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www.se.com DC - DC PV devices NS | I

ComPacT NSX, ComPacT INS/INV and MasterPact NW Direct Current

A Complete DC Offer from 16 to 4000 A

ComPacT NSX, ComPacT INS/INV and MasterPact NW direct current (DC) circuit breakers are used to protect and control low-voltage distribution systems.

They are installed in main low-voltage switchboards (MLVS) and in distribution switchboards (as incomers and outgoers). They can use all the accessories and auxiliaries for the AC ranges and are thus suitable for most DC systems and applications.





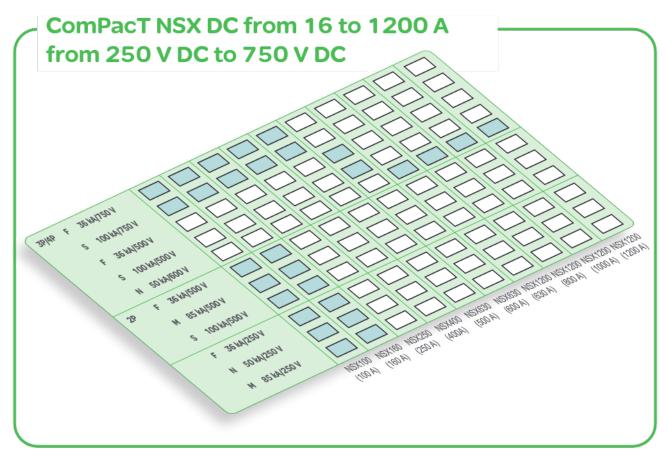






II I DC - DC PV devices www.se.com

A Complete Molded Case Circuit Breaker DC Offer from 80 to 500 A





The ComPacT NSX range is designed for DC voltages from 24 to 750 V and offers:

- A wide selection of models suited to many applications:
- ☐ 1, 2, 3 and 4 poles up to 160 A
- □ 3 and 4 poles from 250 to 630 A
- □ 2 poles from 630 to 1200 A
- High breaking capacities, with four performance levels F, N, M and S:

\Box F

- 36 kA in a 1 pole version, for systems ≤ 250 V
- 36 kA in a 2 poles version, for systems ≤ 500 V
- 36 kA in a 3 or 4 poles version, for systems ≤750 V

$\square N$

- 50 kA in a 1 pole version, for systems ≤ 250 V
- 50 kA in a 2 poles version, for systems ≤ 600 V
- 85 kA in a 1 pole version, for systems ≤ 250 V
- 85 kA in a 2 poles version, for systems ≤ 500 V

- 100 kA in a 2 poles version, for systems
- 100 kA in a 3 or 4 poles version, for systems ≤750 V
- Fewer frame sizes: just two poles pitches (35 and 45 mm) for easy integration in installation systems (enclosures, machines, etc.)
- Accessories for insulation and series or parallel connection of poles, suited to the particularities of DC applications
- Fixed and withdrawable versions (3 and 4 poles, DC type).

Breaking capacity Icu for 250 V per pole and L/R = 15 ms [1] (1P: 250 V, 2P: 500 V, 3P: 750 V)

[1] L/R = time constant of the distribution system (see page A-11).



NSX160 DC -1P



NSX160 DC - 2P



NSX250 DC - 4P



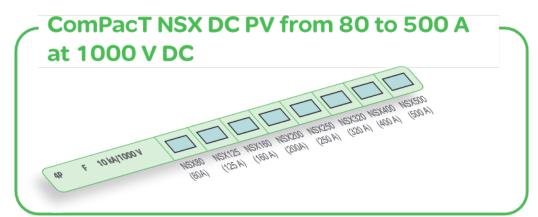
NSX630 DC - 3P



NSX1200 DC - 2P

www.se.com DC - DC PV devices NS | III

A Complete Molded Case Circuit Breaker DC Offer from 80 to 500 A



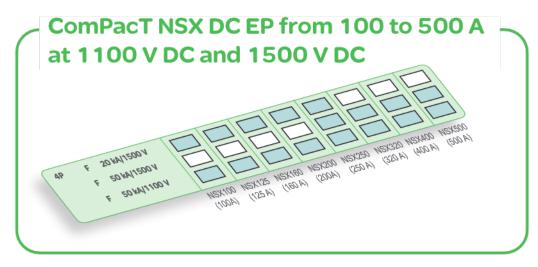


The ComPacT NSX DC PV (Photovoltaic) range is designed for DC voltages under 1000 V and offers:

- Eight current ratings: 80, 125, 160, 200, 250, 320, 400 and 500 A
- A breaking-capacity level F: 10 kA for systems ≤1000 V
- Two types of devices:
- ☐ Circuit breaker for the protection of power circuits and loads
- □ Switch-disconnector for circuit control and disconnection
- Fixed and withdrawable versions for the entire range
- Integrated protection: overload/short circuit protection with thermal magnetic.



ComPacT NSX200 TM DC PV





ComPacT NSX250 TM DC EP



The ComPacT NSX DC EP (Enhanced Performance) range is designed for DC voltages from 1100 to 1500 V and offers:

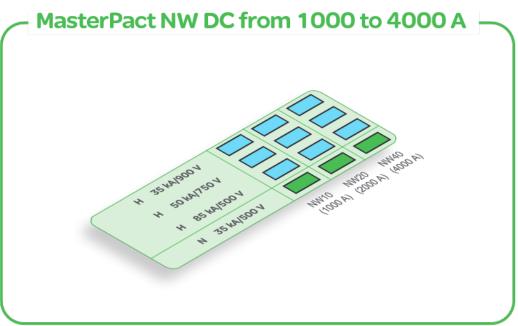
- Eight current ratings: 100, 125, 160, 200, 250, 320, 400 and 500 A
- Two high breaking-capacity level F:
- □ 50 kA for systems ≤1100 V
- □ 50 kA for systems ≤1500 V
- □ 20 kA for systems ≤1500 V
- Two types of devices:
- ☐ Circuit breaker for the protection of power circuits and loads
- $\hfill \square$ Switch-disconnector for circuit control and disconnection
- Fixed and withdrawable versions for the entire range
- Integrated protection: Overload/short circuit protection with Thermal magnetic
- Dedicated to specific applications:
- □ Photovoltaic application under 1500 V
- ☐ Marine application under 1500 V are also presented in this catalog.



ComPacT NSX500 TM DC EP

IV | DC - DC PV devices www.se.com

A Complete Air Circuit Breaker DC Offer from 16 to 4000 A





The MasterPact NW range is designed for DC voltages from 24 to 900 V and offers:

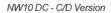
- 2 versions: C/D (3 poles) E (4 poles)
- Three current ratings: 1000, 2000 and 4000 A
- Two high breaking-capacity levels N and H.

Breaking capacity Icu for L/R = 15 ms [1] for 500, 750 or 900 V system voltages:

 $\square N$

- 35 kA for systems ≤ 500 V
- ΠН
- 85 kA for systems ≤ 500 V
- 50 kA for systems ≤ 750 V
- 35 kA for systems ≤ 900 V
- Two types of devices:
- □ Circuit breaker for the protection of power circuits and loads
- □ Switch-disconnector for circuit control and disconnection
- Fixed and drawout versions for the entire range.
- Specific offers dedicated to the specific conditions of some applications:
- □ NW HADC-D switch-disconnectors for photovoltaic application under 1000 V DC
- □ NW EPDC-D circuit breakers for Marine application under 1100 V DC are also presented in this catalog.
- [1] L/R = time constant of the distribution system (see page A-11).







NW10 DC - E Version

www.se.com DC - DC PV devices NS | V

ComPacT NSX DC PV - DC EP, ComPacT INS PV and MasterPact NW DC PV

A Complete DC Offer for Solar Application from 80 to 4000 A



VI | DC - DC PV devices www.se.com

ComPacT NSX DC PV - DC EP

Circuit Breakers and Switch-Disconnectors

Enhancing the Reliability and the Efficiency of your Photovoltaic Installation

Schneider Electric photovoltaic packages give you dependable, clean, and affordable solar power. High quality, highly efficient, and available everywhere, our systems are simple-to-install, giving you a competitive edge. The ComPacT NSX DC PV range of molded case circuit breakers and switch-disconnectors with operational voltage up to 1500 V DC includes the switchgears and the protection components you need to efficiently operate your photovoltaic installation in commercial buildings and power plants.









ComPacT NSX DC PV - DC EP...

...with short heatsinks



With heatsinks supplied as standard, the circuit breaker or switch-disconnector rating is optimized, avoiding the need to oversize protection components and saving space in the enclosure. As part of the ComPacT NSX range, all existing auxiliaries and accessories are compatible.

The terminal shields and phase barriers are available for insulation. The shunt trip auxiliary is available for remote disconnection.

...with long heatsinks



www.se.com DC - DC PV devices NS | VII

ComPacT INS PV Switch-Disconnectors



No matter the size or scale of the project, Schneider Electric, has a photovoltaic solution to fit your needs. Fast ROI, high efficiency – it's all a part of our offer as the world leader in energy management.

The INS PV-1 is a direct current switch disconnector dedicated to array isolation and control with Voc until 600 V DC.

Photovoltaic Applications



VIII | DC - DC PV devices www.se.com

MasterPact NW HADCD-PV

Switch-Disconnectors



Schneider Electric's MasterPact NW HADCD-PV switch-disconnectors are used for circuit control and disconnection.

Dedicated to Photovoltaic Application



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MasterPact NW EPDC-D

Circuit-Breakers for Marine Applications at 1100 V DC



Alternative energies have a major contribution to reducing the carbon footprint in marine industry and building the environmental sustainability of power generation.

Vessels hybrid propulsion systems have continuously been growing worldwide in these last years. The competitive environment together with the increasing power of such systems have created the need for voltage increase on the DC side, in order to limit the cables cross section, to lower the DC power losses, and to reduce the installation costs.

MasterPact NW10-40 EPDC-D is a 1100 V DC air circuit breakers offer tested and certified for marine application.

Marine applications have particular characteristics and require equipment with specific performance. These performance requirements are identified for the IEC 60947-2 products in the IACS UR E10 unified requirements: "Test Specification for marine Type Approval". NW10-40 EPDC-D circuit breakers are certified as per the IEC 60947-2 and the IACS UR E10.



X | DC - DC PV devices www.se.com

Architecture Overview

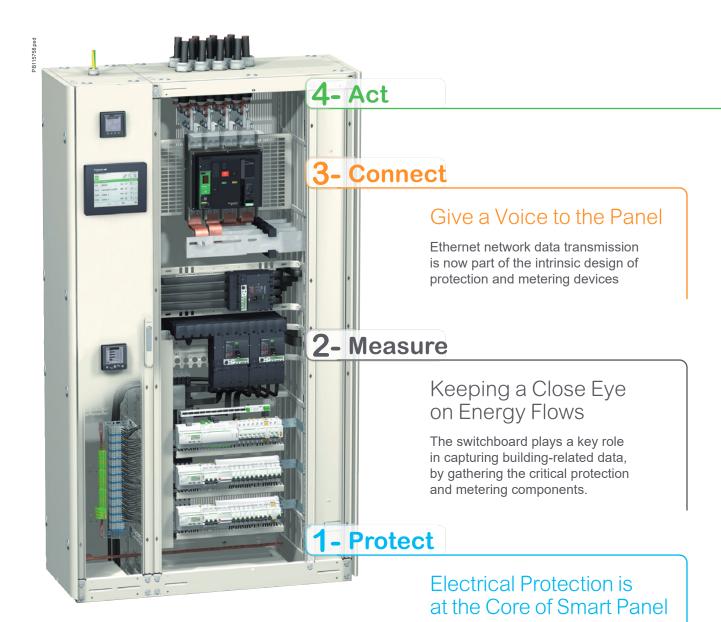


Ethernet-Ready Smart Panels

Ethernet-ready Smart Panels enable electrical distribution control and expertise. 'Protect' - 'Measure' - 'Connect' are the 3 pillars of their technology.

High-performance technology is present in every breaker and every residual

current device.



www.se.com DC - DC PV devices NS | XI

Architecture Overview

Future Savings, Peace-of-Mind

Access to Smart Panel status, values, is essential for taking advantages of monitoring and management services, locally or remotely.

Act in Small/Medium Buildings

with FDM 128, Com'X 510, Power View, EcoStruxure™ Facility Expert



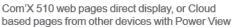




Optimizing Energy-Efficiency

- Visualize, record energy consumption and WAGES.
- Comply with regulation.







Improving Continuity of Service

- Get instant notifications
- Manage with assets-maintenance platform
- Get and analyze data for quick crisis-recovery



Distance management with EcoStruxure™ Facility Expert on Smartphone, tablet, PC



Increasing Maintenance Efficiency

- Operate preventive maintenance tools
- Follow maintenance & planning
- Provide business owner instant access to maintenance reports

XII I DC - DC PV devices www.se.com

Architecture Overview

Day-to-Day Energy Management >> Power Availability and Quality, Energy Performance

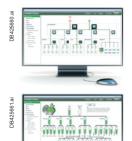
For simply dealing with building user's needs and energy constraints.

EcoStruxure™ Building Management provides electrical management, monitoring and energy accounting.

Energy decisions are often crucial in large critical buildings, they must be informed.

EcoStruxure™ Power Monitoring Expert (software for PC) collects Smart Panels values to provide expert analyzis.

Act in Large Non-Critical Buildings with EcoStruxure™ Energy Expert





Managing Equipment and Key Assets

 Check operating status, faults on custom on-line diagrams.



Monitoring Electrical Network

- Observe voltage disturbances, harmonics on graphics.
- Read power factor.



Accounting Energy

- Record power meter data on dashboards.
- Allocate energy consumption with costs.
- Follow conservation goals.



Act in Large Critical Buildings with EcoStruxure™ Power Monitoring Expert [1]





Analyzing Power Events

- Speed up downtime crisis recovery.
- Determine incident root cause, events sequence.
- Troubleshoot power quality issues.





Monitoring Power quality

- Be alerted of equipment affected by power quality issue.
- Compare power quality against industry standards.
- Collect facts for future discussion with Utility.





Analyzing Energy Performance

- Evaluate building energy saving performance.
- Identify underperforming loads.
- Analyze Energy Conservation Measures (ECMs) according ISO50001 program.
- [1] EcoStruxure™ Power Monitoring Expert, https://pmedemo.biz/web/ ID: demo & Password: demo



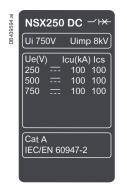
É 1 1 <u></u> **(1)**

ComPacT NSX DC - DC PV - DC EP ComPacT INS/INV DC - DC PV MasterPact NW DC - DC PV

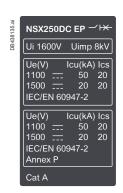
Presentation
Functions and Characteristics
Installation Recommendations
Installation recommendations
Dimensions and Connection
Electrical Diagrams
Additional Characteristics
Catalog Numbers and Order Form

The Benefits of a Comprehensive and Optimized Range Design...

ComPacT NSX and MasterPact NW DC -DC PV - DC EP circuit breakers constitute a flexible and cost-effective means to meet the various needs of DC systems.



NSX250 DC rating plate



NSX250 DC EP rating plate



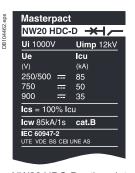
NSX200 DC PV rating plate



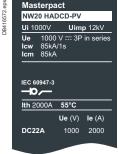
NSX200 NA DC PV rating



INS 250 rating plate



NW20 HDC-D rating plate



NW20 HADCD-PV rating plate

A Wide, Complete and High-Performance Range

Schneider Electric DC-DC PV - DC EP circuit breakers and switches provide a comprehensive solution for the many applications met in DC systems.

The ComPacT NSX and MasterPact NW DC ranges offer, a wide selection of current ratings (16 to 4000 A) and breaking capacities (up to 100 kA) for the common voltages up to 900 V DC.

The ComPacT NSX and MasterPact NW DC - DC PV ranges are designed for use under 1000 V for photovoltaic application.

The ComPacT INS/INV offers a wide selection of current ratings (40 to 2500 A) for the common voltage up to 250 V DC.

Flexible and Optimized Design

The ComPacT NSX, ComPacT INS/INV and MasterPact NW DC ranges use all the standard accessories and auxiliaries of the AC ranges.

The modular design and many possibilities offered by these systems provide a high degree of flexibility in customizing products, while benefiting from dependable and optimized industrial design.

Dependable and Simple Operation

Even though they use the accessories of the corresponding AC ranges, the ComPacT NSX, ComPacT INS/INV and MasterPact NW DC ranges have been specially designed for DC systems.

Specific accessories have been developed to meet the needs of series or parallel connection of poles by users in a simple and dependable manner (see page opposite). ComPacT NSX, ComPacT INS/INV and MasterPact NW DC devices can be installed in class II switchboards with a degree of protection up to IP54.

Compliance with Standards

ComPacT NSX, ComPacT INS/INV and MasterPact DC circuit breaker ranges comply with:

- The main international standards and in particular IEC 60947-1/2/3
- European (EN 60947-1 and EN 60947-2) and the corresponding national standards: France NF, Germany VDE, UK BS, Australia AS, Italy CEI
- The specifications of the marine classification companies (Veritas, Lloyd's Register of Shipping, Det Norske Veritas, etc.)
- French standard NF C 79-130 and the recommendations issued by the CNOMO organization for the protection of machine tools. For United States UL, Canadian CSA, Mexican NOM and Japanese JIS standards, please consult us.

ComPacT NSX, ComPacT INS/INV and MasterPact NW DC - DC PV switches and auxiliaries comply with the following:

- The main international standards and in particular IEC 60947-2 (circuit breaker), IEC 60947-3 (switch-disconnectors)
- European (EN 60947-1, EN 60947-2 and EN 60947-3) and the corresponding national standards: France NF, Germany VDE, United Kingdom BS, Australia AS, Italy CEI.

Open Communication

ComPacT NSX and MasterPact NW DC devices can be equipped with communication options for integration in a supervision system via Modbus.

Pollution Degree

ComPacT NSX and MasterPact NW DC circuit breakers are certified for operation under pollution conditions in industrial environments, as per standard IEC 60947, corresponding to:

- Pollution degree 3 (ComPacT NSX, ComPacT INS/INV)
- Pollution degree 3 (MasterPact NW).

Tropicalization

ComPacT NSX, ComPacT INS/INV and MasterPact NW DC circuit breakers have successfully passed the tests prescribed by the following standards for severe atmospheric conditions:

- IEC 60068-2-1 dry cold (-40 °C)
- IEC 60068-2-1 dry heat (+85 °C)
- IEC 60068-2-30 damp heat (95 % relative humidity at +55 °C)
- IEC 68-2-52 (level 2) salt mist.

Environmental Protection

Schneider Electric circuit breaker ranges benefit from Eco-design:

- Use of environment-friendly materials
- Non-polluting production units complying with ISO 14001 standards
- Filtered breaking for high current ratings to avoid pollution in the switchboard
- Low dissipated energy per pole, making energy losses insignificant
- Marking of products in view of sorting recyclable materials at the end of the service life.

... Specifically for DC- DC PV - DC EP Applications

Designed for Direct Current

Performance Levels and Quality Signed Schneider Electric

The creation of a dependable and high-performance DC range requires a large amount of specific design and development work in addition to that invested in the original AC range.

Schneider Electric called on its proven industrial experience in the AC field and its recognized know-how in current interruption to develop a high-performance DC range.

Schneider Electric decided to use the cases and accessories of its ComPacT NSX and MasterPact NW ranges with:

- A high-performance design for the breaking chambers or the poles intended specifically for DC applications (e.g. 100 kA at 250 V per pole for ComPacT NSX and 85 kA at 900 V for two poles for MasterPact NW)
- Fast trip units developed for DC applications
- Optimized pole-connection and isolation possibilities that are both simple and dependable.

Optimized Solutions for the Many Types of DC Systems

The many types of DC systems make it necessary, for cost and technicaloptimization reasons, to connect the poles of two, three or four-pole circuit breakers in series or in parallel.

The ComPacT NSX and MasterPact NW ranges enable series connection of poles, thereby optimizing breaking capacity for high voltages.

Series connection reduces the voltage across the terminals of each pole (the total voltage is divided by two, three or four depending on the circuit breaker) and the operation of all poles provides the breaking capacity of the overall device.

This makes it possible to break short-circuit currents at high voltages while optimizing solutions (e.g. a ComPacT NSX 100 kA 250 V per pole can be used on a 750 V system with three poles connected in series, thus reducing the cost compared to a 750 V solution).

The ComPacT NSX range enables parallel connection of the poles, thereby optimizing the use of the rated currents.

Optimized and Dependable Series or Parallel Connection of Poles

Series Connection - Controlled Temperature Rise and Enhanced Performance

Schneider Electric DC circuit breakers comply with product standards IEC 60947-1 and 2.

To that end, series connection of poles meets:

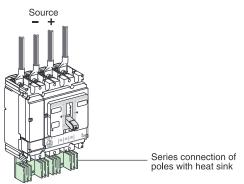
- Temperature-rise conditions. Connections specifically designed to dissipate heat mean the thermal model is equivalent to that for AC applications. The devices dissipate the temperature rise produced by relatively short series connections.
- Connections are designed for severe operating conditions (insulation and safety clearances, ultimate breaking capacity, high pollution levels, etc.).

Parallel Connection - Optimization

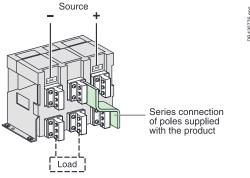
Certain DC systems require high power levels (hundreds to thousands of amperes) at reduced voltages, most often \leq 250 V.

The configurations of DC systems and the exceptional performance levels of ComPacT NSX circuit breakers mean the poles can be parallel connected. This technique virtually doubles, triples or quadruples the current rating depending on the type of circuit breaker and thus reduces the cost of solutions.

ComPacT NSX DC and MasterPact NW DC circuit breakers offer optimized poleconnection possibilities.



ComPacT NSX DC

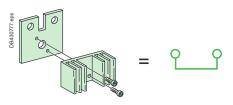


MasterPact NW DC - supplied ready for installation (here with vertical rear connections)

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Great Flexibility in Adapting to DC Applications Overview of Series Connection of Poles for ComPacT NSX DC

With ComPacT NSX DC circuit breakers, it is easy to create a large number of series pole arrangements using prefabricated connections mounted on site during equipment installation.



One type of connection per framesize, two catalog numbers for all series connections.

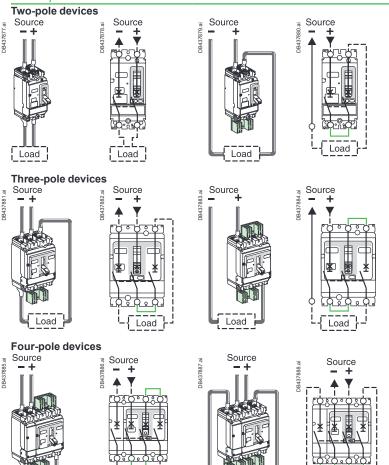
All connections are possible for the fixed and

withdrawable versions

- Indifferent connection of polarities, from left to right or right to left
- Indifferent connection of upstream and downstream cables to top or bottom terminals
- Series connection of poles is possible by upstream/ downstream connections. Creation of the connections is the responsibility of the panel builder or the installer.

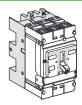
ComPacT NSX DC

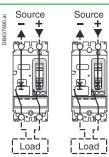
Examples of Series Connection



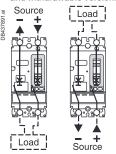
Great Flexibility for Connections





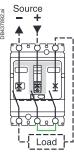


All connections are possible for the fixed and withdrawable versions



Upstream/downstream connections to top or bottom connectors

Indifferent connection of polarities

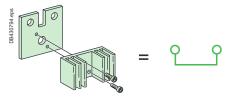


Series connection of poles is possible by upstream/downstream connections (user made)

www.se.com Presentation

Great Flexibility in Adapting to DC Applications Overview of Series Connection of Poles for ComPacT INS/INV

With ComPacT INS/INV switchdisconnectors, it is easy to create a large number of series pole arrangements using prefabricated connections mounted on site during equipment installation.

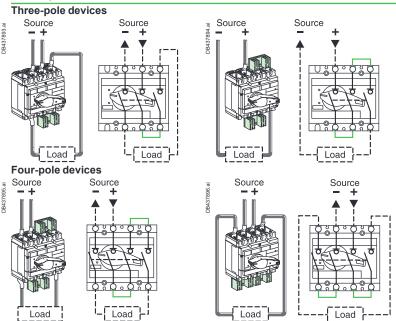


One type of connection per frame size, two catalog numbers for all series connections.

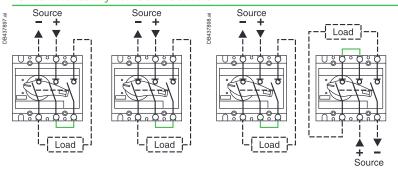
- Indifferent connection of polarities, from left to right or right to left
- Indifferent connection of upstream and downstream cables to top or bottom terminals
- Series connection of poles is possible by upstream/ downstream connections. Creation of the connections is the responsibility of the panel builder or the installer.

Series Connection of Poles for Direct Current Applications

Examples of Series Connection

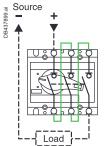


Great Flexibility for Connections



Indifferent connection of polarities

Upstream/downstream connections to top or bottom connectors



Series connection of poles is possible by upstream/downstream connections (user made)

Great Flexibility in Adapting to DC Applications Overview of Series Connection of Poles for MasterPact NW DC

MasterPact NW DC circuit breakers, with high ratings and installed as incoming devices, offer three coupling versions C, D and E ready for connection.

The polarities "Line -", "Line +" indicated on the rear connections of the MasterPact NW DC circuit breakers have to be respected in order to match the magnetic threshold tolerances.

MasterPact NW DC

Three Versions Supplied Ready for Connection

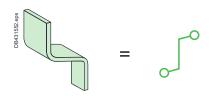
Version C Source Load



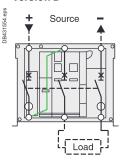


Rear view

The prefabricated series connections are factory made due to the power ratings. They also dissipate



Version D

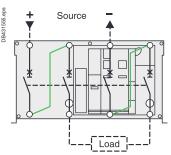


Front view: three-pole case - three poles in series



Rear view with connections

Version E



Front view: four-pole case - four poles in series

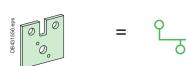


Rear view with connections

Great Flexibility in Adapting to DC Applications Parallel Connection of Poles

The exceptional performance levels of ComPacT NSX DC, DC PV and DC EP circuit breakers mean the poles can be parallel connected. This technique virtually doubles, triples or quadruples the current rating depending on the type of circuit breaker and thus reduces the cost of solutions.

Examples of Parallel Connection

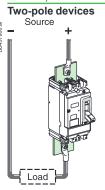


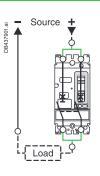
Parallel pole connection accessories are identical to those for series connections. The are equipped with heat sinks.

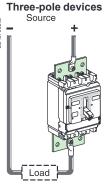
Customer connections are made directly to the connection plates after removing the heat sinks

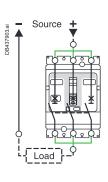


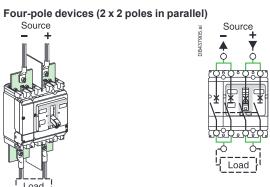
Specific connections are required for parallel connection of three poles.



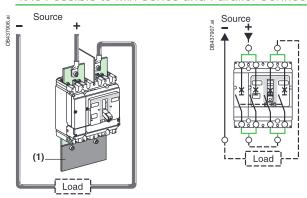








It Is Possible to Mix Series and Parallel Connections



Note: Creation of the additional connection [1] is the responsibility of the panel builder or the installer.

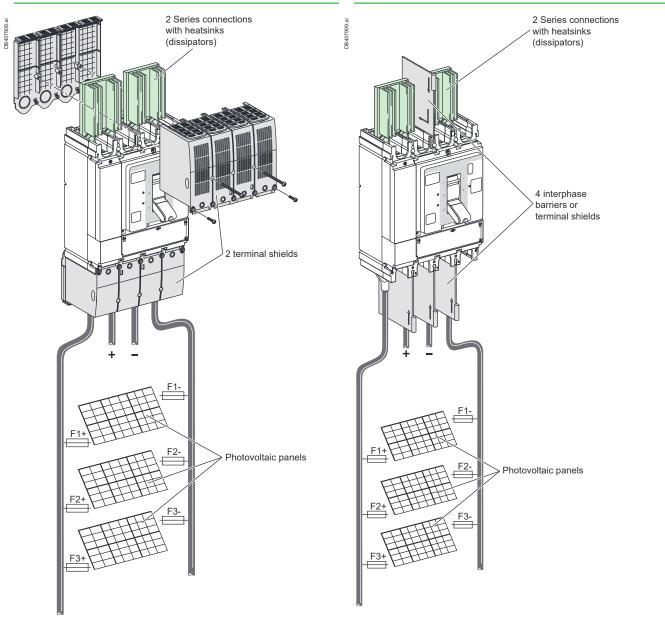
Presentation

Great Flexibility in Adapting to DC EP Applications

Overview of Series Connectors for NSX DC EP

ComPacT NSX TM DC EP

ComPacT NSX NA DC EP

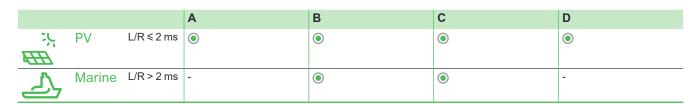


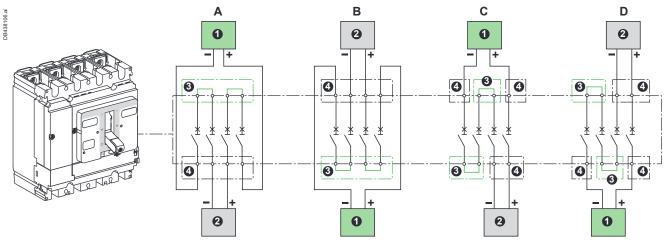
www.se.com Presentation

Great Flexibility in Adapting to DC EP Applications

Overview of Series Connectors for NSX DC EP

ComPacT NSX100 to NSX250 DC EP/ComPacT NSX100 to NSX250 NA DC EP





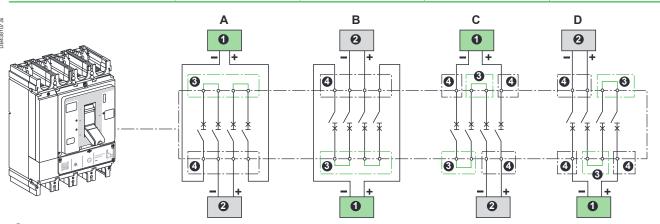
- 1 Source
- 2 Load
- 3 Series connections with heatsinks
- 4 Terminal shields

> ComPacT NSX250 TM DC EP and ComPacT NSX250 NA DC EP Detailed Guide



ComPacT NSX250 to NSX500 DC EP/ComPacT NSX320 to NSX630 NA DC EP

			A	В	С	D
### ::	PV	L/R ≤ 2 ms	•	•	•	•
<u> </u>	Marine	L/R > 2 ms	•	•	•	•



- Source
- 2 Load
- 3 Series connections with heatsinks
- 4 Terminal shields

> ComPacT NSX500 TM DC EP and ComPacT NSX630 NA DC EP Detailed Guide

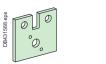


Connection Accessories

The exceptional performance levels of ComPacT INS/INV switch-disconnectors mean the poles can be parallel connected. This technique virtually doubles, triples or quadruples the current rating depending on the type of circuit breaker and thus reduces the cost of solutions.

Parallel Connection of Poles for Direct Current Applications

Examples of Parallel Connection





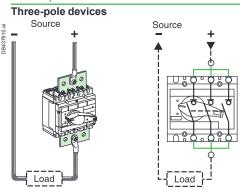
Parallel pole connection accessories are identical to those for series connections. The are equipped with heat sinks.

Customer connections are made directly to the connection plates after removing the heat sinks.

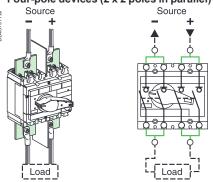




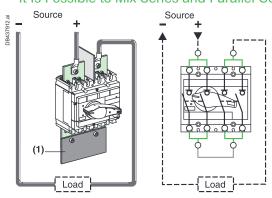
Specific connections are required for parallel connection of three poles.



Four-pole devices (2 x 2 poles in parallel)



It Is Possible to Mix Series and Parallel Connections



Note: Creation of the additional connection [1] is the responsibility of the panel builder or the

Great flexibility for connections

- Indifferent connection of polarities, from left to right or right to left.
- Indifferent connection of upstream and downstream cables to top or bottom terminals.

Functions and Characteristics

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Types of DC Distribution Systems

There are three types of DC distribution systems (see the table).

The operational voltage in conjunction with one of the three systems determines the number of poles taking part in current interruption.

> Selection of a circuit breaker depends essentially on the distribution-system parameters presented below which are used to determine the corresponding characteristics:

- Type of system determines the type of product and the number of poles connected in series for each polarity
- Rated voltage determines the number of series poles taking part in current
- Nominal current determines the rated current of the circuit breaker
- Maximum short-circuit current at the point of installation determines the breaking

Types of sy			Included eveterns
	The source has one earthed polarity [1]	The source has an earthed mid-point	Isolated systems
	' '	The source has an earthed mid-point	
Diagrams and di	ifferent faults		
	Load Load College	Load Load C	Load Load D C
	eglecting resistance of earth electrodes)		
Fault A	 ■ Maximum Isc at U ■ Only protected polarity concerned ■ All poles of protected polarity must have breaking capacity ≥ Isc max. at U 	 ■ Maximum Isc at U/2 ■ Only positive polarity concerned ■ All poles of positive polarity must have breaking capacity ≥ Isc max. at U/2 	 No consequences The fault must be indicated by an IMD (insulation-monitoring device) and cleared (standard IEC/EN 60364)
Fault B	 ■ Maximum Isc at U If only one polarity (the positive here) is protected, all poles of protected polarity must have breaking capacity ≥ Isc max. at U If both polarities are protected, to enable disconnection, all poles of the two polarities must have breaking capacity ≥ Isc max. at U 	 ■ Maximum Isc at U ■ Both polarities are concerned ■ All poles of the two polarities must have breaking capacity ≥ Isc max. at U 	 ■ Maximum Isc at U ■ Both polarities are concerned ■ All poles of the two polarities must have breaking capacity ≥ Isc max. at U
Fault C	No consequences	■ Same as fault A ■ All poles of the Negative polarity must have breaking capacity ≽ Isc max. at U/2	■ Same as fault A with the same actions
Double fault A and D or C and E	Double fault not possible, system trips on first fault	Double fault not possible, system trips on first fault	 ■ Maximum Isc at U ■ Only positive polarity (cases A and D) or negative (C and E) concerned ■ All poles of each polarity must have breaking capacity ≥ Isc max. at U
Most unfavorable	le cases		,
	Fault A and fault B (if only one polarity is protected)	Fault B	Double fault A and D or C and E
Conclusion: s	election of number of poles and breakin	g capacity	
Layout of protect	tion poles		
	On only one polarity [1]	■ Identical for each polarity	■ Identical for each polarity
Number of serie			
Per polarity	■ All on same polarity	■ Equal	■ Equal
Total	 1, 2 or 3 without disconnection 2. 3 or 4 with disconnection 	■ 2 or 4 ^[2]	2 or 4 [2]
Breaking capaci	1 /-		<u> </u>
3	■ All poles of the protected polarity > Isc max. at U	 All poles of both polarities ≥ lsc max. at U All poles of each polarity ≥ lsc max. at U/2 	■ All poles of each polarity > Isc max. at U
Disconnection of	of both polarities [3]	1 = 7 posed of odost polarity > 100 max. at 0/2	
	Possible by adding a pole to the non-protected polarity	■ Ensured	■ Ensured
Implementation	·		
	See the selection table opposite		
	setive depending on the polarity connected to the		

- [1] Positive or negative, depending on the polarity connected to the exposed conductive parts.
 [2] A 3P circuit breaker can be used if a 2P version does not exist. In this case, the central pole is not connected.
- [3] Disconnection made possible by multi-pole breaking.



Solutions Depending on the Distribution System and the Voltage

Series Connection of Poles Type of distribution system Isolated Type Mid-point connected to earth Isolated polarities One polarity (negative here) connected to earth Source (or exposed conductive parts) Protected polarities 2 (disconnection of 2P) 1 (disconnection of 1P) **Diagrams** (and types of faults) Selection of circuit breaker and pole connection ComPacT NSX DC 24 V ≤ Un ≤ 250 V Load } Load Single-pole Two-pole [1] Two-pole [1] Two-pole [1 NSX100-600 250 V < Un ≤ 500 V Two-pole [1] Three-pole Two-pole [1] Four-pole NSX100-500 [2] 500 V < Un ≤ 750 V Three-pole Four-pole Four-pole MasterPact NW DC Type N 24 V ≤ Un ≤ 500 V Version C Version C Version C Type H $24~V \leqslant Un \leqslant 500~V$ Load Load Version D Version C 500 V < Un ≤ 750 V Version D Version E Version E 750 V < Un ≤ 900 V

[1] A 3P circuit breaker can be used if a 2P version does not exist. In this case, the central pole is not connected.

Version D

[2] ComPacT NSX DC circuit breakers (and switch disconnectors) are designed to break the rated current or fault current at the rated operational voltage (Ue) with all poles. To break the current at voltage > 500 V, three poles in series are required. In double earth fault situations (A + D or C + E), the circuit breaker (and Switch disconnectors) must break the current at full voltage with only half of the poles. ComPacT NSX DC circuit breakers (and Switch disconnectors) are not designed for this purpose and could sustain irremediable damage if used to break the current in a double earth fault situation for voltage > 500 V.

Solutions Depending on the Distribution System and the Voltage

Parallel Connection of Poles

Type of distribution	າ system		
Туре	Earthed		Isolated
Source	One polarity (negative here) connected to earth (or exposed conductive parts)	Mid-point connected to earth	Isolated polarities
Protected polarities	1 (disconnection of 1P) 2 (disconnection of 2P)	2	2
Diagrams (and types of faults)	Load Load Bay 157 Page 188	Load Steps 12 Load Load C 1	Load Load
Selection of circuit	breaker and pole connection		
ComPacT NSX DC			
Un ≤ 250 V	Two, three-pole, 2, 3P in parallel, four-pole, 4P in parallel	* * * * * * * * * * * * * * * * * * *	Four-pole, 2 x 2P in parallel
	Four-pole, 2 x 2P in parallel, connected in series	Four-pole, 2 x 2P in parallel	to.
ComPacT NSX1200 DC	[2]		
Un ≤ 300 V	* * * * * * * * * * * * * * * * * * *	T Load F	* * * * * * * * * * * * * * * * * * *
300 V < Un ≤ 600 V	* * * * * * * * * * * * * * * * * * *	The state of the s	(3)

^[1] ComPacT NSX DC circuit breakers (and switch disconnectors) are designed to break the rated current or fault current at the rated operational voltage (Ue) with all poles. To break the current at voltage > 250 V, two poles in series are required. In double earth fault situations (A + D or C + E), the circuit breaker (and switch disconnectors) must break the current at full voltage with only half of the poles. ComPacT NSX DC circuit breakers (and switch disconnectors) are not designed for this purpose and could sustain irremediable damage if used to break the current in a double earth fault situation for voltage > 250 V.

^[3] ComPacT NSX DC circuit breakers (and switch disconnections) are designed to break the rated current or fault current at the rated operational voltage (Ue) with all poles. To break the current at voltage > 300 V, two poles in series are required. In double earth fault situations (A + D or C + E), the circuit breaker (and switch disconnectors) must break the current at full voltage with only half of the poles. ComPacT NSX DC circuit breakers (and switch disconnectors) are not designed for this purpose and could sustain irremediable damage if used to break the current in a double earth fault situation for voltage > 300 V.

A

Selection Guide for DC Circuit Breakers Solutions Depending on the Distribution System and the Voltage

Comparison of Series and Parallel Connection in Terms of Performance

Series connection of poles on a DC circuit breaker is the means to:

- Divide the system voltage by the number of poles
- Use the rated current for each pole
- Use the breaking capacity of the circuit breaker for all the poles.

For example, a ComPacT NSX630, 3P DC type, with the three poles connected in series, provides:

- A maximum voltage of 750 V (250 V per pole)
- A rated current of 630 A
- A breaking capacity of 100 kA/750 V.

Consequently, a 630 A/250 V device can be used in a 750 V system.

Parallel connection of poles, on the contrary, imposes the system voltage on each pole, but is the means to:

- Divide the current flowing through each pole by the number of poles
- Increase the rated current.

For example, the same ComPacT NSX630 DC 3P circuit breaker with three poles in parallel provides:

- A maximum voltage of 250 V (250 V per pole)
- A rated current of 1500 A (see table page B-9).

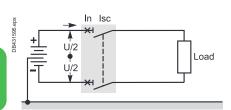
Consequently, a 630 A device used in a 250 V system can handle 1500 A.

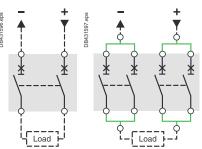
Series connection of poles divides the voltage per pole and optimizes breaking capacity for high-voltage systems.

Parallel connection of poles divides the current per pole and optimizes the rated current for systems that do not exceed the withstand voltage of each pole.

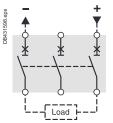
The maximum useable rating and the value of the magnetic setting are indicated (see pages B-7, B-8 and B-9).

Examples of Circuit Breaker Selection

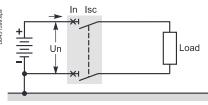




Selection 2: ComPacT NSX160 DC 4P Selection 1 2 x 2P parallel mounted in series



Selection 3: ComPacT NSX250 DC 3P with 2P connected





DB431602.eps Load

Selection 1: ComPacT NSX160F DC 1P

Selection 3: ComPacT NSX100N 2P DC in parallel

Selection of a ComPacT NSX DC Example 1

- Type of system mid-point connected to earth
- System voltage Un = 500 V DC with time constant L/R = 5 ms
- Rated current required at point of installation In = 250 A
- Short-circuit current at the point of installation Isc = 20 kA

Selection constraints - (see page A-4)

The system with the mid-point connected to earth requires (see conclusion

- Identical protection-pole layout for each polarity.
- An equal number of poles for each polarity, i.e. a total of two or four.
- All poles of the two polarities must have breaking capacity > Isc max. at Un, I.e. 20 kA/500 V in this case.
- All poles of the each polarity must have breaking capacity > Isc max. at Un/2, I.e. 20 kA/250 V in this case.

Selection possibilities - (see pages A-5 and A-6)

The tables indicate for 250 V < Un ≤ 500 V and for this system:

- Poles connected in series: two-pole 2P in series → selection 1
- Poles connected in parallel: four-pole 2 x 2P parallel connected in series → selection 2.

Circuit breaker selection - (see pages A-14 and B-8)

- Selection 1: The 250 A rated current does not exist in 2P. It is possible to use a 250 A 3P DC type circuit breaker with the central pole not connected → selection 3
- Selection 2: The 160 A rated current (DC version) is suitable with a 2 x 2P assembly connected in parallel because (see table page B-8):
 - ☐ The rated current of the 2 x 2P assembly connected in parallel is In = 288 A > 250 A
 - \square And for L/R = 5 ms
 - Breaking capacity of all poles = 36 kA/500 V > 20 kA/500 V
 - Breaking capacity of poles of each polarity = 36 kA/250 V > 20 kA/250 V.

The options are:

- Selection 1: ComPacT NSX250S DC, 3P, 2 poles connected
- Selection 3: ComPacT NSX160 DC, 4P, 2 x 2P parallel connected in series. Both solutions exist in fixed and withdrawable configurations.

Trip unit selection

- ComPacT NSX250 DC 3P: The selection table (see page A-18) indicates 3 TM250DC trip units, which are interchangeable
- ComPacT NSX160 DC, 4P (2 x 2P) 160 A: The selection table (see page B-8) indicates, for the 2 x 2P parallel configuration mounted in series and for 250 A, A TM125DC trip unit with the magnetic-protection threshold set to 2500 A.

Example 2

- Type of system one polarity earthed
- System voltage Un = 250 V DC with time constant L/R = 5 ms
- Rated current required at point of installation In = 160 A
- Short-circuit current at the point of installation Isc = 20 kA.

Selection constraints - (see page A-4)

The system with one polarity connected to earth requires (see conclusion

- Protection poles on the protected polarity
- All poles contribute to breaking for the polarity:
 - ☐ 1, 2 or 3P without disconnection of the two polarities
 - □ 2, 3 or 4P with disconnection of the two polarities
- All poles of the protected polarity must have breaking capacity ≥ Isc max. at Un, i.e. 20 kA/250 V in this case.

Selection possibilities - (see pages A-5 and A-6)

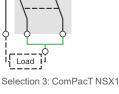
The tables indicate for Un ≤ 250 V and for this system:

- Poles connected in series: single-pole → selection 1 (or two-pole with disconnection → selection 2)
- Poles connected in parallel: two-pole → selection 3
- Other selections (parallel connection) are possible, but are of no particular

- Circuit breaker selection (see pages A-14 and B-7)
 Selection 1: ComPacT NSX160F DC, 1P, 36 kA, available in fixed version (or selection 2: ComPacT NSX160F DC, 2P, 36 kA, if disconnection of the two polarities is desired)
- Selection 3: ComPacT NSX100N DC, 2P in parallel, 36 kA, providing a rated current of 200 A (see table page B-7), available in fixed version.

Trip unit selection

- ComPacT NSX160N DC, 1P: The selection table (see page A-18) indicates a built-in TM160DC trip unit with the magnetic-protection threshold set to 1250 A
- ComPacT NSX100N DC, 2P in parallel: The selection table (see page B-7) indicates, for the 2P parallel configuration and for 160 A, a TM80D trip unit with the magnetic-protection threshold set to 1600 A.



A-8





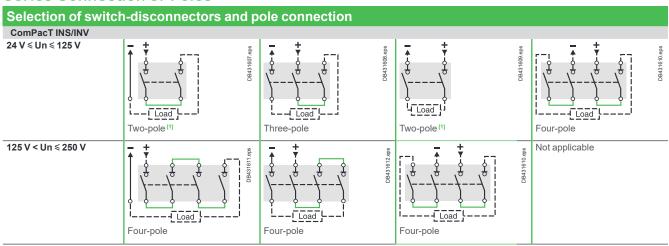
Selection 2

Connection Accessories

Solutions Depending on the Distribution System and the Voltage

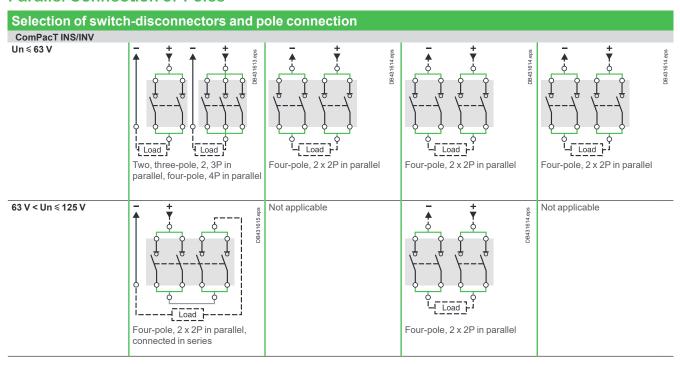
Туре	Earthed		Earthed			
Source	One polarity (negative here) connected to ea (or exposed conductive parts)	arth	Mid-point connected to earth	Isolated polarities		
Protected polarities	1 (disconnection of 1P) 2 (disconn	ection of 2P)	2	2		
Diagrams, connection method	Load Load Load	Load	Load		Load	

Series Connection of Poles

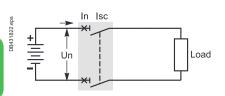


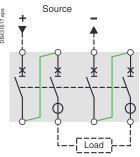
[1] A 3P switch-disconnectors can be used if a 2P version does not exist. In this case, the central pole is not connected.

Parallel Connection of Poles

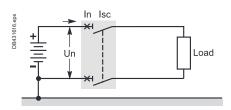


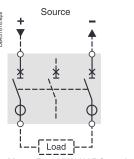
Examples of Circuit Breaker Selection





MasterPact NW20H DC version E





MasterPact NW10N DC version C

Selection of a MasterPact NW DC

Example 1

- Type of system isolated polarities
- System voltage Un = 750 V DC with time constant L/R = 30 ms
- Rated current required at point of installation In = 2000 A
- Short-circuit current at the point of installation Isc = 40 kA

Selection constraints - (see page A-4)

The system with isolated polarities requires (see conclusion page A-4):

- Identical protection for each polarity
- An equal number of poles for each polarity, i.e. a total of two or four
- All poles of each polarity must have breaking capacity > Isc max. at Un, I.e. 40 kA/750 V in this case.

Selection possibilities - (see page A-5)

The table for series poles indicates for a voltage 24 V < Un ≤ 750 V and the type of system, use of a four-pole, version E circuit breaker.

Circuit breaker selection - (see page A-102)

The MasterPact NW DC characteristics table indicates more specifically with a 2000 A a NW20 DC type H circuit breaker with a breaking capacity of 50 kA/750 V

The correct selection is a MasterPact NW20 DC type H version E, 2000 A, 50 kA, available in fixed and drawout versions.

Example 2

- Type of system one polarity earthed
- System voltage Un = 500 V DC with time constant L/R = 15 ms
- Rated current required at point of installation In = 1000 A
- Short-circuit current at the point of installation lsc = 30 kA

Selection constraints - (see page A-4)

The system with one polarity connected to earth requires (see conclusion page A-4):

- Protection poles on the protected polarity
- All poles contribute to breaking for the polarity:
 - $\hfill\Box$ 1, 2 or 3P without disconnection of the two polarities
 - □ 2, 3 or 4P with disconnection of the two polarities
- All poles of the protected polarity must have breaking capacity ☑ Isc max. at Un, i.e. 30 kA/500 V in this case.

Selection possibilities - (see page A-5)

The table for series poles indicates for a voltage 24 V < Un ≤ 500 V and the type of system, use of a three-pole, version C circuit breaker.

Circuit breaker selection - (see page A-102)

The MasterPact NW DC characteristics table indicates more specifically with a 1000 A a NW10 DC type N circuit breaker with a breaking capacity of 35 kA/500 V (L/R = 15 ms). The correct selection is a MasterPact NW10 DC type N version C, 1000 A, 35 kA, available in fixed and drawout versions.

Calculation of DC Distribution-System Characteristics Short-Circuit Currents L/R Time Constant

Short-Circuit Currents

Calculation of the short-circuit current across the terminals of a battery

This calculation is key information to select a product.

During a short-circuit, the battery discharges a current equal to:

$$Isc = \frac{Vb}{Ri}$$

- Vb = maximum discharge voltage (battery 100 % charged)
- Ri = internal resistance equivalent to all cells (a function of the capacity in ampere-hours).

Example

- Consider a set of four 500 Ah batteries connected in parallel.
- Discharge voltage of one battery: 240 V (110 cells 2.2 V each).
- Discharge current of one battery: 300 A with a run-time of 30 minutes.
- Discharge current of all four batteries: 1200 A with a run-time of 30 minutes.
- Internal resistance 0.5 mΩ per cell, i.e. for one battery: Ri = 110 x 0.5 x 10⁻³ = 55 x 10⁻³ Ω.
- Short-circuit current of one battery: Isc = 240 V/55 x 10^{-3} Ω = 4.37 kA.
- Neglecting the resistance of the connections, for all four batteries discharging the short-circuit current in parallel, the total short-circuit current is four times that of one battery, i.e. lsc = 4 x 4.37 kA = 17.5 kA.

Note: If the internal resistance is not known, it is possible to use the following rough approximation: lsc = kc where c is the capacity of the battery in ampere-hours and k is a coefficient close to 10 and always less than 20.

Other typical example

PABXs: Isc from 5 to 25 kA at 240 V DC with L/R = 5 ms.

L/R Time Constant

When a short-circuit occurs across the terminals of a DC circuit, the current rises from the load current (\leq In) to the short-circuit current Isc over a period of time that depends on the value of the resistance R and inductance L of the short-circuited loop.

The equation determining the current in the loop is:

 $\mathsf{U} = \mathsf{R}\mathsf{i} + \mathsf{L}\Delta\mathsf{i}/\Delta\mathsf{t}$

The curve of I versus time is defined (neglecting In) by the equation:

 $I = Isc (1 - exp(t/\tau))$

where τ = L/R is the time constant for the rise to Isc.

Practically speaking, after a time $t = 3\tau$, the short-circuit is considered to be established, because the value of exp(-3) = 0.05 is negligible compared to 1 (see the curve opposite)

The lower the time constant (e.g. battery circuit), the shorter the time required for the current to rise to lsc.

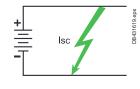
To express breaking capacity, the interrupted short-circuit current with the following time constants is used:

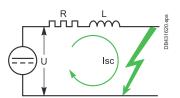
- L/R = 5 ms, fast short-circuit
- L/R = 15 ms, standardized value used in standard IEC 60947-2
- L/R = 30 ms, slow short-circuit.

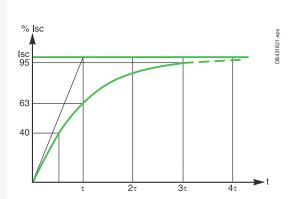
In general, the value of the system time constant is calculated under worst-case conditions, across the terminals of the generator.

Breaking-capacity values for:

- ComPacT NSX DC (table page A-14) are the same for 5 ms and 15 ms
- MasterPact NW DC (table page A-102) are indicated for 3 values, 5 ms, 15 ms And 30 ms.

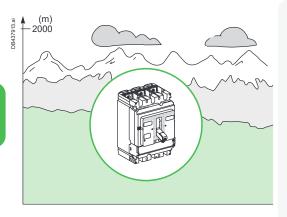




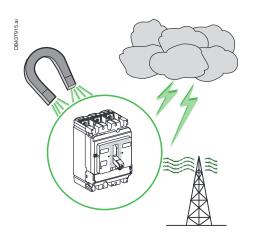


General Characteristics of ComPacT NSX DC, DC PV and DC EP

Operating Conditions







Altitude

ComPacT NSX circuit breakers are designed to operate at their rated values at altitudes under 2000 metres.

Above 2000 metres, the changes in the characteristics of the ambient air (electrical resistance, cooling capacity) result in a reduction of the characteristics below.

Altitude (m)	2000	3000	4000	5000		
ComPacT NSX DC						
Impulse withstand voltage Uimp (kV)	8	7.1	6.4	5.6		
Rated insulation voltage (Ui)	750	710	635	560		
Maximum rated operationnal DC voltage	1 x Ue	0.88 x Ue	0.8 x Ue	0.7 x Ue		
Rated current (A)	1 x ln	0.96 x In	0.93 x In	0.9 x In		
ComPacT NSX DC PV						
Impulse withstand voltage Uimp (kV)	8	7.1	6.4	5.6		
Rated insulation voltage (Ui)	1000	900	800	700		
Maximum rated operationnal DC voltage	1000	900	800	700		
Rated current (A)	1 x In	0.96 x In	0.93 x In	0.9 x In		
ComPacT NSX DC EP						
Impulse withstand voltage Uimp (kV)	8	7.1	6.4	5.6		
Rated insulation voltage (Ui)	1600	1400	1250	1100		
Maximum rated operationnal DC voltage	1500	1300	1150	1000		
Rated current (A)	1 x In	0.96 x In	0.93 x ln	0.9 x In		

Vibrations

ComPacT NSX circuit breakers are are tested electromagnetic or mechanical vibration resistant.

Tests are carried out in compliance with standard IEC 60068-2-6 for the levels required by merchant-marine inspection organizations (Veritas, Lloyd's, etc.):

- 2 to 13.2 Hz: amplitude ±1 mm
- 13.2 to 100 Hz: constant acceleration 0.7 g.

Excessive vibration may cause tripping, breaks in connections or damage to mechanical parts.

Electromagnetic Compatibility

ComPacT NSX circuit breakers are tested against:

- Overvoltages caused by devices that generate electromagnetic disturbances
- Overvoltages caused by atmospheric disturbances or by a distribution-system outage (e.g. failure of a lighting system) and devices emitting radio waves (radios, walkie-talkies, radar, etc.)
- Electrostatic discharges produced by users. The circuit breakers have successfully passed the electromagnetic-compatibility tests (EMC) defined by international standard IEC 60947-2, appendix F.

The above tests show that:

- □ No nuisance tripping occurs
- □ Tripping times are respected.

ComPacT NSX circuit breakers comply with the following electromagneticcompatibility standards:

- IEC/EN 61000-4-2 electrostatic immunity discharge test, part 2 (circuit breakers)
- IEC/EN 61000-4-3 electromagnetic-field immunity test
- IEC/EN 61000-4-4 electrical fast transient/burst immunity test
- IEC/EN 61000-4-5 surge immunity test
- IEC/EN 61000-4-6 immunity to conducted disturbances, induced by radiofrequency fields
- CISPR 11 radio-frequency conducted and radiated emission tests required for
 - □ EN 61000-6-2 immunity standard for industrial environments
 - □ EN 50081-1-2 emissions in commercial and industrial environments.

Ambient Temperature

Operating-Temperature Range

- ComPacT NSX circuit breakers and switches may be used between -25 °C and +70 °C
- For temperatures higher than 40 °C (65 °C for circuit breakers used to protect motor feeders), devices must be derated as indicated in the documentation.
- Circuit breakers and switches should be put into service under the normal, ambient operating temperatures indicated above. Exceptionally, they may be put into service when the ambient temperature is between -35 $^{\circ}\text{C}$ and -25 $^{\circ}\text{C}$.

Derating

Above 40 °C, it is necessary to take into account the derating values.

Storage-Temperature Range

ComPacT NSX circuit breakers and switches may be stored in their original packing between -50 °C and +85 °C.

General Characteristics of ComPacT NSX DC, DC PV and DC EP

ComPacT NSX DC and DC PV

Installation in Class II Switchboards

All ComPacT NSX DC circuit breakers are class II front-face devices. They may be installed through the door of class II switchboards (as per standard IEC 60664) without downgrading switchboard insulation. ComPacT NSX DC EP should be either installed in IP5x enclosure or with rotary handles or IP43 rubber toggle covers. Installation requires no special operations even when the circuit breaker is equipped with a rotary handle or a motor mechanism.

Degree of Protection

ComPacT NSX DC circuit breakers offer the following protection characteristics depending on the installation conditions:

- IP: Degree of protection (standard IEC 60529)
- IK: Protection against external mechanical imPacTs (standard EN 50102).

	ComPacT NSX	DC		
	Bare circuit breaker	with terminal shields		
DB437916.ai		With toggle	IP3X	IK07
DB437917.ai		With direct rotary handle, standard or VDE	IP3X	IK07
	Circuit breaker insta	alled in a switchboard		
DB437918.ai		With toggle	IP40	IK07
DB437919.ai		With direct rotary handle, standard or VDE	IP40	IK07
DB43.		CCM	IP43	IK07
		CNOMO	IP54	IK07
DB437920.ai		With extended rotary handle	IP55	IK08
DB431630.eps		With motor mechanism	IP40	IK07

Positive Contact Indication

ComPacT NSX DC circuit breakers are suitable for isolation as defined by IEC 60947-1 and 60947-2:

- The isolation position corresponds to the O (OFF) position
- The operating handle and the indicators cannot indicate the OFF position unless the contacts are effectively open
- Padlocks may not be installed unless the contacts are open.

The isolation function is certified by tests to achieve:

- The mechanical reliability of the position-indication system
- The absence of leakage currents
- Overvoltage withstand capacity between upstream and downstream connections. For ComPacT NSX DC, installation of a rotary handle or a motor mechanism does not alter the reliability of the position-indication system.





2P 3P 4P

1P

2P 3P

Circuit Breaker Characteristics ComPacT NSX100 DC to NSX250 DC









ComPacT NSX DC circuit breaker	Number of p	ooles	
Electrical Characteristics As Per IEC 60947-1/6			1/60947-2
Rated current at 40 °C	<u> </u>	(A)	1700947-2
Rated insulation voltage	Ui	(V)	
Rated impulse withstand voltage	Uimp	(kV peak)	
Rated operational voltage	Ue	(V DC)	
	06	(V DC)	
Type of circuit breaker Ultimate breaking capacity	lcu	(k \ rmc) \ \/	DC 24-125 V (1P) ^[1]
(L/R = 5 ms and L/R = 15 ms)	icu	(KATITIS) V	250 V (1P) ^[1]
,			500 V (2P) ^[1]
			750 V (3P) ^[1]
Sonvice breaking canacity	Ics	% Icu	750 V (3F)
Service breaking capacity Rated making capacity	Icm	% Icu	
Rated making capacity Utilization category	ICIII	70 ICU	
- · ·		(ms)	
Breaking time		(ms)	
Suitability for isolation			
Pollution degree (as per IEC 60664-1)	A 10)		
Protection against overcurrents (see trip unit table p	age A-19)		2 34 1
			Built-in
Trip units			Interchangeable
Protection			Overloads
			Short-circuits
Durability			
(O/C cycles)	Mechanical		
(C/O dydics)	Electrical		250 V In
	Liooti iodi		250 V In/2
			500 V In
			500 V In/2
			750 V In
			750 V In/2
Indication and Control Associace			730 V III/2
Indication and Control Auxiliaries			
Auxiliary contacts			
Voltage release	MX shunt re		
	MN undervo	ltage release	
Installation and Connections			
Fixed			Front connection
			Rear connection
Plug-in (hase)			Front connection
Plug-in (base)			
			Rear connection
Withdrawable (chassis)			Front connection
			Rear connection
Control	Manual	with toggle	
			extended rotary handle
	Electrical	with remote c	<u> </u>
	Lictifical	with remote C	onu or
Dimensions and Weight			
Dimensions	Fixed	(mm)	1P

Fixed

(kg)

Example. The NSX100N DC circuit breaker exists in the following versions:

H x W x D (mm) connected in series

Weight (kg) connected in series

^[1] Number of poles in series taking part in current interruption.

^{- 1} pole with an Icu of 50 kA, for systems ≤ 250 V
- 2 poles with an Icu of 85 kA, for systems ≤ 500 V; 1 pole can be used in a 250 V system.

Circuit Breaker Characteristics ComPacT NSX100 DC to NSX250 DC

NSX100 DC			NS	X16	60 D	C					NSX250 DC					
1			2			3/4	1			2			3/4		3/4	
100							160								250	
750							750								750	
							_									
8			ECO			750	8			EOO			750		8	
250			500			750	250		1	500	Lac		750		750	10
F	N	M	F	M	S	F S	F	N	M	F	M	S	F	S	F	S
36	50	85	36	85	100	36 100	36	50	85	36	85	100	36	100	36	100
36	50	85	36	85	100	36 100	36	50	85	36	85	100	36	100	36	100
-	-	-	36	85	100	36 100	-	-	-	36	85	100	36	100	36	100
-	-	-	-	-	-	36 100	-	-	-	-	-	-	36	100	36	100
100 %	6															
100 %	6															
Α																
< 10 r	ns															
•																
3																
3																
						1	10		10						I Total	
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	33 X 0	U		, 70 v (06			v 22 x c	,0	161	, 70 v 0	06				
-				x 70 x 8	00	-	-				(70 x 8	Ö	-	. 405	00	
-			-			161 x 105 x 8				-				x 105 x		
-			-			161 x 140 x 8				-				x 140 x	86	
0.7			-			-	0.7			-			-			
 -			1.2			-	-			1.2			-			
-			-			1.6 to 1.9	-			-			1.6 to	o 1.9		
-			-			2.1 to 2.3	-			-			2.1 to	0 2.3		
									_							

Circuit Breaker Characteristics ComPacT NSX400 DC to NSX1200 DC



ComPacT NSX DC circuit breake	Number of p	oles		
Electrical Characteristics As Per IEC 609			7 1/6	20047.2
Rated current at 40 °C	<u>ln</u>	(A)	·/ - I/C	00947-2
Rated insulation voltage	Ui	(V)		
Rated impulse withstand voltage	Uimp	(kV peak)		
Rated impulse withstand voltage	Ue	(V DC)		
· -	Oe	(V DC)		
Type of circuit breaker	le	(Ic A 1110 a)	VDC	24 425 \/ (4D)[1]
Ultimate breaking capacity (L/R = 5 ms and L/R = 15 ms)	lcu	(KAIIIIS)	V DC	24-125 V (1P) ^[1] 250 V (1P) ^[1]
and and and the normal				500 V (2P) [1]
				750 V (3P) ^[1]
	lcu	(k \ rmc)	VDC	24-300 V (1P) ^[1]
	icu	(KAIIIIS)	V DC	300-600 V (2P) ^[1]
Service breaking capacity	lcs	% Icu		300-000 V (ZF)**
Rated making capacity	lcm	% Icu		
Jtilization category	ICIII	70 ICU		
Breaking time		(ms)		
Suitability for isolation		(1113)		
Pollution degree (as per IEC 60664-1)				
,	it table need 4 40)			
Protection against overcurrents (see trip unitip units	it table page A-19)			Interchangeable
Protection				Overloads
Totection				
				Short-circuits
Durability				
D/C cycles)	Mechanical			
	Electrical			250 V In
				250 V In/2
				500 V In
				500 V In/2
				750 V In
				750 V In/2
				600 V In
				600 V In/2
ndication and Control Auxiliaries				
uxiliary contacts				
uxiliary contacts	MX shunt re			
uxiliary contacts oltage release		lease oltage release	;	
uxiliary contacts oltage release nstallation and Connections			;	
uxiliary contacts oltage release nstallation and Connections)	Front connection
uxiliary contacts oltage release Installation and Connections Fixed			:	Front connection Rear connection
uxiliary contacts oltage release nstallation and Connections Fixed			3	
uxiliary contacts oltage release nstallation and Connections Fixed			3	Rear connection
uxiliary contacts oltage release Installation and Connections			3	Rear connection Front connection
uxiliary contacts oltage release nstallation and Connections Fixed Plug-in (base))	Rear connection Front connection Rear connection
uxiliary contacts oltage release nstallation and Connections Fixed Plug-in (base) Withdrawable (chassis)	MN undervo	oltage release		Rear connection Front connection Rear connection Front connection
uxiliary contacts oltage release nstallation and Connections Fixed Plug-in (base) Withdrawable (chassis)		oltage release	e	Rear connection Front connection Rear connection Front connection Rear connection
uxiliary contacts bitage release Installation and Connections Fixed Plug-in (base) Vithdrawable (chassis)	MN undervo	with toggle with direct	e or exte	Rear connection Front connection Rear connection Front connection Rear connection nded rotary handle
uxiliary contacts oltage release Installation and Connections iixed Clug-in (base) Vithdrawable (chassis)	MN undervo	oltage release	e or exte	Rear connection Front connection Rear connection Front connection Rear connection nded rotary handle
uxiliary contacts Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight	MN undervo	with toggle with direct	e or exte	Rear connection Front connection Rear connection Front connection Rear connection nded rotary handle
uxiliary contacts pltage release Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight Dimensions	MN undervo	with toggle with direct	e or exte	Rear connection Front connection Rear connection Front connection Rear connection nded rotary handle
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uxiliary contacts oltage release Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight Dimensions	MN undervo	with toggle with direct	e or exte	Rear connection Front connection Rear connection Front connection Rear connection Inded rotary handle Inded rotary handle Inded rotary handle Inded rotary handle
uxiliary contacts oltage release Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight Dimensions H x W x D (mm) connected in series	MN undervo	with toggle with direct with remo	e or exte	Rear connection Front connection Rear connection Front connection Rear connection Inded rotary handle Inded rotary handle Inded rotary handle Inded rotary handle Inded rotary handle
uxiliary contacts oltage release Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight Dimensions H x W x D (mm) connected in series Weight (kg)	MN undervo	with toggle with direct	e or exte	Rear connection Front connection Rear connection Front connection Rear connection Inded rotary handle IP IP IP IP
uxiliary contacts oltage release Installation and Connections Fixed Plug-in (base) Withdrawable (chassis) Control Dimensions and Weight Dimensions H x W x D (mm) connected in series	MN undervo	with toggle with direct with remo	e or exte	Rear connection Front connection Rear connection Front connection Rear connection Inded rotary handle Inded rotary handle Inded rotary handle Inded rotary handle Inded rotary handle

^[1] Number of poles in series taking part in current interruption.

Example. The NSX100N DC circuit breaker exists in the following versions:

^{- 1} pole with an Icu of 50 kA, for systems ≤ 250 V

^{- 2} poles with an Icu of 85 kA, for systems \leq 500 V; 1 pole can be used in a 250 V system.

Circuit Breaker Characteristics ComPacT NSX400 DC to NSX1200 DC

NS	NSX400 DC					NSX6	ISX630 DC				NSX1200 DC			
3/4						3/4		3/4		2				
						1 ** *		1 20 1		-				
 250		320		400		500		600		630	800	1000	1200	
750		750		750		750		750		750	750	750	750	
8						8						8		
		8		8				8		8	8		8	
750 –		750		750		750		500		600	600	600	600	
F	S	F	S	F	S	F	S	F	S	N				
36	100	36	100	36	100	36	100	36	100	-	-	-	-	
36	100	36	100	36	100	36	100	36	100	-	-	-	-	
36	100	36	100	36	100	36	100	36	100	-	-	-	-	
36	100	36	100	36	100	36	100	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	50	50	50	50	
-	-	-	-	-	-	-	-	-	-	50	50	50	50	
100 %						100 %		•		25 %		•		
100 %						100 %				100 %				
A						100 /0				100 /0				
10ms														
(i)														
3														
-														
•														
•														
15000						1 =000		15000						
5000						5000		5000		-				
 1000						1000		1000		-				
2000						2000		2000		-				
1000						1000 1000				-				
2000						2000 2000				-				
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(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c										- - - - - •	- - - - - •	- - - - - •	- - - - - •	
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	140 x 110 185 x 110									- - - - - • • •	- - - - - • •	- - - - - •	- - - - - •	
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Trip Unit Characteristics

Types of Trip Units - Trip Units for ComPacT NSX DC











Trip units for ComPacT NSX100 DC - NSX160 DC													
Single-po	le and two-	pole (not interc	hang	eable	e)								
Type of trip	unit		TM-I	כ									
Rating		In (A) at 40 °C	16	20	25	30	40	50	63	80	100	125	160
ComPacT	NSX100 AC	DC	•	•	•	•	•	•	•	•	•	-	-
breaker	circuit NSX160 AC/DC		-	-	-	-	-	-	-	-	-	•	•
Overload pro	tection (thern	nal)											
Tripping thresh	old	Ir (A) at 40 °C	Fixed	l									
			16	20	25	30	40	50	63	80	100	125	160
Protection ag	gainst short-c	ircuits (magnetic)											
Pick-up		li (A)	Fixed										
ComPacT circuit breaker	NSX100/ 160 AC/DC	True DC value	260	260	400	400	700	700	700	800	1000	1200	1250
Trin un	its for C	omPacT NS	Y40)U L)C -	NIC	Y46	SO L)C -	NIC	Y25	n DC	

Trip	Trip units for Compact NSX100 DC - NSX100 DC - NSX250 DC													
Three-pole 3P-3d and four-pole 4P-4d (interchangeable trip units)														
Type of	trip unit		TM-E)					TM-	DC				
Rating (A))	In (A) at 40 °C	16	25	32	40	50	63	80	100	125	160	200	250
	NSX100 DC		•	•	•	•	•	•	•	•	-	-	-	-
circuit breaker	NSX160 DC		-	-	-	-	-	-	-	-	•	•	-	-
broaker	NSX250 DC		-	-	-	-	-	-	-	-	-	-		•

Overload protection		
Tripping	Ir (at 40 °C)	Adjustable
threshold (A)		0.7 to 1 x ln

Protection against short-	circuits (magne	tic)										
Pick-up (A)	li	Fixed										Adjustable
ComPacT NSX100/160/ circuit NSX250 DC breaker	True DC value	260	400	550	700	700	700	800	800	1250	1250	5 to 10 x In

Trip (units for	ComPac⊺	NS.	X100) DC	- N	SX1	60 D	C -	NSX	250 D	C	
Three-pole 3P-3d and four-pole 4P-4d (interchangeable trip units)													
Type of	trip unit		TM-G										
Rating (A)		In (A) at 40 °C	16	25	40	63	80	100	125	160	200	250	
	NSX100 DC		•	•	•	•	•	•					
circuit breaker	NSX160 DC		-	-	-	-	-	-	•	•			
broakor	NSX250 DC		-	-	-	-	-	-	-	-	•	0	

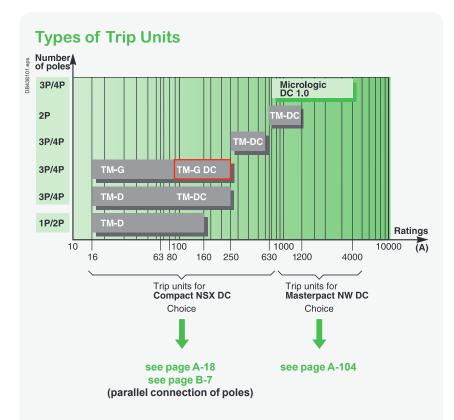
Overioau protect	ion (memiai)						
Tripping	Ir (at 40 °C)	Adjusta	able				
threshold (A)		0.7 to 1	x In				
Protection agains	st short-circuits (r	nagneti	ic)				
Pick-up (A)	li	Fixed					

Pick-up (A)	li	Fixed									
ComPacT True DC value	NSX100 DC	80	100	100	150	250	400	530	530	530	625
circuit	NSX160 DC	-	100	100	150	250	400	530	530	-	-
breaker	NSX250 DC	-	-	-	-	-	-	-	-	530	625

									1		
Trip units for Com	PacT I	NSX40	ODC	- NS	SX12	200D	C				
Three-pole, four- pole (not interchangeable)/Two-pole (not interchangeable)											
Type of trip unit			TM-D	C							
Rating (A)	In(A) at 40	o °C	250 [1]	320	400	500	600	630	800	1000	1200
ComPacT	NSX400D)C	•	0	•	-	-	-	-	-	-
circuit	NSX630D)C	-	-	-	•	•	-	-	-	-
breaker	NSX1200	DC	-	-	-	-	-	•	•	•	•
Overload protection (therma	l)										
Tripping threshold (A)	Ir (at 40 °C	C)	Adjusta	able 0.7	to 1 x in						
Protection against short-circ	Protection against short-circuits (magnetic)										
Pick-up (A)	li		Adjusta	able 2.5	to 5 x in						
[11 TM-DC 250 Adjustable range is	2.5 to 4 x lr	n									

Trip Unit Characteristics

Types of Trip Units - Trip Units for ComPacT NSX DC



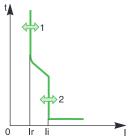
Trip Units for ComPacT NSX DC

TM Thermal-Magnetic Trip Unit up to 1200 A



Up to 1200 A for ComPacT NSX DC, protection is provided by thermal-magnetic trip units.

- TM-D up to 160 A: Fixed thermal threshold and magnetic pick-up.
- TM-D up to 63 A: Adjustable thermal threshold and fixed magnetic pick-up.
- TM-DC from 80 to 250 A: Fixed or adjustable (for 200 and 250 A) magnetic pick-up and adjustable thermal threshold.
- TM-DC from 250 A to 1200 A adjustable magnetic pick-up and adjustable thermal threshold.
- TM-G, up to 250 A: Adjustable thermal threshold and fixed low magnetic pick-up to protect long cables.
- TM-G DC, up to 250A: Adjustable thermal threshold and fixed low magnetic pick-up to protect long cables.



overload protection threshold.
 short-circuit protection pick-up.

Switch-Disconnectors

Characteristics and Performance of ComPacT NSX Switch-Disconnectors from 100 to 250 NA

Installation standards require upstream protection. However ComPacT NSX100 to 630 NA switch-disconnectors are self-protected by their high-set magnetic release.



ComPacT NSX100 to 250 NA

Common characteristics						
Rated voltages						
Insulation voltage (V)	Ui	750				
Impulse withstand volt	tage (kV) Uimp	8				
Operational voltage (V	/) Ue	750				
Suitability for isolation	IEC/EN 60947	'-3 yes				
Utilization category	DC 22 A/DC 23 A					
Pollution degree	IEC 60664-1	3				

Switch-disconnecto	rs				
Electrical Characteristics	As Per II	EC 60947	-3 and EN 60947	-3	
Conventional thermal current (A)	Ith 60 °C				
Number of poles					
Operational current (A) depending on	le	DC			
the utilization category			250 V (1 pole)		
			500 V (2 poles in series)		
			750 V (3 poles in series)		
Short-circuit making capacity (kA peak)	Icm	•	disconnector alone)		
(in the air)		circuit breake	tion by upstream NSX DC er)		
Rated short-time withstand current	lcw	for	1 s		
(Arms)			3 s		
			20 s		
Durability (C-O cycles)	Mechanical				
	Electrical	DC	()	In/2	
			500 V (2 poles in series)	In	
Positive contact indication					
Pollution degree					
Protection					
Add-on earth-leakage protection	By VigiPacT	relay			
Additional Indication and	Control	Auxiliarie :	S		
Indication contacts					
Voltages releases	MX shunt rele	ease			
	MN undervol	tage release			
Current-transformer module					
Insulation monitoring module					
Remote Communication I	oy Bus				
Device-status indication					
Device remote operation					
Operation counter					
Installation/Connections					
Dimensions (mm)	Fixed, front c	onnections	2/3P		
WxHxD			4P		
Weight (kg)	Fixed, front c	onnections	3P 4P		
Transfer PacT Source-Cha	angeover	Systems			
(See Chapter on Transfer PacT Source-Changeover Systems)					
Manual source-changeover systems	. 401 00	00 Ond	gootor oyotorno	/	
Remote-operated or automatic source	e-changeover	systems			
·		-			

Switch-Disconnectors

Characteristics and Performance of Com**PacT** NSX Switch-Disconnectors from 100 to 250 NA

Common characteristics						
Control						
	Manual	With toggle	•			
		With direct or extended rotary handle				
	Electrical	With remote control	•			
Versions						
	Fixed		•			
	Withdrawable	Plug-in base	•			
		Chassis	•			

NSX100NA	NSX160NA	NSX250NA
100	160	250
2 [1], 3, 4	2[1], 3, 4	2 [1], 3, 4
DC22A/DC23A	DC22A/DC23A	DC22A/DC23A
100	160	250
100	160	250
100	160	250
2.6 100	3.6 100	4.9
100	100	100
1800	2500	3500
1800	2500	3500
690	960	1350
50000	40000	20000
10000	10000	10000
5000	5000	5000
•	•	•
3	3	3
•		
•		
•		
•		
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•		
•		
•		
105 x 161 x 86		
140 x 161 x 86		
1.5 to 1.8		
2.0 to 2.2		
•		
•		

Switch-Disconnectors Characteristics ComPacT NSX400/630 NA DC



ComPacT NSX630 NA DC

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ComPacT NSX630 NA DC

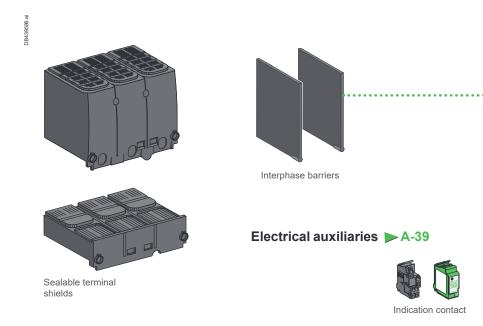
O D THOY D			
	C switch-disconnector		
Number of poles	A - D IFO 00047 2		
Rated current (A)	stics As Per IEC 60947-3	40 °C	
(free air + no venting)	in	40 °C	ĺ
Altitude	m	2000	
Rated insulation voltage (V)	Ui		
Rated impulse withstand voltage (kV)	Uimp		
1 0 ()	Ue	DC	
Type of circuit breaker			
Rated short circuit withstand current (kArms)	lcw/lcm	t = 1 s	ŀ
Rated conditionnal short-circuit		kA	
current	With back-up fuse	AgG	
Rated conditionnal short-circuit current	Iq with NSX DC circuit breaker	kA with MCCB	
Utilization category Suitability for isolation			
-			
Pollution degree Durability			
Endurance (C-O cycles)	Mechanical		
Lindard (0 0 0,,	Electrical (In)	750 V	
Installation and connect	ctions		
Control	Manual	Toggle	
		Direct or extended rotary handle	
	Motor mechanism		
Connections	Fixed	Front connection	
		Long rear connection	
	Plug-in (on base)	Front connection	
		Rear connection	
	Withdrawable (on chassis)	Front connection	
		Rear connection	
Additional measureme	ent, indication and control auxilia	aries	
Indication contacts	OF	Auxiliary contact	
	SD, SDE	Trip, fault-trip	
Voltage releases	MX, MN	Shunt trip/undervoltage release	
Installation			
Accessories	Crimp lugs/bare cable connector		
	Terminal extensions and spreaders		
	Escutcheons		
	Terminal shields and interphase barriers		
	Din rail adapter		
Dimensions and weight	•		
Dimensions (mm) H x W x D (w/			3P
			4P
Weight (kg) (w/o series connecti	ion)		3P

Switch-Disconnectors Characteristics ComPacT NSX400/630 NA DC

NSX400 NA DC		
344 344 344 344 344 344 344 344 344 344 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345 345	NSX400 NA DC	NSX630 NA DC
● 750 8 8 750 75 10 10 400 630 100 100 DC22-A © 3 3 5000 1000 1000 5000 1000 1000 © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © <t< td=""><td>3/4</td><td>3/4</td></t<>	3/4	3/4
● 750 8 8 750 75 10 10 400 630 100 100 DC22-A © 3 3 5000 1000 1000 5000 1000 1000 © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © <t< td=""><td></td><td></td></t<>		
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8		
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7.5 10 10 400 400 100 100 100 100 100 100 1		
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400	7.5	7.5
400	10	10
DC22-A		630
	100	100
	DC22-A	DC22-A
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255 x 185 x 110 255 x 185 x 110 6		
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6	255 x 185 x 110	255 x 185 x 110
7.8	6	6
	7.8	7.8

Accessories and Auxiliaries Overview of ComPacT NSX100 to 630 DC [*] Fixed Version

Insulation accessories

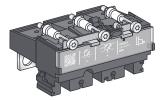








Protection and measurements

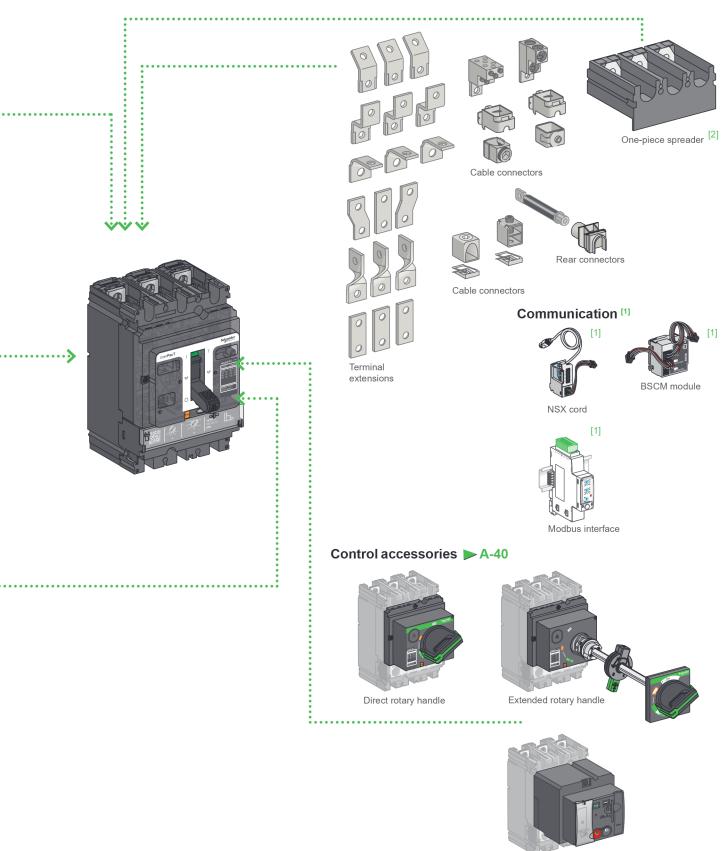


TM-D, TM-G trip unit

Accessories and Auxiliaries

Overview of ComPacT NSX100 to 630 DC [*] Fixed Version

Connection ► A-32



Motor mechanism

Accessories and Auxiliaries Overview of ComPacT NSX1200 DC Fixed Version

Insulation accessories

Electrical auxiliaries ► A-39

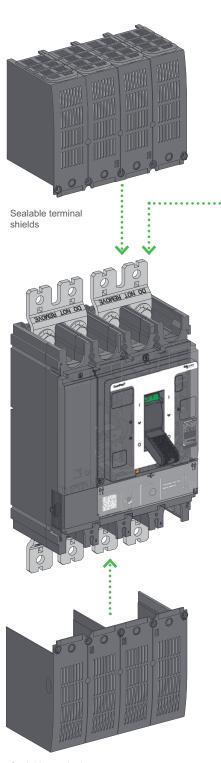




Indication contact



Voltage release



Sealable terminal shields

Accessories and Auxiliaries Overview of ComPacT NSX1200 DC Fixed Version

Connection ► A-32



Cable connectors

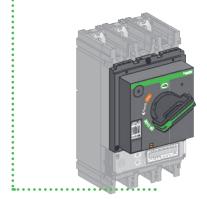
Communication

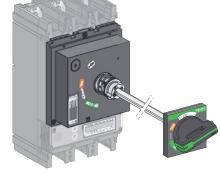






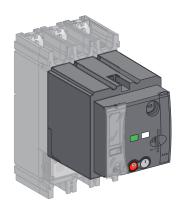
Control accessories ► A-40





Direct rotary handle

Extended rotary handle



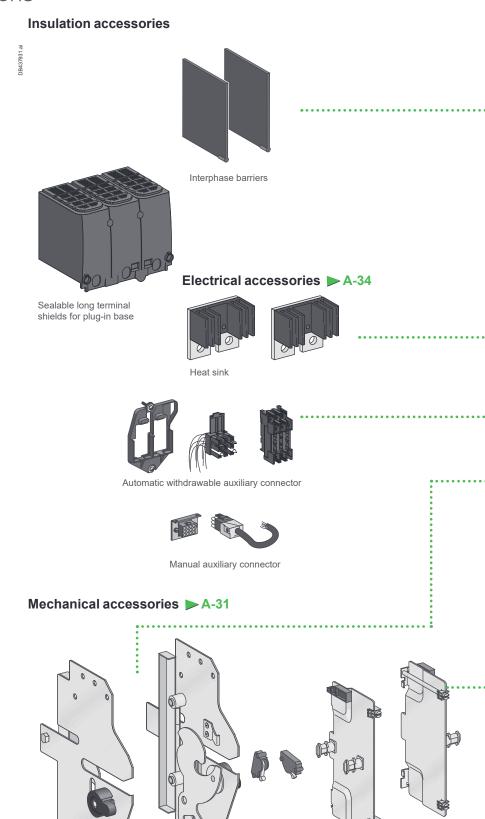
Motor mechanism

[1] See communication chapter.

Circuit-breaker side plate

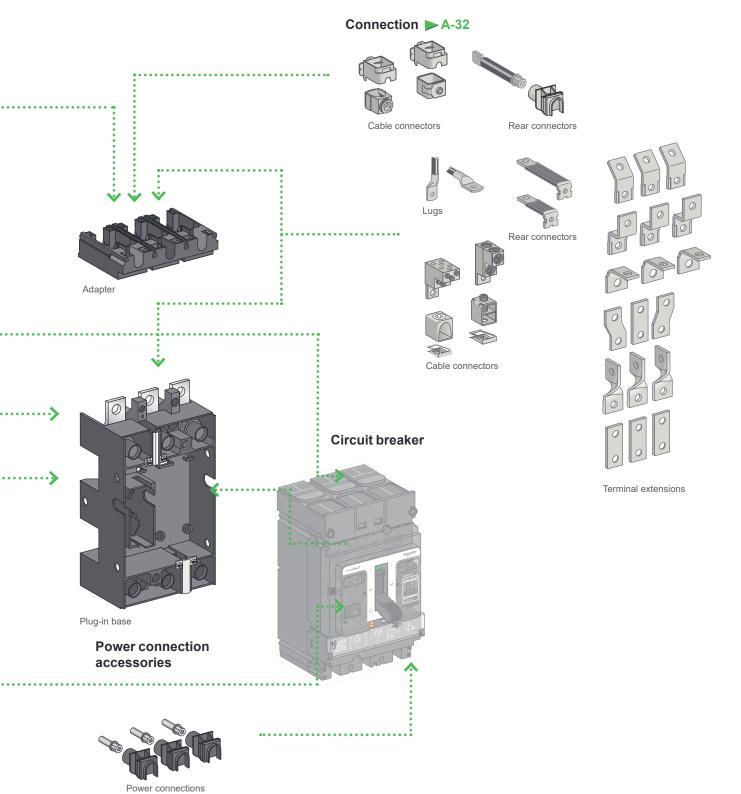
Accessories and Auxiliaries

Overview of ComPacT NSX100 to 630 DC [1] Plug-in and Withdrawable Versions





Accessories and Auxiliaries Overview of ComPacT NSX100 to 630 DC [1] Plug-in and Withdrawable Versions



Electrical and Mechanical Accessories ComPacT NSX100 to 1200 DC

ComPacT NSX DC circuit breakers may be installed horizontally, vertically or flat on their back, without derating performance

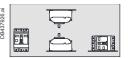
There are three installation versions:

- Fixed
- Plug-in (on a base)
- Withdrawable (on a chassis).

For the last two, components must be added (base, chassis) to the fixed version. Many connection components are shared by the three versions.



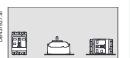
Fixed ComPacT NSX250 DC



Installation positions



ComPacT NSX250 DC

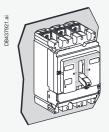


Installation positions

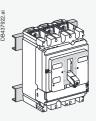
Fixed Circuit Breakers NSX100 to NSX1200

Fixed circuit breakers are designed for standard connection using bars or cables with lugs. Bare-cable connectors are available for connection to bare copper or aluminium cables.

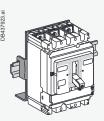
For connection of large cables, a number of solutions with spreaders may be used for both cables with lugs or bare cables.



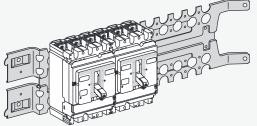
Mounting on a backplate



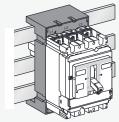
Mounting on rails



Mounting on DIN rail (with adapter)



Mounting on a Prisma mounting plate



Mounting on busbars with an

Plug-in Base Circuit Breakers NSX100 to NSX630 [1]

The plug-in version makes it possible to:

- Extract and/or rapidly replace the circuit breaker without having to touch the connections on the base.
- Allow for the addition of future circuits by installing bases that will be equipped with a circuit breaker at a later date.
- Isolate the power circuits when the device is mounted on or through a panel. It acts as a barrier for the connections of the plug-in base. Insulation is made complete by the mandatory short terminal shields on the device. The degrees of protection are:
 - ☐ Circuit breaker plugged in = IP4
 - ☐ Circuit breaker removed = IP2
 - □ Circuit breaker removed, base equipped with shutters = IP4.

Parts of a plug-in configuration

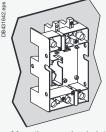
A plug-in configuration is made by adding a "plug-in kit" to a fixed device. To avoid connecting or disconnecting the power circuits under load conditions, a safety trip causes automatic tripping if the device is ON, before engaging or withdrawing it. The safety trip, supplied with the kit, must be installed on the device. If the device is disconnected, the safety trip does not operate. The device can be operated outside the switchboard.

Accessories

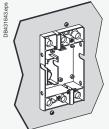
Optional insulation accessories are available.

- Terminal shields to protect against direct contact.
- Interphase barriers to reinforce insulation between phases and to protect against direct contact.

Mounting



Mounting on a backplate



Mounting through a front panel Mounting on rails



[1] Applicable for circuit breaker up to 600 A see page A-14 to A-17.

Electrical and Mechanical Accessories ComPacT NSX100 to 1200 DC

Withdrawable Circuit Breakers NSX100 to NSX630 [1]

In addition to the advantages provided by the base, installation on a chassis facilitates handling. It offers three positions, with transfer from one to the other after mechanical unlocking:

- Connected: the power circuits are connected
- Disconnected: the power circuits are disconnected, the device can be operated to check auxiliary operation
- Removed: the device is free and can be removed from the chassis.

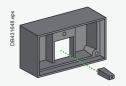
Parts of a withdrawable configuration

A withdrawable configuration requires two side plates installed on the base and two sides plates mounted on the circuit breaker. Similar to the plug-in version, a safety trip causes automatic tripping if the device is ON, before engaging or withdrawing it, and enables device operation in the disconnected position.

Accessories

Accessories are the same as for the base, with in addition:

- Auxiliary contacts for installation on the fixed part, indicating the "connected" and "disconnected" positions
- Locking by 1 to 3 padlocks (shackle diameter 5 to 8 mm), to:
 - □ Prevent insertion for connection
 - □ Lock the circuit breaker in connected or disconnected position
- Toggle collar for circuit breakers with a toggle mounted through a front panel, intended to maintain the degree of protection whatever the position of the circuit breaker (supplied with a toggle extension)
- Telescopic shaft for extended rotary handles. The door can then be closed with the device in the connected and disconnected positions.

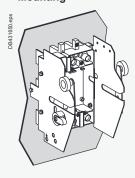


Protection collar for toggle and toggle extension to provide IP4 in the connected and disconnected positions

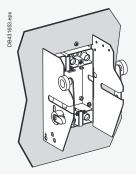


Telescopic shaft

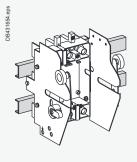
Mounting



Mounting on a backplate



Mounting through a front panel



Mounting on rails

[1] Applicable for circuit breaker up to 600 A see page A-14 to A-17.

- Disconnected position the power circuits are disconnected, but the circuit breaker is still on the chassis and may still be operated (ON, OFF, push-to-trip).
- The circuit breaker may be locked using 1 to 3 padlocks (shackle diameter 5 to 8 mm), to prevent connection.
- The auxiliaries can be tested (with manual auxiliary connector).



Withdrawable ComPacT NSX250 DC



Installation positions



Connected



Disconnected



Removed

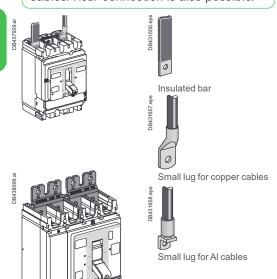


Electrical and Mechanical Accessories

Connection of Fixed Devices

Fixed circuit breakers are designed for standard front connection using bars or cables with lugs.

Cable connectors are available for bare cables. Rear connection is also possible.









Edgewise terminal extensions



Right-angle terminal extensions



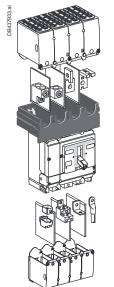
45° terminal extensions



Double-L terminal extensions



Spreaders





Mounting at the back of a switchboard



Mounting behind the front panel with a raiser

Front Connection

Bars or Cables with Lugs

Standard terminals

ComPacT NSX100 to 630 DC come with terminals comprising snap-in nuts with

- ComPacT NSX100/160/250 DC: M8 nuts and screws
- ComPacT NSX400/630 DC: M10 nuts and screws.

These terminals may be used for:

- Direct connection of insulated bars or cables with lugs
- Terminal extensions offering a wide range of connection possibilities.

Interphase barriers or terminal shields are recommended. They are mandatory for certain connection accessories (in which case the interphase barriers are provided).

When the switchboard configuration has not been tested, insulated bars are

Maximum size of bars

ComPacT NSX DC circu	100 to 250	400 to 630	1200	
Without spreaders	pitch (mm)	35	45	45
	maximum bar size (mm)	20 x 2	32 x 6	2 x (32 x 6)
With spreaders	pitch (mm)	45	52.5	-
	maximum bar size (mm)	32 x 2	40 x 6	-

Crimp lugs

There are two models, for aluminium and copper cables.

It is necessary to use narrow lugs, compatible with device connections. They must be used with interphase barriers or long terminal shields. The lugs are supplied with interphase barriers and may be used for the types of cables listed below.

Cable sizes for connection using lugs

ComPacT NSX DC cir	cuit breaker	100 to 250	400 to 630	630 to 1200
Copper cables	size (mm²)	120, 150, 185	240, 300	185, 2 x 185
	crimping	hexagonal barre	hexagonal barrels or punching	
Aluminium cables	size (mm²)	120, 150, 185	240, 300	185, 2 x 185
	crimping	hexagonal barre	els	

Terminal extensions

Extensions with anti-rotation ribs can be attached to the standard terminals to provide numerous connection possibilities in little space:

- Straight terminal extensions
- Right-angle terminal extensions
- Edgewise terminal extensions
- Double-L extensions
- 45° extensions

Spreaders

Spreaders may be used to increase the pitch:

- NSX100 to 250 DC: the 35 mm pitch can be increased to 45 mm
- NSX400/630 DC: the 45 mm pitch can be increased to 52 or 70 mm.

Bars, cable lugs or cable connectors can be attached to the ends.

One-piece spreader for NSX100 to 250 DC

Connection of large cables may require an increase in the distance between the device terminals.

The one-piece spreader is the means to:

- Increase the 35 mm pitch of the NSX100 to 250 DC circuit breaker terminals to the 45 mm pitch of a NSX400/630 DC device
- Use all the connection and insulation accessories available for the next largest frame size (lugs, connectors, spreaders, right-angle and edgewise terminal extensions, terminal shields and interphase barriers).

It may also be used for ComPacT INS switch-disconnectors.

Equipped with a single-piece spreader, ComPacT NSX DC devices can be mounted:

- At the back of a switchboard
- Behind the front panel with a raiser.

The one-piece spreader is also the means to:

- Align devices with different frame sizes in the switchboard
- Use the same mounting plate, whatever the device.

Pitch (mm) depending on the type of spreader

ComPacT NSX DC circuit breaker	100 to 250	400 to 630
Without spreaders	35	45
With spreaders	45	52.5 or 70
With one-piece spreader	45	-

Electrical and Mechanical Accessories Connection of Fixed Devices

Bare Cables

For bare cables (without lugs), the prefabricated bare-cable connectors may be used for both copper and aluminium cables.

1-cable connector for ComPacT NSX100 to 250 DC

The connectors snap directly on to the device terminals and are fixed by clips to right-angle and straight terminal extensions as well as spreaders.

1-cable connector for ComPacT NSX400 to 630 DC

The connectors are screwed directly to the device terminals.

2-cable connector for ComPacT NSX100 to 250 and 400/630/1200 DC

The connectors are screwed to device terminals or right-angle terminal extensions.

Distribution connectors for ComPacT NSX100 to 250 DC

These connectors are screwed directly to device terminals. Interphase barriers are supplied with distribution connectors, but may be replaced by long terminal shields. Each connector can receive six cables with cross-sectional areas ranging from 1.5 to 35 mm² each

Maximum size of cables depending on the type of connector

ComPacT NSX DC circuit breaker		100/160	250	400	630	1200
Steel connectors	1.5 to 95 mm ²					
Aluminium connectors	25 to 95 mm ²	•	•			
	120 to 185 mm²	•	•			
	2 cables 50 to 120 mm ²	•	•			
	2 cables 35 to 240 mm ²			•	•	•
	35 to 300 mm ²			•	•	
Distribution connectors	6 cables 35 mm²	•	•			

Rear Connection (up to Rated Current 600 A)

Device mounting on a backplate with suitable holes enables rear connection.

Bars or Cables with Lugs

Rear connections for bars or cables with lugs are available in two lengths. Bars may be positioned flat, on edge or at 45° angles depending on how the rear connections are positioned.

The rear connections are simply fitted to the device connection terminals. All combinations of rear connection lengths and positions are possible on a given device.

Bare Cables

For the connection of bare cables, the 1-cable connectors for ComPacT NSX100 to 250 DC may be secured to the rear connections using clips.

Accessories for Series and Parallel Connection (up to Rated Current 600 A)

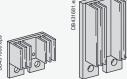
A limited number of accessories can be used to optimize series and parallel connection of poles.

Accessories for Series Connection

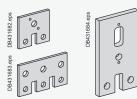
These include series connection plates, equipped with heat sinks.

Accessories for Parallel Connection

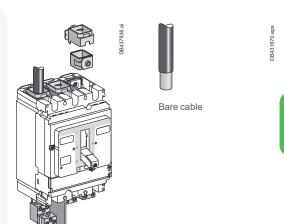
Parallel pole connection accessories are identical to those for series connections. They are equipped with heat sinks. Customer connections are made directly to the connection plates after removing the heat sinks.



Series connection plates equipped with heat sinks



Parallel connection plates











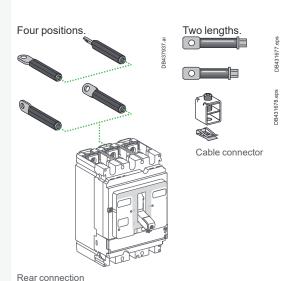
1-cable connector for NSX100 to 250 DC

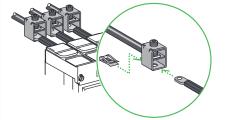
1-cable 2-cable connector for connector for NSX400/ NSX100 630 DC to 250 DC

2-cable connector for NSX400/ 630/1200 DC



Distribution connector for NSX100 to 250 DC

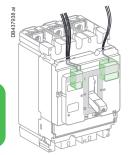




Connection of bare cables to NSX100 to 250 DC by clips

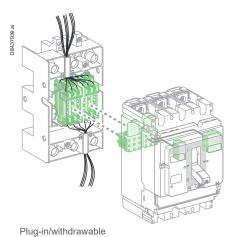
Electrical and Mechanical Accessories

Connection of Electrical Auxiliaries



Fixed ComPacT NSX DC

ComPacT NSX DC



Fixed ComPacT NSX100-250 DC

Auxiliary circuits exit the device through a knock-out in the front cover.

Withdrawable or Plug-in ComPacT NSX DC

Automatic Auxiliary Connectors

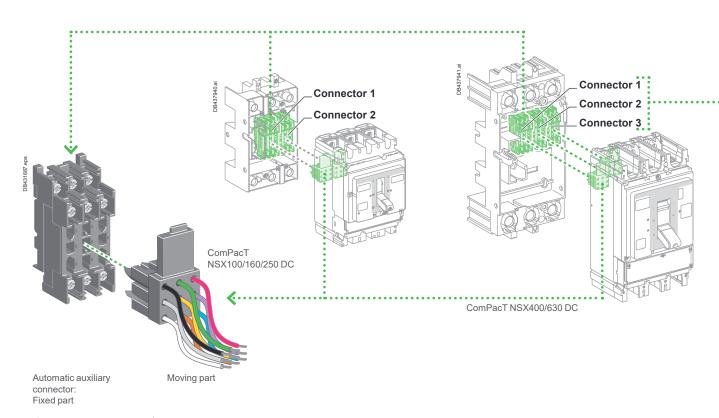
Auxiliary circuits exit the circuit breaker via one to three automatic auxiliary connectors (nine wires each). These are made up of:

- A moving part, connected to the circuit breaker via a support (one support per circuit breaker)
- A fixed part, mounted on the plug-in base, equipped with connectors for bare cables up to 2.5 mm².

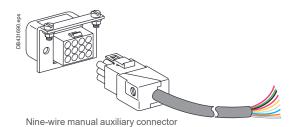
MicroLogic trip unit options are also wired via the automatic auxiliary connectors.

Selection of automatic auxiliary connectors

Depending on the functions installed, one to three automatic auxiliary connectors are required.



Electrical and Mechanical Accessories Connection of Electrical Auxiliaries

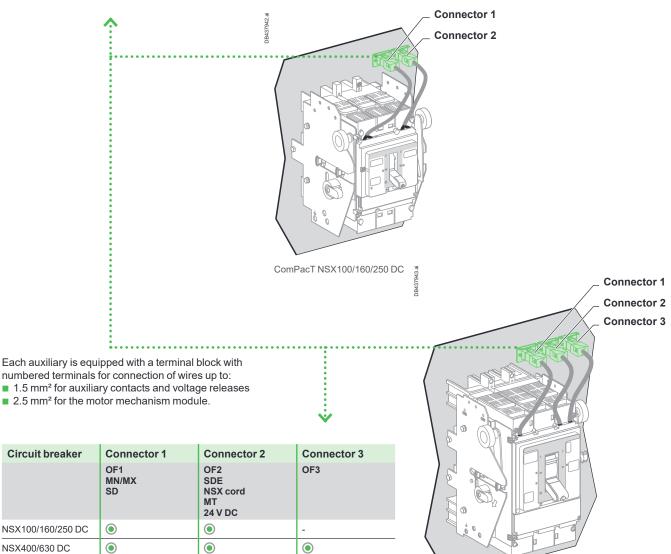


Withdrawable ComPacT NSX DC

Manual Auxiliary Connectors

As an option to the automatic auxiliary connectors, withdrawable circuit breakers may be equipped with one to three plugs with nine wires each. In "disconnected" position, the auxiliaries remain connected.

They can then be tested by operating the device.



MT: motor mechanism

ComPacT NSX400/630 DC

Electrical and Mechanical Accessories

Selection of Auxiliaries for ComPacT NSX100/160/250 DC



Remote Tripping

MX or MN voltage releases are used to trip the circuit breaker.

MN Undervoltage Release

This release trips the circuit breaker when the control voltage drops below a tripping threshold:

- Tripping threshold between 0.35 and 0.7 times the rated voltage.
- Circuit breaker closing is possible if the voltage exceeds 0.85 times the rated voltage. For a lower value, circuit breaker closing cannot be ensured.

Circuit breaker tripping by an MN release meets the requirements of standard IEC 60947-2.

Time-Delay Unit for an MN Release

Eliminates nuisance tripping due to transient voltage dips lasting 200 ms. It is used in conjunction with:

- A 250 V DC MN release, control voltage 220/240 V AC
- A 48 V DC MN release, control voltage 48 V AC.

MX Shunt Release

Trips the circuit breaker when the control voltage rises above $0.7\ x\ Un.$ Control signals can be of the impulse type (≥ 20 ms) or maintained.

When the circuit breaker has been tripped by an MN or MX release, it must be reset

MN or MX tripping takes priority over manual closing.

In the presence of a standing trip order, closing of the contacts, even temporary, is not possible.

Mechanical Characteristics

- Endurance is equal to 50 % of the mechanical endurance of the circuit breaker.
- The releases clip in behind the front cover.
- Connection using wires up to 1.5 mm², to integrated terminal blocks.

Electrical Characteristics

- Consumption:
 - □ Pick-up (MX): < 30 VA</p>
 - ☐ Seal-in (MN and MNR): < 5 VA.
- Response time: < 50 ms.

NA, TMD, TMG **Standard** Motor mechanism / rotary handle / toggle handle DB431693. SD SDE OF₂ OF1 OF2 OF1 SD SDE MN / MX MN / MX

Electrical and Mechanical Accessories Selection of Auxiliaries for ComPacT NSX100/160/250 DC

Communication

Communication requires specific auxiliaries (see page A-42).

Communication of status indications (1)

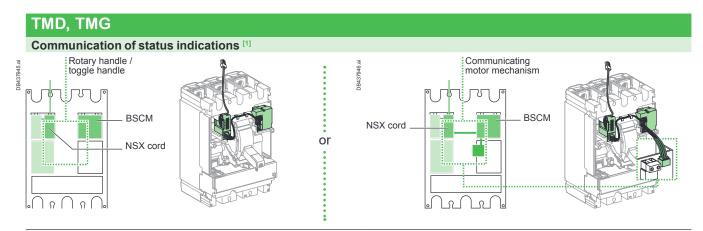
- 1 BSCM module.
- 1 NSX cord (internal terminal block) for both communication and 24 V DC supply to the BSCM.

Communication of status conditions is compatible with a toggle handle and a rotary handle.

Communication of status indications and controls

This requires, in addition to the previous auxiliaries:

■ 1 IFM connected to the BSCM.



[1] ComPacT NSX100-250 DC only.

Electrical and Mechanical Accessories Selection of Auxiliaries for ComPacT NSX400/630/1200 DC

Standard

All ComPacT NSX400/630/1200 DC circuit breakers and switch-disconnectors have slots for the electrical auxiliaries listed below.

5 indication contacts (see page A-39)

- 3 ON/OFF (OF1, OF2, OF3)
- 1 trip indication (SD)
- 1 fault-trip indication (SDE)

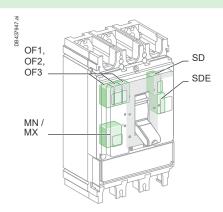
1 remote-tripping release (see page A-43)

- Either 1 MN undervoltage release
- Or 1 MX shunt release

All these auxiliaries may be installed with a motor mechanism or a rotary handle or toggle handle.

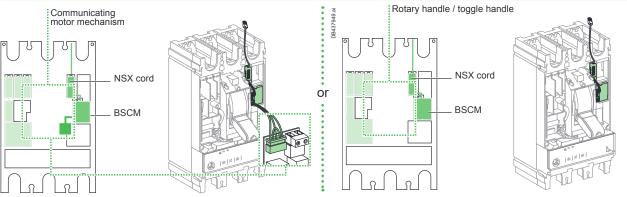
NSX400/630/1200 DC

Standard Motor mechanism / rotary handle / toggle handle DB431697.eps OF1 SD OF2 OF3 SDF MN /



Communication of status indications

Communication of status indications and controls



Electrical and Mechanical Accessories Indication Contacts for ComPacT NSX DC

One contact model provides circuit breaker status indications (OF - SD - SDE).

An early-make or early-break contact, in conjunction with a rotary handle, can be used to anticipate device opening or closing.

A CE/CD contact indicates that the chassis is connected/disconnected.

These common-point changeover contacts provide remote circuit breaker status information.

They can be used for indications, electrical locking, relaying, etc.

They comply with the IEC 60947-5 international recommendation.

Functions

Breaker-status indications, during normal operation or after a fault

A single type of contact provides all the different indication functions:

- OF (ON/OFF) indicates the position of the circuit breaker contacts
- SD (trip indication) indicates that the circuit breaker has tripped due to:
 - □ An overload
 - □ A short-circuit
 - □ Operation of a voltage release
 - □ Operation of the "push to trip" button
 - □ Disconnection when the device is ON.

The SD contact returns to de-energized state when the circuit breaker is reset.

- SDE (fault-trip indication) indicates that the circuit breaker has tripped due to:
 - □ An overload
 - □ A short-circuit.

The SD contact returns to de-energized state when the circuit breaker is reset.

Rotary-handle position contact for early-make or early-break functions

 CAM (early-make or early-break function) contacts indicate the position of the rotary handle.

They are used in particular for advanced opening of safety trip devices (early break) or to energize a control device prior to circuit breaker closing (early make).

Chassis-position contacts

 CE/CD (connected/disconnected) contacts are microswitch-type carriage switches for withdrawable circuit breakers.

Installation

OF, SD, SDE functions: a single type of contact provides all these different indication functions, depending on where it is inserted in the device. The contacts clip into slots behind the front cover of the circuit breaker.

The SDE function on a ComPacT NSX100 - 250 DC equipped with a thermal-magnetic trip unit requires the SDE actuator.

- CAM function: the contact fits into the rotary-handle unit (direct or extended).
- CE/CD function: the contacts clip into the fixed part of the chassis.

Electrical Characteristics of Auxiliary Contacts

Contacts			Standard			Low level				
Types of contacts		All			OF, SD, SDE					
Rated thermal current (A)		6			5					
Minimum load			100 mA at 24 V DC			1 mA at 4 V DC				
Utilization cat. (IEC 60947-5-1)			AC12	AC15	DC12	DC14	AC12	AC15	DC12	DC14
Operational	24 V	AC/DC	6	6	6	1	5	3	5	1
current (A)	48 V	AC/DC	6	6	2.5	0.2	5	3	2.5	0.2
	110 V	AC/DC	6	5	0.6	0.05	5	2.5	0.6	0.05
	220/240 V	AC	6	4	-	-	5	2	-	-
	250 V	DC	-	-	0.3	0.03	5	-	0.3	0.03
	380/440 V	AC	6	2	-	-	5	1.5	-	-
	480 V	AC	6	1.5	-	-	5	1	-	-
	660/690 V	AC	6	0.1	-	-	-	-	-	-



Indication contacts



CE/CD carriage switches

Electrical and Mechanical Accessories Rotary Handles for ComPacT NSX DC

There are two types of rotary handle:

- Direct rotary handle
- Extended rotary handle.

There are two models:

- Standard with a black handle
- Red handle and yellow front for machine-tool control.



ComPacT NSX DC with a rotary handle



ComPacT NSX DC with an MCC rotary handle



ComPacT NSX DC with a CNOMO machine-tool rotary handle

Direct Rotary Handle

Standard Handle

Degree of protection IP40, IK07.

The direct rotary handle maintains:

- Visibility of and access to trip unit settings
- Suitability for isolation
- Indication of the three positions O (OFF), I (ON) and tripped
- Access to the "push to trip" button.

Device locking

The rotary handle facilitates circuit breaker locking.

- Padlocking:
 - □ Standard situation, in the OFF position, using 1 to 3 padlocks, shackle diameter 5 to 8 mm, not supplied
 - □ With a simple modification, in the ON and OFF positions. Locking in the ON position does not prevent free circuit breaker tripping if a fault occurs. In this case, the handle remains the ON position after the circuit breaker tripping. Unlocking is required to go to the tripped then the OFF position.
- Keylock (and padlock).

It is possible to install a Ronis or Profalux keylock (optional) on the base of the handle to obtain the same functions as with a padlock.

Early-make or early-break contacts (optional)

Early-make and/or early-break contacts may be used with the rotary handle. It is thus possible to:

- Supply an MN undervoltage release before the circuit breaker closes
- Open the contactor control circuit before the circuit breaker opens.

MCC Switchboard Control

Control of an MCC switchboard is achieved by adding a kit to the standard handle. In addition to the standard functions, the kit offers the characteristics listed below.

Higher degree of protection IP

Degree of protection IP43, IK07.

The IP is increased by a built-in gasket.

Door locking depending on device position

- The door cannot be opened if the circuit breaker is ON or in the tripped position. For exceptional situations, door locking can be temporarily disabled with a tool to open the door when the circuit breaker is closed. This operation is not possible if the handle is locked by a padlock.
- Circuit breaker closing is disabled if the door is open. This function can be deactivated.

Machine-Tool Control in Compliance with CNOMO

Control of a machine-tool is achieved by adding a kit to the standard handle. In addition to the standard functions, the kit offers the characteristics listed below.

Enhanced waterproofness and mechanical protection

- Degree of protection IP54, IK08.
- Compliance with CNOMO E03.81.501N.



А

Electrical and Mechanical Accessories Rotary Handles for Com**PacT** NSX DC

Extended Rotary Handle

Degree of protection IP55, IK08.

The extended rotary handle makes it possible to operate circuit breakers installed at the back of switchboards, from the switchboard front.

It maintains:

- Visibility of and access to trip unit settings
- Suitability for isolation
- Indication of the three positions O (OFF), I (ON) and tripped.

Mechanical door locking when device closed

A standard feature of the extended rotary handle is a locking function, built into the shaft, that disables door opening when the circuit breaker is in the ON or tripped positions

Door locking can be temporarily disabled with a tool to open the door without opening the circuit breaker. This operation is not possible if the handle is locked by a padlock.

Voluntary disabling of mechanical door locking

A modification to the handle, that can be carried out on site, completely disables door locking, including when a padlock is installed on the handle. The modification is reversible

When a number of extended rotary handles are installed on a door, this disabling function is the means to ensure door locking by a single device.

Device and door padlocking

Padlocking locks the circuit breaker handle and disables door opening:

- Standard situation, in the OFF position, using 1 to 3 padlocks, shackle diameter 5 to 8 mm, not supplied
- With a simple modification, in the ON and OFF positions. Locking in the ON position does not prevent free circuit breaker tripping if a fault occurs. In this case, the handle remains in the ON position after the circuit breaker tripping. Unlocking is required to go to the tripped then the OFF position.

If the door controls were modified to voluntarily disable door locking, padlocking does not lock the door, but does disable handle operation of the device.

Device locking using a keylock inside the switchboard

It is possible to install a Ronis or Profalux keylock (optional) on the base of the rotary handle to lock the device in the OFF position or in either the ON or OFF positions.

Accessory for device operation with the door open

When the device is equipped with an extended rotary handle, a control accessory mounted on the shaft makes it possible to operate the device with the door open.

- The device can be padlocked in the OFF position.
- The accessory complies with UL508.

Early-make or early-break contacts (optional)

The extended rotary handle offers the same possibilities with early-make and/or early-break contacts as the standard rotary handle.

Parts of the extended rotary handles

- A unit that replaces the front cover of the circuit breaker (secured by screws).
- An assembly (handle and front plate) on the door that is always secured in the same position, whether the circuit breaker is installed vertically or horizontally.
- An extension shaft that must be adjusted to the distance. The min/max distance between the back of circuit breaker and door is:
 - □ 185...600 mm for ComPacT NSX100 to 250 DC
 - □ 209...600 mm for ComPacT NSX400/630/1200 DC.

For withdrawable devices, the extended rotary handle is also available with a telescopic shaft to compensate for device disconnection. In this case, the min/max distances are:

- □ 248...600 mm for ComPacT NSX100 to 250 DC
- □ 272...600 mm for ComPacT NSX400/630/1200 DC.

Manual Source-Changeover Systems

An additional accessory interlocks two devices with rotary handles to create a source-changeover system. Closing of one device is possible only if the second is open.

This function is compatible with direct or extended rotary handles. Up to three padlocks can be used to lock in the OFF or ON position.



ComPacT NSX DC with an extended rotary handle installed at the back of a switchboard, with the keylock option and key

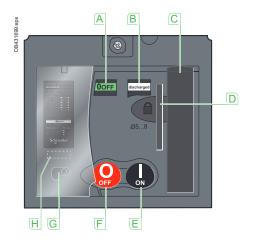




Electrical and Mechanical Accessories Motor Mechanism for ComPacT NSX DC



ComPacT NSX250 DC with motor mechanism



- A Position indicator (positive contact indication)
- B Spring status indicator (charged, discharged)
- C Manual spring-charging lever
- D Keylock device (optional) Locking device (OFF position), using 1 to 3 padlocks, shackle diameter 5 to 8 mm, not supplied
- E I (ON) pushbutton
- F O (OFF) pushbutton
- G Manual/auto mode selection switch. The position of this switch can be indicated remotely
- H Operation counter (ComPacT NSX400/630 DC)

When equipped with a motor mechanism module, ComPacT NSX DC circuit breakers feature very high mechanical endurance as well as easy and reliable

- All circuit breaker indications and information remain visible and accessible, including trip unit settings and indications
- Suitability for isolation is maintained and padlocking remains possible
- Double insulation of the front face.

A specific motor mechanism is required for operation via the communication function [1]. This **communicating motor mechanism** must be connected to the BSCM module to receive the opening and closing orders. Operation is identical to that of a standard motor mechanism.

Applications

- Local motor-driven operation, centralized operation, automatic distribution control.
- Normal/standby source changeover or switching to a replacement source For availability and energy cost optimization.
- Load shedding and reconnection.
- Synchrocoupling.

Operation

The type of operation is selected using the manual/auto mode selection switch (7). A transparent, lead-seal cover controls access to the switch.

Automatic

When the switch is in the "auto" position, the ON/OFF (I/O) buttons and the charging lever on the mechanism are locked.

- Circuit breaker ON and OFF controlled by two impulse-type or maintained signals.
- Automatic spring charging following voluntary tripping (by MN or MX), with standard wiring.
- Mandatory manual reset following tripping due to an electrical fault.

Manual

When the switch is in the "manual" position, the ON/OFF (I/O) buttons may be used. A microswitch linked to the manual position can remote the information.

- Circuit breaker ON and OFF controlled by 2 pushbuttons I/O.
- Recharging of stored-energy system by pumping the lever 8 times.
- Padlocking in OFF position.

Installation and Connections

All installation (fixed, plug-in/withdrawable) and connection possibilities are

Motor mechanism module connections are made behind its front cover to integrated terminals, for cables up to 2.5 mm².

Optional Accessories

- Keylock for locking in OFF position.
- Operations counter for the ComPacT NSX400/630 DC, indicating the number of ON/OFF cycles. Must be installed on the front of the motor mechanism module.

Characteristics

Motor mechanism			MT100 to MT630	
Response time (ms)	opening		< 600	
	closing		< 80	
Operating frequency	Operating frequency cycles/minute max.			
Control voltage (V)	Control voltage (V) DC		24/30 - 48/60 - 110/130 - 250	
	AC 50/60 Hz	7	48 (50 Hz) - 110/130 -	
			220/240 - 380/440	
Consumption [1]	DC (W)	opening	≤ 500	
		closing	≤ 500	
	AC (VA)	opening	≤ 500	
		closing	≤ 500	

[1] For NSX100 to 250 DC, the inrush current is 2 In for 10 ms.

Electrical Endurance



Electrical and Mechanical Accessories Remote Tripping for ComPacT NSX DC

MX or MN voltage releases are used to trip the circuit breaker. They serve primarily for remote, emergency-off commands.

It is advised to test the system every six months.

MN Undervoltage Release

The MN release opens the circuit breaker when its supply voltage drops to a value below 35 % of its rated voltage Un.

Undervoltage tripping, combined with an emergency-off button, provides fail-safe tripping. The MN release is continuously supplied, i.e. if supply is interrupted:

- Either voluntarily, by the emergency-off button
- Or accidentally, through loss of power or faulty wiring, the release provokes opening of the circuit breaker.

Opening conditions

Circuit breaker tripping by an MN release meets the requirements of standard IEC 60947-2.

- Automatic opening of the circuit breaker is ensured when the continuous voltage supply to the release U ≤ 0.35 x Un.
- If the supply voltage is between 0.35 and 0.7 Un, opening is possible, but not guaranteed. Above 0.7 Un, opening does not take place.

Closing conditions

If there is no supply to the MN release, it is impossible to close the circuit breaker, either manually or electrically. Closing is ensured when the voltage supply to the release U \geq 0.85 x Un. Below this threshold, closing is not ensured.

Characteristics

Power supply	VAC	50/60 Hz: 24 - 48 - 100/130 - 200/240		
		50 Hz: 380/415 60 Hz: 208/277		
	V DC	12 - 24 - 30 - 48 - 60 - 125 -250		
Operating threshold	Opening	0.35 to 0.7 Un		
	Closing	0.85 Un		
Operating range		0.85 to 1.1 Un		
Consumption (VA or W)		Pick-up: 10 - Hold: 5		
Response time (ms)		50		

Time-delay unit for an MN release

A time delay unit for the MN release eliminates the risk of nuisance tripping due to a transient voltage dip. For shorter micro-outages, a system of capacitors provides temporary supply to the MN at U > 0.7 to ensure non tripping.

The correspondence between MN releases and time-delay units is shown below.

The correspondence between with releases and time delay and to show the low.				
Power supply	Corresponding MN release			
Unit with fixed delay 200 ms				
48 V AC	48 V DC			
220/240 V AC	250 V DC			
Unit with adjustable delay ≥ 200 ms				
48 - 60 V AC/DC	48 V DC			
100 - 130 V AC/DC	125 V DC			
220 - 250 V AC/DC	250 V DC			

MX Shunt Release

The MX release opens the circuit breaker via an impulse-type (\geqslant 20 ms) or maintained order.

Opening conditions

When the MX release is supplied, it automatically opens the circuit breaker. Opening is ensured for a voltage $U \ge 0.7 \times Un$.

Characteristics

Power supply	VAC	50/60 Hz: 24 - 48 - 100/130 - 200/240		
		50 Hz: 380/415 60 Hz: 208/277		
	V DC	12 - 24 - 30 - 48 - 60 - 125 -250		
Operating range		0.7 to 1.1 Un		
Consumption (VA or W)		Pick-up: 10		
Response time (ms)		50		

Circuit Breaker Control by MN or MX

When the circuit breaker has been tripped by an MN or MX release, it must be reset before it can be reclosed.

MN or MX tripping takes priority over manual closing.

In the presence of a standing trip order, closing of the contacts, even temporary, is not possible.

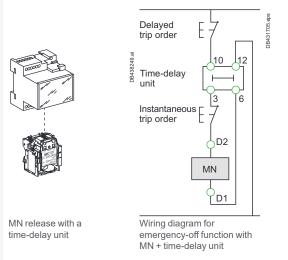
Connection using wires up to 1.5 mm² to integrated terminal blocks.

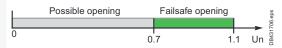


0.85

1.1 Un

Closing conditions of the MN release

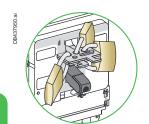


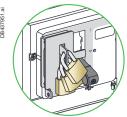


Opening conditions of the MX release

Note: Circuit breaker opening using an MN or MX release must be reserved for safety functions. This type of tripping increases wear on the opening mechanism. Repeated use reduces the mechanical endurance of the circuit breaker by 50 %.

Electrical and Mechanical Accessories Locks for ComPacT NSX DC

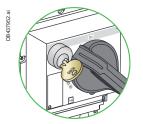




Toggle locking using padlocks and an accessory:

Removable device

Fixed device attached to the

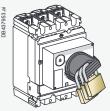


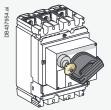
Rotary-handle locking using a keylock

Locking in the OFF position guarantees isolation as per IEC 60947-2. Padlocking systems can receive up to three padlocks with shackle diameters ranging from 5 to 8 mm (padlocks not supplied). Certain locking systems require an additional

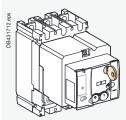
Control device		Function	Means	Required accessories
Toggle		Lock in OFF position	Padlock	Removable device
		Lock in OFF or ON position	Padlock	Fixed device
Direct rotary	Standard	Lock in	Padlock	-
handle		■ OFF position ■ OFF or ON position [1]	Keylock	Locking device + keylock
	MCC	Lock in ■ OFF position ■ OFF or ON position [1]	Padlock	-
CNOMO		Lock in ■ OFF position ■ OFF or ON position [1]	Padlock	-
Extended rotary handle		Lock in OFF position OFF or ON position [1] with door opening prevented [2]	Padlock	-
		Lock in OFF position	Padlock	UL508 control accessory
		■ OFF or ON position [1] Keylo inside the switchboard		Locking device + keylock
Motor mechanism		Lock in OFF position	Padlock	-
		remote operation disabled	Keylock	Locking device + keylock
Withdrawable circuit breaker		Lock in	Padlock	-
		■ Disconnected position	Keylock	Locking device + keylock
		■ Connected position	Keylock	Locking device + keylock

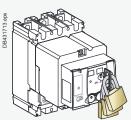
- [1] Following a simple modification of the mechanism.
- [2] Unless door locking has been voluntarily disabled.



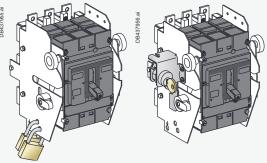


Rotary-handle locking using a padlock or a keylock





Motor mechanism locking using a padlock or a keylock



Chassis locking in the connected position

Electrical and Mechanical Accessories Sealing Accessories for ComPacT NSX DC

Outgoing-Circuit Identification

ComPacT NSX100 to 630 DC can be equipped with label holders supplied in sets of ten (cat. no. LV429226).

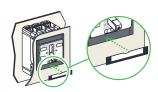
They are compatible with escutcheons.

Sealing Accessories

Sealing accessories are available. Each bag of accessories contains all the parts required for the types of sealing indicated below.

A bag contains:

- 6 sealing accessories
- 6 lead seals
- 0.5 m of wire
- 2 screws.





Sealing accessories



Types of Seals and Corresponding Functions

Toggle control	IN SECTION OF THE PROPERTY OF	DEACTORS OF		In COR427900 is
Rotary handle	De437961.ai	ID DEASONES A		ID DB4377853 III
Motor mechanism	DB431724-8-10	DB431725 epps	DB-451726-eps	DB431727.eps
Types of seals	Front-cover fixing screw	Trip unit transparent cover	Motor mechanism transparent cover	Terminal-shield fixing screw
Protected operations	■ Front removal■ Access to auxiliaries■ Trip unit removal.	■ Modification of settings ■ Access to test connector.	■ access to manual/auto mode selection switch: depending on its position, manual [1] or automatic operation is not possible. [1] In this case, local operation is not possible.	 access to power connections (protection against direct contact).

Electrical and Mechanical Accessories Escutcheons and Protection Collars for ComPacT NSX DC

Escutcheons are an optional feature mounted on the switchboard door. They increase the degree of protection to IP40, IK07. Protection collars maintain the degree of protection, whatever the position of the device (connected, disconnected).





IP30 escutcheon



IP30 escutcheon with access to the trip unit

IP30 or IP40 Escutcheons for Fixed Devices

The three types are glued to the cut-out in the front door of the switchboard:

- Escutcheon for all control types (toggle, rotary handle or motor mechanism):
 - □ Without access to the trip unit
 - □ With access to the trip unit.

The four types, with a gasket, are screwed to the door cut-out:

- Three escutcheons identical to the previous, but IP40
- A wide model for Vigi module that can be combined with the above.





Escutcheon for toggle without and with access to the trip unit

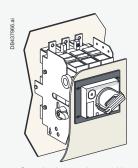
Electrical and Mechanical Accessories Escutcheons and Protection Collars for ComPacT NSX DC

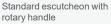
IP40 Escutcheons for Withdrawable Devices

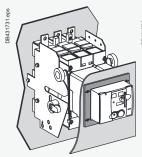
IP40 for Withdrawable Devices

The two types, with a gasket, are screwed to the door cut-out:

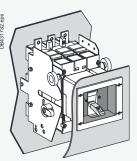
- For rotary handle or motor mechanism: standard IP40 escutcheon
- For toggle with extension: standard escutcheon + collar for withdrawal.







Standard escutcheon for motor mechanism



Standard escutcheon with collar for withdrawal, for toggle

IP43 Toggle Cover

Available only for devices with toggles. Fits over toggle and front cover of the device.

- Mounted on the front of the circuit breaker.
- Degree of protection IP43, IK07.



Toggle cover

Retrofit Front Covers

These replacement front covers make it possible to install NSX DC devices in existing switchboards containing NSX devices by installing the NSX-type retrofit covers on the NSX DC devices.

- NSX100 to 250 DC cover.
- NSX400/630 DC cover.



Escutcheon with collar for toggle



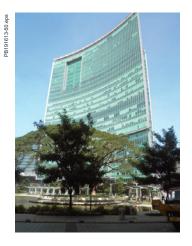
Toggle cover



NSX retrofit front cover

TransferPacT Source-Changeover Systems Presentation







Some installations use two supply sources to counter the temporary loss of the main supply.

A source-changeover system is required to safely switch between the two sources. The replacement source can be a generator set or another network.

Manual Source-Changeover System or MTSE (Manual Transfer Switching Equipment)

The simplest way to switch the load. It is controlled manually by an operator. The time required to switch from the S1 source to S2 source is variable.

2 or 3 mechanically interlocked circuit breakers or 2 switch-disconnectors. **Applications**

Small commercial buildings and small and medium industrial activities where the need for continuity of service is significant but not a priority.

Automatic Source-Changeover System or ATSE (Automatic Transfer Switching Equipment)

An automatic controller may be added to a remote operated source-changeover system. It is possible to automatically control source transfer according to programmed (dedicated controllers) or programmable (PLC) operating modes. These solutions ensure optimum energy management.

The time required to switch from the S1 source to S2 source is fixed.

System

2 or 3 circuit breakers linked by an electrical interlocking system. A mechanical interlocking system protects also against incorrect manual operations, with an automatic control system (dedicated controllers).

Applications

Large infrastructures, industry, critical buildings & process where the continuity of service is a priority.

> TransferPacT (Source-changeover systems)



LVPED216028EN

Interlocking of Two or Three Toggle-Controlled Devices

Interlocking system

Two devices can be interlocked using this system. Two identical interlocking systems can be used to interlock three devices installed side by side.

Authorized positions:

- One device closed (ON), the others open (OFF)
- All devices open (OFF).

The system is locked using one or two padlocks (shackle diameter 5 to 8 mm).

This system can be expanded to more than three devices.

- There are two interlocking-system models: One for ComPacT INS/INV
- One for ComPacT NSX100 to NSX250
- One for ComPacT NSX400 to NSX630.

Combinations of Normal and Replacement devices

All toggle-controlled fixed or plug-in ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors of the same frame size can be interlocked. The devices must be either all fixed or all plug-in versions.

Interlocking of Two Devices with Rotary Handles

Interlocking system

Interlocking involves padlocking the rotary handles on two devices which may be either circuit breakers or switch-disconnectors.

Authorized positions:

- One device closed (ON), the other open (OFF)
- Both devices open (OFF).

The system is locked using up to three padlocks (shackle diameter 5 to 8 mm). There are two interlocking-system models:

- One for ComPacT INS/INV
- One for ComPacT NSX100 to NSX250
- One for ComPacT NSX400 to NSX630

Combinations of Normal and Replacement devices

All rotary-handle fixed or plug-in ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors of the same frame size can be interlocked. The devices must be either all fixed or all plug-in versions.

Interlocking of Two Devices on a Base Plate

Interlocking system

A base plate designed for two ComPacT NSX devices can be installed horizontally or vertically on a mounting rail. Interlocking is carried out on the base plate by a mechanism located behind the devices. In this way, access to the device controls and trip units is not blocked.

Combinations of Normal and Replacement devices

All rotary-handle and toggle-controlled ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors can be interlocked. Devices must be either all fixed or all plug-in versions, with or without earth-leakage protection or measurement modules. An adaptation kit is required to interlock:

- Two plug-in devices
- A ComPacT NSX100 to NSX250 with an NSX400 to NSX630.

Connection to the downstream installation can be made easier using a coupling accessory (see next page).

Interlocking of a Number of Devices Using Keylocks (Captive Keys)

Interlocking using keylocks is very simple and makes it possible to interlock two or more devices that are physically distant or that have very different characteristics, for example medium-voltage and low-voltage devices or a ComPacT NSX100 to NSX630 switch-disconnector.

Interlocking system

Each device is equipped with an identical keylock and the key is captive on the closed (ON) device. A single key is available for all devices. It is necessary to first open (OFF position) the device with the key before the key can be withdrawn and used to close another device.

A system of wall-mounted captive key boxes makes a large number of combinations possible between many devices.

Combinations of Normal and Replacement devices

All rotary-handle ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors can be interlocked between each other or with any other device equipped with the same type of keylock.



Interlocking of two or three toggle-controlled devices



Interlocking of two devices with rotary handles



Interlocking on a base plate



Interlocking with keylocks

1000 V (4P series)

Circuit Breaker Characteristics ComPacT NSX80 TM DC PV to NSX500 TM DC PV



ComPacT NSX200 TM DC PV



Connection and insulation accessories

ComPacT NSX DC PV circuit breaker

Number of poles		
Electrical Char	acteristics A	As Per IEC 60947-2 and EN 60947-2
Rated current (A) (free air + no venting)	In	40 °C heatsink standard-IP4X
Altitude	m	2000

Rated insulation voltage (V) Rated impulse withstand voltage (kV)

Rated operational voltage (V)

Type of circuit breaker Ultimate breaking capacity

(L/R 2 ms) Service breaking capacity Suitability for isolation

Selectivity category (Utilization category) Pollution degree

Durability

Endurance (C-O cycles)

Mechanical Electrical (In)

Icu (kA rms)

1000 V

DC

DC

% Icu

Protection

Overload/short-circuit protection Thermal magnetic

Installation and connections

Control Toggle Motor mechanism

Connections Fixed Front connection

ILong rear connection

Front connection Pua-in (on base) Rear connection Withdrawable Front connection (on chassis) Rear connection

Additional measurement, indication and control auxiliaries

Indication contacts Auxiliary contact SD. SDE Trip, fault-trip

Voltage releases MX, MN Shunt trip/undervoltage release

Installation

Accessories Crimp lugs/bare cable connector

Terminal extensions and spreaders

Escutcheons

Terminal shields and interphase barriers

Din rail adapter

Dimensions and weight

Dimensions (mm) W x H x D (w/o series connection) Weight (kg) Fixed front connection

[1] Double earth fault:

PV systems are either insulated from the earth or one pole is earthed through an overcurrent protection. In both set-ups, therefore, there can be a ground fault in which current leaks to the ground. If this fault is not cleared, it may spread to the healthy pole and give rise to a hazardous situation where fire could break out. Even though double insulation makes such an eventuality unlikely, it deserves full attention

For the two following reasons the double fault situation shall be absolutely avoided: insulation monitoring devices or overcurrent protection in earthed system shall detect first fault and staff shall look after the first fault and clear it with no delay.

- The fault level could be low (e.g. two insulation faults or a low short-circuit capability of the generator in weak sunlight) and below the tripping value of overcurrent protection (circuit breaker or fuses). However, a DC arc fault does not extinguish itself, even when the current is low. It could be a serious hazard, particularly for PV modules on buildings.
- Circuit breakers and switches used in PV systems are designed to break the rated current or fault current with all poles at open-circuit maximum voltage ($U_{\text{OC MAX}}$). To break the current when $U_{\text{OC MAX}}$ is equal to 1000 V, four poles in series (two poles in series for each polarity) are required. In double earth fault situations, the circuit breaker or switches must break the current at full voltage with only two poles in series. Such switchgear is not designed for that purpose and could sustain irremediable damage if used to break the current in a double ground fault situation.

The ideal solution is to prevent double ground faults arising. Insulation monitoring devices or overcurrent protection in grounded systems detect the first fault. However, although the insulation fault monitoring system usually stops the inverter, the fault is still present. Staff must locate and clear it without delay. In large generators with sub-arrays protected by circuit breakers, it is highly advisable to disconnect each array when that first fault has been detected but not cleared within the next few hours

Circuit Breaker Characteristics ComPacT NSX80 TM DC PV to NSX500 TM DC PV

NSX80	NSX125	NSX160	NSX200	NSX250	NSX320	NSX400	NSX500
TM DC PV	TM DC PV	TM DC PV	TM DC PV				
4	4	4	4	4	4	4	4
80	125	160	200	250	320	400	500
•	•	•	•	•	•	•	•
1000	1000	1000	1000	1000	1000	1000	1000
8	8	8	8	8	8	8	8
1000	1000	1000	1000	1000	1000	1000	1000
Loren	Loren						
10 [1]	10 [1]	10 [1]	10 [1]	10 [1]	10 [1]	10 [1]	10 [1]
50 %	50 %	50 %	50 %	100 %	100 %	100 %	100 %
•	•	O	O	O	O	O	O
А	А	Α	Α	Α	Α	Α	Α
3	3	3	3	3	3	3	3
10000	10000	10000	10000	5000	5000	5000	5000
1500	1500	1000	1000	1000	1000	1000	1000
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	o	o	o	o	o	•
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1.	-	_	_				
140 x 161 x 86 2.8	225 x 185 x 110 8.1						
۷.۵	LU	۷.0	۷.۵	U. I	U. I	0.1	U. I

Trip unit for ComPacT NSX DC PV non interchangeable [2]									
Type of trip unit		TM 80 DC PV	TM 125 DC PV	TM 160 DC PV	TM 200 DC PV	TM 250 DC PV	TM 320 DC PV	TM400 DC PV	TM500 DC PV
Rating	In (A) at 40 °C	80	125	160	200	250	320	400	500
Overload protection	(thermal)								
Tripping threshold	Ir (A) at 40 °C	Adjusta	ble 0.7 to	1 x In					
Protection against short-circuits (magnetic)									
Pick-up	li (A)	Fixed 800 A	Fixed 1250 A		Adjustat 5 to 10 li				

^[2] See tripping curves page E-14 and E-15.

Circuit Breaker Characteristics ComPacT NSX100 TM DC EP to NSX500 TM DC EP



ComPacT NSX250 TM DC EP

CSGF4TMS00D3-1_L50 aps	

ComPacT NSX500 TM DC EP

Frame					
Frame	ComPacT NSX D	C EP circuit br	eaker		NSX100
Frame					
Rated current (A) In	Frame				
Rated current (A)					4
(five air + no veniting)	Electrical Characteri	stics As Per IEC 60	947-2 and EN 609	947-2	
Rated insulation voltage (V) U		In		IP4X	100
Rated inpulse withstand Virry Virry Visite Visi	Altitude	m	2000		•
Voltage (kV)	Rated insulation voltage (V)	Ui			1600
Type of circuit breaker Ultimate breaking capacity 1cs	voltage (kV)	Uimp			8
Ultimate breaking capacity Icu (KArms)			DC		1500
Service breaking capacity	71				
Diffusion breaking capacity Icu (kArms) DC 1500 V (4P series) 20 11		, ,		1100 V (4P series)	
Service breaking capacity				1500 \/ (4D porion)	
Ultimate breaking capacity (L/R 2 ms) Cu (KA ms) Cu 100 V (4P series) 50 l/1		, ,		1500 V (4F Selles)	
Service breaking capacity Icu (kArms)	Ultimate breaking capacity			1100 V (4P series)	
Curs	,	lcs	% Icu		40 %
Sultability for isolation	0 . ,	Icu (kA rms)	DC	1500 V (4P series)	20 [1]
Selectivity category (Utilization category)		Ics	% Icu		100 %
Pollution degree	Suitability for isolation				•
Durability 6000000000000000000000000000000000000	Selectivity category (Utilization	category)			
Endurance (C-O cycles) Mechanical (In) (In) (In) (In) (In) (In) (In) (In)					3
Flectrical (In) 1500 V 4500 Protection Overload/short-circuit protection Thermal magnetic Installation and convections Control Manual toggle Motor mechanism ● Connections Fixed Front connection ● Long rear connection - ● (on base) Rear connection - (vilthdrawable (on chassis) Rear connection - (vilthdrawable (on chassis) Rear connection - (on	_				1,000
Protection Overload/short-circuit protection Thermal magnetic ● Installation and connections Control Manual toggle ● Motor mechanism ● ● Connections Fixed Front connection ● Long rear connection - ● Plug-in (on base) Rear connection - (on base) Rear connection - Withdrawable (on chassis) Rear connection - (on chassis) Front connection - (o	Endurance (C-O cycles)		1500 V		
Diverload/short-circuit protection Thermal magnetic ● Installation and connections Control Manual toggle ● Connections Fixed Front connection ● Connections Plug-in (on base) Front connection - (on base) Rear connection - (on base) Rear connection - (on chassis) Front connection - (on base) Rear connection - (on chassis) Front connection - (on chassis) Front connection - (on chassis) Rear connection </td <td>Protection</td> <td>Electrical (III)</td> <td>1500 V</td> <td></td> <td>4300</td>	Protection	Electrical (III)	1500 V		4300
Installation and connections Control Manual toggle		Thermal magnetic			
Control Manual Motor mechanism Image: Connection stands and support of the part					
Motor mechanism ● Connections Fixed Front connection ● Long rear connection ● Plug-in (on base) Front connection - Rear connection - - (on chassis) Rear connection - (on chassis) Rear connection - Rear connection - - (on chassis) Rear connection - Rear connection - - National measurement, indication and control auxiliaries - Indication contacts OF Auxiliary contact ● SD, SDE Trip, fault-trip ● Voltage releases MX, MN Shunt trip/undervoltage release ● Installation Accessories Crimp lugs/bare cable connector ● Terminal extensions and spreaders ● Escutcheons ● Terminal shields and interphase barriers ● Din rail adapter ● Dimensions (mm) Wx H x D (w/o series connection) 4P 140 x 161 x 86			togale		
Connections Fixed Front connection Long rear connection Plug-in (on base) Rear connection Withdrawable (on chassis) Rear connection Por Auxiliaries Indication contacts OF Auxiliary contact SD, SDE Trip, fault-trip Voltage releases MX, MN Shunt trip/undervoltage release Installation Installation Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) Accessories Applications Fixed Front connection Rear connection - Connection Rear connection - Connec					
Long rear connection Plug-in Front connection (on base) Rear connection Withdrawable Front connection (on chassis) Rear connection					_
Plug-in (on base) Rear connection - (on base) Rear connection (on base) Rear connection (on chassis) Rear connection Rear connects Rear connection Rear conn	Connections	Fixed	Front connection		•
Con base Rear connection			Long rear connection		•
Withdrawable (on chassis) Front connection - Concluded (on chassis) Rear connection		o .	Front connection		-
Con chassis Rear connection		` '			-
Additional measurement, indication and control auxiliaries Indication contacts OF Auxiliary contact SD, SDE Trip, fault-trip Voltage releases MX, MN Shunt trip/undervoltage release Installation Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86					-
Indication contacts OF Auxiliary contact ● SD, SDE Trip, fault-trip ● Voltage releases MX, MN Shunt trip/undervoltage release ● Installation Accessories Crimp lugs/bare cable connector ● Terminal extensions and spreaders ● Escutcheons ● Terminal shields and interphase barriers ● Din rail adapter ● Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86	Additional measureme	,			-
SD, SDE Trip, fault-trip Voltage releases MX, MN Shunt trip/undervoltage release Installation Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) Trip, fault-trip Shunt trip/undervoltage release		•			
Voltage releases MX, MN Shunt trip/undervoltage release Installation Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) Shunt trip/undervoltage release O 10 10 10 10 10 10 10 10					
Installation Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86	Voltage releases	MX, MN	Shunt trip/undervoltage r	elease	
Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 0	Installation				
Terminal extensions and spreaders Escutcheons Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86		Crimp lugs/bare cable con	nector		•
Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86		Terminal extensions and sp	preaders		
Terminal shields and interphase barriers Din rail adapter Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86		Escutcheons			
Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86		Terminal shields and interp	hase barriers		
Dimensions and weight Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86		Din rail adapter			
Dimensions (mm) W x H x D (w/o series connection) 4P 140 x 161 x 86	Dimensions and weigh	ıt .			
				4P	140 x 161 x 86
				4P	2.8

PV systems are either insulated from the earth or one pole is earthed through an overcurrent protection. In both set-ups, therefore, there can be a ground fault in which current leaks to the ground. If this fault is not cleared, it may spread to the healthy pole and give rise to a hazardous situation where fire could break out. Even though double insulation makes such an eventuality

For the two following reasons the double fault situation shall be absolutely avoided: insulation monitoring devices or overcurrent protection in earthed system shall detect first fault and staff shall look after the first fault and clear it with no delay.

The fault level could be low (e.g. two insulation faults or a low short-circuit capability of the generator in weak sunlight) and below the tripping value of overcurrent protection (circuit breaker or fuses). However, a DC arc fault does not extinguish itself, even when the current is low. It could be a serious hazard, particularly for PV modules on buildings.

Circuit Breaker Characteristics ComPacT NSX100 TM DC EP to NSX500 TM DC EP

	NSX125	NSX160	NSX200	NSX250	NSX250	NSX320	NSX400	NSX500
		TM DC EP					TM DC EP	
	250	250	250	250	500	500	500	500
	4	4	4	4	4	4	4	4
	125	160	200	250	250	320	400	500
	•	•	•	o	o	o	o	•
	1600	1600	1600	1600	1600	1600	1600	1600
	8	8	8	8	8	8	8	8
	1500	1500	1500	1500	1500	1500	1500	1500
	50 [1]	50 [1]	50 [1]	50 ^[1]	50 ^[1]	50 [1]	50 [1]	50 [1]
	40 %	40 %	40 %	40 %	100 %	100 %	100 %	100 %
	20 [1]	20 [1]	20 [1]	20 [1]	50 [1]	50 [1]	50 [1]	50 [1]
	100 %	100 %	100 %	100 %	40 %	40 %	40 %	40 %
	50 [1]	50 [1]	50 [1]	50 ^[1]	50 [1]	50 [1]	50 [1]	50 [1]
	40 %	40 %	40 %	40 %	100 %	100 %	100 %	100 %
	20 [1]	20 [1]	20 [1]	20 [1]	50 [1]	50 [1]	50 [1]	50 [1]
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
	•	•	•	O	O	O	•	•
	A	A	A	Α	Α	Α	Α	Α
	3	3	3	3	3	3	3	3
	10000	10000	10000	10000	8000	8000	8000	8000
	4500	4500	4500	4500	3000	3000	3000	3000
	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•
-	•	•	•	•	•	•	•	•
	(a)	O	•	•	•	•	•	•
	•	•	•	•	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•
	•	•	•		•	•		0
	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•
	•	<u> </u>	<u>•</u>	O	O	•	O	<u>•</u>
	•	•	•	•	•	•	•	•
	O	O	•	•	-	-	-	-
	140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	225 x 185 x 110	225 x 185 x 110	225 x 185 x 110	225 x 185 x 110
	2.8	2.8	2.8	2.8	8.1	8.1	8.1	8.1

[■] Circuit breakers and switches used in PV systems are designed to break the rated current or fault current with all poles at open-circuit maximum voltage (U_{OC.MAX}). To break the current when U_{OC.MAX} is equal to 1000 V, four poles in series (two poles in series for each polarity) are required. In double earth fault situations, the circuit breaker or switches must break the current at full voltage with only two poles in series. Such switchgear is not designed for that purpose and could sustain irremediable damage if used to break the current in a double ground fault situation.

The ideal solution is to prevent double ground faults arising. Insulation monitoring devices or overcurrent protection in grounded systems detect the first fault. However, although the insulation fault monitoring system usually stops the inverter, the fault is still present. Staff must locate and clear it without delay. In large generators with sub-arrays protected by circuit breakers, it is highly advisable to disconnect each array when that first fault has been detected but not cleared within the next few hours.

Switch-Disconnectors Characteristics ComPacT NSX100 NA DC PV to NSX500 NA DC PV



ComPacT NSX200 NA DC PV



ComPacT NSX200 NA DC PV

ComPacT NSX DC PV switch-disconnector

Number of poles		
Electrical Characteris	stics As Per IEC 60947-3	
Rated current (A) (free air + no venting)	In	40 °C
Altitude	m	2000
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	eUimp	
Rated operational voltage (V)	Ue	DC
Type of circuit breaker		
Rated short circuit withstand current (kArms)	lcw/lcm	t = 1 s
Rated conditionnal short-circuit	_ ·	kA
current	With back-up fuse	AgPV
Rated conditionnal short-circuit current	Iq with circuit breaker	kA with MCCB
Utilization category		
Suitability for isolation		
Pollution degree		
Durability		
Endurance (C-O cycles)	Mechanical	
	Electrical (In)	1000 V
Installation and connec		
Control	Manual	Toggle
		Direct or extended rotary handle
	Motor mechanism	
Connections	Fixed	Front connection
		Long rear connection
	Plug-in (on base)	Front connection
		Rear connection
	Withdrawable (on chassis)	Front connection
		Rear connection

Additional measurement, indication and control auxiliaries

Indication contacts	OF	Auxiliary contact
	SD, SDE	Trip, fault-trip
Voltage releases	MX MN	Shunt trin/undervoltage release

Installation

Accessories Crimp lugs/bare cable connector

Terminal extensions and spreaders

Escutcheons

Terminal shields and interphase barriers

Din rail adapter

Dimensions and weight

Dimensions (mm) W x H x D (w/o series connection)	4P
Weight (kg) (w/o series connection)	4P

PV systems are either insulated from the earth or one pole is earthed through an overcurrent protection. In both set-ups, therefore, there can be a ground fault in which current leaks to the ground. If this fault is not cleared, it may spread to the healthy pole and give rise to a hazardous situation where fire could break out. Even though double insulation makes such an eventuality unlikely, it deserves full attention.

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- Circuit breakers and switches used in PV systems are designed to break the rated current or fault current with all poles at open-circuit maximum voltage (U_{OCMMX}). To break the current when U_{OCMMX} is equal to 1000 V, four poles in series (two poles in series for each polarity) are required. In double earth fault situations, the circuit breaker or switches must break the current at full voltage with only two poles in series. Such switchgear is not designed for that purpose and could sustain irremediable damage if used to break the current in a double ground fault situation.

The ideal solution is to prevent double ground faults arising. Insulation monitoring devices or overcurrent protection in grounded systems detect the first fault. However, although the insulation fault monitoring system usually stops the inverter, the fault is still present. Staff must locate and clear it without delay. In large generators with sub-arrays protected by circuit breakers, it is highly advisable to disconnect each array when that first fault has been detected but not cleared within the next few hours

Switch-Disconnectors Characteristics ComPacT NSX100 NA DC PV to NSX500 NA DC PV

NSX100 NA DC	NSX160 NA DC	NSX200 NA DC PV	NSX400 NA DC PV	NSX500 NA DC PV
4	4	4	4	4
4	14	14	14	14
100 heatsink - IP4X	160 heatsink - IP4X	200 heatsink - IP4X	400 heatsink - IP3X	500 heatsink - IP3X
•	•	•	•	•
1000 [1]	1000 [1]	1000 [1]	1000 [1]	1000 [1]
8	8	8	8	8
1000	1000	1000	1000	1000
2.5	2.5	2.5	6	6
10	10	10	10	10
100	160	200	400	500
10	10	10	-	-
NSX125 TM DC PV DC22-A	NSX160-200 TM DC PV DC22-A	NSX200 TM DC PV DC22-A	DC22-A	DC22-A
•	BOZZ //Company //Company	OZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ<l< td=""><td>OZZ //</td><td>B022 //O</td></l<>	OZZ //	B022 //O
3	3	3	3	3
' i				
10000	10000	10000	5000	5000
1500	1000	1000	1000	1000
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
	•	•	•	•
-	•	•	•	•
	•	•	•	•
	•	•	•	•
	0	•	-	-
140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	185 x 255 x 110	185 x 255 x 110
2.8	2.8	2.8	8.1	8.1

Switch-Disconnectors Characteristics ComPacT NSX630b NA DC PV to NSX1600 NA DC PV

ComPacT NSX DC PV switch-disconnector



ComPacT NSX1600 NA DC PV

Number of poles		
Electrical Characteris	stics As Per IEC 60947-3	
Rated current (A) (free air + no venting)	In	40 °C
Altitude	m	2000
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operational voltage (V)	Ue	DC
Type of circuit breaker		
Rated short circuit withstand current (kA rms)	lcw/lcm	t=1s
Rated conditionnal short-circuit	•	kA
current	With back-up fuse	AgPV
Rated conditionnal short-circuit current	Iq with circuit breaker	
Utilization category		
Suitability for isolation		
Pollution degree		
Durability		
Endurance (C-O cycles)	Mechanical	
	Electrical (In)	1000 V
Installation and connect	ctions	
Control	Manual	
	Motor mechanism	
Connections	Fixed	Front connection
		Rear connection
Additional measureme	nt, indication and control auxili	aries
Indication contacts	OF	Auxiliary contact
Voltage releases	MX, MN	Shunt trip/undervoltage release
Installation		
Accessories	Terminal extensions	
	Escutcheons	

Dimensions (mm) W x H x D (w/o series connection)

Dimensions and weight

4P Weight (kg) (w/o series connection) [1] Double earth fault: PV systems are either insulated from the earth or one pole is earthed through an overcurrent protection. In both set-ups, therefore, there can be a ground fault in which current leaks to the ground. If this fault is not cleared, it may spread to the healthy

Terminal shields and interphase barriers

pole and give rise to a hazardous situation where fire could break out. Even though double insulation makes such an eventuality unlikely, it deserves full attention. For the two following reasons the double fault situation shall be absolutely avoided: insulation monitoring devices or overcurrent protection in earthed system shall detect first fault and staff shall look after the first fault and clear it with no delay.

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- Circuit breakers and switches used in PV systems are designed to break the rated current or fault current with all poles at open-circuit maximum voltage ($U_{\text{OC MAX}}$). To break the current when $U_{\text{OC MAX}}$ is equal to 1000 V, four poles in series (two poles in series for each polarity) are required. In double earth fault situations, the circuit breaker or switches must break the current at full voltage with only two poles in series. Such switchgear is not designed for that purpose and could sustain irremediable damage if used to break the current in a double ground fault situation.

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Switch-Disconnectors Characteristics ComPacT NSX630b NA DC PV to NSX1600 NA DC PV

NSX630b NA DC PV	NSX800b NA DC PV	NSX1000 NA DC PV	NSX1250 NA DC PV	NSX1600 NA DC PV
4	4	4	4	4
630 heatsink - IP2X	800 heatsink - IP2X	1000 heatsink - IP2X	1250 heatsink - IP2X	1500 heatsink - IP0
•	•	•	•	•
1000 [1]	1000 [1]	1000 [1]	1000 [1]	1000 [1]
8	8	8	8	8
1000	1000	1000	1000	1000
20	20	20	20	20
10	10	10	10	10
N/A	N/A	N/A	N/A	N/A
10	10	10	10	10
DC22-A	DC22-A	DC22-A	DC22-B	DC22-B
•	•	•	•	•
3	3	3	3	3
			'	
10000	10000	10000	10000	10000
1000	500	500	100	100
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
280 x 327 x 182	280 x 327 x 182	280 x 327x 182	280 x 327 x 182	280 x 327 x 182
18	18	18	18	18

Switch-Disconnectors Characteristics ComPacT NSX100 NA DC EP to NSX630 NA DC EP

ComPacT NSX DC EP switch-disconnector





Frame		
Number of poles		
Electrical Characteri	stics As Per IEC 60947-3	
Rated current (A) (free air + no venting)	In	40 °C
		60 °C
Altitude	m	2000
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operational voltage (V)	Ue	DC
Type of circuit breaker		
Rated short circuit withstand current (kA rms)	lcw/lcm	t=1s
Utilization category		
Suitability for isolation		
Pollution degree		
Durability		
Endurance (C-O cycles)	Mechanical	
	Electrical (In)	1500 V
Installation and conne	ctions	
Control	Manual	Toggle
		Direct or extended rotary handle
	Motor mechanism	
Connections	Fixed	Front connection
		Long rear connection
	Plug-in (on base)	Front connection
		Rear connection
	Withdrawable (on chassis)	Front connection
		Rear connection

Additional mea	surement, indicatio	n and control	auxiliaries
Indication contacts	OF		Auvil

Indication contacts	OF	Auxiliary contact
	SD, SDE	Trip, faut-trip
Voltage releases	MX, MN	Shunt trip/undervoltage release

Installation

Accessories Crimp lugs/bare cable connector Terminal extensions and spreaders

Escutcheons

Terminal shields and interphase barriers

Dimensions and weight

4P Dimensions (mm) W x H x D (w/o series connection) Weight (kg) (w/o series connection)

[1] Double earth fault:

PV systems are either insulated from the earth or one pole is earthed through an overcurrent protection. In both set-ups, therefore, there can be a ground fault in which current leaks to the ground. If this fault is not cleared, it may spread to the healthy pole and give rise to a hazardous situation where fire could break out. Even though double insulation makes such an eventuality unlikely, it deserves full attention.

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Switch-Disconnectors Characteristics ComPacT NSX100 NA DC EP to NSX630 NA DC EP

NSX100	NSX160	NSX200	NSX250	NSX320	NSX400	NSX500	NSX630 NA DC	
NA DC	NA DC	NA DC	NA DC	NA DC	NA DC	NA DC		
EP	EP	EP	EP	EP	EP	EP	EP	
250	250	250	250	630	630	630	630	
4	4	4	4	4	4	4	4	
100 heatsink - IP4X	160 heatsink - IP4X	200 heatsink - IP4X	250 heatsink - IP4X	320 heatsink - IP3X	400 heatsink - IP3X	500 heatsink - IP3X	500 heatsink - IP3X	
100 IP0	160 IP0	200 IP0	250 ^[2] IP0	320 IP0	400 IP0	500 IP0	630 ^[3] IP0	
	•	•	•	•	•	•	•	
1600 [1]	1600 [1]	1600 [1]	1600 [1]	1600 [1]	1600 [1]	1600 [1]	1600 [1]	
8	8	8	8	8	8	8	8	
1500	1500	1500	1500	1500	1500	1500	1500	
	,						,	
3,5	3,5	3,5	3,5	7.56	7.56	7.56	7.56	
DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV2	DC-22A DC-PV	
	•	•	•	•	•	•	•	
3	3	3	3	3	3	3	3	
40000	140000	140000	140000	8000	8000	8000	Lacos	
10000	10000	10000	10000				8000	
4500	4500	4500	4500	3000	3000	3000	3000	
•	•	•	•	•	•	•	•	
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				1			1	
•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	
•	•	•	0	•	•	•	•	
•	0	0	0	0	0	0	•	
•	•	0	• -	-	-	-	-	
140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	185 x 255 x 110	185 x 255 x 110	185 x 255 x 110	185 x 255 x 110	
2,8	2,8	2,8	2,8	8,1	8,1	8,1	8,1	

[■] Circuit breakers and switches used in PV systems are designed to break the rated current or fault current with all poles at open-circuit maximum voltage (U_{OC MAX}). To break the current when U_{OC MAX} is equal to 1000 V, four poles in series (two poles in series for each polarity) are required. In double earth fault situations, the circuit breaker or switches must break the current at full voltage with only two poles in

Such switchgear is not designed for that purpose and could sustain irremediable damage if used to break the current in a double ground fault

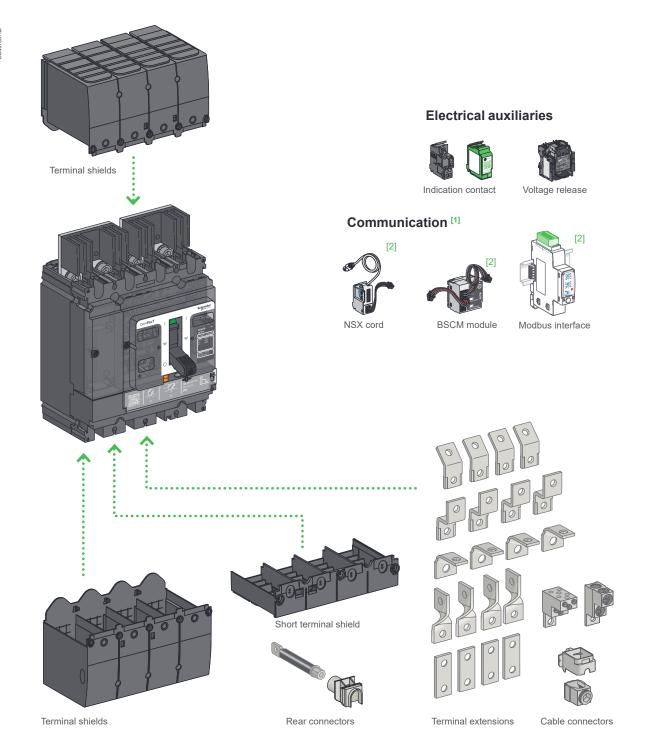
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^[2] In=250A at 50 °C [3] In=630A at 40 °C.

Accessories and Auxiliaries

Overview of ComPacT NSX80 TM to NSX500 TM DC PV -Circuit Breakers

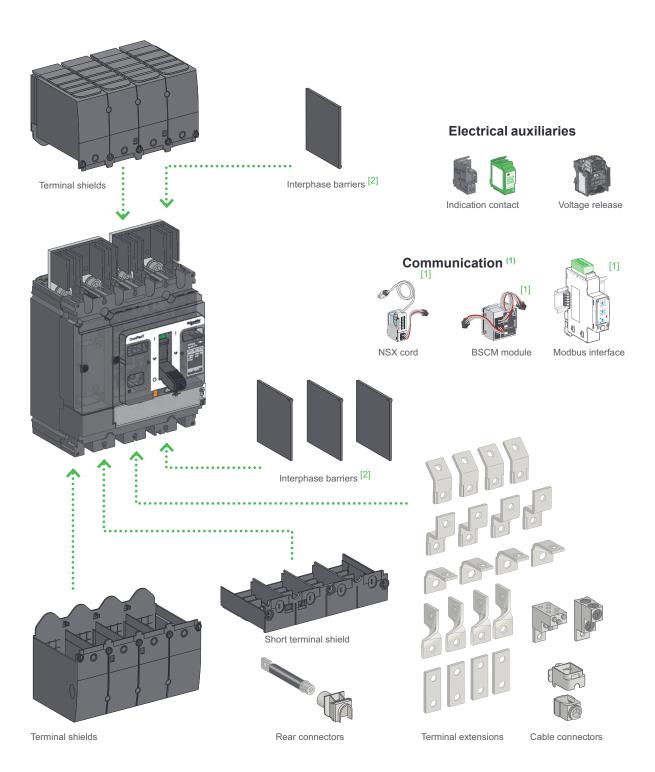




^[1] See communication chapter. [2] ComPacT NSX100-250 only.

Accessories and Auxiliaries Overview of ComPacT NSX100 NA to NSX500 NA DC PV -

Switch-Disconnectors



^[1] See communication chapter.

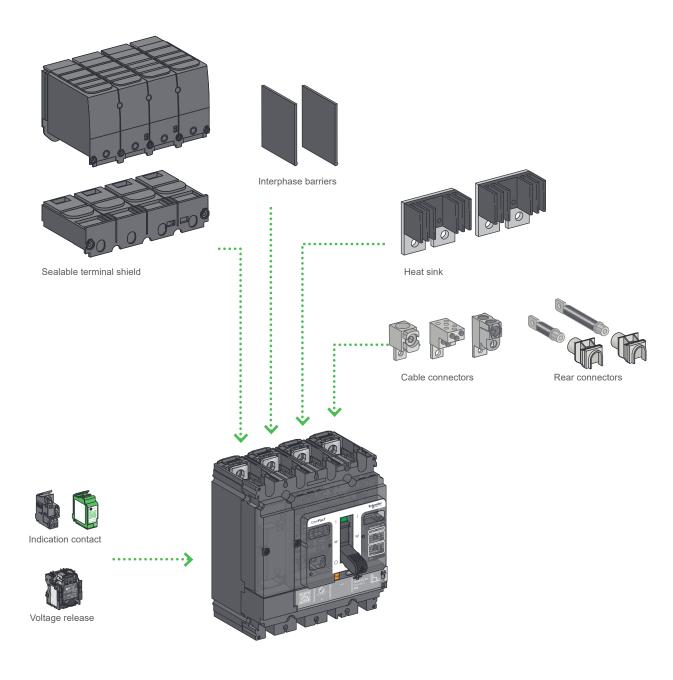
^[2] Only for switches.

Accessories and Auxiliaries

Overview of ComPacT NSX100 TM to NSX250 TM DC EP -ComPacT NSX100 NA to NSX250 NA DC EP

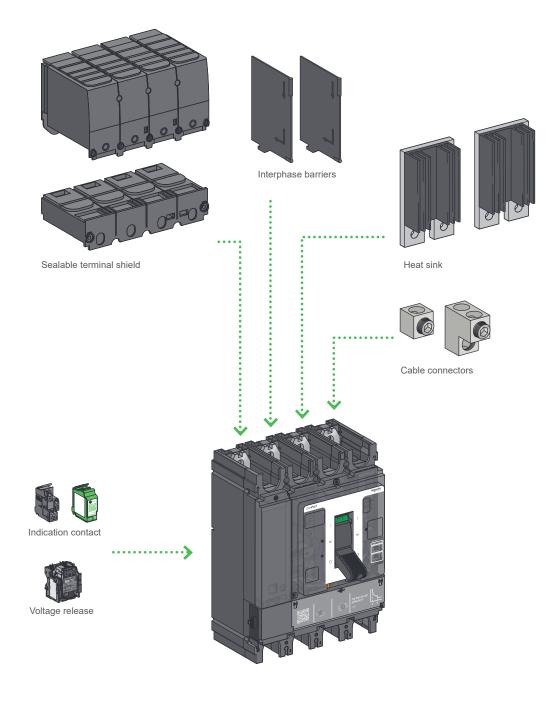
Circuit Breakers and Switch-Disconnectors





Accessories and Auxiliaries

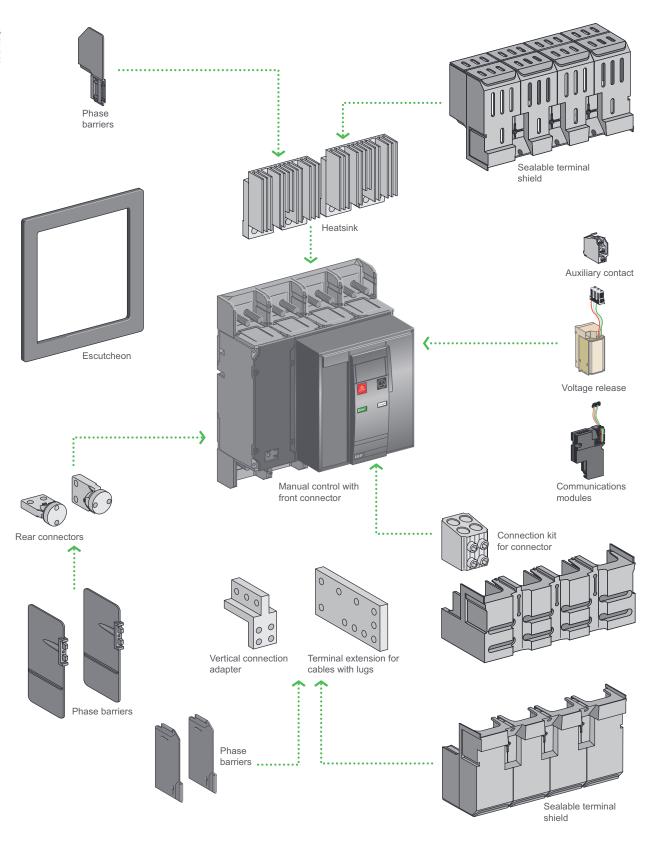
Overview of ComPacT NSX250 TM to NSX500 TM DC EP - ComPacT NSX320 NA to NSX630 NA DC EP Circuit Breakers and Switch-Disconnectors



Accessories and Auxiliaries Overview of ComPacT NSX630b NA

to NSX1600 NA DC PV Switch-Disconnectors





ComPacT INS DC PV



ComPacT INS PV-1

No matter the size or scale of the project, Schneider Electric, has a photovoltaic solution to fit your needs. Fast ROI, high efficiency – it's all a part of our offer as the world leader in energy management.

The INS PV-1 is a direct current switch disconnector dedicated to array isolation and control with Voc until 600 V DC.

ComPacT			INS80 PV
Number of poles			4 serial pole
Electrical Characteristics			•
Conventional thermal current (A)	lth		
Conventional thermal current in enclosure (A)	Ithe		
Rated insulation level (DC V)	Ui		
Impulse-withstand voltage (kV)	Uimp		
Rated operational voltage (DC V)	Ue		
Rated operational voltage DC21B (V)			
Rated operational current (A)	le	Electrical DC	
	DC21B	600	
	DC21B	500	
	DC21B	400	
	DC21B	300	
Rated duties		Uninterrupted duty	-
		Intermittent duty	Class 120 - 60 %
Short-circuit making capacity (kA peak)	lcm		
Short-time withstand current (Arms)	lcw		
Suitability for isolation			Yes
Durability (O-C cycles)		Mechanical	20000
		Electrical DC	
		600 V	1500
Positive contact indication			Yes
Visible break			-
Emergency-off switch disconnector			Yes
Degree of pollution			3



ComPacT INS40 to 80 switch-disconnector



ComPacT INS40 to 80 emergency-off switch-disconnector



ComPacT INS100 to 160 switch-disconnector



ComPacT INS100 to 160 emergency-off switch-disconnector

ComPacT INS switch-dis	scon	nectors						
Number of poles								
Electrical Characteristics As Defined by IEC 60947-1/60947-3								
and EN 60947-1/60947-3								
Conventional thermal current (A)	lth	at 60 °C						
Conventional thermal current in enclosure	Ithe	at 60 °C						
Rated insulation level (V)	Ui	AC 50/60 Hz						
Impulse-withstand voltage (kV)	Uimp							
Rated operational voltage (V)	Ue	AC 50/60 Hz						
		DC						
Rated operational voltage AC20 and DC20 (V)	AC 50/60 Hz						
Rated operational current (A)	le	Electrical DC						
		125 V (2P in series)						
		250 V (4P in series)						
Rated duties		Uninterrupted duty						
		Intermittent duty						
Short-circuit making capacity (kA peak)	lcm	Min. (switch-disconnector alone)						
Short-time withstand current (Arms)	lcw	1 s						
		3 s						
		20 s						
		30 s						
Suitability for isolation								
Durability (O-C cycles)		Mechanical						
		Electrical DC						
		250 V						
Positive contact indication								
Visible break								
Emergency-off switch disconnector								
Degree of pollution								
Upstream Protection								

See the "Complementary technical information" in catalog ComPacT INS/INV

INS40		340 INS63 INS80			INS80 INS100			INS12	5	INS16	0	
3-4		3-4		3-4		3-4		3-4		3-4		
40		63		80		100		125		160		
40		63		80		100		125		160		
690		690		690		800		800		800		
8		8		8		8		8		8		
500		500		500		690		690		690		
250		250		250		250		250		250		
690		690		690		750		750		750		
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	
40	40	63	63	80	80	100	100	125	125	160	160	
40	40	63	63	80	80	100	100	125	125	160	160	
•	•		•		•	•		•				
Class 120 -	60 %	Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		
15		15		15		20		20		20		
3000		3000		3000		5500		5500		5500		
1730		1730		1730		3175		3175		3175		
670		670		670		1230		1230		1230		
550		550		550		1000	1000		1000		1000	
•		•	o		•		o		o		•	
20000		20000		20000		15000	15000			15000		
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
•	•			•		•		•		•		
-			-		-		-		-			
•	•				•			•		•		
3	3 3			3		3		3		3		
-		-		-		-		-		-		

ComPacT INS switch	n-disconnectors
Installation	
Fixed, front connection	
Fixed, rear connection	
On symmetrical rails	
On a backplate	
Connection	
By cables	To bare cable connectors
By cables with lugs	Directly to terminals
•	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters
Indication and Measurem	ent Auxiliaries
Auxiliary contacts	
Control Locking and Intel	
Control, Locking and Inter	Direct front rotary handle
CONTROL	Extended front rotary handle
	·
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock By padlocks
	••
Interlocking	By keylock Mechanical
Complete source-changeover assemb	
Operating torque (Nm) (typical value for	-
Installation and Connection	
Bare cable connectors	
Rear connectors	
Terminal extensions	
Spreaders One-piece spreader	
One-piece spreader Terminal shrouds	
Terminal shields	
Interphase-barrier	
Front panel escutcheons	
Coupling accessories	
Tightening torque for electrical connec Dimensions and Weights	tions (Nm)
Overall dimensions H x W x D (mm)	3 poles
Overall difficultions of the control	4 poles
Approximate weight (kg)	3 poles
	4 poles
Enclosure Dimensions	
A H	H x W x D (mm)



	INS40	INS63	INS80	INS100	INS125	INS160
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	-	-	-	•	•	•
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	O	•	•	•	•	•
	•	•	•	•	•	•
	-	-	-	•	•	•
	-	-	-	-	-	-
	-	-	-	-	-	-
(•	•	•	•	•	•
	-	-	-	-	-	-
	-	-	-	-	-	-
	•	•	•	•	•	•
	-	-	-	-	-	-
	•	•	•	•	•	•
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	•	•	•	•	•	•
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	-	-	-	-	-	-
,	•	•	•	•	•	•
	-			-	-	
(•	•	•	•	•	•
	- 0.7 + N=- +4.0	- 0.7 + No. + 4.0	- 0.7 a Nov. a 4.0	4.4.4 Nov. 4.0	4.4.4 Nov. 4.0	4.4.4 Nov. 40
	0.7 < Nm < 1.3	0.7 < Nm < 1.3	0.7 < Nm < 1.3	1.4 < Nm < 2	1.4 < Nm < 2	1.4 < Nm < 2
,	•	•	•	•	•	•
	-	-	-	-	-	-
	-	-	-		-	-
	-	-	-	-	-	-
1	•	•	•	•	•	•
	OO	•	•	•	•	•
	•	•	•	•	•	•
	-	-	-	-	-	-
	- 5	5	5	8	8	8
;	<u> </u>		19		<u> </u>	
T.	85 x 90 x 62.5	85 x 90 x 62.5	85 x 90 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5
	85 x 90 x 62.5	85 x 90 x 62.5	85 x 90 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5	100 x 135 x 62.5
	0.5	0.5	0.5	0.8	0.8	0.8
	0.6	0.6	0.6	0.9	0.9	0.9
1	190 x 115 x 55	190 x 115 x 55	190 x 115 x 55	260 x 160 x 55	260 x 160 x 55	260 x 160 x 55



ComPacT INS250 switch-disconnector



ComPacT INS250 emergency-off switch-disconnector



ComPacT INS630 switch-disconnector



ComPacT INS630 emergency-off switch-disconnector

ComPacT INS switch-dis	conn	ectors
Number of poles		
Electrical Characteristics As De	efined	by IEC 60947-1/60947-3
and EN 60947-1/60947-3		
Conventional thermal current (A)	lth	at 60 °C
Conventional thermal current in enclosure	Ithe	at 60 °C
Rated insulation level (V)	Ui	AC 50/60 Hz
Impulse-withstand voltage (kV)	Uimp	
Rated operational voltage (V)	Ue	AC 50/60 Hz
		DC
Rated operational voltage AC20 and DC20 (V)	-	AC 50/60 Hz
Rated operational current (A)	le	Electrical DC
		125 V (2P in series)
		250 V (4P in series)
Rated duties		Uninterrupted duty
		Intermittent duty
Short-circuit making capacity (kA peak)	lcm	Min. (switch-disconnector alone)
Short-time withstand current (A rms)	lcw	1 s
		3 s
		20 s
		30 s
Suitability for isolation		
Durability (O-C cycles)		Mechanical
		Electrical DC
		250 V
Positive contact indication		
Visible break		
Emergency-off switch disconnector		
Degree of pollution		
Upstream Protection		

See the "Complementary technical information" in catalog ComPacT INS/INV "LVPED213024EN".

[1] 550 A (DC).

INS250- INS25		250-	INS250- INS250 200		INS	320	INS4	00	INS500 IN		INS	INS630				
3-4		3-4		3-4		3-4		3-4		3-4		3-4		3-4		
•										,						
100		160		200		250		320		400		500		630		
100		160		200		250		320		400		500		630 [1]		
800		800		800		800		800		800		800		800		
8		8		8		8		8		8		8		8		
690		690		690		690		690		690		690		690		
250		250		250		250		250		250		250		250		
750		750		750		750		750		750		750		750		
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC23
100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	550	630
100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	550	630
O		•		•		●			●		•					
Class 12	20 - 60 %	Class 12	20 - 60 %	Class 12	0 - 60 %	Class 120 - 60 % Class 120 -		20 - 60 %	Class 120 - 60 % Class		Class 120 - 60 % Class 120 - 60 %					
30		30		30		30		50		50 50		50				
8500		8500		8500		8500		20000		20000 20000			20000			
4900		4900		4900		4900		11500		11500		11500		11500		
2200		2200		2200		2200		4900		4900		4900		4900		
1800		1800		1800		1800		4000		4000		4000		4000		
•		•		•		•		•		•				•		
15000		15000		15000		15000		10000		10000		10000		10000		
DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC22A	DC23A	DC23A	DC23B	DC23A	DC23B	DC23A	DC23B	DC23A	DC23B	
1500	1500	1500	1500	1500	1500	1500	1500	1000	-	1000	-	1000	-	1000	200	
•		•		•		•		•		•		•		•		
		-		-		-		-		-		-		-		
•			0		0				0		0					
3		3		3 3		_		3		3		3		3		
 -		-		-		-		-		-		-		-		

ComPacT INS switch	n-disconnectors
Installation	
Fixed, front connection	
Fixed, rear connection	
On symmetrical rails	
On a backplate	
Connection	
By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters
Indication and measurement auxiliaries	
Auxiliary contacts	
Current-transformer module	
Control, locking and interlocking	
Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
	Mechanical
Complete source-changeover assemble	ly
Operating torque (Nm) (typical value fo	r 3-4 poles with front handle)
Installation and Connection	on Accessories
Bare cable connectors	
Rear connectors	
Terminal extensions	
Spreaders	
One-piece spreader	
Terminal shrouds	
Terminal shields	
Interphase-barrier	
Front panel escutcheons	
Coupling accessories	
Tightening torque for electrical connect	ions (Nm)
Dimensions and Weights	
Overall dimensions H x W x D (mm)	3 poles
A	4 poles
Approximate weight (kg)	3 poles 4 poles
Enclosure Dimensions	4 poies
H H	H x W x D (mm)



INS250- 100	INS250- 160	INS250- 200	INS250	INS320	INS400	INS500	INS630
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	O	•	O	•	•	0
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	0
-	-	-	-	•	•	•	0
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	0
•	•	•	•	•	•	•	•
0	•	•	•	OIO	•	•	0
0	•	•	•	-	-	1-	-
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0	0	O	(a)				
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•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 1
•	•	•	•	•	•	•	0
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	-	-	-	-
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
15	15	15	15	50	50	50	50
136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 13
136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 13
2	2	2	2	4.6	4.6	4.6	4.6
2.2	2.2	2.2	2.2	4.9	4.9	4.9	4.9
400 x 300 x 200	400 x 300 x 200	400 x 300 x 200	400 x 300 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 20
1	1		1	1		1	1

Switch-Disconnector Selection ComPacT INS630b to 2500 DC



ComPacT INS1600 switch-disconnector



ComPacT INS1600 emergency-off switch-disconnector



ComPacT INS2500 switch-disconnector

ComPacT INS switch-disconnectors

Number of poles

Electrical Characteristics As Defined by IEC 60947-1/60947-3 and EN 60947-1/60947-3

	and EN 000+1 1/000+1 0								
ĺ	Conventional thermal current (A)	lth	at 60 °C						
	Conventional thermal current in enclosure	Ithe	at 60 °C						
	Rated insulation level (V)	Ui	AC 50/60 Hz						
	Impulse-withstand voltage (kV)	Uimp							
	Rated operational voltage (V)	Ue	AC 50/60 Hz						
			DC						
	Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz						
	Rated operational current (A)	le	Electrical DC						
				125 V (2P in series)					
				250 V (4P in series)					
	Rated duties		Uninterrupted du	ıty					
			Intermittent duty						
	Short-circuit making capacity (kA peak)	Icm	Min. (switch-disc	connector alone)					
	Short-time withstand current (kA rms)	lcw	0.5 s						
			0.8 s						
			<u>1 s</u>						
			3 s						
			20 s						
	0.71.177.6.1.17		30 s						
	Suitability for isolation								
	Durability (O-C cycles)		Mechanical						
			Electrical DC						
				125 V (2P)					
				125 V (2P) 250 V (4P)					

Positive contact indication

Visible break

Emergency-off switch disconnector

Degree of pollution

Upstream Protection

See the "Complementary technical information" catalog ComPacT INS/INV "LVPED213024EN".

[1] For vertical connection busbars only. For horizontal connection busbars, see derating charts in "Installation recommendations" in catalog ComPacT INS/INV "LVPED213024EN".

Switch-Disconnector Selection ComPacT INS630b to 2500 DC

INS	630	b	INS	800		INS	100	0	INS	125	0	INS	1600	0	INS	200	0	INS	250	0
3-4			3-4			3-4			3-4			3-4			3-4			3-4		
630			800			1000			1250			1600[1]			2000			2500		
630			800 1			1000			1250			1600 [1]		2000			2500		
1000			1000			1000			1000			1000			1000			1000		
12			12			12			12			12			12			12		
690			690			690			690			690			690			690		
250	250 250			250			250			250			250			250				
800	800 800				800			800			800			800			800			
								DC23A												
								1000/2										2500/2		
630/4	630/4	630/4	800/4	800/4	800/4	1000/4	1000/4	1000/4	1250/4	1250/4	1250/4	1600/4	1600/4	1600/4	2000/4	2000/4	-	2500/4	2500/4	-
•			•			•			•			•			•			•		
Class	Class 120 - 60 % Class 120 - 60 %				%	Class	120 - 60) %	Class 120 - 60 %			Class 120 - 60 %			Class 120 - 60 %			Class 1	120 - 60	%
75			75			75			75				75					105		
50			50			50 50						50			50			50		
42			42			42			42			42			50			50		
35			35			35			35		_	35			50		-	50		
20			20			20			20			20			30			30		
10			10			10			10			10			13			13		
8			8			8			8			8			11			11		
•			•			•			•			•			•			•		
5000			3000			3000			3000			3000			3000			3000		
								DC23A									DC23B			DC23B
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500		100	-	100	100	-
•			•			•			•			•			•			•		
-			-			-			-			-			-			-		
•			•			•			•			•			-			-		
3					3			3		3		3			3					
			-			-			-			-			-			_		

Switch-Disconnector Selection ComPacT INS630b to 2500 DC

ComPacT INS switch	n-disconnectors
Installation	
Fixed, front connection	
Fixed, rear connection	
On symmetrical rails	
On a backplate	
Connection	T
By cables By cables with lugs	To bare cable connectors Directly to terminals
_,g	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters
Indication and Measurem	ent Auxiliaries
Auxiliary contacts	one r damidinos
Current-transformer module	
Control, Locking and Inte	rlocking
Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
Locking	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
Complete source-changeover assemb	Mechanical
Operating torque (Nm) (typical value for	
Installation and Connection	
Bare cable connectors	
Rear connectors Terminal extensions	
Spreaders	
One-piece spreader	
Terminal shrouds	
Terminal shields	
Interphase-barrier	
Front panel escutcheons	
Coupling accessories	
Tightening torque for electrical connections (Nm)	
Dimensions and Weights	
Overall dimensions H x W x D (mm)	3 poles 4 poles
Approximate weight (kg)	3 poles
	4 poles
Enclosure Dimensions	H. W. D (mm)
D W	H x W x D (mm)

Switch-Disconnector Selection ComPacT INS630b to 2500 DC

INS630b	INS800	INS1000	INS1250	INS1600	INS2000	INS2500
•	•	•	•	•	•	•
•	•				•	
		•	•	•		
-	-	-	-	-	-	-
•	•	•	•	•	•	•
	1	1	1	1		
-	-	-	-	-	-	-
-	-	-	-	-	•	•
	-	-	-	-	-	-
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•	•	•	•	•	•	•
•	•	•	•	•	-	-
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•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•	•	•	•	•	•
-	-	-	-	-	-	-
30	30	30	30	30	60	60
30	30	30	30	30	00	00
-	-	-	-	-	-	1-
-	-	-	-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	•
-	-	-	-	-	-	-
-	-	-	-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•		•	•	•	
50	50	50	50	50	50	50
300 x 340 x 146.5	440 x 347.5 x 227.5	440 x 347.5 x 227.				
300 x 410 x 146.5	440 x 462.5 x 227.5	440 x 462.5 x 227				
14	14	14	14	14	35	35
18	18	18	18	18	45	45
1		1	1		1	1
-	-	-	-	-	1	-
		-				



ComPacT INV250 switch-disconnector



ComPacT INV250 emergency-off switch-disconnector



ComPacT INV630 switch-disconnector



ComPacT INV630 emergency-off switch-disconnector

ComPacT INV switch-dis	sconn	ectors					
Number of poles							
Electrical Characteristics As D	efined k	oy IEC 6094	7-1/60947-3				
and EN 60947-1/60947-3							
Conventional thermal current (A)	lth	at 60 °C					
Conventional thermal current in enclosure	Ithe	at 60 °C					
Rated insulation level (V)	Ui	AC 50/60 Hz					
Impulse-withstand voltage (kV)	Uimp						
Rated operational voltage (V)	Ue	AC 50/60 Hz					
		DC					
Rated operational voltage AC20 and DC20 (V)	AC 50/60 Hz					
Rated operational current (A)	le	Electrical DC					
			125 V (2P in series)				
			250 V (4P in series)				
Rated duties		Uninterrupted d	luty				
		Intermittent duty	у				
Short-circuit making capacity (kA peak)	lcm	Min. (switch-dis	connector alone)				
Short-time withstand current (Arms)	lcw	1 s					
		3 s					
		20 s					
		30 s					
Suitability for isolation							
Durability (O-C cycles)		Mechanical					
		Electrical DC					
			250 V				
Positive contact indication							
Visible break							
Emergency-off switch disconnector							
Degree of pollution							
Upstream Protection							
See the "Complementary technical information "LVPED213024EN".	า" in cataloo	g ComPacT INS/I	NV				

[1] 550 A (DC).

INV	/100)	INV	/16	0	IN۱	/20	0	IN۱	/250)	IN۱	/ 32	0	IN۱	/40	0	IN۱	/50	0	INV630		
3-4			3-4			3-4			3-4			3-4			3-4			3-4			3-4		
100			160			200			250			320			400			500			630		
100			160			200			250			320			400			500			630 [1]		
800			800			800			800			800			800			800			800		
8			8			8			8			8			8			8			8		
690			690			690			690			690			690			690			690		
250			250	250					250			250			250			250			250		
750			750			750			750			750			750			750			750		
DC21A	DC22A	DC23B	DC21A	DC22A	A DC23B	DC21A	DC22A	DC23B	DC21A	DC22A	DC23B	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22/	DC23A/ DC23B
100	100	100	160	160	160	200	200	200	250	250	250	320	320	320	400	400	400	500	500	500	550	550	550/63
100	100	100	160	160	160	200	200	200	250	250	250	320	320	320	400	400	400	500	500	500	550	550	550/630
•							•					•			•							•	
Class	Class 120 - 60 %			120 -	60 %	Class	120 - 6	60 %	Class 120 - 60 %		Class	120 - 6	60 %	Class 120 - 60 %			Class	120 -	60 %	Class	120 -	60 %	
30			30			30			30			50			50			50			50		
8500			8500			8500 8500					20000)		20000			20000			20000)		
4900			4900			4900 4900			4900 115			11500			11500			11500			11500		
2200			2200			2200 22			2200		4900		4900			4900			4900				
1800			1800			1800			1800		4000			4000			4000			4000			
O			•						•		•			•			•			\odot			
15000			15000			15000			15000			10000)		10000			10000)		10000)	
DC22A	DC	23A	DC22A	DO	C23A	DC22A	DC	23A	DC22A	DC	23A	DC21A	DC22A	DC23A	DC21A	DC22A	DC23A	DC21A	DC22/	DC23A	DC21A	DC22/	DC23A/
4500			4500			4500			4500			4000	4000	1000	4000	1000	4000	4000	4000	4000	4000	4000	DC23B
1500	15	00	1500	15	500	1500	15	500	1500	150	00		1000	1000		1000	1000	_	1000	1000	_	1000	1000/20
0			•			•			•			•			•			•			•		
•			•			•			•			•			•			•			•		
•	•				•			•			•			•			•			•			
3			3			3			3			3			3			3			3		
-			-			-			-		-		-			-			-				
			L																				

ComPacT INV switch	n-disconnectors
Installation	1-disconnectors
Fixed, front connection	
Fixed, rear connection	
,	
On symmetrical rails On a backplate	
Connection By cables	To bare cable connectors
•	
By cables with lugs	Directly to terminals
	To spreaders
Flat-facing bars	To vertical-connection adapters via cable-lug adapters Directly to terminals
Tracing bars	
E	To spreaders
Edgewise bars	To vertical-connection adapters
Indication and Measurem	ent Auxiliaries
Auxiliary contacts	
Current-transformer module	
Control, Locking and Inter	
Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Locking	By keylock
	By padlocks
Interlocking	By keylock
	Mechanical
Complete source-changeover assemb	ly
Operating torque (Nm) (typical value for	
Installation and Connection	on Accessories
Bare cable connectors	
Rear connectors	
Terminal extensions	
Spreaders	
One-piece spreader	
Terminal shrouds	
Terminal shields	
Interphase-barrier	
Front panel escutcheons	
Coupling accessories	
Tightening torque for electrical connect	tions (Nm)
Dimensions and Weights	
Overall dimensions H x W x D (mm)	3 poles
	4 poles
Approximate weight (kg)	3 poles 4 poles
Enclosure Dimensions	- polico
	H x W x D (mm)
A H	

INV100	INV160	INV200	INV250	INV320	INV400	INV500	INV630
O	0	0	0	0	•	0	O
•	•	•	•	•	•	•	•
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	•
		1				1	
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	O	•	•	•
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	•
•	•	•	•	•	O	•	•
-	-	-	-	•	•	•	•
•	•	•	•	•	•	•	•
•	0	0	0	0	•	0	•
(a)	0	0	0	<u> </u>	0	0	O
(a)	O	O	O	•	•	•	•
•	•	•	•	-	-	-	-
•	•	•	•	-	-	-	-
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
-	-	-	-	-	-	-	-
5 < Nm < 6.2	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16			
	I a						
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	O
-	-	-	-	-	-	-	-
•	•	•	•	•	•	•	O
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	0
•	0	0	0	0	•	0	•
15	15	15	15	50	50	50	50
,,,	1.0	. •		1-0		1	150
136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130			
136 x 140 x 96	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130	205 x 185 x 130			
2	2	2	2	4.6	4.6	4.6	4.6
2.2	2.2	2.2	2.2	4.9	4.9	4.9	4.9
400 x 300 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200	600 x 400 x 200			
		1					
1	1	1	1	1	1	1	1

125 V (2P) 250 V (4P)

Switch-Disconnector Selection ComPacT INV630b to 2500 DC



ComPacT INV1600 switch-disconnector



ComPacT INV1600 emergency-off switch-disconnector



ComPacT INV2500 switch-disconnector

ComPacT INV switch-disconnectors

Number of poles

Electrical Characteristics As Defined by IEC 60947-1/60947-3 and EN 60947-1/60947-3

Conventional thermal current (A)	lth	at 60 °C					
Conventional thermal current in enclosure	Ithe	at 60 °C					
Rated insulation level (V)	Ui	AC 50/60 Hz					
Impulse-withstand voltage (kV)	Uimp						
Rated operational voltage (V)	Ue	AC 50/60 Hz					
		DC					
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz					
Rated operational current (A)	le	Electrical DC					
			125 V (2P in series)				
			250 V (4P in series)				
Rated duties		Uninterrupted d	uty				
		Intermittent duty	/				
Short-circuit making capacity (kA peak)	lcm	Min. (switch-dis	connector alone)				
Short-time withstand current (kA rms)	lcw	0.5 s					
		0.8 s					
		<u>1 s</u>					
		3 s					
		20 s					
Suitability for ignitation		30 s					
Suitability for isolation							
Durability (O-C cycles)		Mechanical					
		Electrical DC					

Positive contact indication

Visible break

Emergency-off switch disconnector

Degree of pollution

Upstream Protection

See the "Complementary technical information" in catalog ComPacT INS/INV "LVPED213024EN".

[1] For vertical connection busbars only. For horizontal connection busbars, see derating charts in "Installation recommendations" in catalog ComPacT INS/INV "LVPED213024EN".

Switch-Disconnector Selection ComPacT INV630b to 2500 DC

INV630b			INV	300		INV1	000		INV1	1250		INV1	600		INV2	2000		INV2	2500	
3-4			3-4			3-4			3-4			3-4			3-4			3-4		
630			800			1000			1250			1600 [1]			2000			2500		
630			800 10			1000			1250			1600 [1	1		2000			2500		
1000			1000			1000			1000			1000			1000			1000		
12			12			12			12			12			12			12		
690			690			690			690			690			690			690		
250			250			250			250			250			250			250		
800 800 B00 BC21A DC22A DC23A DC21A DC22A DC23A			800			800			800			800			800					
	630/2							1000/2											2500/2	
630/4	630/4	630/4	800/4	800/4	800/4	1000/4	1000/4	1000/4	1250/4	1250/4	1250/4	1600/4	1600/4	1600/4	2000/4	2000/4	-	2500/4	2500/4	-
•				•			•			•			•			•				
Class				Class	120 - 60) %	Class	120 - 60) %	Class	120 - 60	%	Class '	Class 120 - 60 %			120 - 60) %		
75				75			75			75			105	5			105			
50				50			50			50			50			50				
42			42			42 42								50			50			
35			35			35			35			35			50			50		
20			20			20			20			20			30			30		
10			10			10			10			10			13			13		
8			8			8			8			8			11			11		
•			•			•			•			•			•			•		
5000			3000			3000			3000			3000			3000			3000		_
											DC23A						DC23B	DC21B	DC22B	DC23E
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
1000	1000	1000	500	500	500	500	500	500	500	500	500	500	500	500	100	100	-	100	100	-
•			•			•			•			•			•			•		
0							•			•						•				
0	•			•			•			•			-			-				
3			3			3			3			3			3			3		
				-		-		-		-		-								

Switch-Disconnector Selection ComPacT INV630b to 2500 DC

Compost INIV quital	a disaannaatana							
ComPacT INV switch	1-disconnectors							
Installation Fixed, front connection								
•								
Fixed, rear connection								
On symmetrical rails On a backplate								
·								
Connection	To bare cable connectors							
By cables By cables with lugs	Directly to terminals							
by capice with lage	To spreaders							
	To vertical-connection adapters via cable-lug adapters							
Flat-facing bars	Directly to terminals							
. lat lating zaro	To spreaders							
Educacion have	·							
Edgewise bars	To vertical-connection adapters							
Indication and Measurem	ent Auxiliaries							
Auxiliary contacts								
Current-transformer module								
Control, Locking and Inter	<u> </u>							
Control	Direct front rotary handle							
	Extended front rotary handle							
	Direct lateral rotary handle							
Locking	Extended lateral rotary handle							
Locking	By keylock							
	By padlocks							
Interlocking	By keylock							
Complete source changeover accomb	Mechanical							
Complete source-changeover assemb Operating torque (Nm) (typical value for	-							
Installation and Connection								
Bare cable connectors								
Rear connectors								
Terminal extensions								
Spreaders								
One-piece spreader								
Terminal shrouds								
Terminal shields								
Interphase-barrier								
Front panel escutcheons								
Coupling accessories								
Tightening torque for electrical connec	tions (Nm)							
Dimensions and Weights								
Overall dimensions H x W x D (mm)	3 poles 4 poles							
Approximate weight (kg)	3 poles							
3 (3)	4 poles							
Enclosure Dimensions								
A H	H x W x D (mm)							

Switch-Disconnector Selection ComPacT INV630b to 2500 DC

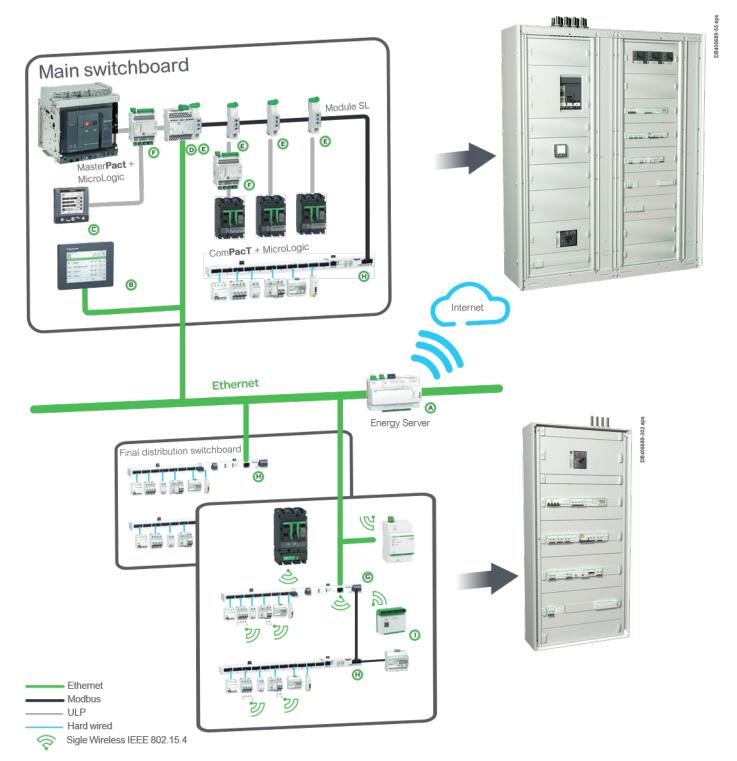
INV630b	INV800	INV1000	INV1250	INV1600	INV2000	INV2500
•	•	0	•	•	•	•
•	•	•	•	•	•	•
-	-	-	-	-	-	-
•	•	•	•	•	•	•
1		1	1	1	1	1
-	-	-	-	-	-	-
-	-	-	-	-	•	•
-	-	-	-	-	-	-
•	•	•	•	•		-
•	•	•	•	•	•	•
•	•	•	•	•	-	-
•	•	•	•	•	-	-
 •	•	•	•	•	•	•
-	-	-	-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	0
-	-	-	-	-	-	1-
-			-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	0
•	•	•	•	•	•	•
-	-	-	-	-	-	-
30	30	30	30	30	60	60
	100	100	100	100	100	100
-	-	-	-	-	-	-
-	-	-	-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	•
-	-	-	-	-	-	-
-	-	-	-	-	-	-
•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•	•	•	•	•	0
-	-	-	-	-	-	-
50	50	50	50	50	50	50
300 x 340 x 146.5	440 x 347.5 x 227.5	440 x 347.5 x 227.				
300 x 410 x 146.5	440 x 462.5 x 227.5	440 x 462.5 x 227.				
14	14	14	14	14	35	35
18	18	18	18	18	45	45
-	-	-	-	-	-	-
1	1	1	1	1		1
						1

Enerlin'X Digital System - Overview

Enerlin'X communication system provides access to status, electrical values and devices control using Ethernet and Modbus SL communication protocols.

Ethernet has become the universal link between switchboards, computers and communication devices inside the building. The large amount of information which can be transferred makes the connection of Enerlin'X digital system to hosted web services of Schneider Electric a reality. More advantages are offered to integrators thanks to configuration web pages available remotely or on the local Ethernet network.

Modbus SL is the most widely used communication protocol in industrial networks. It operates in master-slave mode. The devices (slaves) communicate one after the other with a gateway (master).



Communication Enerlin'X Digital System - Overview

Ene	rlin'X digital devices and c	lisplay <u>s</u>						
		Name	Function	Port		Inputs	Outputs	Cial. Ref.
				(to device)	(to server)			
	The state of the s	Com'X 210	Energy data logger + Ethernet Gateway	Ethernet Modbus Smartlink SI B, Zigbee	Ethernet cable + WiFi	64 devices: 6 binary 2 analog 32 Modbus	-	EBX210
	hammel Transition	Com'X 510 24 V DC + PoE	Energy server + Ethernet Gateway	(to wireless meters)		devices + other Ethernet devices (Modbus TCP)	-	EBX510
B		FDM128	Ethernet LCD color touch screen	-	Ethernet		-	LV434128
©	0.000	FDM121	LCD display for circuit breaker	ULP	-	1 circuit breaker	-	TRV00121
	7000000	IFE Switchboard server	Switchboard server	Modbus Smartlink SI B & ULP	Ethernet	20 circuit breakers	-	LV434002
U		IFE interface	Ethernet interface for circuit breakers	ULP	Ethernet	1 circuit breaker	-	LV434001
E		IFM	Modbus interface for circuit breaker	ULP	Modbus Smartlink SI B	1 circuit breaker	-	LV434000
F		I/O	Input/Output application module for circuit breaker	ULP	ULP	6 binary 1 analog (PT100 sensor)	3	LV434063
G	and the sale and t	Smartlink SI B Ethernet wireless	Ethernet server for I/O and Modbus Smartlink SI B devices	Modbus Smartlink SI B & Wireless to PowerTag	Ethernet	14 binary 2 analog	7	A9XMZA08
H	28.	Smartlink Modbus Smartlink SI B	Modbus interface with Input/Output functions	-	Modbus Smartlink SI B	22 binary	11	A9XMSB11
①	100 M	HeatTag	Detection of overheating cables	-	-	-	-	SMT10020

> EcoStruxure Power Connected Products Catalog



LVCATENLX_EN

Ethernet Gateway or Interface: routes an internal traffic (ULP or other protocole) to the Internet, the outgoing messages are coded with Modbus TCPIP protocol.

Server (Switchboard, Energy): routes the internal traffic to the Internet. Other complementary functions such as data logging and storage. Provides devices status and energy trends on internal web pages...

PowerLogicTM HeatTag: HeatTag is a smart sensor for early detection of overheating wire connections or overheating cables. HeatTag helps prevent electrical switchboards from being damaged, by analyzing gas and particles in the air and sending alerts before any smoke or insulator browning.

Note: For more information, see Configuration & commissioning guide of connected devices & software - New buildings

Communication IFE Ethernet Interface

IFE interface, ref.: LV434001



IFE interface + gateway, ref.: LV434002

IFE Interface, IFE Interface + Gateway Description

The IFE interface and the IFE switchboard server enable LV circuit breakers to be connected to an Ethernet network. The IFE switchboard server incorporates a Modbus gateway. The IFE interface and IFE switchboard server are both equipped with two ULP ports and two Ethernet ports. The IFE switchboard server is equipped with a Modbus RS 485 serial connection. The following circuit breakers can be connected to IFE interface and to IFE switchboard server: Fixed type MasterPact NT/NW, ComPacT NSX or PowerPacT.

IFE Interface: Ref. LV434001

Provides an Ethernet access to a single LV circuit breaker. The circuit breaker is connected to the IFE interface via its ULP port and a prefabricated ULP cord.

IFE Switchboard Server, Ref.: LV434002

Provides an Ethernet access to one or several LV circuit breakers. It allows to interface to Ethernet:

- One single circuit breaker connected to the IFE interface via its ULP port and a prefabricated ULP cord,
- Up to 12 ComPacT NSX connected through the Modbus serial line interface.

Each ComPacT NSX is connected to Modbus by means of a dedicated IFM interface module performing the UI P/Modbus conversion

The connection between each ComPacT NSX and its associated IFM interface is realized by a prefabricated ULP cord connected to ULP ports.

IFE Interface, IFE Switchboard Server

Provides an Ethernet access to one or several LV circuit breakers.

Functions

- Interface one circuit breaker is connected to the IFE interface via its ULP port.
- Gateway: several circuit breakers on a Modbus network are connected via the IFE interface + gateway master Modbus port.

IFE Interface, IFE Interface + Gateway Features

- Dual 10/100 Mbps Ethernet port for simple daisy chain connection
- Device profile web service for discovery of the IFE interface, IFE interface + gateway on the LAN
- ULP compliant for localization of the IFE interface in the switchboard
 Ethernet interface for ComPacT, MasterPact and PowerPacT circuit breakers
- Gateway for Modbus-SL connected devices (IFE interface + gateway only)
- Embedded set-up web pages
- Embedded monitoring web pages
- Embedded control web pages
- Built-in e-mail alarm notification
- RBAC (Role Base Access Control) for the embedded control web pages
- RSTP (Rapid Scanning Tree Protocol) is a solution to implement redundant Ethernet networks
- Internal real-time clock with battery back-up
- RBAC (Role Base Access Control) for the embedded control web pages
- RSTP (Rapid Scanning Tree Protocol) is a solution to implement redundant
- Ethernet networks

The IFE interface and the IFE switchboard server are DIN rail mounting devices. A stacking accessory enables the user to connect several IFMs (ULP to Modbus serial line interfaces) to an IFE switchboard server without

24 V DC Power Supply

The IFE interface and the IFE switchboard server must be supplied either with a 24 V DC AD or with a 24 V DC ABL8 RPS power supply. The IFMs stacked to an IFE switchboard server are supplied by the IFE, thus it is not necessary to supply them separately.

Note: The connection of the +/- of the power supply on +/- terminals of the IFE device must be strictly respected. Crossing the polarities may damage the device.

IFE Interface, IFE Switchboard Server Firmware Update The firmware can be updated using the EcoStruxure Power Commission software.

Required Circuit Breaker Communication Modules

must be closed with an ULP terminator (TRV00880).

The connection to IFE interface or to IFE switchboard server requires ULP communication ports.

 MasterPact NT/NW (Fixed or drawout): BCM ULP communication module. ■ Drawout MasterPact NT/NW: BCM ULP and its respective I/O (Input/Output) application module.

All connection configurations for MasterPact NT/NW require the breaker ULP cord. The insulated NSX cord is mandatory for system voltages greater than 480 V AC. When the second ULP RJ45 connector is not used, it

Characteristic		Value				
Type of interface module		Modbus RTU, RS485 serial connection				
		Modbus TCP/IP Ethernet				
Transmission	Modbus RS485	Transfer rate: 9,60019,200 Baud				
		Medium Double shielded twisted pair				
		Impedance 120 Ω				
	Ethernet	Transfer rate: 10/100 Mbps				
		Medium STP, Cat5e, straight cable				
Structure	Туре	Modbus, Ethernet				
	Method	Master/Slave				
Device type	Modbus	Master				
	Ethernet	Server				
Turnaround time	Modbus	10 ms				
	Ethernet	1 ms				
Maximum length of cable	Modbus	1000 m				
	Ethernet	100 m				
Type of bus connector	Modbus	4-pin connector				
	Ethernet	RJ45 (Shielded)				

DB419230.eps

Communication IFE Ethernet Interface

Consul abou				
General char				
Environmenta	I characteristics			
Conforming to sta	andards	IEC 60950, IEC 60947-6-2, UL 508, UL 60950, IACS E10		
Certification		c UL us, CE, EAC, FCC marking		
Ambient	storage	-40 to +85 °C		
temperature	operation	-25 to +70 °C		
Relative humidity	1	5 - 85 %		
Level of pollution		Level 3		
Protective treatm	ent	ULV0 conforming to IEC/EN 60068-2-30		
Mechanical ch	aracteristics			
Shock resistance		Conforming to IEC/EN 60068-2-27 15 g/11 ms, 1/2 sinusoidal		
Resistance to sinusoidal vibrations		Conforming to IEC/EN 60068-2-6 5 Hz < f < 8.4 Hz		
Electrical chai	racteristics			
Consumption		150 mA at 24 V DC		
Resistance to electrostatic discharge		IEC/EN 61000-4-2: ■ 8 kV air discharge ■ 6 kV contact discharge		
Immunity to radia	ited fields	IEC/EN 61000-4-3: 10 V/m		
Immunity to fast t	ransient perturbations	IEC/EN 61000-4-4: 2 kV		
Immunity to surge	es	IEC/EN 61000-4-5: 2 kV common mode		
Immunity to cond frequency field	ucted radio	IEC/EN 61000-4-6: 10 V		
Physical chara	acteristics			
Dimensions		72 x 105 x 71 mm		
Mounting		DIN rail		
Weight		182.5 g (0.41 lb)		
Degree of protection of the installed I/O		 On the front panel (wall mounted enclosure): IP4x Connectors: IP2x Other parts: IP3x 		
Connections		Screw type terminal blocks		

IFE Web Page Description

Monitoring web page:

- Real time data
- Device logging.

Control web page:

Single device control.

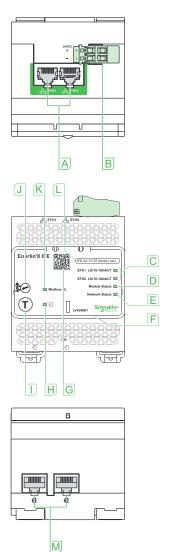
Diagnostics web page:

- Statistics
- Device information
- IMU information
- Read device registers
- Communication check.

Maintenance web page:

- Circuit breaker health status
- Maintenance log
- Maintenance counters.

- Setup web page:
- Device localization/name
- Ethernet configuration (dual port)
- IP configuration
- Modbus TCP/IP filtering
- Date and time
- E-mail server configuration
- Alarms to be e-mailed
- Device logging
- Device log export
- SNMP parameters
- Preferences
- Advanced services control
- User accounts
- Web page access.



- A Ethernet 1 and Ethernet 2 communication port
- **B** 24 V DC power supply terminal block
- © Ethernet communication LEDs: yellow: 10 Mb

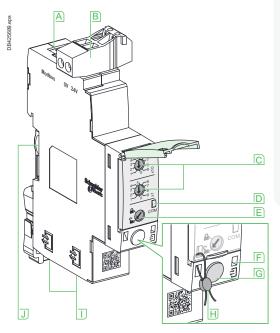
green: 100 Mb Module status LE

- D Module status LED: steady off: no power steady green: device operational steady red: major fault flashing green: standby flashing red: minor fault flashing green/red: self-test
- E Network status LED: steady off: no power/no valid IP address steady green: connected, valid IP address steady orange: default IP address steady red: duplicated IP address flashing green/red: self-test
- F Sealable transparent cover
- G QR code to product information
- H ULP status LED
- Test button (accessible with cover closed)
- J Locking pad
- Modbus traffic status LED (LV434002 only)
- Device name label
- M ULP ports

IFM Modbus Communication Interface



IFM Modbus communication interface Ref.: LV434000



- A Modbus screw clamp connector
- B Modbus address switches
- Modbus traffic LED
- D Modbus locking pad
- **E** ULP activity LED

Function

IFM - Modbus communication interface - is required for connecting MasterPact MTZ, NT/ NW or ComPacT NS and NSX to Modbus network whenever the circuit breaker has an ULP port (Universal Logic Plug). The port is available on BCM ULP for MasterPact range and BSCM module for ComPacT range.

Note: IFM is defined as an IMU (Intelligent Modular Unit) within the ULP connection System documentation.

Once connected to IFM, the circuit breaker is considered as a slave by the Modbus master. Its electrical values, alarm status, open/close signals car be monitored or controlled by a Programmable Logic Controller or any other system.

Characteristics

ULP port

2 RJ45 sockets, internal parallel wiring.

- Connection of a single circuit breaker.
- An ULP line terminator must be connected to the second RJ45 ULP socket.

The RJ45 sockets deliver a 24 V DC supply fed from the Modbus socket. Built-in test function, for checking the correct connection to the circuit breaker.

Modbus slave port

- Modbus Serial RJ45 port RJ45 connector provides fast and reliable wiring.
- Lateral socket, for DIN rail stackable connector.
- Both top and lateral sockets are internally parallel wired.
- Multiple IFM can be stacked, thus sharing a common power supply and Modbus line without individual wiring.
- On the front face:
- □ Modbus address setting (1 to 99): 2 coded rotary switches
- □ Modbus locking pad: enables or disable the circuit breaker remote control and modification of IFM parameters.
- Self adjusting communication format (Baud rate, parity).

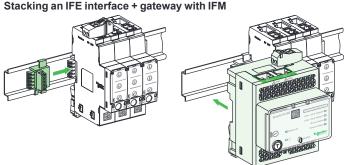
24 V DC power supply

- Screw clamp terminal block
- High electrical insulation between Modbus and 24 V DC connectors
- Separated lines provides improved communication robustness.

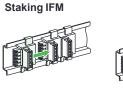
Technical Characteristics

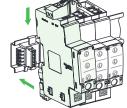
General characteristics Environmental Characteristics Conforming to standards IEC 61010, IEC 60950, UL 61010, UL 60950, CISPRR 22, 24, 11, IACS E10 Certification c UL us, CE, EAC, FCC marking -20 to +70 °C Ambient temperature Relative humidity 5 - 85 % Level of pollution Level 3 Protective treatement ULV0 conforming to IEC/EN 60068-2-30 **Mechanical characteristics** Shock resistance Conforming to IEC/EN 60068-2-27 15 g/11 ms, 1/2 sinusoidal Resistance to sinusoidal vibrations Conforming to IEC/EN 60068-2-6 5 Hz < f < 8.4 Hz **Electrical characteristics** 30 mA at 24 V DC Consumption Resistance to electrostatic discharge IEC/EN 61000-4-2: 8 kV AD Immunity to radiated fields IEC/EN 61000-4-3: 10 V/m Immunity to surges IEC/EN 61000-4-5: class 2 **Physical characteristics** Dimensions 109 x 73 x 18 mm Mounting DIN rail Weight 120 g Degree of protection ■ IP20 for connectors of the installed module ■ IP30 for other areas ■ RJ45 for ULP and Modbus SL Connections Screw type terminals for Power

Stacking an IFE interface + gateway with IFM



Simplified IFM Installation





F Test button

G Mechanical lock

H ULP RJ45 connectors

Stacking accessory

connection

Stacking accessories

Up to 12 stacked IFM

A

Communication COM Option in ComPacT and MasterPact

All the Master**Pact** devices can be fitted with the communication function thanks to the COM option. Master**Pact** uses the Ethernet or Modbus communications protocol for full compatibility with the supervision management systems.

Eco COM is limited to the transmission of metering data. It is not used to communicate status and controls.

For fixed and Drawout devices, the common communication option is made up of:

- A BCM ULP module, installed behind the MicroLogic control unit and supplied with its set of sensors (OF, SDE, PF and CH micro switches) its kit for connection to XF and MX1 communicating voltage releases and its COM terminal block (inputs E1 to E6). This module is independent of the control unit. It receives and transmits information on the communication network. An infra-red link transmits data between the control unit and the communication module. Consumption: 30 mA, 24 V.
- IFM, this module required for connection to the network, contains the Modbus address (1 to 99) declared by the user via the two dials in front. It automatically adapts (baud rate, parity) to the Modbus network in which it is installed.

Or

■ IFE, the Ethernet interface for LV circuit breaker enables an intelligent modular unit (IMU), for example a MasterPact NT/NW or ComPacT NSX circuit breaker to be connected to an Ethernet network. Each circuit breaker has its own IFE and a corresponding IP address.

For drawout device the Cradle Management option must be added:

I/O (Input/Output) application module for LV breaker, the I/O application module is delivered with withdrawable devices ordered with the COM option, for cradle management. It must be installed on a DIN rail near the device. It must be connected to the ULP system and to the position contacts (CD, CT, CE) that transmit the position of the device in the cradle.

For communicating remote control, option with XF and MX1 communicating voltage releases must be added:

The XF and MX1 communicating voltage releases are equipped for connection to the "device" communication module.

The remote-tripping function (MX2 or MN) are independent of the communication option. They are not equipped for connection to the "device" communication module.

BSCM Module

Functions

The optional BSCM Breaker Status & Control Module is used to acquire device status indications and control the communicating remote-control function. It includes a memory used to manage the maintenance indicators.

Status indications

Indication of device status:

O/F, SD and SDE.

Maintenance indicators

The BSCM module manages the following indicators:

- Mechanical operation counter
- Electrical operation counter
- History of status indications.

It is possible to assign an alarm to the operation counters.

Controls

The module can be used to carry out communicating remote control operations: (open, close and reset) in different modes (manual, auto).

Mounting

The BSCM module can be installed on all ComPacT NSX circuit breakers and switch-disconnectors. It simply clips into the auxiliary contact slots. It occupies the slots of one O/F contact and one SDE contact. The BSCM is supplied with 24 V DC power automatically via the NSX cord when the communication system is installed.



BCM ULP



BSCM module

Communication I/O Application Module









I/O Application Module Description

The I/O input/output application module for LV breaker is one of the components of ULP architecture. Built in functionalities and applications enhance control and monitoring needs.

ULP system architecture including I/O modules can be built without any restrictions using a wide range of circuit breakers:

- MasterPact MTZ1/MTZ2/MTZ3/NT/NW
- ComPacT NS1600b-3200
- ComPacT NS630b-1600
- ComPacT NSX100-630 A.

The I/O application module is compliant with the ULP system specifications. Two I/O application modules can be connected in the same ULP architecture.

I/O input/output interface for LV breaker resources

The I/O application module resources are the following:

- 6 digital inputs that are self powered for either NO and NC dry contact or pulse
- 3 digital outputs that are bistable relay (5 A maximum)
- 1 analog input for Pt100 temperature sensor.

Pre-defined applications

Pre-defined applications improve the IMU approach (Intelligent Modular Unit) in a simple way.

A 9-position rotary switch on the front of the I/O module allows to select the pre-defined applications. Each position is assigned to a pre-defined application except position 9 which allows the user to define a specific application by means of the customer engineering tool. The switch is set in factory to the pre-defined application 1.

For each application the input/output assignment and the wiring diagram are pre-defined. No additional setting with the customer engineering tool is required. The I/O and other resources not assigned to the pre-defined applications are free for user specific applications.

User applications

The user applications with the corresponding resources are defined by means of EcoStruxure Power Commission engineering tool. They use the resources not assigned to the predefined applications. User applications may be required for:

- Protection improvement
- Circuit breaker control
- Motor control
- Energy management
- Monitoring.

24 V DC power supply

The I/O module must be supplied either with a 24 V DC AD or with a 24 V DC ABL8 RPS power supply.

Note: The connection of the +/- of the power supply on +/- terminals of the I/O module must be strictly respected. Crossing the polarities may damage the device.

Mounting

The I/O is a DIN rail mounting device.

Setting Locking Pad

The setting locking pad on the front panel of the I/O enables the setting of the I/O by EcoStruxure Power Commission engineering tool.

Communication I/O Application Module

General chara	cteristics			
Environmental	characteristics			
Conforming to star	ndards	IEC 60950, IEC 60947-6-2, UL 508, UL 60950, IACS E10		
Certification		c UL us, CE, EAC, FCC marking		
Ambient	storage	-40 to +85 °C		
temperature	operation	-25 to +70 °C		
Relative humidity		5 - 85 %		
Level of pollution		Level 3		
Protective treatme	nt	ULV0 conforming to IEC/EN 60068-2-30		
Mechanical cha	racteristics			
Shock resistance		Conforming to IEC/EN 60068-2-27 15 g/11 ms, 1/2 sinusoidal		
Resistance to sinu	soidal vibrations	Conforming to IEC/EN 60068-2-6 5 Hz < f < 8.4 Hz		
Electrical chara	cteristics			
Consumption		165 mA at 24 V DC		
Resistance to elec	trostatic discharge	IEC/EN 61000-4-2: ■ 8 kV air discharge ■ 6 kV contact discharge		
Immunity to radiate	ed fields	IEC/EN 61000-4-3: 10 V/m		
Immunity to fast tra	insient perturbations	IEC/EN 61000-4-4: 2 kV		
Immunity to surges	5	IEC/EN 61000-4-5: 2 kV common mode		
Immunity to condu- frequency field	cted radio	IEC/EN 61000-4-6: 10 V		
Physical charac	cteristics			
Dimensions		71.7 x 116 x 70.6 mm		
Mounting		DIN rail		
Weight		229.5 g (0.51 lb)		
Degree of protection of the installed I/O application module		On the front panel (wall mounted enclosure): IP4x I/O parts: IP3x Connectors: IP2x		
Connections		Screw type terminal blocks		

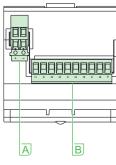
Digital inputs	
Digital input type	Self powered digital input with current limitations as per IEC 61131-2 type 2 standards (7 mA)
Input limit values at state 1 (close)	19.8 - 25.2 V DC, 6.1 - 8.8 mA
Input limit values at state 0 (open)	0 - 19.8 V DC, 0 mA
Maximum cable length	10 m

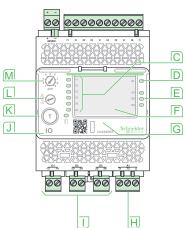
Note: For a length greater than 10 m and up to 300 m, it is mandatory to use a shielded twisted cable. The shield cable is connected to the I/O functional ground of the I/O application module.

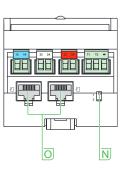
Digital outputs	
Digital output type	Bistable relay
Rated voltage	250 V AC maximum [1]/30 V DC
Rated carry current	5 A
Contact resistance	$30\ m\Omega$
Maximum operating frequency	18000 operations/hr (Mechanical) 1800 operations/hr (Electrical)
Digital output relay protection by an external fuse	External fuse of 5 A or less
Maximum cable length	10 m
Analog inputs	

Analog inputs

I/O application module analog input can be connected to a Pt100 temperature sensor						
	Range	-30 to 200 °C	-22 to 392 °F			
	Accuracy	±2 °C from -30 to 20 °C ±1 °C from 20 to 140 °C ±2 °C from 140 to 200 °C	±3.6 °F from -22 to 68 °F ±1.8 °F from 68 to 284 °F ±3.6 °F from 284 to 392 °F			
	Refresh interval	5 s	5 s			







- A 24 V DC power supply terminal block
- B Digital input terminal block: 6 inputs, 3 commons and 1 shield
- © 6 input status LEDs
- Analog input status LED
- **E** 3 output status LEDs
- F I/O application module identification labels
- G Sealable transparent cover
- H Analog input terminal block
- Digital output terminal blocks
- J ULP status LED
- $\boxed{\textbf{K}} \text{ Test/reset button (accessible with cover closed)}$
- Setting locking pad
- MApplication rotary switch: 1 to 9
- N Switch for I/O addressing (I/O 1 or I/O 2)
- **O**ULP connectors

[1] 250 V AC OVC 2 according IEC/EN 60947-2. For OVC 3 and 4 surge arresters are required on the polarizing voltage of the output contacts.

Communications Modules, IFM and IFE for ComPacT NSX

All ComPacT NSX devices can be equipped with the communication function via a prewired connection system and a Modbus or Ethernet network interface.

The interface can be connected directly or via the FDM121 switchboard display unit. Four functional levels can be combined to adapt to all supervision requirements.

Four Functional Levels

The ComPacT NSX can be integrated in a Modbus or Ethernet communication environment. Four functional levels can be used separately or combined.

Communication of status indications

This level is compatible with all ComPacT NSX circuit breakers, whatever the trip unit, and with all switch-disconnectors. Using the BSCM module, the following information is accessible:

- ON/OFF position (O/F)
- Trip indication (SD)
- Fault-trip indication (SDE).

Communication of commands

Also available on all circuit breakers and switch-disconnectors, this level (communicating remote control) can be used to:

- Open
- Close
- Reset.

Modbus principle

The Modbus RS 485 (RTU protocol) system is an open bus on which communicating Modbus devices (ComPacT NS with Modbus COM, Power Meter PM700, PM800, Sepam, Vigilohm, ComPacT NSX, etc.) are installed. All types of PLCs and microcomputers may be connected to the bus.

Addresses

The Modbus communication parameters (address, baud rate, parity) are entered using the Electrical Asset Manager or RSU (Remote Setting Utility).

Number of devices

The maximum number of devices that may be connected to the Modbus bus depends on the type of device (ComPacT with Modbus COM, PM700, PM800, Sepam, Vigilohm, ComPacT NSX, etc.), the baud rate (19200 is recommended), the volume of data exchanged and the desired response time. The RS 485 physical layer offers up to 32 connection points on the bus (1 master, 31 slaves). A fixed device requires only one connection point (communication module on the device). A drawout device uses two connection points (communication modules on the device and on the chassis).

The number must never exceed 31 fixed devices or 15 drawout devices.

Length of bus

The maximum recommended length for the Modbus bus is 1200 meters.

Bus power source

A 24 V DC power supply is required (less than 20 % ripple, insulation class II).

Ethernet Principle

Ethernet is a data link and physical layer protocol defined by IEEE 802 10 and 100 Mbps specifications that connects computer or other Ethernet devices. Ethernet is an asynchronous Carrier Sense Multiple Access with Collision detection (referred as CSMA/CD) protocol. Carrier Sense means that the hosts can detect whether the medium (coaxial cable) is idle or busy. Multiple Access means that multiple hosts can be connected to the common medium. Collision Detection means a host detects whether its transmission has collided with the transmission of another host (or hosts). IFE Ethernet interface can be connected to a PC or a laptop over Ethernet. The maximum length of Ethernet cable is 100 meters. IFE Ethernet interface + gateway provides a Modbus TCP/IP gateway over Ethernet to enable Modbus TCP communication from a Modbus TCP master to any Modbus slave devices connected to it. The maximum active Modbus TCP client connection is twelve.

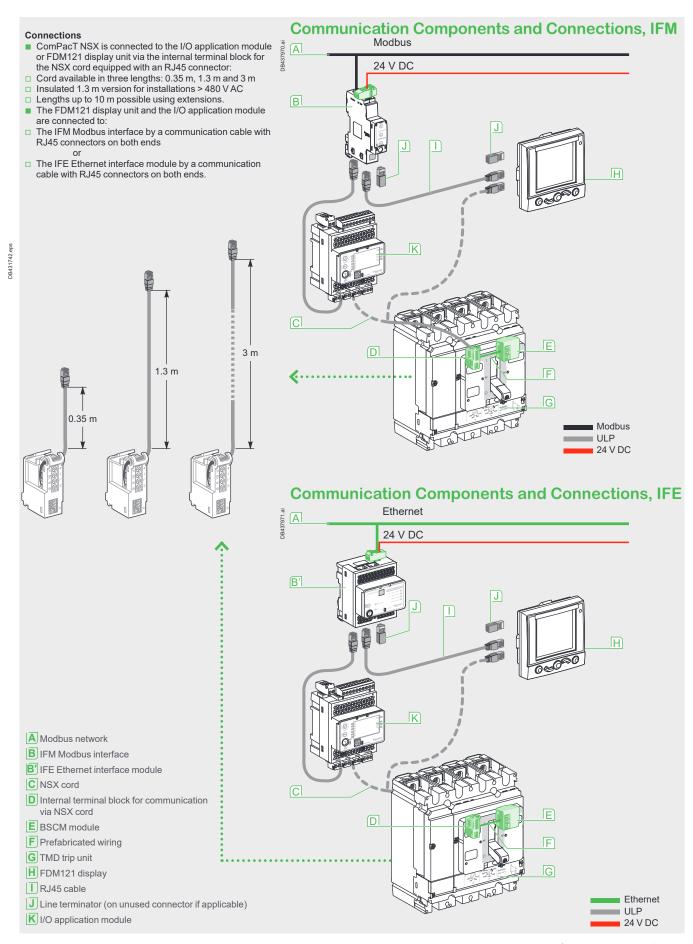
IFE Ethernet interface has an embedded web server (web page).

The Modbus RS 485 (RTU protocol) system is an open bus on which communicating Modbus devices (ComPacT NS with Modbus COM, Power Meter PM700, PM800,

Sepam, Vigilohm, ComPacT NSX, etc.) are installed. All types of PLCs and

microcomputers may be connected to the bus.

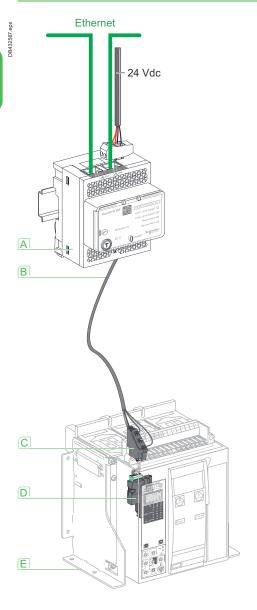
Communication Components and Connections



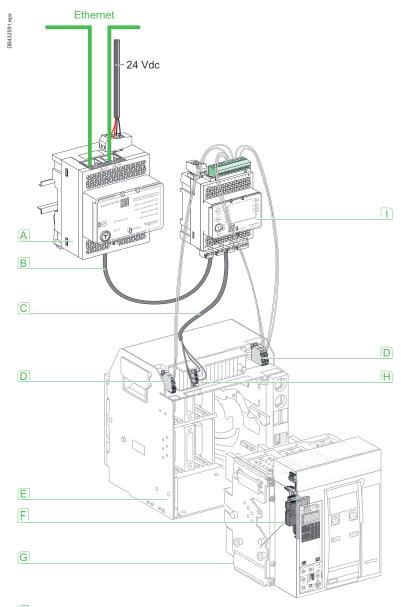
Connection of the IFE to a Fixed or Drawout MasterPact NW

Connect the IFE to a fixed electrically operated MasterPact NW or circuit breaker using the breaker ULP cord

Connect the IFE to a drawout MasterPact NW or circuit breaker using the breaker ULP cord



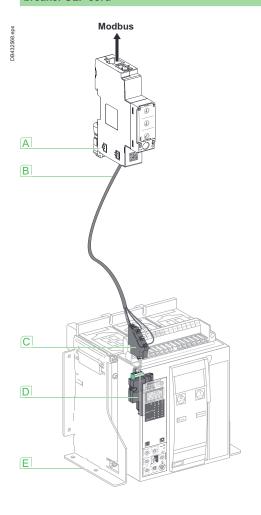
- A IFE Ethernet interface for LV circuit breaker
- B Breaker ULP cord
- Fixed COM terminal block
- **D** BCM ULP communication module
- E Fixed electrically operated circuit breaker



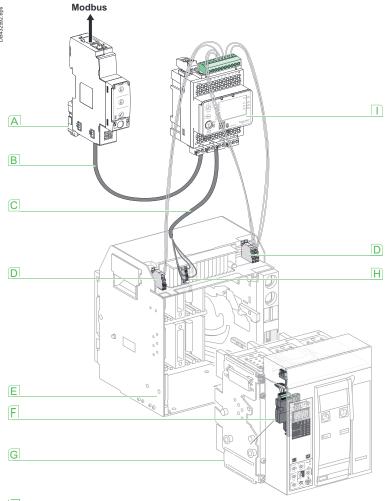
- $\overline{f A}$ IFE Ethernet interface for LV circuit breaker
- B ULP cable
- C Breaker ULP cord
- Drawout device position contacts
- E Circuit breaker cradle
- F BCM ULP communication module
- G Drawout circuit breaker
- H Drawout COM terminal block
- I/O (Input/Output) application module for LV circuit breaker

Connection of the IFM to a Fixed or Drawout MasterPact NW

Connect the IFM to a fixed electrically operated MasterPact NW or circuit breaker using the breaker ULP cord Connect the IFM to a drawout MasterPact NW or circuit breaker using the breaker ULP cord



- A IFM Ethernet interface for LV circuit breaker
- B Breaker ULP cord
- Fixed COM terminal block
- **D** BCM ULP communication module
- E Fixed electrically operated circuit breaker



- A IFM Ethernet interface for LV circuit breaker
- **B** ULP cable
- Breaker ULP cord
- Drawout device position contacts
- E Circuit breaker cradle
- F BCM ULP communication module
- G Drawout circuit breaker
- H Drawout COM terminal block
- I/O (Input/Output) application module for LV circuit breaker

Electrical Asset Manager Configuration Engineering Tool



| COUNTY | C





Introduction

Electrical Asset Manager is a software application that helps the user to manage a project as part of designing, testing, site commissioning, and maintenance of the project life cycle.

It enables the user to prepare the settings of the devices offline (without connecting to the device) and configure them when connected with the devices.

It also provides several other value added features for the user to manage the project such as: repository in cloud, attach artifacts to each device or at the project level, organize devices in switchboard wise, manage a hierarchical structure of the installation

Compatible Devices (Configuration and Device Management)

Electrical Asset Manager is compatible with the following devices:

- ComPacT NSX100-630 (IEC)
- PowerPacTTM (UL) circuit breaker
- ComPacT NS630b-3200 (IEC)
- MasterPact NT/NW (IEC and UL) circuit breaker
- Acti9 Smartlink.
- Compatible devices (Device Management in the project)
- Switch disconnectors (ComPacT NSX, MasterPact & PowerPacT Family)
- Third party devices.

References:

Electrical Asset Manager software package can be downloaded from our website www.schneider-electric.com

Features

Electrical Asset Manager supersedes the Schneider Electric customer engineering tools such as Remote setting Utility (RSU) and Remote Control Utility (RCU) with additional features.

Electrical Asset Manager supports the connection of Schneider Electric communicable devices to:

- Create projects by device discovery, selection of devices, and import Bill of Material (BOM)
- Monitor the status of protection and IO status
- Read information (alarms, measurements, parameters)
- Check protection selectivity between two devices
- Upload and download of configuration or settings in batch mode to multiple devices
- Carry out commands and tests
- Generate and print device settings report and communication test report
- Manage multiple devices with electrical and communication hierarchy model
- Manage artifacts (project documents)
- Check consistency in settings between devices on a communication network
- Compare configuration settings between PC and device (online)
- Download latest firmware.

Electrical Asset Manager enables the user to avail the advanced features of the software once the project is saved in Schneider Electric cloud.



Electrical Asset Manager Configuration Engineering Tool

Functions

Offline Mode

A project can be built in offline mode through 2 different ways:

- Through BOM file import
- Through Device Selection.

Additionally, the user can open an existing project and modify the settings offline. The user can do the selectivity curve check and firmware compatibility check for devices in the project.

Online Mode

A project can be built in online mode through device discovery also other than the methods possible through offline method.

Once the project is built, the following functions can be performed in addition to the functions available in offline mode:

- Compare the device parameters with project parameters
- Load parameters from project to the device and vice versa
- Firmware downloads to the device
- Monitor the measurement, maintenance, device status and I/O status
- Control functions.

User Interface

Electrical Asset Manager software provides fast direct access to the project and the devices in the project through different tabs.

- Project: to provide the project information including customer details, project references and to add project artifacts (documents related to the project).
- Configuration: to build up the tree structure of the project architecture; to have a table view of the devices added in the project; to set the parameters of the devices; to transfer the device settings; to view the tripping curves; to attach device artifacts and to download the latest firmware, to do the communication test for all the devices and generate the test report.
- Monitoring: this allows the user to monitor the real time values of different devices through different sub tabs namely Monitoring, Logs and Control.
- Reports: report tab allows you to generate and print a report of the project settings from the report tab. The user details and project characteristics are automatically filled with the details entered in the Project page.











General Characteristics of MasterPact NW DC, EPDC, DC PV

Operating Conditions

MasterPact circuit breakers have been tested for operation in industrial atmospheres. It is recommended that the equipment be cooled or heated to the proper operating temperature and kept free of excessive vibration and dust.



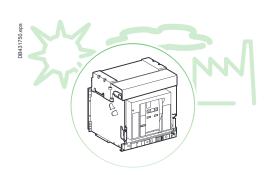


MasterPact devices can operate under the following temperature conditions:

- The electrical and mechanical characteristics are stipulated for an ambient temperature of -25 °C to +70 °C
- Circuit breaker closing is ensure down to -35 °C by manual operation (push button).

Storage conditions are as follows:

- -40 to +85 °C for a MasterPact device without its control unit
- -25 °C to +85 °C for the control unit.



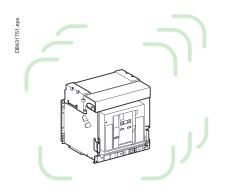
Severe Atmospheric Conditions

MasterPact devices have successfully passed the tests defined by the following standards for severe atmospheric conditions:

- IEC 60068-2-1: dry cold at -40 °C
- IEC 60068-2-2: dry heat at +85 °C
- IEC 60068-2-30: damp heat (temperature +55 °C, relative humidity 95 %)
- IEC 60068-2-52 level 2: salt mist.

MasterPact devices can operate in the industrial environments defined by standard IEC 60947 (pollution degree up to 3).

It is nonetheless advised to check that the devices are installed in suitably cooled switchboards without excessive dust.



Vibrations

MasterPact devices have successfully passed testing in compliance with IEC 60068-2-6 for the following vibration levels:

- 2 to 13.2 Hz: amplitude ±1 mm
- 13.2 to 100 Hz: constant acceleration 0.7 g.

Vibration testing to these levels is required by merchant marine inspection organizations (Veritas, Lloyd's, etc). Some applications have vibration profiles outside of this standard and require special attention during application design, installation, and use. Excessive vibration may cause unexpected tripping, damage to connections or to other mechanical parts. Please refer to the MasterPact maintenance guide (causes of accelerated ageing/operating conditions/vibrations) for additional information.

Examples of applications with high vibration profiles could include:

- Wind turbines
- Power frequency converters that are installed in the same switchboard or close proximity to the MasterPact circuit breaker
- Emergency generators
- High vibration marine applications such as thrusters, anchor positioning systems,

General Characteristics of MasterPact NW DC, EPDC, DC PV MasterPact NW DC, EPDC, DC PV

Altitude

At altitudes higher than 2000 metres, the modifications in the ambient air (electrical resistance, cooling capacity) lower the following characteristics as follows:

Altitude (m)	Altitude (m)		3000	4000	5000
NW DC					
Impulse withstand voltage Uimp	(kV)	12	10.6	9.5	8.4
Rated insulation voltage (Ui)		1000	900	800	700
Maximum rated operationnal	NW DC ≤500 V	500	450	390	350
voltage 50/60 Hz Ue (V)	NW DC 500-900 V	900	800	700	630
Rated current (A) at 40 °C		1 x ln	0.98 x In	0.96 x In	0.94 x In
NW DC PV					
Impulse withstand voltage Uimp	(kV)	12	10.6	9.5	8.4
Rated insulation voltage (Ui)		1000	1000	950	850
Maximum rated operationnal DC	voltage	1000	1000	950	850
Rated current (A) at 40 °C		1 x In	0.98 x In	0.96 x In	0.94 x In

Intermediate values may be obtained by interpolation.

Electromagnetic Disturbances

MasterPact NW DC devices are protected against:

- Overvoltages caused by devices that generate electromagnetic disturbances
- Overvoltages caused by atmospheric disturbances or by a distribution-system outage (e.g. failure of a lighting system)
- Devices emitting radio waves (radios, walkie-talkies, radar, etc.)
- Electrostatic discharges produced by users.

MasterPact NW DC devices have successfully passed the electromagneticcompatibility tests (EMC) defined by the following international standards:

- IEC 60947-2, appendix F
- IEC 60947-2, appendix B (trip units with earth-leakage function).

The above tests ensure that:

- No nuisance tripping occurs
- Tripping times are respected.

Degree of Protection

MasterPact NW DC circuit breakers offer the following protection characteristics depending on the installation conditions:

- IP: degree of protection (standard IEC 60529)
- IK: protection against external mechanical imPacTs (standard EN 50102).

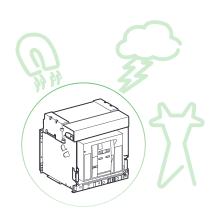
MasterPact NW DC Circuit breaker installed in a switchboard Bare circuit breaker IP30 Escutcheon (CDP) for fixed and drawout IP40 versions, with blanking plate



Transparent cover (CCP) for escutcheon for drawout version	IP54	IK10
ioi diawodi versiori		

IK07





General Characteristics of MasterPact NW DC, EPDC, DC PV

MasterPact NW10 to NW40 DC



NW10 DC 3P



NW10 DC 4P

MasterPact NW DC Circu	ıit Breaker			
Poles coupling version			C or D (3 poles)	
			E (4 poles)	
Electrical Characteristics As Pe	r IEC 60947-1/ 609	47-2 an	nd EN 60947-1/60947-2	
Rated current at 40 °C/50 °C ^[1]		In	(A)	
Rated insulation voltage		Ui	(V)	
Rated impulse withstand voltage		Uimp	(kV peak)	
Rated operational voltage		Ue	(V DC)	
Type of circuit breaker				
Ultimate breaking capacity	L/R = 5 ms	lcu	(kA) V DC 500	
			750	
			900	
	L/R = 15 ms	lcu	500	
			750	
			900	
	L/R = 30 ms	lcu	500	
			750	
			900	
Service breaking capacity		Ics	% Icu	
Rated making capacity		lcm	% Icu	
Short-time withstand current		lcw	1 s	
Utilization category				
Breaking time			(ms)	
Making time			(ms)	
Suitability for isolation				
Pollution degree (as per IEC 60664-1)				
Protection against overcurrents (s	ee trip unit table pag	je D-12)		
Trip units			Built-in	
Protection			Overloads	
			Short-circuits	
Decimals 1994 c				

Durability				
(O/C cycles)	Mechanical	With maintenance		
		Without maintenance		
	Electrical	Without maintenance	500 V DC	
			900 V DC	

Indication and control auxiliaries

Auxiliary contacts

Voltage release MX shunt release MN undervoltage release

Switch-Disconnector As Per IEC 60947-3 and EN 60947-3

Type of Switch-d	isconnec	tor			
Rated making capacity	/			Icm	(kA)
Rated short-time withs	tand current			Icw	(kA)
	10:	🕞	/EOO W DO	$\overline{}$	

Unprotected Circuit Breaker (500)

Tripping by Shunt Trip As Per IEC 60947-2

Type of unprotected circuit breaker					
Ultimate breaking capacity	L/R = 6.5 ms	lcu	(kA)		500 V DC
Short-time withstand current		lcw	(kA)	1 s	
Ultimate breaking capacity	L/R = 15 ms	lcu	(kA)		500 V DC
Short-time withstand current		lcw	(kA)	1 s	
Service breaking capacity		Ics	% Icu		

Overload and short-circuit protection

External protection relay: short-circuit protection, maximum delay: 500 ms

Installation and	Connections
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Connection	Drawout	3P RC		Horizontal
		4P		Vertical
	Fixed	3P	RC	Horizontal
		4P		Vertical
Dimensions and Weight				

	1 1/104	01	110	Honzontai
		4P		Vertical
Dimensions and Weight				
Dimensions	Drawout	3P		
H x W x D (mm) connected in series		4P		
	Fixed	3P		
		4P		

Weight (kg) connected in series (approximate values)

Drawout 3P

4P

4P Fixed 3P

[1] 50 °C - see the derating table for the NW40 DC.



General Characteristics of Master**Pact** NW DC, EPDC, DC PV

MasterPact NW10 to NW40 DC

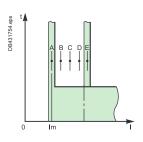
NW10 DC		NW20 DC		NW40 DC	
O		O		0	
<u> </u>		©		<u> </u>	
1000		2000		4000	
1000		1000		4000	
12		12		1000 12	
500/900		500/900		500/900	
N	H	N	H	N	H
85	100	85	100	85	100
-	85	-	85	-	85
-	85	-	85	-	85
35	85	35	85	35	85
-	50	-	50	-	50
-	35	-	35	-	35
25	50	25	50	25	50
-	50	-	50	-	50
-	25	-	25	-	25
100 %					
100 %					
50	85	50	85	50	85
В					
30 to 75					
< 70					
3	•	•	•	•	O
3					
<u> </u>	<u> </u>	<u>•</u>	-	<u> </u>	•
•	•	•	•	•	O
20000					
10000					
8500		5000		2000	
-	2000	-	2000	-	1000
			•		•
					<u></u>
		0			•
	114		114		114
	HA		HA		HA
-	85	-	85	-	85
-	85	-	85	-	85
NW10 HADC-C 500	V DC	NW20 HADC-C 500	V DC	NW40 HADC-C 500	V DC
85		85		85	
85		85		85	
65		65		65	
65		65		65	
100 %					
-		-		-	
				<u> </u>	
<u>•</u>	<u>•</u>	<u>•</u>	<u> </u>		-
•	•	•	•	•	O
•	•	•	•	-	-
•	O	O	•	O	
439 x 441 x 494				439 x 441 x 594	
439 x 556 x 494				439 x 556 x 594	
352 x 422 x 427				352 x 422 x 527	
352 x 537 x 427				352 x 537 x 527	
90 to 116				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
125 to 146					
60 to 86					
85 to 106					
00 10 100					

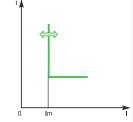
Trip Unit Characteristics Trip Units for MasterPact NW DC, EPDC

All MasterPact NW DC devices are equipped with a MicroLogic 1.0 DC control unit.









Magnetic pick-up value

Protection Using the MicroLogic 1.0 DC Control Unit

MasterPact NW DC circuit breakers use MicroLogic 1.0 DC control units. These interchangeable units with instantaneous thresholds, operating with electromagnetic sensors, can be adjusted on site.

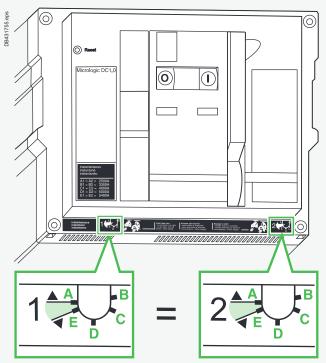
The circuit breakers can be used with the three versions of sensors, defined by their setting range.

Type of sensor	1250/2500 A	2500/5400 A	5000/11000 A
MasterPact NW10 DC	•	•	•
MasterPact NW20 DC	-	o	•
MasterPact NW40 DC	-	-	•

Adjustments

Settings for MasterPact NW DC circuit breakers may be accessed from the front, with the switchboard door open.

- Settings are made for the input (+ pole) and the output (- pole).
- The setting range comprises eleven positions, plus five preferential settings marked A, B, C, D and E.
- The setting values for the two corresponding sensors must be identical.



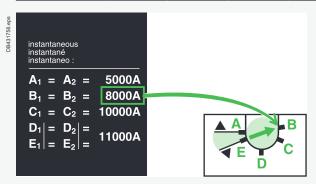
Two identical settings

Trip Unit Characteristics Trip Units for MasterPact NW DC, EPDC

Setting Values for Magnetic Pick-up li

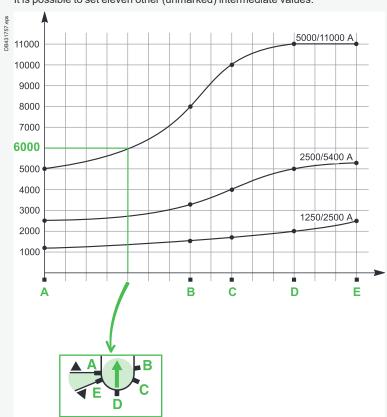
Settings Marked A, B, C, D and E

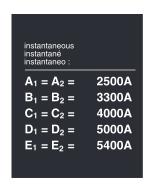
	Minimum	Minimum					
Sensor versions	Settings A1 and A2	Settings B1 and B2	Settings C1 and C2	Settings D1 and D2	Settings E1 and E2		
1250/2500	1250 A	1500 A	1600 A	2000 A	2500 A		
2500/5400	2500 A	3300 A	4000 A	5000 A	5400 A		
5000/11000	5000 A	8000 A	10000 A	11000 A	11000 A		
Tolerances	±8 %	±10 %	±10 %	±10 %	±10 %		



Intermediate Settings

It is possible to set eleven other (unmarked) intermediate values.







Switch-Disconnectors for PV Application Master**Pact** NW HADCD-PV



0	
MasterPact NV	V20
HADCD-PV	

0B416572.eps	Masterpact						
141657	NW20 HADCD-PV						
8	Ui 1000V Uimp 12kV						
	Ue 1000 V 3P in series lcw 85kA/1s lcm 85kA						
	IEC 60947-3						
	Ith 2000A 55°C						
	Ue (V) le (A)						
	DC22A 1000 2000						

MasterPact NW20 HADCD-PV rating plate

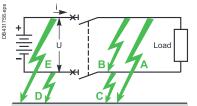
Masterp	act	
NW40 HA	DCD-PV	
Ui 1000V	Uim	p 12kV
Je 100	0 V 3P	in series
cw 85k.		
Icm 85k.	A 	
	·	
IEC 60947∹	3	
IEC 60947-	3	le (A)

MasterPact NW40 HADCD-PV rating plate

W HAD	CD-PV	NW20	NW40				
nector	s for PV		HADCD-PV	HADCD-PV			
	D (3 poles)		•	O			
Electrical Characteristics As Per IEC 60947-1/60947-3 and EN 60947-1/60947-3							
In	(A)		2000	4000			
Ui	(V)		1000	1000			
Uimp	(kV peak)		12	12			
Ue	(V DC)		1000 [1]	1000 [1]			
or as per	IEC 60947-3	and EN 609	47-3				
Icm	(kA)		85	85			
lcw	(kA/1 s)		85	85			
			DC-22A	DC-22A			
Mechanical	with maintenance		20000	20000			
	without mainten	ance	10000	10000			
Electrical	without maintenance	1000 V DC L/R = 2 ms	2000	1000			
nnections							
Fixed	rear	Vertical	o	O			
	connections	Horizontal	•	-			
Drawout	rear	Vertical	•	O			
	connections	Horizontal	•	-			
eight							
Fixed	3P		352 x 422 x 427	352 x 422 x 527			
Drawout	3P		439 x 441 x 494	439 x 441 x 594			
Fixed	3P		60 to 86				
Drawout	3P		90 to 116				
	teristics In Ui Uimp Ue or as per Icm Icw Mechanical Electrical Innections Fixed Drawout Fixed Drawout	cteristics As Per IEC In (A) Ui (V) Uimp (kV peak) Ue (V DC) or as per IEC 60947-3 Icm (kA) Icw (kA/1 s) Mechanical with maintenance without mainten without maintenance mections Fixed rear connections Drawout rear connections Drawout 3P Fixed 3P Drawout 3P Fixed 3P	D (3 poles) Cteristics As Per IEC 60947-1/6 In (A) Ui (V) Uimp (kV peak) Ue (V DC) Or as per IEC 60947-3 and EN 609 Icm (kA) Icw (kA/1 s) Mechanical with maintenance without maintenance Without maintenance L/R = 2 ms Innections Fixed rear Vertical Connections Drawout rear Connections Drawout rear Connections Drawout 3P Fixed 3P Drawout 3P Fixed 3P Fixed 3P	D (3 poles) D (3 poles) D (3 poles) D (2 teristics As Per IEC 60947-1/60947-3 and EN 609 In (A) Ui (V) Uimp (kV peak) Ue (V DC) Toras per IEC 60947-3 and EN 60947-3 Icm (kA) Icw (kA/1 s) DC-22A Mechanical with maintenance without maintenance 10000 Electrical without 1000 V DC maintenance L/R = 2 ms Toractions Fixed rear connections Drawout rear connections Drawout rear connections Drawout 3P Drawout 3P Drawout 3P Sight Fixed 3P Drawout 3P Go to 86			

All the accessories of the standard NW HADC switch-disconnectors can be used.

[1] NW HADCD-PV switch-disconnectors for PV applications are designed and qualified to break the rated or the fault current under 1000 V DC with all the 3 poles in series and this is a mandatory condition whatever the type of fault. This comes to say that the PV systems using these switch-disconnectors must be isolated systems from the earth and that the double fault situation (A and D or C and E on the diagram below) must be absolutely avoided: insulation monitoring devices shall detect the first fault and the staff shall look for this first fault and clear it with no delay. These switch-disconnectors cannot be used in grounded systems as in this situation they may be expected to break the current under the full voltage (1000 V DC) with only 1 pole or 2 poles in series. These devices are not designed for that purpose and could sustain irremediable damage if used to



Isolated system

Switch-Disconnectors for PV Application MasterPact NW HADCD-PV -

Connections and Safety Clearances

Fixed Version, Vertical Rear Connections

NW20 HADCD-PV



NW40 HADCD-PV



	Safety clearances	
DB431759.eps	A (*)	A (*) BB A (*)
	15 → 205 →	

	Insulated parts	Metal parts	Energized parts
Α	0	0	100
В	0	0	60

A(*) An overhead clearance of 110 mm is required to remove the arc chutes. An overhead clearance of 20 mm is required to remove the terminal block.

Drawout Version, Vertical Rear Connections

NW20 HADCD-PV

-F



NW40 HADCD-PV



	Safety clearances	
DB431761.eps	100 = 225 = F	BH411829

	Insulated parts	Metal parts	Energized parts
Α	0	0	0
В	0	0	60

F. Datum

MasterPact NW EPDC-D Circuit Breakers for Marine Applications at 1100 V DC

MasterPact NW EPDC-D General Characteristics

			NW10	NW20	NW40	
				EPDC-D	EPDC-D	EPDC-D
Poles coupling version			D (3 poles in series)	O	O	O
Electrical Characteristics As F	Per IEC 609	47-1/60	0947-2 and EN 60947-	-1/60947-2		
Rated current at 40°/45°C		In	(A)	1000	2000	4000
Rated insulation voltage		Ui	(V)	1250	1250	1250
Rated impulse withstand voltage		Uimp	(kV peak)	12	12	12
Rated operational voltage		Ue	(V DC)	1100 🖽	1100 🖽	1100 🖽
Circuit breaker as per IEC 60947	-2 and EN 60	947-2				
Ultimate breaking capacity	L/R = 15 ms	lcu	(kA)	65	65	65
Service breaking capacity		lcs	%lcu	100%	100%	100%
Rated making capacity		lcm	%lcu	100%	100%	100%
Rated short-time withstand current (kA	rms)	lcw	(kA/1s)	65	65	65
Selectivity category				Α	Α	Α
Breaking time			(ms)	30 to 75	30 to 75	30 to 75
Making time			(ms)	<70	<70	<70
Suitability for isolation				O	•	O
Pollution degree (as per IEC 60664-1)				3	3	3
Protection against overcurrents	(see trip uni	t table r	next page)			
Trip units	Built-in			O	•	O
Protection	Overloads			-	-	-
	Short-circuits	;		O	O	O
Durability						
(O/C cycles)	Mechanical	With ma	aintenance	20000	20000	20000
		Without	t maintenance	10000	10000	10000
	Electrical	Withou	t maintenance 1100 V DC	1000	1000	1000
Indication and control auxiliaries	3					
Auxiliary contacts				•	•	•
Voltage release		MX shu	int release			
			lervoltage release		O	
Installation and Connections						
Connection	Drawout	Rearco	onnections Horizontal	•	•	_
Connection	Diawout	Tteal CC	Vertical	•	<u> </u>	•
Dimonsions and Woight			vertical			
Dimensions and Weight Dimensions	Drawout	3P		439 x 441 x 494	439 x 441 x 494	439 x 441 x 594
H x W x D (mm) with the series connect		32		439 X 44 I X 494	439 X 44 I X 494	439 X 44 I X 594
Weight (kg) with the series	.1011				I	
connection (approximate values)	Drawout	3P		90 to 116		
confidencial (approximate values)	Diawout	OI .		00 10 110		



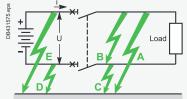
All the accessories of the standard NW HDC circuit breakers can be used. NW EPDC-D circuit breakers were not designed for and cannot be used in PV application.

[1] NW EPDC-D circuit breakers are designed and qualified to break the rated or the fault current under 1100V DC with all the 3 poles in series, and having the 3 poles in series when breaking is a mandatory condition whatever the type of fault.

This implies 2 mandatory conditions:

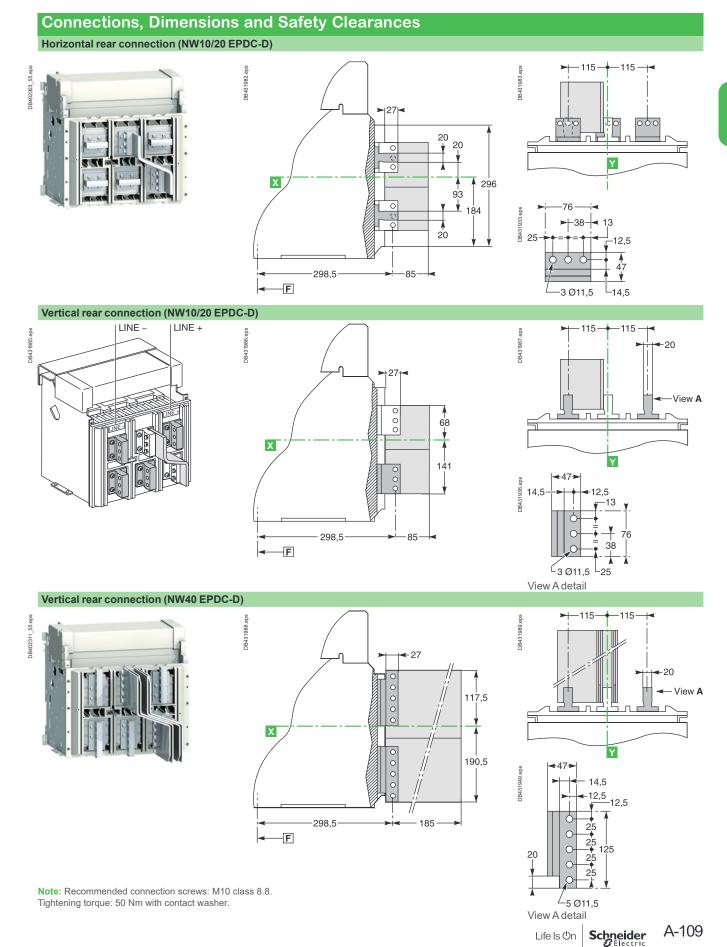
- the systems using these circuit breakers must be isolated from the earth.
 avoid the double fault situation (A and D or C and E on the diagram above). For this, insulation monitoring devices must detect the first fault, and the staff must locate it and clear it with no

These circuit breakers cannot be used in grounded systems as, in this situation, they may be expected to break the current under the full voltage (1100 V DC) with only 1 pole or 2 poles in series. These devices are not designed for that purpose and could sustain irremediable damage if used to break in these conditions.



Isolated system

Master**Pact** NW EPDC-D Circuit Breakers for Marine Applications at 1100 V DC



All MasterPact NW DC devices exist in Circuit breaker (equipped with MicroLogic DC 1.0 control unit) and switchdisconnector versions. All auxiliaries are common from 1000 to 4000 A.



- A OFF pushbutton
- B ON pushbutton
- Closing mechanism charging handle
- D Operation counter
- E Operating mechanism charged and "ready to close" indication:
- Spring charged
- Spring discharged



- F Main contact position indication:
- ON
- OFF

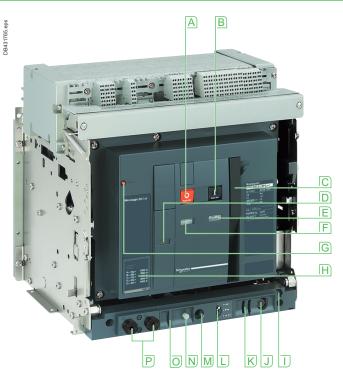


- G Fault trip indication and reset button
- H MicroLogic 1.0 DC control unit
- Racking interlock
- J Racking-handle storage
- K Shutter position indication and locking
- Connected/test/disconnected"position indication
- M Racking-handle port
- N Reset pushbutton
- O Padlock locking
- P Keylock locking



Vertical rear connection





Circuit Breakers and Switch-Disconnectors

MasterPact NW DC exists in fixed and withdrawable versions:

- Circuit breaker equipped with MicroLogic 1.0 DC control unit
- Switch-disconnector without the control unit.

Common Auxiliaries from 1000 to 4000 A

All accessories are:

- Accessible from the front in a compartment isolated from the power circuits
- Secured by a single screw
- No adjustments
- Adaptable on site.

Communication

Circuit breaker or switch-disconnector integration in a supervision system requires the COM option.

MasterPact uses the Modbus communication protocol compatible with ION-E electrical engineering expert system software.

An external gateway is available for communication with other networks (Profibus, Ethernet, etc.).

Connections

- Rear vertical connection in standard.
- Possibility of conversion to horizontal connection by turning the connectors On the site by the customer (except for the NW40).
- Prefabricated series connections.
- Safety shutters, shutter locking blocks.
- Optional accessories:
- ☐ Interphase barriers
- □ Shutter position indication and locking.

Locking

- Pushbutton locking by padlockable transparent
- OFF-position locking by padlock or keylock.
- Chassis locking:
 - ☐ In disconnected position by keylock
- □ In connected, disconnected and test positions.
- Door interlock (inhibits door opening with breaker in connected position).
- Racking interlock (inhibits racking with door open).
- Racking interlock between crank and OFF
- Automatic spring discharge before breaker removal.
- Mismatch protection.





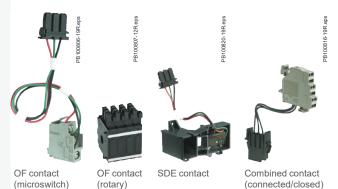


Door interlock (inhibits door opening with breaker in connected position)

Locking in disconnected position by keylock or padlock

Indication Contacts

- Standard or low-level contacts:
 - □ ON/OFF indication (OF)
 - □ "fault-trip" indication (SDE)
 - ☐ Carriage switches for connected (CE), disconnected (CD) and test (CT) positions.



Remote Operation

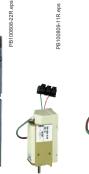
- Remote ON/OFF:
- □ Gear motor
- □ XF closing or MX opening voltage releases
- □ PF ready-to-close contact
- □ Options:
- RAR automatic or Res electrical remote reset
- BPFE electrical closing pushbutton.
- Remote tripping function:
 - MN voltage release:
 - standard
 - adjustable or non-adjustable delay
 - □ Or 2nd MX voltage release.



Remote ON/OFF



Gear motor

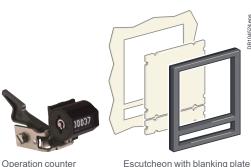




ready-toclose contact

Accessories

- Auxiliary terminal shield.
- Operation counter.
- Escutcheon.
- Transparent cover for escutcheon.
- Escutcheon blanking plate.





Escutcheon with blanking plate

Transparent cover

Connection

Overview of Solutions

Two types of connection are available: vertical connection is standard however the connectors can be rotated for on-site conversion to horizontal connection (except for NW40).

Rear Connection Fixed Device

MasterPact NW DC

Vertical rear connection



Horizontal rear connection



Connection Overview of Solutions

Rear Connection Withdrawable Device MasterPact NW DC Horizontal rear connection



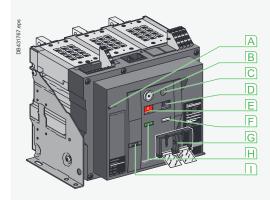


Vertical rear connection





Locking on the Device



- A Fault trip indication and reset button
- B OFF position locking
- C Electrical closing pushbutton
- ON pushbutton
- E OFF pushbuton
- F Operating mechanism charged and "ready to close" indication
- G Pushbutton locking
- H Main contact position indication
- Operation counter



The transparent cover blocks access to the pushbuttons used to open and close the

It is possible to independently lock the opening button and the closing button.

The locking device is often combined with a remote operating mechanism.

The pushbuttons may be locked using either:

- Three padlocks (not supplied)
- Lead seal
- Two screws.

Device Locking in the OFF Position VCPO - by Padlocks - VSPO - by Keylocks

The circuit breaker is locked in the OFF position by physically maintaining the opening pushbutton pressed down:

- Using padlocks (one to three padlocks, not supplied)
- Using keylocks (one or two different keylocks, supplied).

Keys may be removed only when locking is effective (Profalux or Ronis type locks). The keylocks are available in any of the following configurations:

- One keylock
- One keylock mounted on the device + one identical keylock supplied separately for interlocking with another device
- Two different key locks for double locking.

Profalux and Ronis keylocks are compatible with each other.

A locking kit (without locks) is available for installation of one or two keylocks (Ronis, Profalux, Kirk or Castell).

Accessory-compatibility

3 padlocks and/or 2 keylocks.

Cable-Type Door Interlock IPA

This option prevents door opening when the circuit breaker is closed and prevents circuit breaker closing when the door is open.

For this, a special plate associated with a lock and a cable is mounted on the right side of the circuit breaker.

With this interlock installed, the source changeover function cannot be implemented. This option is identical for fixed or drawout versions.





Access to pushbuttons protected by transparent cover



Pushbutton locking using a padlock

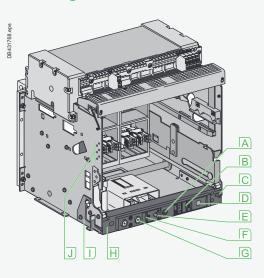


OFF position locking using a padlock



OFF position locking using a keylock

Locking on the Chassis



- A Racking-handle port
- "Connected/test/ disconnected" position indication
- C Racking interlock
- Racking-handle storage
- E Reset pushbutton
- F Padlock locking
- G Keylock locking
- H Chassis front plate (accessible with cubicle door closed)
- interlock
- J Mismatch protection

"Disconnected" Position Locking By Padlocks (Standard) or Keylocks (VSPD Option)

The circuit breaker can be locked in its disconnected position by using the locks on the chassis. This feature is accessible via the cut out door closed.

Two options are available:

- Using padlocks (standard), up to three padlocks (not supplied)
- Using keylocks (optional), one or two different keylocks are available.

Profalux and Ronis keylocks are available in different options:

- One keylock
- Two different keylocks for double locking
- One (or two) keylocks mounted on the chassis + one (or two) identical keylocks supplied separately for interlocking with another device.

A locking kit (without locks) is available for installation of one or two keylocks (Ronis, Profalux, Kirk or Castell).

Connected", "Disconnected" and "Test" Position Locking

The "connected", "disconnected" and "test" positions are shown by an indicator and are mechanically indexed. The exact position is obtained when the racking handle blocks. A release button is used to free it.

As standard, the circuit breaker can be locked only in "disconnected" position by padlocks or by keylocks. On request, the locking system may be modified to lock the circuit breaker in any of the three positions "connected", "disconnected" or "test".

Door Interlock Catch VPEC

Mounted on the right or left-hand side of the chassis, this device inhibits opening of the cubicle door when the circuit breaker is in "connected" or "test" position. It the breaker is put in the "connected" position with the door open, the door may be closed without having to disconnect the circuit breaker.

Racking Interlock VPOC

This device prevents insertion of the racking handle when the cubicle door is open. Cable-Type Door Interlock IPA

This option is identical for fixed and drawout versions.

Racking Interlock between Crank and OFF Pushbutton IBPO for NW DC

This option makes it necessary to press the OFF pushbutton in order to insert the racking handle and holds the device open until the handle is removed.

Automatic Spring Discharge Before Breaker Removal DAE for NW DC

This option discharges the springs before the breaker is removed from the chassis. Mismatch Protection V DC

Mismatch protection ensures that a circuit breaker is installed only in a chassis with compatible characteristics. It is made up of two parts (one on the chassis and one on the circuit breaker) offering twenty different combinations that the user may select.



Racking interlock



Mismatch protection



Indication contacts are available:

- In the standard version for relay applications
- In a low-level version for control of PLCs and electronic circuits.





OF (microswitch type)



ON/OFF indication contacts OF (rotary type)



Additional "fault-trip" indication contacts SDE



Combined contacts

Indication Contacts

ON/OFF Indication Contacts OF

Rotary type changeover contacts directly driven by the mechanism. These contacts trip when the minimum isolation distance between the main Circuit breaker contacts

s reacried.				
OF				
Supplied as standard				4
Maximum number				12
Breaking capacity (A)	Standard			minimum load: 100 mA/24 V
p.f.: 0.3		VAC	240/380	10/6[1]
AC12/DC12			480	10/6[1]
			690	6
		V DC	24/48	10/6[1]
			125	10/6[1]
			250	3
	Low-level			minimum load: 2 mA/15 V
		VAC	24/48	6
			240	6
			380	3
		V DC	24/48	6
			125	6
			250	3

[1] Standard contacts: 10 A; optional contacts: 6 A.

"Fault-Trip" Indication Contacts SDE

Circuit breaker tripping due to a fault is signalled by:

- A red mechanical fault indicator (reset)
- One changeover contact SDE.

Following tripping, the mechanical indicator must be reset before the circuit breaker may be closed. One SDE is supplied as standard. An optimal SDE may be added.

This latter is incompatible with the electrical reset after fault-trip option (Res).							
SDE							
Supplied as standard				1			
Maximum number				2			
Breaking capacity (A)	Standard			minimum load: 100 mA/24 V			
p.f.: 0.3		VAC	240/380	6			
AC12/DC12			480	2			
		V DC	24/48	3			
			125	0.3			
			250	0.15			
	Low-level			minimum load: 2 mA/15 V			
		VAC	24/48	3			
			240	3			
			380	3			
		V DC	24/48	3			
			125	0.3			
			250	0.15			

Combined "Connected/Closed" Contacts EF

The contact combines the "device connected" and the "device closed" information to produce the "circuit closed" information. Supplied as an option for MasterPact NW DC, it is mounted in place of the connector of an additional OF contact.

EF				
Maximum number				8
Breaking capacity (A)	Standard			minimum load: 100 mA/24 V
p.f.: 0.3		VAC	240/380	6
AC12/DC12			480	6
			690	6
		V DC	24/48	2.5
			125	0.8
			250	0.3
	Low-level			minimum load: 2 mA/15 V
		VAC	24/48	5
			240	5
			380	5
		V DC	24/48	2.5
			125	0.8
			250	0.3



Three series of optional auxiliary contacts are available for the chassis:

- Changeover contacts to indicate the "connected" position CE
- Changeover contacts to indicate the "disconnected" position CD. This position is indicated when the required clearance for isolation of the power and auxiliary circuits is reached.
- Changeover contacts to indicate the "test" position CT. In this position, the power circuits are disconnected and the auxiliary circuits are connected.

Additional actuators

A set of additional actuators may be installed on the chassis to change the functions of the carriage switches.

Contacts				CE	CD	СТ
Maximum number	Standard actuators	with add	ditional	3 9 6 6 3	3 0 3 0 6	3 0 0 3 0
Breaking capacity (A)	Standard			minimun	n load: 100) mA/24 V
p.f.: 0.3 AC12/DC12		VAC	240	8		
AC12/DC12			380	8		
			480	8		
			690	6		
		V DC	24/48	2.5		
			125	0.8		
			250	0.3		
	Low-level			minimun	n load: 2 m	nA/15 V
		VAC	24/48	5		
			240	5		
			380	5		
		V DC	24/48	2.5		
			125	0.8		
			250	0.3		



CE, CD and CT "connected/disconnected/test" position carriage switches



Two solutions are available for remote operation of MasterPact devices:

- A point-to-point solution
- A bus solution with the COM communication option.





Note:

An opening order always takes priority over a closing order. If opening and closing orders occur simultaneously, the mechanism discharges without any movement of the main contacts. The circuit breaker remains in the open position (OFF).

In the event of maintained opening and closing orders, the standard mechanism provides an anti-pumping function by blocking the main contacts in open position.

Anti-pumping function. After fault tripping or intentional opening using the manual or electrical controls, the closing order must first be discontinued, then reactivated to close the circuit breaker.

When the automatic reset after fault trip (RAR) option is installed, to avoid pumping following a fault trip, the automatic control system must take into account the information supplied by the circuit breaker before issuing a new closing order or blocking the circuit breaker in the open position. (information on type of fault: overload, short time delay, earthleakage fault, fault vigi or short-circuit, etc.)

MX communicating releases are of the impulse type only and cannot be used to lock a circuit breaker in OFF position. For locking in OFF position, use the remote tripping function (2nd MX or MN).

When Mx or XF communicating releases are used, the third wire (C3, A3) must be connected even if the communication module is not installed. When the control voltage (C3-C1 or A3-A1) is applied to the MX or XF releases, it is necessary to wait 1.5 seconds before issuing an order. consequently, it is advised to use standrad MX or XF releases for applications such as source-changeover systems.

Remote Operation: Remote ON/OFF

The remote ON/OFF function is used to remotely open and close the circuit breaker.

- An electric motor MCH equipped with a "springs charged" limit switch contact CH
- Two voltage releases:
 - □ A closing release XF
 - □ An opening release MX.

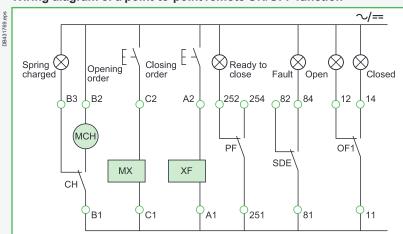
Optionally, other functions may be added:

- A "ready to close" contact PF
- An electrical closing pushbutton BPFE
- Remote RES following a fault.

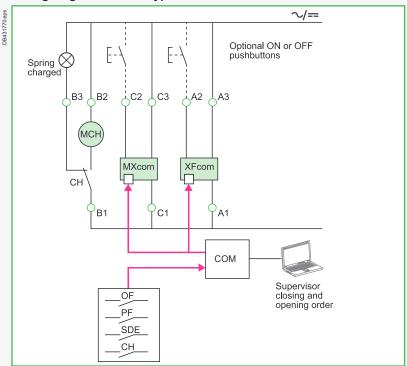
A remote-operation function is generally combined with:

- Device ON/OFF indication OF
- "fault-trip" indication SDE.

Wiring diagram of a point-to-point remote ON/OFF function



Wiring diagram of a bus-type remote ON/OFF function



Electric Motor MCH

The electric motor automatically charges and recharges the spring mechanism when the circuit breaker is closed. Instantaneous reclosing of the breaker is thus possible following opening. The spring-mechanism charging handle is used only as a backup if auxiliary power is absent.

The electric motor (MCH) is equipped as standard with a limit switch contact (CH) that signals the "charged" position of the mechanism (springs charged).

Characteristics							
48/60 - 100/130 - 200/240 - 277 - 380/415 - 400/440 - 480							
24/30 - 48/60 - 100/125 - 200/250							
0.85 to 1.1 Un							
180							
2 to 3 In for 0.1 s							
maximum 4 seconds							
maximum 3 cycles per minute							
10 A at 240 V							

Voltage Releases XF and MX

Their supply can be maintained or automatically disconnected.

Closing release XF

The XF release remotely closes the circuit breaker if the spring mechanism is charged.

Opening release MX

The MX release instantaneously opens the circuit breaker when energized, the minimum duration of the pulse operating order must be 200 ms. The MX release locks the circuit breaker in OFF position if the order is maintained (except for MX "communicating" releases).

Note: Whether the operating order is maintened or automatically disconnected (pulse-type), XF or MX "communicating" releases ("bus" solution with "COM" communication option) always have an impulse-type action (see diagram).

Characteristics		XF	MX	
1117		24 - 48 - 100/130 - 200/250 -	277 - 380/480	
		12 - 24/30 - 48/60 - 100/130 - 200/250		
Operating threshold		0.85 to 1.1 Un	0.7 to 1.1 Un	
Consumption (VA or W)		pick-up: 200 (during 200 ms) hold: 4.5	pick-up: 200 (during 200 ms) hold: 4.5	
Circuit breaker response time at Un		70 ms ±10 (NW DC \le 4000 A) 80 ms ±10 (NW DC \le 4000 A)	50 ms ±10 (NW DC)	

"Ready to Close" Contact PF

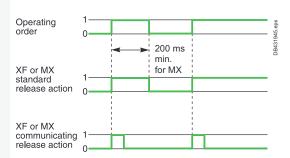
The "ready to close" position of the circuit breaker is indicated by a mechanical indicator and a PF changeover contact. This signal indicates that all the following are valid:

- The circuit breaker is in the OFF position
- The spring mechanism is charged
- A maintained opening order is not present:
 - □ MX energized
 - □ Fault trip
 - $\hfill\Box$ Remote tripping second MX or MN
 - □ Device not completely racked in
 - □ Device locked in OFF position
 - □ Device interlocked with a second device.

Characteristics				
Supplied as standard				-
Maximum number				1
Breaking capacity	Standard			minimum load: 100 mA/24 V
p.f.: 0.3		VAC	240/380	5
AC12/DC12			480	5
			690	3
		V DC	24/48	3
			125	0.3
			250	0.15
	Low-level			minimum load: 2 mA/15 V
		VAC	24/48	3
			240	3
			380	3
		V DC	24/48	3
			125	0.3
			250	0.15



Electric motor MCH for MasterPact NW DC





XF and MX voltage releases



"Ready to close" contacts PF

Electrical Closing Pushbutton BPFE

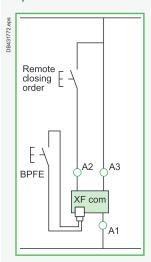
Located on the front panel, this pushbutton carries out electrical closing of the circuit breaker. It is generally associated with the transparent cover that avoids access to the closing pushbutton.

Electrical closing via the BPFE pushbutton takes into account all the safety functions that are part of the control/monitoring system of the installation.

The BPFE connects to the closing release XF in place of the COM module.

The COM module is incompatible with this option.

Different types of voltage exist and the XF electromagnet is compulsary if the BPFE option is selected.



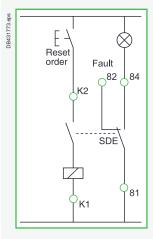
Remote Reset After Fault Trip

Electrical reset after fault trip RES

Following tripping, this function resets the "fault trip" indication contacts SDE and the mechanical indicator and enables circuit breaker closing.

Power supply: 110/130 V AC and 200/240 V AC.

The use of XF closing release is compulsory with this option.



Automatic reset after fault trip RAR

Following tripping, a reset of the mechanical indicator (reset button) is no longer required to enable Circuit breaker closing. The mechanical (reset button) and electrical SDE indications remain in fault position until the reset button is pressed. The use of XF closing release is compulsory with this option.

Electrical and Mechanical Accessories MasterPact NW10 to NW40 DC

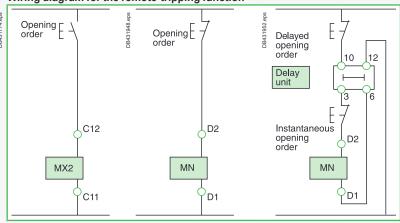
Remote Operation: Remote Tripping

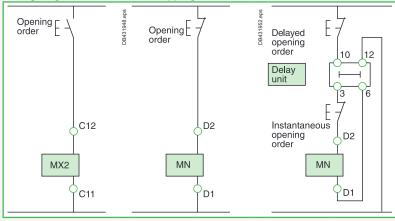
This function opens the circuit breaker via an electrical order. It is made up of:

- A shunt release second MX
- Or an undervoltage release MN
- Or a delayed undervoltage release MNR: (MN + delay unit).

These releases (2nd MX or MN) cannot be operated by the communication bus. The delay unit, installed outside the circuit breaker, may be disabled by an emergency OFF button to obtain instantaneous opening of the circuit breaker.

Wiring diagram for the remote-tripping function





Voltage Releases Second MX

When energized, the MX voltage release instantaneously opens the circuit breaker. A continuous supply of power to the second MX locks the circuit breaker in the OFF position.

Characteristics						
Power supply V AC 50/60 Hz		24 - 48 - 100/130 - 200/250 - 277 - 380/480				
	V DC	24/30 - 48/60 - 100/130 - 200/250				
Operating threshold		0.7 to 1.1 Un				
Permanent locking function		0.85 to 1.1 Un				
Consumption (VA or W)		pick-up: 200 (during 80 ms) hold: 4.5				
Circuit breaker respons	e time at Un	50 ms ±10				

Instantaneous Voltage Releases MN

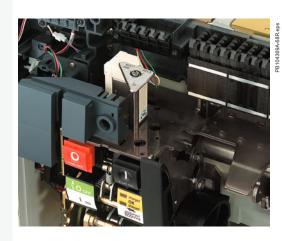
The MN release instantaneously opens the circuit breaker when its supply voltage drops to a value between 35 % and 70 % of its rated voltage. If there is no supply on the release, it is impossible to close the circuit breaker, either manually or electrically. Any attempt to close the circuit breaker has no effect on the main contacts. Circuit breaker closing is enabled again when the supply voltage of the release returns to 85 % of its rated value.

Characteristics						
Power supply	V AC 50/60 Hz	24 - 48 - 100/130 - 200/250 - 380/480				
	V DC	12 - 24/30 - 48/60 - 100/130 - 200/250				
Operating threshold	opening	0.35 to 0.7 Un				
	closing	0.85 Un				
Consumption (VA or W)		pick-up: 200 (during 200 ms)	hold: 4.5			
MN consumption with delay unit		pick-up: 200 (during 200 ms) hold: 4.5				
Circuit breaker response time at Un		90 ms ±5				

MN Delay Units

To eliminate Circuit breaker nuisance tripping during short voltage dips, operation of the MN release can be delayed. This function is achieved by adding an external delay unit in the MN voltage-release circuit. Two versions are available, adjustable and non-adjustable.

Characteristics						
Power supply non-adjustable		100/130 - 200/250				
VAC 50-60 Hz/DC	adjustable	48/60 - 100/130 - 200/250 - 380/4	480			
Operating threshold	opening	0.35 to 0.7 Un				
	closing	0.85 Un				
Consumption of delay unit alone (VA or W)		pick-up: 200 (during 200 ms)	hold: 4.5			
Circuit breaker response	non-adjustable	0.25 s				
time at Un	adjustable	0.5 s - 0.9 s - 1.5 s - 3 s				



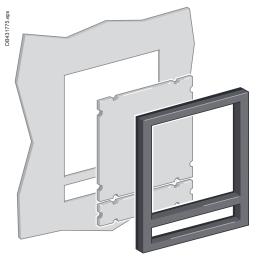


MX or MN voltage release

Electrical and Mechanical Accessories MasterPact NW10 to NW40 DC







Escutcheon CDP with blanking plate



Transparent cover CCP for escutcheon



Grounding kit KMT

A-122

Life Is On Schneider

Shields, Blanking Plates, Counters

Auxiliary Terminal Shield CB

Optional equipment mounted on the chassis, the shield avoids access to the terminal block of the electrical auxiliaries.

Operation Counter CDM

The operation counter sums the number of operating cycles and is visible on the front panel. It is compatible with manual and electrical control functions.

Escutcheon CDP

Optional equipment mounted on the door of the cubicle, the escutcheon increases the degree of protection to IP 40 (circuit breaker installed free standing: IP30). It is available in fixed and drawout versions.

Blanking Plate OP for Escutcheon

Used with the escutcheon, this option closes off the door cut-out of a cubicle not yet equipped with a device. It may be used with the escutcheon for both fixed and drawout devices.

Transparent Cover CCP for Escutcheon

Optional equipment mounted on the escutcheon, the cover is hinged and secured by a screw. It increases the degree of protection to IP 54, IK10. It adapts to drawout devices.

Grounding Kit KMT

This option allows the grounding of the breaker mechanism while the front cover is removed. The grounding is made via the chassis for the drawout version and via the fixation side plate for the fixed version.

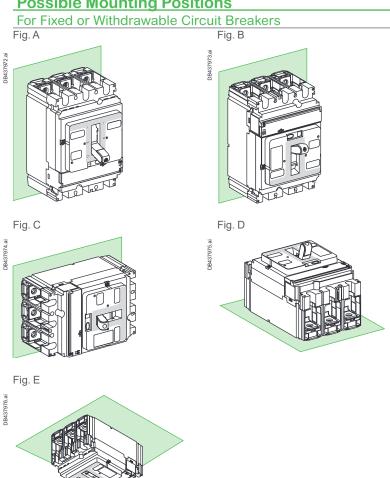
Installation Recommendations

COMPACT NSX 100 to NSX 1200 DC	
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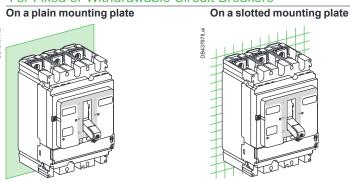
Installation in Switchboards

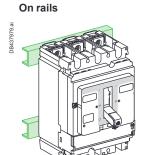
Possible Mounting Positions



Possible Supports

For Fixed or Withdrawable Circuit Breakers





Power Connections

Electrodynamic Forces on the Conductors

The circuit breakers can be connected with copper, tinned copper or tinned aluminum conductors (rigid or flexible bars, cables).

In the event of a short-circuit, electrodynamic forces will be exerted on the conductors

They must therefore be correctly sized and maintained in place using supports. Electrical connection points on all types of devices (contactors, circuit breakers, etc.) should not be used for mechanical support.

Ties for Flexible Bars and Cables

The table below indicates the maximum distance between ties depending on the prospective short-circuit current.

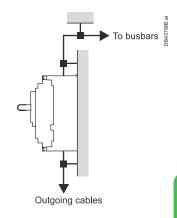
The maximum distance between ties attached to the switchboard frame is 400 mm.

Type of	Maximum distance	Short-circuit current
tie	between ties (mm)	(kA rms)
"PANDUIT" type ties	200	10
Width: 4.5 mm	100	14
Max. load: 22 kg	50	19
White		
"SAREL" type ties	350	21
Width: 9 mm	200	27
Max. load: 90 kg	100	36
Black	70	45
Double ties	50	100

Note: For 50 mm² cables, use the 9 mm wide ties.

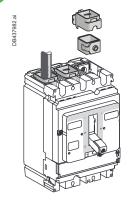
Weights

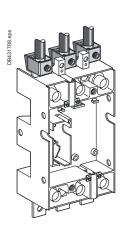
Туре		Circuit breaker	Plug-in base	Chassis	Motor mechanism
NSX100N/H DC	1P/1D	0.5	-	-	-
	2P/2D	1.45	-	-	-
NSX100 DC	3P/3D	1.79	0.8	2.2	1.2
	4P/4D	2.57	1.05	2.2	1.2
NSX160N/H DC	1P/1D	0.5	-	-	-
	2P/2D	1.45	-	-	-
NSX160N DC	3P/3D	1.85	0.8	2.2	1.2
	4P/4D	2.58	1.05	2.2	1.2
NSX250 DC	3P/3D	2.2	0.8	2.2	1.2
	4P/4D	2.78	1.05	2.2	1.2
NSX400/630 DC	3P/3D	6.19	2.4	2.2	2.8
	4P/4D	8.13	2.8	2.2	2.8
NSX1200 DC	2P/2D	8.9	-	-	2.8



Power Connections







Connection of Insulated Bars or Cables with Lugs

				NSX100/160/250 DC	NSX400/630/1200 DC
sd	4000 000 000 000 000 000 000 000 000 00	Bars	L (mm)	≤ 25	≤ 32
789.e			I (mm)	d + 10	d + 15
)B431			d (mm)	≤ 10	≤ 15
		Lugs	e (mm)	≤ 6	3 ≤ e ≤ 10
	# d 0		Ø (mm)	8.5	10.5
	^		L (mm)	≤ 25	≤ 32
	e Tighteni		Ø (mm)	8.5	10.5
		Tightening to	orque (Nm) [1]	15	50
		Tightening to	orque (Nm) [2]	5	20

- [1] Tightening torque for lugs or bars on the circuit breaker.
 [2] Tightening torque for rear connections or terminal extensions on plug-in base.

Connection of Bare Cables

NSX100 to 250 DC





Cable connector

Distribution connector

		Cable	Steel	Aluminium				
		connector	≤ 160 A	≤ 250 A				
bs	M .	L (mm)	20	20				
790.е	■	S (mm²) Cu/Al	1.5 95 [1]	10 16	25 35	50185		
DB431790.eps	4					150 max. flexible		
		Tightening	12	15	20	26		
	OS	torque (Nm)						
		6-cable distribution connector (copper or aluminium)						
		L (mm)	15 or 30					
		S (mm²) Cu/Al	1.5 6 ^[1]	8 35				
		Tightening	4	6				
		torque (Nm)						

[1] For flexible cables from 1.5 to 4 mm², connection with crimped or self-crimping ferrule.

NSX400 to 630 DC





Cable connector

Distribution connector

			Cable connector	2-cable connector
sd	1	L (mm)	20	30 or 60
DB431790.eps	III ↓	S (mm²) Cu/Al	Ü	2 x 85 to 2 x 240 rigid
B431			240 max. flexible	240 max. flexible
		Tightening	31	31
	OS	torque (Nm)		

NSX1200 DC

		2-cable connector
4.eps	L (mm)	30 or 60
DB431674		2 x 85 to 2 x 240 rigid 240 max. flexible
	Tightening torque (Nm)	31

Safety Clearances, Minimum Distances and Insulation of Live Parts

When installing a ComPacT NSX100 to 1200 DC circuit breaker, minimum distances (safety clearances) must be maintained between the device and panels, bars and other protection devices installed nearby. These distances, which depend on the ultimate breaking capacity, are defined by tests carried out in accordance with standard IEC 60947-2.

If installation conformity is not checked by type tests, it is also necessary to:

- Use insulated bars for circuit breaker connections
- Block off the busbars using insulating screens.

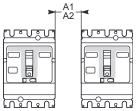
Terminal shields, interphase barriers and the insulation kit are recommended and may be mandatory depending on the utilization voltage and the type of installation (fixed, withdrawable).

Dimensions (mm)		Insulation, insulated bars or painted sheet metal C1 D1 D2								
ComPacT circuit breaker		C1	D1	D2	C2	D1	D2	A1 [2]	A2 [3]	В
NSX100-250		0	30	30	5	35	35	0	10	0
		U	30	30	-	33	33	U		U
DC	U ≤ 500 V	0	30	30	10 [1]	35	35	0	20	0
	U ≤ 750 V	0	30 [4]	30 [4]	20 [4]	35 [4]	35 [4]	0	-	0
NSX400-630	U ≤ 250 V	0	30	30	5	60	60	0	10	0
DC	U ≤ 500 V	0	30	30	10 [1]	60	60	0	20	0
	U ≤ 750 V	0	30 [4]	30 [4]	20 [4]	100 [4]	100 [4]	0	-	0
NSX1200	U ≤ 300 V	0	30	30	10	60	60	0	-	0
DC [5]	U ≤ 600 V	0	30	30	20	100	100	0	-	0

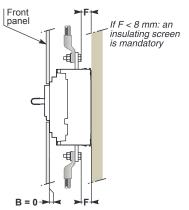
- [1] Distance must be doubled with interphase barriers.
- [2] For ComPacT NSX DC with long or short terminal shields.
 [3] For ComPacT NSX DC without terminal shields.
- [4] For voltage > 500 V, terminal shields are mandatory. The length of terminal shields (long or short terminal shields) should be considered.
- [5] For ComPacT NSX1200 DC, terminal shields are required and are supplied with the circuit

Terminal Shield Configuration

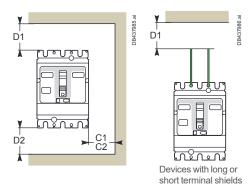
NSX400/6	30/1200,	NSX400/6	530 NA						
	NSX400/63	0				NSX1200			
Circuit breaker construction	3P	3P	4P	4P	4P	2P (4P platform)			
Pole connection	3P in series	2P in series	3P in series	4P in series	2P parallel	-			
Terminal shield construction	3P	3P	4P	4P	4P	4P			
upstream	LV438291	LV432593	LV438294	LV432594	LV438293	LV438293			
upstream with rear connection	LV438291	LV432593 or LV432591 (short)	LV438294	LV432594 or LV432592 (short)		-			
downstream	LV438291	LV438292	LV438295	LV438293	LV438293	LV438293			
	Source Load	DB437988 ai	PB437989 ai	Source Load	Poed 1				
	DB431796.eps	DB431798.eps	DB431800.eps	08431804 e.g.	DB431806.6ps	DB431807.eps			



Minimal distance between two adjacent circuit breakers



Minimal distance between the circuit breaker and front or rear panels



Minimal distance between the circuit breaker and top, bottom or side panels

Temperature Derating

These values are valid for fixed and withdrawable circuit breakers with or without terminal shields.

- "≤ 500 V" means that 2 poles only are used, for isolated system, this table shall be used up to 250 V only.
- "> 500 V" means that 3 or 4 poles are used, for isolated system, this table shall be used up to 500 V only.

When the ambient temperature is greater than 40 °C, overload-protection characteristics are slightly modified. To determine tripping times using time/current curves, use the values of the current indicated in the table below, corrected to take into account the ambient temperature.

ComPacT NSX DC temp	erature derati	ing						
NSX DC configuration	Type of trip		A) for a given	temperatur	е			
· ·	unit	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient
		temp. 40 °C	temp. 45 °C	temp. 50 °C	temp. 55 °C	temp. 60 °C	temp. 65 °C	temp. 70 °C
NSX100 DC 1/2P	TM16D	16	15.6	15.2	14.8	14.5	14	13.8
1P 250 V - 2P 500 V	TM25D	25	24.5	24	23.5	23	22	21
	TM30D	30	31.3	30.5	30	29.5	29	28.5
	TM40D	40	39	38	37	36	35	34
	TM50D	50	49	48	47	46	45	44
	TM63D	63	61.5	60	58	57	55	54
	TM80D	80	78	76	74	72	70	68
	TM100D	100	97.5	95	92.5	90	87.5	85
NSX160 DC 1/2P	TM125D	125	122	119	116	113	109	106
1P 250 V - 2P 500 V	TM160D	160	156	152	147	144	140	136
NSX100 DC 3/4P ≤ 500 V	TM16D	16.8	16.4	16	15.5	15.2	14.7	14.5
	TM25D	26.3	25.7	25.2	24.7	24.2	23.1	22.1
	TM32D	33.6	33	32	31.5	31	30.5	30
	TM40D	42	41	40	39	38	37	36
	TM50D	53	51	50	49	48	47	46
	TM63D	66	65	63	61	60	58	57
	TM80DC	84	82	80	78	76	74	71
	TM100DC	105	102	100	97	95	92	89
NSX160 DC 3/4P ≤ 500 V	TM125DC	131	128	125	122	119	114	111
	TM160DC	168	164	160	154	151	147	143
NSX250 DC 3/4P ≤ 500 V	TM200DC	210	205	200	194	189	184	179
NOVICE DE CITE DE CONT	TM250DC	250	240	235	230	220	210	200
NSX100 DC 3/4P > 500 V	TM16D	16	15.6	15.2	14.8	14.5	14	13.8
	TM25D	25	24.5	24	23.5	23	22	21
	TM32D	32	31.3	30.5	30	29.5	29	28.5
	TM40D TM50D	40 50	39 49	38 48	37 47	36 46	35	34 44
	TM63D	63	61.5	60	58	57	45 55	54
	TM80DC	80	78	76	74	72	70	68
	TM100DC	100	97.5	95	92.5	90	87.5	85
NSX160 DC 3/4P > 500 V	TM125DC	125	122	119	116	113	109	106
N3X 100 DC 3/4F > 300 V	TM160DC	160	156	152	147	144	140	136
NSX250 DC > 500 V	TM200DC	200	195	190	185	180	175	170
NOAZOO BO F OOO V	TM250DC	230	225	220	210	200	190	180
NSX400 DC ≤ 500 V	TM250DC	250 A	250 A	240 A	230 A	220 A	205 A	195 A
	TM320DC	320 A	320 A	315 A	305 A	295 A	280 A	270 A
	TM400DC	400 A	400 A	395 A	380 A	370 A	355 A	340 A
NSX400 DC > 500 V	TM250DC	250 A	250 A	240 A	230 A	220 A	205 A	195 A
	TM320DC	320 A	320 A	315 A	305 A	295 A	280 A	270 A
	TM400 DC	400 A	400 A	395 A	380 A	370 A	350 A	340 A
NSX630 DC ≤ 500 V	TM500DC	500 A	500 A	490 A	475 A	460 A	440 A	420 A
	TM600DC	600 A	600 A	585 A	560 A	535 A	510 A	485 A
NSX630 DC > 500 V	TM500DC	500 A	480 A	465 A	450 A	440 A	420 A	410 A
	TM600DC	-	-	-	-	-	-	-
NSX1200 DC 600 V	TM630DC	630 A	610 A	590 A	570 A	550 A	520 A	500 A
	TM800DC	800 A	775 A	740 A	720 A	695 A	665 A	640 A
	TM1000DC	1000 A	970 A	930 A	905 A	870 A	830 A	800 A
	TM1200DC	1200 A	1160 A	1115 A	1085 A	1040 A	995 A	955 A
NSX400 NA DC ≤ 500 V		400 A	400 A	400 A	400 A	400 A	400 A	400 A
NSX400 NA DC > 500 V		400 A	400 A	400 A	400 A	400 A	400 A	400 A
NSX600 NA DC ≤ 500 V		630 A	600 A	580 A	560 A	540 A	520 A	500 A
NSX600 NA DC > 500 V		605 A	585 A	570 A	550 A	530 A	505 A	485 A

Example :: ComPacT NSX100 DC equipped with a TM80DC trip unit has a rating of:

- 84 A at 40 °C
- 78 A at 55 °C.

Characteristics of Circuit Breakers with Parallel Connection of Poles

When poles are connected in parallel, the trip unit corresponding to the maximum circuit breaker rating is never used, for safety reasons related to temperature rise. The heating conditions are modified. The table opposite indicates the new thermal ratings that should be used for 2P, 3P and 4P circuit breakers.

Type of circuit breaker	Pole connections	Type of trip unit	Equivalent rated current [1] In (A) at 40 °C	Magnetic threshold li (A) ±20 %	Breaking capacity Icu (kA)		
NSX100F DC NSX100F DC 2-pole	2P in parallel	TM16D TM25D TM30D TM40D TM50D	40 63 80 100 125	520 800 800 1400	250 V 36	500 V -	
See example 2 (see page A-8)		TM63D TM80D	158 200	1400 1600			
NSX100F DC 3-pole	3P in parallel	TM16D TM25D TM32D TM40D TM50D TM63D TM63D TM80DC TM16G TM25G TM40G TM63G TM80G	58 90 115 144 180 227 288 58 90 144 227 288	780 1200 1650 2100 2100 2100 2400 240 300 300 450 750	Please consult us	-	
NSX100F DC 4-pole	4P in parallel	TM100G TM16D TM25D TM32D TM40D TM50D TM63D TM80DC	360 74 115 147 184 230 290 368	1200 1040 1600 2200 2800 2800 2800 3200	Please consult us	-	
	2 x 2P (in	TM16G TM25G TM40G TM63G TM80G TM100G TM16D	74 115 184 290 368 460 37	320 400 400 600 1000 1600 520	36	36	
	parallel) in series	TM25D TM32D TM40D TM50D TM63D TM80DC TM16G TM25G TM40G TM63G	58 74 46 115 145 184 37 58 46 145	800 1100 1400 1400 1400 1600 1600 200 200 300			
		TM40G	46	5 4	200 5 300 4 500	200 5 300 4 500	

An equivalent rated current of 290 A

A fixed magnetic threshold of 2800 A.

Characteristics of Circuit Breakers with Parallel Connection of Poles

When poles are connected in parallel, the trip unit corresponding to the maximum circuit breaker rating is never used, for safety reasons related to temperature rise. The heating conditions are modified. The table opposite indicates the new thermal ratings that should be used for 2P, 3P and 4P circuit breakers.

Type of circuit	Pole connections	Type of trip unit	Equivalent rated	Magnetic threshold	Breakir capacit	
breaker			In (A) at 40 °C	li (A) ±20 %	lcu (kA)
NSX160F DC					250 V	500 V
NSX160F DC 2-pole	2P in parallel	TM125D	313	2400	36	-
NSX160F DC	3P in parallel	TM100DC	360	2400	Please	-
3-pole		TM125DC	450	3750	consult	
		TM125G	450	1560	us	
		TM160G	576	1560		
NSX160F DC	4P in parallel	TM100DC	460	3200		
4-pole		TM125DC	575	5000		
		TM125G	575	2080		
		TM160G	736	2080		
	2x2P (in	TM100DC	230	1600	36	36
See	parallel) in	TM125DC	288	2500		
example 1	series	TM125G	288	1040		
(see page A-8)		TM160G	368	1040		
NSX250F DC						
NSX250F DC	2P in parallel	TM160DC	400	2500	36	-
3-pole		TM200DC	500	2000 to 4000		
NSX250F DC	3P in parallel	TM160DC	576	3750	Please	-
3-pole	·	TM200DC	720	3000 to 6000	consult	
		TM200G	720	1560	us	
		TM250G	900	1875		
NSX250F DC	4P in parallel	TM160DC	736	5000		
4-pole	·	TM200DC	920	4000 to 8000		
-		TM200G	920	2080		
		TM250G	1150	2500		
	2x2P (in	TM160DC	368	2500	36	36
	parallel)	TM200DC	460	2000 to 4000		
	in series	TM200G	460	1040		
		TM250G	575	1250		
		TIVIZOUG	0/0	1230		

Example : a ComPacT NSX160F DC 4-pole circuit breaker with 2x2P poles in parallel, equipped with a TM125DC trip unit:

- A equivalent rated current of 288 A
- A fixed magnetic threshold of 2500 A.

Characteristics of Circuit Breakers with Parallel Connection of Poles

When poles are connected in parallel, the trip unit corresponding to the maximum circuit breaker rating is never used, for safety reasons related to temperature rise. The heating conditions are modified. The table opposite indicates the new thermal ratings that should be used for 2P, 3P and 4P circuit breakers.

Type of circuit breaker	Pole connections	Type of trip unit	Equivalent rated current [1] In (A) at 40 °C	Magnetic threshold Ii (A) ±20 %	Breaking capacity Icu (kA)	
NSX400F DC					250 V	500 V
NSX400F	2P in parallel	TM250DC	500	1250 to 2000	36	-
DC 3-pole		TM320DC	640	1600 to 3200		
	3P in parallel	TM250DC	750	1875 to 3000		
		TM320DC	960	2400 to 4800		
NSX400F	4P in parallel	TM250DC	1000	2500 to 4000		
DC 4-pole		TM320DC	1280	3200 to 6400		
	2x2P	TM250DC	500	1250 to 2000	36	36
	(in parallel) in series	TM320DC	640	1600 to 3200		
NSX630F DC						
NSX630F	2P in parallel	TM500DC	1000	2500 to 5000	36	-
DC 3-pole		TM600DC	1065	3000 to 6000		
NSX630F	3P in parallel	TM500DC	1485	3750 to 7500		
DC 3-pole		TM600DC	1500	4500 to 9000		
NSX630F DC 4-pole	4P in parallel	TM500DC	1650	5000 to 10000		
		TM600DC	1985	6000 to 12000		

ComPacT NSX DC PV

Safety Clearances and Minimum Distances

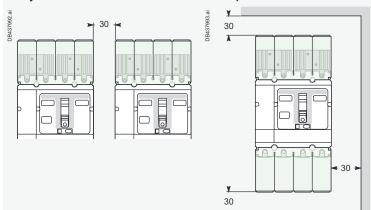
Safety Clearance Using Terminals Shields

- Terminal shields must be used with all DC PV circuit breakers when operating at 1000 V DC.
- Terminal shields can be used in option with DC PV switch-disconnectors (U ≤ 1000 V DC).

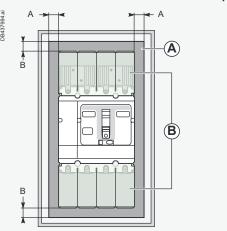
ComPacT NSX80 to 200 DC PV and ComPacT NSX250 to 500 DC PV

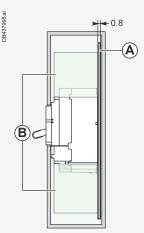
Minimal distance between two adjacent devices

Minimal distance between the device and panels



Minimal distance between the device and panels





Dimensions (mm)	Insulation, insulated bars or painted sheet meta						
	A	В					
NSX80-200 DC PV	13	13					
NSX250 to 500 DC PV	26	26					

- (A) Fiber insulating plate to be made by the customer.
- (B) Long terminal shield.

Note: The thermal behavior of switchgear and enclosures warrants careful monitoring. PV generator boxes and array boxes are usually installed outdoors and exposed to the elements. In the event of high ambient temperatures, high IP levels could reduce air flow and thermal power dissipation.

In addition, the way switchgear devices achieve high voltage operation - i.e. through the use of poles in series - increases their temperature. Special attention should therefore be paid to the temperature of switchgear inside outdoor enclosures on the DC side.

Schneider Electric recommends checking the installation as per IEC 61439 or any other equivalent standard.

ComPacT NSX NA DC PV

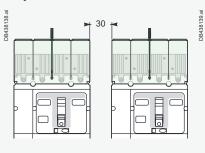
Safety Clearances and Minimum Distances

Safety Clearance with Interphase Barriers

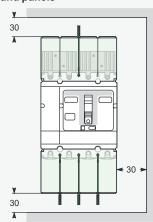
■ Interphase barriers can used only with DC PV switch-disconnectors (U \leq 1000 V DC).

ComPacT NSX100 to 630 NA DC PV

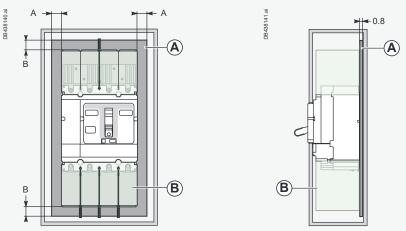
Minimal distance between two adjacent devices



Minimal distance between the device and panels



Minimal distance between the device and panels



Dimensions (mm)	Insulation, insulated ba	rs or painted sheet metal
	A	В
NSX100 to 250 DC PV	13	13
NSX400 to 630 DC PV	26	26

- (A) Fiber insulating plate to be made by the customer.
- (B) Long terminal shield.

Note: The thermal behavior of switchgear and enclosures warrants careful monitoring. PV generator boxes and array boxes are usually installed outdoors and exposed to the elements. In the event of high ambient temperatures, high IP levels could reduce air flow and thermal power dissipation.

In addition, the way switchgear devices achieve high voltage operation - i.e. through the use of poles in series - increases their temperature. Special attention should therefore be paid to the temperature of switchgear inside outdoor enclosures on the DC stide. Schpeider Electric recommends checking the installation as per IEC 61439 or any other

Schneider Electric recommends checking the installation as per IEC 61439 or any other equivalent standard.



ComPacT NSX200 NA DC PV with short heatsinks and interphase barriers



ComPacT NSX200 NA DC PV with long heatsinks and interphase barriers

ComPacT NSX DC PV

Temperature Derating

ComPacT switch-disconnectors have been tested for operation in industrial atmospheres. It is recommended that the equipment be cooled or heated to the proper operating temperature and kept free of excessive vibration and dust.

ComF	PacT NSX NA	DC PV											
IP	Bottom	Bottom	Тор	Тор	Top series	Maxir	num c	urren	t (A): I,	Ha.			Cooper
	interphase	terminal	interphase	terminal	connection	40 °C	45 °C	50 °C	55 °C	ຣດ ∘ຕ	65 °C	70 °C	cable
	barrier	shield	barrier	shield		70 0	- 3 0	30 0	33 C	00 0	05 0	, o o	section (1)
NSX1	00 NA DC PV	/ 4P											
IP0	3	No	1	No	Short 2 x	100	100	100	100	100	100	100	Cu 35 mm ²
	(LV429329)		(LV429329)		LV438328								
IP4X	No	LV429518	No	LV438327	Short 2 x	100	100	100	100	100	100	100	Cu 35 mm ²
					LV438328								
NSX160 NA DC PV 4P													
IP0	3	No	1	No	Short 2 x	160	160	160	160	160	155	145	Cu 70 mm ²
	(LV429329)		(LV429329)		LV438328								
IP0	3	No	1	No	Long 2 x	160	160	160	160	160	160	160	Cu 70 mm ²
	(LV429329)		(LV429329)		LV438339								
IP4X	No	LV429518	No	LV438327	Short 2 x	160	160	160	160	150	145	135	Cu 70 mm ²
					LV438328								
NSX2	00 NA DC PV	/ 4P											
IP0	3	No	1	No	Short 2 x	200	195	190	180	170	160	150	Cu 95 mm ²
	(LV429329)		(LV429329)		LV438328								
IP0	3	No	1	No	Long 2 x	200	200	200	200	195	185	170	Cu 95 mm ²
	(LV429329)		(LV429329)		LV438339								
IP4X	No	LV429518		LV438327	Short 2 x	190	180	175	165	155	150	140	Cu 95 mm ²
					LV438328								
NSX4	00 NA DC PV	/ 4P											
IP3X	No	LV432594	No	LV438337	LV438338	400	400	400	400	400	390	380	Cu 240 mm ²
IP0	3	No	1	No	LV438338	400	400	400	400	400	400	400	Cu 240 mm ²
	(LV432570)		(LV429329)										
NSX500 NA DC PV 4P													
IP3X	No	LV432594	No	LV438337	LV438338	500	500	490	470	450	435	420	Cu 2 x 150
													mm²
IP0	3	No	1	No	LV438338	500	500	500	500	500	500	480	Cu 2 x 150
	(LV432570)		(LV429329)										mm²

For ComPacT NSX the overload protection is calibrated at 40 °C and for C60 DC PV at 20 °C. This means that when the ambient temperature is less or greater than these temperatures, the Ir protection pickup is slightly modified.

- Temperature rise for ComPacT range have been checked with terminal shields (mandatory) heatsink on top, four cables on bottom connections with section and length according to IEC60947-1 Table 9 and 10.
- Values in the tables are provided for vertical mounting only. In case of horizontal mounting consult us. To obtain the tripping time for a given temperature:
 - □ See the tripping curves for 20 or 40 °C
 - □ Determine tripping times corresponding to the Ir value (thermal setting on the device), corrected for the breaker ambient temperature as indicated in the tables below.

DC P	V over	currer	nt prot	ection							
	cT NSX T im currer		'								Cooper cable section [1]
20 °C	25 °C	30 °C	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C	Cooper cable section 15
NSX80	TM DC P	/									
88	86	84	82	80	77	75	72	69	66	63	Cu 25 mm ²
NSX125	TM DC F	٧٧									
137.5	135	131	128	125	121	116	112	108	103	98	Cu 50 mm ²
NSX160	TM DC F	٧٧									
176	172	168	164	160	153	147	142	136	130	124	Cu 70 mm ²
NSX200	TM DC	٧٧									
194	189	183	178	172	167	161	155	149	142	136	Cu 95 mm ²
200	200	200	200	200	188	182	175	168	160	153	Cu 95 mm ^{2 [2]}
NSX250	TM DC F	٧٧									
302	295	288	280	250	243	235	228	220	210	197	Cu 120 mm ²
NSX320	TM DC F	٧٧									
371	362	352	342	320	309	297	286	273	261	248	Cu 185 mm ²
NSX400	TM DC F	٧									
455	444	433	421	400	386	372	358	343	327	311	Cu 240 mm ²
	TM DC F										
557	542	526	511	495	478	461	444	426	405	384	Cu 2x150 mm ²

^[11] Temperature rise have been checked with four cables on bottom connections with section and length according to IEC60947-1 Table 9.

a. When used in array boxes, with short connection to string protections the cross section of the bars or cables shall have a higher cross section.

b. When cables have a cross section lower than the value indicated an additional 0.9 derating coefficient shall be applied. Values in the tables are provided for vertical mounting only.

^[2] Take into account this derating line for products with date code over --15011.

ComPacT NSX DC PV

Temperature Derating - Power Dissipation/Resistance

ComPacT NSX630b to 1600 DC PV Switch-Disconnectors [1]

All the given values come from connections tests.

For other kind of connections (rear horizontal/rear vertical) the values remain the same.

DC	PV switc	h-disc	onnecto	r									
	PacT NSX N												
IP	Bottom	Bottom	Тор	Тор	Top series	Maxir	num c	urrent	(A): I,	1			Copper cable
	interphase		interphase	terminal	connection	40.00	45.00	50 °C	FF 00	CO 00	05.00	70.00	section
	barrier	shield	barrier	shield		40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C	
	30b NA DC		l				1						
IP2X		33629	No		2 x LV438966		630	630		630	630	630	Cu 2 x 185 mm ²
IP0	3 (33646)	No	1 (33646)	No	2 x LV438966	630	630	630	630	630	630	630	Cu 2 x 185 mm ²
NSX8	00 NA DC P	V 4P											
IP2X	No	33629	No	LV438968	2 x LV438966	800	800	800	800	800	800	800	Cu 2 x 240 mm ²
IP0	3 (33646)	No	1 (33646)	No	2 x LV438966	800	800	800	800	800	800	800	Cu 2 x 240 mm ²
NSX1	NSX1000 NA DC PV 4P												
IP2X	No	33629	No	LV438968	2 x LV438966	1000	1000	1000	1000	1000	1000	1000	Bar Cu 2 x 60 x 5 mm
IP0	3 (33646)	No	1 (33646)	No	2 x LV438966	1000	1000	1000	1000	1000	1000	1000	Bar Cu 2 x 60 x 5 mm
NSX1	250 NA DC I	PV 4P							'				
IP2X	No	33629	No	LV438968	2 x LV438966	1250	1250	1250	1250	1232	1169	1102	Bar Cu 2 x 80 x 5 mm
IP0	3 (33646)	No	1 (33646)	No	2 x LV438966	1250	1250	1250	1250	1250	1227	1157	Bar Cu 2 x 80 x 5 mm
NSX1	NSX1600 NA DC PV 4P												
IP2X	No	33629	No	LV438968	2 x LV438966	1473	1428	1384	1338	1291	1243	1193	Bar Cu
													2 x 100 x 5 mm
IP0	3 (33646)	No	1 (33646)	No	2 x LV438966	1500	1500	1500	1448	1397	1345	1291	Bar Cu
	()		, , ,										2 x 100 x 5 mm

^[1] For a switch-disconnector mounted in horizontal position, the derating to be applied is equivalent to that of a front or horizontal rear connected switch-disconnector.

The values indicated in the tables opposite are typical values.

Power dissipated per pole (P/pole) in Watts (W)

The value indicated in the table is the power dissipated at I_N, four-pole switchboard (these values can be higher than the power calculated on the basis of the pole resistance). Measurement and calculation of the dissipated power are carried out in compliance with the recommendations of Annex G of standard IEC 60947-2.

Resistance per pole (R/pole) in milliohms (m Ω)

The value of the resistance per pole is provided as a general indication for a new device.

The value of the contact resistance must be determined on the basis of the measured voltage drop, in accordance with the manufacturer's test procedure.

ComPacT NSX80 TM to 500	ComPacT NSX80 TM to 500 TM DC PV switch-disconnectors						
Version	Fixed device						
	TM						
	R/pole	P/pole					
NSX80 TM DC PV	1	6.40					
NSX100 TM DC PV	0.72	7.20					
NSX125 TM DC PV	0.68	10.63					
NSX160 TM DC PV	0.49	12.54					
NSX200 TM DC PV	0.44	17.60					
NSX250 TM DC PV	0.33	20.63					
NSX320 TM DC PV	0.215	22.02					
NSX400 TM DC PV	0.16	25.60					
NSX500 TM DC PV	0.134	33.50					

ComPacT NSX630b NA to 1600 NA DC PV switch-disconnectors						
Version	Fixed device					
	NA					
	R/pole	P/pole				
NSX630b NA DC PV	0.029	11.4				
NSX800 NA DC PV	0.029	18.7				
NSX1000 NA DC PV	0.030	29.7				
NSX1250 NA DC PV	0.030	47.3				
NSX1600 NA DC PV	0.033	74.0				

Note: This measurement is not sufficient to determine the quality of the contacts, i.e. the capacity of the circuit breaker to carry its rated current.

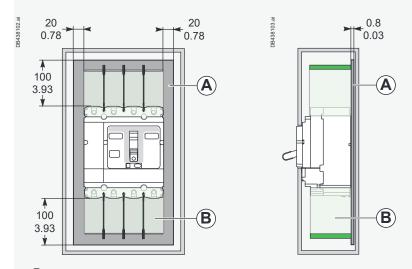
ComPacT NSX DC EP

Safety Clearances and Minimum Distances

Safety Clearance Using Terminals Shields

- Terminal shields must be used with all DC EP circuit breakers when operating at 1500 V DC.
- Terminal shields can be used in option with DC EP switch-disconnectors (U ≤ 1500 V DC).

Minimal distance between two adjacent devices (ComPacT NSX250 TM DC EP and ComPacT NSX250 NA DC EP)

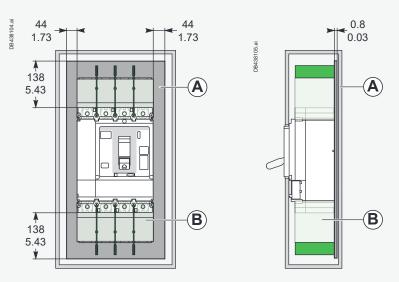


- (A) Insulating screen (LV429331) or fiber insulating plate to be made by the customer.
- (B) Interphase barriers (LV429329) or terminal shield.

ComPacT NSX DC EP

Safety Clearances and Minimum Distances

Minimal distance between two adjacent devices (ComPacT NSX500 TM DC EP and ComPacT NSX630 NA DC EP)



- (A) Insulating screen (LV432579) or fiber insulating plate to be made by the customer
- (B) Interphase barriers (LV432570) or terminal shield.

Note

The device must be installed in an IP5x enclosure. The thermal behavior of switchgear and enclosures warrants careful monitoring. PV generator boxes and array boxes are usually installed outdoors and exposed to the elements. In the event of high ambient temperatures, high IP levels could reduce air flow and thermal power dissipation.

In addition, the way switchgear devices achieve high voltage operation - i.e. through the use of poles in series - increases their temperature. Special attention should therefore be paid to the temperature of switchgear inside outdoor enclosures on the DC side.

Schneider Electric recommends checking the installation as per IEC 61439 or any other equivalent standard

ComPacT NSX DC EP

Temperature Derating

ComPacT switch-disconnectors have been tested for operation in industrial atmospheres. It is recommended that the equipment be cooled or heated to the proper operating temperature and kept free of excessive vibration and dust.

DC E	P switch-di	isconnec	tors										
ComPa	cT NSX NA DC												
IP	Bottom interphase barrier	Bottom terminal shield	Top interphase barrier	Top terminal shield	Top series connection	Maxin 40 °C	um cur 45 °C	rent (A) 50 °C	uii	60 °C	65 °C	70 °C	Cooper cable section (1)
	50 NA DC EI	5											
	0 NA DC EP 4P											,	
IP0	3 (LV429329)	No	1 (LV429329)	No	Short 2 x LV438328	100	100	100	100	100	100	100	Cu 35 mm ²
IP4X	No	LV429518	No	LV438327	Short 2 x LV438328	100	100	100	100	100	100	100	Cu 35 mm ²
NSX16	NA DC EP 4P						·						
IP0	3 (LV429329)	No	1 (LV429329)	No	Short 2 x LV438328	160	160	160	160	160	155	145	Cu 70 mm ²
IP4X	No	LV429518	No	LV438327	Short 2 x LV438328	160	160	160	160	150	145	135	Cu 70 mm ²
NSX20	NA DC EP 4P				,	1							
IP0	3 (LV429329)	, ,		No	Short 2 x LV438328	200	195	190	180	170	160	150	Cu 95 mm²
IP4X	No	LV429518	No	LV438327	Short 2 x LV438328	190	180	175	165	155	150	140	Cu 95 mm ²
IP0	3 (LV429329)	No	1 (LV429329)	No	Cable	200	200	200	200	200	200	200	Cu 95 mm ²
NSX25	NA DC EP 4P						1	1					
IP0	3 (LV429329)	No	1 (LV429329)	No	Short 2 x LV438328	200	195	190	180	170	160	150	Cu 120 mm ²
IP4X	No	LV429518	No	LV438327	Short 2 x LV438328	190	180	175	175	155	150	140	Cu 120 mm ²
IP0	3 (LV429329)	No	1 (LV429329)	No	Cable	250	250	250	235	230	220	210	Cu 120 mm ²
	30 NA DC EI	0											
	0 NA DC EP 4P						_	,	_	,	,		
IP3X	No	LV432594	No	LV438337	LV438338	320	320	320	320	320	320	320	Cu 185 mm ²
IPO	3 (LV432570) 0 NA DC EP 4P	No	1 (LV429329)	No	LV438338	320	320	320	320	320	320	320	Cu 185 mm ²
IP3X	No NA DC EP 4P	LV432594	No	LV438337	LV438338	400	400	400	400	400	390	380	Cu 240 mm ²
IP0	3 (LV432570)	No	1 (LV429329)	No	LV438338	400	400	400	400	400	400	400	Cu 240 mm ²
	0 NA DC EP 4P	1	(21.20020)		,	1.50		,	,				1202.011111
IP3X	No	LV432594	No	LV438337	LV438338	500	500	490	470	450	435	420	Cu 2 x 150 mm ²
IP0	3 (LV432570)	No	1 (LV429329)	No	LV438338	500	500	500	500	500	500	480	Cu 2 x 150
NSX63	0 NA DC EP 4P					1	1	1		1	1	1	ļ
IP3X	No	LV432594	No	LV438337	LV438338	500	500	490	470	450	435	420	Cu 2 x 185 mm ²
IP0	3 (LV432570)	No	1 (LV429329)	No	LV438338	500	500	500	500	500	500	480	Cu 2 x 185
IP0	3 (LV432570)	No	1 (LV429329)	No	Cable	630	610	590	570	550	530	510	Cu 2 x 185

^[1] Temperature rise have been checked with four cables on bottom connections with section and length according to IEC60947-1 Table 9 and 10.

Values in the tables are provided for vertical mounting only.

a. When used in array boxes, with short connection to string protections the cross section of the bars or cables shall have a higher cross section.

b. When cables have a cross section lower than the value indicated an additional 0.9 derating coefficient shall be applied.

Installation Recommendations

ComPacT NSX DC EP

Temperature Derating

ComPacT NSX100 to 500 DC EP Overcurrent Protection [1]

DC E	P over	currer	nt prot	ection								
	cT NSX T											
Maximu	ım currei	nt (A): I _{th}									Cooper cable section [2]	
20 °C	25 °C	30 °C	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C		
NSX250 DC EP												
NSX100 TM DC EP												
110	108	107	105	104	102	100	95	89	84	78	Cu 35 mm ²	
NSX12	TM DC	ΕP										
137	135	133	131	129	127	125	119	112	105	98	Cu 50 mm ²	
	TM DC	7										
176	174	172	169	166	163	160	151	142	133	124	Cu 70 mm ²	
	TM DC	7										
225	221	217	213	209	205	200	189	177	165	153	Cu 95 mm ^{2 [2]}	
NSX250	TMDC	ΕP										
262	260	258	256	254	252	250	238	226	213	200	Cu 120 mm ²	
NSX5	600 DC	EP										
NSX250	TM DC	P										
302	294	286	277	268	259	250	237	224	211	197	Cu 120 mm ²	
NSX320	TM DC	ΞP										
371	363	355	347	338	329	320	302	284	266	248	Cu 185 mm ²	
NSX400	TM DC	ΕP										
455	446	437	428	419	410	400	378	356	334	311	Cu 240 mm ²	
NSX500	TM DC	ΕP										
557	548	539	530	520	510	500	471	442	413	384	Cu 2x150 mm ²	

For ComPacT NSX the overload protection is calibrated at 40 °C or 50 °C. This means that when the ambient temperature is less or greater than these temperatures, the Ir protection pickup is slightly modified.

- calibrated at 40 $^{\circ}\text{C}$: heatsink on bottom & four cables on top, with terminal shields
- calibrated at 50 °C: standard cable with phase barrier connections with section and length according to IEC60947-1 Table 9
- [1] Values in the table are provided for standard cable with phase barrier configuration
- See the tripping curves for 50 °C.
- Determine tripping times corresponding to the Ir value (thermal setting on the device), corrected for the breaker ambient temperature as indicated in the tables below
- For heatsink on bottom & four cables on top, with terminal shield. Ir value is always equal In when ambient temperature ≤ 40 °C; in case of ambient temperature > 40°; consult us.
- [2] Temperature rise have been checked with cables that section and length according IEC60947-1 Table 9 and 10.

The values indicated in the tables opposite are typical values.

Power dissipated per pole (P/pole) in Watts (W)

The value indicated in the table is the power dissipated at I_N , four-pole switchboard (these values can be higher than the power calculated on the basis of the pole resistance). Measurement and calculation of the dissipated power are carried out in compliance with the recommendations of Annex G of standard IEC 60947-2.

Resistance per pole (R/pole) in milliohms (m Ω)

The value of the resistance per pole is provided as a general indication for a new device.

The value of the contact resistance must be determined on the basis of the measured voltage drop, in accordance with the manufacturer's test procedure.

ComPacT NSX100 TM	to 500 TM DC EP switcl	n-disconnectors
Version	Fixed device TM R/pole	P/pole
NSX250 DC EP		
NSX100 TM DC EP	0.72	7.20
NSX125 TM DC EP	0.68	10.63
NSX160 TM DC EP	0.49	12.54
NSX200 TM DC EP	0.44	17.60
NSX250 TM DC EP	0.44	17.60
NSX500 DC EP		
NSX250 TM DC EP	0.33	20.63
NSX320 TM DC EP	0.215	22.02
NSX400 TM DC EP	0.16	25.60
NSX500 TM DC EP	0.134	33.50

Note: This measurement is not sufficient to determine the quality of the contacts, i.e. the capacity of the circuit breaker to carry its rated current.

MasterPact NW10 to NW40 DC, EPDC, DC PV

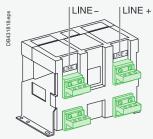
Installation in Switchboard

Possible Positions



Power Supply

The plus and minus polarities (LINE + and LINE -) of the power supply must be connected as indicated in the "Dimensions and connection" chapter.

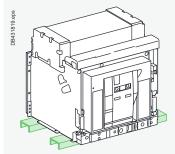


Mounting the Circuit Breaker

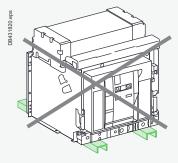
It is important to distribute the weight of the device uniformily over a rigid mounting surface such as rails or a base plate.

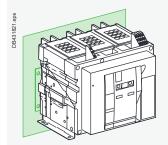
This mounting plane should be perfectly flat (tolerance on support flatness: 2 mm). This eliminates any risk of deformation which could interfere with correct operation

MasterPact devices can also be mounted on a vertical plane using the special brackets.









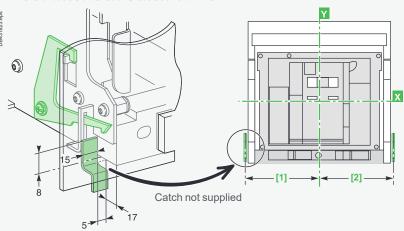
Mounting with vertical brackets

MasterPact NW10 to NW40 DC, EPDC, DC PV Door Interlock

Mounted on the right or left-hand side of the craddle, this device inhibits opening of the cubicle door when the circuit breaker is in "connected" or "test" position.

If the breaker is put in the "connected" position with the door open, the door may be closed without having to disconnect the circuit breaker.

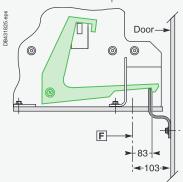




Dimensions (mm)		
Type DC	[1]	[2]
NW10-40 DC (versions C-D)	215	215
NW10-40 DC (version E)	330	215
Type DC PV	[1]	[2]
NW10-40 DC PV (version D)	215	215

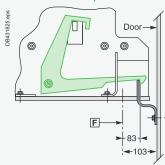
Breaker in "Connected" or "Test" Position

Door Cannot Be Opened



Breaker in "Disconnected" Position

Door Can Be Opened



Note: The door interlock can either be mounted on the right side or the left side of the breaker. **F**: Datum

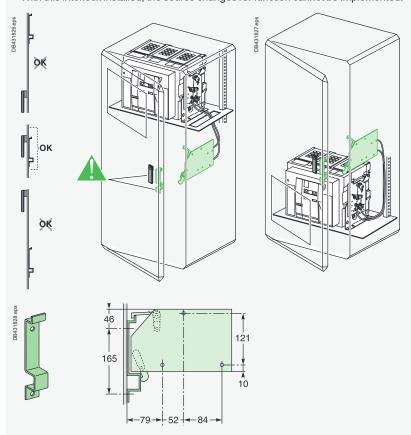
MasterPact NW10 to NW40 DC, EPDC, DC PV

Cable-Type Door Interlock - Connection of MN, MX and XF Voltage Releases

Cable-Type Door Interlock IPA

This option avoids door opening when the circuit breaker is closed and avoids circuit breaker closing when the door is open.

For this, a special plate associated with a lock and a cable is mounted on the right side of the circuit breaker. With this interlock installed, the source changeover function cannot be implemented.



Wiring of Voltage Releases

During pick-up, the power consumed is approximately 150 to 200 VA. For low control voltages (12, 24, 48 V), maximum cable lengths are imposed by the voltage and the cross-sectional area of cables.

Recommended Maximum Cable Lengths (Meter)

		12 V		24 V		48 V			
		2.5 mm ²	1.5 mm ²	2.5 mm ²	1.5 mm ²	2.5 mm ²	1.5 mm ²		
MN	U source 100 %	, <mark>-</mark> -		58	35	280	165		
	U source 85 %	-	-	16	10	75	45		
MX-XF	U source 100 %	21	12	115	70	550	330		
	U source 85 %	10	6	75	44	350	210		

Note: The indicated length is that of each of the two wires.

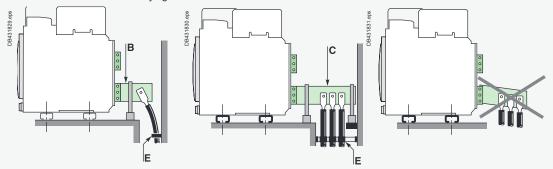
MasterPact NW10 to NW40 DC, EPDC, DC PV **Power Connection**

Cable Connections

If cables are used for the power connections, make sure that they do not apply excessive mechanical forces to the circuit breaker terminals.

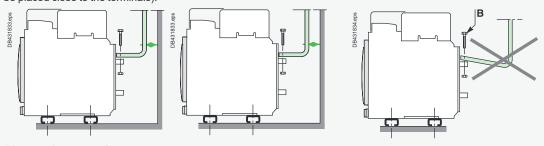
For this, make the connections as follows:

- Extend the circuit breaker terminals using short bars designed and installed according to the recommendations for bar-type power connections:
 - $\hfill\Box$ For a single cable, use solution \boldsymbol{B} opposite
 - □ For multiple cables, use solution **C** opposite.
- In all cases, follow the general rules for connections to busbars:
 - ☐ Position the cable lugs before inserting the bolts
 - □ The cables should firmly tightened to the framework of the switchboard E.



Busbar Connections

The busbars should be suitably adjusted to ensure that the connection points are positioned on the terminals before the bolts are inserted B. The connections are held by the support which is solidly fixed to the framework of the switchboard, such that the circuit breaker terminals do not have to support its weight C. (This support should be placed close to the terminals).



Electrodynamic Stresses

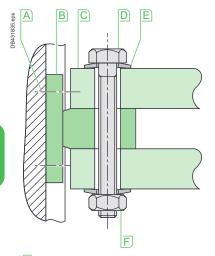
The first busbar support or spacer shall be situated within a maximum distance from the connection point of the breaker (see table below). This distance must be respected so that the connection can withstand the electrodynamic stresses between phases in the event of a short circuit.

Maximum distance A between busbar to circuit breaker connection and the first busbar support or spacer with respect to the value of the prospective short-circuit current.

Isc (kA)	30	50	65	80	100	
distance A	(mm) 350	300	250	150	150	

MasterPact NW10 to NW40 DC, EPDC, DC PV

Power Connection



- A Terminal screw factory-tightened to 16 Nm
- B Breaker terminal
- **C** Busbar
- **D** Bolt
- **E** Washer
- F Nut

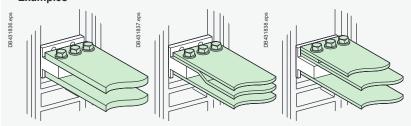
Clamping

Correct clamping of busbars depends amongst other things, on the tightening torques used for the nuts and bolts. Over-tightening may have the same consequences as under-tightening.

For connecting busbars (Ču ETP-NFA51-100) to the circuit breaker, the tightening torques to be used are shown in the table below.

These values are for use with copper busbars and steel nuts and bolts, class 8.8. The same torques can be used with AGS-T52 quality aluminium bars (French standard NFA 02-104 or American National Standard H-35-1).

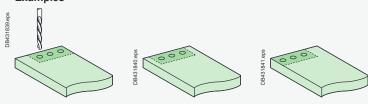
Examples



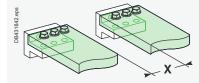
Tightening t	torques		
Ø Nominal (mm)	Drilling	with flat washers or split	Tightening torque (Nm) with contact or serrated washers
10	11	37.5	50

Busbar Drilling

Examples



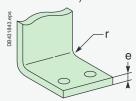
Isolation Distance



Dimensions (mm)	
Ui	X mini
500 V DC	8 mm
900 V DC	14 mm

Busbar Bending

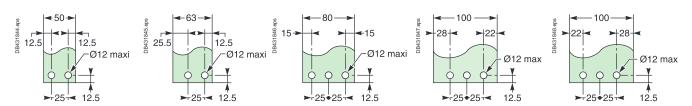
When bending busbars maintain the radius indicated below (a smaller radius would cause cracks).

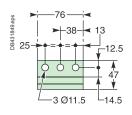


Dimensions (mm)		
e	Radius of curvature r	
	Min.	Recommended
5	5	7.5
10	15	18 to 20

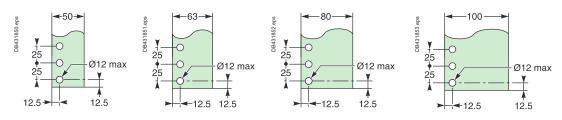
MasterPact NW10 to NW40 DC, EPDC, DC PV Power Connection

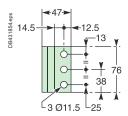
Horizontal Rear Connection NW10 to NW20 DC - DC PV



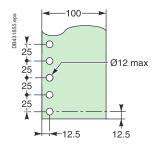


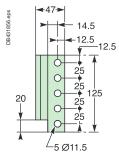
Vertical Rear Connection NW10 to NW20 DC - DC PV





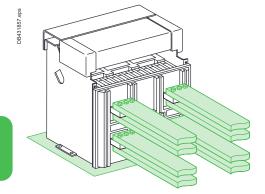
Vertical Rear Connection NW40 DC - DC PV

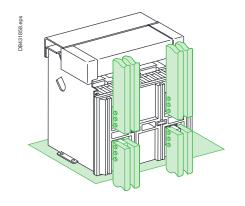




MasterPact NW10 to NW40 DC, EPDC, DC PV

Busbar Sizing





Rear Horizontal Connection

Basis of Tables

- Maximum permissible busbar temperature: 100 °C
- Ti: temperature around the circuit breaker and its connections
- Busbar material is unpainted copper.

Conditions:

- Drawout version
- Horizontal busbars
- Ti: 50 °C
- Service current: 2000 A.

For Ti = 50 °C, use an NW20 DC - DC PV which can be connected with three 100 x 5 mm bars or two 80 x 10 mm bars.

MasterPact NW DC, EPDC, DC	Maximum service	Ti: 40 °C no. of ba		Ti: 50 °C no. of ba		Ti: 60 °C no. of bars		
PV	current	5 mm thick bars	10 mm thick bars	5 mm thick bars	10 mm thick bars	5 mm thick bars	10 mm thick bars	
NW10 DC,	1000	3b.50	1b.63	3b.50	2b.50	3b.63	2b.50	
EPDC		x 5	x 10	x 5	x 10	x 5	x 10	
NW20 DC,	2000	3b.100	2b.80	3b.100	2b.80	3b.100	3b.80	
EPDC		x 5	x 10	x 5	x 10	x 5	x 10	
NW20	2000	3b.100	2b.80	3b.100	2b.80	3b.100	3b.80	
HADCD-PV		x 5	x 10	x 5	x 10	x 5	x 10	

Note: The values indicated in these tables have been extrapolated from test data and theoretical calculations. These tables are only intended as a guide and cannot replace industrial experience or a temperature rise test.

Rear Vertical Connection

Basis of Tables

- Maximum permissible busbar temperature: 100 °C
- Ti: temperature around the circuit breaker and its connections
- Busbar material is unpainted copper.

Example

Conditions:

- Fixed version
- Vertical busbars
- Ti: 40 °C
- Service current: 1000 A.

For Ti = 40 °C, use an NW10 DC - DC PV which can be connected with two $50 \times 5 \text{ mm}$ bars or one $50 \times 10 \text{ mm}$ bar.

MasterPact NW DC, EPDC,	Maximum service	Ti: 40 °C no. of ba		Ti: 50 °C no. of ba		Ti: 60 °C no. of bars			
DC PV	current	5 mm thick	10 mm thick	5 mm thick	10 mm thick	5 mm thick	10 mm thick		
		bars	bars	bars	bars	bars	bars		
NW10 DC,	1000	2b.50	1b.50	2b.50 x	1b.50	2b.63	1b.63		
EPDC		x 5	x 10	5	x 10	x 5	x 10		
NW20 DC,	2000	3b.100	2b.63	3b.100	2b.63	3b.100	3b.63		
EPDC		x 5	x 10	x 5	x 10	x 5	x 10		
NW40 DC,	4000	-	4b.100	-	4b.100	-	4b.100		
EPDC			x 10		x 10		x 10		
NW20	2000	3b.100	2b.63	3b.100	2b.63	3b.100	3b.63		
HADCD-PV		x 5	x 10	x 5	x 10	x 5	x 10		
NW40	4000	-	4b.100 x	-	4b.100 x	-	4b.100 x		
HADCD-PV			10		10		10		

Note: The values indicated in these tables have been extrapolated from test data and theoretical calculations. These tables are only intended as a guide and cannot replace industrial experience or a temperature rise test.

MasterPact NW10 to NW40 DC, EPDC, DC PV

Temperature Derating - Power Dissipation

Temperature Derating

The table below indicates the maximum current rating, for each connection type, as a function of the ambient temperature around the circuit breaker and the busbars. For ambient temperatures greater than 60 °C, consult us. Ti: temperature around the circuit breaker and its connections.

Versi	on	Dra	wo	ut	dev	/ice						Fix	ed	de	vic	е					
Conne	ction	Rea	r ho	rizo	ntal		Rear	vertic	cal			Rea	ar ho	orizo	onta	ı	Rea	ar ve	ertic	al	
temp. 7	Ті	40	45	50	55	60	40	45	50	55	60	40	45	50	55	60	40	45	50	55	60
NW DC																					
NW10	Version C	1000	C				1000			100	0				100	0					
	Version D 1000				1000					100	0				100	0					
	Version E 1000					1000					100	0				100	0				
NW20						2000					200	0				200	0				
Version D 2000)				2000					200	0				200	0			
	Version E	2000)				2000					200	0				200	0			
NW40	Version C	-					4000				-					400	0				
	Version D	-					4000		3900	3750	3600	-					4000				
	Version E	-					4000 3800 3650 3500			3500	-			4000							
NW EP	DC																				
NW10 I	EPDC-D	1000	C				1000					-					-				
NW20 I	EPDC-D	2000)				2000					-					-				
NW40 I	EPDC-D	-					4000		3900	3750	3600	-					-				
NW DC	: PV																				
NW20	20 Version D 2000		2000					2000					2000								
NW40	Version D	-					4000		3900	3750	3600	_					4000				

Power Dissipation

Total power dissipation is the value measured at IN, for a 3 pole (version C, D $^{[1]}$) or 4 pole (version E) breaker (values above the power P = $3RI^2$).

[1] DC PV version D only.

Version	Drawout	Drawout device			Fixed device				
	Power diss	sipation (Watt)	Power dis	Power dissipation (Watt)				
Version	С	D	E	С	D	E			
NW10 DC	45	75	105	25	40	60			
NW20 DC	135	230	330	90	160	235			
NW40 DC	460	800	1150	360	580	850			

Version	Drawout device	No Fixed device
	Power dissipation (Watt)	
Version	D	
NW10 EPDC-D	75	
NW20 EPDC-D	230	
NW40 EPDC-D	800	

Version	Drawout device	Fixed device
	Power dissipation (Watt)	Power dissipation (Watt)
Version	D	D
NW20 HADCD-PV	230	160
NW40 HADCD-PV	800	580



Dimensions and Connection

Com PacT (Fixed Version) 1P-2P NSX100-NSX160 DC	
Dimensions, Mounting, Cutout	C-4
Dimensions and Mounting ComPacT NSX100 to 1200 DC Fixed Version	C-8 .C-10 .C-12 .C-13
Front-Panel Accessories(ComPacT NSX100 to 1200 DC	
Power Connections ComPacT NSX100 to 1200 DC Fixed Version	.C-20 .C-22
ComPacT (Fixed Version) 2P-3P-4P Parallel and Series Connection of Poles ComPacT NSX100 to NSX250 DC ComPacT NSX400 to NSX630 DC	
ComPacT (Fixed Version) 4P Parallel and Series Connection of Poles ComPacT NSX630 to NSX1200 DC	.C-26
ComPacT (Withdraw. Version) 3P-4P Parallel and Series Connection of Poles ComPacT NSX100 to NSX250 DC	
ComPacT (Fixed Version) 4P Connection of Poles, Dimensions and Mounting ComPacT NSX100 to NSX630 DC PV - DC EP	.C-29
ComPacT (Fixed Version) 4P Connection of Poles, Dimensions ComPacT NSX630b to 1600 DC PV	.C-30

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Functions and Characteristics	
Installation RecommendationsB-1	
Electrical DiagramsD-1	
Additional Characteristics E-1	
Catalog Numbers and Order FormF-1	

Dimensions and Connection

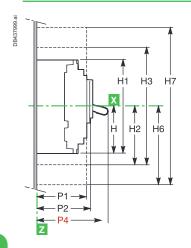
Com PacT (Fixed Version) 4P Rear Connection of Poles, Mounting Com PacT NSX630b to 1600 DC PV	
MasterPact (Fixed Device) NW10 to 40 DC Version C/D (3P), Version E (4P) NW10 to 40 EPDC, DC PV Version D (3P) NW10 to 40 DC–Version C NW10 to 40 DC–DC PV–Version D NW10 to 40 DC–Version E	C-34 C-35
MasterPact (Drawout Device) NW10 to 40 DC Version C/D (3P) Version E (4P) NW10 to 40 DC PV Version D (3P) NW10 to 40 DC-Version C NW10 to 40 DC, EPDC, DC PV-Version D NW10 to 40 DC-Version E	C-38 C-39
Master Pact NW10 to 40 DC, EPDC, DC PV Accessories	
Dimensions and Mounting External Modules for ComPacT and MasterPact FDM121 Switchboard Display FDM128 Switchboard Display	
1 DIVI 120 OVII.01 10001	

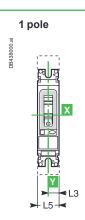
Other Chapters	
Presentation	2
Functions and Characteristics	A-1
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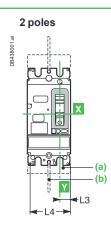
Other Chapters

ComPacT (Fixed Version) 1P-2P NSX100-NSX160 DC Dimensions, Mounting, Cutout

Dimensions



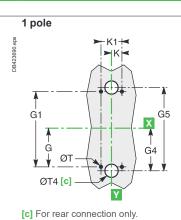


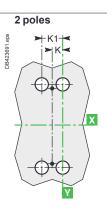


[a] Short terminal shields[b] Interphase barriers

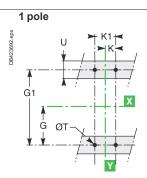
Mounting

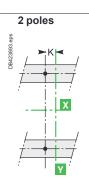
On Backplate





On Rails

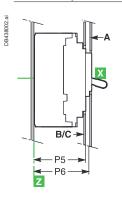


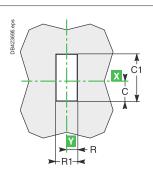


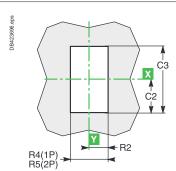
ComPacT (Fixed Version) 1P-2P NSX100-NSX160 DC Dimensions, Mounting, Cutout

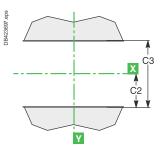
Front-Panel Cutout

On Backplate

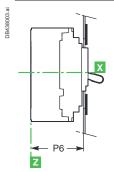


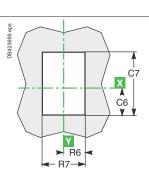






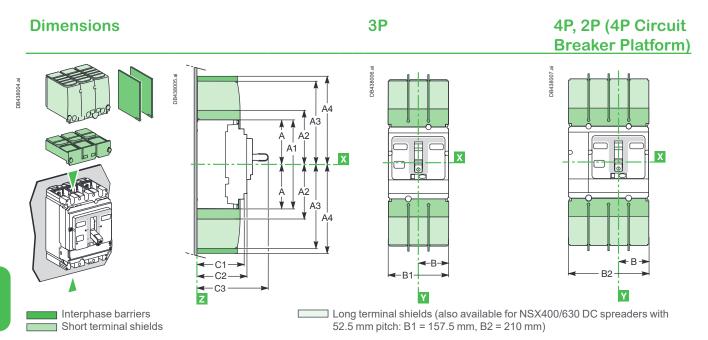
With Escutcheon

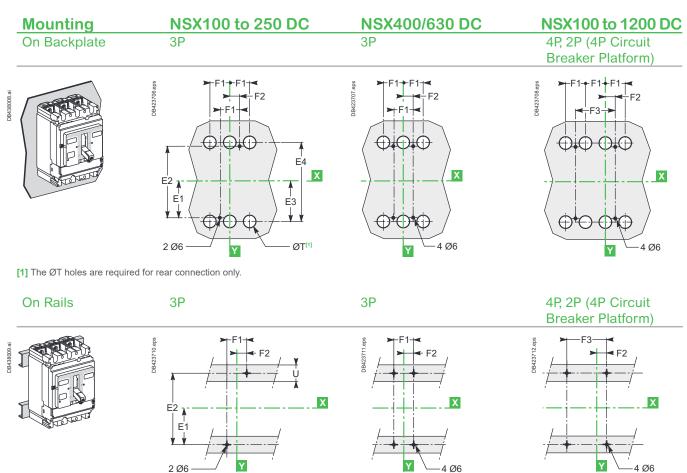




Dimensions (m	nm)										
Туре	С	C1	C2	C3	C6	C7	G	G1	G4	G5	Н
NSX100/160 DC	29	76	54	108	43	104	62.5	125	70	140	80.5
Туре	H1	H2	H3	H4	H6	H7	K	K1	L3	L4	L5
NSX100/160 DC	161	94	188	160.5	178.5	357	17.5	35	17.5	70	35
Туре	P1	P2	P4	P5	P6	R	R1	R2	R4	R5	R6
NSX100/160 DC	81	86	111	83	88	14.5	29	19	38	73	29
Туре	R7	ØT	ØT4	U							
NSX100/160 DC	58	6	22	≤32							

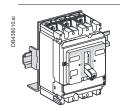
Dimensions and Mounting ComPacT NSX100 to 1200 DC Fixed Version

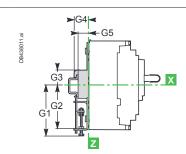




Dimensions and Mounting ComPacT NSX100 to 1200 DC Fixed Version

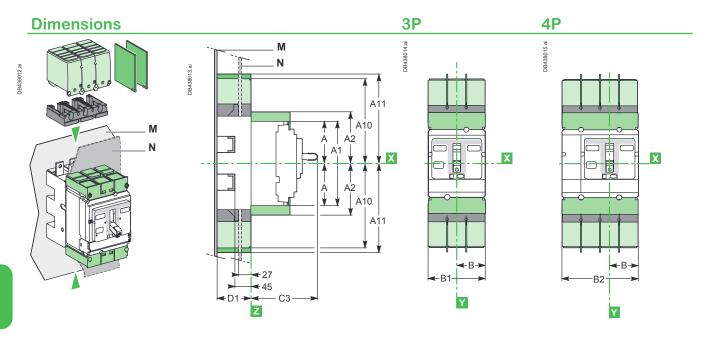
On DIN Rail with Adapter Plate (NSX100 to 250 DC)





Dimensions (mm)											
Туре	Α	A1	A2	A3	A4	В	B1	B2	C1	C2	C3
NSX100/160/250 DC	80.5	161	94	145	178.5	52.5	105	140	81	86	126
NSX400/630 DC	127.5	255	142.5	200	237	70	140	185	95.5	110	168
NSX1200 DC	-	-	-	240	-	70	-	185	95.5	110	168
Type	E1	E2	F1	F2	F3	G1	G2	G3	G4	G5	
NSX100/160/250 DC	62.5	125	35	17.5	70	95	75	13.5	23	17.5	
NSX400/630 DC	100	200	45	22.5	90	-	-	-	-	-	
NSX1200 DC	100	200	-	22.5	90	-	-	-	-	-	

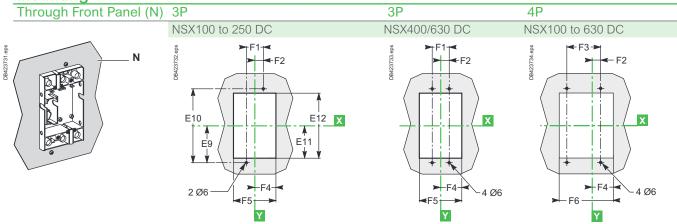
Dimensions and Mounting ComPacT NSX100 to 630 DC Plug-in Version



- Interphase barriers for base

 Short terminal shields on circuit breaker
- Long terminal shields (also available for NSX400/630 DC spreaders with 52.5 mm pitch: /B1 = 157.5 mm, B2 = 210 mm)
- Adapter for base, required to mount long terminal shields or interphase barriers

Mounting



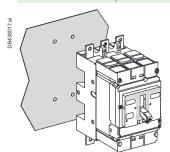
Dimensions and Mounting ComPacT NSX100 to 630 DC Plug-in Version

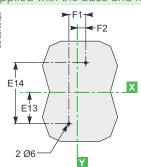


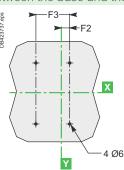
3P

4P

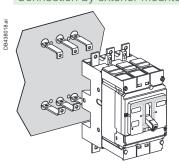
Front connection (an insulating screen is supplied with the base and must be fitted between the base and the backplate)

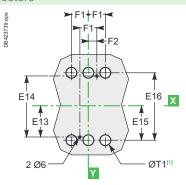


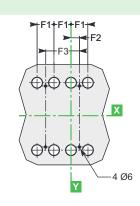




Connection by exterior-mounted rear connectors

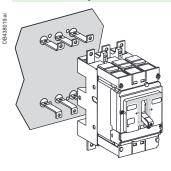


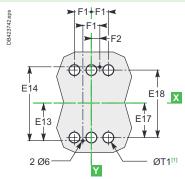


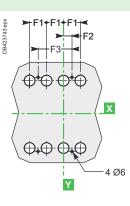


[1] The ØT1 holes are required for rear connection only.

Connection by interior-mounted rear connectors



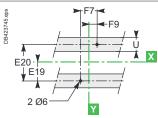


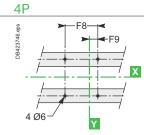


[1] The ØT1 holes are required for rear connection only.

On Rails

3P

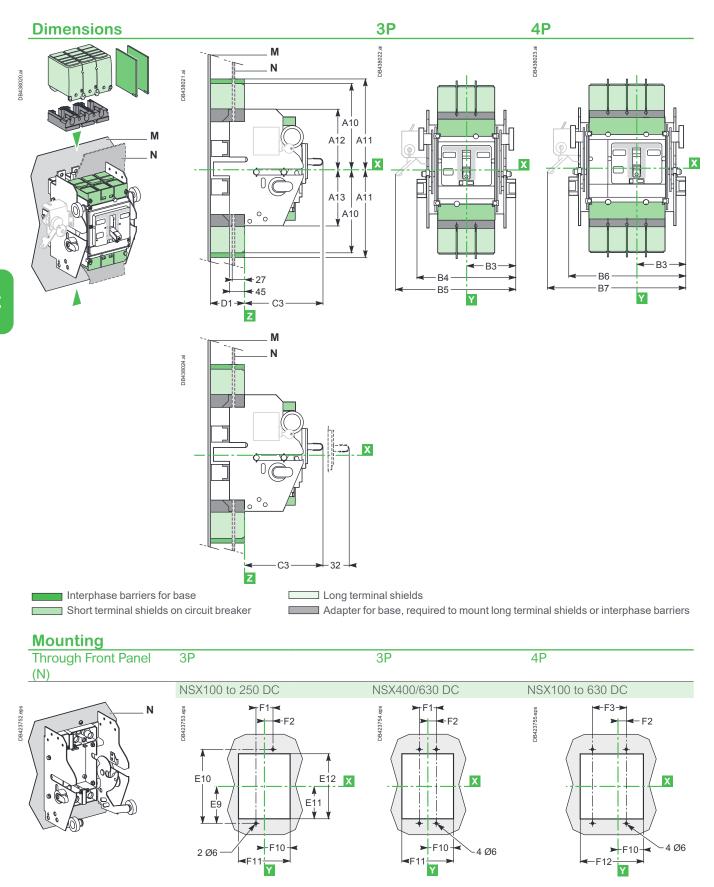




Туре	Α	A1	A2	A10	A11	В	B1	B2	C3	D1	E9	E10	E11	E12	E13	E14	E15
NSX100/160/250 DC	80.5	161	94	175	210	52.5	105	140	126	75	95	190	87	174	77.5	155	79
NSX400/630 DC	127.5	255	142.5	244	281	70	140	185	168	100	150	300	137	274	125	250	126
Туре	E16	E17	E18	E19	E20	F1	F2	F3	F4	F5	F6	F7	F8	F9	ØT1	U	
NSX100/160/250 DC	158	61	122	37.5	75	35	17.5	70	54.5	109	144	70	105	35	24	≤32	
NSX400/630 DC	252	101	202	75	150	45	22.5	90	71.5	143	188	100	145	50	33	≤ 35	

Dimensions and Mounting

ComPacT NSX100 to 630 DC Withdrawable Version



Dimensions and Mounting

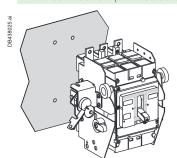
ComPacT NSX100 to 630 DC Withdrawable Version

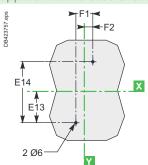


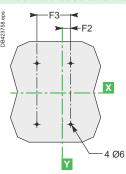
3F

4P

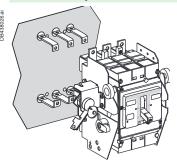
Front connection (an insulating screen is supplied with the base and must be fitted between the base and the backplate)

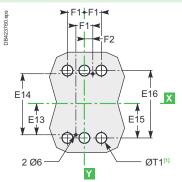


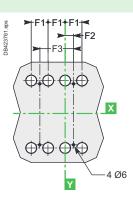




Connection by exterior-mounted rear connectors

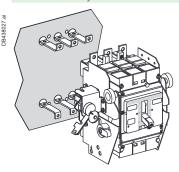


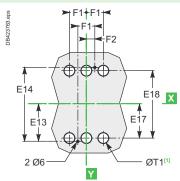


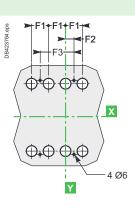


[1] The ØT1 holes are required for rear connection only.

Connection by interior-mounted rear connectors





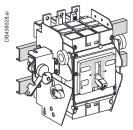


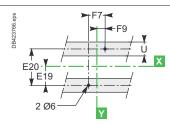
[1] The ØT1 holes are required for rear connection only.

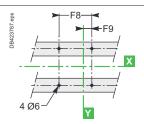
On Rails

3P

4P



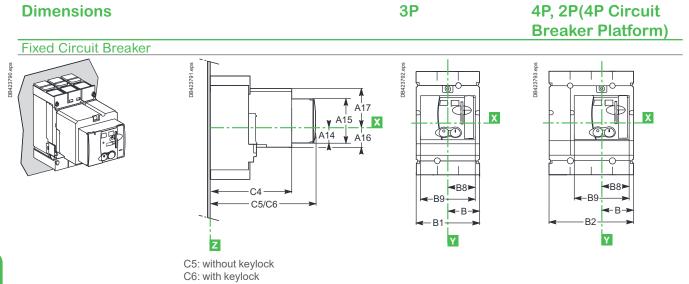




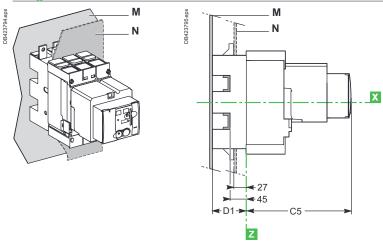
Туре	A10	A11	A12	A13	B3	B4	B5	B6	B7	C3	D1	E9	E10	E11	E12	E13	E14
NSX100/160/250 DC	175	210	106.5	103.5	92.5	185	216	220	251	126	75	95	190	87	174	77.5	155
NSX400/630 DC	244	281	140	140	110	220	250	265	295	168	100	150	300	137	274	125	250
Туре	E15	E16	E17	E18	E19	E20	F1	F2	F3	F7	F8	F9	F10	F11	F12	ØT1	U
NSX100/160/250 DC	79	158	61	122	37.5	75	35	17.5	70	70	105	35	74	148	183	24	≤ 32
NSX400/630 DC	126	252	101	202	75	150	45	22.5	90	100	145	50	91.5	183	228	33	≤ 35

Dimensions and Mounting

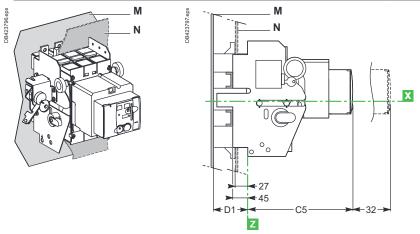
Motor Mechanism Module for ComPacT NSX100 to 1200 DC



Plug-in Circuit Breaker

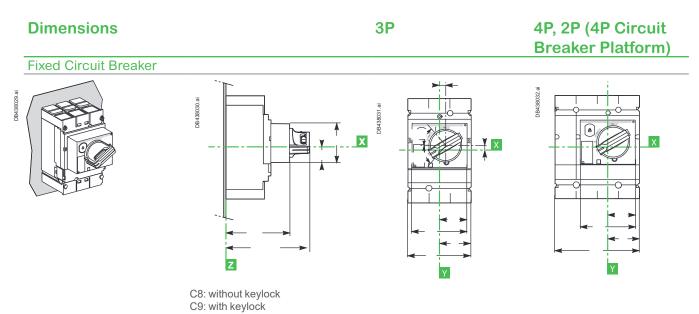


Withdrawable Circuit Breaker

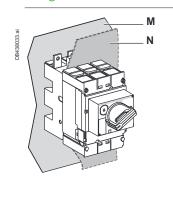


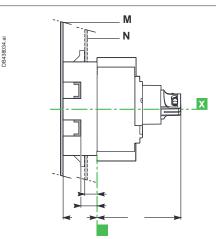
Туре	A14	A15	A16	A17	В	B1	B2	B8	В9	C4	C5	C6	D1
NSX100/160/250 DC	27.5	73	34.5	62.5	52.5	105	140	45.5	91	143	182	209.5	75
NSX400/630 DC	40	123	52	100	70	140	185	61.5	123	215	256	258	100
NSX1200 DC	40	123	52	100	70	140	185	61.5	123	215	-	258	-

Dimensions and Mounting Direct Rotary Handle for ComPacT NSX100 to 1200 DC

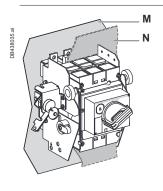


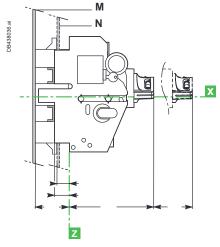
Plug-in Circuit Breaker





Withdrawable Circuit Breaker



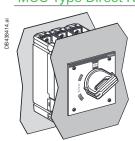


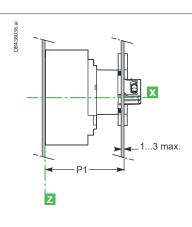
Туре	A14	A15	A18	В	B1	B2	B8	В9	B10	C7	C8	C9	D1
NSX100/160/250 DC	27.5	73	9	52.5	105	140	45.5	91	9.25	121	155	164	75
NSX400/630 DC	40	123	24.6	70	140	185	61.5	123	5	145	179	188	100
NSX1200 DC	40	123	24.6	70	140	185	61.5	123	5	145	_	188	_

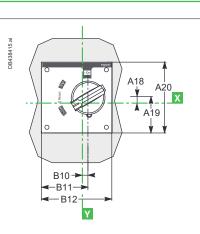
MCC and CNOMO Type Direct Rotary Handles for ComPacT NSX100 to 1200 DC Fixed Version

Dimensions

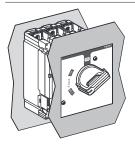
MCC Type Direct Rotary Handle

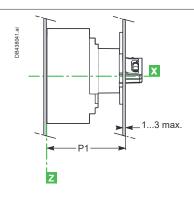


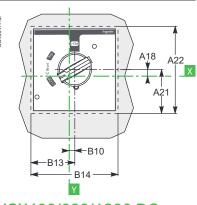




CNOMO Type Direct Rotary Handle





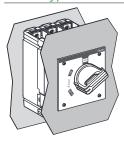


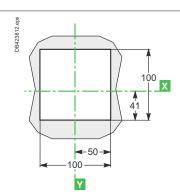
Front-Panel Cutout

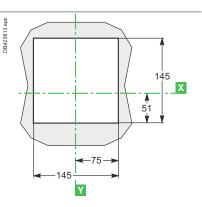
NSX100 to 250 DC

NSX400/630/1200 DC

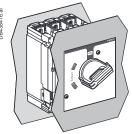
MCC Type Direct Rotary Handle





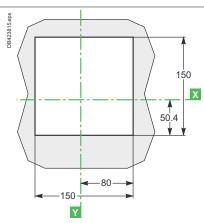


CNOMO Type Direct Rotary Handle



-						
Туре	A18	A19	A20	A21	A22	B10
NSX100/160/250 D0	9	60	120	65	130	9.25
NSX400/630/1200 D0	24.6	83	160	82	164	5
Туре	B11	B12	B13	B14	P1	P2
NSX100/160/250 D0	69	120	65	130	125	135
NSX400/630/1200 D0	85	160	82	164	149	158

50.5 119



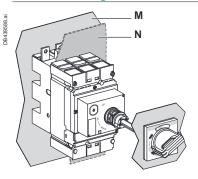
C-14

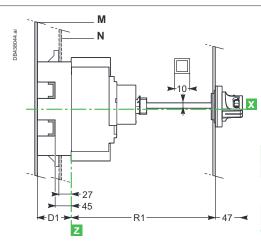
Life Is On Schneider

Extended Rotary Handle for ComPacT NSX100 To1200 DC

Dimensions

Fixed and Plug-in Circuit Breakers



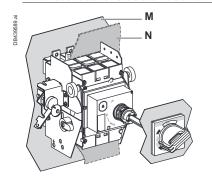


Cutout for shaft (mr	n)
Туре	R1
NSX100/160/250 DC	min. 171 max. 600
NSX400/630/1200 DC	min 195 max. 600

min. 248 max. 600

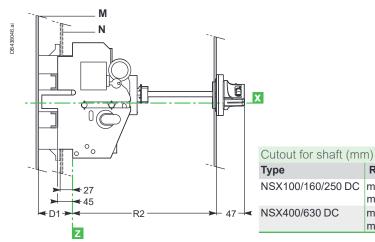
min. 272 max. 600

Withdrawable Circuit Breaker



NSX100/160/250 DC

NSX400/630/1200 DC



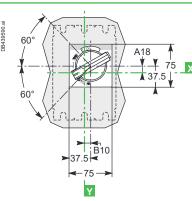
Dimensions and Front-Panel Cutout

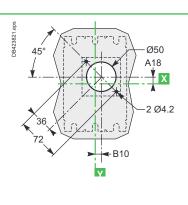
9.25

24.6

75



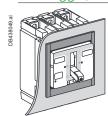




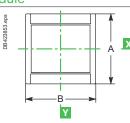
Front-Panel Accessories ComPacT NSX100 to 1200 DC

IP30 Front-Panel Escutcheons

For Toggle, Rotary Handle or Motor Mechanism Module





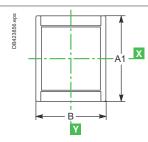




For Toggle or Rotary Handle with Access to Trip Unit



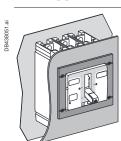




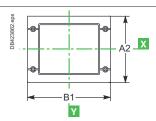


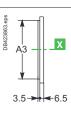
IP40 Front-Panel Escutcheons

For Toggle, Rotary Handle or Motor Mechanism Module and Protection Collar



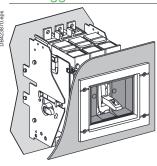


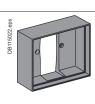


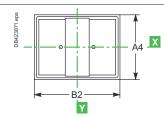


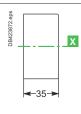
Protection Collars for IP40 Front-Panel Escutcheons

For Toggle



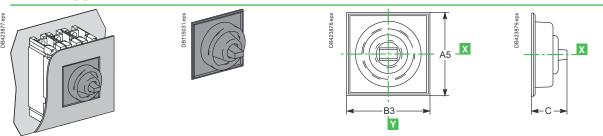






Front-Panel Accessories ComPacT NSX100 to 1200 DC

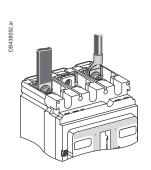
IP43 Toggle Cover

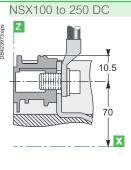


Туре	Α	A1	A2	A3	A4	A5	В	B1	B2	B3	С
NSX100/160/250 DC	113	138	114	101	73	85	113	157	91	103	40
NSX400/630/1200 DC	163	211	164	151	122.5	138	163	189	122.5	138	60

ComPacT NSX100 to 1200 DC Fixed Version

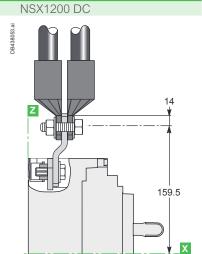
Front Connection without Accessories





NSX400/630 DC

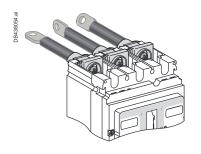
Bars/cables with lugs

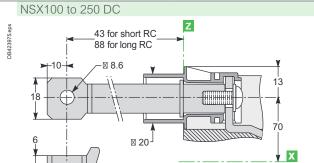


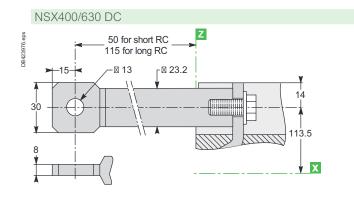
Cables with lugs/bars

Connection with Accessories

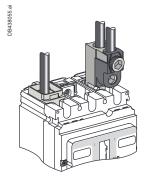
Long and Short Rear Connectors



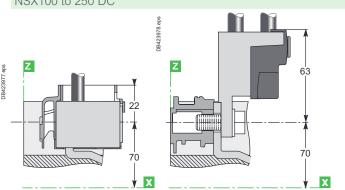




Bare-Cable Connectors

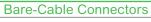


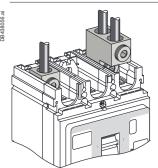
NSX100 to 250 DC

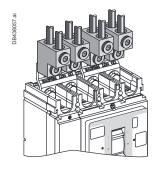


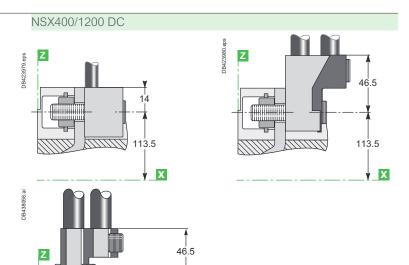
ComPacT NSX100 to 1200 DC Fixed Version

Connection with Accessories (Cont.)



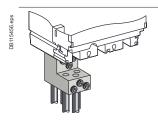






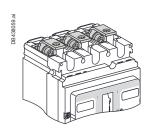
159.5

Distribution Connectors (for NSX100 to 250 DC Only)



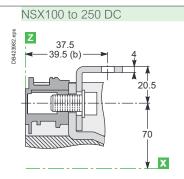
70 70 64.5 66.5 (a)

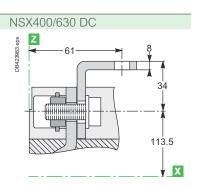
Right-Angle Terminal Extensions (Upstream Only)



(b) NSX250 DC

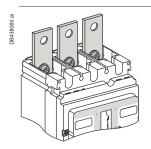
(a) NSX250 DC





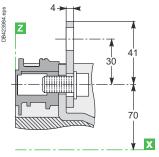
ComPacT NSX100 to 630 DC Fixed Version

Connection with Accessories (Cont.)
Straight Terminal Extensions (for NSX100 to 250 DC Only)

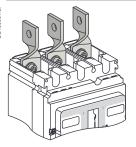


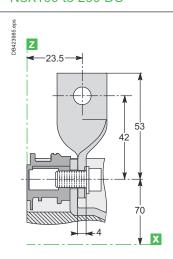
Edgewise Terminal Extensions

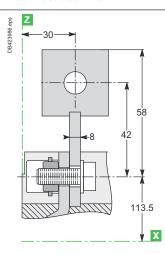
NSX100 to 250 DC



NSX400/630 DC



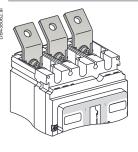


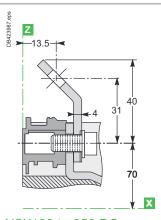


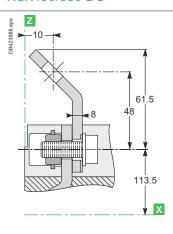
45° Terminal Extensions

NSX100 to 250 DC

NSX400/630 DC

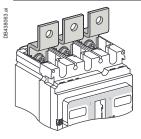


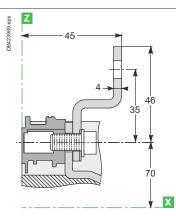




Double-L Terminal Extensions

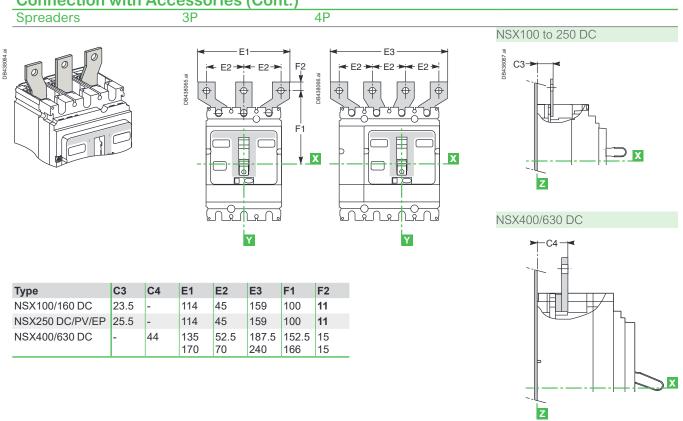
NSX100 to 250 DC



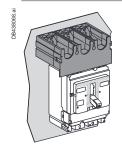


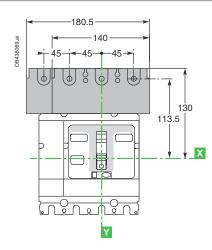
ComPacT NSX100 to 630 DC Fixed Version

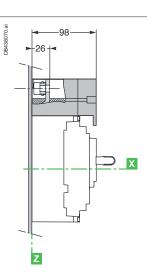
Connection with Accessories (Cont.)



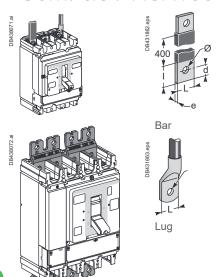
One-Piece Spreader (for NSX100 to 250 Only)







Connection of Insulated Bars or Cables with Lugs to ComPacT NSX100 to 1200 DC



Accessories	for NSX100 to 250 D	C

Accessories for	NSX100 to 250 DC
Straight Terminal	Double-L Terminal
Extensions	Extensions
	DB431664.eps
Tinned copper	Tinned copper
Spreaders	
separate parts	One-piece spreader



Tinned copper For U > 600 V, the mandatory insulation kit is not compatible with spreaders made up of separate parts.

Accessories for NSX400 and 630 DC Spreaders Made up of Separate Parts for 52.5 and 70 Mm Pitch



For U > 600 V, use of the 52.5 mm pitch spreaders requires a specific insulation kit.

The 70 mm pitch spreaders may not be used.

Accessories for NSX100 to 630 DC

1100000110
Right-Angle
Terminal
Extensions

Edgewise Terminal Extensions





Tinned copper To be mounted on upstream side

Terminal Extensions



Direct Connection to NSX100 to 1200 DC

Billet Confidential Novi 100 to 1200 BC									
Dimensions		NSX100 DC	NSX160/250	NSX400/630/1200					
			DC	DC					
Bars	L (mm)	≤ 25	≤ 25	≤32					
	I (mm)	d + 10	d + 10	d + 15					
	d (mm)	≤ 10	≤ 10	≤ 15					
	e (mm)	≤6	≤6	3 ≤ e ≤ 10					
	Ø (mm)	6.5	8.5	10.5					
Lugs	L (mm)	≤ 25	≤ 25	≤ 32					
	Ø (mm)	6.5	8.5	10.5					
Torque (Nm) [1]		10	15	50					
Torque (Nm) [2]		5/5	5/5	20/11					
Torque (Nm) [3]		8	8	20					

- [1] Tightening torque on the circuit breaker for lugs or bars
- [2] Tightening torque on fixed devices for rear connectors//tightening torque on plug-in or withdrawable devices for power connectors.
- [3] Tightening torque on the plug-in base for terminal extensions.

Connection with Accessories to NSX100 to 250 DC

	(IEC 228)								
	Pole Pitch								
	Without spreaders			35 mm					
	With spreaders			45 mm					
	Dimensions			With Spreaders or Terminal					
				Extensions					
				NSX100 DC	NSX160/250 DC				
bs		Bars	L (mm)	≤ 25	≤ 25				
789.e			I (mm)	20 ≤ 1 ≤ 25	20 ≤ 1 ≤ 25				
DB431789.eps			d (mm)	≤ 10	≤ 10				
ă	400 Ø		e (mm)	≤ 6	≤ 6				
			Ø (mm)	6.5	8.5				
		Lugs	L (mm)	≤ 25	≤ 25				
	1 1 1		Ø (mm)	6.5	8.5				
		Torque	(Nm) [1]	10	15				
	е	Torque	(Nm) [2]	5	5				

- [1] Tightening torque on the circuit breaker for spreaders or terminal extensions.
- [2] Tightening torque on the plug-in base for spreaders or terminal extensions.

Spreaders and straight, right-angle, 45°, double-L and edgewise terminal extensions are supplied with flexible interphase barriers.

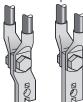
Connection with Accessories to NSX400 DC and 630 DC (IEC 228)

	Pole Pitch					
	Without spreaders			45 mm		
	With spreaders			52.5 or 70 mm		
	Dimensions			With Spreaders	With Terminal	
					Extensions	
bs	400	Bars	L (mm)	≤ 40	≤ 32	
DB431789.eps			I (mm)	d + 15	30 ≤ 1 ≤ 34	
B431			d (mm)	≤20	≤ 15	
			e (mm)	3 ≤ e ≤ 10	3 ≤ e ≤ 10	
			Ø (mm)	12.5	10.5	
		Lugs	L (mm)	≤ 40	≤ 32	
			Ø (mm)	12.5	10.5	
		Torque (Nm) [1]		50	50	
	▼ –e	Torque	(Nm) [2]	20	20	

- [1] Tightening torque on the circuit breaker for spreaders or terminal extensions.

[2] Tightening torque on the plug-in base for spreaders or terminal extensions.

Spreaders and right-angle, 45° and edgewise terminal extensions are supplied with flexible interphase barriers.



Mounting detail: 2 cables with lugs

Connection of Bare Cables to ComPacT NSX100 to 1200 DC

Connection for NSX100 to 250 DC









Distribution connector

1-cable	Steel	Aluminium					
connector	≤ 160 A	≤ 250 A					
L (mm)	25	25					
S (mm²) Cu/Al	1.5 to 95 ^[1]	25 to 50	70 to 95	120 to 185 150 max. flex.			
Torque (Nm)	12	20	26	26			
2-cable connector							
L (mm)	25 or 50						
S (mm²) Cu/Al	120						
Torque (Nm)							
6-cable distribution connector (copper or aluminium)							
L (mm)	15 or 30						
S (mm²) Cu/Al	1.5 to 6 ^[1]	8 to 35					
Torque (Nm)	4	6					

[1] For flexible cables from 1.5 to 4 mm², connection with crimped or self-crimping ferrules.

Connection for NSX400 and 630 DC





1-cable connector

2-cable connector



	1-cable connector	2-cable connector
L (mm)	30	30 or 60
S (mm²) Cu/Al	35 to 300 rigid 240 max. flex.	2 x 35 to 2 x 240 rigid 240 max. flex.
Torque (Nm)	31	31

Connection for NSX630 and 1200 DC



2-cable connector



	2-cable connector
L (mm)	30 or 60
S (mm²) Cu/Al	2 x 35 to 2 x 240 rigid 240 max. flex.
Torque (Nm)	31

Conductor Materials and Electrodynamic Stresses

ComPacT NSX DC circuit breakers can be connected indifferently with bare-copper, tinned-copper and tinned-aluminium conductors (flexible or rigid bars, cables). In the event of a short-circuit, thermal and electrodynamic stresses will be exerted on the conductors. They must therefore be correctly sized and held in place by supports.

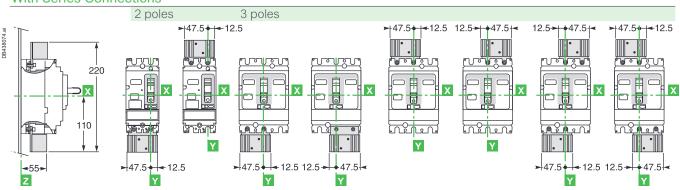
Electrical connection points on switchgear devices (switch-disconnectors, contactors, circuit breakers, etc.) should not be used for mechanical support. Any partition between upstream and downstream connections of the device must be made of non-magnetic material.



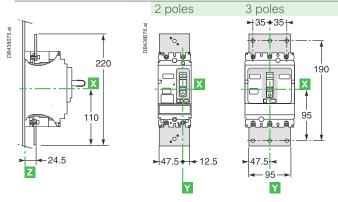
ComPacT (Fixed Version) 2P-3P-4P Parallel and Series Connection of Poles ComPacT NSX100 to NSX250 DC

2P Fixed Version (ComPacT NSX100-160 N/H DC) - 3P Fixed Version

(ComPacT NSX100-250 DC) With Series Connections

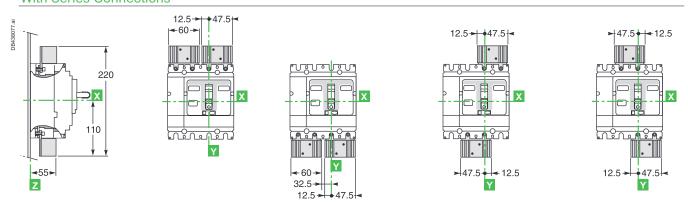


With Parallel Connections

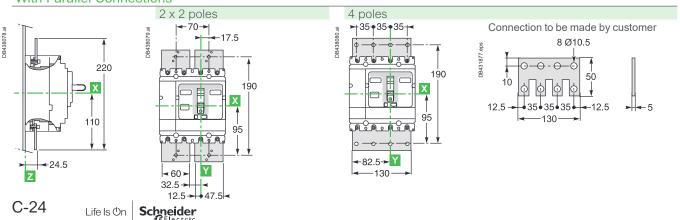


4P Fixed Version (ComPacT NSX100-250 DC)

With Series Connections

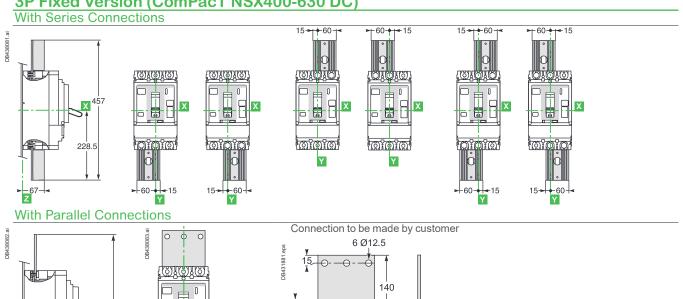


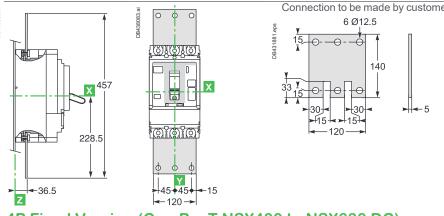
With Parallel Connections



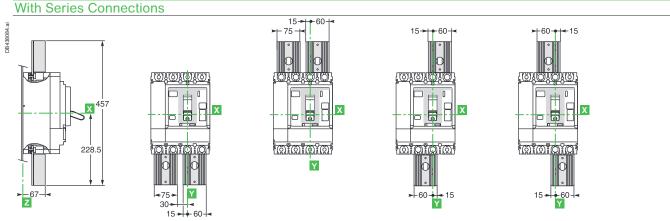
ComPacT (Fixed Version) 2P-3P-4P Parallel and Series Connection of Poles ComPacT NSX400 to NSX630 DC

3P Fixed Version (ComPacT NSX400-630 DC)

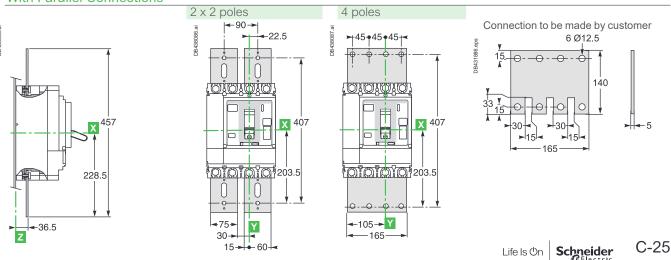




4P Fixed Version (ComPacT NSX400 to NSX630 DC)





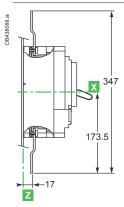


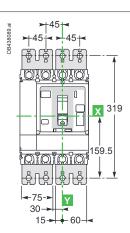
ComPacT (Fixed Version) 4P Parallel and Series Connection of Poles

ComPacT NSX630 to NSX1200 DC

4P Fixed Version (ComPacT NSX630 to NSX1200DC)

With Parallel Connections



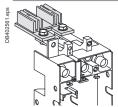


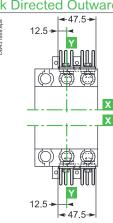
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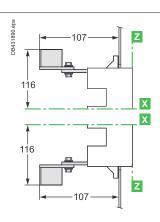
ComPacT (Withdraw. Version) 3P-4P Parallel and Series Connection of Poles ComPacT NSX100 to NSX250 DC

3P Withdrawable Version

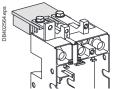
Connections Mounted with Heat Sink Directed Outwards

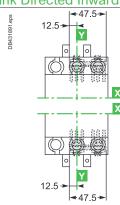


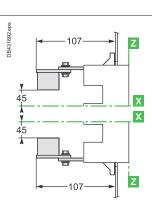




Connections Mounted with Heat Sink Directed Inwards

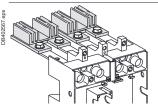


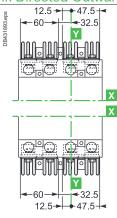


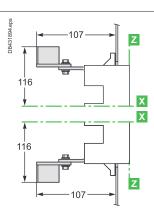


4P Withdrawable Version

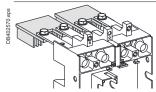
Connections Mounted with Heat Sink Directed Outwards

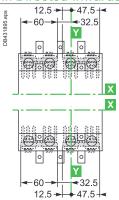


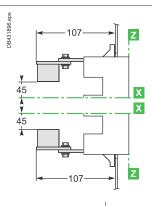




Connections Mounted with Heat Sink Directed Inwards



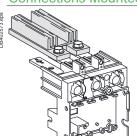


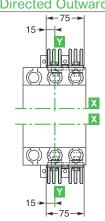


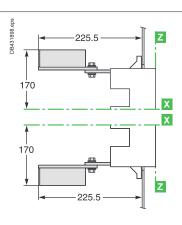
ComPacT (Withdraw. Version) 3P-4P Parallel and Series Connection of Poles ComPacT NSX400 to NSX630 DC

3P Withdrawable Version

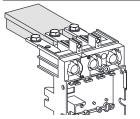
Connections Mounted with Heat Sink Directed Outwards

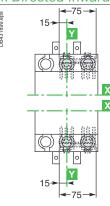


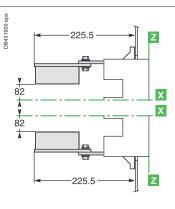




Connections Mounted with Heat Sink Directed Inwards

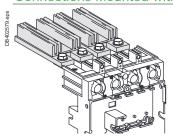


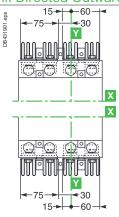


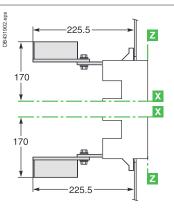


4P Withdrawable Version

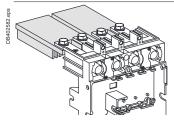
Connections Mounted with Heat Sink Directed Outwards

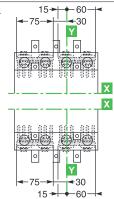


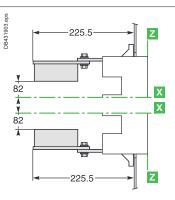




Connections Mounted with Heat Sink Directed Inwards





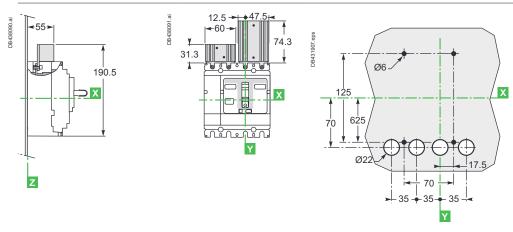


ComPacT (Fixed Version)

4P Connection of Poles, Dimensions and Mounting ComPacT NSX100 to NSX630 DC PV - DC EP

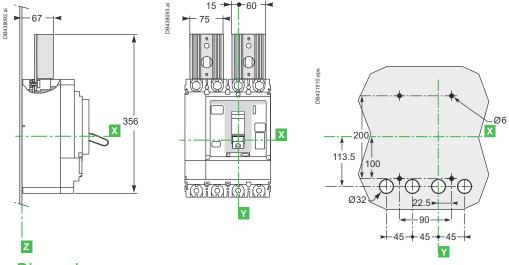
4P Fixed Version (ComPacT NSX100-200 DC PV)

With Series Connections

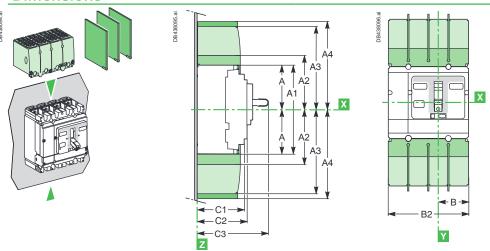


4P Fixed Version (ComPacT NSX250-630 DC PV)

With Series Connections



Dimensions



Interphase barriers
Long terminal shields

Long terminal shields (also available for NSX400/630 DC spreaders with 52.5 mm pitch: B2 = 210 mm)

Туре	Α	A1	A2	A3	A4	В	B2	C1	C2	C3
NSX100/160/200 DC PV	80.5	161	94	145	178.5	52.5	140	81	86	126
NSX250/630 DC PV	127.5	255	142.5	240	237	70	185	95.5	110	168

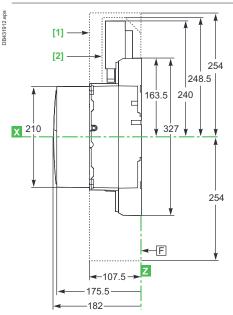
ComPacT (Fixed Version)

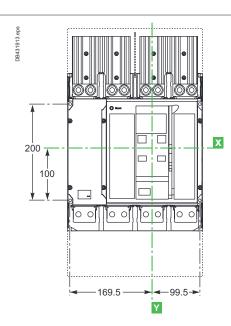
4P Connection of Poles, Dimensions

ComPacT NSX630b to 1600 DC PV

Electrical Control

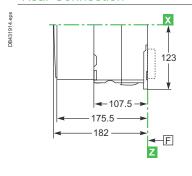
Front Connection

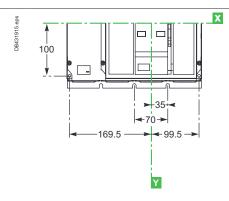




- [1] With terminal shield.
- [2] With phase separator.

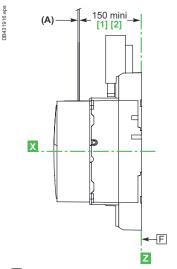
Rear Connection

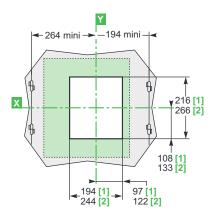




Front-Panel Cutouts

Door cutout A





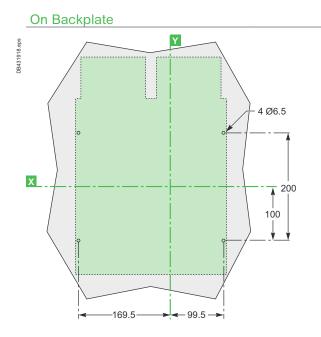
- E: Datum
- [1] Without escutcheon.
- [2] With escutcheon.

C-30

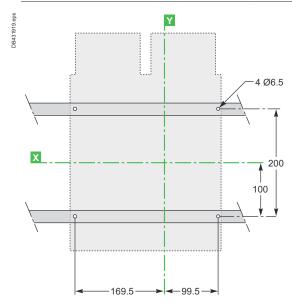




ComPacT (Fixed Version) 4P Front Connection of Poles, Mounting ComPacT NSX630b to 1600 DC PV



On Rails



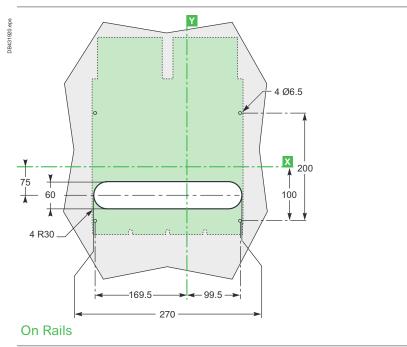
Note: Mounting parameters for electrically operated devices are identical to those for manually operated devices.

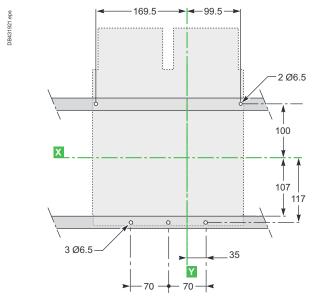
X and **Y** are the symmetry planes for a 4-pole device.

Z is the back plane of the device.

ComPacT (Fixed Version) 4P Rear Connection of Poles, Mounting ComPacT NSX630b to 1600 DC PV

On Backplate





Note: Mounting parameters for electrically operated devices are identical to those for manually operated devices.

X and **Y** are the symmetry planes for a 4-pole device.

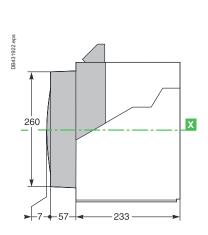
Z is the back plane of the device.

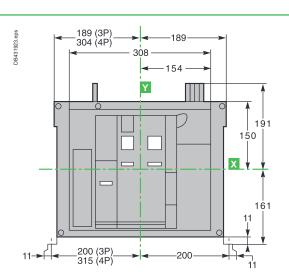
MasterPact (Fixed Device)

NW10 to 40 DC Version C/D (3P),

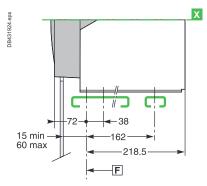
Version E (4P) NW10 to 40 EPDC, DC PV Version D (3P)

Device

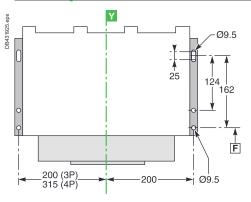




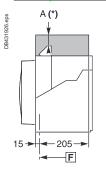
Mounting on Base Plate or Rails

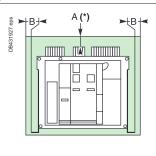


Mounting Detail

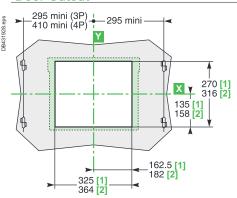


Safety Clearances





Door Cutout



	Insulated parts	Metal parts	Energized parts		
Α	0	0	100		
В	0	0	60		

Note:

[1] Without escutcheon.

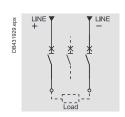
[2] With escutcheon.

X and Y are the symmetry planes for a 3-pole device.

A[*] An overhead clearance of 110 mm is required to remove the arc chutes. An overhead clearance of 20 mm is required to remove the terminal block.

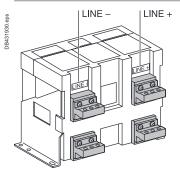
Master**Pact** (Fixed Device)

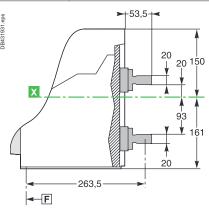
NW10 to 40 DC-Version C

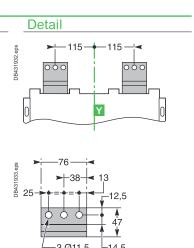


Connections

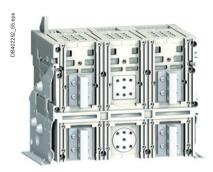
Horizontal Rear Connection (NW10-NW20 DC)

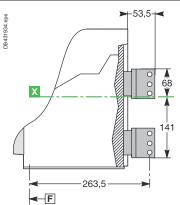




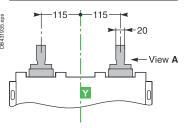


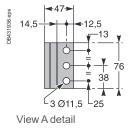
Vertical Rear Connection (NW10-NW20 DC)



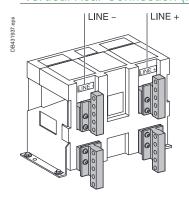


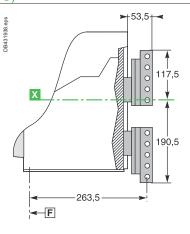
Detail



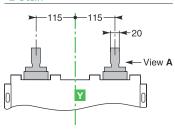


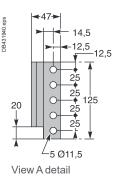
Vertical Rear Connection (NW40 DC)





Detail





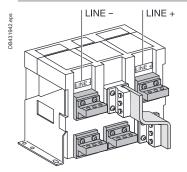
Note: Recommended connection screws: M10 class 8.8. Tightening torque: 50 Nm with contact washer.

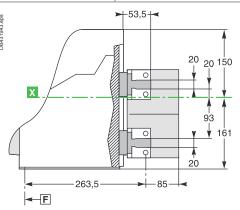
LINE Y **↑** LINE DB431941.eps

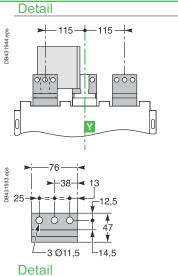
Master**Pact** (Fixed Device) NW10 to 40 DC-DC PV-Version D

Connections

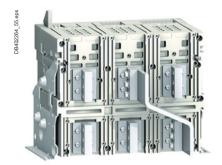
Horizontal Rear Connection (NW10-NW20 DC-DC PV)

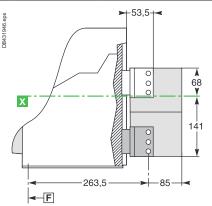






Vertical Rear Connection (NW10-NW20 DC-DC PV)





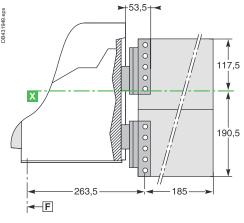
View A ²3 Ø11,5 View A detail

-115-

Detail

Vertical Rear Connection (NW40 DC-DC PV)





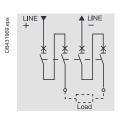
⊢1<u>2,5</u> —12,5 25 Note: Recommended connection screws: M10 class 8.8. ∠₅ Ø11,5 Tightening torque: 50 Nm with contact washer. View A detail

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14,5

Master**Pact** (Fixed Device)

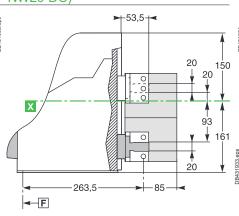
NW10 to 40 DC-Version E

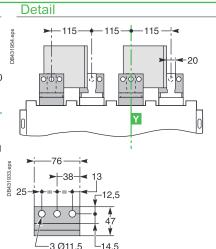


Connections

Horizontal Rear Connection (NW10-NW20 DC)

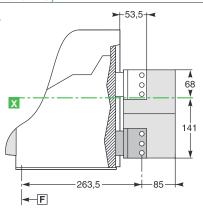




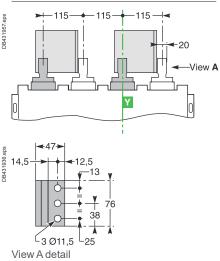


Vertical Rear Connection (NW10-NW20 DC)



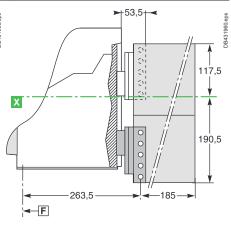


Detail

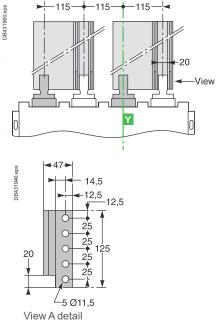


Vertical Rear Connection (NW40 DC)





Detail

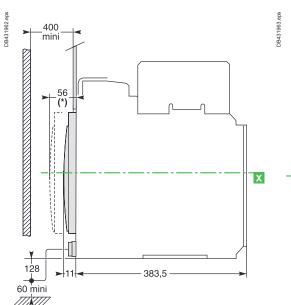


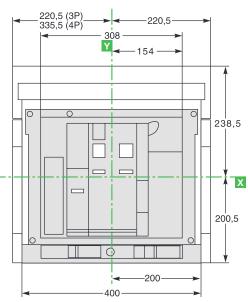
Note: Recommended connection screws: M10 class 8.8. Tightening torque: 50 Nm with contact washer.

MasterPact (Drawout Device)

NW10 to 40 DC Version C/D (3P) Version E (4P) NW10 to 40 DC PV Version D (3P)

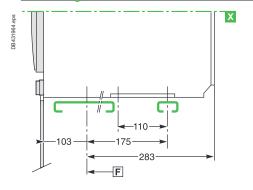
Device



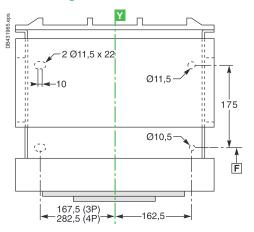


[*] Drawout position.

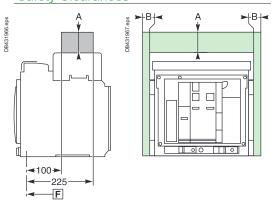
Mounting on Base Plate or Rails



Mounting Detail



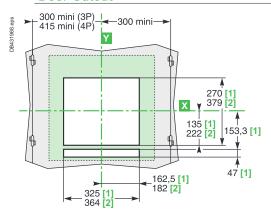
Safety Clearances



	Insulated parts	Metal parts	Energized parts
Α	0	0	0
В	0	0	60

E: Datum

Door Cutout

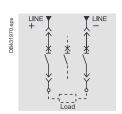


Note:

- [1] Without escutcheon
- [2] With escutcheon
- X and Y are the symmetry planes for a 3-pole device.

Master**Pact** (Drawout Device)

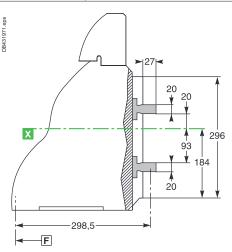
NW10 to 40 DC-Version C

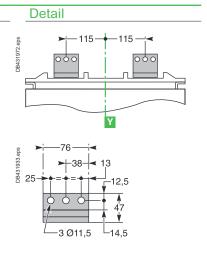


Connections

Horizontal Rear Connection (NW10-NW20 DC)

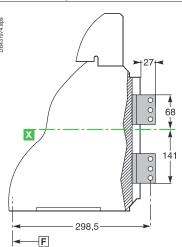




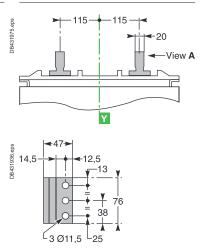


Vertical Rear Connection (NW10-NW20 DC)



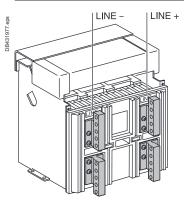


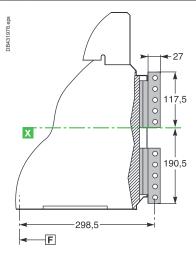
Detail



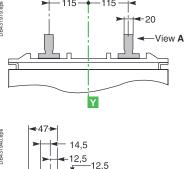
View A detail

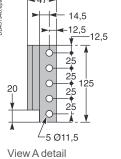
Vertical Rear Connection (NW40 DC)



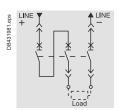


Detail





Note: Recommended connection screws: M10 class 8.8. Tightening torque: 50 Nm with contact washer.

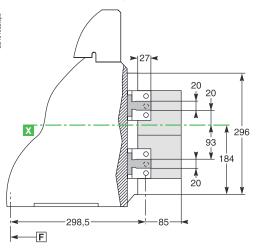


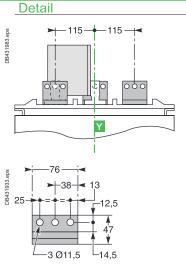
MasterPact (Drawout Device) NW10 to 40 DC, EPDC, DC PV-Version D

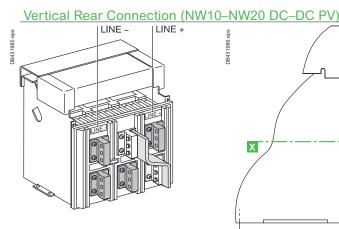
Connections

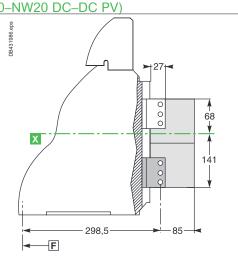


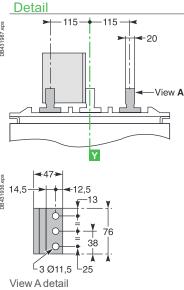






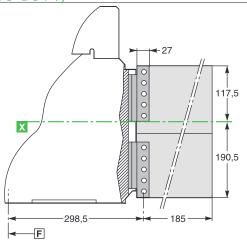






Vertical Rear Connection (NW40 DC-DC PV)



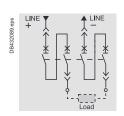


115 115 20 View A View A detail
Life Is On Schneider C-39

Note: Recommended connection screws: M10 class 8.8. Tightening torque: 50 Nm with contact washer.

Master**Pact** (Drawout Device)

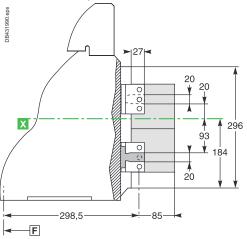
NW10 to 40 DC-Version E

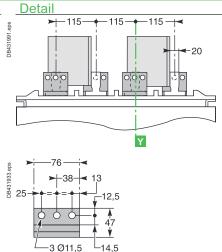


Connections

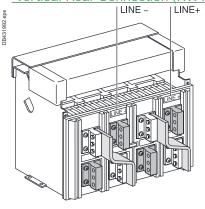


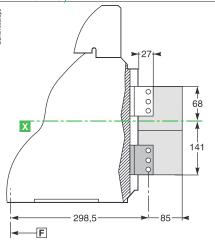


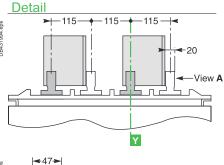


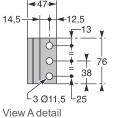


Vertical Rear Connection (NW10-NW20 DC)



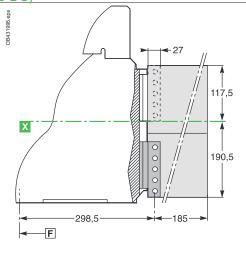


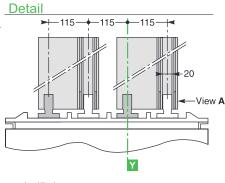


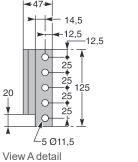


Vertical Rear Connection (NW40 DC)







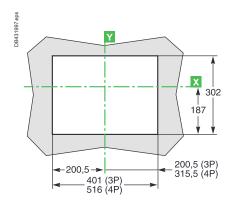


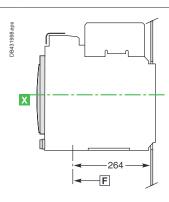
Note: Recommended connection screws: M10 class 8.8. Tightening torque: 50 Nm with contact washer.

MasterPact NW10 to 40 DC, EPDC, DC PV

Accessories

Rear Panel Cutout (Drawout Device) NW10 to NW40 DC-DC PV

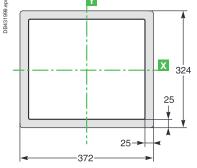




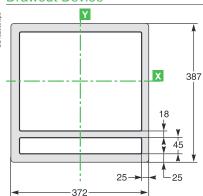
E: Datum

Escutcheon

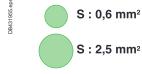


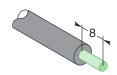


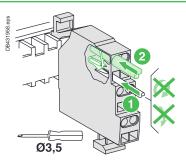




Connection of Auxiliary Wiring to Terminal Block





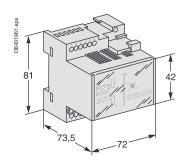


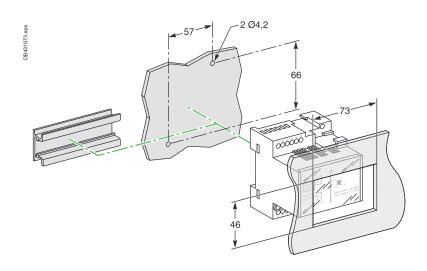
One conductor only per connection point

MasterPact NW10 to 40 DC, EPDC, DC PV

Accessories

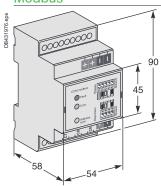
Delay Unit for MN Release





"Chassis" Communication Module

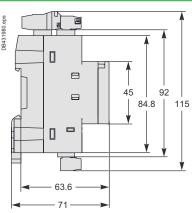
Modbus



Dimensions and MountingExternal Modules for Com**PacT** and Master**Pact**

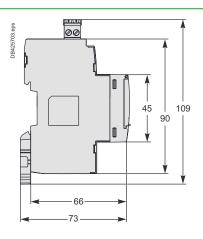
I/O (Input/Output) Application Module





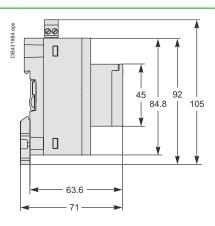
IFM-Modbus-SL Interface



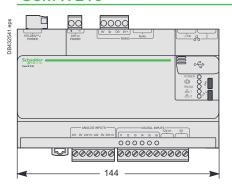


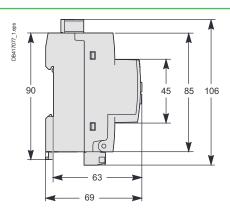
IFE-Ethernet Interface





Com'X 210

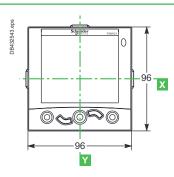




Dimensions and Mounting FDM121 Switchboard Display

Dimensions

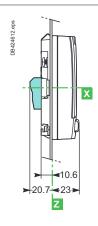


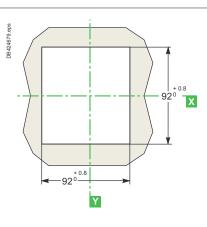


Mounting
Through Panel





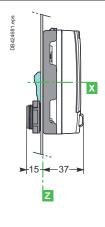


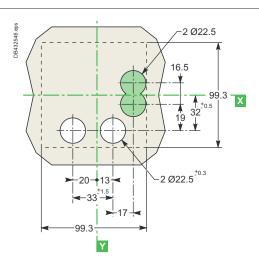


On Panel







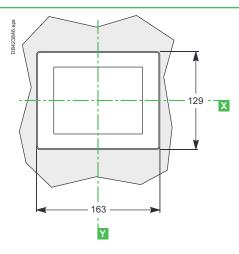


Connector (optional)

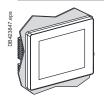
FDM128 Switchboard Display

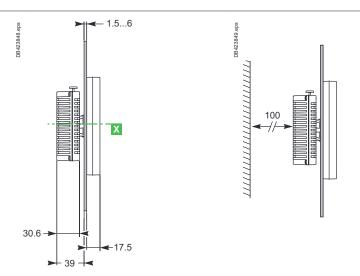
Dimensions

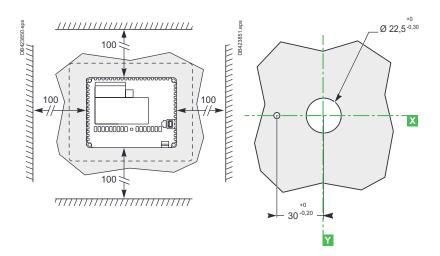




Mounting On Panel









Electrical Diagrams

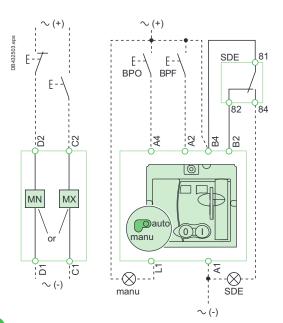
ComPacT NSX100 to 1200 DC Fixed Circuit Breakers	D-2
ComPacT NSX100 to 630 DC Plug-in/Withdrawable Circuit Breakers	D-4
ComPacT NSX100 to 630 DC - DC PV Motor Mechanism Communication	
ComPacT NSX630b to NSX1600 DC PV Fixed Switch-Disconnectors	D-10
MasterPact NW10 to NW40 DC - DC PV Fixed and Drawout Devices	D-12
MasterPact NW DC - DC PV Communication	D-14
Fixed, Electrically Operated MasterPact NW DC DC PV Connection to the Communication Interface Module	
Withdrawable MasterPact NW DC - DC PV Connection to the I/O and Communication Interface Module.	

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Additional Characteristics	E-1
Catalog Numbers and Order Form	F-1
·	

ComPacT NSX100 to 1200 DC

Fixed Circuit Breakers

Remote Operation



Motor mechanism (MT)

NSX cord \sim (220/240 V) 8 01 manu ---A1

Communicating motor mechanism (MTc)

Remote Operation

MN: undervoltage release

or MX:

shunt release

Motor mechanism (MT)

A4: opening order A2: closing order

B4, A1: power supply to motor mechanism

L1: manual position (manu)

SDE interlocking (mandatory for correct operation) B2:

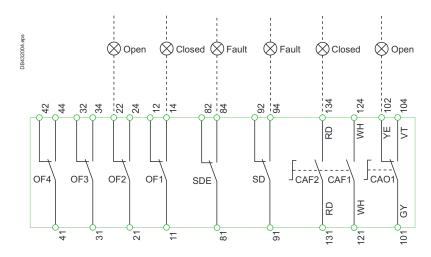
BPO: opening pushbutton BPF: closing pushbutton

Communicating motor mechanism (MTc) [1]

B4, A1: motor mechanism power supply BSCM: breaker status and control module

ComPacT NSX100 to 1200 DC Fixed Circuit Breakers

Indication Contacts



The diagram is shown with circuits de-energized, all devices open, connected and charged and relays in normal position.

Terminals shown in **o** must be connected by the customer.

OF2/OF1: device ON/OFF indication contacts

OF4/OF3: device ON/OFF indication contacts (NSX400/630)

SDE: fault-trip indication contact (short-circuit, overload, ground fault,

earth leakage)

SD: trip-indication contact

CAF2/CAF1: early-make contact (rotary handle only)
CAO1: early-break contact (rotary handle only)

Color Code for Auxiliary Wiring

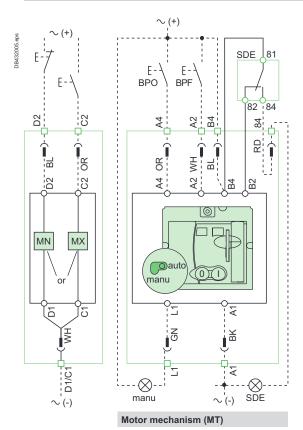
RD: red VT: violet
WH: white GY: grey
YE: yellow OR: orange
BK: black BL: blue

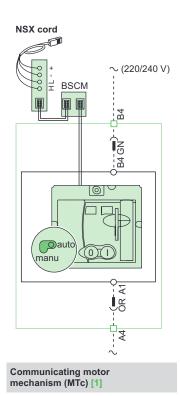
GN: green

ComPacT NSX100 to 630 DC

Plug-in/Withdrawable Circuit Breakers

Remote Operation





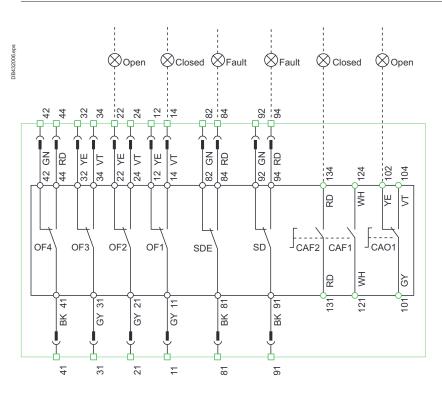
[1] NSX100-250 DC only.

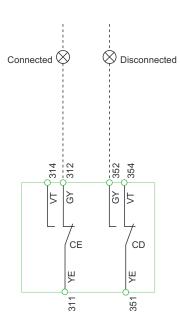
ComPacT NSX100 to 630 DC

Plug-in/Withdrawable Circuit Breakers

Indication Contacts

Carriage Switches





Remote Operation

MN: undervoltage release

or

MX: shunt release

Motor mechanism (MT)

A4: opening order A2: closing order

B4, A1: motor mechanism power supply

L1: manual position (manu)

B2: SDE interlocking (mandatory for automatic or remote

recharging)

BPO: opening pushbutton closing pushbutton

Communicating motor mechanism (MTc)

B4, A1: motor mechanism power supply **BSCM:** breaker status and control module

Indication Contacts

OF2/OF1: device ON/OFF indication contacts

OF4/OF3: device ON/OFF indication contacts (NSX400/630)

SDE: fault-trip indication contact

(short-circuit, overload, ground fault, earth leakage)

SD: trip-indication contact

CAF2/CAF1: early-make contact

(rotary handle only)

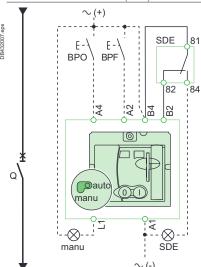
CAO1: early-break contact

(rotary handle only)

ComPacT NSX100 to 630 DC - DC PV

Motor Mechanism

Motor Mechanism (MT) with Automatic Reset

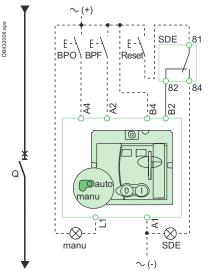


The diagram is shown with circuits de-energized, all devices open, connected and charged and relays in normal position.

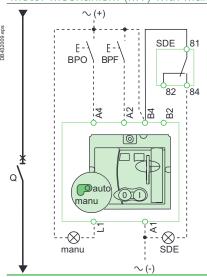
After tripping initiated by the "Push to trip" button or by the undervoltage (MN) release or the shunt (MX) release, device reset can be automatic, remote or manual.

Following tripping due to an electrical fault (with an SDE contact), reset must be carried out manually.

Motor Mechanism (MT) with Remote Reset



Motor Mechanism (MT) with Manual Reset



Symbols

Q: circuit breaker
A4: opening order
A2: closing order

B4, A1: motor mechanism power supply

L1: manual position (manu)

B2: SDE interlocking (mandatory for correct operation)

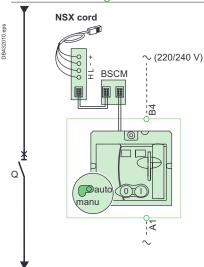
BPO: opening pushbutton **BPF:** closing pushbutton

SDE: fault-trip indication contact (short-circuit, overload, ground fault, earth

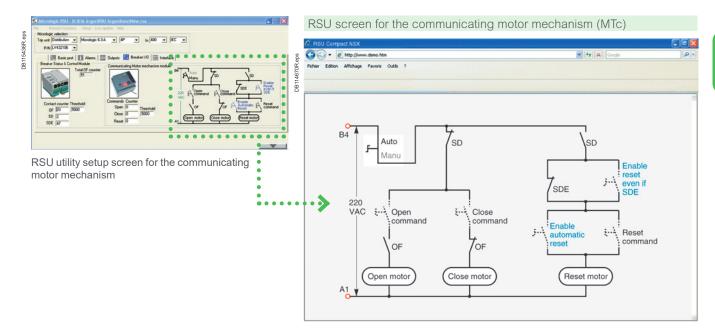
leakage)

ComPacT NSX100 to 630 DC - DC PV Motor Mechanism

Communicating Motor Mechanism (MTc) [1]



Schematic representation of the communicating motor mechanism (MT).



Single-line diagram of communicating motor mechanism

Opening, closing and reset orders are transmitted via the communication network. The "Enable automatic reset" and "Enable reset even if SDE" parameters must be set using the RSU software via the screen by clicking the blue text.

"Auto/manu" is a switch on the front of the motor mechanism.

Symbols

Q: circuit breaker

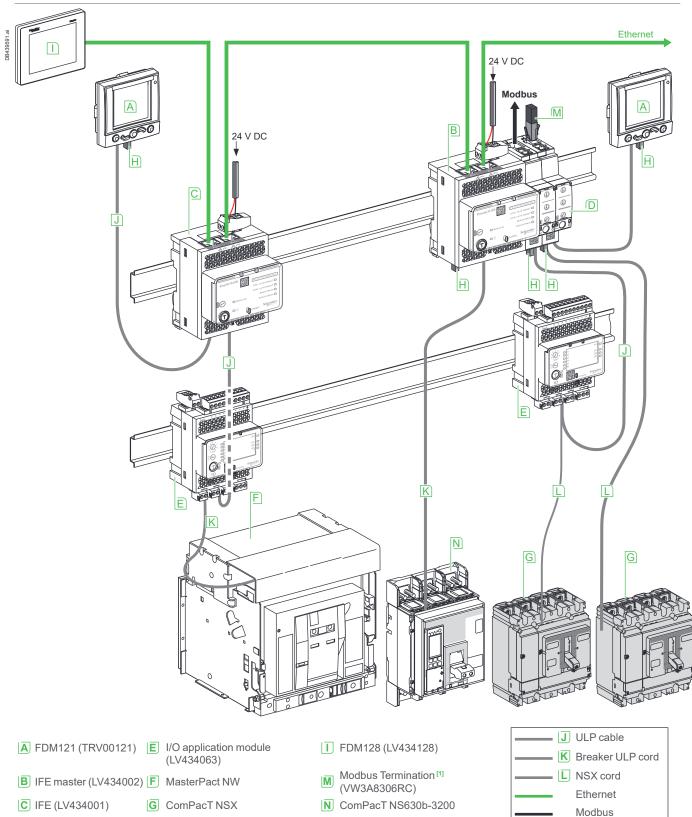
B4, A1: motor mechanism power supply **BSCM:** breaker status and control module

Terminals shown in **O** must be connected by the customer. [1] NSX100-250 only.

ComPacT NSX100 to 630 DC - DC PV - DC EP

Communication

Connection of Circuit Breakers to the Modbus Communication Network

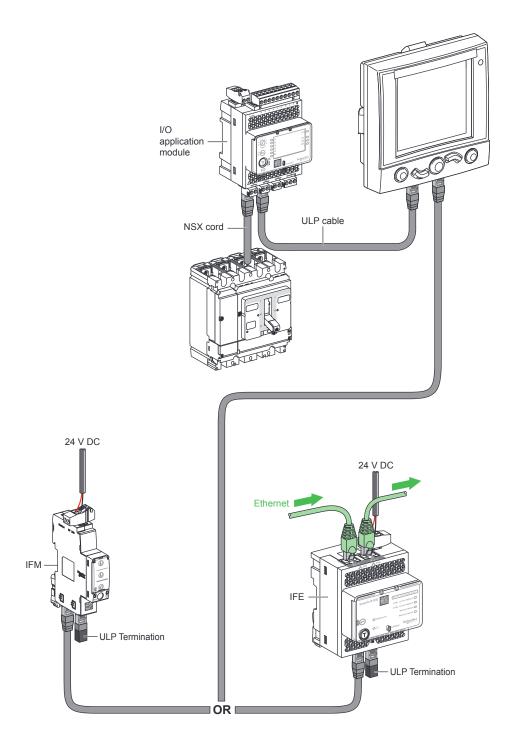


[1] Modbus termination is mandatory, see ULP system user guide TRV99101.

H ULP termination (TRV00880)

D IFM (LV434000)

ComPacT NSX100 to 630 DC - DC PV - DC EP Communication

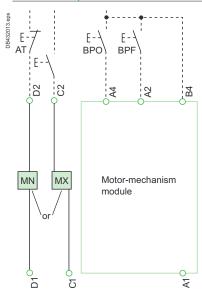


ComPacT NSX630b to NSX1600 DC PV

Fixed Switch-Disconnectors

The diagram is shown with circuits de-energized, all devices open, connected and charged and relays in the normal position.

Remote Operation



MN undervoltage release

or MX

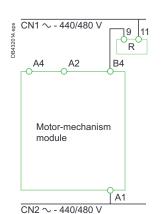
shunt release

Motor-mechanism module [1]

A4 electrical opening order **A2** electrical closing order

B4, A1 : power supply for control devices and gear motor

[1] Spring-charging motor 440/480 V AC (380 V motor + additional resistor).

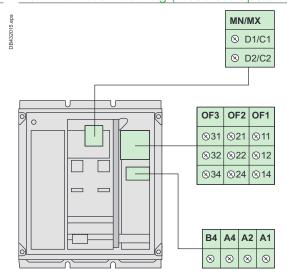


ComPacT NSX630b to NSX1600 DC PV Fixed Switch-Disconnectors

Indication Contacts

Terminal-Block Marking (Electrical Operation)

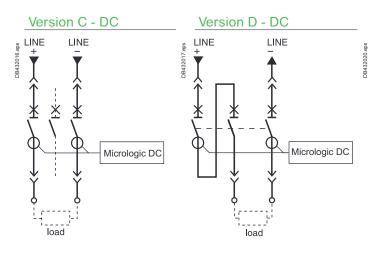
OF3/OF2/OF1 : indication contacts

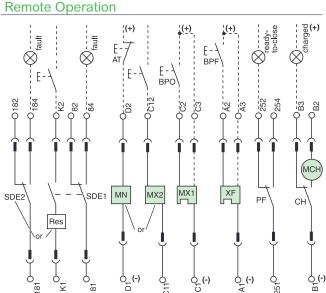


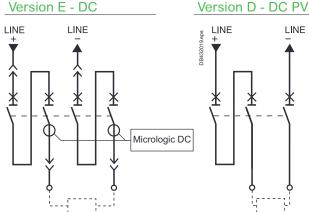
MasterPact NW10 to NW40 DC - DC PV

Fixed and Drawout Devices

Diagrams are shown with circuits de-energized, all devices open, connected and charged and relays in the normal position.

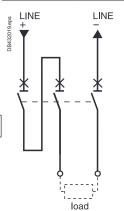






load

Terminal block marking



Control Unit Com: E1-E6 communication 0 E5 E6 0 0

_		_		
Rem	note	()ne	ration	١

SDE2 / Res	SDE1	MN	/ MX2	MX1	XF	PF	МСН
53 53	5	6	5	5	5	6.9	6.9
184 / K2	84	D2	/ C12	C2	A2	254	B2
5-5	6 9			6 9	6 9	6 9	6 9
182	82			С3	А3	252	В3
5 5	5-9	5	5	5-9	5-9	6-9	6.9
181 / K1	81	D1	/ C11	C1	A1	251	B1

SDE2: fault-trip indication contact

remote reset

SDE1: fault-trip indication contact (supplied as standard)

MN: undervoltage release

MX2:

shunt release

MX1: shunt release (standard or communicating) XF: closing release (standard or communicating)

PF: ready-to-close contact

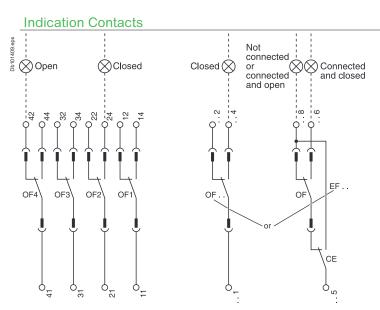
MCH: electric motor

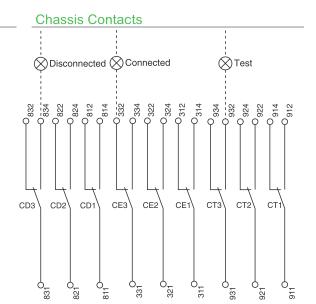
Note: When communicating MX or XF releases are used, the third wire (C3,A3) must be connected even if the communication module is not installed.

E3 E4 0 E1 E2

MasterPact NW10 to NW40 DC - DC PV

Fixed and Drawout Devices





Indication Contacts

OF4	OF3	OF2	OF1
6	5 9	5	6
44	34	24	14
6	6 9	6	6
42	32	22	12
6	6 9	5	6
41	31	21	11

OF24	OF23	OF22	OF21	OF14	OF13	OF12	OF11
6	6	6	6	6	5	6	6
244	234	224	214	144	134	124	114
6	67	6 9	67	6 9	6	6	6
242	232	222	212	142	132	122	112
6	6	6	6	6	67	6	6
241	231	221	211	141	131	121	111

or			or				or
EF24	EF23	EF22	EF21	EF14	EF13	EF12	EF11
$\overline{\Box}$	5	5	5	6	6	6	5 3
248	238	228	218	148	138	128	118
6	5	6	6	6	6 9	6	6 9
246	236	226	216	146	136	126	116
6	5	6	6	6	6 9	6	6 9
245	235	225	215	145	135	125	115

Chassis Contacts

CD3	CD2	CD1	CE3	CE2	CE1	СТЗ	CT2	CT1
6	6	6	5 9	6	5 9	6	5	5
834	824	814	334	324	314	934	924	914
5	6 9	5 9	5 9	5 9	5	5 9	5	6
832	822	812	332	322	312	932	922	912
6	6	6	6	6	6	6	5	6
831	821	811	331	321	311	931	921	911

0.								
CE6	CE5	CE4						
6	6	6						
364	354	344						
6	6	6						
362	352	342						
6	6	6						
361	351	341						

	OI						
CI	Ξ9	CI	CE8		Ξ7		
6	7	5	7	6	7		
3	94	3	84	3	74		
6	7	2	7	6	7		
3	92	3	82	3	72		
6	7	2	7	6	7		
3	391		81	3	71		

Indication Contacts

<u>Inai</u>	cation Contacts		
OF4 OF3 OF2 OF1	ON/OFF indication contacts	OF24 or EF24	ON/OFF indication contacts Combined "connected-closed" indication contacts
011		OF22 or EF22	
		OF21 or EF21	
		OF14 or EF14	
		OF13 or EF13	
		OF12 or EF12	

OF11 or

Chassis Contacts

Una	SSIS Conta	icis			
CD3 CD2 CD1	Disconnected position contacts	CE3 CE2 CE1	Connected position contacts	CT3 CT2 CT1	Test position contacts
or				or	
CE6 CE5 CE4	Connected position contacts			CE9 CE8 CE7	Connected position contacts
				or	
				CD6 CD5 CD4	Disconnected position contacts

Legend:

Drawout device only.

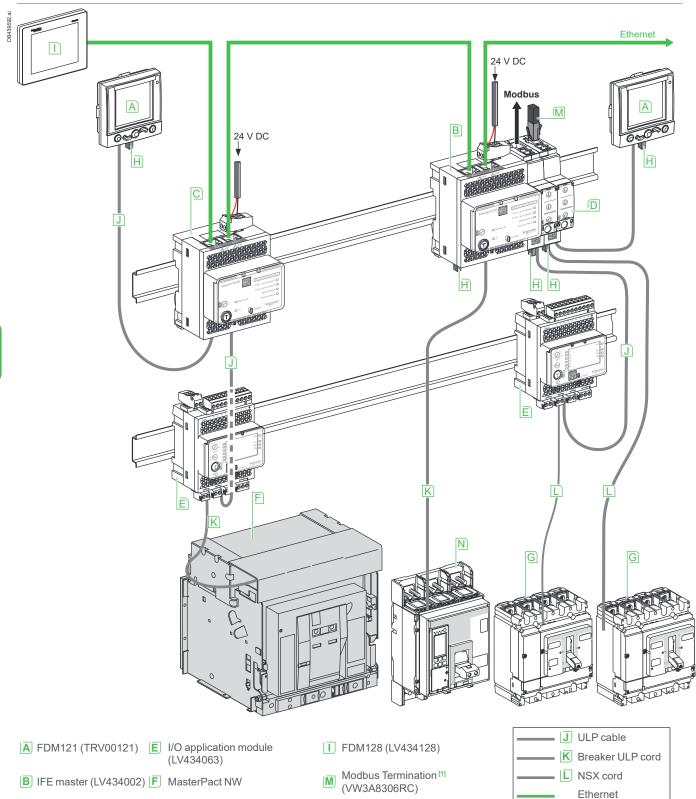
XXX SDE1, OF1, OF2, OF3, OF4 supplied as standard.

Interconnected connections (only one wire per connection point).

MasterPact NW DC - DC PV

Communication

Communication Achitecture



N ComPacT NS630b-3200

Modbus

[1] Modbus termination is mandatory, see ULP system user guide TRV99101.

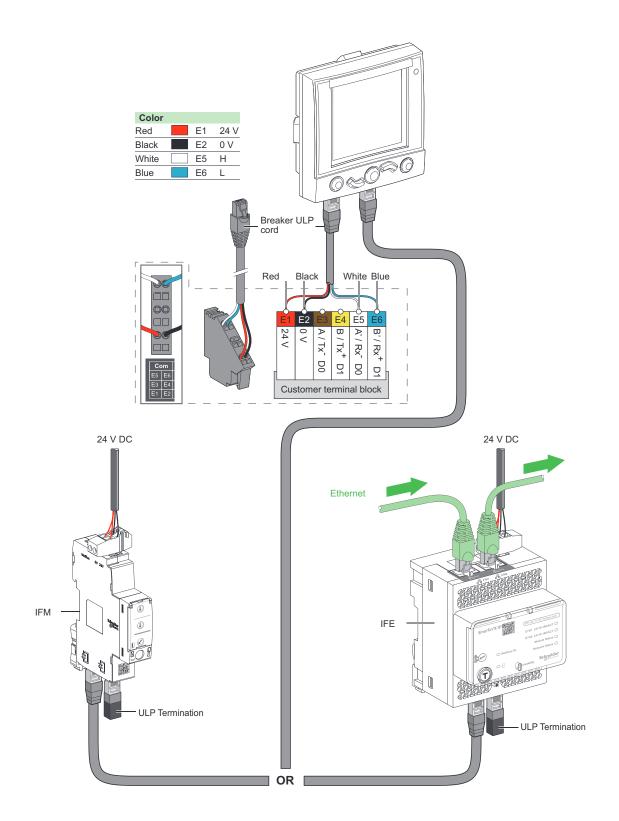
G ComPacT NSX

H ULP termination (TRV00880)

C IFE (LV434001)

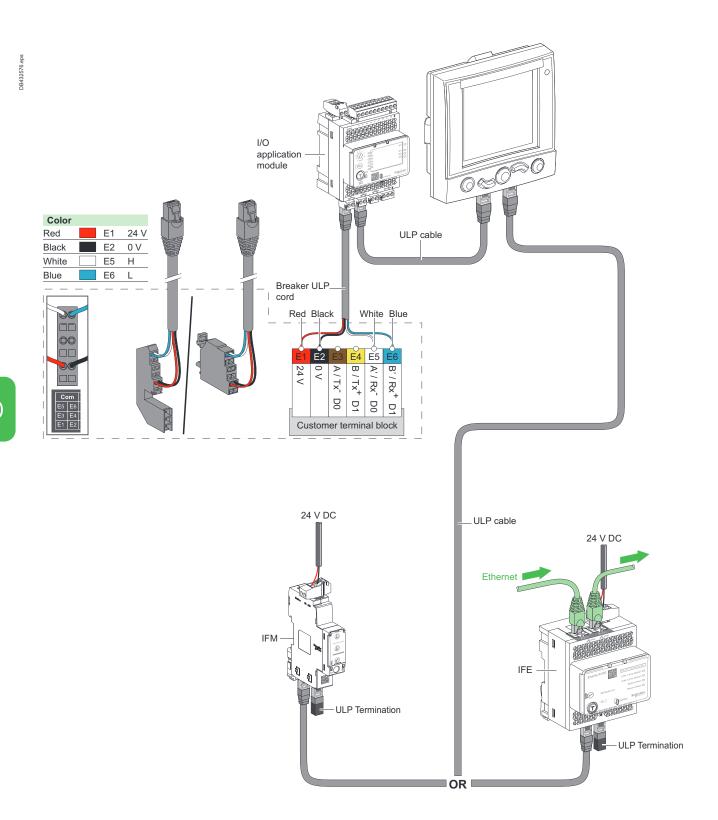
D IFM (LV434000)

Fixed, Electrically Operated MasterPact NW DC - DC PV Connection to the Communication Interface Module



Withdrawable MasterPact NW DC - DC PV

Connection to the I/O and Communication Interface Module



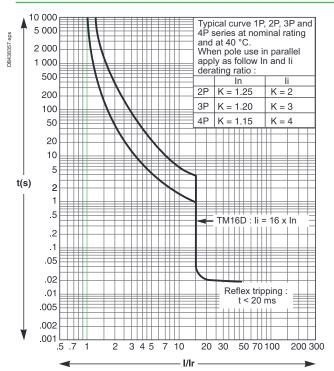
Additional Characteristics

ComPact NSX100 to 250 DC TM-DC Magnetic Trip Units, Tripping Curves TMG Magnetic Trip Units, Tripping Curves	
ComPact NSX400 to 630 DC TM-DC Trip Units, Tripping Curves	E-8
ComPact NSX630 to 1200 DC TM-DC Trip Units, Tripping Curves	E-10
ComPacT NSX80 to 500 DC PV TM-DC PV Magnetic Trip Units, Tripping Curves	E-11
Current and Energy Limiting Curves ComPact NSX DC ComPacT NSX DC EP	
MasterPact NW10 to NW40 DC Tripping Curves U = 500 V DC, L/R = 5 Ms Tripping Curves U = 750/900 V DC, L/R = 5 Ms Tripping Curves U = 500 V DC, L/R = 15 Ms Tripping Curves U = 750/900 V DC, L/R = 15 Ms Tripping Curves U = 750/900 V DC, L/R = 30 Ms	E-19 E-20 E-21 E-22
Tripping Curves U = 900 V DC, L/R = 30 Ms	E-23

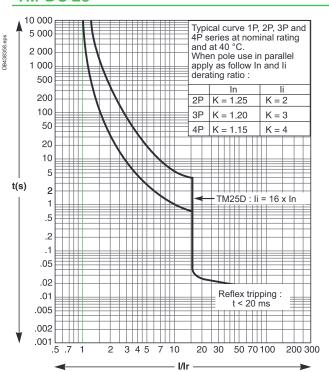
Other Chapters
Presentation
Functions and Characteristics
Installation Recommendations
Dimensions and Connection
Electrical Diagrams
Catalog Numbers and Order FormF-1
·

TM-DC Magnetic Trip Units, Tripping Curves

TM-DC 16

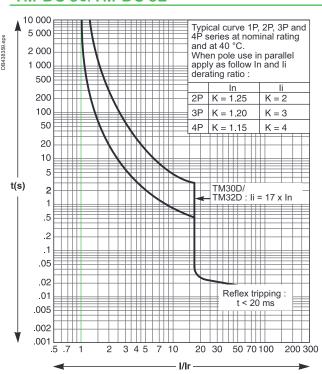


TM-DC 25

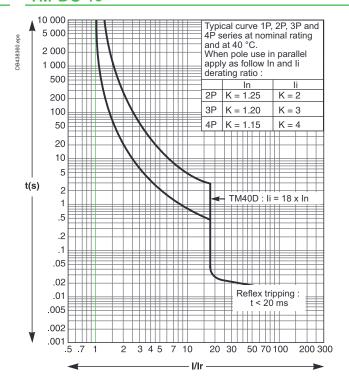


Reflex tripping.

TM-DC 30/TM-DC 32



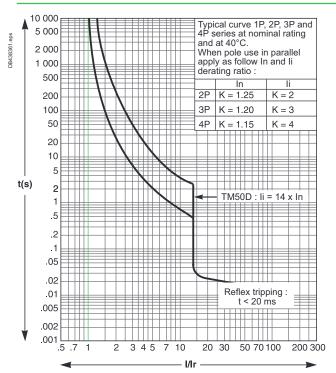
TM-DC 40



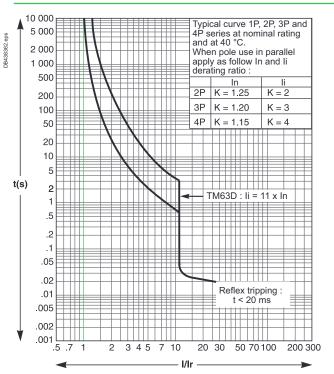
Reflex tripping.

TM-DC Magnetic Trip Units, Tripping Curves

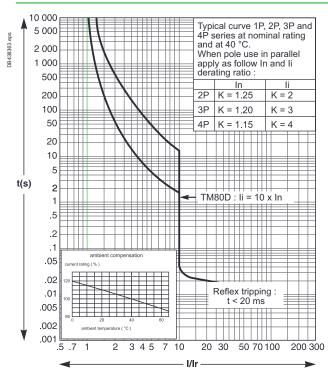
TM-DC 50

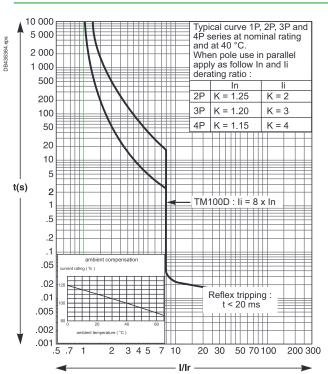


TM-DC 63



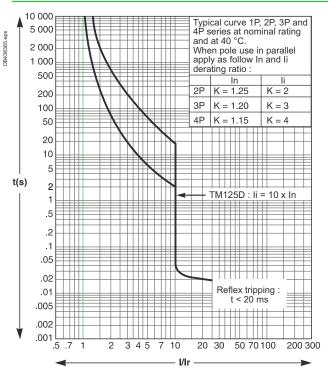
TM-DC 80



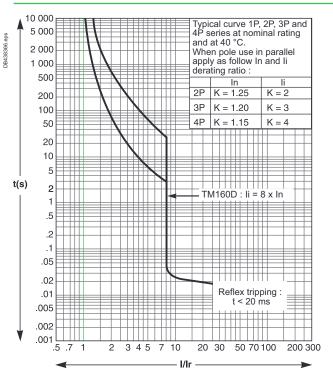


TM-DC Magnetic Trip Units, Tripping Curves

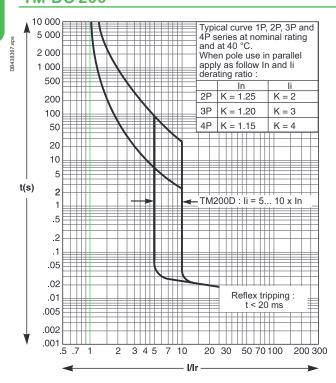
TM-DC 125

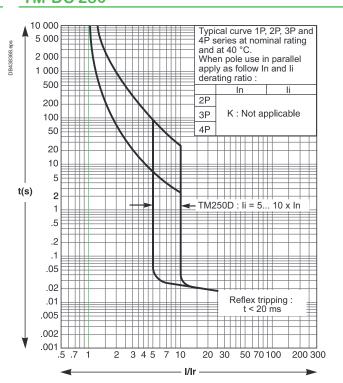


TM-DC 160



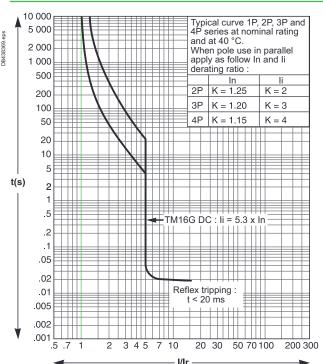
TM-DC 200



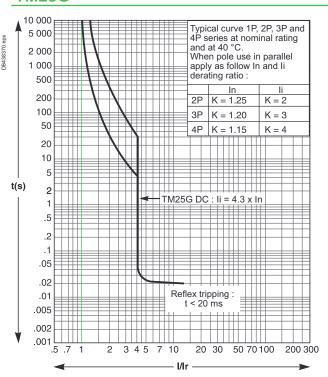


TMG Magnetic Trip Units, Tripping Curves

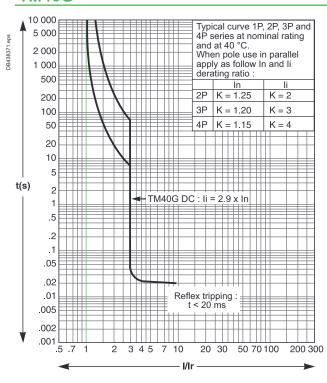
TM16G



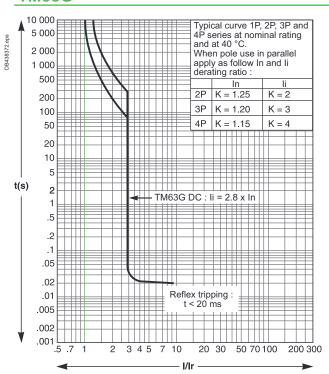
TM25G



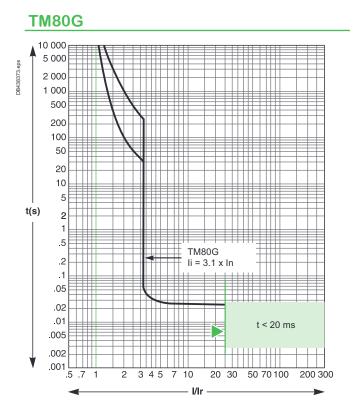
TM40G



TM63G

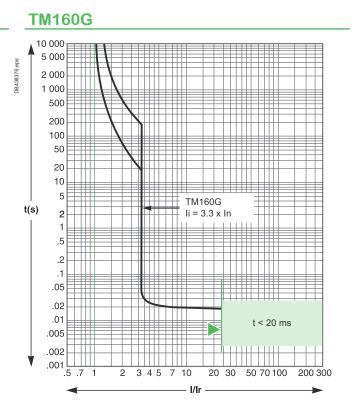


TMG Magnetic Trip Units, Tripping Curves

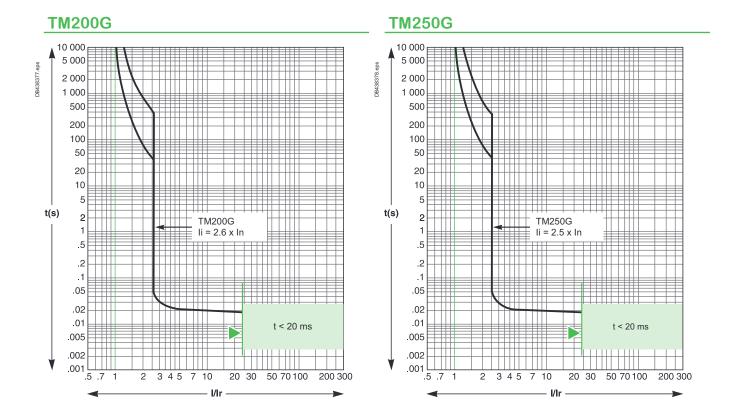


TM100G 10 000 2 000 1 000 500 200 50 20 10 TM100G .2 .05 .02 .01 t < 20 ms .005 .002 .001 3 4 5 7 10 20 30 50 70 100 200 300

TM125G 10 000 2 000 1 000 500 200 100 50 20 10 t(s) .05 .02 .01 t < 20 ms .005 .002 .001 2 3 4 5 7 10 20 30 50 70 100 200 300



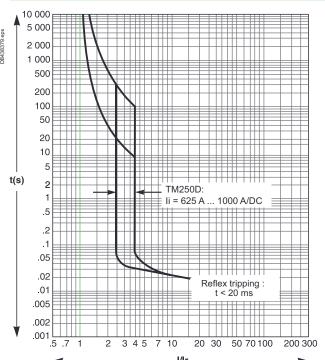
ComPact NSX100 to 250 DC TMG Magnetic Trip Units, Tripping Curves



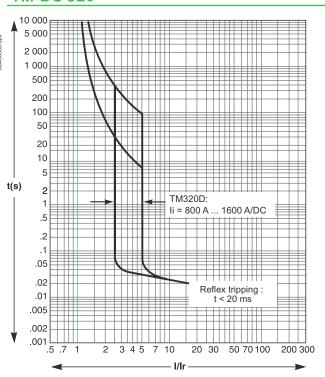
ComPact NSX400 to 630 DC

TM-DC Trip Units, Tripping Curves

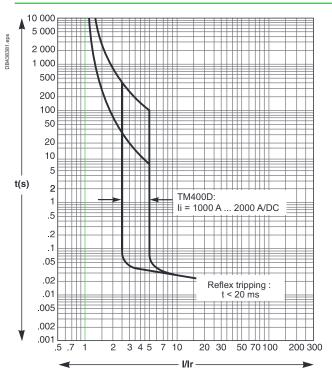


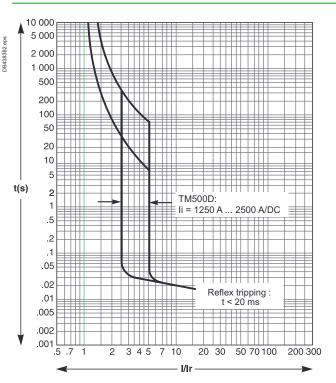


TM-DC 320

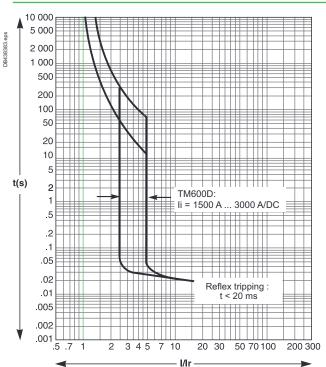


TM-DC 400



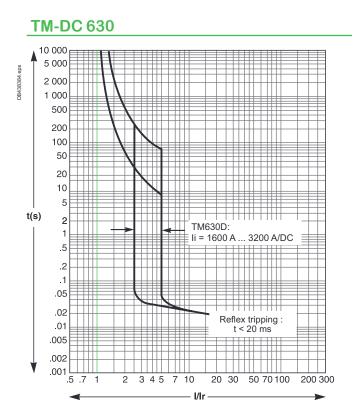


ComPact NSX400 to 630 DC TM-DC Trip Units, Tripping Curves

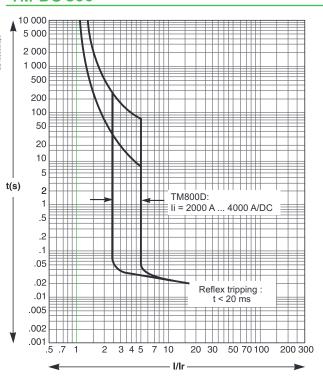


ComPact NSX630 to 1200 DC

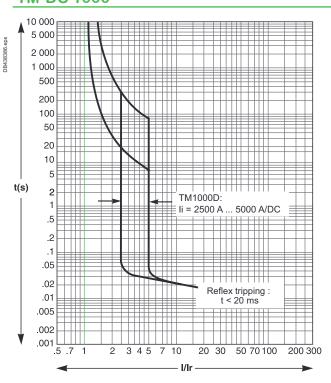
TM-DC Trip Units, Tripping Curves

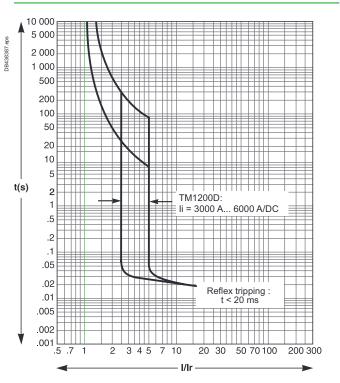


TM-DC 800



TM-DC 1000

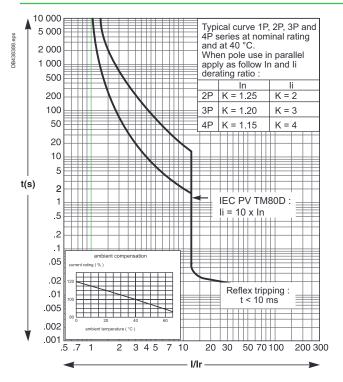




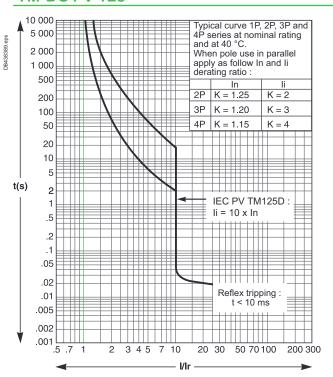
ComPacT NSX80 to 500 DC PV

TM-DC PV Magnetic Trip Units, Tripping Curves

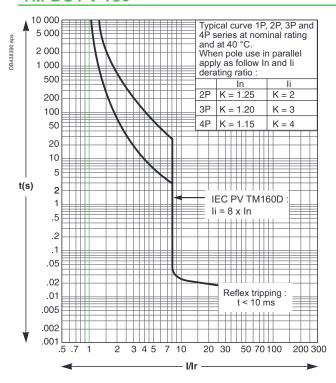
TM-DC PV 80



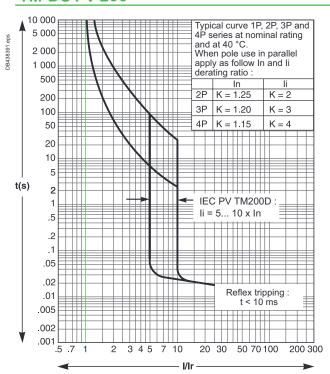
TM-DC PV 125



TM-DC PV 160



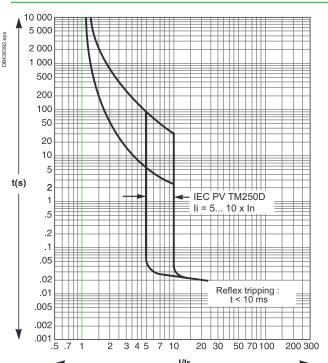
TM-DC PV 200



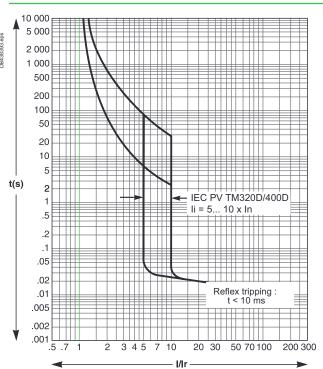
ComPacT NSX80 to 500 DC PV

TM-DC PV Magnetic Trip Units, Tripping Curves

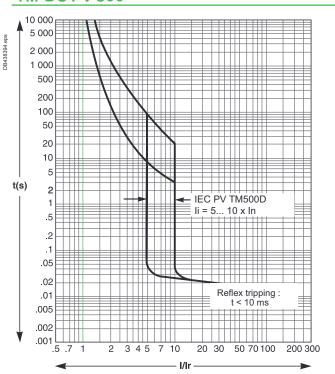
TM-DC PV 250



TM-DC PV 320/400

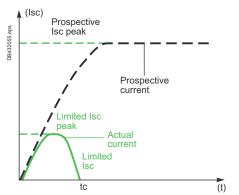


TM-DC PV 500



Current and Energy Limiting Curves

The limiting capacity of a circuit breaker is its aptitude to let through a current, during a short-circuit, that is less than the prospective short-circuit current.



The exceptional limiting capacity of the ComPacT NSX DC range is due to the rotating double-break technique (very rapid natural repulsion of contacts and the appearance of two arc voltages in-series with a very steep wave front).

Ics = 100 % Icu

The exceptional limiting capacity of the ComPacT NSX DC range greatly reduces the forces created by fault currents in devices.

The result is a major increase in breaking performance.

In particular, the service breaking capacity lcs is equal to 100 % of lcu.

The lcs value, defined by IEC standard 60947-2, is ensured by tests comprising the following steps:

- Break three times consecutively a fault current equal to 100 % of Icu
- Check that the device continues to function normally, that is:
 - □ It conducts the rated current without abnormal temperature rise
 - □ Protection functions perform within the limits specified by the standard
 - □ Suitability for isolation is not impaired.

Longer Service Life of Electrical Installations

Current-limiting circuit breakers greatly reduce the negative effects of short-circuits on installations.

Thermal Effects

Less temperature rise in conductors, therefore longer service life for cables.

Mechanical Effects

Reduced electrodynamic forces, therefore less risk of electrical contacts or busbars being deformed or broken.

Electromagnetic Effects

Fewer disturbances for measuring devices located near electrical circuits.

Current and Energy Limiting Curves

The limiting capacity of a circuit breaker is expressed by two curves which are a function of the prospective short-circuit current (the current which would flow if no protection devices were installed):

- The actual peak current (limited current)
- \blacksquare Thermal stress (A²s), i.e. the energy dissipated by the short-circuit in a conductor with a resistance of 1 Ω .

Example

What is the real value of a 150 kA rms prospective short-circuit (i.e. 330 kA peak) limited by an NSX250L DC upstream?

The answer is 30 kA peak (curve page E-14).

Maximum Permissible Cable Stresses

The table below indicates the maximum permissible thermal stresses for cables depending on their insulation, conductor (Cu or AI) and their cross-sectional area (CSA). CSA values are given in mm² and thermal stresses in A²s.

CSA		1.5 mm ²	2.5 mm ²	4 mm ²	6 mm²	10 mm ²
PVC	Cu	2.97 x 10 ⁴	8.26 x 10 ⁴	2.12 x 10 ⁵	4.76 x 10 ⁵	1.32 x 10 ⁶
	Al					5.41 x 10 ⁵
PRC	Cu	4.10 x 10 ⁴	1.39 x 10⁵	2.92 x 10 ⁵	6.56 x 10⁵	1.82 x 10 ⁶
	ΑI					7.52 x 10 ⁵
CSA		16 mm ²	25 mm ²	35 mm ²	50 mm ²	
PVC	Cu	3.4 x 106	8.26 x 106	1.62 x 107	3.31 x 107	
	Al	1.39 x 106	3.38 x 106	6.64 x 106	1.35 x 107	
PRC	Cu	4.69 x 106	1.39 x 107	2.23 x 107	4.56 x 107	
	Al	1.93 x 106	4.70 x 106	9.23 x 106	1.88 x 107	

Example

Is a Cu/PVC cable with a CSA of 10 mm 2 adequately protected by an NSX160F. The table above indicates that the permissible stress is $1.32 \times 10^6 \, \text{A}^2 \text{s}$.

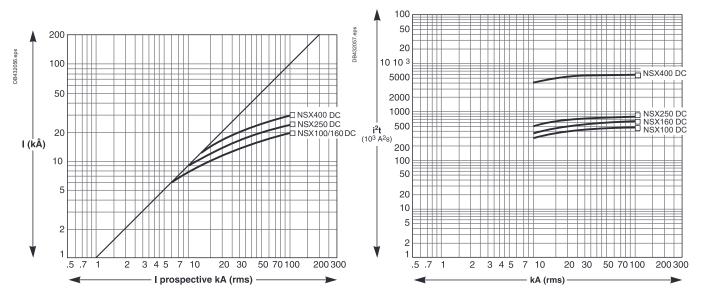
All short-circuit currents at the point where an NSX160F (Icu = 35 kA) is installed are limited with a thermal stress less than $6x10^5$ A²s (curve page E-14).

Cable protection is therefore ensured up to the limit of the breaking capacity of the circuit breaker.

Current and energy limiting curves ComPact NSX DC

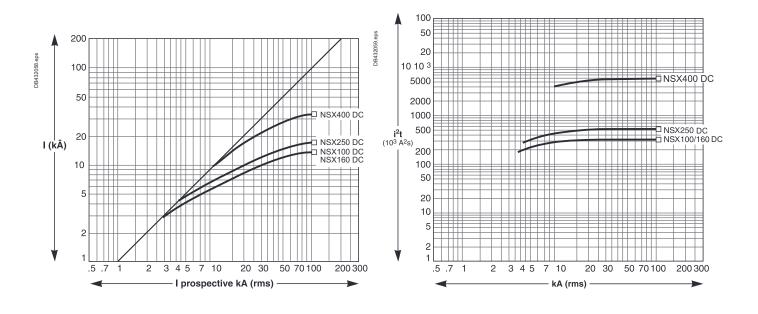
Current-limiting curves and thermal stress for L/R = 5 ms

Peak current U < 250 V DC: 1P 250 V < U < 500 V DC: 2P 500 V < U < 750 V DC: 3P Thermal stress U < 250 V DC: 1P 250 V < U < 500 V DC: 2P



Current-limiting curves and thermal stress for L/R = 15 ms

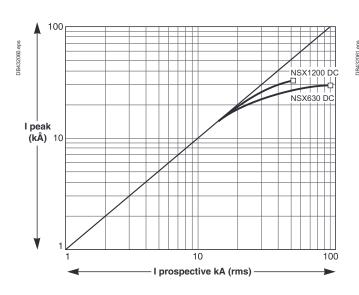
Peak current U < 250 V DC: 1P 250 V < U < 500 V DC: 2P 500 V < U < 750 V DC: 3P Thermal stress U < 250 V DC: 1P 250 V < U < 500 V DC: 2P

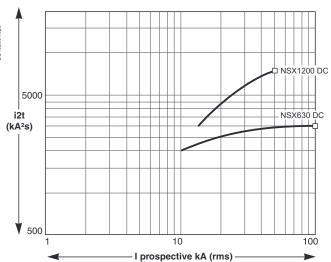


Current and energy limiting curves ComPact NSX DC

Current-limiting curves and thermal stress for L/R = 5 ms

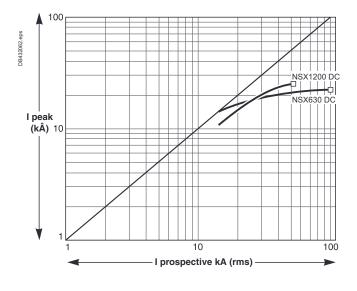
Peak current U ≤ 250 V DC: 1P 250 V < U < 600 V DC: 2P 600 V < U < 750 V DC: 3P Thermal stress U ≤ 250 V DC: 1P 250 V < U < 600 V DC: 2P

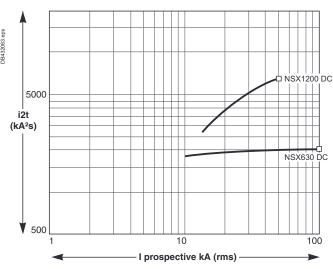




Current-limiting curves and thermal stress for L/R = 15 ms

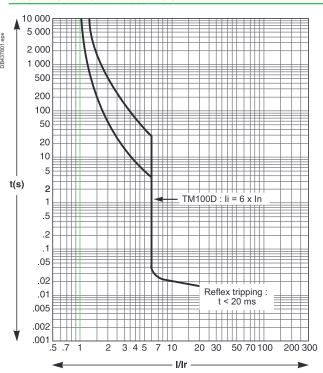
Peak current U ≤ 250 V DC: 1P 250 V < U < 600 V DC: 2P 600 V < U < 750 V DC: 3P Thermal stress U ≤ 250 V DC: 1P 250 V < U < 600 V DC: 2P



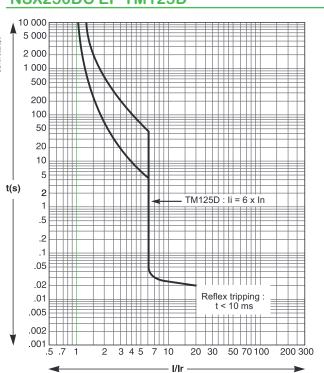


Current and Energy Limiting Curves ComPacT NSX DC EP

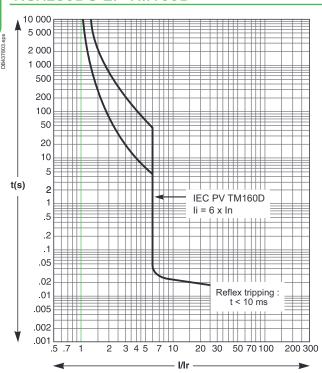
NSX250DC EP TM100D



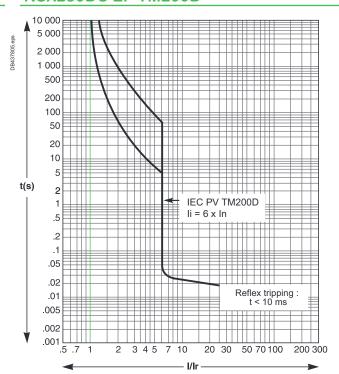
NSX250DC EP TM125D



NSX250DC EP TM160D

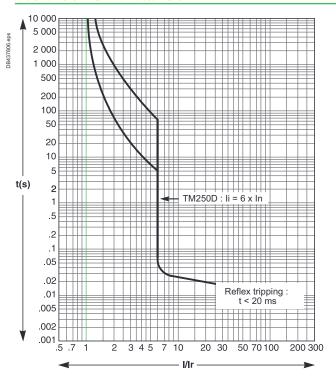


NSX250DC EP TM200D

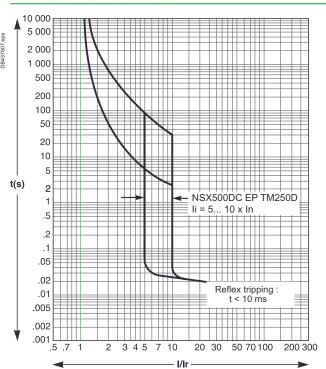


Current and Energy Limiting Curves ComPacT NSX DC EP

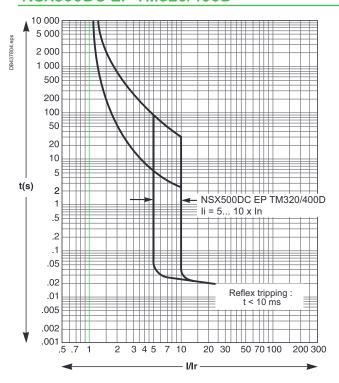
NSX250DC EP TM250D



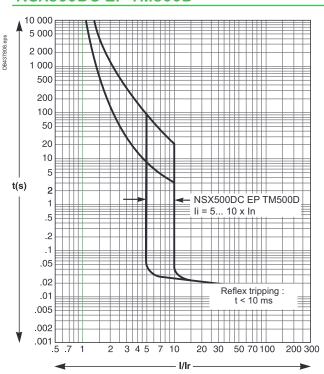
NSX500DC EP TM250D



NSX500DC EP TM320/400D



NSX500DC EP TM500D

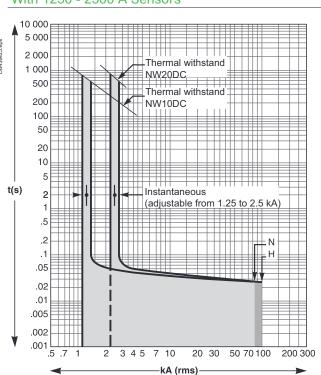


MasterPact NW10 to NW40 DC

Tripping Curves U = 500 V DC, L/R = 5 Ms

MicroLogic DC 1.0 Instantaneous Protection

With 1250 - 2500 A Sensors



With 2500 - 5400 A Sensors 5 000 2 000 1 000 NW40DC 500 Thermal withstand NW20DC 200 Thermal withstand 100 NW10DC 50 20 10 5 Instantaneous 2 (adjustable from 2.5 to 5.4 kA) .05 .02 .01 .005

3 4 5 7 10

kA (rms)

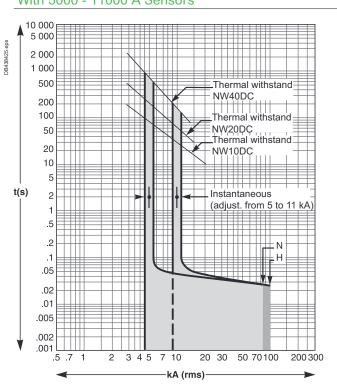
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200300

.002

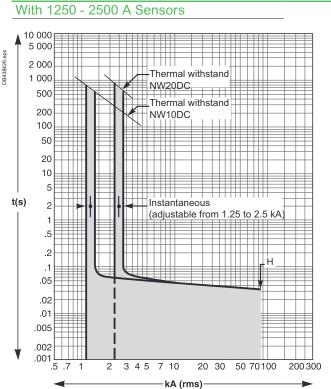
.0015.7 1

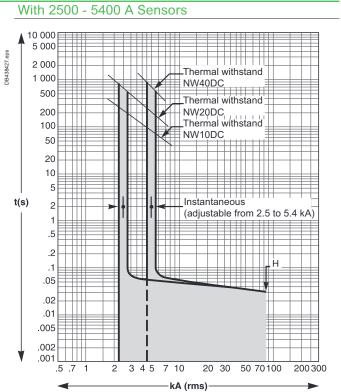
With 5000 - 11000 A Sensors

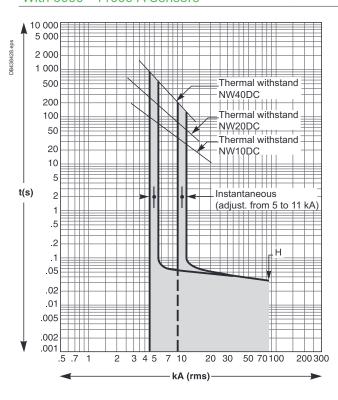


Tripping Curves U = 750/900 V DC, L/R = 5 Ms

MicroLogic DC 1.0 Instantaneous Protection

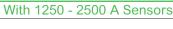


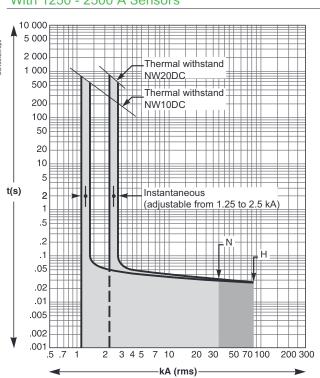




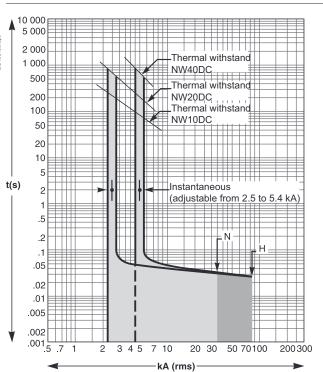
Tripping Curves U = 500 V DC, L/R = 15 Ms

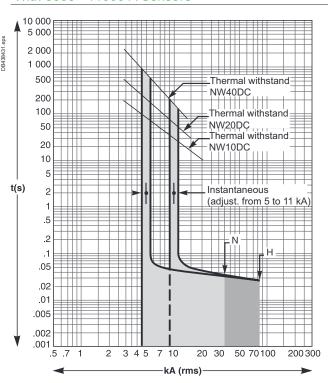
MicroLogic DC 1.0 Instantaneous Protection





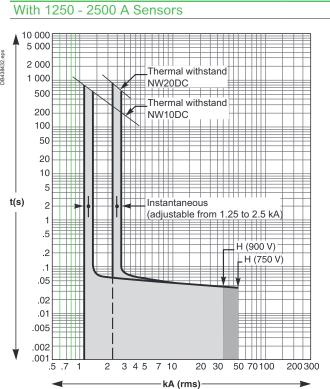
With 2500 - 5400 A Sensors

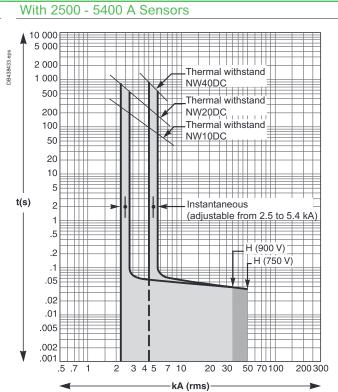


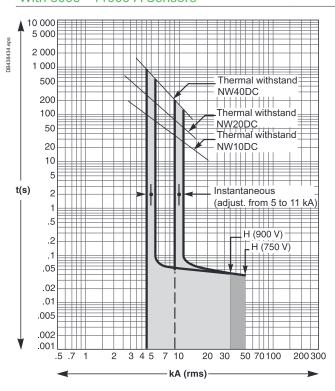


Tripping Curves U = 750/900 V DC, L/R = 15 Ms

MicroLogic DC 1.0 Instantaneous Protection



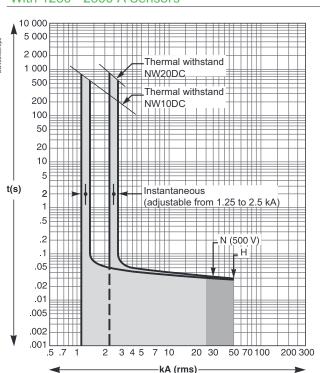




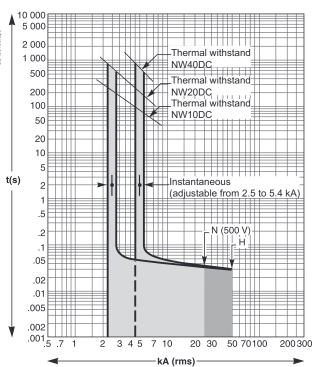
Tripping Curves U = 500/750 V DC, L/R = 30 Ms

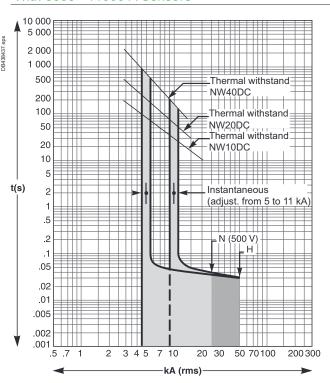
MicroLogic DC 1.0 Instantaneous Protection

With 1250 - 2500 A Sensors



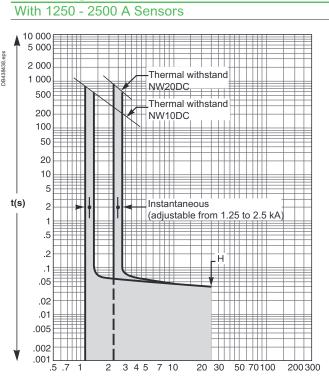
With 2500 - 5400 A Sensors



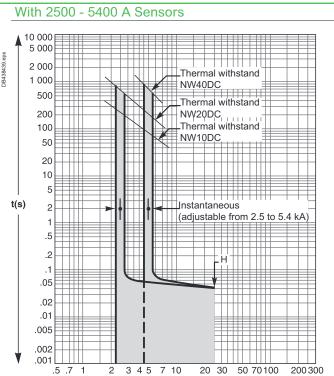


Tripping Curves U = 900 V DC, L/R = 30 Ms

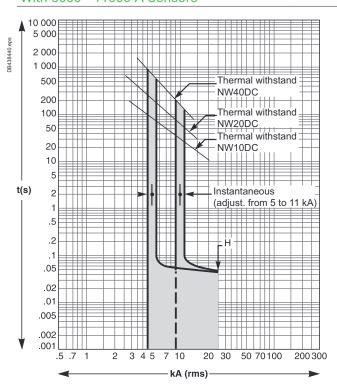
MicroLogic DC 1.0 Instantaneous Protection



kA (rms)



kA (rms)





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Spare Parts: ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC	.F-13
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Catalog Numbers and Order Form

and ComPacT INV100 to 250 DC Accessories	F-28
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Chassis Locking and Accessories	
Clusters	
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ComPacT NSX630/1600 NA DC PV 4P,	
Fixed Version	
Upside: Front Connection, 2 Kit Heatsink, Phase Separator	
Are Included	F-57
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Other Chapters	
Presentation	2
Functions and Characteristics	A-1
Installation Recommendations	B-1
Dimensions and Connection	
Electrical Diagrams	D-1
Additional Characteristics	E-1

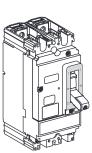
ComPacT NSX100 DC to NSX630 DC

Choice of Device

ComPacT NSX100/160 F/N/M/S 1P/2P







etic trip unit TM-D		
ComPacT NSX100F AC/DC		ComPacT NSX100F AC/DC
Rating	1P 1d (Icu = 36 kA 250 V DC)	2P 2d (Icu = 36 kA 250 V DC/1P - 500 V DC/2P)
TM16D	C10F1TM016	C10F2TM016
TM20D	C10F1TM020	C10F2TM020
TM25D	C10F1TM025	C10F2TM025
TM30D	C10F1TM030	C10F2TM030
TM40D	C10F1TM040	C10F2TM040
TM50D	C10F1TM050	C10F2TM050
TM63D	C10F1TM063	C10F2TM063
TM80D	C10F1TM080	C10F2TM080
TM100D	C10F1TM100	C10F2TM100
ComPacT NSX160F AC/DC	CTOT TTWITOO	ComPacT NSX160F AC/DC
Rating	1P 1d (Icu = 36 kA 250 V DC)	2P 2d (lcu = 36 kA 250 V DC/1P - 500 V DC/2P)
	,	,
TM125D	C16F1TM125	C16F2TM125
TM160D	C16F1TM160	C16F2TM160
ComPacT NSX100N AC/DC		ComPacT NSX100M AC/DC
Rating	1P 1d (lcu = 50 kA 250 V DC)	2P 2d (Icu = 85 kA 250 V DC/1P - 500 V DC/2P)
TM16D	C10N1TM016	C10M2TM016
TM20D	C10N1TM020	C10M2TM020
TM25D	C10N1TM025	C10M2TM025
TM30D	C10N1TM030	C10M2TM030
TM40D	C10N1TM040	C10M2TM040
TM50D	C10N1TM050	C10M2TM050
TM63D	C10N1TM063	C10M2TM063
TM80D	C10N1TM080	C10M2TM080
TM100D	C10N1TM100	C10M2TM100
ComPacT NSX160N AC/DC	<u>'</u>	ComPacT NSX160M AC/DC
Rating	1P 1d (Icu = 50 kA 250 V DC)	2P 2d (Icu = 85 kA 250 V DC/1P - 500 V DC/2P)
TM125D	C16N1TM125	C16M1TM125
TM160D	C16N1TM160	C16M1TM160
ComPacT NSX100M AC/DC	01010111111100	ComPacT NSX100S AC/DC
Rating	1P 1d (Icu = 85 kA 250 V DC)	2P 2d (lcu = 100 kA 250 V DC/1P - 500 V DC/2P)
	,	,
TM16D	C10M1TM016	C10S2TM016
TM20D	C10M1TM020	C10S2TM020
TM25D	C10M1TM025	C10S2TM025
TM30D	C10M1TM030	C10S2TM030
TM40D	C10M1TM040	C10S2TM040
TM50D	C10M1TM050	C10S2TM050
TM63D	C10M1TM063	C10S2TM063
TM80D	C10M1TM080	C10S2TM080
TM100D	C10M1TM100	C10S2TM100
ComPacT NSX160M AC/DC		ComPacT NSX160S AC/DC
Rating	1P 1d (Icu = 85 kA 250 V DC)	2P 2d (Icu = 100 kA 250 V DC/1P - 500 V DC/2P)
TM125D	C16M1TM125	C16S2TM125
TM160D	C16M1TM160	C16S2TM160
TWITOOD	10.10.11.11.100	010021m100

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Choice of Device

ComPacT NSX100/160/250 DC



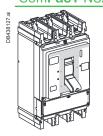
	3P	4P
Rating	(Icu = 36 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	
NSX100F DC	C10F3D	C10F4D
NSX160F DC	C16F3D	C16F4D
NSX250F DC	C25F3D	C25F4D
	(Icu = 100 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	
NSX100S DC	C10S3D	C10S4D
NSX160S DC	C16S3D	C16S4D
NSX250S DC	C25S3D	C25S4D

+ Trip unit



3P 3d	4P 4d
C103TM016	C104TM016
C103TM025	C104TM025
C103TM032	C104TM032
C103TM040	C104TM040
C103TM050	C104TM050
C103TM063	C104TM063
C103TM080D	C104TM080D
C103TM100D	C104TM100D
C163TM125D	C164TM125D
C163TM160D	C164TM160D
C253TM200D	C254TM200D
C253TM250D	C254TM250D
3P 3d	4P 4d
C103MG016	C104MG016
C103MG025	C104MG025
C103MG040	C104MG040
C103MG063	C104MG063
C103MG080	C104MG080
C103MG100	C104MG100
C163MG125D	C164MG125D
C163MG160D	C164MG160D
C253MG200D	C254MG200D
C253MG250D	C254MG250D
	C103TM016 C103TM025 C103TM025 C103TM032 C103TM040 C103TM063 C103TM080D C103TM100D C163TM125D C163TM125D C163TM250D 3P 3d C103MG016 C103MG016 C103MG040 C103MG063 C103MG080 C103MG080 C103MG080 C103MG100 C253MG160D C253MG160D C253MG160D C253MG200D

ComPacT NSX250/630 F/S DC



	3P	4P	
Rating	(Icu = 36 kA 250 V DC/1P -	(Icu = 36 kA 250 V DC/1P - 500 V DC/ 2P - 750 V DC/3P)	
NSX250F TM-DC	C40F3TM250D	C40F4TM250D	
NSX320F TM-DC	C40F3TM320D	C40F4TM320D	
NSX400F TM-DC	C40F3TM400D	C40F4TM400D	
NSX500F TM-DC	C63F3TM500D	C63F4TM500D	
	(Icu = 36 kA 250 V DC/1P -	(Icu = 36 kA 250 V DC/1P - 500 V DC/2P)	
NSX600F TM-DC	C63F3TM600D	C63F4TM600D	
	(Icu = 100 kA 250 V DC/1P	(Icu = 100 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	
NSX250S TM-DC	C40S3TM250D	C40S4TM250D	
NSX320S TM-DC	C40S3TM320D	C40S4TM320D	
NSX400S TM-DC	C40S3TM400D	C40S4TM400D	
NSX500S TM-DC	C63S3TM500D	C63S4TM500D	
	(Icu = 100 kA 250 V DC/1P	(Icu = 100 kA 250 V DC/1P - 500 V DC/2P)	
NSX600S TM-DC	C63S3TM600D	C63S4TM600D	

ComPacT NSX630/1200 DC

Rating	2P (Icu = 50 kA 300 V DC/ 1P - 600 V DC/2P)
	without bare cable connector
NSX630 TM-DC	C1BN2TM630D
NSX800 TM-DC	C1BN2TM800D
NSX1000 TM-DC	C1BN2TM10HD
NSX1200 TM-DC	C1BN2TM12HD

ComPacT NSX100/160/250 NA [1]



nector unit			
ComPacT I	NSX100NA		
Rating	2P	3P	4P
100	C102100S	C103100S	C104100S
ComPacT I	VSX160NA		
Rating	2P	3P	4P
160	C162160S	C163160S	C164160S
ComPacT I	NSX250NA		
Rating	2P	3P	4P
250	C252250S	C253250S	C254250S

ComPacT NSX400/630 NA DC

	3P	4P
ComPacT NSX400 NA DC	C403400DS	C404400DS
ComPacT NSX630 NA DC	C633630DS	C634630DS

^[1] See catalog ComPacT NSX LVPED221001EN for order form and configurated product.

^[*] Adapted products (basic frame and trip unit TMG are not sold separately).

NSX100-250 DC NSX400-630 DC

LV432475

LV432476

LV429235

LV429236

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Connection Accessories

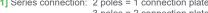
Connection Accessories (Cu or Al)

2 short 2 long

Rear connections

Special C	onnection Accessories for Parallel or Series (Connection	NSX100-	NSX400-	NSX1200
			250 DC	630 DC	DC
	Connection accessories				
	Connection accessories for parallel or series connection of 2 poles [1]	1 connection plate equipped with heat sink + 1 interphase barrier ^[2]	LV438328	LV438338	
	Connection plates				
	Connection plates for parallel connection of 3 poles	1 set of 2 connection plates	LV438329	[3]	
	Connection plates for parallel connection of 4 poles		[3]	[3]	
	1P short terminal shields	1 pair	LV438320		
	2P short terminal shields	2 pairs 2 x	LV438320		
	3P terminal shields for series connection of poles	1 set	LV438325	LV438291 [5]	
_				LV438292 [5]	
20	4P terminal shields for series connection of poles	1 set	LV438326	LV438294 [5]	
lo o lo				LV438295 [5]	
	4P terminal shields for parallel connection of poles (2P/4P)	1 set	LV438327	LV438293 [5]	LV438293 [5]
	1 long terminal shield for breaker or plug-in base	3P	LV429517		
		4P	LV429518		
DB425456 eps				•	

Bare cable connector	S				
sde	Steel connectors	1.5 to 95 mm ² ; ≤ 160 A	Set of 2	LV429246	
084172228.0%		,	Set of 3	LV429242	
			Set of 4	LV429243	
ā	Aluminium connectors	25 to 95 mm ² ; ≤ 250 A	Set of 2	LV429255	
sd - CO			Set of 3	LV429227	
			Set of 4	LV429228	
2112		120 to 185 mm ² ; ≤ 250 A	Set of 2	LV429247	
			Set of 3	LV429259	
			Set of 4	LV429260	
sde Seb	Clips for connectors		Set of 10	LV429241	
1272e.					
DB1					
DB 112227 epp DB 112726 epp	Aluminium connectors for 2	cables [4] 2 x (50 to 120 mm²); ≤ 250 A	Set of 3	LV429218	
			(3P) Set of 4	LV429219	
			(4P)	LV423213	
	Aluminium connectors 1x (3	5 to 300 mm²)	Set of 3		LV432479
			(3P)		
			Set of 4		LV432480
ss 🗻			(4P)		
DB112228.eps	Aluminium connectors [4] for	6 cables 6 x (1.5 to 35 mm²); ≤ 250 A	Set of 3 (3P)	LV429248	
			Set of 4	LV429249	
			(4P)		
	Aluminium connectors for 2	cables 2 x (35 to 300 mm²)	Set of 3 (3P)		LV432481
			Set of 4		LV432482
			(4P)		
DB112724.eps	6.35 mm voltage tap for stee	el or aluminium connectors	Set of 10	LV429348	
72.1					
a 9					
[1] Series connection: 2 pole	es = 1 connection plate.			<u> </u>	



3 poles = 2 connection plates.

4 poles = 3 connection plates.

Parallel connection: 2 poles = 2 connection plates.

3 poles = 1 set of 2 connection plates (29499).

2 x 2 poles = 4 connection plates.

[3] To be made by the customer.

[4] Supplied with 2 or 3 interphase barriers.

[5] Refer to page B-5 for details.

^[2] These connection accessories come with an interphase barrier.

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Connection Accessories (Cont.)

Terminal extensions	sories (Cu or AI)		NSX100-250 DC		<u> </u>
_	Right-angle terminal extensions	Set of 3	LV429261	LV432484	
	rtight-angle terminal extensions	Set of 4	LV429262	LV432485	
0112		001014	LV423202	LV-102-103	
	Straight terminal extensions	Set of 3	LV429263		
0	ottaight terminal extensions	Set of 4	LV429264		
o		001014	LV423204		
	45° terminal extension [1]	Set of 3	LV429223		
7 [0]	45 terrilinal exterision	Set of 4	LV429224		
		001014	24423224		
	Edgewise terminal extensions [1]	Set of 3	LV429308	LV432486	
		Set of 4	LV429309	LV432487	
	Double-L terminal extensions [1]	Set of 3	LV429221		
الله الا	Double-L terrillial exterisions.	Set of 4	LV429222		
		361014	LV423222		
_					
	Spreaders from 35 to 45 mm pitch [1]	3P	LV431563		
		4P	LV431564		
2					
THE STATE OF THE S	One-piece spreader from 35 to 45 mm pitch	3P	LV431060		
		4P	LV431061		
1380°C	Front alignment base (for one-piece spreader)	3P/4P	LV431064		
	, , , , , , , , , , , , , , , , , , , ,				
Crimp luas for coppe	er cable (supplied with 2 or 3 interphase barr	riers)			I
m	For cable 120 mm ²	Set of 3	LV429252		
	1 of dable 120 mm	Set of 4	LV429256		
	For cable 150 mm ²	Set of 3	LV429253		
		Set of 4	LV429257		
9 -	For cable 185 mm ²	Set of 3	LV429254	LV429254	LV429254
		Set of 4	LV429258	LV429258	LV429258
	For cable 240 mm ²	Set of 3		LV432500	LV432500
		Set of 4		LV432501	LV432501
	For cable 300 mm ²	Set of 3		LV432502	LV432502
rimp luga for alumin	aium aabla (Set of 4		LV432503	LV432503
ne .	nium cable (supplied with 2 or 3 interphase I For cable 150 mm ²		1.1/420504		
, [] []	TOLCADIE 150 HITT	Set of 3 Set of 4	LV429504 LV429505		
	For cable 185 mm ²	Set of 4	LV429506	LV429506	LV429506
	1 of capie 100 mm	Set of 4	LV429507	LV429506 LV429507	LV429507
•	For cable 240 mm ²	Set of 3		LV432504	LV432504
		Set of 4		LV432505	LV432505
	For cable 300 mm ²	Set of 3		LV432506	LV432506
		Set of 4		LV432507	LV432507
Barriers	Internhage how:	0-1-10	1.7/420220	11/422572	1
	Interphase barriers	Set of 6	LV429329	LV432570	
nsulation screen	2 insulating screens for breaker (45 mm pitch)	3P	LV429330		
	2 modiating screens for breaker (40 mill pitch)	4P	LV429331		
	2 insulating screens for breaker (70 mm pitch)			LV432578	
J	g 55.55hb for broaker (70 mm phon)	4P		LV432579	

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Electrical Auxiliaries

	7 (4) (11)				
Electrical Auxi	liaries				
Auxiliary contact	s (changeover)				
	OF or SD or SDE or SDV				29450
9438418.	OF or SD or SDE or SDV low lev	rel			29452
DB43	SDE adapter, mandatory for trip	unit			LV429451
	Voltage releases			MX	MN
ī	AC	24 V 50/60 Hz		LV429384	LV429404
82.33 82.33		48 V 50/60 Hz		LV429385	LV429405
		110-130 V 50/60 Hz		LV429386	LV429406
		220-240 V 50/60 Hz 2	208-277 V 60 Hz	LV429387	LV429407
		380-415 V 50 Hz 440	-480 V 60 Hz	LV429388	LV429408
		525 V 50 Hz - 600 V 6	0 Hz	LV429389	LV429409
	DC	12 V		LV429382	LV429402
		24 V		LV429390	LV429410
		30 V		LV429391	LV429411
		48 V		LV429392	LV429412
		60 V		LV429383	LV429403
		125 V		LV429393	LV429413
		250 V		LV429394	LV429414
o o o o o o o o o o o o o o o o o o o	MN 48 V 50/60 Hz with fixed	· · · · · · · · · · · · · · · · · · ·			
DB438249; c	Composed of:	MN 48 V DC			LV429412
8		Delay unit 48 V 50/60	Hz		LV429426
	MN 220-240 V 50/60 Hz wit				
las la	Composed of:	MN 250 V DC			LV429414
		Delay unit of 220-240) V 50/60 Hz		LV429427
	MN 48 V DC/AC 50/60 Hz w				
	Composed of:	MN 48 V DC	0.50/00.11		LV429412
	MANUAL ACCUA DO 14 O 50/00	Delay unit 48 V DC/A	C 50/60 Hz		33680
		Hz with adjustable time delay			1111100110
	Composed of:	MN 125 V DC	DO(4.0.50/00.11		LV429413
	AAN	Delay unit 100-130 V	DC/AC 50/60 Hz		33681
		Hz with adjustable time delay			11/400444
	Composed of:	MN 250 V DC	DO/AO 50/00 H-		LV429414
NA-4 NA1	·	Delay unit 200-250 V	DC/AC 50/60 HZ		33682
Motor Mechan					
Motor mechanisi	m module supplied with SDE ada		1	1	1
sa San		Voltage	MT100/160	MT250	MT400-630
DB125554 eps	AC	48-60 V 50/60 Hz	LV429440	LV431548	LV432639
		110-130 V 50/60 Hz	LV429433	LV431540	LV432640
000		220-240 V 50/60 Hz 208-277 V 60 Hz	LV429434	LV431541	LV432641
		380-415 V 50/60 Hz 440-480 V 60 Hz	LV429435	LV431542	LV432642 LV432647
	DC	24-30 V	LV429436	LV431543	LV432643
	-	48-60 V	LV429437	LV431544	LV432644
		110-130 V	LV429438	LV431545	LV432645
		250 V	LV429439	LV431546	LV432646
	Operations counter				LV432648
	The state of the s	1 ::1 00 = 1 :			





or mechanism module supplied with	SDE adapter		
Motor mechanism module	MTc 100/160	220-240 V 50/60 Hz	LV429441
	MTc 250	220-240 V 50/60 Hz	LV431549
	MTc 400/630	220-240 V 50/60 Hz	LV432652
+			
Breaker and Status Communication Module	BSCM		LV434205
+			
NSX cord	Wire length L = 0.	35 m	LV434200
	Wire length L = 1.	3 m	LV434201
	Wire length L = 3	m	LV434202
	U > 480 V AC wire	e length L = 0.35 m	LV434204

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Electrical Auxiliaries

Communica	tion O	ption

	IFE Ethernet interface for LV	breaker	LV434001
	Ethernet interface for LV	breakers and gateway	LV434002
	IFM Modbus-SL interface module		LV434000
			'
	I/O application module		LV434063
	User guide IFE		DOCA0084EN
	User guide I/O application module		DOCA0055EN
ULP wiring accessor	ies		
	NSX cord L = 0.35 m		LV434200
	NSX cord L = 1.3 m		LV434201
	NSX cord L = 3 m		LV434202
	NSX cord for U > 480 V AC L = 1.3 m		LV434204
	10 stacking connectors for communication interface modules		TRV00217
	2 Modbus line terminators		VW3A8306DR0
	RS 485 roll cable (4 wires, length 60 m)		50965
	5 RJ45 connectors female/female		TRV00870
	10 ULP line terminators		TRV00880
			<u>'</u>
廥	10 RJ45/RJ45 male cord L = 0.3 m		TRV00803
	10 RJ45/RJ45 male cord L = 0.6 m		TRV00806
(//))	5 RJ45/RJ45 male cord L = 1 m		TRV00810
	5 RJ45/RJ45 male cord L = 2 m		TRV00820
	5 RJ45/RJ45 male cord L = 3 m		TRV00830
Power supply modul	1 RJ45/RJ45 male cord L = 5 m		TRV00850
Tower supply modul	External power supply module 100-240 V AC 110-230 V DC/24 V DC-3 A	class 2	ABL8RPS2403
000			
	External power supply module 24 V DC-1 A OVC IV		
	24-30 V DC		54440
AD .	48-60 V DC		54441
	100 105 \/ 10		

380-415 V AC

[1] SDE adapter mandatory for trip unit TM,TMG.

100-125 V AC

110-130 V AC

200-240 V AC

[2] www.schneider-electric.com.

54442

54443

54444

54445

ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Operation and Locking/Interlocking

	Rotary Handles			NSX100-250	DC NSX400-1200 DC
				140/(100-200	DO 110X400-1200 DO
	Direct rotary handles				
ia.		With black handle		LV429337T	LV432597T
DB438131.ai		With red handle on yellow front		LV429339T	LV432599T
DB43		MCC conversion accessory		LV429341T	LV432606T
		CNOMO conversion accessory		LV429342T	LV432602T
		CIVOWIO CONVENSION decessory		244230421	244020021
	Extended rotary handle				
	Exteriora rotary manare	With black handle		LV429338T	LV432598T
93.ai					
B439593.a		With red handle on yellow front		LV429340T	LV432600T
D		With telescopic handle for withdrawable d	levice	LV429343T	LV432603T
	Accessories				
	ACCC33011C3	Indication auxilians	1 aprily break contact	11/400045	13/400005
		Indication auxiliary	1 early-break contact	LV429345	LV432605
			2 early-break contacts	LV429346	LV429346
	Locks			NSX100-250	DC NSX400-1200 DC
	Toggle locking device for	or 1 to 3 padlocks			
	roggie rocking device re			20270	29370
DB438109.ai		By removable device		29370	29370
4381					
DB					
		By fixed device for 3P/4P (open or close p	nosition)	LV429371	LV432631
DB 438110.ai			•	LV429370	LV432630
3438	The second	By fixed device for 3P/4P (open position of	orliy)	LV429370	LV432630
ä					
	Marian				
	Locking of the rotary ha	ndle			
	Locking of the rotary ha	Keylock adapter (keylock not included)		LV429344	LV432604
11.ai		Keylock (keylock adapter not included)	Ronis 1351B.500		
		Kevinck (kevinck anabier not inclined)		41940	41940
3438		region (region adapter not moradod)		40000	10000
DB438111.ai		Noylook (Roylook adaptor Hot moladod)	Profalux KS5 B24 D4Z	42888	42888
DB438		regions (regions adapter not medical)		42888	42888
DB438	Locking of the motor m			42888	42888
DB438	Locking of the motor me	echanism modules	Profalux KS5 B24 D4Z		
9	Locking of the motor me	echanism modules Keylock adapter + Ronis keylock (special	Profalux KS5 B24 D4Z	42888 LV429449	LV432649
9	Locking of the motor me	echanism modules	Profalux KS5 B24 D4Z) Ronis 1351B.500		LV432649 41940
DB432104.eps DB438	Locking of the motor me	echanism modules Keylock adapter + Ronis keylock (special	Profalux KS5 B24 D4Z		LV432649
9	Locking of the motor me	echanism modules Keylock adapter + Ronis keylock (special	Profalux KS5 B24 D4Z) Ronis 1351B.500		LV432649 41940
9	Locking of the motor me	echanism modules Keylock adapter + Ronis keylock (special	Profalux KS5 B24 D4Z) Ronis 1351B.500		LV432649 41940
9		echanism modules Keylock adapter + Ronis keylock (special	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449	LV432649 41940 42888
9	Interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included)	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449	LV432649 41940
9	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
i DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included)	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449	LV432649 41940 42888
i DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
9	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
i DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
i DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers	Profalux KS5 B24 D4Z) Ronis 1351B.500	LV429449 NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles	Profalux KS5 B24 D4Z) Ronis 1351B.500	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
i DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles	Profalux KS5 B24 D4Z) Ronis 1351B.500	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles	Profalux KS5 B24 D4Z) Ronis 1351B.500	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles	Profalux KS5 B24 D4Z) Ronis 1351B.500	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles	Profalux KS5 B24 D4Z) Ronis 1351B.500	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles	Profalux KS5 B24 D4Z Ronis 1351B.500 Profalux KS5 B24 D4Z	NSX100-250	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles	Profalux KS5 B24 D4Z Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429449 NSX100-250 LV429354T	LV432649 41940 42888 DC NSX400-1200 DC LV432614T
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1]	Profalux KS5 B24 D4Z Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429449 NSX100-250 LV429354T LV429369T	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T
DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1] 1 set of 2 keylocks	Profalux KS5 B24 D4Z) Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429344 LV429369T LV429344 41950	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T LV432604 41950
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1] 1 set of 2 keylocks	Profalux KS5 B24 D4Z Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429449 NSX100-250 LV429354T LV429369T	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1] 1 set of 2 keylocks	Profalux KS5 B24 D4Z) Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429344 LV429369T LV429344 41950	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T LV432604 41950
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1] 1 set of 2 keylocks	Profalux KS5 B24 D4Z) Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429344 LV429369T LV429344 41950	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T LV432604 41950
DB438183.ai DB438112.ai DB432104.eps	Interlocking Mechanical interlocking	echanism modules Keylock adapter + Ronis keylock (special Keylock (keylock adapter not included) for circuit breakers With toggles With rotary handles Keylocks/1 key) for rotary handles Keylock kit (keylock not included) [1] 1 set of 2 keylocks	Profalux KS5 B24 D4Z) Ronis 1351B.500 Profalux KS5 B24 D4Z	LV429344 LV429369T LV429344 41950	LV432649 41940 42888 DC NSX400-1200 DC LV432614T LV432621T LV432604 41950

[1] NSX100-250 DC only.

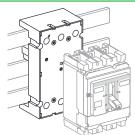


ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Installation

	Installation Accessories		NSX100-250 DC	NSX400-1200 DC
	Front-panel escutcheons			
sde:		IP30 escutcheon for all control types	LV429525	LV432557
DB112269.eps		IP30 trip unit access escutcheon for toggle	LV429526	LV432559
DB1				
	IP30			
S		IP40 escutcheon for all control types	LV429317	LV432558
DB112737.eps		ii 40 escutoreornor aircontrortypes	LV423311	LV432330
	IP40			
	IP43 rubber toggle cover			
sde		1 toggle cover	LV429319	LV432560
DB112738.eps				
	Lead-sealing accessories			
5.eps	C. S. S.	Bag of accessories	LV429375	LV429375
DB115615.eps				
	Din rail adapter			
15.ai		1 adapter	LV429305	
DB438115.ai				

	60 Mm Plate Busbar Ada	apter	NSX100-250 DC	NSX400-630 DC
6.ai		3P 60 mm busbar adapter	LV429372	LV432623
43811		4P 60 mm busbar adapter	LV429373	LV432624
8	0.00			



ComPacT NSX100 DC to NSX630 DC

Plug-in/Withdrawable Accessories

	drawable Version Accessories		NSX100-250	DC NSX400-630 D
Insulation acc				
	1 connection adapter for plug-in base	3P	LV429306	LV432584
		4P	LV429307	LV432585
Auxiliary conn	ections			
	1 9-wire fixed connector (for base)		LV429273	LV429273
	1 9-wire moving connector (for circuit breaker)		LV429274	LV432523
	1 support for 2 moving connectors		LV429275	LV432525
	9-wire manual auxiliary connector (fixed + moving)		LV429272	LV429272
Plug-in base a				
	2 long insulated right angle terminal extensions	Set of 2	LV429276	LV432526
00				
	2 IP40 shutters for base		LV429271	LV432521
	Base	2P	LV429265	
		3P	LV429266	LV432516
	Base	4P	LV429267	LV432517
000	2 power connections	2/3/4P	LV429268	LV432518
00				
	1 short terminal shields	2/3P	LV429515	LV432591
0000				
	1 short terminal shields	4P	LV429516	LV432592
	1 safety trip interlock	2/3/4P	LV429270	LV432520
Installation an	d connection			
	Kit for ComPacT	3P	LV429289 +	LV432538 +
			LV429282 + LV429283	LV432532 + LV432533
		4P	LV429290 +	LV432539 +
			LV429282 +	LV432532 +
			LV429283	LV432533

Spare Parts: ComPacT NSX100 DC to 1200 DC, NSX400 NA DC to NSX630 NA DC

Spare Parts			NSX100-250 DC	NSX400-1200 DC
DB115633.eps	Additional toggle extension			32595
DB111430 eps	10 spare toggle extensions (only for ComPosts spare toggle extensions	acT NSX250)	LV429313	LV432553
DBH 18620 obs	Bag of screws		LV429312	LV432552
DB III 431 498	12 snap-in nuts (fixed/FC)	M6 for NSX100N/H/L M8 for NSX160/250N/H/L	LV429234 LV430554	
DB-38117 ail	NS retrofit escutcheon	Small cut-out	LV429528	LV432571
DB432106.eps	IP40 toggle escutcheon	ComPacT NS type/small cut-out	29315	32556
DB111438.eps	1 set of 10 identification labels		LV429226	LV429226
DB438118.aii D	1 base for extended rotary handle		LV429502	LV432498
DB1111434, eps	Torque limiting screws (set of 12)	3P/4P ComPacT NSX100-630	LV429513	LV432513
DB111436.eps	5 transparent covers for trip unit	TM, MA, NA	LV429481	

ComPacT INS DC PV - ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

ComPacT INS DC PV - 1 [1]

	Compact ins	DC PV - T							
DB417876.eps		ComPacT INS PV - 1	4P	28907					
	ComPacT NSX Circuit Breake		.P	Connection a	nd Insula	ation Acces	sories Man	datory	
	Oll Gall Broallo			1.1				Б	
				Upstream conn	ection	Upstream to	erminai	Downstream	terminai
				(x2)		shields		shields	
ia.		NSX80	C10F4TM080D1	connection plate with heatsink	LV438328	LV438327		LV429518	
DB438421.ai		NSX125	C16F4TM125D1	WILLITEALSHIK	LV438328	LV438327		LV429518	
DB4		NSX160	C16F4TM160D1		LV438328	LV438327		LV429518	
	11519	NSX200 NSX250	C25F4TM200D1		LV438328 LV438338	LV438327 LV438293		LV429518 LV432594	
			C40F4TM250D1						
		NSX320 NSX400	C40F4TM320D1 C40F4TM400D1		LV438338 LV438338	LV438293 LV438293		LV432594 LV432594	
	TENEN	NSX500	C40F4TM400D1		LV438338	LV438293		LV432594 LV432594	
	ComPacT NSX			Connection a			corios Mon		
	Switch Discon		· F	Connection a	nu msura	ation Acces	Suries Mari	uatory	
				Upstream conn	ection	Upstream	or	Downstream	or
				(x2)		terminal	interphase	terminal	interphase
				(/ (=)		shields	barrier	shields	barrier
		NSX100	C104100D1S	connection plate	LV438328	LV438327	LV429329	LV429518	LV429329
121.ai		NSX160	C164160D1S	with heatsink	LV438328	LV438327	LV429329	LV429518	LV429329
DB438421.ai		NSX200 (≤ 200 A at 40 °C)	C254200D1S		LV438328	LV438327	LV429329	LV429518	LV429329
		NSX200 (= 200 A at 55 °C)	C254200D1S	connection plate with heatsink (long)	LV438339	not available	LV429329	LV429518	LV429329
		NSX400	C404400D1S	connection plate	LV438338	LV438337	LV432570	LV432594	LV432570
	Hallaha	NSX500	C634500D1S	with heatsink	LV438338	LV438337	LV432570	LV432594	LV432570
	ComPacT NSX			Connection a					
	Circuit Breake		•	oomioodon a	na modic	1011710000	oorroo war	datory	
				Upstream conn	ection	Upstream te	erminal	Dowstream to	erminal
				(x2)		shields	, , , , , , , , , , , , , , , , , , ,	shields	, , , , , , , , , , , , , , , , , , ,
-	-48	NSX250-100	C25F4TM100D3 [2]	connection plate	LV438328	LV438327		LV429518	
DB438422.a		NSX250-125	C25F4TM125D3 [2]	with heatsink	LV438328	LV438327		LV429518	
B438		NSX250-160	C25F4TM160D3 [2]		LV438328	LV438327		LV429518	
		NSX250-200	C25F4TM200D3 [2]		LV438328	LV438327		LV429518	
		NSX250-250	C25F4TM250D3 [2]		LV438328	LV438327		LV429518	
	ATO MADE	NSX500-250	C50F4TM250D3 [2]		LV438338	LV438293		LV432594	
	A Table	NSX500-320	C50F4TM320D3 [2]		LV438338	LV438293		LV432594	
		NSX500-400	C50F4TM400D3 [2]		LV438338	LV438293		LV432594	
		NSX500-500	C50F4TM500D3 [2]		LV438338			LV432594	
	ComPacT NSX	(NA DC EP 4	.P	Connection a	nd Insula	ation Acces	sories Man	datory	
	Switch Disconi	nector							
				Upstream conn	ection	Upstream	or	Downstream	
				(x2)		terminal	interphase	terminal	interphase
					1	shields	barrier	shields	barrier
2.ai		NSX250-100	C254100D3S [2]	connection plate	LV438328	LV438327	LV429329	LV429518	LV429329
DB438422.a		NSX250-160	C254160D3S [2]	with heatsink	LV438328	LV438327	LV429329	LV429518	LV429329
DB		NSX250-200	C254200D3S [2]		LV438328	LV438327	LV429329	LV429518	LV429329
		NSX250-250	C254250D3S [2]		LV438328	LV438327	LV429329	LV429518	LV429329
		NSX630-320	C634320D3S [2]		LV438338	LV438293	LV432570	LV432594	LV432570
	Tallera	NSX630-400	C634400D3S [2]		LV438338	LV438293	LV432570	LV432594	LV432570
	=	NSX630-500	C634500D3S [2]		LV438338	LV438293	LV432570	LV432594	LV432570
	[41 Far acceptanting of	NSX630-630	C634630D3S [2]	1040 to 460 A	LV438338	LV438293	LV432570	LV432594	LV432570

^[1] For accessories, see catalog INS/INV page dedicated to INS40 to 160 A.
[2] Please consult Schneider Electric for information on the availability of the product.

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Connection Accessories

Connection Acc	essories (Cu or Al)			NSX100-250 DC PV	NSX400-630 DC PV
Rear connections					<u>'</u>
(A)	2 short			LV429235	LV432475
	2 long			LV429236	LV432476
Terminal shield				Leaves	Leaven
	1 short terminal shield for b	reaker or plug-in base	4P	LV429516	LV432592
0.00					
Bare cable connec	ctors				
	Steel connectors	1.5 to 95 mm ² ; ≤ 160 A	Set of 2	LV429246	
			Set of 3	LV429242	
To you			Set of 4	LV429243	
_	Aluminium connectors	25 to 95 mm ² ; ≤ 250 A	Set of 2	LV429255	
			Set of 3	LV429227	
			Set of 4	LV429228	
		120 to 185 mm ² ; ≤ 250 A	Set of 2	LV429247	
			Set of 3	LV429259	
			Set of 4	LV429260	
	Clips for connectors		Set of 10	LV429241	
	Aluminium connectors for 2	2 cables [1] 2 x (50 to 120 mm²); ≤ 250 A	Set of 3 (3P)	LV429218	
			Set of 4 (4P)	LV429219	
	Aluminium connectors 1 x	(35 to 300 mm²)	Set of 3 (3P)		LV432479
			Set of 4 (4P)		LV432480
	Aluminium connectors [1] fo	r 6 cables 6 x (1.5 to 35 mm²); ≤ 250 A	Set of 3 (3P)	LV429248	
			Set of 4 (4P)	LV429249	
	Aluminium connectors for 2	2 cables 2 x (35 to 300 mm²)	Set of 3 (3P)		LV432481
			Set of 4 (4P)		LV432482
	6.35 mm voltage tap for ste	el or aluminium connectors	Set of 10	LV429348	

^[1] Supplied with 2 or 3 interphase barriers.

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Connection Accessories (Cont.)

Terminal extensions	ories (Cu or AI)		NSX100-250	NSX400-630
Terminal extensions			DC PV	DC PV
ICITIIII al extellatoria				1
	Right-angle terminal extensions	Set of 2	LV429250	
	ragni-angle terminal extensions	Set of 3	LV429261	LV432484
911-		Set of 4	LV429262	LV432485
		001014	LV420202	LV402400
_	Straight terminal extensions	Set of 2	LV429251	
0		Set of 3	LV429263	
0		Set of 4	LV429264	
	45° terminal extension [1]	Set of 3	LV429223	
		Set of 4	LV429224	
	Edgavias terminal sytematons [1]	Cot of 2	11/420200	13/400400
	Edgewise terminal extensions [1]	Set of 3	LV429308	LV432486
		Set of 4	LV429309	LV432487
5 J	Double-L terminal extensions [1]	Set of 3	LV429221	
o P		Set of 4	LV429222	
	Spreaders from 35 to 45 mm pitch [1]	3P	LV431563	
		4P	LV431564	
و ا ا				
Crimp lugs for copper	cable (supplied with 2 or 3 interphase barriers)			
In a	For cable 120 mm ²	Set of 3	LV429252	
		Set of 4	LV429256	
	For cable 150 mm ²	Set of 3	LV429253	
		Set of 4	LV429257	
	For cable 185 mm ²	Set of 3	LV429254	
		Set of 4	LV429258	
	For cable 240 mm ²	Set of 3		LV432500
		Set of 4		LV432501
	For cable 300 mm ²	Set of 3		LV432502
		Set of 4		LV432503
Crimp lugs for aluminit	um cable (supplied with 2 or 3 interphase barriers)			
IM .	For cable 150 mm ²	Set of 3	LV429504	
	Tot dable for film	Set of 4	LV429505	
	For cable 185 mm ²	Set of 3	LV429506	
	To capie too him	Set of 4	LV429507	
	For cable 240 mm ²	Set of 3	L1423001	LV432504
	T OF GUIDIO 2 TO THIN	Set of 4		LV432505
	For cable 300 mm ²	Set of 3	<u> </u>	LV432506
		Set of 4	<u> </u>	LV432507
Barriers				
	Interphase harriers	Cat af C	1.1/420220	LV432570
1//	Interphase barriers	Set of 6	LV429329	LV4325/U
1) 10				
11				
الال				
Insulation screen				
	2 insulating screens for breaker (45 mm = itah)	3P	LV429330	
	2 insulating screens for breaker (45 mm pitch)	3P 4P		
	2 insulating screens for breaker (70 mm pitch)	3P	LV429331	LV432578
	2 moulating screens for breaker (70 mm pitch)			
		4P		LV432579

[1] Supplied with 2 or 3 interphase barriers.

Note: Circuit breakers or switch-disconnectors must be in "off" position when fitting the mechanical or electrical accessories.



29450

29452 LV429451

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Electrical Auxiliaries

Electrical Auxiliaries

OF or SD or SDE or SDV

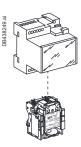
OF or SD or SDE or SDV low level

SDE adapter, mandatory for trip unit









Voltage releases		MX	MN
AC	24 V 50/60 Hz	LV429384	LV429404
	48 V 50/60 Hz	LV429385	LV429405
	110-130 V 50/60 Hz	LV429386	LV429406
	220-240 V 50/60 Hz 208-277 V 60 Hz	LV429387	LV429407
	380-415 V 50 Hz 440-480 V 60 Hz	LV429388	LV429408
	525 V 50 Hz - 600 V 60 Hz	LV429389	LV429409
DC	12 V	LV429382	LV429402
	24 V	LV429390	LV429410
	30 V	LV429391	LV429411
	48 V	LV429392	LV429412
	60 V	LV429383	LV429403
	125 V	LV429393	LV429413
	250 V	LV429394	LV429414
MN 48 V 50/60 Hz with fixed	time delay		
Composed of:	MN 48 V DC		LV429412
	Delay unit 48 V 50/60 Hz		LV429426
MN 220-240 V 50/60 Hz with	fixed time delay		
Composed of:	MN 250 V DC		LV429414
	Delay unit of 220-240 V 50/60 Hz		LV429427
MN 48 V DC/AC 50/60 Hz wit	th adjustable time delay		
Composed of:	MN 48 V DC		LV429412
	Delay unit 48 V DC/AC 50/60 Hz		33680
MN110-130 V DC/AC 50/60 H	Hz with adjustable time delay		
Composed of:	MN 125 V DC		LV429413
	Delay unit 100-130 V DC/AC 50/60 Hz		33681
MN 220-250 V DC/AC 50/60	Hz with adjustable time delay		
Composed of:	MN 250 V DC		LV429414
	Delay unit 200-250 V DC/AC 50/60 Hz		33682

Motor Mechanism

Motor mechanism module supplied with SDE adapter

	Voltage	MT100/160/250	MT400-630
AC	48-60 V 50/60 Hz	LV431548	LV432639
	110-130 V 50/60 Hz	LV431540	LV432640
	220-240 V 50/60 Hz 208-277 V 60 Hz	LV431541	LV432641
	380-415 V 50/60 Hz 440-480 V 60 Hz	LV431542	LV432642 LV432647
DC	24-30 V	LV431543	LV432643
	48-60 V	LV431544	LV432644
	110-130 V	LV431545	LV432645
	250 V	LV431546	LV432646
Operations counter			LV432648

Communicating motor mechanism module supplied with SDE adapter Motor mechanism module





+
Breaker and Status
Communication Module

NSX cord

MTc 100/160/250 220-240 V 50/60 Hz MTc 400/630 220-240 V 50/60 Hz **BSCM**

Wire length L = 0.35 m	LV434200
Wire length L = 1.3 m	LV434201
Wire length L = 3 m	LV434202
U > 480 V AC wire length L = 0.35 m	LV434204

LV431549

LV432652

LV434205

54445

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Electrical Auxiliaries

\sim				[4]
Commu	ınıca	tion ()ntinn	נים
COITIIII	moa	tion C	puon	

Communication Opt	ion ^[1]		
ULP communication me	odule		
	IFE	Ethernet interface for LV breaker	LV434001
DB472868 qps		Ethernet interface for LV breakers and gateway	LV434002
DB425706 eps	IFM Modbus-SL interface module		LV434000
School Company	I/O application module		LV434063
DB43255	User guide IFE		DOCA0084EN
	User guide I/O application module		DOCA0055EN
III D wiring accession			
ULP wiring accessories			1.7/42/4200
12.eps	NSX cord L = 0.35 m NSX cord L = 1.3 m		LV434200 LV434201
4	NSX cord L = 3 m		LV434201
	NSX cord for U > 480 V AC L = 1.3 m		LV434204
	10X 3014 101 0 7 400 V X 0 E = 1.0 III		24404204
Sd.	10 stacking connectors for communication in	nterface modules	TRV00217
DBH15621¢	g		
	2 Modbus line terminators		VW3A8306DRC [2]
DB115622-eys	RS 485 roll cable (4 wires, length 60 m)		50965
sa Charles	5 RJ45 connectors female/female		TRV00870
DB115822	10 ULP line terminators		TRV00880
DB111444.eps	TO OLF line terminators		TRYUUGOU
	10 RJ45/RJ45 male cord L = 0.3 m		TRV00803
DB111445.eps	10 RJ45/RJ45 male cord L = 0.6 m		TRV00806
	5 RJ45/RJ45 male cord L = 1 m		TRV00810
	5 RJ45/RJ45 male cord L = 2 m		TRV00820
	5 RJ45/RJ45 male cord L = 3 m		TRV00830
	1 RJ45/RJ45 male cord L = 5 m		TRV00850
Power supply modules			
DB11278 aps	External power supply module 100-240 V A	C 110-230 V DC/24 V DC-3 A class 2	ABL8RPS24030
S. S	External power supply module 24 V DC-1 A	OVC IV	
· · · · · · · · · · · · · · · · · · ·	24-30 V DC		54440
08412736	48-60 V DC		54441
- History	100-125 V AC		54442
	110-130 V AC		54443
	200-240 V AC		54444

^[1] NSX80-250 DC PV TM/NA only.

380-415 V AC

^[2] www.schneider-electric.com.

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Operation and Locking/Interlocking

		Opo	nation and	Looking/ii	nononing
	Rotary Handles			NSX100-250	NSX400-630
	Trotal y Flamaroo			DC PV	DC PV
	Direct rotary handles			DOTV	DOTV
-	Direct rotary manages	With black handle		LV429337	LV432597
DB438131.ai		With red handle on yellow front		LV429339	LV432599
)B438		MCC conversion accessory		LV429341	LV432606
_		CNOMO conversion accessory		LV429342	LV432602
		,			
	Extended rotary handl	e			
ē		With black handle		LV429338	LV432598
39593		With red handle on yellow front		LV429340	LV432600
DB4		With telescopic handle for withdrawable device		LV429343	LV432603
	Accessories				
	710000001100	Indication auxiliary	1 early-break contact	LV429345	LV432605
		a.ca.caa.,	2 early-break contacts	LV429346	LV429346
	Locks			NSX100-250	NSX400-630
	LOUNG			DC PV	DC PV
	Toggle leeking device	for 1 to 2 modlocks		DOFV	DCTV
	Toggle locking device	•		00070	00070
09.ai		By removable device		29370	29370
DB438109.ai	To all				
	Alte			I	
0.ai		By fixed device (open or close position)		LV429371	LV432631
DB438110.a	Ins.	By fixed device (open position only)		LV429370 [1]	LV432630 [1]
8					
	Born				
	Locking of the rotary			I	
ia.		Keylock adapter (keylock not included)		LV429344	LV432604
DB438111.a		Keylock (keylock adapter not included)	Ronis 1351B.500	41940	41940
DB			Profalux KS5 B24 D4Z	42888	42888
				I and the second	t contract the contract to the

	Keylock (keylock adapter not included)	Ronis 1351B.500	41940	41940
		Profalux KS5 B24 D4Z	42888	42888
ocking of the m	otor mechanism modules			i i
	Keylock adapter + Ronis keylock (special)		LV429449	LV432649
	Keylock (keylock adapter not included)	Ronis 1351B.500		41940
		Profalux KS5 B24 D4Z		42888

Interlocki	ng		NSX100-250	NSX400-630	
				DC PV	DC PV
Interlockin	g with key (2 ke	ylocks/1 key) for rotary handles			
- Marie		Keylock kit (keylock not included)[2]		LV429344	LV432604
		1 set of 2 keylocks	Ronis 1351B.500	41950	41950
		(1 key only, keylock kit not included)	Profalux KS5 B24 D4Z	42878	42878

[1] Available February 2014. [2] NSX100-250 DC PV only.

ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Installation

	Installation Accessori	NSX100-250 DC PV	NSX400-630 DC PV	
	Front-panel escutcheons			
sda		IP30 escutcheon for all control types	LV429525	LV432557
DB112269.eps		IP30 trip unit access escutcheon for toggle	LV429526	LV432559
	IP30			
60		IDAOtalafaralltralk	11/400047	11/400550
DB112737.eps		IP40 escutcheon for all control types	LV429317	LV432558
	IP40			
	IP43 rubber toggle cover	•		
sde	1 To Tabbet toggio cover	1 toggle cover	LV429319	LV432560
DB112738.eps				
	Lead-sealing accessorie	S		
sda		Bag of accessories	LV429375	LV429375
DB115615.eps	\$ \$ 500 \$ \$ 500 \$			
	Din rail adapter			
15.ai		1 adapter	LV429305	
DB438115.al				

ComPacT NSX630b to 1600 NA DC PV Fixed Electrically Operated

Complete Device without Motor Mechanism Module

Complete Molded Case Switch-Disconnector (without Motor Mechanism Module)

Racic framo



Molded case switch disconnector ComPacT NSX630b NA DC PV 630 A 4P	LV438969
Molded case switch disconnector ComPacT NSX800 NA DC PV 800 A 4P	LV438970
Molded case switch disconnector ComPacT NSX1000 NA DC PV 1000 A 4P	LV438971
Molded case switch disconnector ComPacT NSX1250 NA DC PV 1250 A 4P	LV438972
Molded case switch disconnector ComPacT NSX1600 NA DC PV 1500 A 4P	LV438973

Note: All references above include:



Dasicifalle	
Heatsink	Kit of 2 (LV438966)
Front connection:	Top (33612)
	Bottom (33613)
Interphase barriers	Kit of 3 (33646)

Electrical Auxiliaries for Complete Device

Indication contacts



	6 A - 240 V	Low level	
OF, ON/OFF indication contacts	33108	33109	
Up to 3 OF can be connected.			

Instantaneous voltage releases

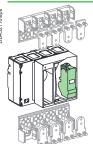


	MX	MN			
			Delay unit	R (non-adjustable)	Rr (adjustable)
12 V DC	33658				
24/30 V DC	33659	33668			
48/60 V DC	33660	33669	48/60 V DC		33680
100/130 V DC	33661	33670	100/130 V DC	33684	33681
200/250 V DC	33662	33671	200/250 V DC	33685	33682
			380/480 V DC		33683

ComPacT NSX630b to 1600 NA DC PV Fixed

Electrically Operated
Device Based on Separate Components with or without Motor Mechanism Module

Basic Frame Molded Case Switch-Disconnector



ComPacT NSX type NA	
	4P
NSX630b NA DC PV	LV453421
NSX800 NA DC PV	LV453423
NSX1000 NA DC PV	LV453425
NSX1250 NA DC PV	LV453427
NSX1600 NA DC PV	LV453429

Note: The characteristics of the motor mechanism module for electrical operation are specified separately by selecting a part number from the table at the bottom of this page.

Connections for Basic Frame Molded Case Switch-Disconnectors







Front co	nnec	tion			
					4P
Тор		630-1000 A - NA			33612
		Heatsink mandatory		Kit of 2	LV438966
Bottom		interphase barriers*		Kit of 3	33646
	or	Terminal shield*			LV438968
		* interphase barriers or	andatory		
		Front connection	630-1000 A - NA	Bottom	33609
			630-1000 A - L	Bottom	33611
			1600 A - NA	Bottom	33613
		Rear connection	Vertical NA	Bottom	33615
			Horizontal NA	Bottom	33617

Electrical Auxiliaries

Indication contacts

ဖ	-	
9	- T	
Ψ	1 1201	
φ.	1 1851	
Ŋ	1 1241	
74	(PSI	
≈;	- 192a.r	
	\J_200	

6 A - 240 V Low level OF, ON/OFF indication contacts 33108 33109 Up to 3 OF can be connected.

Instantaneous voltage releases



	MX	MN			
			Delay unit	R (non-adjustable)	Rr (adjustable)
12 V DC	33658				
24/30 V DC	33659	33668			
48/60 V DC	33660	33669	48/60 V DC		33680
100/130 V DC	33661	33670	100/130 V DC	33684	33681
200/250 V DC	33662	33671	200/250 V DC	33685	33682
			380/480 V DC		33683

Communication Options



For fixed devices	Electrically operated
Modbus COM	33708

Motor Mechanism Module

	DC
DB432113.eps	U

	Standard	Communicating
24/30 V	33690	33697
48/60 V	33691	33698
100/130 V	33692	33699
200/250 V	33693	33700

Note: To order a complete device, order:

- A basic frame switch disconnector
- Connections
- Electrical auxiliaries.
- Communication option as required.
- Motor mechanism as required.

ComPacT INS40 to 160 DC

Complete Fixed/FC Device and Accessories

ComPacT INS40 to 160 Standard Version with Black Handle

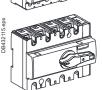


	[3P	4P	
ComPacT INS40	28900	28901	
ComPacT INS63	28902	28903	
ComPacT INS80	28904	28905	
ComPacT INS80PV - Photovoltaic	-	28907	
	<u>'</u>		
	3P	4P	
	JF	48	
ComPacT INS100	28908	28909	
ComPacT INS100 ComPacT INS125			

ComPacT INS40 to 160 with Red Handle and Yellow Front



	3P	4P
ComPacT INS40	28916	28917
ComPacT INS63	28918	28919
ComPacT INS80	28920	28921
	3P	4P
ComPacT INS100	3P 28924	4P 28925
ComPacT INS100 ComPacT INS125		



ComPacT INS40 to 160 DC

Accessories

Connection Accessories (Cont.)

	Connection	1 Accessories (Cont.)			
	Connectors	for bare Cu or Al cables			
S		Snap-in	INS100 to 160 S ≤ 95 mm ²	Set of 3	28947
DB432116.eps		·		Set of 4	28948
s	M	Distribution connector for	INS40 to 80	Set of 3	19096
DB432117.eps		3 rigid cables up to 16 mm² or 3 flexible cables up to 10 mm²		Set of 4	19091
			10.000 / 100	0.4.60	
eps		Distribution connector for	INS100 to 160	Set of 3	28949
DB432118.eps		4 rigid cables up to 25 mm² or 4 flexible cables up to 16 mm²		Set of 4	28950
	No.				
	Crimp lugs f	or copper cables			
bs	\sim	For 95 mm ² cables with	INS100 to 160	Set of 3	28951
119.e	(0)	interphase barriers		Set of 4	28952
DB432119.eps					
	Terminal shr				
sda		INS40 to 80	3P/4P	Set of 2	28955
2120.		INS100 to 160	3P/4P	Set of 2	28956
DB432120.eps					
	Terminal ship				
sde	ARIEN .	INS40 to 80	3P/4P	Set of 2	28957
121.		INS100 to 160	3P/4P	Set of 2	28958
DB432121.eps					
	Interphase b	parriers			
Sd	22	INS100 to 160	3P/4P	Set of 6	28959
DB432122.eps					
	~				

Electrical Auxiliaries

Auxi	liary co	ntacts		·
		1 CAF/CAO standard (early make or break) 1 CAF/CAO low level (early make or break)	INS40 to 160 INS40 to 160	29450 29452

Rotary Handles

	nt control or lateral control es for conversion to extended rota	ary handles		Built-in
ACCC33011C	Front control	Black handle	INS40 to 160	LV428941
		Red handle on yellow front	INS40 to 160	LV428942
	Lateral control	Black handle	INS40 to 160	28943
		Red handle on yellow front	INS40 to 160 ^[1]	28944
N II	Lateral control on PRAGMA F	Black handle	INS40 to 160	28945 [2]
	functional enclosure	Red handle on yellow front	INS40 to 160 [1]	28946

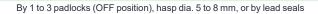
- [1] For red/yellow switch versions only.
 [2] Not available with Prisma.



ComPacT INS40 to 160 DC Accessories

Locking and Interlocking

Handle locking



Built-in

Interlocking for extended rotary handles

Mechanical

28953



ComPacT INS250-100 to 630 DC

Complete Fixed/FC Device and Accessories

ComPacT INS250 to 630 Standard Version with Black Handle

	3P	4P
ComPacT INS250-100A	31100	31101
ComPacT INS250-160A	31104	31105
ComPacT INS250-200A	31102	31103
ComPacT INS250	31106	31107
	3P	4P
ComPacT INS320	31108	31109
ComPacT INS400	31110	31111
ComPacT INS500	31112	31113
ComPacT INS630	31114	31115
	ComPacT INS250-160A ComPacT INS250-200A ComPacT INS250 ComPacT INS320 ComPacT INS400 ComPacT INS500	ComPacT INS250-100A 31100 ComPacT INS250-160A 31104 ComPacT INS250-200A 31102 ComPacT INS250 31106 3P ComPacT INS320 31108 ComPacT INS400 31110 ComPacT INS500 31112

ComPacT INS250 to 630 with Red Handle and Yellow Front

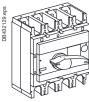
ComPacT INS630

DB432128.eps	
	_

	3P	4P	
ComPacT INS250-100A	31120	31121	
ComPacT INS250-160A	31124	31125	
ComPacT INS250-200A	31122	31123	
ComPacT INS250	31126	31127	
	3P	4P	
ComPacT INS320	31128	31129	
ComPacT INS400	31130	31131	
ComPacT INS500	31132	31133	

31134

31135



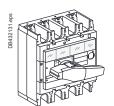
ComPacT INV100 to 630 DC

Complete Fixed/FC Device and Specific Accessories

ComPacT INV100 to 630 Standard Version with Black Handle



	[3P	[4P
ComPacT INV100	31160	31161
ComPacT INV160	31164	31165
ComPacT INV200	31162	31163
ComPacT INV250	31166	31167

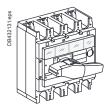


	3P	4P
ComPacT INV320	31168	31169
ComPacT INV400	31170	31171
ComPacT INV500	31172	31173
ComPacT INV630	31174	31175

ComPacT INV100 to 630 with Red Handle and Yellow Front



	3P	4P
ComPacT INV100	31180	31181
ComPacT INV160	31184	31185
ComPacT INV200	31182	31183
ComPacT INV250	31186	31187



	3P	4P
ComPacT INV320	31188	31189
ComPacT INV400	31190	31191
ComPacT INV500	31192	31193
ComPacT INV630	31194	31195

ComPacT INS250-100 to 250 DC and ComPacT INV100 to 250 DC

Accessories

- ::	A	
Connection	n Acce	ssories

Connection Access	ories			
Rear connections				
	Short (1 pair)			LV429235
	Long (1 pair)			LV429236
Cable connectors				i e
	Snap-on, for cables:	Steel: 1.5 to 95 mm²; ≤ 160 A	Set of 3	LV429242
			Set of 4	LV429243
		Aluminium: 25 to 95 mm²; ≤ 250 A	Set of 3	LV429227
			Set of 4	LV429228
		Aluminium: 120 to 185 mm ² ; ≤ 250 A	Set of 3	LV429259
			Set of 4	LV429260
	Tab connector for voltag	e tap on 185 mm² cable connector	Set of 10	LV429348
	Clip for cable connector		Set of 10	LV429241
	D: 1.11 (1)		0 1 10	11/400040
	Distribution connector to	r six 1.5 to 35 mm² cables with interphase barriers	Set of 3 Set of 4	LV429248 LV429249
			001014	
. 🖎	Aluminium connectors for	or 2 cables: 2 x (50 to 120 mm²); ≤ 250 A	Set of 3	LV429218
		` "	Set of 4	LV429219
Linergy DX and DP dis	stribution block			
	Linergy DX 160 A	For 6 cables (16 mm²) per pole [1]	1P	04031
1	Linergy DP 250 A	For 9 cables (6 x 10 mm ² + 3 x 16 mm ²)	3P	04033
		per pole [1]	4P	04034
		Additional blocks of 2 x 35 mm ² per pole [1]	3P	04155
			4P	04156
Linergy DS distribution	n block			
	Linergy DS 250 A	For 14 holes (1 x 15.3 mm² + 1 x 10 mm² + 4 x 6 mm² + 8 x 7.5 mm²)	1P	LGY125014

	Terminal extensions (su	upplied with 2 or 3 interphase barriers)		
sda:	- 6	Right-angle terminal extensions [1]	Set of 3	LV429261
DB432094			Set of 4	LV429262
sda		Straight terminal extensions [1]	Set of 3	LV429263
DB432095.eps DB432094.eps	0		Set of 4	LV429264
	Spreaders (for upstrea	m or downstream connection)		
eps		Separate for each pole	3P	LV431563
DB432135.eps			4P	LV431564
ebs		One-piece	3/4P	LV431061
DB432136.eps	The state of the s	Front alignment base for one-piece spreader (when mounting with LV432594 and LV432596, refer chapter dimensions and connection in catalog ComPact INS/INV "LVPED213024EN")	3/4P	LV431064
	Crimp lugs for copper	cables (supplied with 2 or 3 interphase barriers)		
sde	_ m M	For 120 mm² cables	Set of 3	LV429252
DB112237.eps			Set of 4	LV429256
DB112	240	For 150 mm² cables	Set of 3	LV429253
			Set of 4	LV429257
		For cable 185 mm ² cables	Set of 3	LV429254
			Set of 4	LV429258
	Crimp lugs for aluminiu	Im cables (supplied with 2 or 3 interphase barriers)		
sda	_ m M	For 150 mm ² cables	Set of 3	LV429504
2238.			Set of 4	LV429505
DB112238.eps		For 185 mm² cables	Set of 3	LV429506
_			Set of 4	LV429507

[1] Supplied with 2 or 3 interphase barriers.

ComPacT INS250-100 to 250 DC and ComPacT INV100 to 250 DC

Set of 6

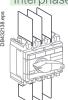
Accessories

LV429329

Connection Accessories

Terminal shields			
	1 Short	3/4 P	LV429516
No. con control	1 Long	3/4 P	LV429518
agree of the same			





Special Connection Accessories for INS250-100 to 250DC and INV100 to 250DC

Terminal extensions for series or parallel connection of two poles [1] 1 terminal ext. LV438328







Parallel connection of: 3 poles = set of 2 terminal exten		ensions	LV438329
4P terminal shields for series ca	onnection of poles	Set of 1	LV438326
4P terminal shields for parallel	connection of noles (2P/4P)	Set of 1	LV438327

Electrical Auxiliaries

Auxiliary contacts (changeover type)





CAM (early make or break)	29450
Low level CAM (early make or break)	29452

Rotary Handles

Front control



Direct for INS/INV250	Built-in
Extended	
For INS/INV250 with standard rotary handle	LV431050
For INS/INV250 with red handle on yellow front [2]	LV431051
For complete source changeover assembly	31055

Lateral control



Direct lateral control for INS/INV250	
Lateral support	31054
+ standard lateral control assembly	31057
or + red and yellow lateral control assembly	[2] 31058
Extended lateral control for INS/INV250	
Standard lateral control assembly	31057
Red and yellow lateral control assembly	[2] 31058

[1] Series connection of:	2 poles = 1 terminal extension
	3 poles = 2 terminal extensions
	4 poles = 3 terminal extensions
Parallel connection of:	2 poles = 2 terminal extensions
	4 poles = 4 terminal extensions

[2] For red/yellow switch versions only.

ComPacT INS250-100 to 250 DC and ComPacT INV100 to 250 DC

Accessories

Locking and Interlocking for INS/INV and TransferPacT Source Changeover Systems

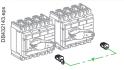
	Locking for INS/INV				
sd		Handle locking by 1 to 3 padloc	ks (in OFF position)		Built-in
141.e		By keylock	Keylocking device	2 x	31087
B432			+ Ronis 1351B.500 keylock		41940
	0		or + Profalux KS5 B24 D4Z keylock		42888

Locking for INS	complete TransferPacT source changeover assembly	
THE STATE OF THE S	Handle leaking by 1 to 2 padleaks (in OFF position)	



Built-in Handle locking by 1 to 3 padlocks (in OFF position) By keylock Keylocking device 31097 41940 + Ronis 1351B.500 keylock or + Profalux KS5 B24 D4Z keylock 42888

Interlocking with key (2 keylocks/1 key) By 2 keylocks



INS250 keylocking device 2 x 31087 INS320-630 keylocking device 2 x 31088 + Ronis 1351B.500 keylock 2 x **41950** or + Profalux KS5 B24 D4Z keylock 2 x **42878**

Interlocking for INS/INV with direct or extended rotary handle



Mechanical interlocking for INS250

31073

ComPacT INS320 to 630 DC and ComPacT INV320 to 630 DC

Accessories

Connection Acc	E22011E2			
lear connections	Short (1 pair)			LV432475
	Long (1 pair)			LV432476
Cable connectors				
	For 1 cable, 35 mm ² to 300 mm ²		Set of 3	LV432479 [1]
			Set of 4	LV432480 [2]
	For 2 cables, 35 mm ² to 240 mm ²		Set of 3	LV432481 [1]
	,		Set of 4	LV432482 [2]
	Tab connector for voltage tap on cable conne	ector	Set of 10	LV429348
erminal extensior	s (supplied with 2 or 3 interphase barri	ers)		
	Right-angle terminal extensions		Set of 3	LV432484
			Set of 4	LV432485
e D	Edgewise terminal extensions		Set of 3	LV432486
	· ·		Set of 4	LV432487
preaders (for up	stream or downstream connection)			
	One-piece 52.5 mm ²	3P		LV432490
		4P		LV432491
	70 mm	3P		LV432492
		4P		LV432493
rimp lugs for cop	per cables (supplied with 2 or 3 interpl	nase barriers)		
m N	For 240 mm ² cables		Set of 3	LV432500
			Set of 4	LV432501
	For 300 mm ² cables		Set of 3	LV432502
			Set of 4	LV432503
rimp lugs for alu	minium cables (supplied with 2 or 3 inte	erphase barriers)		
m M	For 240 mm ² cables	,	Set of 3	LV432504
ШН			Set of 4	LV432505
	For 300 mm ² cables		Set of 3	LV432506
			Set of 4	LV432507
erminal shields	1 Chart	2/40		1.7/422502
	1 Short	3/4P		LV432592
المنافقة المنافقة		3/4P		LV432594
	1 Long 1 Long for 52.5 mm spreader (supplied with i			LV432596





Special connection accessories for INS/INV320 to 630DC

Terminal extensions for series or parallel connection of two poles [3]



1 connection
plate equipped
with heat sink +
1 interphase
barrier

Set of 6

LV438338

LV432570



4P terminal shields for series connection of poles	Set of 1	LV438346	
4P terminal shields for parallel connection of poles	Set of 1	LV438337	

- [1] Kit comprising 2 interphase barriers.
- [2] Kit comprising 3 interphase barriers.
- [3] Series connection of: 2 poles = 1 terminal extension 3 poles = 2 terminal extensions

4 poles = 3 terminal extensions

Parallel connection of: 2 poles = 2 terminal extensions 4 poles = 4 terminal extensions

ComPacT INS320 to 630 DC and ComPacT INV320 to 630 DC

Accessories

Electrical Auxiliaries

Auxiliary contacts (changeover type)			
		1 OF/CAF/CAO (early make or break)	29450
	I A I	1 OF/CAF/CAO low level (early make or break)	29452

Rotary Handles

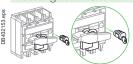
Extended front control



01	
For INS320/400/630 with standard rotary handle	31052
For INS320/400/630 with red handle on yellow front	31053
For complete source changeover assembly	31055

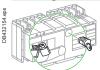
Locking and Interlocking for INS/INV and TransferPacT Source Changeover Systems

Locking for INS/INV



Handle locking by 1 to 3 padlocks (in OFF position)		Built-in
By keylock	Keylocking device	31088
	+ Ronis 1351B.500 keylock	41940
or + Profalux KS5 B24 D4Z keylock		42888

Locking for INS complete TransferPacT source changeover assembly



oto manorom aon obarbo o	mangeover accombly	
Handle locking by 1 to 3 padlocks (in OFF position)		Built-in
By keylock	Keylocking device	31097
	+ Ronis 1351B.500 keylock	41940
	or + Profalux KS5 B24 D4Z keylock	42888

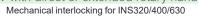
Interlocking with key (2 keylocks/1 key)



By 2 keylocks

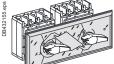
INS250 keylocking device	2 x 31087	
INS320-630 keylocking device	2 x 31088	
+ Ronis 1351B.500 keylock	2 x 41950	
or + Profalux KS5 B24 D4Z keylock	2 x 42878	

Interlocking for INS/INV with direct or extended rotary handle



31074

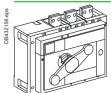




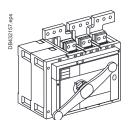
ComPacT INS630b to 2500 DC

Complete Fixed/FC Device and Accessories

ComPacT INS630b to 2500 Standard Version with Black Handle

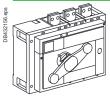


	[3P	 4P
ComPacT INS630b	31342	31343
ComPacT INS800	31330	31331
ComPacT INS1000	31332	31333
ComPacT INS1250	31334	31335
ComPacT INS1600	31336	31337



ComPacT INS2000	31338	31339
ComPacT INS2500	31340	31341

ComPacT INS800 to 1600 with Red Handle and Yellow Front

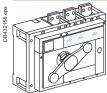


	3P	4P
ComPacT INS800	31344	31345
ComPacT INS1000	31346	31347
ComPacT INS1250	31348	31349
ComPacT INS1600	31350	31351

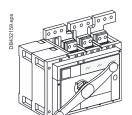
ComPacT INV630b to 2500 DC

Complete Fixed/FC Device and Specific Accessories

ComPacT INV630b to 2500 Standard Version with Black Handle

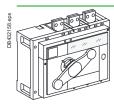


[3P	4P
31370	31371
31358	31359
31360	31361
31362	31363
31364	31365
	31370 31358 31360 31362



ComPacT INV2000	31366	31367
ComPacT INV2500	31368	31369

ComPacT INV800 to 1600 with Red Handle and Yellow Front



	3P	4P
ComPacT INV800	31372	31373
ComPacT INV1000	31374	31375
ComPacT INV1250	31376	31377
ComPacT INV1600	31378	31379

ComPacT INS630b to 2500 DC and ComPacT INV630b to 2500 DC

Accessories

Connection A	Accessories
	10000001100

	0011100110117100033	01103			
	Vertical connection ad	apters			
sde	(Person	INS/INV630b-1600	3P	Set of 3	31301
DB432160.eps			4P	Set of 4	31302
DB43	696969				
	Calala lugi adamtana				
	Cable lug adapters	INIQ/INIV/COOL 4COO	a.D.	0-4-60	33644
1.eps		INS/INV630b-1600	3P 4P	Set of 3 Set of 4	33645
DB432161.eps			41	361014	33043
DB					
	Busbar connection (no	ot compatible with terminal shield)			
S		INS/INV630b-1600	3P	Set of 3	31305
DB432162.ej			4P	Set of 4	31306
DB43	(6 o)(2 - 1				
sde		Right angle connector for busbar (edgewise) to INS2000/2500			31310
2163.6					
DB43	6 000				
	Insulation Accessor	rioc			
	Base for terminal sniel	d (not compatible with interphase barriers)	3P		04007
4.eps		INS/INV630b-1600			31307 31308
DB432164.			4P		31300
DB					
	Terminal shield				
	Terminal Shield	INS/INV630b-1600	3P		LV433638
5.eps		INS/INV030D-1000	3P 4P		LV433639
DB432165.eps			71		2440000
D					
	Interphase barriers (no	ot compatible with terminal shield and base)			

10	of compatible with terminal shield and base)			
	INS/INV630b-1600	4P	Set of 6	31315
	INS/INV2000/2500	4P	Set of 6	31319

Electrical Auxiliaries

Auxiliary contacts (changeover type) INS/INV630b-2500



1 OF/CAF/CAO low level (early make or break)	29452
1 OF/CAF/CAO standard (early make or break)	29450

Extended Front Control

	Exterioed Front Con	iti Oi		
bs	a =	INS/INV630b-2500	For standard rotary handle	31288
DB432167.e		INS/INV630b-1600	For red handle on yellow front	31289

[1] For red/yellow switch versions only.

F-35

ComPacT INS630b to 2500 DC and ComPacT INV630b to 2500 DC

Accessories

Locking and Interlocking

Locking for INS/INV630b to 2500					
sd	Handle lockin By keylock	Handle locking by 1 to	3 padlocks (in OFF position)	Built-in	
168.e		By keylock	Keylocking device	31291	
B432			+ Ronis 1351B.500 keylock	41940	
_			or + Profalux KS5 B24 D4Z keylock	42888	
Į					



Keylocking device	2 x 31291
+ Ronis 1351B.500 keylock (1 key)	2 x 41950
or + Profalux KS5 B24 D4Z keylock (1 key)	2 x 42878

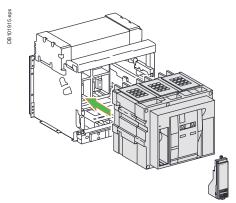
NW10 DC to NW40 DC Fixed and Drawout Circuit Breakers and Switch-Disconnectors

A MasterPact DC circuit breaker is described by 2 catalog numbers corresponding to:

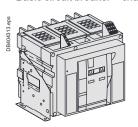
- The basic circuit breaker (fixed or drawout with chassis, including the power connections)
- A control unit.

A MasterPact switch-disconnector is described by 1 catalog number corresponding to:

The switch-disconnector (fixed or drawout with chassis, including the power connections). Vertical connection is standard however the connectors can be rotated for on-site conversion to horizontal connection (except on the NW40). A communication option and various auxiliaries and accessories may also be added.



Basic circuit breaker + chassis ≤ 4000 A



Switch-disconnector ≤ 4000 A

Basic Circuit Breaker

		<u> </u>	
In (A at 40 °C)	Icu (kA for U = 500 V DC)	Fixed	Drawout
1000	35	48645	48660
2000	35	48646	48661
4000	35	48647	48662
In (A at 40 °C)	Icu (kA for U = 500 V DC)	Fixed	Drawout
1000	85	48648	48663
1000	85	48649	48664
1000	85	48650	48665
2000	85	48651	48666
2000	85	48652	48667
2000	85	48653	48668
4000	85	48654	48669
4000	85	48655	48670
4000	85	48656	48671
	1000 2000 4000 In (A at 40 °C) 1000 1000 1000 2000 2000 2000 4000 4000	U = 500 V DC) 1000 35 2000 35 4000 35 In (A at 40 °C) Icu (kA for U = 500 V DC) 1000 85 1000 85 1000 85 2000 85 2000 85 2000 85 4000 85 4000 85	U = 500 V DC) 1000 35 48645 2000 35 48646 4000 35 48647 In (A at 40 °C) cu (kA for U = 500 V DC) 1000 85 48648 1000 85 48649 1000 85 48650 2000 85 48651 2000 85 48652 2000 85 48653 4000 85 48654 4000 85 48654

Circuit Breaker for Marine Application at 1100 V DC

Type EPCD				
	In (A at 40 °C)	lcu (kA for U = 1100 V DC, L/R = 15 ms)	No Fixed Version	Drawout
NW10 EPDC-D	1000	65		46921
NW20 EPDC-D	2000	65		46922
NW40 EPDC-D	4000	65		46924

DC 1.0 MicroLogic Control Unit

Setting range				
Minimum (A ±8 %)	Maximum (E ±10 %)	Type	Fixed	Drawout
1250	2500	N, H type C	65266	65269
2500	5400	N, H type C	65267	65270
5000	11000	N, H type C	65268	65271
1250	2500	H type D	65272	65275
2500	5400	H type D	65273	65276
5000	11000	H type D	65274	65277
1250	2500	H type E	65278	65281
2500	5400	H type E	65279	65282
5000	11000	H type E	65280	65283

Switch-Disconnector

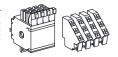
Type HA				
	In (A at 40 °C)	Icm (kA)	Fixed	Drawout
NW10HADC-C	1000	85	48684	48698
NW10HADC-D	1000	85	48685	48699
NW10HADC-E	1000	85	48879	48882
NW20HADC-C	2000	85	48687	48701
NW20HADC-D	2000	85	48688	48702
NW20HADC-E	2000	85	48880	48883
NW40HADC-C	4000	85	48690	48704
NW40HADC-D	4000	85	48691	48705
NW40HADC-E	4000	85	48881	48884

Switch-Disconnector for PV Application

Type HADCD-PV				
	In	Icm (kA)	Fixed	Drawout
NW20HADCD-PV	2000	85	48975	47651
NW40HADCD-PV	4000	85	48797	47652

NW10 DC to NW40 DC Fixed Circuit Breakers Indication Contacts

ON/OFF indication contacts (OF)



acts (OI)	
Block of 4 changeover contacts (6 A - 240 V)	1 block (standard)
1 additional block of 4 contacts (2 max.)	48198



ontacts (ODL)				
Changeover contact (5 A - 240 V)	1 (standard)			
1 additional SDE (5 A - 240 V)	48200			
1 additional low-level SDE	48201			

NW10 DC to NW40 DC Fixed Circuit Breakers Remote Operation

Remote ON/OFF

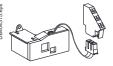
Remote ON/OFF				
Gear motor				
Λ			MCH	
	AC 50/60 Hz	48 V	48207	
		100/130 V	48211	
		200/240 V	48212	
		250/277 V	48213	
		380/415 V	48214	
		440/480 V	48215	
	DC	24/30 V	48206	
	20	48/60 V	48207	
		100/130 V	48208	
		200/250 V	48209	
Instantaneous volt	age releases	200/200 \$	10203	
			Closing release	Opening release
A A A A A A A A A A A A A A A A A A A	Standard		XF	MX
	AC 50/60 Hz	12 V DC	47349	47359
	DC	24/30 V DC, 24 V AC	47350	47360
M		48/60 V DC, 48 V AC	47351	47361
		100/130 V AC/DC	47352	47362
		200/250 V AC/DC	47353	47363
		277 V AC	47354	47364
		380/480 V AC	47355	47365
	Communicating		XF com	MX com
	AC 50/60 Hz	12 V DC	47310	47320
	DC	24/30 V DC, 24 V AC	47311	47321
		48/60 V DC, 48 V AC	47312	47322
		100/130 V AC/DC	47313	47323
		200/250 V AC/DC	47314	47324
		277 V AC	47315	47325
		380/480 V AC	47316	47326
'Ready to close" c	contact (1 max.)			
Na.			PF 47342	
		1 changeover contact (5 A - 240 V)		
	1 low-level changeover	contact	47343	

Electrical closing pushbutton



| BPFE | 1 pushbutton | 48534 |

Remote reset after fault trip



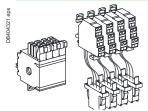
Electrical reset	RES	
110/130 V AC	48202	
220/240 V AC	48203	
Automatic reset	RAR	
Adaptation	47346	
•		

Remote Tripping

	Instantaneous voltage re	elease			
sde				2 nd MX or	MN
317.6		AC 50/60 Hz	12 V DC	47369	
DB404317.eps	\ \	DC	24/30 V DC, 24 V AC	47370	47380
B			48/60 V DC, 48 V AC	47371	47381
			100/130 V AC/DC	47372	47382
			200/250 V AC/DC	47373	47383
			277 V AC	47374	
			380/480 V AC	47375	47385
	MN delay unit				
SC				R (non-adjustable)	Rr (adjustable)
20.el	The state of the s	AC 50/60 Hz	48/60 V AC/DC	, ,	33680
DB 404320.eps	00000	DC	100/130 V AC/DC	33684	33681
8			200/250 V AC/DC	33685	33682
			380/480 V AC/DC		33683

NW10 DC to NW40 DC Drawout Circuit Breakers **Indication Contacts**

ON/OFF indication contacts (OF)

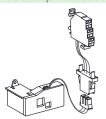


Block of 4 changeover contacts (6 A - 240 V)	1 block (standard)
1 additional block of 4 contacts (2 max.)	48468

Combined closed/connected contacts for use with 1 auxiliary contact







"	TITACIS (ODE)				
(Changeover contact (5 A - 240 V)	1 (standard)			
	1 additional SDE (5 A - 240 V)	48475			
	or 1 additional low-level SDE	48476			

Carriage switches (connected/disconnected/test position)



100tod/d1000111100tod/toot pooltion)	
Changeover contacts (8 A - 240V)	
1 connected position contact (3 max.)	33751
1 test position contact (3 max.)	33752
1 disconnected position contact (3 max.)	33753
and/or low-level changeover contacts	
1 connected position contact (3 max.)	33754
1 test position contact (3 max.)	33755
1 disconnected position contact (3 max.)	33756
Actuator for additional carriage switches	48560

NW10 DC to NW40 DC Drawout Circuit Breakers (Cont.) Chassis Locking and Accessories

Chassis Locking			
"Disconnected" pos	ition locking		
02	By padlocks		
		VPOC	Standard
	By Profalux keylocks		
	Profalux	1 lock with 1 key + adaptation kit	48568
		2 locks 1 key + adaptation kit	48569
	1 keydeek Drefelyy (without	2 locks 2 different keys + adaptation kit	48570
	1 keylock Profalux (without adaptation kit):	Identical key not identified combination	33173 33174
	adaptation kit).	Identical key identified 215470 combination Identical key identified 215471 combination	33175
	By Ronis keylocks	racritical key lacritilled 2 10+7 1 combination	00170
	Ronis	1 lock with 1 key + adaptation kit	48572
	rtonio	2 locks 1 key + adaptation kit	48573
		2 locks 2 different keys + adaptation kit	48574
	1 keylock Ronis (without	Identical key not identified combination	33189
	adaptation kit): `	Identical key identified EL24135 combination	33190
		Identical key identified EL24153 combination	33191
		Identical key identified EL24315 combination	33192
	Optional disconnected/test/co		33779
	Adaptation kit (without keyloo	ck): Adaptation kit Profalux/Ronis	48564
		Adaptation kit Kirk	48565
		Adaptation kit Castell	48566
Door interlock (1 pa			
	Right-hand side of chassis		48579
/PU	Left-hand side of chassis		48580
Racking interlock			
~	1 part		48582
Racking interlock be	etween crank and OFF push 1 part	nbutton	48585
Automatic spring di	scharge before breaker rem	noval	
	1 part		48554
Breaker mismatch p	protection		
	Breaker mismatch protection	VDC	33767
Chassis Accesso	ries		
Arc chute cover			
		3P/4P	Standard
Auxiliary terminal sh	aield (CB)		
nuniliary terrifical SI	1000/4000 A	3P	48595
	1000/4000 A	4P	48596
0		71	10000
Safety shutters + lo	cking block		
	1000/4000 A	3P	Standard
		4P	Standard
Shutter locking bloc	ck (for replacement)		
21 3 .3100			1

2 parts for 1000/4000 A

Front face shutter position indication and locking 1000/4000 A

48592

48591

NW10 DC to NW40 DC Drawout Circuit Breakers Remote Operation

Pomoto ON/OFF

Remote ON/	OFF			
Gear motor				
o <u>B</u> _			MCH	
0B404334.eps	AC 50/60 Hz	48 V	48522	
ğ Jahan M		100/130 V	48526	
		200/240 V	48527	
		250/277 V	48528	
		380/415 V	48529	
		440/480 V	48530	
	DC	24/30 V	48521	
		48/60 V	48522	
		100/130 V	48523	
		200/250 V	48524	
Instantaneous	voltage releases			
	3		Closing release	Opening release
2°-	Standard		XF	MX
DB404335.eps	AC 50/60 Hz	12 V DC	48480	48490
₩ Mer	DC	24/30 V DC, 24 V AC	48481	48491
		48/60 V DC, 48 V AC	48482	48492
RA LIP		100/130 V AC/DC	48483	48493
		200/250 V AC/DC	48484	48494
		277 V AC	48485	48495
		380/480 V AC	48486	48496
	Communicating		XF com	MX com
	AC 50/60 Hz	12 V DC	48448	48457
	DC	24/30 V DC, 24 V AC	48449	48458
		48/60 V DC, 48 V AC	48450	48459
		100/130 V AC/DC	48451	48460
		200/250 V AC/DC	48452	48461
		277 V AC	48453	48462
		380/480 V AC	48454	48463
"Ready to clos	se" contact (1 max.)			
a - 9			PF	
	1 changeover contact (5	A - 240 V)	48469	
DB40043%.eps	1 low-level changeover	contact	48470	
Electrical clos	ing pushbutton			
a 📞			BPFE	
	1 pushbutton		48534	
DB404319.eps				

Remote reset after fault trip



шр	
Electrical reset	RES
110/130 V AC	48472
220/240 V AC	48473
Automatic reset	RAR
Adaptation	47346

Remote Tripping

	Instantaneous voltage re	elease			
DB404335.eps		AC 50/60 Hz DC	12 V DC 24/30 V DC, 24 V AC 48/60 V DC, 48 V AC 100/130 V AC/DC 200/250 V AC/DC 277 V AC 380/480 V AC	2 nd MX Or 48510 48511 48512 48513 48514 48515 48516	48501 48502 48503 48504 48506
	MN delay unit				
DB404320.eps		AC 50/60 Hz DC	48/60 V AC/DC 100/130 V AC/DC 200/250 V AC/DC 380/480 V AC/DC	R (non-adjustable) 33684 33685	Rr (adjustable) 33680 33681 33682 33683

Accessories for NW10 DC to NW40 DC Fixed and Drawout Circuit Breakers

Circuit Breaker Locking

Pushbutton locking device

By padlocks

48536



OFF position locking



By padlocks		
	VPOC	48539
By Profalux keylocks		
Profalux	1 lock with 1 key + adaptation kit	48545
	2 locks 1 key + adaptation kit	48546
	2 locks 2 different keys + adaptation kit	48547
1 keylock Profalux	Identical key not identified combination	33173
(without adaptation kit)	Identical key identified 215470 combination	33174
	Identical key identified 215471 combination	33175
By Ronis keylocks		
Ronis	1 lock with 1 key + adaptation kit	48549
	2 locks 1 key + adaptation kit	48550
	2 locks 2 different keys + adaptation kit	48551
1 keylock Ronis	Identical key not identified combination	33189
(without adaptation kit)	Identical key identified EL24135 combination	33190
	Identical key identified EL24153 combination	33191
	Identical key identified EL24315 combination	33192
Adaptation kit (without keylock):	Adaptation kit Profalux/Ronis	48541
	Adaptation kit Kirk	48542
	Adaptation kit Castell	48543

Other Circuit Breaker Accessories

Mechanical operation counter

Operation counter CDM

48535



Escutcheon and accessories







	Fixed	Drawout
Escutcheon	48601	48603
Transparent cover IP54		48604
Escutcheon blanking plate	48605	48605

Escutcheon Cover

Blanking plate

Connection

Connection

			C or D type	E type
Fixed or drawout cir	cuit breakers or switche	S		
Rear connection (vertice	cal or horizontal mounting)/l	Replacement kit (3 or 4 parts)		
	1000/2000 A	Vertical or horizontal Top or bottom	47966	47967
	4000 A	Vertical or horizontal	47968	47969
		Top or bottom		



Vertical mounting

Connection Accessories

Additional support brackets for mounting on a backplate

For fixed rear-connected circuit breaker (2 parts)

47829

DB432170.e

Remote Operation

DB416231.eps				
231.eps				
	NB N			
	DB432172.eps			
	sd 🗫			
		(- F)	For drawout circuit breaker	47849
4		Terminal block (1 part)	For fixed circuit breaker	47074
			380/480 V AC	33673
			100/130 V AC/DC 200/250 V AC/DC	33670 33671
		- •		
13217		DC	48/60 V DC, 48 V AC	33669
DB432173.eps		Undervoltage release (** AC 50/60 Hz	24/30 V DC, 24 V AC	33668
	age release IVIIN		1 nart)	
Fixed	Drawout age release MN	Installation manual		47951
		Installation		47054
Side Side	al.			
. ~	- Mari	(- [)	For drawout circuit breaker	47849
	08432172.eps	Terminal block (1 part)	For fixed circuit breaker	47074
	2172.6		380/480 V AC	33038
	s 9		277 V AC	33037
			200/250 V AC/DC	33036
			100/130 V AC/DC	33035
			48/60 V DC, 48 V AC	33034
		DC	24/30 V DC, 24 V AC	33032
		AC 50/60 Hz	12 V DC	33032
		Communicating coil (1)		33007
			380/480 V AC	33664
4			200/250 V AC/DC 277 V AC	33662
			100/130 V AC/DC 200/250 V AC/DC	33661 33662
			24/30 V DC, 24 V AC 48/60 V DC, 48 V AC	33659 33660
DB432173.eps		AC 50/60 Hz DC	12 V DC	33658
TITA: eps		Standard coil (1 part)	121/DC	22050
	nd opening rele	,		
Fixed	Drawout	Installation manual		47951
	72	la stallation .		47054
· \			For drawout circuit breaker	47849
	DB432	Terminal block (1 part)	For fixed circuit breaker	47074
	DB432172.eps		200/250 V	47891
	g 🛼		100/125 V	47890
			48/60 V	47889
		DC	24/30 V	47888
			440/480 V	47897
			380/415 V	47896
(0)	_		250/277 V	47895
			200/240 V	47894
W-1100		710 00700112	100/130 V	47893
		MCH (1 part) AC 50/60 Hz	48 V	47889

380/480 V AC/DC

Installation manual

33683

47951

Chassis Locking and Accessories

C	hassis	Loc	ki	ng

	Chassis Locking				
	"Disconnected" position lo	0 .			
sda		By padlocks	VODO		0, 1, 1
DB404325.eps		Py Profolicy koylooko	VCPO		Standard
DB4		By Profalux keylocks Profalux	1 lock with 1 key + adaptation kit		64934
		Totalax	2 locks 1 key + adaptation kit		64935
			2 locks 2 different keys + adaptation	kit	64936
		1 keylock Profalux	identical key not identified combinati		33173
		(without adaptation kit):	identical key identified 215470 comb		33174
			identical key identified 215471 comb	ination	33175
		By Ronis keylocks			
		Ronis	1 lock with 1 key + adaptation kit		64937
			2 locks 1 key + adaptation kit		64938
			2 locks 2 different keys + adaptation		64939
		1 keylock Ronis	identical key not identified combinati		33189
		(without adaptation kit):	identical key identified EL24135 com		33190
			identical key identified EL24153 com		33191
		Adaptation kit	identical key identified EL24315 com	idination	33192 48564
		(without keylock):	adaptation kit Profalux/Ronis adaptation kit Kirk		48565
		(adaptation kit Castell		48566
		Installation manual	adaptation kit Gastell		47952
	Door interlock/1 part	motanationmanati			41002
40		Right and left-hand side of o	chassis (VPECD or VPECG)		47914
DB432174.eps		Tagit and lost hard olde of c	muosis (v. 200 di vi 200)		10.0
		Installation manual			47952
	Racking interlock				
s		5 parts			64940
DB432175.ep					
		Installation manual			47952
	Breaker mismatch protecti				
sda		Breaker mismatch protectio	n (VDC)		33767
DB404329.eps		Installation manual			47952
	Chassis Accessories				I and the second
	Auxiliary terminal shield (C	CB)/1 part			
(0		800/4000 A	3P		64942
DB404331.eps			4P		48596
B4043		4000b/6300 A	3P		48597
□			4P		48598
	0				
	Safety shutters + locking b	olock/1 part			
bs		800/4000 A	3P		48721
332.e			4P		48723
DB404332.eps	}[[] [] [] [] []	4000b/6300 A	3P		48722
			4P		48724
		Installation manual			47952
	Shutter locking block (for re				1
sdə		2 parts for 800/4000 A			48591
DB404333.eps					
DB4C	<u> </u>	Installation manual			47952
	Earthing Kit for Chassis	S			•
				3P	4P
	Types for N1/H1/NA/HA			·	
				48433	48434
	Note: The installation manual is en	closed			

Note: The installation manual is enclosed.

Clusters



1 disconnecting contact cluster for chassis (see table below) (part 1)

64906

Table: number of clusters required for the different chassis models								
Chassis rating (A)	Master	Master Pact NW 3P			Master Pact NW 4P			
	N1	H1/H2	H3	L1	N1	H1/H2	H3	L1
250		12 (H1)						
630	6	12		24	8	16		32
800	6	12		24	8	16		32
1000	6	12		24	8	16		32
1250	6	12		24	8	16		32
1600	12	12		24	16	16		32
2000		24	24	42		32	32	56
2500		24	24			32	32	
3200		36	36			48	48	
4000		42	42			56	56	
4000b		72				96		
5000		72				96		
6300		72				96		

Note: The minimum order is 6 parts.

Racking handle



Racking handle 47944

DC Rear Connection





For NW10/20 DC 48642

For NW40 DC 48643



Circuit Breaker Locking and Accessories Mechanical Interlocking for Source Changeover

	Wiconamoai iii	torrooming it	n oddrod oriai	1900101	
	Circuit Breaker Locking	n			
	Pushbutton locking device				
	rusilbuttoii lockiilg device	By padlocks			48536
37.eps		by padiooks			40000
DB404337.eps					
		Installation manual			47951
	OFF position locking/1 par				
sde.	Po Plan	By padlocks			40500
DB404411.eps		By Profalux keylocks			48539
DB		Profalux	1 lock with 1 key + adaptation kit		64928
			2 locks 1 key + adaptation kit		64929
			2 locks 2 different keys + adaptati	ion kit	64930
		1 keylock Profalux	identical key not identified combin		33173
		(without adaptation kit):	identical key identified 215470 co		33174
			identical key identified 215471 co	mbination	33175
		By Ronis keylocks Ronis	1 lock with 1 key + adaptation kit		64931
		None	2 locks 1 key + adaptation kit		64932
			2 locks 2 different keys + adaptati	ion kit	64933
		1 keylock Ronis	identical key not identified combin		33189
		(without adaptation kit):	identical key identified EL24135 o	combination	33190
			identical key identified EL24153 of		33191
			identical key identified EL24315 c	combination	33192
		Adaptation kit (without keylock):	adaptation kit Profalux/Ronis		64925 64927
		(marear negreen).	adaptation kit Kirk adaptation kit Castell		64926
		Installation manual	adaptation in Gaston		47951
	Other Circuit Breaker A	Accessories			ı
	Mechanical operation cour				
so	Widefial library operation coal	Operation counter CDM			48535
DB125617.ep		-1			
)B125					
_		Installation manual			47951
	Escutcheon and accessor	ies/1 part		l -	1_
	sd.	> ebs	Escutcheon	Fixed	Drawout
77,007,000	PB403098 ep	DB403099-eps	Transparent cover (IP 54)	48601	48603 48604
Ĉ		å l	Escutcheon blanking plate	48605	48605
	Escutcheon Cover	Blanking plate	Installation manual		47951
	Spring charging handle/1				
sd	M	Spring charging handle			47940
DB 404413.eps	N. C.				
DB40					
		Installation manual			47951
		mstaliationmanual			4/331
	Arc chute for MasterPact I	NW/1 part	_		
sde			C type	D type	E type
DB432178.eps		Type NW DC 2	x 47934 3 x	47934 4 x	47934
DB4	00000				
		Installation manual			47951
	Cable-Type Door Interle	nck			
	Cable-Type Door Illett		asterPact NW fixed or drawout devi	re .	48614
		. complete accombly for Mi	actor doctors involved and anough devi-		1 .0017

Note: The installation manual is enclosed.

Spare Parts: MasterPact NW DC, EPDC, DC PV Indication Contacts

Indication Contacts

	indication Contacts			
	ON/OFF indication contacts	s (OF)/12 parts		
sd		1 additional block of 4 contact	ets	64922
179.e		Wiring	For fixed circuit breaker	47074
DB432179.eps			For drawout circuit breaker	47849
٥				
	4	Installation manual		47951
	"Fault trip" indication conta	cts (SDE)/1 part		
sd	9	Changeover contact (SDE)	6 A - 240 V	47915
180.e			Low-level	47916
DB432180.eps		Wiring	For fixed circuit breaker	47074
			For drawout circuit breaker	47849
		Installation manual		47951
	"Ready to close" contact (1	max.)/1 part		
sde	(A)			PF
38432181.eps		1 changeover contact (5 A - 2	*	47080
DB43;		1 low-level changeover conta		47081
_		Wiring	For fixed circuit breaker	47074
			For drawout circuit breaker	47849
		Installation manual		47951
	"Connected, disconnected		on contact (carriage switches)/1 part	
sda	<u> </u>	Changeover contacts	6 A - 240 V	33170
DB404324.eps		CE, CD, CT	Low-level	33171
DB40	BETERTE			
		Installation manual		47952
	Set of additional actuaters	for carriage switches/1	set	
		1 set		48560

	/connected contacts for use with 1 auxiliary contact/1 pa	
	1 contact (5 A - 240 V)	48477
	or 1 low-level contact	48478
A STATE OF THE STA		
Age of the same of		
- AM		
	Installation manual	47952
Electrical closing	pushbutton/1 part	'
3		BPFE
	1 pushbutton	48534
6 To		'
	Installation manual	47951
Auxiliary terminals	s for chassis alone	
-	3 wire terminal (1 part)	47849
	6 wire terminal (1 part)	47850
	Jumpers (10 parts)	47900

Instructions

Instructions

Chassis accessories		47952
Circuit breaker accessori	es	47951
Fixed and drawout circuit	breaker	47950
User manual	NW DC (French)	64923
	NW DC (English)	64924
Modbus communication	notice for manual	33088

Spare Parts: Master**Pact** NW DC, EPDC, DC PV Monitoring and Control Converter

Monitoring a	and Control	
ULP display r	module	
	Switchboard front display module FDM121	TRV00121
92.1.6	FDM mounting accessory (diameter 22 mm)	TRV00128
DB432551.eps		<u> </u>
ULP wiring ac	ccessories	
	Breaker ULP cord L = 0.35 m	LV434195
'985.eps	Breaker ULP cord L = 1.3 m	LV434196
0B127985.eps	Breaker ULP cord L = 3 m	LV434197
8		
	2 Modbus line terminators	VW3A8306DRC [1]
DB432584.ai	2 Modbus line terminators	VW3A03UbDRC ···
s de	5 RJ45 connectors female/female	TRV00870
DB115623.		<u> </u>
	10 ULP line terminators	TRV00880
DB 111444		
s de	10 RJ45/RJ45 male cord L = 0.3 m	TRV00803
1445.eps	10 RJ45/RJ45 male cord L = 0.6 m	TRV00806
DB111445.eps	5 RJ45/RJ45 male cord L = 1 m	TRV00810
° \	5 RJ45/RJ45 male cord L = 2 m	TRV00820
	5 RJ45/RJ45 male cord L = 3 m	TRV00830
	1 D 145/D 145 male cord 1 = 5 m	TD\/00850

TRV00850

ComPacT NSX100 DC to NSX250 DC Circuit Breakers

Check the applica	able and enter	the annro	nriate	Indication and measure	suraments						
	information ir			Auxiliary contact	OF SD	SDE		tandard	\neg	Low level	
square boxes				SDE adapter (TM trip unit)	01 05	ODL		landard		LOWICVCI	\vdash
Circuit break			antity								ш
ComPacT type	NSX100/16	0/250		Remote operation Electrical operation	Motor mechanism		4С Г	D DC	\neg	vΓ	
				Voltage releases			AC	DC	\dashv	v	
Rating	Α			voltage releases	-		_	_	-		
Circuit breaker	F, N, M, S						AC	DC	_	V	
Number of poles	1 or 2				Fixed time delay	MN A	AC	DC		٧	
Circuit breaker	DC				Adjust. time delay	MN A	AC	DC		V	
Number of poles	3 or 4			Rotary handles						_	
Number of poles			<u> </u>	Direct		Black		R	ed or	yellow front	
		٦.			MCC conversion	access.		NOMO c	onver	sion access.	\Box
Fixed device	Front conn.	Long	rear conn.	Extended		Black		R	ed or	yellow front	
	Short rear conn.					Telescopi	c han	dle for wit	hdrav	vable device	
Plug-in/withdr.	Plug-in	With	ndrawable	Indication auxiliary	1 early-brea					eak switches	-
	gnetic trip unit			maioation auxiliary	rodry broc				•		-
Thermal-magnet	tic TMD rating ((1663 A	A)			vviring ac	cess	ory for ear	ıy-m	ake switches	\perp
NSX100 to 250	TMG rating	(16250	A)	Locking	D		_		-:	0/01	
	TMDC rating	g (8025	50 A)	Toggle (1 to 3 padlocks)	Rer	movable			-ixea	Open/Close	-
Special conn	nection accessori	es for r	parallel or							Fixed Open	
series conne		00 101	3414113131	Rotary handle	Keylock adapter (key		nclude	ed)			
Series	2 poles (1 connection	n plate)			Keylock Ronis 1351	B.500		Profa	alux K	S5 B24 D4Z	
connection	3 poles (2 connection	' '		Motor mechanism	Keylock adapter + Ke	eylock Ro	nis (s _l	oecial)	- 1	NSX100/250	
		. ,	<u> </u>		Keylock Ronis 1351	B.500		Profa	alux K	S5 B24 D4Z	
B	4 poles (3 connection	<u> </u>		Interlocking			_				
Parallel connection	2 poles (2 connection	. ,		Mechanical	Toggle				R	otary handle	
Connection	3 poles (NSX100 to 2			By key (2 Keylocks, 1 key)	Keylock adapter (key	/lock not i	nclude	ed)			
	1 set of 2 connection	plates)		For rotary handle	Keylock Ronis 1351				ılux K	S5 B24 D4Z	
	2 x 2 poles (4 connec	tion plate	es)	Installation accesso	•		_				ш
Special term	inal shields for pa	arallel c	or series	Front-panel escutcheon	Toggle						
connection	'			Tront-parier esocioneen	Rotary handle, motor	r mechani	em e	scutcheou	n coll	ar ID/IO	
1P short		1 pair		Toggle cover	Ttotal y Haridic, Hioto	THEOHAIII	3111, 0		1 00110	ai, ii +0	\vdash
2P short		2 x 1 pa	ir (1P)								\vdash
3P short for series	s connection of poles	1 set	` ′	Sealing accessories							\vdash
	s connection of poles	1 set		DIN rail adapter	NSX100/250						oxdot
	•		<u> </u>	Plug-in/Drawout cor							_
4P short for parall of poles (2P/4P)	lei connection	1 set		Auxiliary connections	1 automatic connect	<u>-</u>					\vdash
					1 auto. conn. moving	part with	9 wire	es (for circ	uit br	eaker)	
Connection NSX100/250	Steel 1.5º to 95º	(< 160 Δ)			1 support for 3 auton	natic conn	ector	moving p	arts		
connectors	Aluminium 25 ⁻ to	,			9-wire manual auxilia	ary conne	ctor (f	ixed + mo	ving)		
	Aluminium 120° to	,		Plug-in base accessories	Long insulated termi	nals		Set of 3		Set of 4	
Voltago mogeuros	ment For bare cable	NSX100			2 IP4 shutters for bas	se					
input	connector	N3X100 ≤ 185 [□]	5/230	Chassis accessories	Escutcheon collar			Toggle	\neg		
Right-angle termi					Locking kit (keylock i	not include	ed)				
Straight extension					2 carriage switches (conn./disc	conne	cted posi	tion ir	ndication)	
Double L terminal		3P	4P	Parts of plug-in	Plug-in base FC/RC	2P		3P		4P	
Spreader from 35		3P	4P		Set of 2 power conne	ections -	S	Standard			
One piece spread					Safety trip for advance	ced openii	ng				П
Front alignment					For 3P/4P chassis					Moving part	П
Cu cable lugs	NSX100/250 120 ¹¹	150□	185□							Fixed part	
		240	3000	Communication			_				
Al cable lugs	NSX100/250	150	185"		NSX Cord L = 0.35 m	1		NS	SX C	ord L = 1.3 m	
		240	300□		NSX Cord U > 480 V A	AC L = 0.35	m		NSX	Cord L = 3 m	
Insulation screen	45 mm		4P	BSCM							
	70 mm		4P	Communicating motor med	chanism 220-240 V						
Interphase barrie			Set of 6	Switchboard front display r	nodule FDM121						
	-		20.0.0	FDM mounting accessory							
				Ethernet interface + gatew	ay						
				Ethernet interface							П
				Modbus interface							Т
				I/O application module	(Qty 1				Qty 2	П
				Stacking accessory						, -	
				ULP line termination							\vdash
				RJ45 connectors female/fe	emale Wire	length RJ	45	1	Wire	length RJ45	\vdash
					L=0			_		L = 0.6 m	
						length RJ	45		Wire	length RJ45	
					L = 1		_ =	_		L = 2 m	
						length RJ	45	╛	Wire	length RJ45	_
					L=3	m				L = 5 m	

ComPacT NSX400 DC to NSX630 DC Circuit Breakers and Switch-Disconnectors

Check the applica		er the appr		
square boxes	information			
Circuit break	ker/	Qu	anti [.]	ty
Switch-disco				
ComPacT type	NSX400/6	30		
	switch-disconnector	circ	uit br	eaker
Rating	Α			
Circuit breaker	F, S			
	DC			
Number of poles	3 or 4			
Fixed device	Front conn.	Long	rear	conn.
	Short rear conn.			
Plug-in/withdr.	Plug-in	Wi	thdra	wable
Circuit break	er thermal-mag			
Thermal-magne	tic TM-DC ra	ting (250	.600	A)
Special conr	nection accesso	ries for	para	allel or
series conne	ection			
Series	2 poles (1 connecti	on plate)		
connection	3 poles (2 connecti	on plates)		
	4 poles (3 connecti	on plates)		
Parallel	2 poles (2 connecti	on plates)		
connection	2 x 2 poles (4 conn	ection plat	es)	
Special term	inal shields for			eries
connection				
Terminal shield fo	r front connection			
Terminal shield for	r rear connection			
	Standard		Sho	ort
Connection				
NSX400/630	1 cable 35º to 3	800□		
connectors	2 cables 35º to	240□		
Voltage measure	ment input For b	are cable	conn	ector
Right-angle termi	nal extensions			\Box
Edgewise extens	ions			
Double L termina		3P	Ш	4P
Spreader from 35		3P	Ш	4P
One piece spread	der			
Front alignment				
Cu cable lugs	NSX400/630 120 ⁻		-	185"
		240	\rightarrow	300□
Al cable lugs	NSX400/630	150□	-	185"
		240	-	300"
Insulation screen	45 m		\vdash	4P
	70 m	m 3P		4P
Interphase barrie	rs		Se	et of 6

Auxiliary contact	Indication and meas	urer	ner	nts									
SDE adapter (TM trip unit) Remote operation R	Auxiliary contact					1	SDE	Г	Sta	andard		Low le	vel
Remote operation Electrical operation Voltage releases Instantaneous MX AC DC V Fixed time delay MN AC DC V Fixed time delay MN AC DC V Rotary handles Direct Rotary handles Direct MCC conversion access. Extended Black CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front CNOMO conversion access. Extended Black Red on yellow front Extended CNOMO conversion access. Extended Black Red on yellow front Extended Front CNOMO conversion access. Extended Black Red on yellow front Extended Front CNOMO conversion access. Extended Black Red on yellow front Extended Front CNOMO conversion access. Extended Black Red on yellow front Extended Front CNOMO conversion acces	SDE adapter (TM trip unit)				_			_	_				
Electrical operation Motor mechanism AC DC V V V V V V V V V													
Notary handle		Mot	or m	nechan	ism			AC		DC		l v	
MN AC DC V					_	MX					Н		
Fixed time delay MN AC DC V Adjust time delay MN AC DC V V Adjust time delay MN AC DC V V Adjust time delay MN AC DC V V V Adjust time delay MN AC DC V V V V Adjust time delay MN AC DC V V V V V V V V V	Voltage releases	11131	arita	iiicous									
Rotary handles Direct Rotary handles Direct MCC conversion access. Extended Black Telescopic handle for withdrawable device Indication auxiliary 1 early-break switch Wiring accessory for early-make switches Locking Toggle (1 to 3 padlocks) Removable Fixed Open/Close Fixed Open Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D42 Interlocking Mechanical Toggle By key (2 Keylocks, 1 key) Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D42 Interlocking Mechanical Toggle By key (2 Keylocks, 1 key) Keylock Adapter (keylock not included) For rotary handle Keylock Adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D42 Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Plug-in/Drawout configuration accessories 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector fixed part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector (fixed + moving) Plug-in base accessories Escutcheon collar Toggle Chassis accessories Escutcheon collar For 3P/4P chassis Moving part Fixed pa									Ш		Ш		
Rotary handles Black MCC conversion access. CNOMO conversion access.		Fixe	d tir	ne dela	ay	MN		AC		DC		V	
Direct Black Red on yellow front CNOMO conversion access.		Adju	ıst. 1	time de	elay	MN		AC		DC		V	
Direct Black Red on yellow front CNOMO conversion access.	Rotary handles												
Extended Black Red on yellow front Telescopic handle for withdrawable device Indication auxiliary 1 early-break switch 2 early-break switches Wiring accessory for early-make switches Wiring accessory for early-make switches Fixed Open Rotary handle Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Reylock Ronis Reylock Ronis 1351B.500 Profalux KS5 B24 D4Z Reylock Ronis Reylock Ronis Reylock Ronis Reylock Ronis Reylock Ronis Reylock Reylock Ronis Reylock Rey	Direct					Е	Black	П		F	Red	on yellow fro	ont 🗌
Extended			МС	C conv	ersic	n acc	ess.		CN			-	_
Telescopic handle for withdrawable device Indication auxiliary 1 early-break switch 2 early-break switches Wiring accessory for early-make switches Wiring accessory for early-make switches Exed Open/Close Fixed Open/Close	Extended					F	Rlack	\vdash					_
Indication auxiliary 1 early-break switch Wiring accessory for early-break switches Wiring accessory for early-make switches Locking Toggle (1 to 3 padlocks) Removable Fixed Open/Close Fixed Open Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Motor mechanism Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Toggle Rotary handle By key (2 Keylocks, 1 key) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Toggle Rotary handle By key (2 Keylocks, 1 key) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Rotary handle By key (2 Keylocks, 1 key) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Rotary handle By key (2 Keylocks, 1 key) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Rotary handle Wires (for circuit breaker) 1 support for 3 automatic connector moving part 3 automatic connector fixed part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector fixed + moving) Plug-in base accessories Louing insulted terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord L = 0.6 m Wire length RJ45 L = 0.6 m Wire length RJ45 L = 0.6 m Wire length RJ45 Wire length RJ45 L = 0.6 m Wire length RJ45 Wire length RJ45	Exionada							سا مار	l ndl			•	_
Wiring accessory for early-make switches	1 1 0 11			4 1		_		II II	illul				-
Toggle (1 to 3 padlocks) Removable Fixed Open/Close Fixed Open/Close Fixed Open Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KSS B24 D4Z Motor mechanism Keylock adapter (keylock not included) NSX400/630 Reylock Ronis 1351B.500 Nox MSX400/630 Retained Reylock Ronis 1351B.500 Nox MSX400/630 Profalux KSS B24 D4Z Interlocking Rectained Reylock adapter (keylock not included) For rotary handle Keylock adapter (keylock not included) For rotary handle Reylock Ronis 1351B.500 Profalux KSS B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar, IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 1 auto. conn. moving part with 9 wires (for oricuit breaker) 2 auto. conn. moving part with 9 wires (for oricuit breaker) 2 auto. conn. moving part with 9 wires (for o	indication auxiliary			1 earl	y-bre						•		_
Removable						Wi	ring a	cces	sor	y for ea	rly-r	make switch	nes
Rotary handle	Locking												
Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Motor mechanism Keylock Adapter (keylock not included) NSX400/630 Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Toggle Rotary handle By key (2 Keylocks, 1 key) Keylock Adapter (keylock not included) Rotary handle By key (2 Keylocks, 1 key) Keylock Adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 automatic connector fixed part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord U > 480 VAC L = 0.35 m NSX Cord L = 3 m NSX Cord L	Toggle (1 to 3 padlocks)				Re	emov	able	1			Fixe	ed Open/Clo	se
Rotary handle Keylock adapter (keylock not included) Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Motor mechanism Keylock Adapter (keylock not included) NSX400/630 Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Interlocking Mechanical Toggle Rotary handle By key (2 Keylocks, 1 key) Keylock Adapter (keylock not included) Rotary handle By key (2 Keylocks, 1 key) Keylock Adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 automatic connector fixed part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord U > 480 VAC L = 0.35 m NSX Cord L = 3 m NSX Cord L												Fixed Op	en 🗌
New	Rotary handle	Kev	lock	adapt	er (ke	evloc	k not	inclu	ded	1)			
Motor mechanism	. totally manus							T			alux	KS5 B24 D	47
New	Matermachaniem							inalı					72
Interlocking Mechanical Toggle Rotary handle By key (2 Keylocks, 1 key) Keylock adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for circuit breaker) 1 autonatic connector fixed part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 1.3 m NSX Cord L = 1.3 m NSX Cord L = 3 m NSX Cord L =	Motor mechanism				<u>_</u>			Incit	lueu				
Rotary handle By key (2 Keylocks, 1 key) Keylock adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories 1 auto. conn. moving part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in base FC/RC 2P 3P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 1.3 m NSX Cord L = 3 m NSX Cord		Key	lock	Ronis	135	1B.50	00	ᆫ		Prof	alux	KS5 B24 D	^{14Z} L
By key (2 Keylocks, 1 key) Reylock adapter (keylock not included) For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 auto. con. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Chassis accessories Escutcheon collar Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2 p 3 p 4 p Set of 2 power connections Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord U > 480 VACL = 0.35 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord L = 3 m NSX Cord L = 0.35 m NSX Cord L =	Interlocking							_					_
For rotary handle Keylock Ronis 1351B.500 Profalux KS5 B24 D42 Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals Set of 3 Set of 4 2 IP4 shutters for base Chassis accessories Escutcheon collar Toggle Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 1.3 m NSX Cord L = 3 m NSX Cord U > 480 VAC L = 0.35 m NSX Cord L = 3 m BSCM Communicating motor mechanism 220-240 V Switchboard front display module FDM121 FDM mounting accessory Ethernet interface Modbus interface Modbus interface Modbus interface Modbus interface Wire length RJ45 Wire length RJ45 L = 1 m Wire length RJ45 Wire length RJ45 L = 2 m Wire length RJ45 Wire length RJ45 L = 2 m Wire length RJ45 Wire length RJ45 L = 2 m Wire length RJ45 Wire length RJ45 L = 1 m Wire length RJ45 Wire length RJ45	Mechanical	Tog	gle									Rotary han	dle
Installation accessories Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories 1 automatic connector fixed part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals 2 IP4 shutters for base Chassis accessories Escutcheon collar Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC 2P 3P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 3 m	By key (2 Keylocks, 1 key)	Key	lock	adapt	er (ke	eyloc	k not	inclu	ded	1)			
Front-panel escutcheon Toggle Rotary handle, motor mechanism, escutcheon collar; IP40 Toggle cover Sealing accessories Plug-in/Drawout configuration accessories Auxiliary connections 1 automatic connector fixed part with 9 wires (for base) 1 auto. conn. moving part with 9 wires (for circuit breaker) 1 support for 3 automatic connector moving parts 9-wire manual auxiliary connector (fixed + moving) Plug-in base accessories Long insulated terminals 2 IP4 shutters for base Chassis accessories Escutcheon collar Locking kit (keylock not included) 2 carriage switches (conn./disconnected position indication) Parts of plug-in Plug-in base FC/RC P 3 P 4P Set of 2 power connections Standard Safety trip for advanced opening For 3P/4P chassis Moving part Fixed part Communication NSX Cord L = 0.35 m NSX Cord L = 0.35 m NSX Cord L = 3 m NSX Cord	For rotary handle	Key	lock	Ronis	135	1B.50	00	П		Prof	alux	KS5 B24 D	4Z
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L=3 m L=5 m							gth R	J45			Wii		
					L=	3 m						L = 5	5 m 🗖

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Check the applicable

Circuit breaker

Connection Voltage

measurement input connector

square boxes

Rating Fixed device

www.se.com

ComPacT NSX1200 DC Circuit Breakers

ble and enter the appropriate	Indication auxiliaries		
information in the rectangles	Auxiliary contact	OF SD SDE Standard Low level	Ш
er Quantity	SDE adapter (TM trip unit)		ш
630A, 800 A, 1000 A, 1200 A	Remote operation		
Without bare cable connector	Electrical operation	Motor mechanism AC DC V	_
With bare cable connector	Voltage releases	Instantaneous MX AC DC V	
		MN AC DC V	
For bare cable	7	Fixed time delay MN AC DC V	
ut connector	_	Adjust. time delay MN AC DC V	
	Rotary handles		
	Direct	Black Red on yellow front	Ш
		MCC conversion access. CNOMO conversion access.	Ш
	Extended	Black Red on yellow front	
		Telescopic handle for withdrawable device	П
	Indication auxiliary	1 early-break switch 2 early-break switches	П
		Wiring accessory for early-make switches	П
	Locking		_
	Toggle (1 to 3 padlocks)	Removable Fixed Open/Close	П
		Fixed Open	П
	Rotary handle	Keylock adapter (keylock not included)	Н
		Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z	H
	Motor mechanism	Keylock adapter (keylock not included) NSX400/630	Н
		Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z	Н
	Interlocking	Troidia No. 15.555	ш
	Mechanical	Toggle Rotary handle	\Box
	By key (2 Keylocks, 1 key)	Keylock adapter (keylock not included)	Н
	For rotary handle	Keylock Ronis 1351B.500 Profalux KS5 B24 D4Z	Н
	Installation accessor		ш
	Front-panel escutcheon	Toggle	П
	•	Rotary handle, motor mechanism, escutcheon collar; IP40	П
	Toggle cover		П
	Sealing accessories		Н
	Communication		ш
	Communication	NSX Cord L = 0.35 m	П
		NSX Cord U > 480 V AC L = 0.35 m NSX Cord L = 3 m	П
	BSCM		П
	Communicating motor mec	hanism 220-240 V	П
	Switchboard front display m	odule FDM121	
	FDM mounting accessory		
	Ethernet interface + gatewa	у	
	Ethernet interface		
	Modbus interface		Ш
	I/O application module	Qty 1 Qty 2	Ш
	Stacking accessory		Ш
	ULP line termination		Щ
	RJ45 connectors female/fe		Ш
		L = 0.3 m L = 0.6 m	\Box
		Wire length RJ45 Wire length RJ45 L = 1 m L = 2 m	Ш
		Wire length RJ45 Wire length RJ45	\Box
		1=3m	\blacksquare



ComPacT NSX80/500 TM DC PV to NSX100/500 NA DC PV

Circuit Breakers and Switch-Disconnectors

			On	Juit Di Canci	<i>5</i> ai	ia		LOTT		300	/ I I I	11000	515
Check the applicat	ole and	enter the approp	riate	Indication auxiliaries	3								
square boxes	informa	ition in the rectan	gles	Auxiliary contact	OF	П	SD	SDE	St	andard	П	Low lev	vel
Circuit breake	er ComPacT	Quar	ntity	SDE adapter (TM trip unit)							_		\top
NSX250-100 TM D		NSX80 TM DO		Remote operation									
NSX250-125 TM D		NSX125 TM DO		Electrical operation	Motor n	nechan	ism	F	κсΓ	DC	П	v	
NSX250-160 TM D	C EP	NSX160 TM DO	C PV	Voltage releases	Instanta	aneous	MX	(A	AC	DC	П	٧	
NSX250-200 TM D	C EP	NSX200 TM D	C PV	· ·			MN	J /	AC	DC	Н	V	
NSX250-250 TM D		NSX250 TM DO			Fixed ti	me del			AC	DC	Н	V	
NSX500-250 TM D		NSX320 TM DO					elay MN		AC	DC	Н	V	
NSX500-320 TM D		NSX400 TM DO		Rotary handles	,		,		-		_		
NSX500-400 TM D		NOVOU IMIDO	, PV	Direct				Black	\neg	R	ed c	on yellow fro	ont 🗌
Special conne		nculation acc	occorioc	5661	МС	CC con	version a		⊢cı			ersion acces	
for circuit brea			C33011C3	Extended				Black	\dashv	R	≀ed c	on yellow fro	ont
Upstream		ates with heatsink	(x2)				Te	ı elescopio	— c hand			awable devi	
	special termina		` '	Indication auxiliary		1 ear	ly-break		\neg			reak switch	-
Downstream		terminal shields		,			-		 cesso		•	nake switch	
2011101101111	or rear connec			Locking				9	-	.,	,	iano omitori	
		long		Toggle (1 to 3 padlocks)			Rem	ovable			Five	d Open/Clo	se 🗆
	+ short termina			10ggio (1 to o padioons)			i (Cill	- vanie			INC	Fixed Op	
Switch-disconi	nector ComF	PacT Quar	ntity	Rotary handle	Keylock	k adant	er (keylo	ock not in	clude	4)		i ived Ob	VIII
NSX250-100 NA D		NSX100 NA D	CPV	. total y flatiule			1351B.		Jauet		alux	KS5 B24 D	47
NSX250-160 NA D	C EP	NSX160 NA D	C PV	Motor mechanism				lock Ror	is (sn		-141	NSX100/2	-
NSX250-200 NA D		NSX200 NA D		Motor modification				ock not in				NSX400/6	
NSX250-250 NA D		,	60 A)			<u>_</u>	1351B.					KS5 B24 D4	
NSX630-320 NA D		NSX200 NA D	C PV	Interlegipa	rteyloci	KIKOIIIS	10010.	000 L		1 1016	AUA	100 024 0	⁷
NSX630-400 NA D NSX630-500 NA D		NSX400 NA D	· —	Interlocking Mechanical	Toggle			Г	\neg			Rotary hand	ام ال
NSX630-630 NA D		NSX500 NA D		By key (2 keylocks, 1 key)		k adapt	or (koyle	ck not in	aludad	4/	'	Total y Haric	ile
Special conne				For rotary handle			1351B.		Ciude			KS5 B24 D	47
for switch-disc			C33011C3	Installation accesso		K I (OIII3	10010.	JOO [1 1016	AUA	1100 024 0	⁷
Upstream		ates with heatsink	(x2)	Front-panel escutcheon									
≤ 200 A at 40 °C	special termina		`	i Tonit-panel esculciteon	Toggle Rotary	handle	motor n	nechanis	m es	cutcheor	n col	lar: IP40	+
	or interphase l			Toggle cover	rtotary	Tidildic	, 1110101 11		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	batoricoi	1001		-H
Upstream		ates with heatsink	(x2)	Sealing accessories									+
= 200 A at 55 °C	(long)		(//_/	DIN rail adapter	NSX10	0/250					—		+
	interphase bar	rriers		·	NOXIO	0/200							ш
Upstream	connection pla	ates with heatsink	(x2)	Communication	NSX C	ord I =	0 35 m			7 N	SX (Cord L = 1.3	m 🗆
≥ 400 A	special termina	al shields						L=0.35	_m ├─			Cord L = 3	
	or interphase l	barriers		BSCM									
Downstream	standard long	terminal shields		Communicating motor med	hanism 2	220-240) V						\top
	or rear connec			Switchboard front display n	nodule Fl								
		long		FDM mounting accessory									
	+ short termina			Ethernet interface + gatewa									
	or interphase l			Ethernet interface									\Box
Connection				Modbus interface									
NSX100/250	Steel 1.5º	to 95º (< 160 A)		I/O application module				Qty 1				Qty	y 2
connectors		n 25º to 95º (< 25º	_{0A)} H	Stacking accessory									\dashv
		n 120º to 185º (< :	· —	ULP line termination RJ45 connectors female/fe	male		Wiro lor	ngth RJ4	5	1	\//i=	e length RJ	15
NSX400/630	1 cable 35			NUAD CONNECTORS TERMINIE/TE	malt	Ш	1 E.0 = L		¬ <u>Г</u>	1	vVIf	e iengin KJ L = 0.6	
connectors	2 cables 3	5º to 240º						ngth RJ4	5 F	1	Wir	e length RJ	
Voltage measurem)/250				L = 1 m	J 1 10 1	_	_		L=2	
input	connector		V000				Wire ler	ngth RJ4	5 	1	Wir	e length RJ	45
	For bare c		0/630				L = 3 m	_		-		L=5	
Right-angle termin													
Straight extensions		250	-										
Edgewise extensions			-										
Double L terminal		3P	4P										
Spreader from 35 t		3P	4P										
Cu cable lugs	NSX100/250		185"										
	NSX400/630	240"	300□										
Al cable lugs	NSX100/250	150"	185"										
	NSX400/630	240□	300□										
Insulation screen		45 mm 3P	4P										

70 mm

Interphase barriers

3P

4P

Set of 6

Order Form

www.se.com

ComPacT NSX250/500 TM DC EP to NSX250/630 NA DC EP

Circuit Breakers and Switch-Disconnectors

Check the applica	ble and enter the ap	propr	iate		Indication auxiliaries											
square boxes	information in the re	ctan	gles		Auxiliary contact	OF	П	SD	\Box	SDE	\neg	Sta	ndard	\neg	Low le	vel 🗌
Circuit break	er (Quan	titv		SDE adapter (TM trip unit)						_			_		
ComPacT type	NSX250-100 TM E		-	\neg	Remote operation											
	NSX250-125 TM D			\neg	Electrical operation	Motor	mech	anism		Д	сΓ	\neg	DC	\neg	V	
	NSX250-160 TM D			\neg	Voltage releases	Instan			MX		C	┪	DC	\dashv	V	
	NSX250-200 TM D			\neg	vollago voloadoo				MN		C	\dashv	DC	\dashv	V	
	NSX250-250 TM D			ᅱ		Fixed	timo	lolov	MN		C	\dashv	DC	\dashv		<u> </u>
	NSX500-250 TM D			ᅥ				delay			c	\dashv	DC	\dashv	V	
	NSX500-320 TM D			ᅥ	D	Aujusi	. ume	uelay	IVIIN	-		_	DC [_	v	
	NSX500-400 TM D			ᅥ	Rotary handles					ъ Г	_					
	NSX500-500 TM D			ᅥ	Direct		00 -			Black	-	ON 14			n yellow fr	_
Special conn	ection and insulation		_	20		IV	CC co	onvers	ion a	_	4	CNC			rsion acce	-
	eakers (mandatory)	acc	5330116	53	Extended				_	Black	Ш				n yellow fr	
Upstream	connection plates with heat	sink (x2)								ha	ndle			wable dev	
-,	special terminal shields		-/	\neg	Indication auxiliary		1 €	early-b						•	reak switch	-
Downstream	standard long terminal shiel	ds		\dashv					W	/iring ac	cess	sory	for ear	ly-m	ake switch	nes
	or rear connections shor			\dashv	Locking											_
	long			\dashv	Toggle (1 to 3 padlocks)			F	Remo	vable			F	ixe	d Open/Clo	se
	+ short terminal shields			\dashv						_					Fixed Op	en 🗌
Switch-disco		Quan	tity	\dashv	Rotary handle	Keylo	k ada	apter (k	eylo	ck not in	clud	led)				
ComPacT type	NSX250-100 NA D		-	\dashv		Keylo	k Roi	nis 135	51B.5	00	П		Profa	lux	KS5 B24 D	4Z
John dor type	NSX250-160 NA D			\dashv	Motor mechanism	Keylo	k ada	apter +	Keyl	ock Ron	is (s	pec	ial)		NSX100/2	250
	NSX250-200 NA D			\dashv		Keylo	k ada	apter (k	eylo	ck not in	clud	led)			NSX400/6	30
	NSX250-250 NA D		_	-		Keylo	k Roi	nis 135	1B.5	00	\neg		Profa	alux	KS5 B24 D	4Z
	NSX630-320 NA D			\dashv	Interlocking						_					
	NSX630-400 NA D			\dashv	Mechanical	Toggle	•			Г	\neg			F	Rotary han	dle 🗀
	NSX630-500 NA D			\dashv	By key (2 keylocks, 1 key)			anter (k	evlo	ck not in	clud	led)			total y mail	-
	NSX630-630 NA D			\dashv	For rotary handle			nis 135				,	Profe	alux	KS5 B24 D	47
Chaoial conn				20	Installation accessor						_					
	ection and insulation		2550116	35	Front-panel escutcheon	Toggle	<u>,</u>									
Upstream	sconnectors (mandato connection plates with heat		v2)	\neg	Tront-paner esouteneen			dle mo	tor m	echanis	— - m е	SCL	ıtcheor	coll	ar: IP40	\vdash
≤ 200 A at 40 °C	special terminal shields	SII IIC (^_/	\dashv	Toggle cover			,			,				u.,	\vdash
	or interphase barriers			\dashv	Sealing accessories											\vdash
Upstream	connection plates with heat	sink (x2)	\dashv	DIN rail adapter	NSX1	20/25	Λ								_
= 200 A at 55 °C	(long)		//_/		·	INSAI	30/23	U								
	interphase barriers				Communication	Nev	`ord I	= 0.35	m		г	\neg	NIC	2 V C	ord L = 1.3	, , _
Upstream	connection plates with heat	sink (x2)	\dashv						L = 0.35 r	"	\dashv			Cord L = 3	_
≥ 400 A	special terminal shields	`	´	\neg	BSCM	NOAC	old 0	- 400 N	ACI		'' [_		NOV	COIGL	, , , ,
	or interphase barriers			\neg	Communicating motor med	nanism	220-2	240 \/								+
Downstream	standard long terminal shiel	ds		一	Switchboard front display m											\vdash
	or rear connections shor			\neg	FDM mounting accessory	oudio i	DIVIT									\vdash
	long				Ethernet interface + gatewa	V										\vdash
	+ short terminal shields				Ethernet interface											\top
	or interphase barriers				Modbus interface											
Connection					I/O application module					Qty 1					Qt	y 2
NSX100/250	Steel 1.5° to 95° (< 160	A)			Stacking accessory											
connectors	Aluminium 25º to 95º (<	250	A)		ULP line termination		_									
	Aluminium 120° to 185°	(< 2	50 A)		RJ45 connectors female/fer	nale	\square			gth RJ4	5			Wire	e length R	
NSX400/630	1 cable 35 ⁻ to 300 ⁻			Ш					0.3 m		-	_			L = 0.6	_
connectors	2 cables 35° to 240°			Ш						gth RJ4	5 <u> </u>			Wire	e length R	
	nent For bare cable NSX		50					L=				_			L = 2	
input	connector ≤ 185 For bare cable NSX4		20					VVir		gth RJ4	L			Wire	e length R. L = 5	
	For bare cable NSX4 connector	+00/0	30	Ш					3 111						L - ;)
Right-angle termi	nal extensions			П												
Straight extension	ns NSX100/250			П												
Edgewise extensi	ons NSX400/630			П												
Double L terminal		P	4P	П												
Spreader from 35		_	4P	П												
Cu cable lugs	NSX100/250 120 ⁻ 150)-	185□	П												
Ü	NSX400/630 24	_	300□	П												
Al cable lugs	NSX100/250 150	_	185º	П												
J	NSX400/630 240	_	300	П												
Insulation screen	45 mm 3	_	4P	Н												
	70 mm 3	_	4P	Н												
Interphase barrier		_	Set of 6	П												

ComPacT NSX630/1600 NA DC PV 4P, Fixed Version Upside: Front Connection, 2 Kit Heatsink, Phase Separator Are Included

Name of customer:		Indication contacts	S					
Adress for delivery:		OF - ON/OFF indication	contacts (maixmum 3)					
Requested delivery date:		6 A-240 V AC qty	/	Low	level		qty	
Customer order no:		Remote operation	_				_	
To indicate your choices,		Electrical operation	Standard	П	Comn	านท	icating	
Check the and enter th	e appropriate	(NSX 630b/1600 DC PV)	Power supply	AC	DC	Г	\ \	
applicable square information boxes rectangles	in the	Voltage releases	MX	AC	DC		V	
Switch-disconnector	Quantity		MN	AC	DC		V	
Rating	Α		MN delay unit	Ad	justable		Non-adjustable	
Communication		Locking						
COM module Device w	vith Ethernet	For electrically operated devices	VBP - ON/OFF pushbutto (by transparent cover + pa					
`	vith Ethernet	(NSX630b/1600 DC PV)	OFF position locking:			_		
ir	nterface + gateway		VCPO - by padlocks					Г
	vith Modbus		VSPO - by keylocks:					十
	nterface		Keylock kit (w/o keylock)	Pr	ofalux	Г	Ronis	\top
	Mounting accessory		1 keylock		ofalux	H	Ronis	+
Breaker ULP Cord L = 0.35 m			2 identical keylocks, 1 key	 / Pr	ofalux	H	Ronis	+
L = 1.3 m		Accessories	z radinidai noyrodno, i noy		orana, c	_		
L = 3 m		CDM - mechanical opera	ation counter					
AD - external power-supply module	V	CDP - escutcheon	THE TOTAL COUNTY					+
NSX630b/1600 DC PV connection	ction	CP - transparent cover for	ar a soutabasan		_			+
Horizontal rear connections	Bottom	<u> </u>						╬
Vertical rear connections	Bottom	OP - blanking plate for es	scutcheon					
Front connections	Bottom							
4 x 240° + bare cable connectors + shiel	ds Bottom							
Vertical-connection adapters	Bottom							
Cable-lug adapters	Bottom							
Long connection shields [1] Top	Bottom							
or interphase barriers	Bottom							

^[1] Bottom long connection shield or Bottom interphase barriers kit is mandatory.

MasterPact NW DC

Address for delive	;y:
Requested deliver Customer order no To indicate your ch and enter the appr	y date:
Qty MasterPact type	NW10 NW20 NW40
Circuit breaker Special PV switch-disconnectors	NW40 1000 V DC) HADCD-PV2 (NW32-1500
Switch-disconnect Sensor version	V DC FIXED) or HA 1250 to 2500 A 2500 to 5400 A 5000 to 11000 A
Version Type of equipment	C, D, E Fixed Drawout chassis
Communicati COM module Device (BCM-ULP)	
Front Display Mod Breaker ULP Cord	
Connection Vertical Horizontal	Standard version Top Bottom Vertical connection is standard however the connectors can be rotated on-site conversion to horizontal connection (except on the NW40)

OF - ON/OFF indication conta	icts		
Standard	4 OF 10 A/240 V AC and low	level	
Additional	1 block of 4 OF	Max	c. 2 Qty
EF - combined "connected/cl	osed" contacts		_
	1 EF 6 A/240 V AC	Max	c. 8 Qty
	1 EF low level	Max	c. 8 Qty
SDE - "fault-trip" indication o	ontact		
Standard	1 SDE 6 A/240 V AC		
Additional	1 SDE 6 A/240 V AC		DE low level
Carriage switches	Low level	6 A/	240 V AC
CE - "connected" position CD - "disconnected" position	Max. 3		Qty
	Max. 3		Qty
CT - "test" position		audtahaa	Qty
AC - NW actuator for 6 CE - 3	CD - 0 CT additional carriage	switches	Qty
Remote operation	MOUL		
Electrical operation	MCH - gear motor		V
	XF - closing voltage release		
	MX - opening voltage release		V
	PF - "ready to close" contact		level
	RDFF - plactrical classing and		240 V AC
	RES - electrical closing pus	ภามนแบบ	V
	RAR - automatic reset option		
Remote tripping	MN - undervoltage release		v
ixemote tripping	R - delay unit (non-adjustable	e)	
	Rr - adjustable delay unit		
	2° MX - shunt release		v
VCPO - by padlocks	Keylock kit (w/o keylock)	Profalux	Ronis
VCPO - by padlocks	Keylock kit (w/o keylock) 1 keylock	Profalux Profalux	Ronis Ronis
VCPO - by padlocks			
VCPO - by padlocks	1 keylock	Profalux	Ronis
OFF position locking: VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys	Profalux Profalux	Ronis Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys	Profalux Profalux	Ronis Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position:	Profalux Profalux Profalux	Ronis Ronis Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock)	Profalux Profalux Profalux	Ronis Ronis Ronis Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock)	Profalux Profalux Profalux Profalux Kirk	Ronis Ronis Ronis Ronis Castell
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock)	Profalux Profalux Profalux Profalux Kirk Profalux	Ronis Ronis Ronis Ronis Castell Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux	Ronis Ronis Ronis Ronis Castell Ronis Ronis Ronis Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indication	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning Or	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux ected/test pos n right-hand sid	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indication	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconning Or	Profalux Profalux Profalux Profalux Kirk Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux ected/test pos n right-hand sid	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indication IBPO - racking interlock between	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnical connected/disc	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indication IBPO - racking interlock between	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnical connected/disc	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPCC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indicatic IBPO - racking interlock between DAE - automatic spring dischar	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconn Or Or on and locking en crank and OFF pushbutton for ge before breaker removal for locking	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VIVC - shutter position indication IBPO - racking interlock between the call of the cable and the	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnormal	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VIVC - shutter position indication IBPO - racking interlock between the calculation of the compact of the	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/discon	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VDC - mismatch protection VIVC - shutter position indicatic IBPO - racking interlock between DAE - automatic spring dischare Accessories	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/discon	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
VCPO - by padlocks VSPO - by keylocks Chassis locking in "disconne VSPD - by keylocks VPEC - door interlock VPOC - racking interlock IPA - cable-type door interlock VIC - shutter position indication IBPO - racking interlock between DAE - automatic spring dischart Accessories VO - safety shutters on chassis CDM - mechanical operation oc CB - auxiliary terminal shield for CDP - escutcheon	1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys ected" position: Keylock kit (w/o keylock) 1 keylock 2 identical keylocks, 1 key 2 keylocks, different keys Optional connected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/disconnected/discon	Profalux Profalux Profalux Frofalux Frofalux Frofalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux Profalux On the firm of	Ronis
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