

Compact™ NSXm

Catalogue 2017

Molded-case circuit breakers and switch-disconnectors
up to 160 A and 690 V





Green Premium™

Endorsing eco-friendly products in the industry



Green Premium™ Product

Green Premium is the only label that allows you to effectively develop and promote an environmental policy whilst preserving your business efficiency. This ecolabel guarantees compliance with up-to-date environmental regulations, but it does more than this.

Over 75% of Schneider Electric manufactured products have been awarded the Green Premium ecolabel



Discover what we mean by green

Check your products!

Schneider Electric's Green Premium ecolabel is committed to offering transparency, by disclosing extensive and reliable information related to the environmental impact of its products:

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REACH

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PEP: Product Environmental Profile

Schneider Electric publishes complete set of environmental data, including carbon footprint and energy consumption data for each of the lifecycle phases on all of its products, in compliance with the ISO 14025 PEP ecopassport program. PEP is especially useful for monitoring, controlling, saving energy, and/or reducing carbon emissions.

EoLI: End of Life Instructions

Available at the click of a button, these instructions provide:

- Recyclability rates for Schneider Electric products.
- Guidance to mitigate personnel hazards during the dismantling of products and before recycling operations.
- Parts identification for recycling or for selective treatment, to mitigate environmental hazards/ incompatibility with standard recycling processes.

Life Is On

Schneider
Electric

Efficiency that clicks.



Compact NSXm molded case circuit breakers

Schneider Electric introduces a new family member of the Compact™ NSX range of circuit breakers, the Compact NSXm.

The Compact NSX and NSXm ranges benefit from 60 years of Schneider Electric background and leadership in industrial circuit breakers based on the roto-active breaking technology.

As well as offering proven performance, flexibility, and reliability, the Compact NSXm features new innovations such as EverLink™ patented connections.

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Life Is On

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Your efficiency is our first concern.



I design more reliable solutions with NSXm.

- Ensure reliable connection over time using creep-compensating technology — EverLink™
- Enhanced continuity of service with outstanding discrimination
- Optimize panel cost with cascading

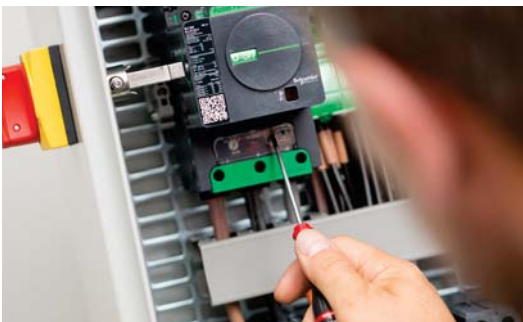


Equipment with Compact NSXm is tested and complies with IEC 61439 1&2.



I build panels more productively using NSXm.

- Save up to 40% of time spent mounting and cabling with built-in DIN rail, EverLink™ connectors, and spring-type auxiliaries



I build more reliable and optimized machines with NSXm.

- Best combination of size and performance
- Ensure reliable connection over time using creep-compensating technology - EverLink™
- Same footprint, accessories, and auxiliaries for both IEC and multistandard (UL/IEC) range



Compact NSXm circuit breakers: Optimized for your needs

The Compact NSXm range of circuit breakers and switch disconnectors is a newcomer in the Compact NSX family. It is one of the smallest on the market with innovative features. Built on the design of roto-active breaking technology, we have made it as robust as Compact NSX products.

Compact NSXm main features and innovations

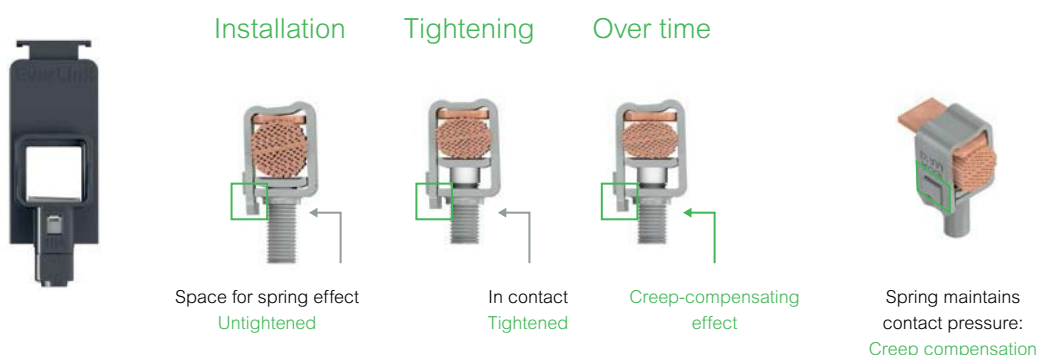
- Rated Current ,In (A) – 16, 25, 32, 40, 50, 63, 80, 100, 125, 160
- Breaking capacity (kA) at 415V – 16, 25, 36, 50, 70
- Thermal magnetic trip unit integrated
- Built-in DIN rail and plate mount
- Auxiliaries externally visible
- EverLink™ connectors



EverLink™ patented technology

The Compact NSXm features a new cable connection method with patented creep-compensating technology built directly into the terminal — EverLink™:

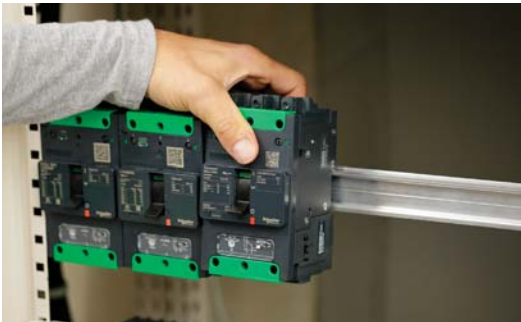
- With EverLink™ connectors, save space and time during panel assembly.
- Bare cable connections are as safe as compression lug ones.



More than 35 patents have been registered for this new Compact NSXm offer.

Efficiency that clicks.

Compact NSXm accessories are available to answer all your needs from power connection to operating mechanism, including electrical auxiliaries. All of them are easily field installable.



Mounting: DIN rail and plate

Embedded DIN rail and plate mounting capabilities for every circuit breaker; no extra parts required.



Auxiliaries: Field-installable offer

All electrical auxiliaries (contacts OF/SD and voltage release MN/MX) can be easily installed in the product by simply opening the front cover and snapping them into cavities.

Their presence in the breaker is externally visible through flags or a window.



Power connection: Flexible

Compact NSXm circuit breakers come with EverLink™ or compression lug or busbar connector. As an option, you can get EverLink™ connectors with control wire terminal.

New torque-limiting breakaway bits can be used to tighten power connections in the field.



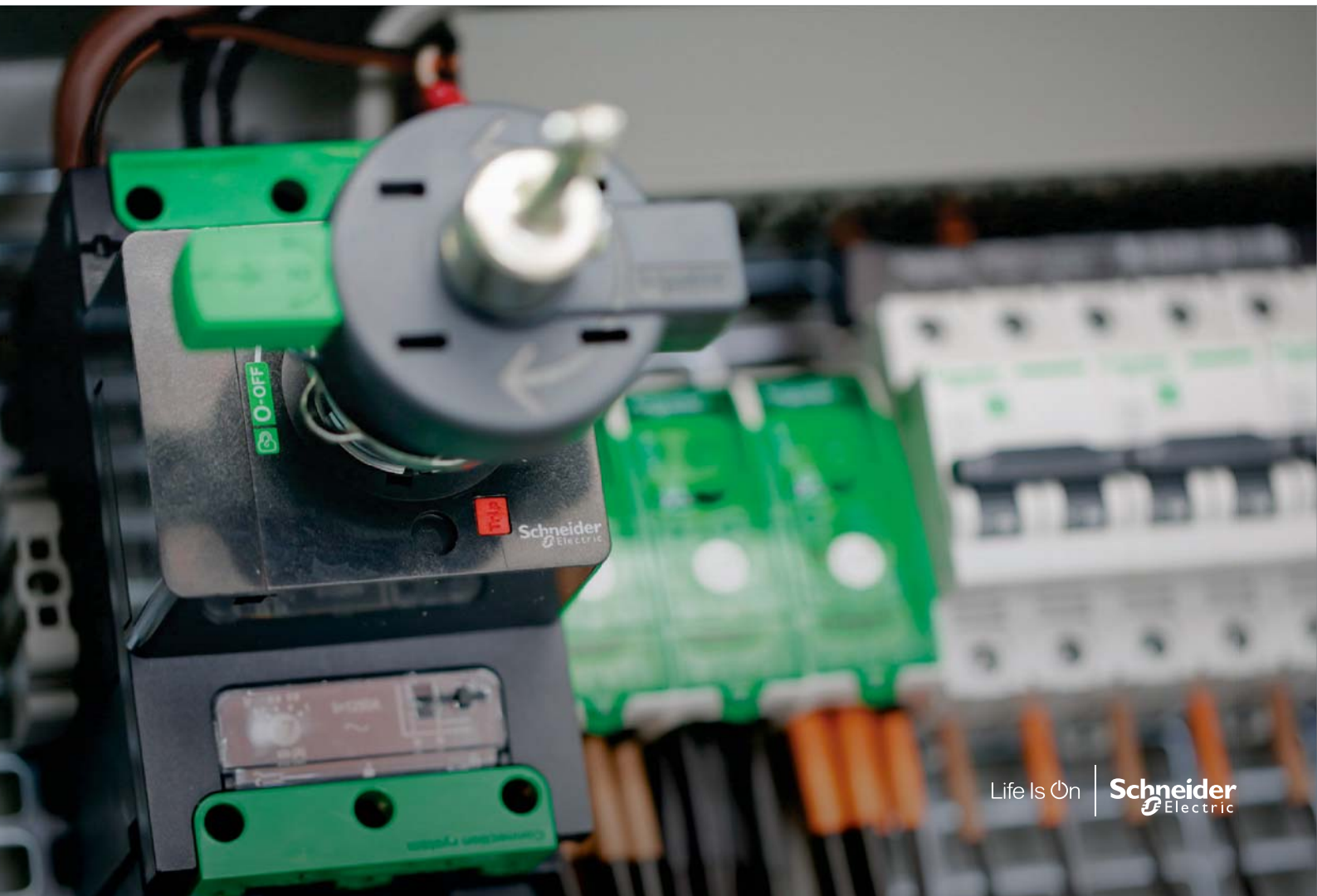
Insulation

New transparent long terminal shield can allow you to achieve IP40.



A wide range of operating mechanism

A wide range of rotary handles enables the Compact NSXm to meet all standards and applications. They are available as direct, extended, and side mount. We also feature an open door shaft operator (NFPA79 code), which allows you to operate the breaker safely when the panel door is open.



General contents

Compact™ NSXm

Functions and characteristics

A

Installation recommendations

B

Dimensions and connections

C

Wiring diagrams

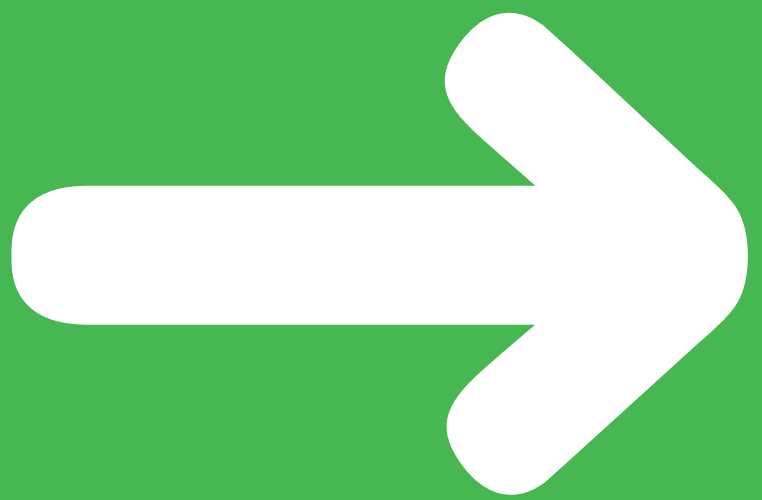
D

Additional characteristics

E

Catalogue numbers

F



Functions and characteristics

A

Introduction

General characteristics of the Compact NSXm range A-2

Protection of distribution systems

Characteristics and performance of Compact NSXm
circuit breakers from 16 to 160 A up to 690 V A-4
Overview of trip units for Compact NSXm circuit breakers A-6
TM thermal-magnetic A-8

Switch-disconnectors

Characteristics and performance of Compact NSXm
switch-disconnectors from 50 to 160 A up to 690 V A-10
Overview of applications A-12

Installation A-14

Accessories and auxiliaries

Overview A-15
Power connection of fixed devices A-16
Insulation of live parts A-18
Selection of auxiliaries A-19
Connection of auxiliaries A-20
Indication contacts A-21
Voltage release A-22
Rotary handles A-23
Locks and sealing accessories A-25

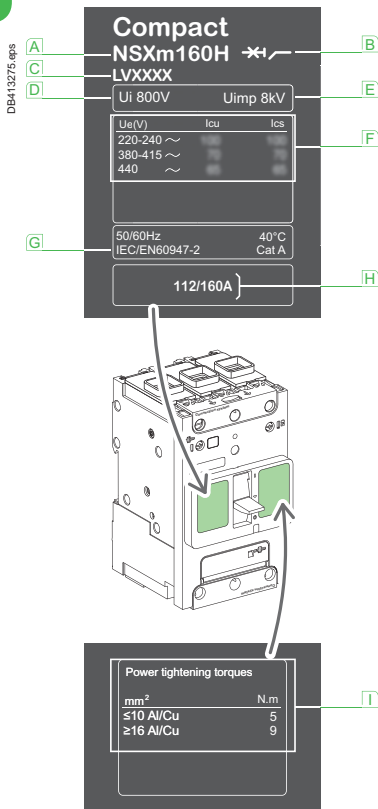
Other chapters

Installation recommendations B-1
Dimensions and connection C-1
Wiring diagrams D-1
Additional characteristics E-1
Catalogue numbers F-1

Introduction

General characteristics of the Compact NSXm range

A



Standardised characteristics indicated on the rating plate:

- A** Type of device: frame size and breaking capacity class
- B** Circuit breaker/switch-disconnector symbol.
- C** Commercial reference.
- D** Ui: rated insulation voltage.
- E** Uimp: rated impulse withstand voltage.
- F** Ue: operational voltage.
- G** Reference standard.
- H** Circuit breaker rating.
- I** Power connections tightening torques.

Note: when the circuit breaker is equipped with an extended rotary handle, the door must be opened to access the rating plate.

Compliance with standards

Compact NSXm circuit breakers and auxiliaries comply with the following:

- international recommendations:
 - IEC 60947-1: general rules
 - IEC 60947-2: circuit breakers
 - IEC 60947-3: switch-disconnectors
 - IEC 60947-5-1 and following: control circuit devices and switching elements; automatic control components
- European (EN 60947-1, EN 60947-2, EN 60947-3 and EN 60947-5-1) and corresponding national standards:
 - China CCC
 - EAC (Customs Union)
- the specifications of the marine classification companies (Veritas, Lloyd's Register of Shipping, Det Norske Veritas, etc.), standard NF C 79-130 and recommendations issued by the CNOMO organisation for the protection of machine tools.

Pollution degree

Compact NSXm circuit breakers are certified for operation in pollution-degree 3 environments as defined by IEC standards 60947-1 and 60664-1 (industrial environments).

Climatic withstand

Compact NSXm circuit breakers have successfully passed the tests defined by the following standards for extreme atmospheric conditions.

Dry cold and dry heat:

- IEC 60068-2-1: dry cold at -55 °C
- IEC 60068-2-2: dry heat at +85 °C.

Damp heat (tropicalization)

- IEC 60068-2-30: damp heat (temperature + 55 °C and relative humidity of 95 %).
- IEC 60068-2-52: severity 2 - Cycling salt mist.

Environment

Compact NSXm respects the European environment directive EC/2002/95 concerning the restriction of hazardous substances (RoHS) and is Green Premium. Product environment profiles (PEP) have been prepared, describing the environmental impact of every product throughout its life cycle, from production to the end of its service life.

All Compact NSXm production sites have set up an environmental management system certified ISO 14001.

Each factory monitors the impact of its production processes. Every effort is made to prevent pollution and to reduce consumption of natural resources.

Ambient temperature

- Compact NSXm circuit breakers may be used between -25 °C and +70 °C. For temperatures higher than 40 °C, devices must be derated (pages B-4 and B-5).
- Circuit breakers should be put into service under normal ambient, operating-temperature conditions. Exceptionally, the circuit breaker may be put into service when the ambient temperature is between -35 °C and -25 °C.
- The permissible storage-temperature range for Compact NSXm circuit breakers in the original packing is -50 °C and +85 °C.

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General characteristics of the Compact NSXm range

Electromagnetic compatibility

Compact NSXm devices are protected against:

- overvoltages caused by circuit switching (e.g. lighting circuits)
- overvoltages caused by atmospheric disturbances
- devices emitting radio waves such as mobile telephones, radios, walkie-talkies, radar, etc.
- electrostatic discharges produced by users.

Immunity levels for Compact NSXm comply with the standards below.

- IEC/EN 60947-2: Low-voltage switchgear and controlgear, part 2: Circuit breakers:
 - Annex F: Immunity tests for circuit breakers with electronic protection
 - Annex B: Immunity tests for residual current protection
- IEC/EN 61000-4-2: Electrostatic-discharge immunity tests
- IEC/EN 61000-4-3: Radiated, radio-frequency, electromagnetic-field immunity tests
- IEC/EN 61000-4-4: Electrical fast transient/burst immunity tests
- IEC/EN 61000-4-5: Surge immunity tests
- IEC/EN 61000-4-6: Immunity tests for conducted disturbances induced by radio-frequency fields
- IEC/EN 61000-4-8: Power frequency magnetic field immunity test
- IEC/EN 61000-4-11: Voltage dips, short interruptions and voltage variations immunity tests
- CISPR 11: Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment.

Suitable for isolation with positive contact indication

All Compact NSXm devices are suitable for isolation as defined in IEC standard 60947-2:

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

Installation of a rotary handle does not alter the reliability of the position-indication system.

The isolation function is certified by tests guaranteeing:

- the mechanical reliability of the position-indication system
- the absence of leakage currents
- overvoltage withstand capacity between upstream and downstream connections.

The tripped position does not insure isolation with positive contact indication.

Only the OFF position guarantees isolation.

Installation in class II switchboards

All Compact NSXm devices are class II front face devices. They may be installed through the door of class II switchboards (as per IEC standards 61140 and 60664-1) without downgrading switchboard insulation. Installation requires no special operations, even when the circuit breaker is equipped with a rotary handle.

Degree of protection

The following indications are in accordance with standards IEC 60529 (IP degree of protection) and IEC 62262 (IK protection against external mechanical impacts).

Bare circuit breaker with terminal shields

- With toggle: IP40, IK07.
- With direct rotary handle: IP40 IK07.

Circuit breaker installed in a switchboard

- With toggle: IP40, IK07.
- With direct rotary handle: IP40, IK07.
- With extended rotary handle: IP54 or IP65 IK08
- With side rotary handle: IP54 or IP65 IK08.

For more detail about IP, see [page B-3](#).

Protection of distribution systems

Characteristics and performance of Compact NSXm circuit breakers from 16 to 160 A up to 690 V

A

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Compact NSXm

Common characteristics

Rated voltages	Insulation voltage (V)	Ui	800
	Impulse withstand voltage (kV)	Uimp	8
	Operational voltage (V)	Ue AC 50/60 Hz	690
Suitability for isolation		IEC/EN 60947-2	yes
Utilisation category			A
Pollution degree		IEC 60664-1	3

Circuit breakers

Breaking capacity levels

Breaking capacity (kA rms)

Icu	AC 50/60 Hz	220...240 V
		380...415 V
		440 V
		500 V
		525 V
		660...690 V

Service breaking capacity (kA rms)

Ics	AC 50/60 Hz	220...240 V
		380...415 V
		440 V
		500 V
		525 V
		660...690 V

Durability (C-O cycles)

Mechanical

Electrical

440 V	In/2
	In
690 V	In/2
	In

Protection and measurements

Overload / short-circuit protection Thermal magnetic

Options Device status

Installation / connections

Dimensions and weights

Dimensions (mm)	3P
W x H x D	4P
Weight (kg)	3P
	4P

Connections

Pitch (mm)	Standard
	With spreaders
EverLink™ lug Cu or Al [2] cables	Cross-section (mm ²) Rigid
	Flexible
Crimp lugs Cu or Al	Cross-section (mm ²) Rigid
	Flexible

[2] Al up to 100 A.

Protection of distribution systems

Characteristics and performance of Compact NSXm circuit breakers from 16 to 160 A up to 690 V



Common characteristics			
Control	Manual	With toggle	<input checked="" type="radio"/>
		With direct or extended rotary handle	<input checked="" type="radio"/>
		With side rotary handle	<input checked="" type="radio"/>
Versions	Fixed		<input checked="" type="radio"/>

NSXm up to 63 A					NSXm from 80 to 160 A				
E	B	F	N	H	E	B	F	N	H
25	50	85	90	100	25	50	85	90	100
16	25	36	50	70	16	25	36	50	70
10	20	35	50	65	10	20	35	50	65
8	10	15	25	30	-	-	-	-	-
-	-	10	15	22	-	-	-	-	-
-	-	-	10	10	-	-	-	-	-
25	50	85	90	100	25	50	85	90	100
16	25	36	50	70	16	25	36	50	70
10	20	30	50	65	10	20	30	50	65
8	10	10	25	30	-	-	-	-	-
-	-	10	15	22	-	-	-	-	-
-	-	-	2.5	2.5	-	-	-	-	-
20000									
20000									
10000									
10000									
5000									
<input checked="" type="radio"/>					<input checked="" type="radio"/>				
<input checked="" type="radio"/>									
81 x 137 x 80									
108 x 137 x 80									
1.06									
1.42									
27									
35									
95									
70									
120									
95									

Protection of distribution systems

Overview of trip units for Compact NSXm circuit breakers

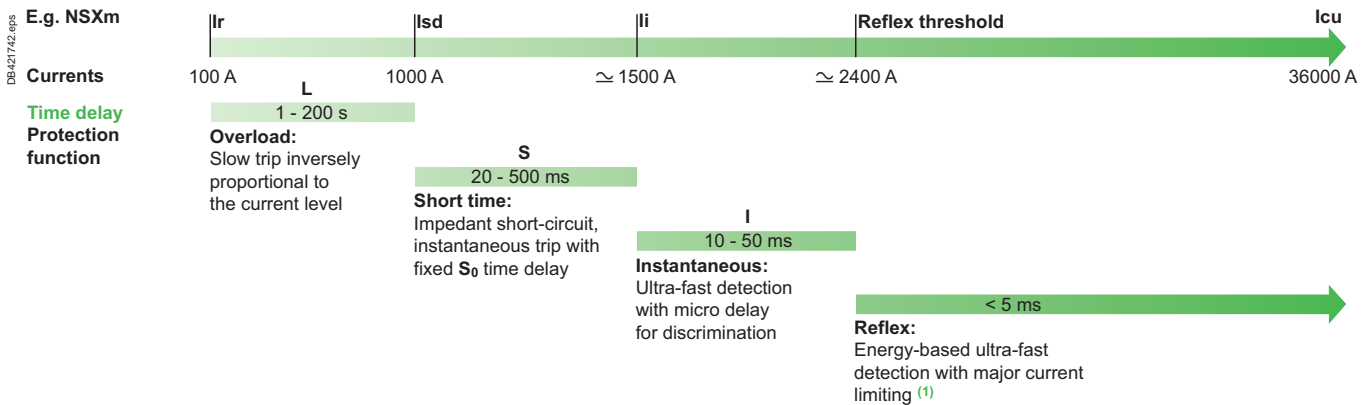


Compact NSXm is available with 3 types of protection

- **Magnetic NA** for switch-disconnectors with self-protection embedded
- **Thermal-magnetic TM-D** which protects cables on distribution systems against over currents and short-circuits

Coordinated tripping systems

Compact NSXm detects faults even faster and its tripping time is reduced. It protects the installation better and limits contact wear.



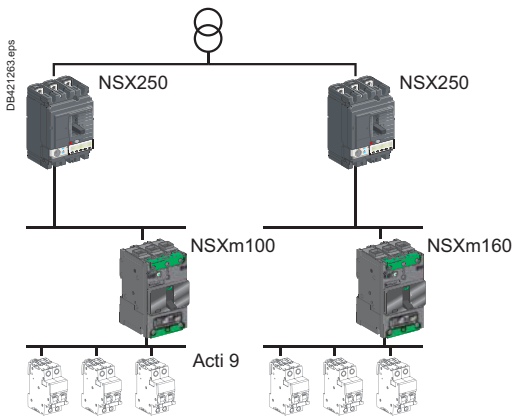
[1] This tripping system is completely independent of the trip unit. Because it directly actuates the mechanism, it precedes the trip unit by a few milliseconds.

Unmatched discrimination

Discrimination

Compact NSXm provides maximum continuity of service and savings through an unmatched level of discrimination:

- given the high accuracy of measurements, overload discrimination is ensured even between very close ratings
- for very high faults, the energy of the arc dissipated by the short-circuit in the downstream breaker causes reflex tripping. The current seen by the upstream device is significantly limited. The energy is not sufficient to cause tripping, so discrimination is maintained whatever the short-circuit current.



Compact NSX250 for total discrimination with NSXm160 up to 70 kA.
 Compact NSXm100 (N and H) for total discrimination with Acti 9 devices rated ≤ 40 A.
 Better coordination between protection functions reduces the difference in ratings required for total discrimination.

For total discrimination up to 70 kA between Compact NSX and Compact NSXm over the entire range of possible faults, from the long-time pick-up I_r to the ultimate short-circuit current I_{cu} , a ratio of 1.6 must be maintained between the ratings of the upstream and downstream devices (for example NSXm160 with NSX250). This ratio is required to ensure selective reflex tripping for high short-circuits. For discrimination between different ranges, see rules in "Complementary technical information" document.

Protection of distribution systems

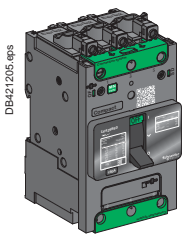
Overview of trip units for Compact NSXm circuit breakers



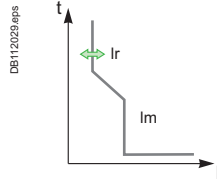
Compact NSXm offers a range of trip units, whether they are thermal-magnetic or electronic with earth leakage protection.

Type of protection and applications

TM-D thermal-magnetic



Compact NSXm



Distribution

Circuit breakers and trip units



TM-D Distribution

Settings and indications



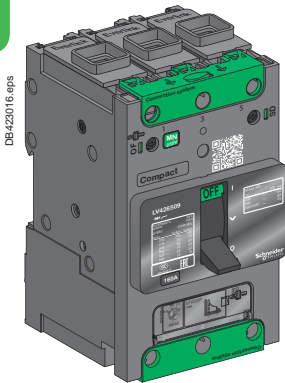
Adjustment and reading

- Pick-up set in amps using dials
- Non-adjustable time delay

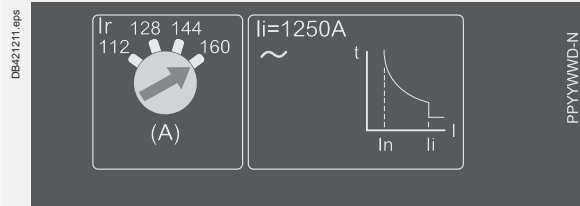
Protection of distribution systems

TM thermal-magnetic

A



TM-D thermal-magnetic trip units



Circuit breakers equipped with thermal-magnetic trip units are used mainly in industrial and commercial electrical distribution applications for protection of cables on distribution systems supplied by transformers

Protection



Thermal protection (Ir)

Thermal overload protection based on a bimetal strip providing an inverse time curve I^2t , corresponding to a temperature rise limit. Above this limit, the deformation of the strip trips the circuit breaker operating mechanism.

This protection operates according to:

- Ir that can be adjusted in amps from 0.7 to 1 times the rating of the circuit breaker (16 A to 160 A), corresponding to settings from 11 to 160 A for the range of products
- a non-adjustable time delay, defined to ensure protection of the cables.

Magnetic protection (Im)

Short-circuit protection with a fixed pick-up I_m that initiates instantaneous tripping if exceeded with a non adjustable time delay to ensure discrimination and cascading.

Protection versions

- 3-pole:
 - 3P 3D: 3-pole frame (3P) with detection on all 3 poles (3D).
- 4-pole:
 - 4P 3D: 4-pole frame (4P) with detection on 3 poles (3D).
 - 4P 4D: 4-pole frame (4P) with detection on all 4 poles (same threshold for phases and neutral).

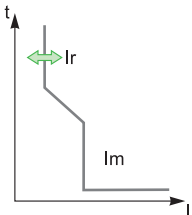
Note: All the circuit breakers have a transparent lead-sealable cover that protects access to the adjustment dials.

Protection of distribution systems

TM thermal-magnetic



Thermal-magnetic trip units		TM16D to 160D									
Ratings (A)	In at 40 °C [1]	16	25	32	40	50	63	80	100	125	160
Circuit breaker	Compact NSXm	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Thermal protection											
Pick-up (A) tripping between 1.05 and 1.20 Ir	$I_r = I_n \times \dots$	adjustable in amps from 0.7 to 1 x In									
Time delay (s)	tr	non-adjustable									
Magnetic protection											
Pick-up (A)	I_m	fixed									
accuracy ±20 %	Compact NSXm	500	500	500	500	600	800	1000	1250	1250	1250
Time delay	tm	fixed									
Neutral protection											
Unprotected neutral	4P 3D	no detection									
Fully protected neutral	4P 4D	1 x Ir									



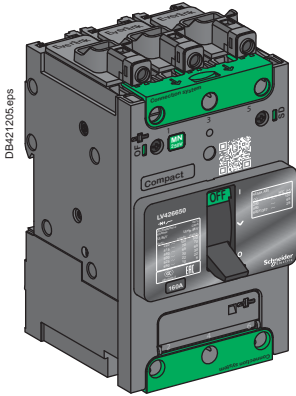
[1] If the circuit breakers are used in high-temperature environments, the setting must take into account the thermal limitations of the circuit breaker. See the temperature derating table [page B-4](#).

Switch-disconnectors

Characteristics and performance of Compact NSXm switch-disconnectors from 50 to 160 A up to 690 V

A

Installation standards require upstream protection.
However Compact NSXm 50 to 160 NA switch-disconnectors are self-protected by their high-set magnetic release.



NSXm with EverLink™ connectors and control wire terminal upstream

Common characteristics

Rated voltages	Insulation voltage (V)	Ui	800
	Impulse withstand voltage (kV)	Uimp	8
	Operational voltage (V)	Ue	AC 50/60 Hz 690
Suitability for isolation		IEC/EN 60947-3	yes
Utilisation category		AC 22 A/AC 23 A	
Pollution degree		IEC 60664-1	3

Switch-disconnectors

Electrical characteristics as per IEC 60947-3 and EN 60947-3

Conventional thermal current (A) Ith 40 °C

Number of poles

Operational current (A) depending on the utilisation category	Ie	AC 50/60 Hz	
			220/240 V
			380/415 V
			440/480 V
			500/525 V
			660/690 V

Short-circuit making capacity (kA peak)	Icm	min. (switch-disconnector alone)	
		max. (protection by upstream circuit breaker)	

Rated short-time withstand current (A rms)	Icw	for	1 s
			3 s
			20 s

Durability (C-O cycles)	mechanical		
	electrical	AC	
		440 V	Ie/2
		690 V	Ie
			Ie/2
			Ie

Positive contact indication

Pollution degree

Additional indication and control auxiliaries

Indication contacts

Voltage releases	MX shunt trip release
	MN undervoltage release

Installation / connections

Dimensions and weights

Dimensions (mm)	3P
W x H x D	4P
Weight (kg)	3P
	4P

Connections

Pitch (mm)	Standard
	With spreaders
EverLink™ lug Cu or Al [1] cables	Cross-section (mm²)
	Rigid
	Flexible
Crimp lugs Cu or Al	Cross-section (mm²)
	Rigid
	Flexible

Source-changeover systems

Manual source-changeover systems

[1] Al up to 100 A.

Switch-disconnectors

Characteristics and performance of Compact NSXm switch-disconnectors from 50 to 160 A up to 690 V



Common characteristics

Control	Manual	With toggle	<input checked="" type="radio"/>
		With direct or extended rotary handle	<input checked="" type="radio"/>
		With side rotary handle	<input checked="" type="radio"/>
Versions	Fixed		<input checked="" type="radio"/>


	NSXm50NA	NSXm100NA	NSXm160NA
	50	100	160
	3.4	3.4	3.4
	AC22A / AC23A	AC22A / AC23A	AC22A / AC23A
	50	100	160 / 100
	50	100	160 / 100
	50	100	160 / 100
	50	100	160 / 100
	50	100	160 / 100
	1.28	2.13	2.13
	330	330	330
	900	1500	1500
	900	1500	1500
	200	335	335
	20000	20000	20000
	AC22A / AC23A	AC22A / AC23A	AC22A / AC23A
	20000 / 20000	20000 / 20000	20000 / 20000
	10000 / 10000	10000 / 10000	10000 / 10000
	10000 / 6000	10000 / 6000	10000 / 6000
	5000 / 3000	5000 / 3000	5000 / 3000
	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	3	3	3
	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
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	81 x 137 x 80		
	108 x 137 x 80		
	1.06		
	1.42		
	27		
	35		
	95		
	70		
	120		
	95		
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Functions and characteristics

Switch-disconnectors

Overview of applications

A

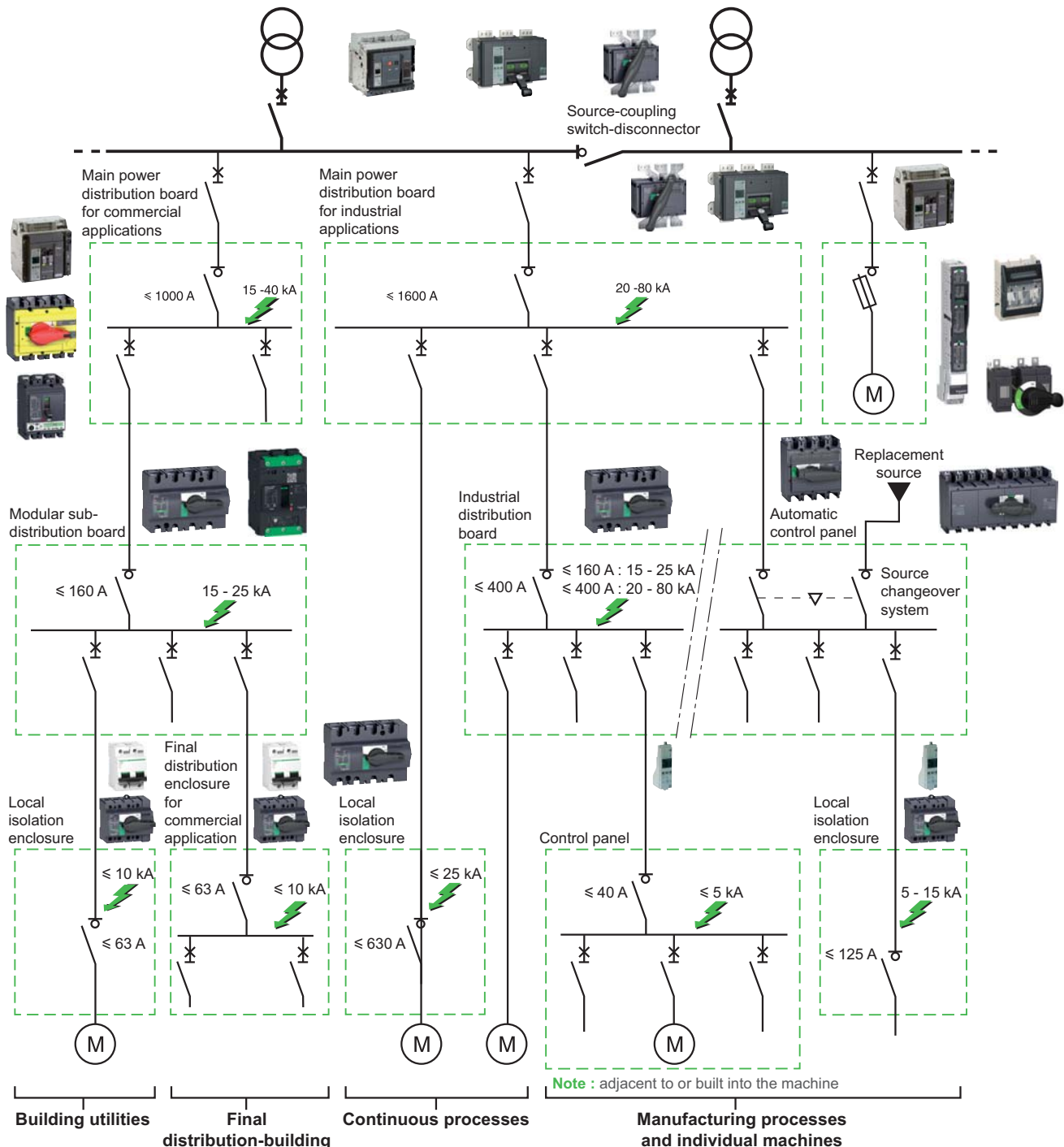
A switch-disconnector is a control device that can be used to open and close a circuit under normal operating conditions. It is suitable for isolation as indicated on the front by the symbol .

Position of switch-disconnectors

Compact switch-disconnectors are used primarily for the following applications:

- busbar coupling and isolation
- isolation of industrial distribution boards and industrial control panels
- isolation of subdistribution boards for modular devices
- isolation of local enclosures
- isolation of final distribution enclosures for commercial applications
- industrial control panel switch-disconnectors.

DB421532-995



Switch-disconnector functions

Overview of applications



Suitability for isolation with positive contact indication

Compact NSXm switch-disconnectors are suitable for isolation as defined by standard IEC 60947-3. The corresponding conformity tests guarantee:

- the mechanical reliability of the position indication, i.e. the O (OFF) position indicated by the control device always reflects the open position of the contacts:
 - the required distance between contacts is provided
 - padlocks may not be installed unless the contacts are open
 - the absence of leakage currents
 - overvoltage withstand capacity between upstream and downstream connections.
- Installation of a rotary handle does not alter the reliability of the position-indication system.

Emergency-off function

A Compact NSXm NA is combined with an MN release connected to an emergency-off button. In an emergency, an operator at a remote location can interrupt the circuit at rated load to isolate the entire switchboard and the downstream loads.

Switch-disconnector protection

The switch-disconnector can make and break its rated current. For an overload or a short-circuit, it must be protected by an upstream device, in compliance with installation standards.

The circuit breaker/switch-disconnector coordination tables determine the required upstream circuit breaker. However, due to their high-set magnetic release, Compact NSXm 50 to 160 A switch-disconnectors are self-protected.

Switch-disconnector utilisation category

Depending on the rated operational current and the mechanical durability (A for frequent operation or B for infrequent operation), standard IEC 60947-3 defines the utilisation categories as shown in the table below. Compact NSXm NA switch-disconnectors comply with utilisation categories AC-21A or AC-22A up to 160 A and AC-23A up to 100 A.

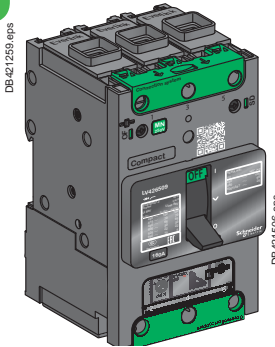
Utilisation categories		
Infrequent operation	Frequent operation	Characteristics
AC-21B	AC-21A	Switching of resistive loads including moderate overloads (cos φ = 0.95)
AC-22B	AC-22A	Switching of mixed resistive and inductive loads, including moderate overloads (cos φ = 0.65)
AC-23B	AC-23A	Switching of motor loads or other highly inductive loads (cos φ = 0.45 or 0.35)

Compact NSXm NA switch-disconnectors use the same accessories and offer the same connection possibilities as the circuit breaker versions.

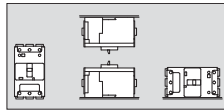


Compact NSXm switch-disconnector.

A



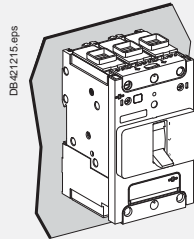
Compact NSXm.



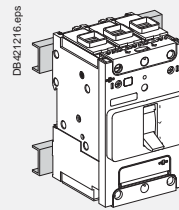
Installation positions.

Mounting

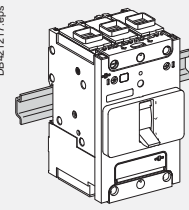
Compact NSXm may be mounted vertically, horizontally or flat on their back or on their side without any derating of characteristics. These devices can be mounted on a DIN rail using the integrated DIN rail mounting feature. For backplate mounting, the devices are supplied with two mounting screws (M4), washers and nuts. These mounting screws can be inserted through mounting holes molded into the device case and threaded into the mounting enclosure, rails or plate.



Mounting on a backplate.



Mounting on rails.



Mounting on DIN rail.

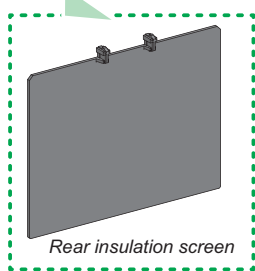
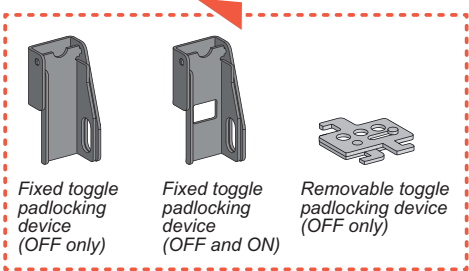
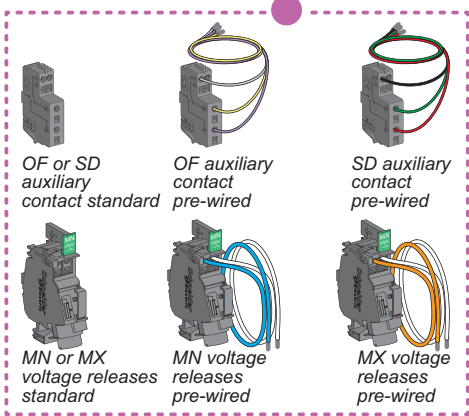
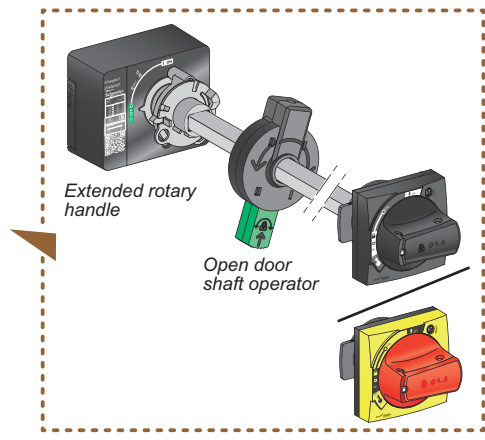
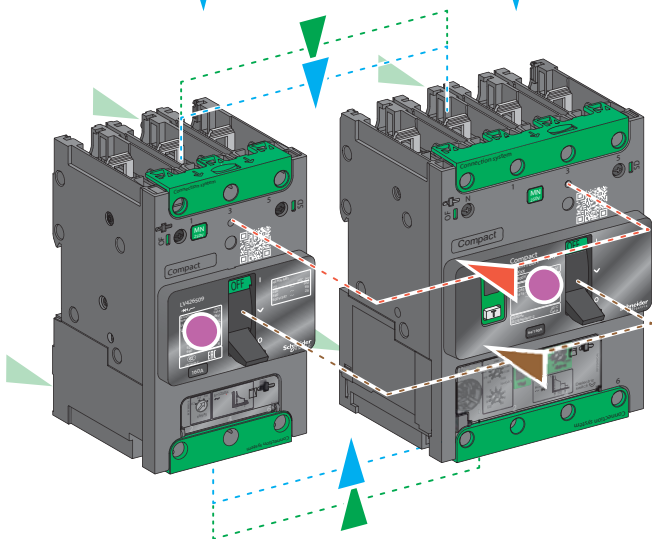
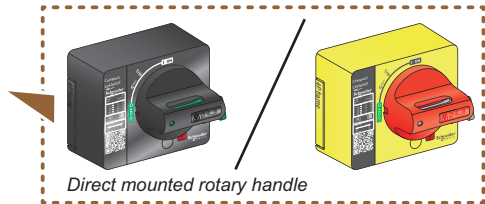
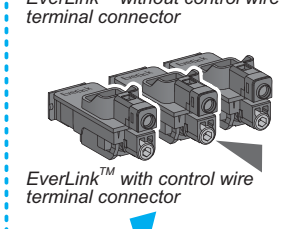
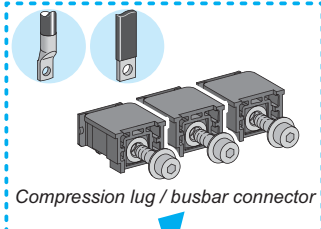
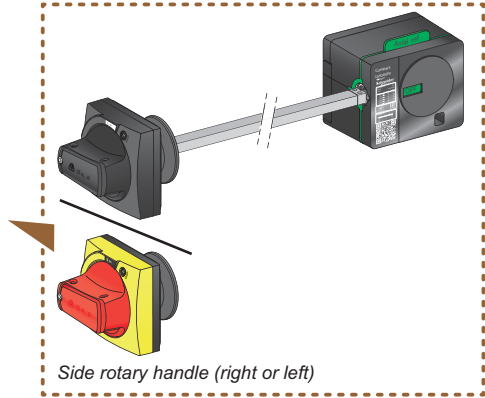
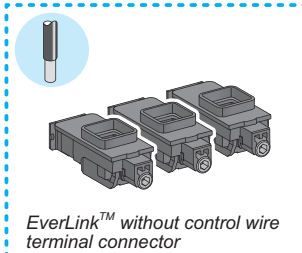
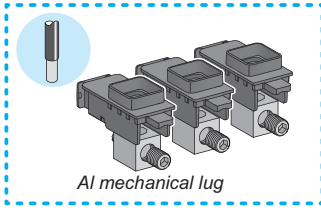
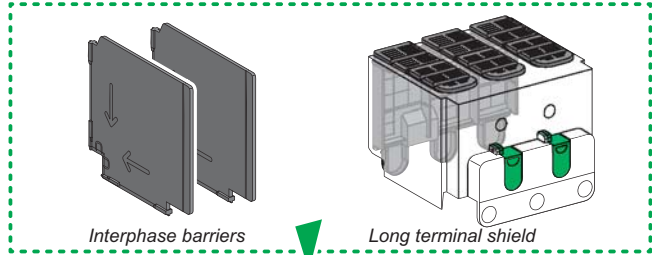
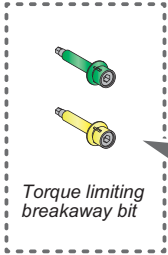
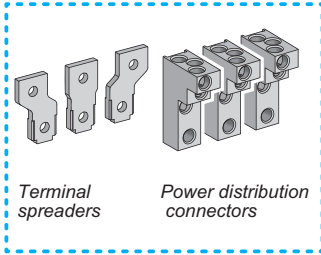
Functions and characteristics

Accessories and auxiliaries

Overview



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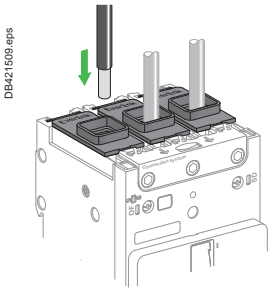


Accessories and auxiliaries

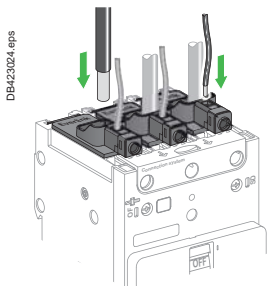
Power connection of fixed devices

A

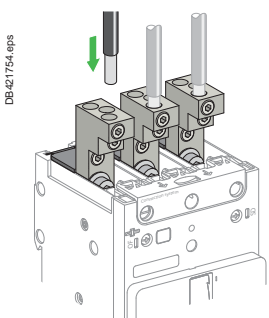
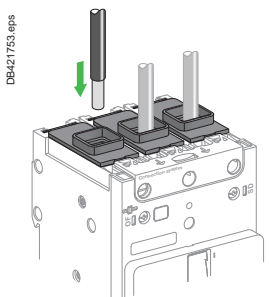
Fixed circuit breakers are designed for standard front connection using bare cables.
Bars or cables with lugs connectors are also available.



EverLink™ lug connector (standard).



EverLink™ lug connector with control wire terminal (spare part).



Power connection

Circuit breakers are delivered with EverLink™ lug connectors for bare cables. They may be delivered with connectors for bars or cables with compression lugs. Whatever, the connectors can be removed for the installation of one of the 4 kinds of connectors available (EverLink™ lug with control wire terminal, EverLink™ lug, compression lug / busbar, aluminium mechanical lug). For connection of large cables, a number of solutions with spreaders may be used for both cables with lugs or bars.

Bare cables

Standard terminal: EverLink™ lug connector

This type of connection uses the EverLink™ system with creep^[1] compensation (Schneider Electric patent). This technique makes it possible to achieve accurate and durable tightening torque, in order to avoid cable creep. When ordered as spare part, EverLink™ connectors have control wire terminal in order to make some measurement connection (limited to 10 A).

EverLink™ lugs for use with Al or Cu wire

Wire range		
Solid/stranded	Flexible	Torque
Power connection 15-160 A (Cu), 15-100 A (Al)		
2.5 - 10 mm ²	2.5 - 10 mm ²	5 N.m ±0.5
16 - 95 mm ²	16 - 70 mm ²	9 N.m ±0.9
Control wire terminal up to 10 A (Cu)		
1.5 - 6 mm ²	0.5 - 6 mm ²	1 N.m ±0.1

Aluminium mechanical connectors up to 125 A

The standard EverLink™ lugs can be removed for the installation of mechanical lugs. Lugs suitable for copper and aluminum conductors are made of tin-plated aluminum. The mechanical lugs are fastened to the terminals with lug mounting screws, inserted from the bottom of the circuit breaker. The lug cover is held in place with built-in snap features. They are sold as field installable kits.

Aluminium mechanical connectors, 15-125 A (Cu/Al)

Wire range	
Solid/stranded	Torque
2.5 - 6 mm ²	4 N.m ±0.4
10 - 70 mm ²	5.6 N.m ±0.6

[1] Creep: normal crushing phenomenon of conductors, that is accentuated over time.

[*] Available Q4 2017.

Accessories and auxiliaries

Power connection of fixed devices



Bars or cables with lugs

Compression lug / busbar connectors

The Compact NSXm circuit breakers may be equipped with captive nuts and M6 screws connectors. These are readily field-installable, simply by removing the EverLink™ lug and replacing with the appropriate terminal nut.

They are also available factory installed. These terminals may be used for:

- direct connection of insulated bars or cables with compression (crimp) lugs.
- terminal extensions offering a wide range of connection possibilities.

Compression lug / busbar connectors, 15-160 A	
Power connection	Torque
≤ 10 mm ²	5.0 N.m ±0.5
≥ 16 mm ²	9 N.m ±0.9

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

Crimp lugs large size cables

There are two models, for aluminium and for 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.

Crimp lugs for use with Compact NSXm					
Copper cables	size	rigid	70 mm ²	95 mm ²	120 mm ²
		flexible	50 mm ²	70 mm ²	95 mm ²
	crimping	hexagonal barrels or punching			
Aluminium cables	size	rigid	95 mm ²	120 mm ²	
	crimping	hexagonal barrels			

Bars

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

Bar and lugs dimensions					
Dimensions	A	B	C	D	E
mm	6.4	≤ 8	≤ 20	7	≥ 17

Spreaders

Spreaders may be used to increase the pitch from 21 mm to 35 mm. Bars or cable lugs can be attached to the ends.

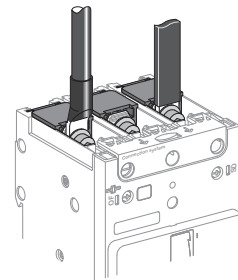
They are provided with M8 screws for power connection and interphase barriers (not compatible with long terminal shield). Rear insulation screens may have to be used too depending on the distance between the live uninsulated parts and the grounded metallic back pan (see page B-6).

Torque limiting breakaway bits

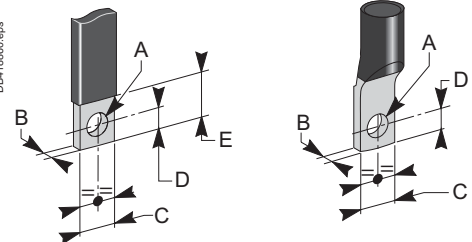
Torque limiting breakaway bits may be used, particularly in the field, to tighten at the right torque EverLink™, compression lug or busbar power connections.

Throwaway tips				Qty per kit
Circuit breaker application				
Frame	Ampere rating	Torque		
BD, BG, BJ	15-125 A	5 N.m		6 or 8
BD, BG, BJ	15-125 A	9 N.m		6 or 8

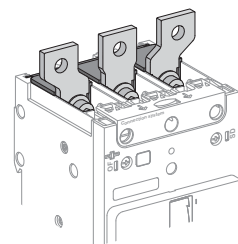
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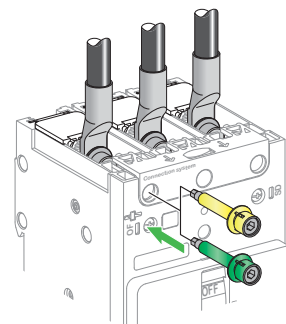
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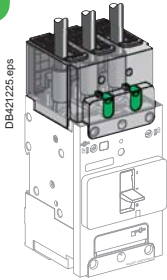
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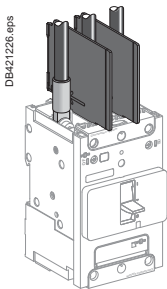
Accessories and auxiliaries

Insulation of live parts

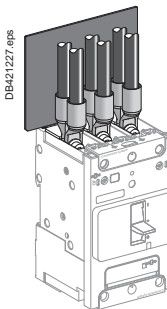
A



Long terminal shields.



Interphase barriers.



Rear insulating screens.

Long terminal shields IP40

Compact NSXm 3P or 4P can be equipped with long terminal shields. They can be mounted upstream and downstream and are used for protection against direct contact with power circuits. They provide IP40 degree of protection and IK07 mechanical impact protection. Moreover long terminal shields can be mounted after product installation on plate or DIN rail, and can be removed and put in place even if there are auxiliary wires.

They are used for connection with cables or insulated bars. They are comprised of two parts assembled with 2 locks and/or captive screws, forming an IP40 cover.

- The top part is transparent in order to be able to see the connection through it and is equipped with sliding grids with break marks for precise adaptation to cables or insulated bars.
- The rear part completely blocks off the connection zone. Partially cut squares can be removed to adapt to all types of connection for cables with lugs or copper bars.

Interphase barriers

Safety accessories for maximum insulation at the power-connection points:

- they clip easily onto the circuit breaker
- not compatible with long terminal shield
- 2 ways mounting: short / long insulation.

Rear insulating screens

Safety accessories providing insulation at the rear of the device.

Their use may be mandatory if no long terminal shield depending of the distance between bare conductors and backplate (see table [page B-6](#)).

The screen dimensions are shown below.

Circuit breaker		NSXm
3P	W x H x thickness (mm)	110 x 84 x 1
4P	W x H x thickness (mm)	145 x 84 x 1

Standard

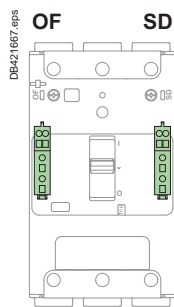
All Compact NSXm circuit breakers and switch-disconnectors have slots for the electrical auxiliaries listed below:

- 2 indication contacts (see page A-21) :
- 1 ON/OFF (OF)
- 1 trip indication (SD)
- either 1 MN undervoltage release or 1 MX shunt trip (see page A-22).

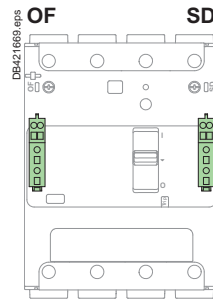
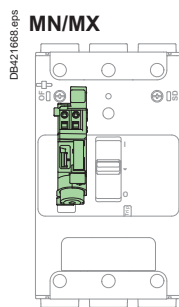
All these auxiliaries may be installed with a rotary handle or a toggle handle.

The following drawing indicates auxiliary possibilities depending on the type of device.

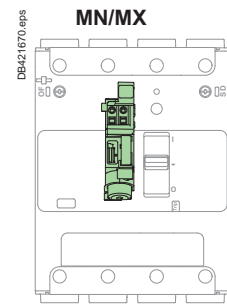
Thermal magnetic circuit breaker (TM-D), switch (NA)



3 poles device



4 poles device



Accessories and auxiliaries

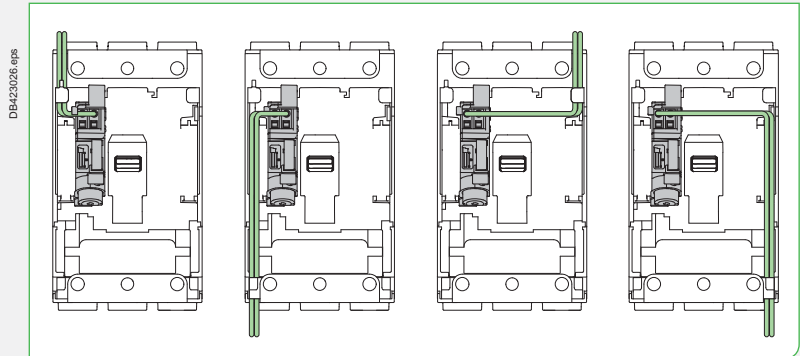
Connection of auxiliaries

A

Wiring

Electrical accessories are fitted with numbered spring terminal blocks for wires. The maximum wire size is 1.5 mm² for auxiliary switches (OF or SD), shunt trip MX or undervoltage release MN.

Electrical accessory wire routing can be exited out any of the four corners of the breaker, under the accessory cover even when using long terminal shield



Auxiliary and alarm indication contacts

Indication contacts provide remote information of the circuit breaker status and can thus be used for indications, electrical locking, relays, etc.

They are common point changeover type contacts, with a normally open (NO) contact and a normally closed (NC) contact.

Open/Closed - Auxiliary switches (OF)

- Indicates the position of the circuit breaker contacts.

Trip indication - Alarm switch (SD)

- Indicates that the circuit breaker has tripped due to:
 - an electrical fault (overload, short circuit)
 - the operation of a shunt trip
 - undervoltage release
 - the "push-to-trip" button.
- Resets when the circuit breaker is reset.

Installation and connection

- The auxiliary switch (OF) and alarm switch (SD) indication contacts snap into cavities behind the front accessory cover of the circuit breaker and their presence is visible on the front face through green flags.
- One model serves for all indication functions depending on where it is fitted in the circuit breaker.
- Each NO and NC spring terminal may be connected by one 0.5...1.5 mm² flexible copper wire and by two for the common point.

Electrical characteristics of auxiliary contacts

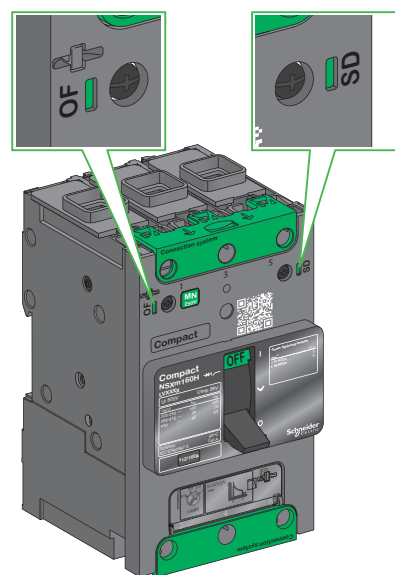
Characteristics						
Rated thermal current (A)	5					
Minimum load	5 mA at 17 V DC					
Utilization cat. (IEC 60947-5-1)	AC12	AC15	DC12	DC13	DC14	
Operational current (A)	24 V AC/DC	5	5	5	2.5	1
	48 V AC/DC	5	5	2.5	1.2	0.2
	110...127 V AC / 110 V DC	5	4	0.6	0.35	0.05
	220/240 V AC	5	3	-	-	-
	250 V DC	-	-	0.3	0.05	0.03
	380/440 V AC	5	2.5	-	-	-
660/690 V AC	5	0.11	-	-	-	

Standards

- Auxiliary indicator contacts comply with IEC 60947-5-1 Standards.
- Auxiliary contacts have also been tested according IEC 60 947-5-4 standard.



Auxiliary Switch (OF) /
Alarm Switch (SD).



Accessories and auxiliaries

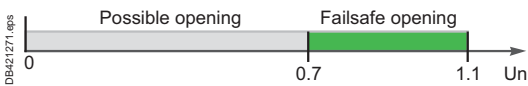
Voltage release

A

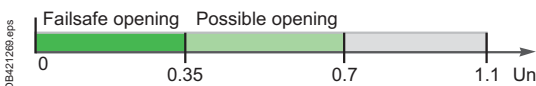


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MX or MN voltage release.



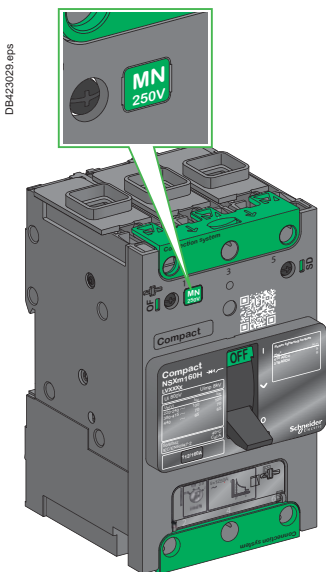
Opening conditions of the MX release.



Opening conditions of the MN release.



Closing conditions of the MN release.



DB423293 eps

Operating voltages for MN/MX.

Shunt trip (MX) and undervoltage release (MN)

A voltage release can be used to trip the circuit breaker using a control signal. They serve primarily for remote, emergency-off commands. It is advised to test the system every six months.

Shunt trip (MX)

- Trips the circuit breaker when the control voltage rises above 70 % of its rated voltage (U_n).
- Impulse type ≥ 20 ms or maintained control signals.
- Shunt trip 110...130 V AC is suitable for ground-fault protection when combined with a Class I ground-fault sensing element.
- Continuous duty rated coil [1].

Undervoltage release (MN)

- Trips the circuit breaker when the control voltage drops below 35 % of its rated voltage.
- Between 35 % and 70 % of the rated voltage opening is possible but not guaranteed.
- Above 70 % of the rated voltage, opening does not take place.
- Continuous duty rated coil.
- Circuit breaker closing is possible only if the voltage exceeds 85 % of the rated voltage. If an undervoltage condition exists, operation of the closing mechanism of the circuit breaker will not permit the main contacts to touch, even momentarily. This is commonly called "Kiss Free".

Time-delay unit for an undervoltage release (MN)

- A time delay unit eliminates the risk of nuisance tripping due to a transient voltage dip lasting less than 200 ms for fixed delay units and up to 3 seconds for adjustable units. For shorter micro-outages, a system of capacitors provides temporary supply to the MN at $U > 0.7 U_n$ to ensure non tripping.

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

Power supply	Corresponding MN
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

Installation and connection

- Accessories snap into cavities under the front accessory cover of the circuit breaker. The presence and characteristics of the voltage release is visible from the front face through a window
- Terminals are spring type in order to insure a fast and reliable connection
- Each terminal may be connected by one 0.5...1.5 mm² flexible copper wire.

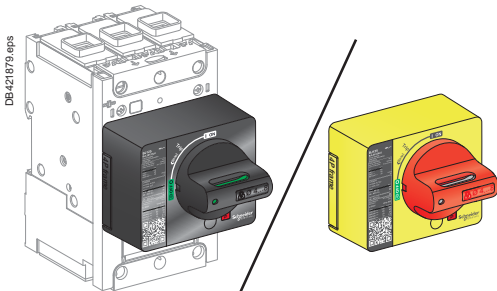
Operation

- The circuit breaker must be reset locally after being tripped by shunt trip (MX) or undervoltage release (MN)
- Tripping by the shunt trip or undervoltage release has priority over manual closing; in the presence of a standing trip order such an action does not result in any closing, even temporarily, of the main contacts
- Endurance: 50 % of the rated mechanical endurance of the circuit breaker.

Standard

- MN/MX voltage releases comply with IEC 60947-2 Standards.

[1] Except for MX 24 V AC/DC (in case of continuous activation, may generate some minor perturbation in sensitive environment).



Directly mounted rotary handle.

Direct rotary handles

Installation

The direct mounted rotary handle has to be mounted by 3 screws on the front accessory cover.

Operation

The direct rotary handle maintains:

- suitability for isolation
- indication of the three positions OFF (O), ON (I) and tripped (Trip)
- access to the “push-to-trip” button
- visibility and access to the trip unit.

Device padlocking

The circuit breaker may be locked in the OFF position by using one to three padlocks (not supplied) or in ON position after customer modification of the rotary handle before installation, padlock shackle Ø4-8 mm. Locking in the ON position does not prevent the circuit breaker from tripping if a fault occurs. In this case, the handle remains in the ON position after the circuit breaker trips. Unlocking is required for the handle to go to the tripped then the OFF position.

Variations: door locking

Door locking built-in functionality can be activated by the customer to prevent opening the door when the circuit breaker is ON or in trip position. For exceptional situations, door locking can be temporarily disabled with a tool by qualified personnel to open the door when the circuit breaker is closed.

Models

- Standard with black handle.
- VDE type with red handle and yellow bezel for machine tool control.

Extended rotary handles

Installation

The door-mounted (extended) rotary handle is made up of:

- a unit that has to be screwed on the front accessory cover of the circuit breaker
- an assembly (handle mechanism and front plate) on the door that is always secured in the same position, whether the circuit breaker is installed vertically or horizontally
- an adjustable extension shaft.

The handle mechanism is fixed with a nut (Ø22 mm) assembly easier. The Laser Square tool (GVAPL01) can be used to accurately align the hole on the door with the circuit breaker.

Operation when door is closed

The door mounted handle makes it possible to operate a circuit breaker installed in an enclosure from the front. The door mounted operating handle maintains:

- suitability for isolation
- indication of the three positions OFF (O), ON (I) and tripped (Trip)
- visibility and access to trip unit when the door is open
- degree of protection of the handle on the door: IP54 or IP65 as per IEC 529.

Mechanical door locking when device closed

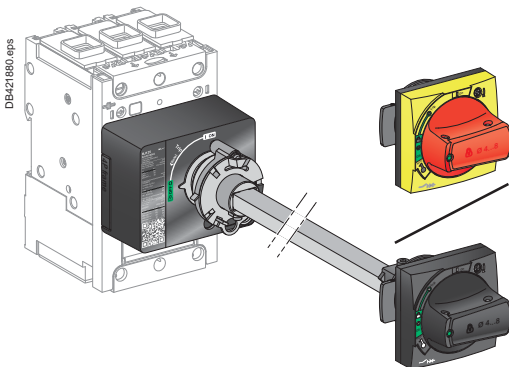
A standard feature of the extended rotary handle is a locking function, built into the shaft, that disables door opening when the circuit breaker is in the ON or tripped positions.

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

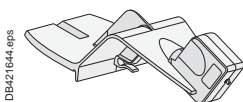
Device and door padlocking

Padlocking locks the circuit breaker handle and disables door opening:

- standard situation, in the OFF position, using 1 to 3 padlocks, shackle Ø4-8 mm, padlocks are not supplied
- for the black handle, with a voluntary modification of the door handle (to be done by the customer during installation), in the ON and OFF positions. Locking in the ON position does not prevent the circuit breaker from tripping if a fault occurs. In this case, the handle remains in the ON position after the circuit breaker trips. Unlocking is required for the handle to go to the tripped then the OFF position.



Door-mounted rotary handle.



Laser Square tool.

Accessories and auxiliaries

Rotary handles

A

Operation when door is opened

An open door shaft operator can be used to operate the circuit breaker when door is opened. This accessory complies with UL508.

The indication of the three positions OFF (O), ON (I) and tripped (Trip) is visible on the circuit breaker.

The circuit breaker itself may be locked in OFF position when the door is opened by 1 padlock / lockout hasp, shackle \varnothing 4-8 mm.

Shaft length

The shaft length is the distance between the back of the circuit breaker and the door:

- minimum shaft length is 200 mm
- maximum shaft length is 600 mm
- shaft length must be adjusted.

Models

- Standard with black handle (IP54).
- VDE type with red handle and yellow bezel for machine tool control (IP54).
- IP65 with red handle and yellow bezel.

Side rotary handles (left or right)**Installation**

The side-mounted rotary handle is made up of:

- a unit that has to be screwed on the front accessory cover of the circuit breaker
- an assembly (handle and front plate) on the side (left or right) of the enclosure
- an adjustable extension shaft
- IP54 handle mechanisms
- IP65 handle mechanisms.

The handle mechanism is fixed with a nut (\varnothing 22 mm) to make easier the assembling.

Operation

The side mounted rotary handle makes it possible to operate circuit breakers installed in enclosure from the side. The side mounted rotary handle maintains:

- suitability for isolation
- indication of the three positions OFF (O), ON (I) and tripped (Trip). Moreover, the position is visible on the circuit breaker itself.
- visibility and access to trip unit when the door is open
- degree of protection of the handle on the side: IP54 or IP65 as per IEC 529.

Device padlocking

The circuit breaker may be locked in the OFF position, or, for the black rotary handle only, in ON position after voluntary modification of the side handle (to be done by the customer during installation), by using one to three padlocks, padlock shackle \varnothing 4-8 mm ; padlocks are not supplied.

Locking in the ON position does not prevent free circuit breaker from 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.

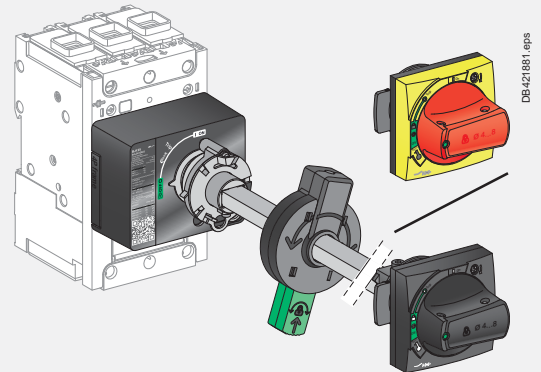
Shaft length

The shaft length is the distance between the side of the circuit breaker and the side of the enclosure:

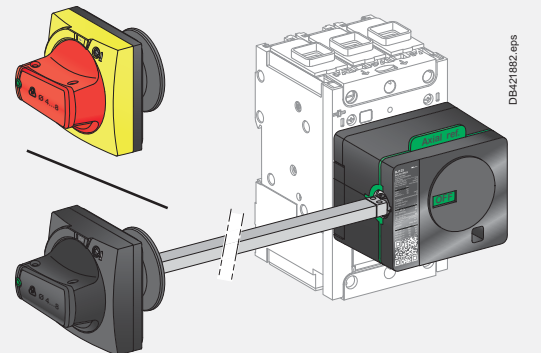
- minimum shaft length is 45 mm
- maximum shaft length is 480 mm
- shaft length must be adjusted.

Models

- Standard with black handle (IP54).
- VDE type with red handle and yellow bezel for machine tool control (IP54).
- IP65 with red handle and yellow bezel (by ordering a standard one and an IP65 universal handle).



Door-mounted rotary handle with open door shaft operator.



Side mounted rotary handle.

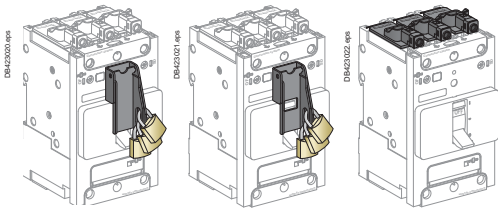
Accessories and auxiliaries

Locks and sealing accessories



Handle padlocking device ^[1]

Fixed (OFF only) **Fixed (OFF or ON)** **Removable (OFF only)**



[1] Rotary handle has integrated padlocking capability.

Locks

Padlocking systems can receive up to three padlocks with diameters of 5-8 mm ; padlocks not supplied. Locking in the OFF position guarantees isolation as per IEC 60947-2.

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 handle	Lock in OFF position	Padlock	Fixed device
	<ul style="list-style-type: none"> ■ OFF position ■ OFF or ON position ^[1] 	Padlock	-
Extended/side rotary handle	Lock in OFF position	Padlock	-
	<ul style="list-style-type: none"> ■ OFF or ON position ^[2] with door opening prevented 		

[1] Following a simple modification of the mechanism.

[2] Following a simple modification of the mechanism - black handle only.

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:

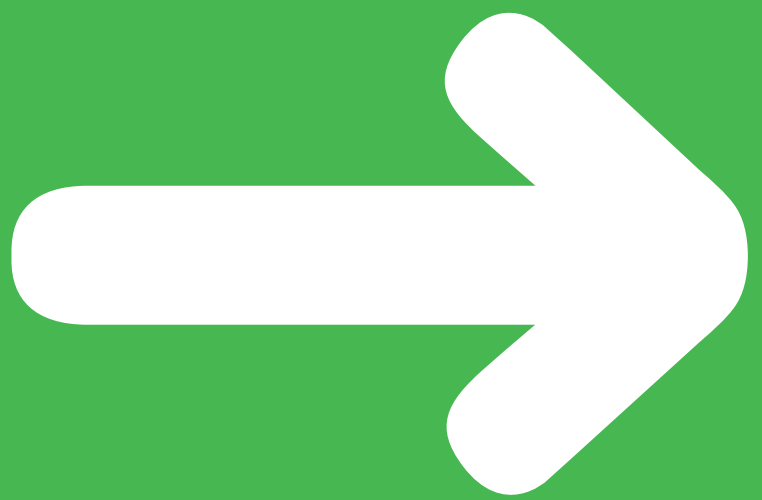
- 6 sealing accessories
- 6 lead seals.



LV429335: Bag of sealing accessories.

Types of seals and corresponding functions

Control type	Protected operations		
	<ul style="list-style-type: none"> ■ Front removal ■ Access to auxiliaries. 	<ul style="list-style-type: none"> ■ Access to power connections 	<ul style="list-style-type: none"> ■ Access to settings and test connector
Toggle			
Rotary handle			



Installation recommendations

Operating and installation conditions.....	B-2
Safety clearances and minimum distances.....	B-6
Voltage release wiring rules.....	B-8



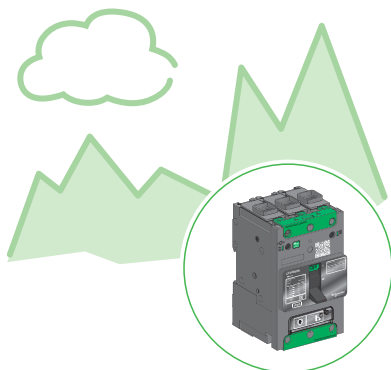
Other chapters

Functions and characteristics	A-1
Dimensions and connection	C-1
Wiring diagrams.....	D-1
Additional characteristics	E-1
Catalogue numbers	F-1

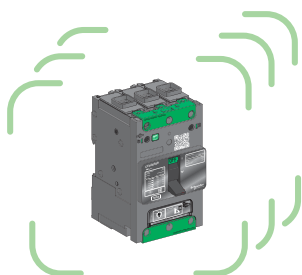
Operating and installation conditions

B

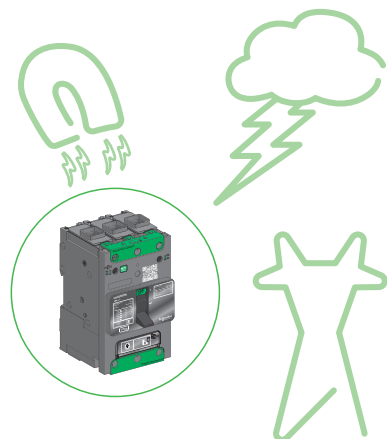
DB421514.eps



DB421515.eps



DB421516.eps



Altitude derating

Altitude does not significantly affect the characteristics of Compact NSXm circuit breakers up to 2000 m. Above this altitude, it is necessary to take into account the decrease in the dielectric strength and cooling capacity of air.

The following table gives the corrections to be applied for altitudes above 2000 m. The breaking capacities remain unchanged.

Altitude (m)		2000	3000	4000	5000
Impulse withstand voltage (kV)		8	7.1	6.4	5.6
Insulation voltage (V)	U _i	800	710	635	560
Maximum operational voltage (V)	U _e	690	690	635	560
Average current capacity (A) at 40 °C	In x	1.0	0.98	0.96	0.94

Vibrations

Compact NSXm devices resist mechanical vibrations.

They meet IEC 60068-2-6:

- 2.0 to 13.2 Hz and amplitude ±1 mm
- 13.2 to 100 Hz acceleration ±0.7 g.

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

Electromagnetic disturbances

Compact NSXm devices are protected against:

- overvoltages caused by circuit switching
- overvoltages caused by an 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 directly by users.

Compact NSXm devices have successfully passed the electromagnetic-compatibility tests (EMC) defined by the international standards listed [page A-3](#).


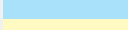
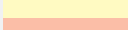

These tests ensure that:

- no nuisance tripping occurs
- tripping times are respected.

Operating and installation conditions

Protection degree

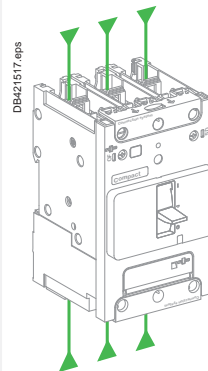
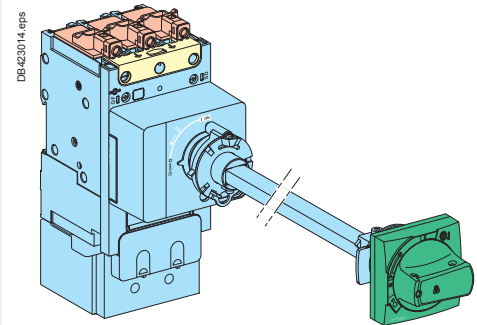
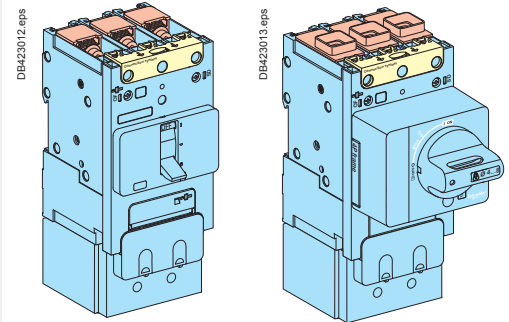
Protection degree of the product, according to IEC60259, depends of its configuration:

Colours	Definition
	IP54/65: side / front extended rotary handle
	IP40: front cover, side, back, long terminal shield, direct rotary handle
	IP20: power connection cover
	may be IP20 or less depending of the kind of power connections and cable size used

Power supply from the top or bottom

Compact NSXm circuit breakers can be supplied from either the top or the bottom, without any reduction in performance. This capability facilitates connection when installed in a switchboard.

All connection and insulation accessories can be used on circuit breakers supplied either from the top or bottom.



B

Operating and installation conditions

B

Derating and correction factor depending of temperature

The overload protection is calibrated at 40 °C in the lab. This means that when the ambient temperature is less or greater than 40 °C, the Ir protection pick-up is slightly modified.

Choosing the right rating depending of the temperature:

Over the reference temperature of 40 °C, the circuit breaker has to be derated following the table below:

Temperature derating for thermal-magnetic (TM-D) NSXm at In						
Temperature °C						
40	45	50	55	60	65	70
Rating (A) In						
16	16	15	15	14	14	13
25	24	24	23	23	22	21
32	31	30	30	29	28	27
40	39	38	37	36	34	33
50	49	48	46	45	44	42
63	61	60	58	56	54	53
80	77	73	70	67	64	60
100	96	94	90	87	83	80
125	120	117	113	109	104	100
160	155	149	144	139	133	126

Operating and installation conditions

Doing the setting or calculating the tripping time for a given temperature:

After having determine the corrected ratio I/I_n , the tripping time at 40 °C is defined with the tripping curves (see page E-2 to page E-3).

To obtain the right setting or the tripping time at a different temperature, the ratio I/I_n has to be corrected with the correction factor below:

Correction factor table for thermal magnetic (TM-D) NSXm to determine setting or tripping time at I_n

Rating (A)	Temperature °C												
I_n	10	15	20	25	30	35	40	45	50	55	60	65	70
16	1.16	1.13	1.11	1.08	1.05	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.81
25	1.13	1.11	1.09	1.07	1.05	1.02	1.00	0.98	0.95	0.93	0.90	0.88	0.85
32	1.14	1.11	1.09	1.07	1.05	1.02	1.00	0.98	0.95	0.93	0.90	0.87	0.84
40	1.15	1.12	1.10	1.08	1.05	1.03	1.00	0.97	0.95	0.92	0.89	0.86	0.83
50	1.13	1.11	1.09	1.07	1.05	1.02	1.00	0.98	0.95	0.93	0.90	0.87	0.85
63	1.14	1.12	1.10	1.07	1.05	1.02	1.00	0.97	0.95	0.92	0.89	0.86	0.83
80	1.21	1.18	1.14	1.11	1.07	1.04	1.00	0.96	0.92	0.88	0.83	0.80	0.75
100	1.18	1.16	1.12	1.10	1.06	1.04	1.00	0.96	0.94	0.90	0.87	0.83	0.80
125	1.17	1.14	1.11	1.08	1.06	1.03	1.00	0.96	0.93	0.90	0.87	0.84	0.80
160	1.17	1.15	1.12	1.09	1.06	1.03	1.00	0.97	0.93	0.90	0.87	0.83	0.79

Doing the right setting depending of the temperature:

Example: What is the setting to obtain a real I_r of 105 A, taking into account the temperature, for a Compact NSXm 125 A?

The necessary dial setting, in amperes, is shown below.

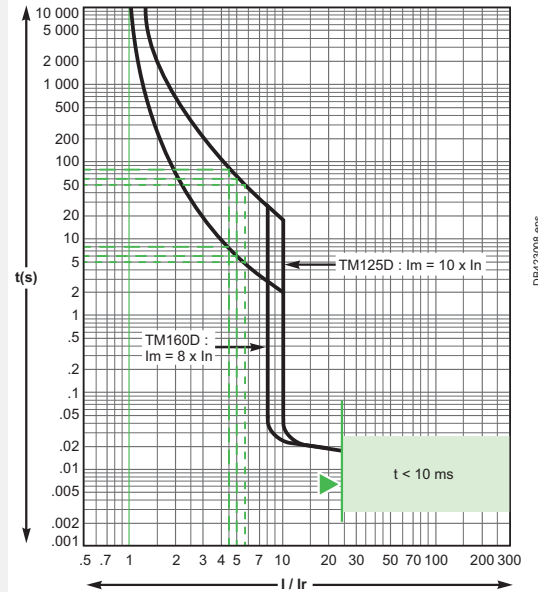
- At 40 °C, $I_r = 105 / 1 = 105$ A
- At 20 °C, $I_r = 105 / 1.11 = 95$ A
- At 60 °C, $I_r = 105 / 0.87 = 121$ A.

Calculating the tripping time at $I_r = I_n$ for a given temperature:

Example: What is the tripping time of a Compact NSXm 100A at $I_r = I_n$ for an overload of 500 A?

- At 40 °C, $I/I_r = 5$, tripping time is between 6 and 60 seconds
- At 20 °C, $I/I_r = 5 / 1.12 = 4.46$, tripping time is between 8 and 80 seconds
- At 60 °C, $I/I_r = 5 / 0.87 = 5.75$, tripping time is between 5 and 50 seconds

For $I_r = 0.7$ to $0.9 I_n$, additional correction factor need to be applied - please consult us.



DE422008 eps

Safety clearances and minimum distances

B

General rules

When installing a 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
- segregate the busbars using insulating screens.

For Compact NSXm devices, terminal shields and interphase barriers are recommended and may be mandatory depending on the kind of power connections of the device and type of installation.

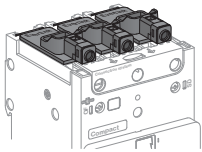
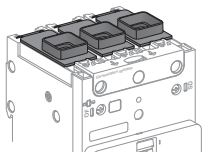
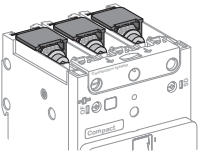
Power connections

The table below indicates the rules to be respected for Compact NSXm devices to ensure insulation of live parts for the various types of connection.





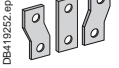

Connection accessories such as crimp lugs, power distribution connectors, and spreaders are supplied with interphase barriers.

Long terminal shields provide a degree of protection of IP40 (ingress) and IK07 (mechanical impact).

Compact NSXm: rules to be respected to ensure insulation of live parts

	EverLink™ connector with or without control wire terminal	Mechanical lug connector	Compression lug / busbar connector
	 DB421518.eps	 DB418827.eps	 DB421519.eps

Insulation accessory options per conductor type

Type of conductor	No insulating accessory	Interphase barriers	Long terminal shield	No insulating accessory	Interphase barriers	Long terminal shield	No insulating accessory	Interphase barriers	Long terminal shield
Cables  DB419248.eps	Possible	Possible	Possible	Possible	Possible	Possible	-	-	-
Insulated bars  DB419249.eps	-	-	-	-	-	-	Forbidden	Mandatory	Possible ^[1]
Cables + crimp lugs  DB419250.eps  DB419251.eps	-	-	-	-	-	-	Forbidden	Mandatory	Possible ^[1]
Extension terminals: spreader  DB419252.eps	-	-	-	-	-	-	Forbidden	Mandatory	-
Extension terminals: cables + power distribution connector  DB419253.eps	-	-	-	-	-	-	Forbidden	Mandatory	Possible ^[1]

[1] Instead of phase barriers.

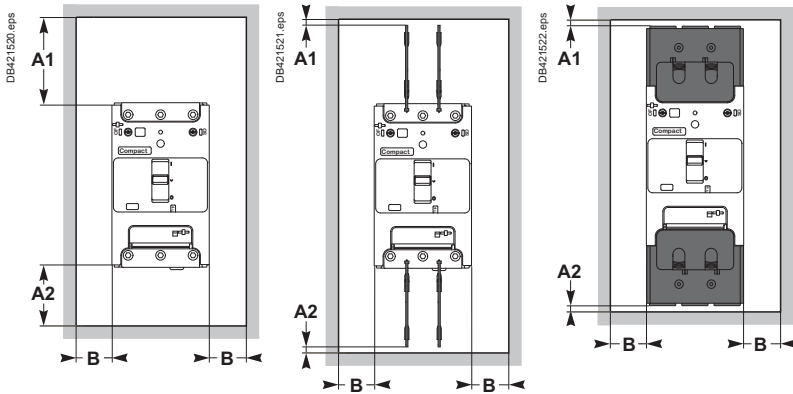
Note: For uninsulated bar connections, please consult us.

Safety clearances and minimum distances



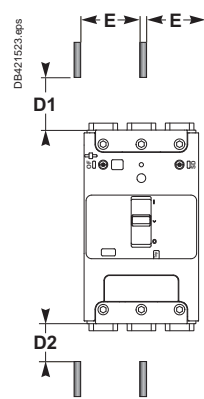
IEC standard

Minimum safety clearances



Operating voltage	Clearance (mm) Between devices	Between device and sheet metal					
		Painted sheet metal			Bare sheet metal		
		A1	A2	B	A1	A2	B
U ≤ 690 V							
for devices equipped with:							
no accessories	0	30 mm	5 mm	0	40 mm	5 mm	5 mm
interphase barriers	0	0	0	0	0	0	5 mm
long terminal shields	0	0	0	0	0	0	5 mm

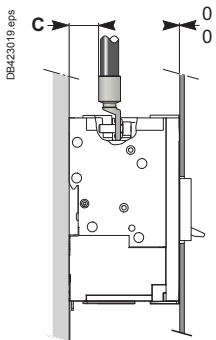
Minimum safety clearances to bare busbars



Operating voltage	Clearances to live bare busbars ^[1]			
	Spacing E ≤ 60 mm		Spacing E > 60 mm	
	D1	D2	D1	D2
U ≤ 690 V	200 mm	100 mm	120 mm	60 mm

[1] These clearances can be reduced for special installations as long as the configuration is checked by tests.

Compression lug safety clearance

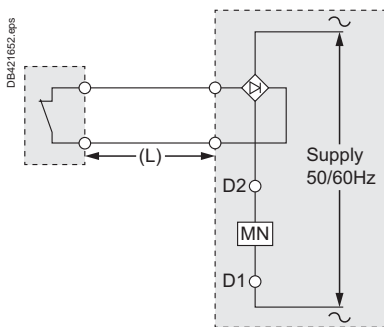
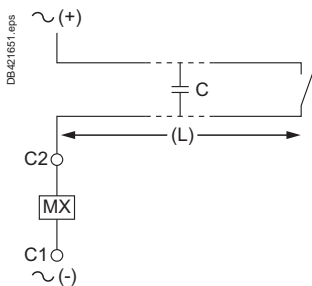
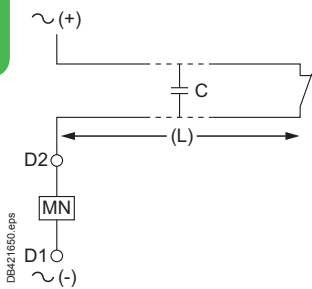


An insulating screen or long terminal shield is required if C < 9.5 mm.

B

Voltage release wiring rules

B



Shunt trip (MX) and undervoltage release (MN)

Recommended maximum cable lengths

In certain circumstances, high cable capacitance due to an excessive cable length could prevent an undervoltage release MN from dropping out resulting in safety issues. In case of a shunt trip MX, an untimely trip may occur due to capacitive current leak.

To avoid these dysfunction due to cable capacitance C, the maximum cable length (L) is defined by the following table for a 1.5 mm² cable.

Power supply voltage (Un)	Maximum cable length undervoltage trip (MN) [1]	Shunt trip (MX) [1]
24 V AC	1 243 m	3 653 m
24 V DC	unlimited	> 3653 m
48 V AC	583 m	1 667 m
48 V DC	unlimited	> 1667 m
110...130 V AC	126 m	913 m
110...130 V DC	unlimited	> 913 m
208-240 V AC	109 m	160 m
250 V DC	unlimited	> 160 m
277 V AC	98 m	120 m
380-415 V AC	86 m	80 m
440-480 V AC	56 m	67 m

[1] Make sure auxiliaries supply voltage is within working range (0.85 Un mini...1.1 Un maxi).

If a longer cable length is required, several solutions are possible to counteract excessive cable capacitance:

- use DC operated auxiliaries
- use lower control voltage (make sure auxiliaries supply voltage is within working range: 0.85 Un minimum...1.1 Un maximum)
- if high voltage and long control cables are required for an AC undervoltage release (MN), add a rectifier bridge (ref LV426899 – DIN rail compatible) in the control circuit. It will prevent drop out problems but increase operating time.

Electrical characteristics of MN/MX

Characteristics			AC	DC
Rated voltage (V)			24, 48, 110...130, 208...240, 277, 380...415, 440...480	24, 48, 125, 250
Power requirements	MX	Pickup (< 50 ms)	< 6 VA	< 10 W
		Seal-in	< 4 VA	< 1 W
	MN		< 7 VA	< 2 W
Clearing time (ms)			< 50	< 50
Operating range			up to 1.1 Un	

Dimensions and connection

Circuit breaker and switch-disconnector

Compact NSXm	C-2
Circuit breaker	C-2
Connectors	C-3
Insulation of live parts	C-4
Mounting on backplate	C-6
Mounting on DIN rail	C-6
Direct rotary handle	C-7
Extended rotary handle	C-8
Dimensions and front-panel cutout	C-8
Connection with accessories	C-9

C

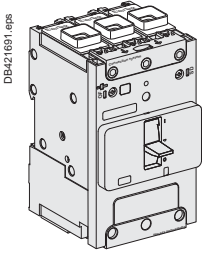
Other chapters

Functions and characteristics	A-1
Installation recommendations	B-1
Wiring diagrams	D-1
Additional characteristics	E-1
Catalogue numbers	F-1

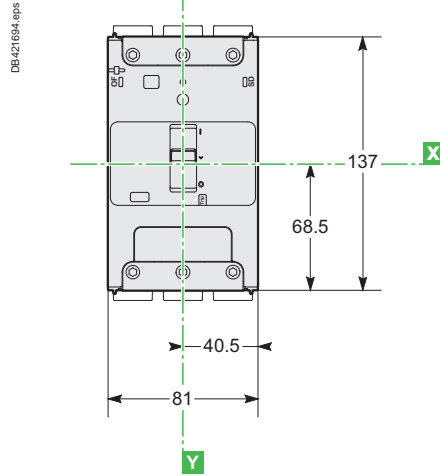
Circuit breaker and switch-disconnector

Compact NSXm

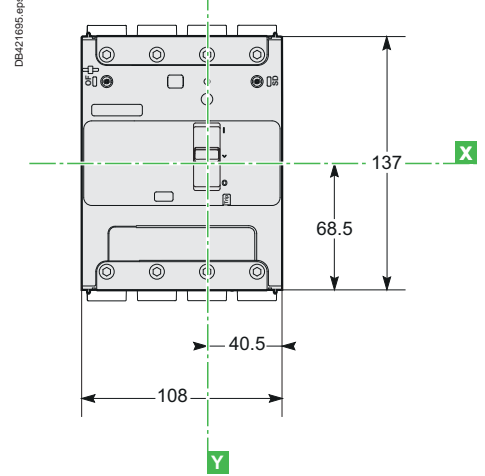
Circuit breaker



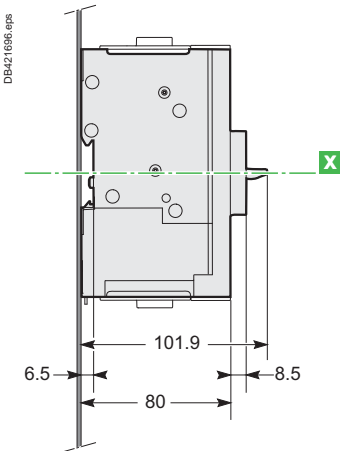
3P



4P



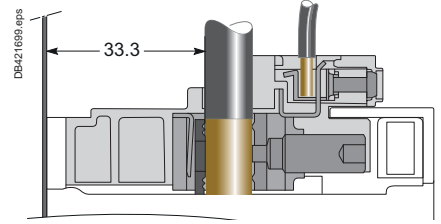
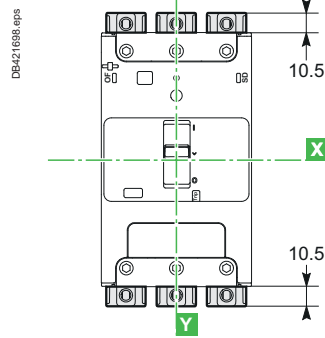
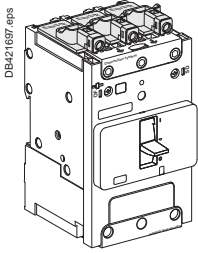
Side view



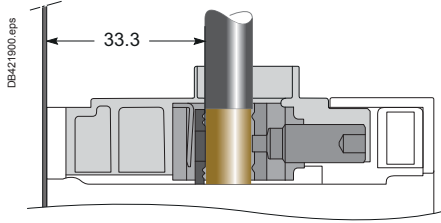
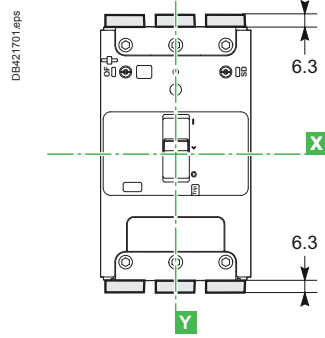
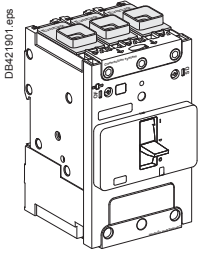
Circuit breaker and switch-disconnector Compact NSXm

Connectors

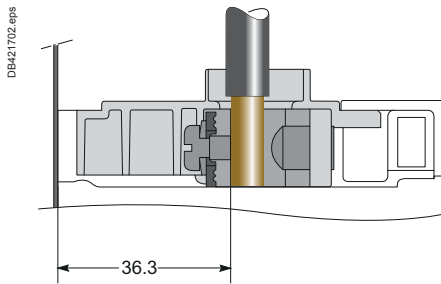
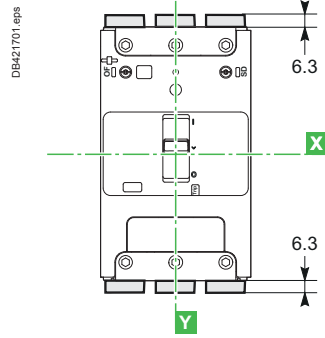
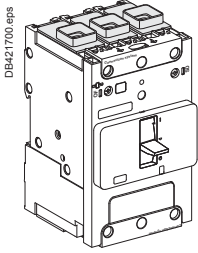
EverLink™ with control wire terminal connector



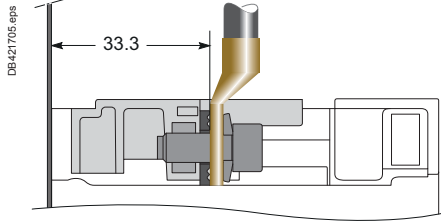
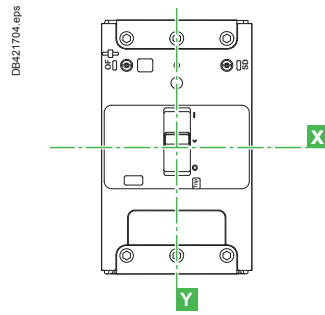
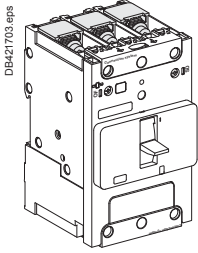
EverLink™ without control wire terminal connector



Mechanical lug connector



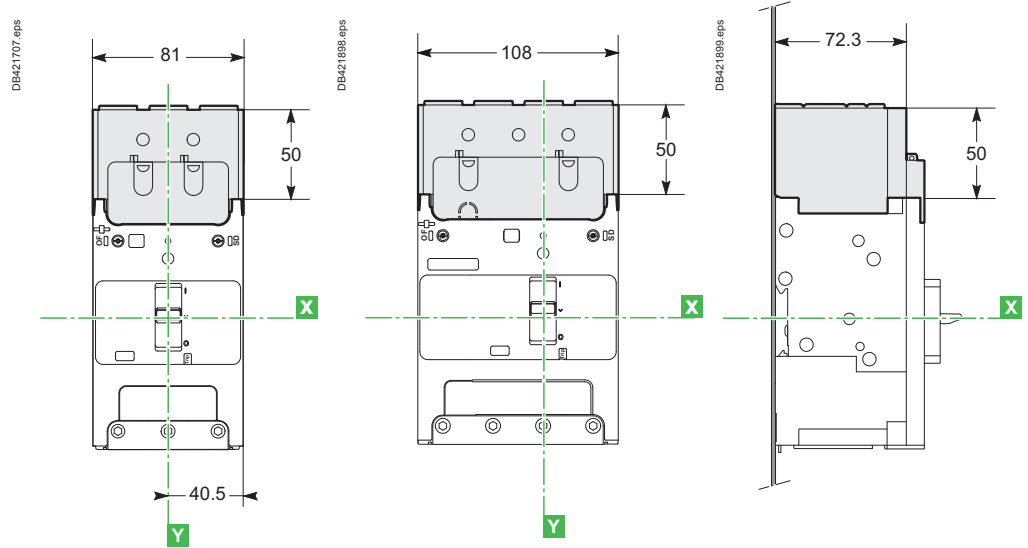
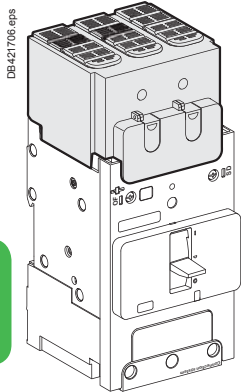
Compression lug / busbar connector



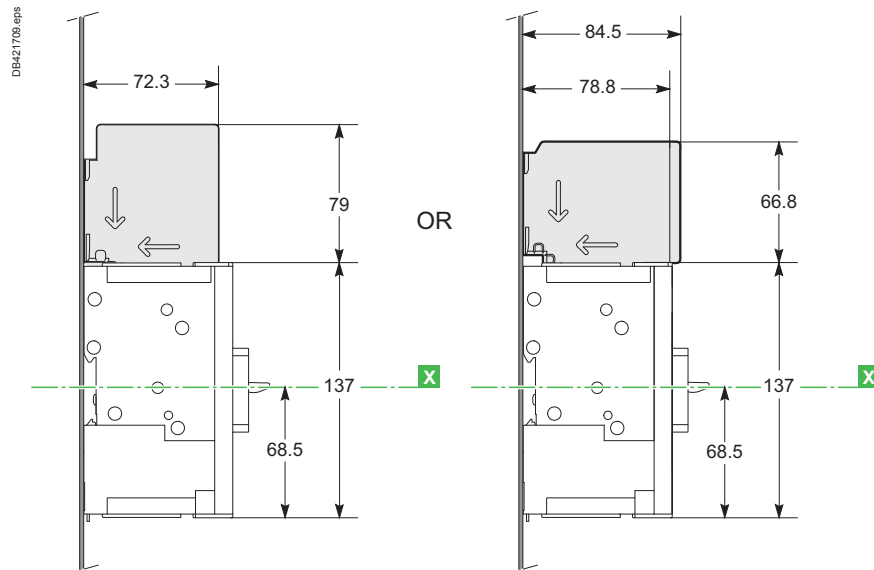
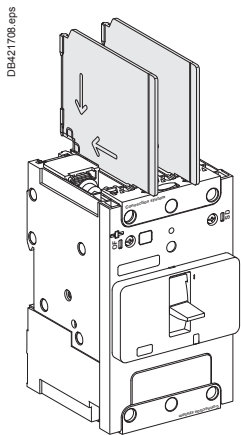
Circuit breaker and switch-disconnector Compact NSXm

Insulation of live parts

Long terminal shields

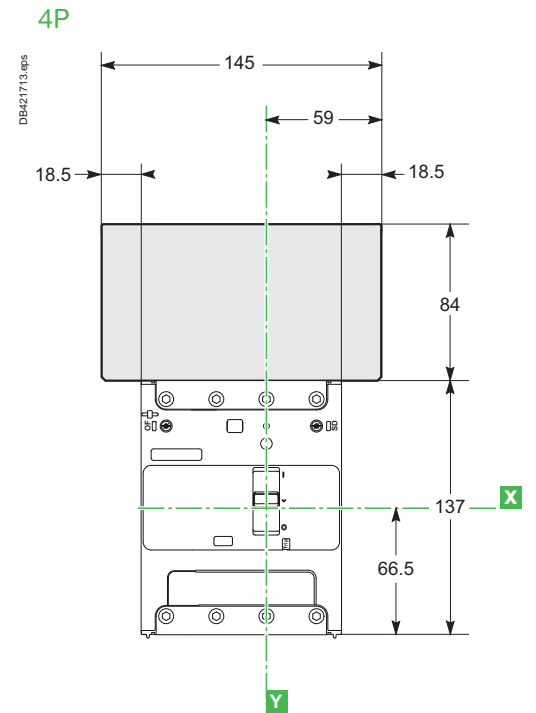
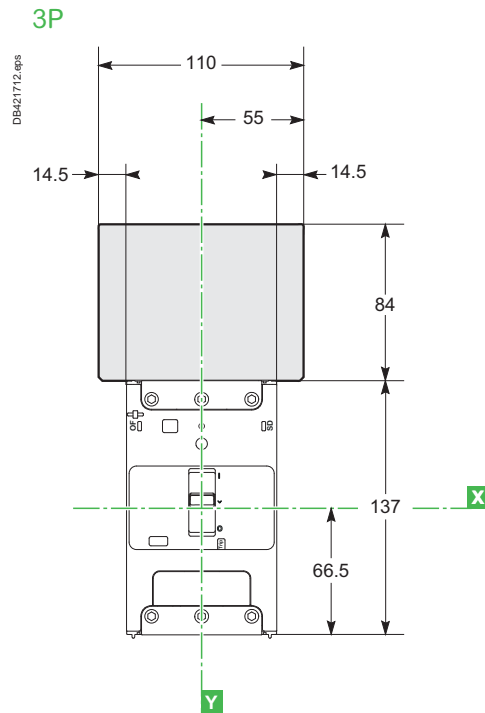
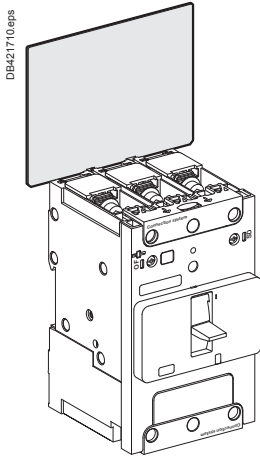


Interphase barriers



Circuit breaker and switch-disconnector Compact NSXm

Rear insulating screens

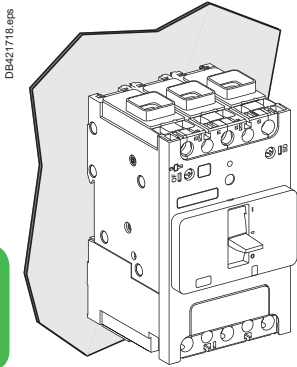


Circuit breaker and switch-disconnector

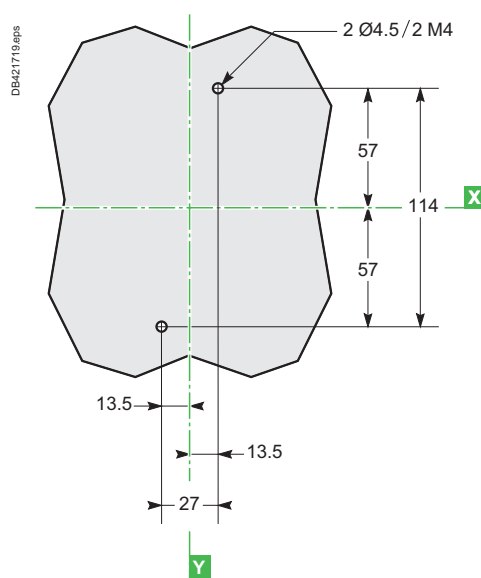
Compact NSXm

Mounting on backplate

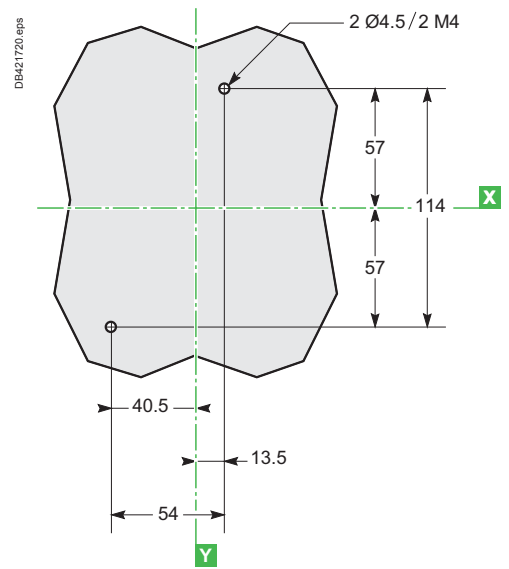
3P/4P



3P

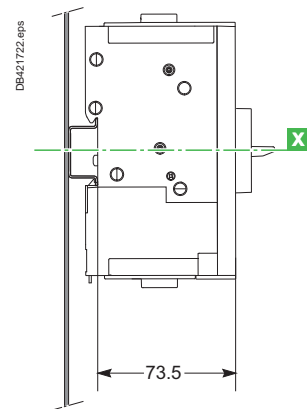
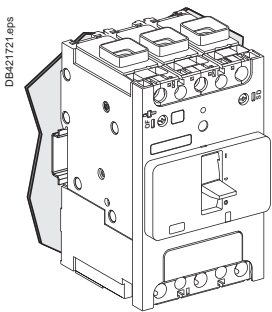


4P



Mounting on DIN rail

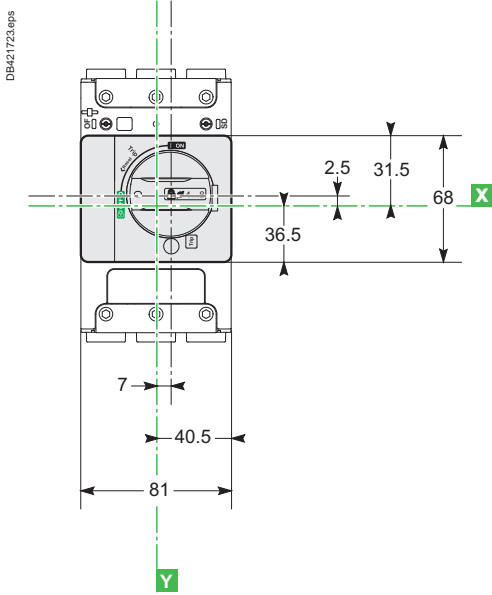
3P



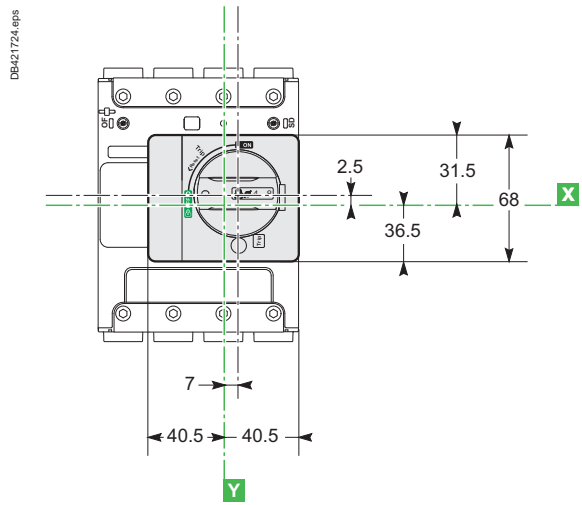
Circuit breaker and switch-disconnector Compact NSXm

Direct rotary handle

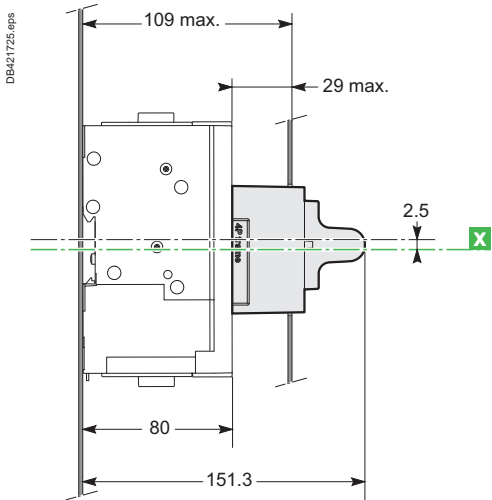
3P



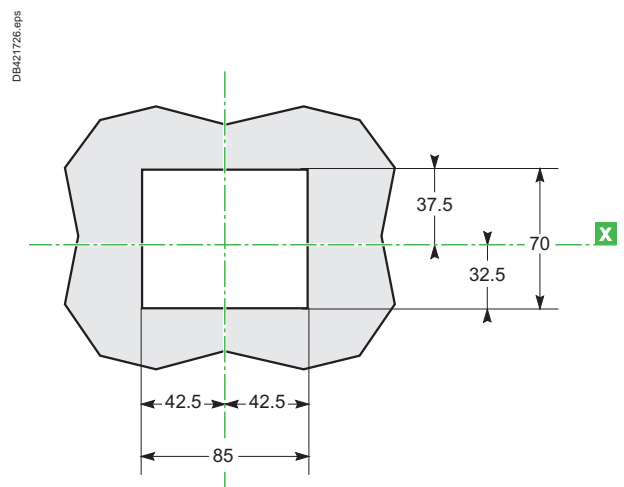
4P



Side view



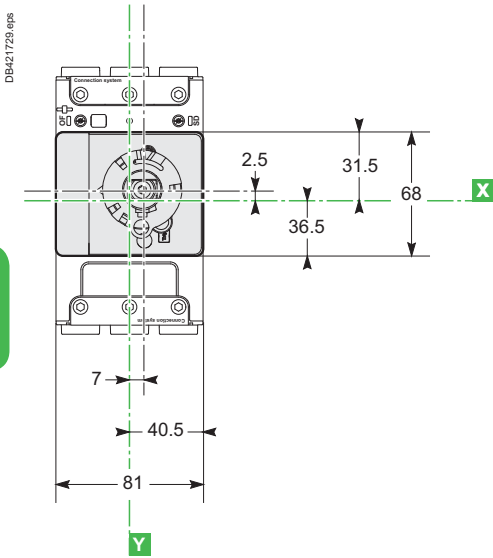
Door cutout for 3P/4P



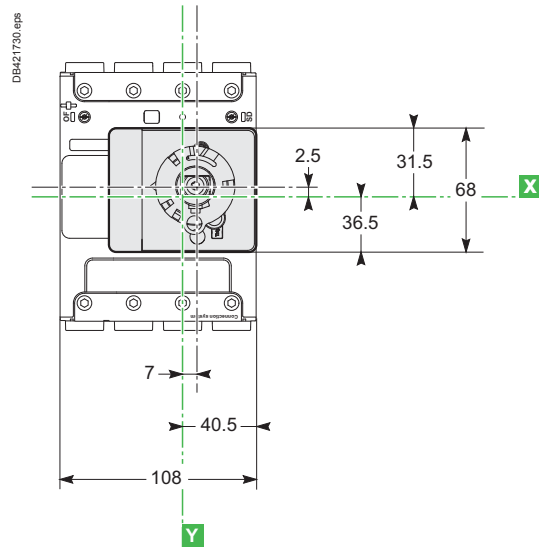
Circuit breaker and switch-disconnector Compact NSXm

Extended rotary handle

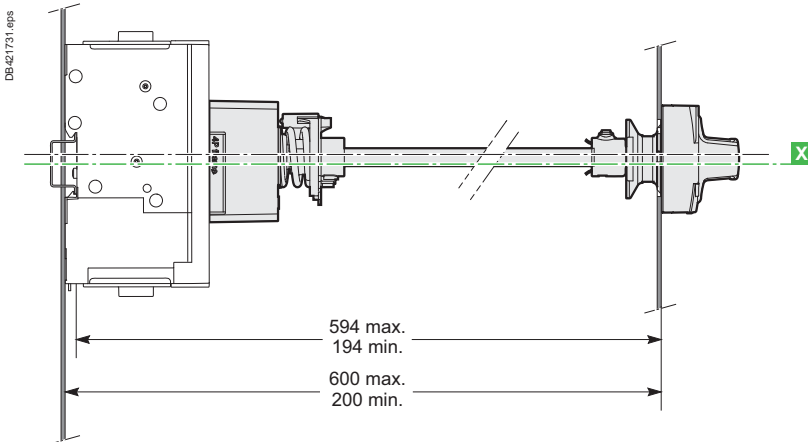
3P



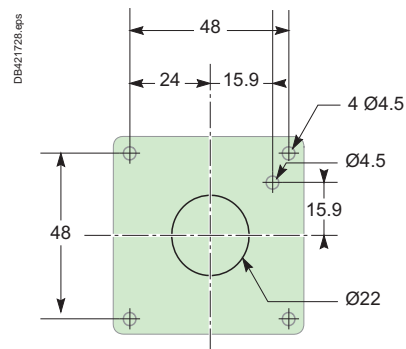
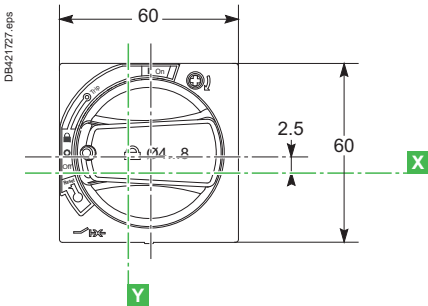
4P



3P/4P



Dimensions and front-panel cutout



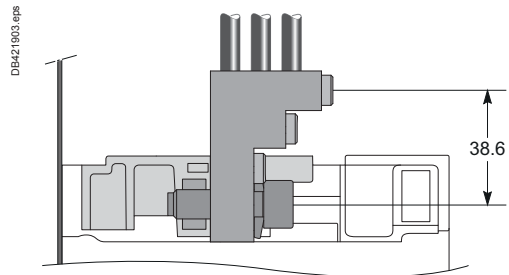
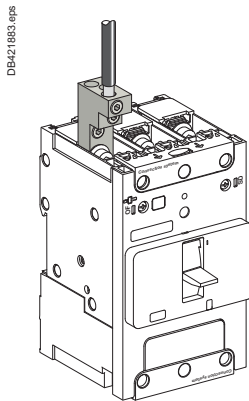
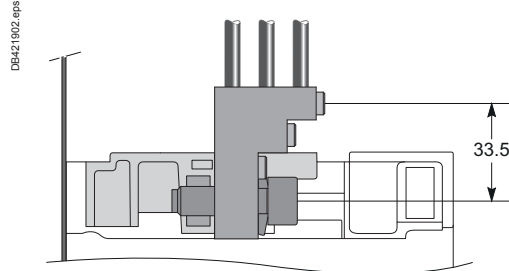
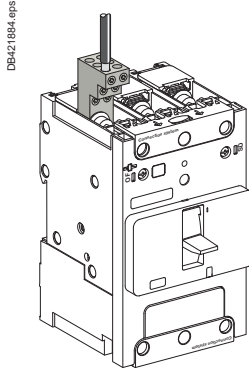
Dimensions and connection

Circuit breaker and switch-disconnector

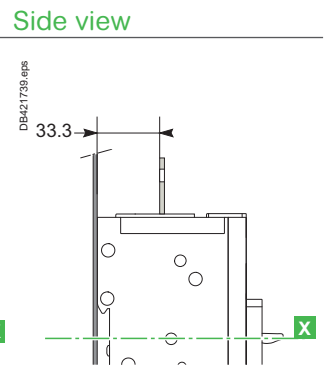
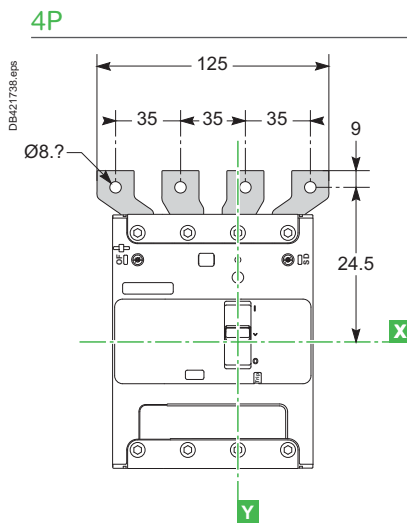
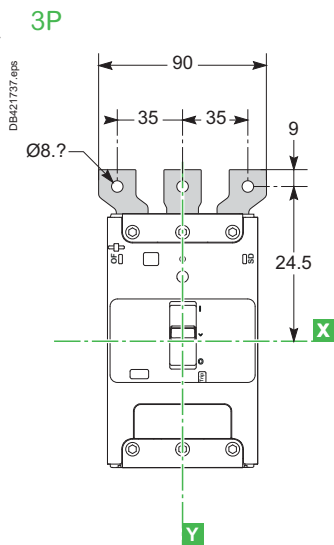
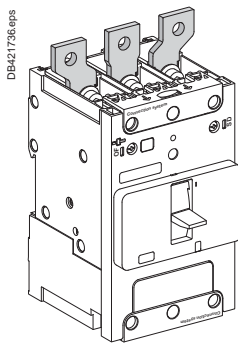
Compact NSXm

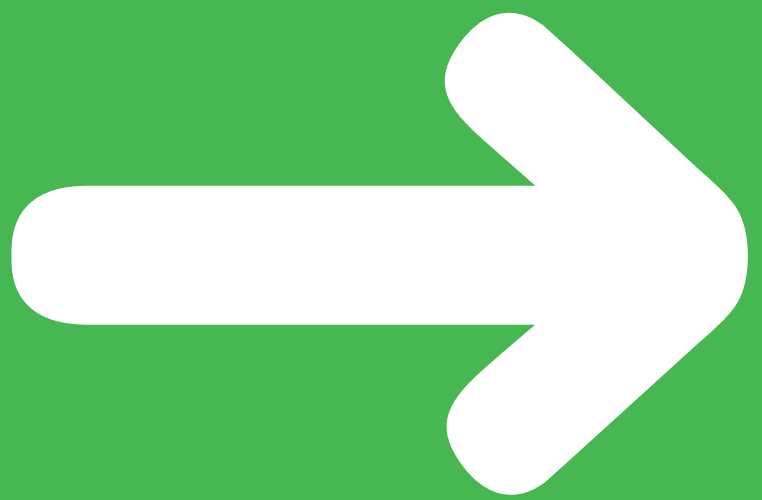
Connection with accessories

Bare-cable connectors



Spreaders





Wiring diagrams

Compact NSXm

Auxiliaries	D-2
Communication	D-3



Other chapters

Functions and characteristics	A-1
Installation recommendations	B-1
Dimensions and connection	C-1
Additional characteristics	E-1
Catalogue numbers	F-1

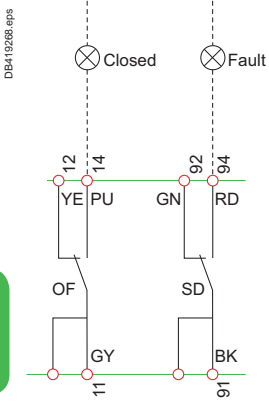
Wiring diagrams

Compact NSXm

Auxiliaries

The diagram is shown with circuits de-energized, relays in normal position, and all devices open, connected, and charged. Terminal connections shown as **○** must be connected by the customer.

Indication contacts



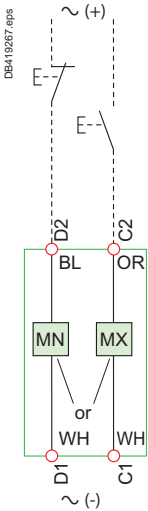
Indication contacts

OF	Device ON/OFF indication contacts
SD	Trip indication contact

Color code for auxiliary wiring

BK	Black
GN	Green
GY	Grey
RD	Red
PU	Purple
YE	Yellow

Remote operation



Remote operation

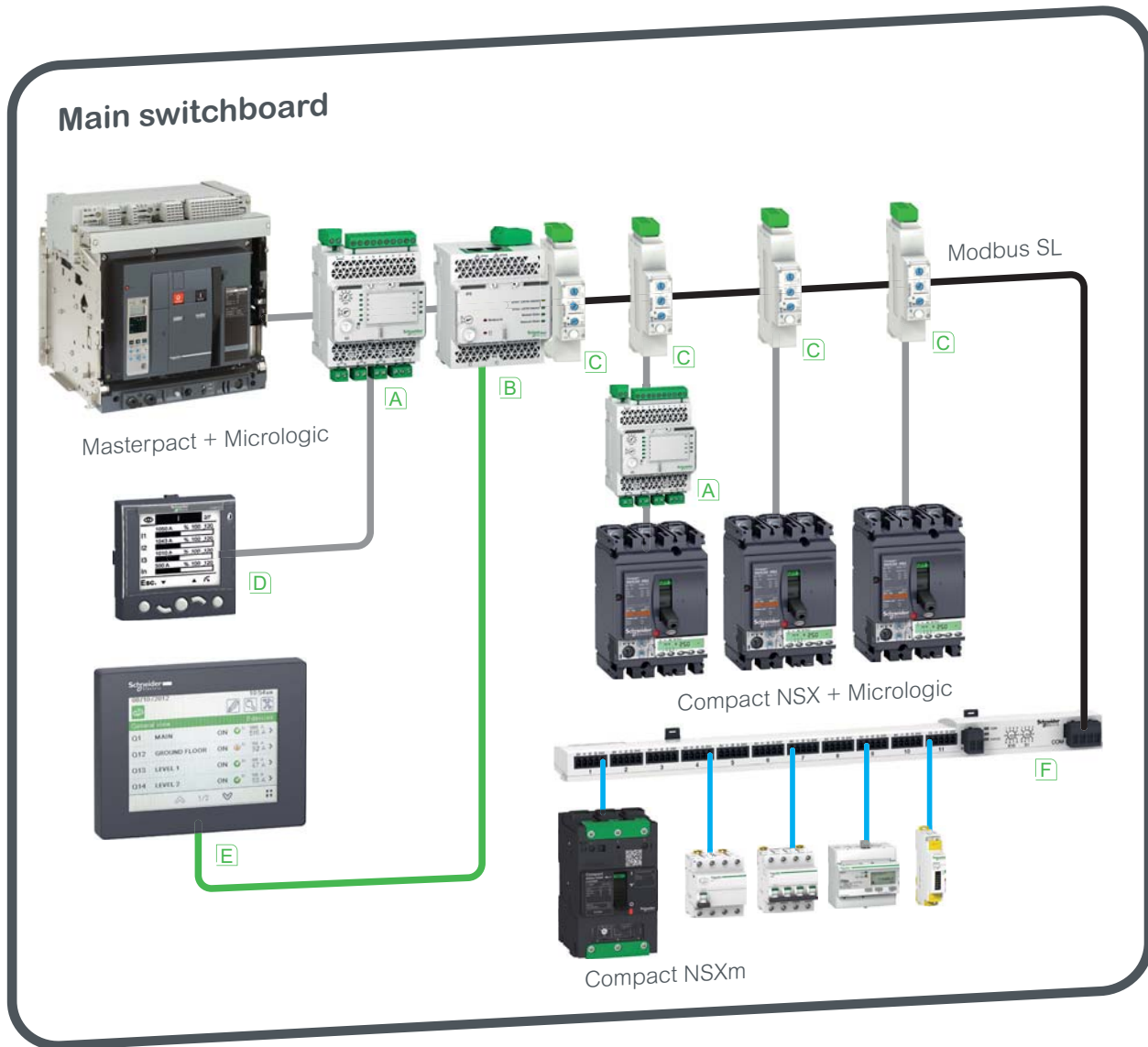
MN	Undervoltage Release
or	
MX	Shunt trip Release

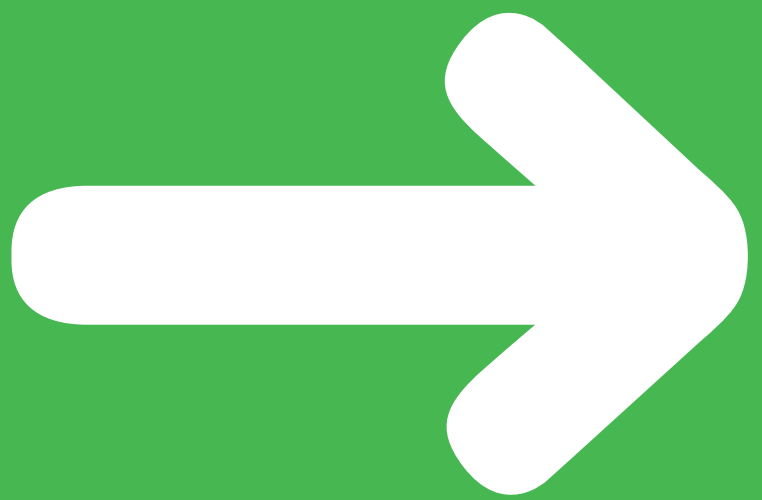
Color code for auxiliary wiring

BL	Blue
OR	Orange
WH	White

Connection of circuit breakers to the Modbus communication network

PB115715_ed11.eps





Additional characteristics

Tripping curves

TMD magnetic trip units,	
Protection of distribution systems	E-2
Reflex tripping	E-4
Current and energy limiting curves	E-5

E

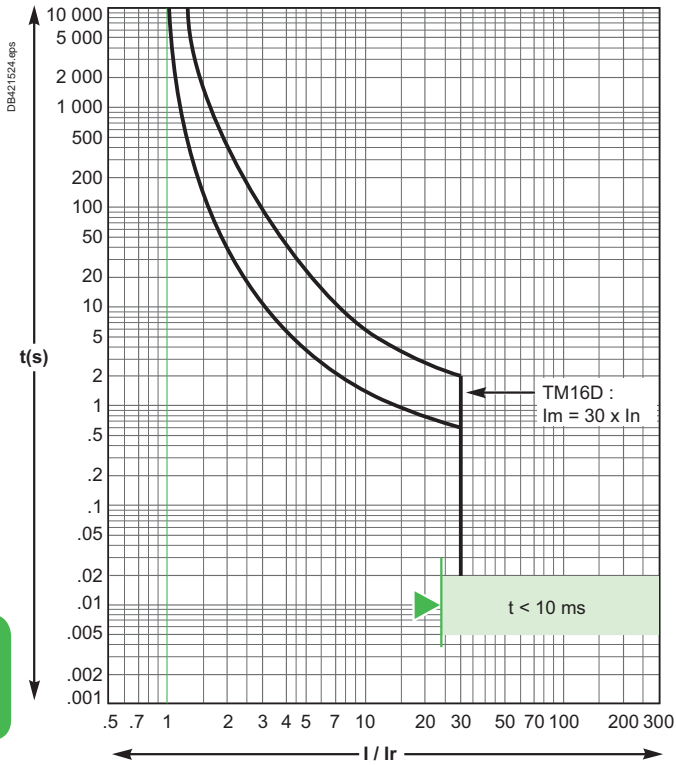
Other chapters

Functions and characteristics	A-1
Installation recommendations	B-1
Dimensions and connection	C-1
Wiring diagrams	D-1
Catalogue numbers	F-1

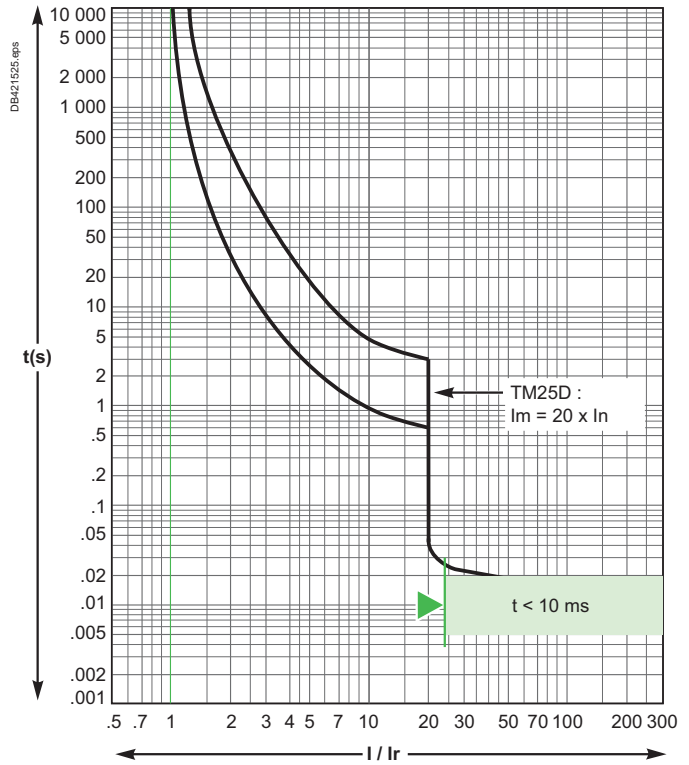
Tripping curves

TMD magnetic trip units, Protection of distribution systems

TM16D

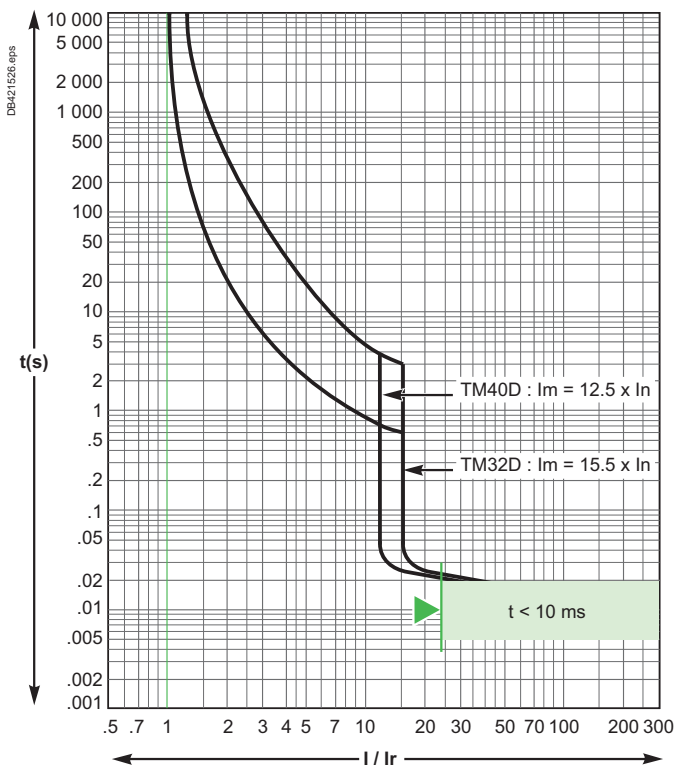


TM25D

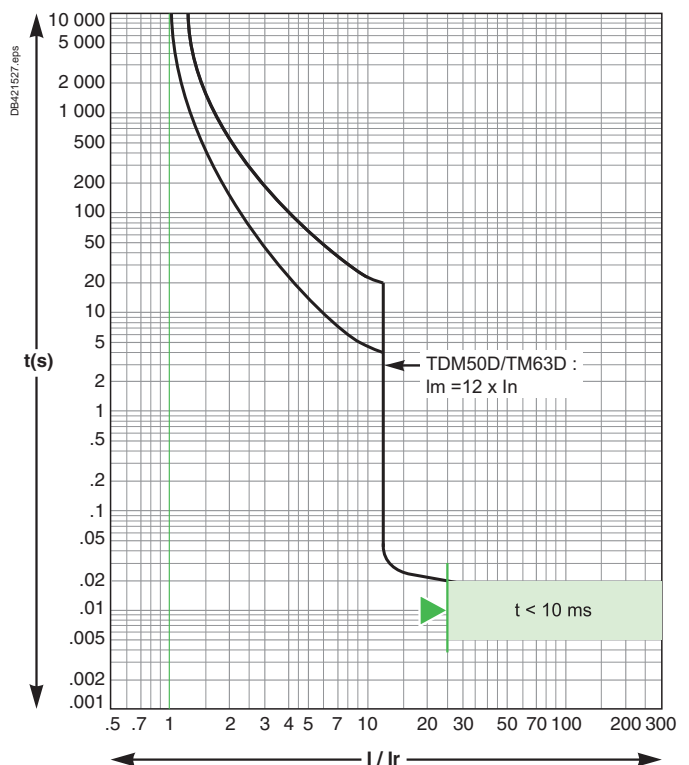


Reflex tripping.

TM32D / TM40D



TM50D / TM63D

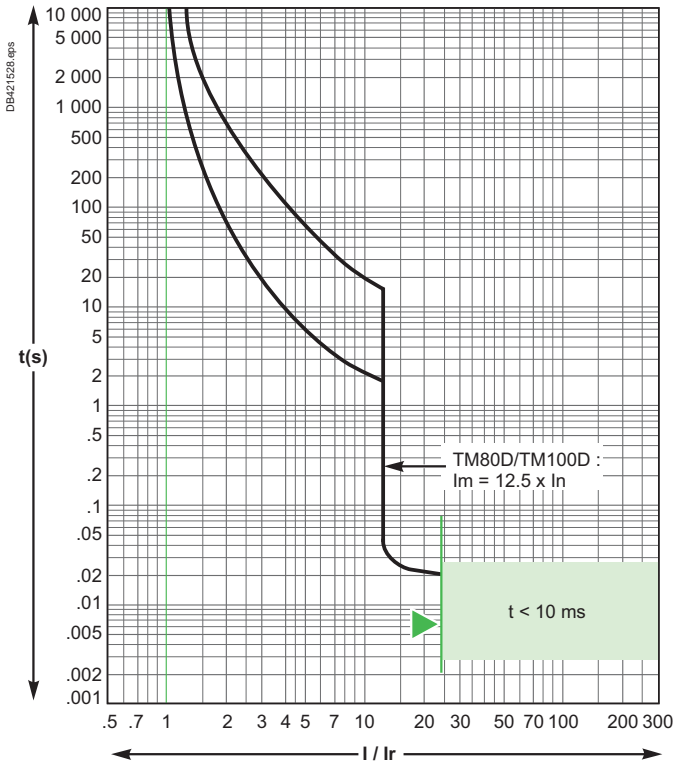


Reflex tripping.

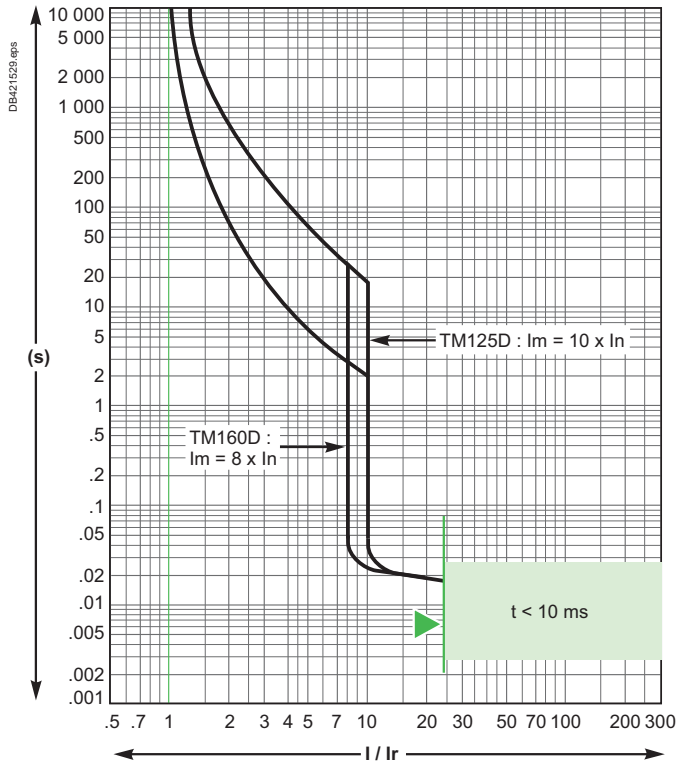
Tripping curves

TMD magnetic trip units, Protection of distribution systems

TM80D / TM100D



TM125D / TM160D



Reflex tripping.

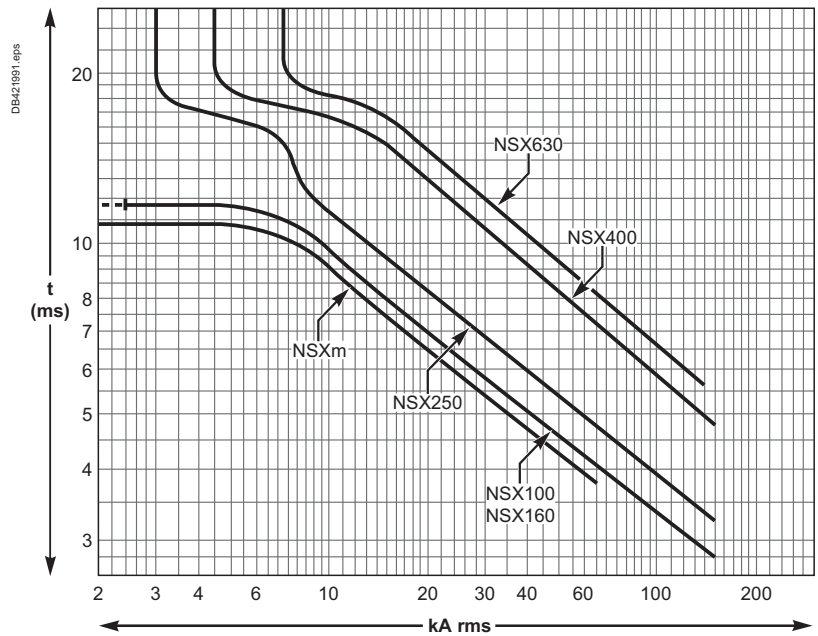
For all TDM curves :
 Values are given for 40 °C ambient, $I_r = 1 \times I_n$, 3 poles loaded, cold start.
 For $I_r = k \times I_n$, read the time corresponding to $1/k$ times given current.
 For 1 pole tripping, read the time corresponding to 0.85 times given current.
 For hot start ($0.9 \times I_r$), divide max. time by 2, min. time by 4.



Tripping curves

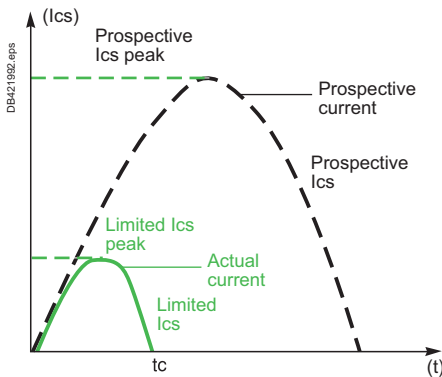
Reflex tripping

Compact NSXm and NSX100 to 630 devices incorporate the exclusive reflex-tripping system. This system breaks very high fault currents. The device is mechanically tripped via a "piston" actuated directly by the pressure produced in the breaking units by the short-circuit. For high short-circuits, this system provides a faster break, thereby ensuring discrimination. Reflex-tripping curves are exclusively a function of the circuit-breaker rating.



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 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 and NSXm ranges 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 Ics is equal to 100 % of Icu.

The Ics value, defined by IEC standard 60947-2, is guaranteed 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.

Economy by means of cascading

Cascading is a technique directly derived from current limiting. Circuit breakers with breaking capacities less than the prospective short-circuit current may be installed downstream of a limiting circuit breaker. The breaking capacity is reinforced by the limiting capacity of the upstream device. It follows that substantial savings can be made on downstream equipment and enclosures.

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)
- 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 upstream ?

The answer is 30 kA peak (curve page <?>).

Maximum permissible cable stresses

The table below indicates the maximum permissible thermal stresses for cables depending on their insulation, conductor (Cu or Al) 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 mm ²	10 mm ²
PVC	Cu	2.97x10 ⁴	8.26x10 ⁴	2.12x10 ⁵	4.76x10 ⁵	1.32x10 ⁶
	Al					5.41x10 ⁵
PRC	Cu	4.10x10 ⁴	1.39x10 ⁵	2.92x10 ⁵	6.56x10 ⁵	1.82x10 ⁶
	Al					7.52x10 ⁵
CSA		16 mm ²	25 mm ²	35 mm ²	50 mm ²	
PVC	Cu	3.4x10 ⁶	8.26x10 ⁶	1.62x10 ⁷	3.31x10 ⁷	
	Al	1.39x10 ⁶	3.38x10 ⁶	6.64x10 ⁶	1.35x10 ⁷	
PRC	Cu	4.69x10 ⁶	1.39x10 ⁷	2.23x10 ⁷	4.56x10 ⁷	
	Al	1.93x10 ⁶	4.70x10 ⁶	9.23x10 ⁶	1.88x10 ⁷	

Example

Is a Cu/PVC cable with a CSA of 10 mm² adequately protected by an NSX160F?

The table above indicates that the permissible stress is 1.32x10⁶ A²s.

All short-circuit currents at the point where an NSX160F (Icu = 35 kA) is installed are limited with a thermal stress less than 6x10⁵ A²s (curve page <?>).

Cable protection is therefore ensured up to the limit of the breaking capacity of the circuit breaker.

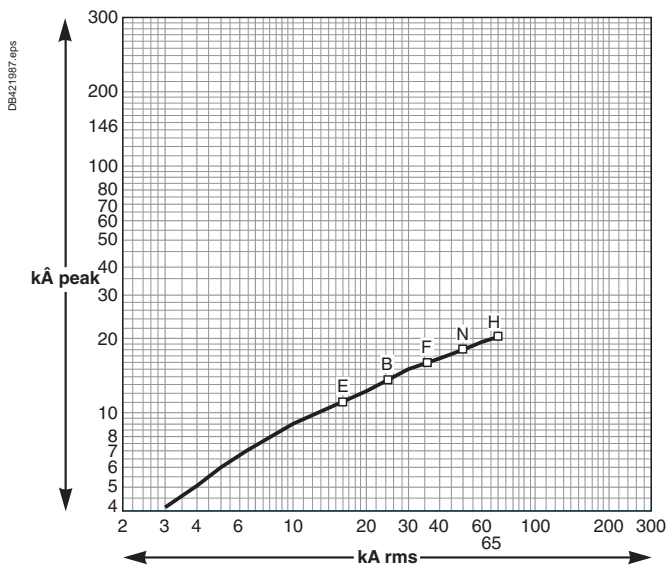


Current and energy limiting curves

Current-limiting curves

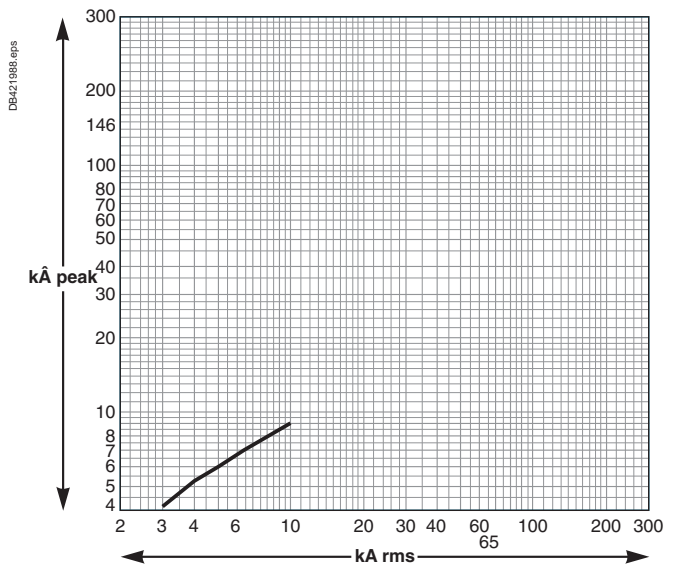
Voltage 400/440 V AC

Limited short-circuit current (kA peak)



Voltage 660/690 V AC

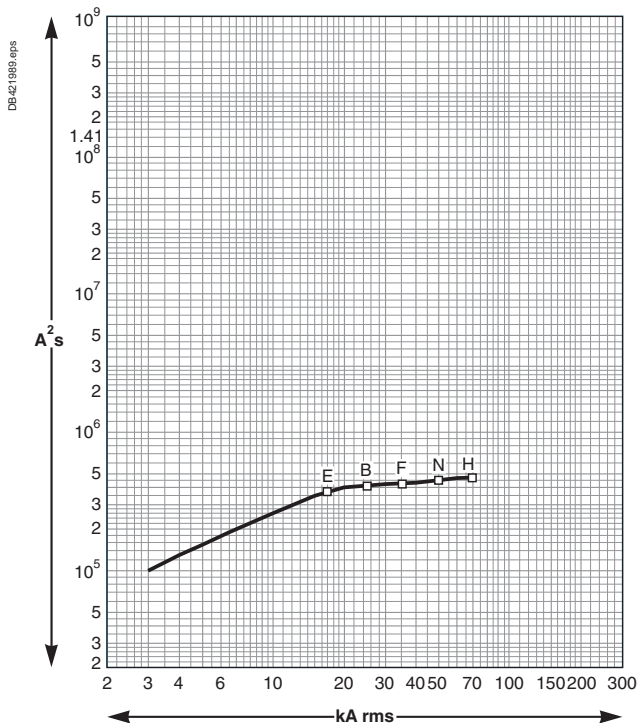
Limited short-circuit current (kA peak)



Energy-limiting curves

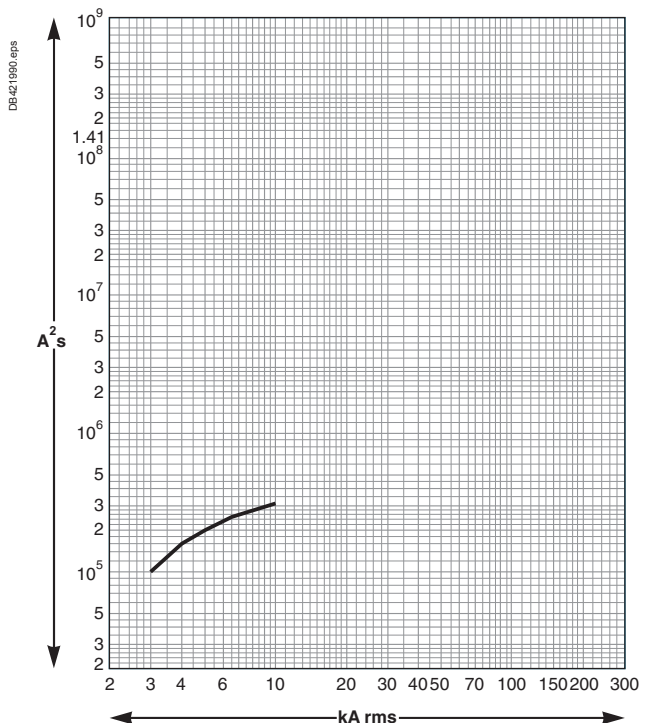
Voltage 400/440 V AC

Limited energy



Voltage 660/690 V AC

Limited energy



Catalogue numbers

Compact NSXm: complete fixed device

Compact NSXm E/B (16/25 kA at 380/415 V)	F-2
Compact NSXm F/N (36/50 kA at 380/415 V)	F-3
Compact NSXm H (70 kA at 380/415 V)	F-4
Compact NSXm NA	F-5

Compact NSXm: accessories

Connection and insulation	F-6
Electrical auxiliaries.....	F-7
Rotary handles, locks and seals.....	F-8
Spare parts, test tool and software.....	F-9

Other chapters

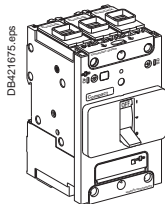
Functions and characteristics	A-1
Installation recommendations	B-1
Dimensions and connection	C-1
Wiring diagrams.....	D-1
Additional characteristics	E-1

Compact NSXm: complete fixed device

Compact NSXm E/B (16/25 kA at 380/415 V)

Compact NSXm E (16 kA at 380/415 V)

With thermal-magnetic trip unit TM-D



EverLink™ connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426100	LV426110	LV426120
TM25D	LV426101	LV426111	LV426121
TM32D	LV426102	LV426112	LV426122
TM40D	LV426103	LV426113	LV426123
TM50D	LV426104	LV426114	LV426124
TM63D	LV426105	LV426115	LV426125
TM80D	LV426106	LV426116	LV426126
TM100D	LV426107	LV426117	LV426127
TM125D	LV426108	LV426118	LV426128
TM160D	LV426109	LV426119	LV426129

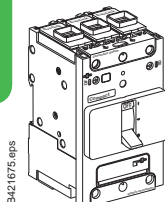
Compression lug/busbar connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426150	LV426160	LV426170
TM25D	LV426151	LV426161	LV426171
TM32D	LV426152	LV426162	LV426172
TM40D	LV426153	LV426163	LV426173
TM50D	LV426154	LV426164	LV426174
TM63D	LV426155	LV426165	LV426175
TM80D	LV426156	LV426166	LV426176
TM100D	LV426157	LV426167	LV426177
TM125D	LV426158	LV426168	LV426178
TM160D	LV426159	LV426169	LV426179

Compact NSXm B (25 kA at 380/415 V)

With thermal-magnetic trip unit TM-D

F



EverLink™ connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426200	LV426210	LV426220
TM25D	LV426201	LV426211	LV426221
TM32D	LV426202	LV426212	LV426222
TM40D	LV426203	LV426213	LV426223
TM50D	LV426204	LV426214	LV426224
TM63D	LV426205	LV426215	LV426225
TM80D	LV426206	LV426216	LV426226
TM100D	LV426207	LV426217	LV426227
TM125D	LV426208	LV426218	LV426228
TM160D	LV426209	LV426219	LV426229

Compression lug/busbar connectors

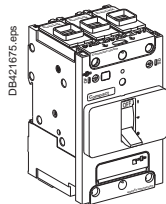
Rating	3P	4P 3d	4P 4d
TM16D	LV426250	LV426260	LV426270
TM25D	LV426251	LV426261	LV426271
TM32D	LV426252	LV426262	LV426272
TM40D	LV426253	LV426263	LV426273
TM50D	LV426254	LV426264	LV426274
TM63D	LV426255	LV426265	LV426275
TM80D	LV426256	LV426266	LV426276
TM100D	LV426257	LV426267	LV426277
TM125D	LV426258	LV426268	LV426278
TM160D	LV426259	LV426269	LV426279

Compact NSXm: complete fixed device

Compact NSXm F/N (36/50 kA at 380/415 V)

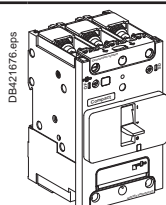
Compact NSXm F (36 kA at 380/415 V)

With thermal-magnetic trip unit TM-D



EverLink™ connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426300	LV426310	LV426320
TM25D	LV426301	LV426311	LV426321
TM32D	LV426302	LV426312	LV426322
TM40D	LV426303	LV426313	LV426323
TM50D	LV426304	LV426314	LV426324
TM63D	LV426305	LV426315	LV426325
TM80D	LV426306	LV426316	LV426326
TM100D	LV426307	LV426317	LV426327
TM125D	LV426308	LV426318	LV426328
TM160D	LV426309	LV426319	LV426329

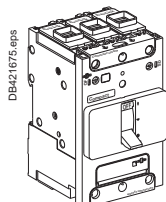


Compression lug/busbar connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426350	LV426360	LV426370
TM25D	LV426351	LV426361	LV426371
TM32D	LV426352	LV426362	LV426372
TM40D	LV426353	LV426363	LV426373
TM50D	LV426354	LV426364	LV426374
TM63D	LV426355	LV426365	LV426375
TM80D	LV426356	LV426366	LV426376
TM100D	LV426357	LV426367	LV426377
TM125D	LV426358	LV426368	LV426378
TM160D	LV426359	LV426369	LV426379

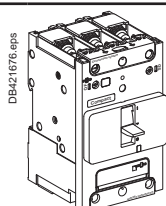
Compact NSXm N (50 kA at 380/415 V)

With thermal-magnetic trip unit TM-D



EverLink™ connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426400	LV426410	LV426420
TM25D	LV426401	LV426411	LV426421
TM32D	LV426402	LV426412	LV426422
TM40D	LV426403	LV426413	LV426423
TM50D	LV426404	LV426414	LV426424
TM63D	LV426405	LV426415	LV426425
TM80D	LV426406	LV426416	LV426426
TM100D	LV426407	LV426417	LV426427
TM125D	LV426408	LV426418	LV426428
TM160D	LV426409	LV426419	LV426429



Compression lug/busbar connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426450	LV426460	LV426470
TM25D	LV426451	LV426461	LV426471
TM32D	LV426452	LV426462	LV426472
TM40D	LV426453	LV426463	LV426473
TM50D	LV426454	LV426464	LV426474
TM63D	LV426455	LV426465	LV426475
TM80D	LV426456	LV426466	LV426476
TM100D	LV426457	LV426467	LV426477
TM125D	LV426458	LV426468	LV426478
TM160D	LV426459	LV426469	LV426479

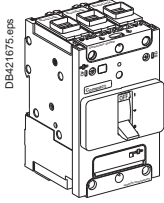
F

Compact NSXm: complete fixed device

Compact NSXm H (70 kA at 380/415 V)

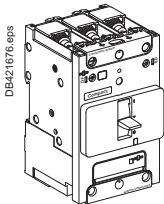
Compact NSXm H (70 kA at 380/415 V)

With thermal-magnetic trip unit TM-D



EverLink™ connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426500	LV426510	LV426520
TM25D	LV426501	LV426511	LV426521
TM32D	LV426502	LV426512	LV426522
TM40D	LV426503	LV426513	LV426523
TM50D	LV426504	LV426514	LV426524
TM63D	LV426505	LV426515	LV426525
TM80D	LV426506	LV426516	LV426526
TM100D	LV426507	LV426517	LV426527
TM125D	LV426508	LV426518	LV426528
TM160D	LV426509	LV426519	LV426529



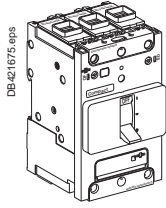
Compression lug/busbar connectors

Rating	3P	4P 3d	4P 4d
TM16D	LV426550	LV426560	LV426570
TM25D	LV426551	LV426561	LV426571
TM32D	LV426552	LV426562	LV426572
TM40D	LV426553	LV426563	LV426573
TM50D	LV426554	LV426564	LV426574
TM63D	LV426555	LV426565	LV426575
TM80D	LV426556	LV426566	LV426576
TM100D	LV426557	LV426567	LV426577
TM125D	LV426558	LV426568	LV426578
TM160D	LV426559	LV426569	LV426579

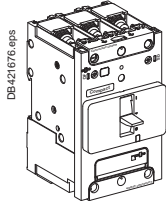
Compact NSXm: complete fixed device

Compact NSXm NA

Compact NSXm NA switch-disconnector



EverLink™ connectors		
Rating	3P	4P
50NA	LV426600	LV426610
100NA	LV426601	LV426611
160NA	LV426602	LV426612



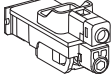
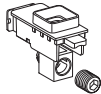


Compression lug/busbar connectors		
Rating	3P	4P
100NA	LV426650	LV426660
125NA	LV426651	LV426661
160NA	LV426652	LV426662

Compact NSXm: accessories

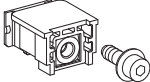
Connection and insulation

Connection accessories (Cu or Al)


Bare cable connectors

DB421533.eps 	EverLink™ connector with control wire terminal	1x (2.5 to 95 mm ²) ; ≤ 160 A Cu or ≤ 100 A Al	Set of 3	LV426970
			Set of 4	LV426971
DB411979.eps 	Aluminium connector	1x (2.5 to 70 mm ²) ; ≤ 125 A Cu or Al	Set of 2	LV426966
			Set of 3	LV426967
DB421535.eps 	Aluminium connector for 3 cables ^{[1][*]}	3x (2.5 to 35 mm ²) ; ≤ 125 A Cu or Al	Set of 3	PDC3BD2
DB421536.eps 	Aluminium connector for 6 cables ^{[1][*]}	6x (2.5 to 16 mm ²) ; ≤ 125 A Cu or Al	Set of 3	PDC6BD6


Compression lugs / busbar connectors

DB421537.eps 	Terminal with nuts and screws M6	≤ 160 A	Set of 3	LV426960
			Set of 4	LV426961


Terminal extensions

DB421538.eps 	Spreaders from 27 to 35 mm pitch ^[1]	3P	LV426940
		4P	LV426941


Crimp lugs for copper cable ^[1]

DB421539.eps 	For cable 70 mm ² rigid / 50 mm ² flexible	Set of 3	LV426978
		Set of 4	LV426979
	For cable 95 mm ² rigid / 70 mm ² flexible	Set of 3	LV426980
		Set of 4	LV426981
	For cable 120 mm ² rigid / 95 mm ² flexible	Set of 3	LV426982
		Set of 4	LV426983

Crimp lugs for aluminium cable ^[1]

DB421540.eps 	For cable 95 mm ² rigid	Set of 3	LV426984
		Set of 4	LV426985
	For cable 120 mm ² rigid	Set of 3	LV426976
		Set of 4	LV426977

Torque limiting breakaway bits

DB421541.eps 	9 N.m	Set of 6	LV426990
		Set of 8	LV426991
	5 N.m	Set of 6	LV426992
		Set of 8	LV426993

Insulation accessories

DB421542.eps 	1 long terminal shield	3P	LV426912
		4P	LV426913
DB421543.eps 	Interphase barriers	Set of 6	LV426920
DB421544.eps 	2 rear insulation screens	3P	LV426922
		4P	LV426923

^[1] Supplied with 2 or 3 interphase barriers.

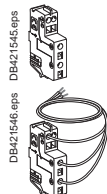
^[*] Available Q3 2017.

Compact NSXm: accessories

Electrical auxiliaries

Electrical auxiliaries

Auxiliary contacts (changeover)



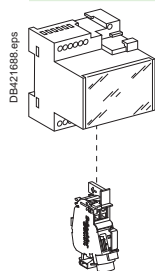
Standard OF or SD	LV426950
Pre-wired OF ^[2]	LV426951
Pre-wired SD ^[2]	LV426952

Voltage releases



Standard	Voltage	MX	MN
AC	24 V 50/60 Hz	LV426841	LV426801
	48 V 50/60 Hz	LV426842	LV426802
	110...130 V 50/60 Hz	LV426843	LV426803
	220...240 V 50 Hz	LV426844	LV426804
	208...240 V 60 Hz		
	277 V 60 Hz	LV426844	LV426805
	380...415 V 50 Hz	LV426846	LV426806
DC	440...480 V 60 Hz	LV426846	LV426807
	24 V DC	LV426841	LV426801
DC	48 V DC	LV426842	LV426802
	125 V DC	LV426843	LV426803
	250 V DC	LV426844	LV426815
	Pre-wired ^[2]	Voltage	MX
AC	24 V 50/60 Hz	LV426861	LV426821
	48 V 50/60 Hz	LV426862	LV426822
	110...130 V 50/60 Hz	LV426863	LV426823
	220...240 V 50 Hz	LV426864	LV426824
	208...240 V 60 Hz		
	277 V 60 Hz	LV426864	LV426825
	380...415 V 50 Hz	LV426866	LV426826
DC	440...480 V 60 Hz	LV426866	LV426827
	24 V DC	LV426861	LV426821
DC	48 V DC	LV426862	LV426822
	125 V DC	LV426863	LV426823
	250 V DC	LV426864	LV426835

Time delay unit for undervoltage release (MN)



MN 48 V 50/60 Hz with fixed time delay		
Composed of:	MN 48 V DC	LV426802
	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	LV426815
	Delay unit 220-240 V 50/60 Hz	LV429427
MN 48 V DC/AC 50/60 Hz with adjustable time delay		
Composed of:	MN 48 V DC	LV426802
	Delay unit 48 V DC/AC 50/60 Hz	33680
MN 110-130 V DC/AC 50/60 Hz with adjustable time delay		
Composed of:	MN 125 V DC	LV426803
	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	LV426815
	Delay unit 200-250 V DC/AC 50-60 Hz	33682

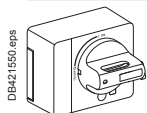
[2] Cable: 1 meter long - AWG 18 - 480 V UL certified.

Compact NSXm: accessories

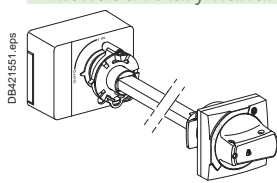
Rotary handles, locks and seals

Rotary handle

Direct rotary handle

	With black handle	LV426930
	With red handle on yellow font	LV426931

Extended rotary handle

	With black handle IP54	LV426932
	With red handle on yellow font IP54	LV426933
	With red handle on yellow font IP65	LV426934

	Open door shaft operator	LV426937
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	Laser tool	GVAPL01
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Side rotary handle

	With black handle IP54	LV426935
	With red handle on yellow font IP54	LV426936


Universal handle

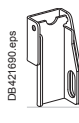
	Black handle IP54	LV426997
	Red handle on yellow font IP54	LV426998
	Red handle on yellow font IP65	LV426999

Locks

Toggle locking device for 1 to 3 padlocks

	By removable device	29370
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	By fixed device (OFF or ON)	LV426905
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	By fixed device (OFF only)	LV426906
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Lead - Sealing accessories

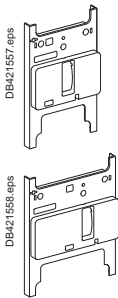
	Bag of accessories	LV429375
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F

Compact NSXm: accessories

Spare parts, test tool and software

Spare parts



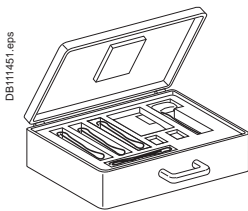
Front cover	3P	LV426946
	4P	LV426947

Test tool, software, demo

Test tool

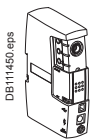


Pocket battery for Micrologic	LV434206
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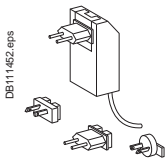


Maintenance case	TRV00910
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- Comprising:
- USB maintenance interface
 - Power supply
 - Micrologic cord
 - USB cord
 - RJ45/RJ45 male cord



Spare USB maintenance interface	TRV00911
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Spare power supply 110-240 V AC	TRV00915
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Spare Micrologic cord for USB maintenance interface	TRV00917
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Bluetooth/Modbus option for USB maintenance interface	VW3A8114
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Software



Configuration and setting software Ecoreach	LV4ST100
Test software LTU	LV4ST121 ^[2]
Monitoring software RCU	LV4SM100 ^[2]


Demo tool

Demo case for Compact	LV434207
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[2] Downloadable from <http://schneider-electric.com>.



Life Is 

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Toll-free numbers: 1800 103 0011, 1800 425 4272

General number: 0124 4222040

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