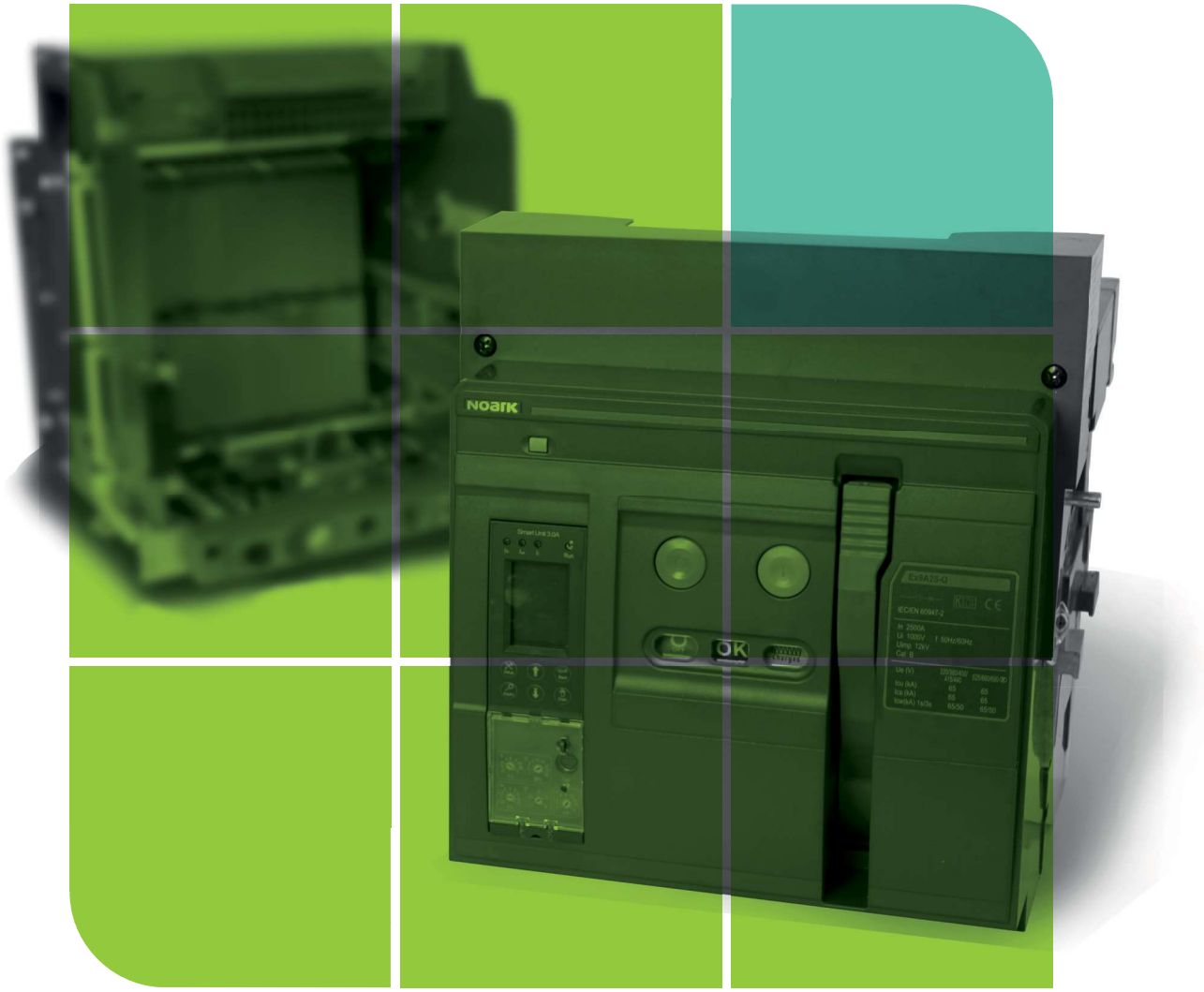
MANUAL

Fast installation guide

Ex9A - Air Circuit Breakers and
Air Switch Disconnectors



www.noark-electric.eu

5 years
WARRANTY

Noark

noark

DEFINITION OF RELIABILITY

5 years WARRANTY

FAST INSTALLATION MANUAL

- Connection diagrams
- Smart Unit basic configuration manual
- Tripping characteristics and protection settings
- Mounting manual of the circuit breaker

SMART UNIT MANUAL

- Connection diagrams
- Tripping characteristics and protective settings
- Safety parameters configuration
- Communication parameters
- Advanced smart functions configuration

AIR CIRCUIT BREAKER MANUAL

- Connection diagrams
- Accessories installation manual
- Mounting manual of the circuit breaker
- Troubleshooting

Phone: +420 226 203 122
E-mail: technicalsupport@noark-electric.com
warrantyclaims@noark-electric.com
europe@noark-electric.com

CE

Index

Warning

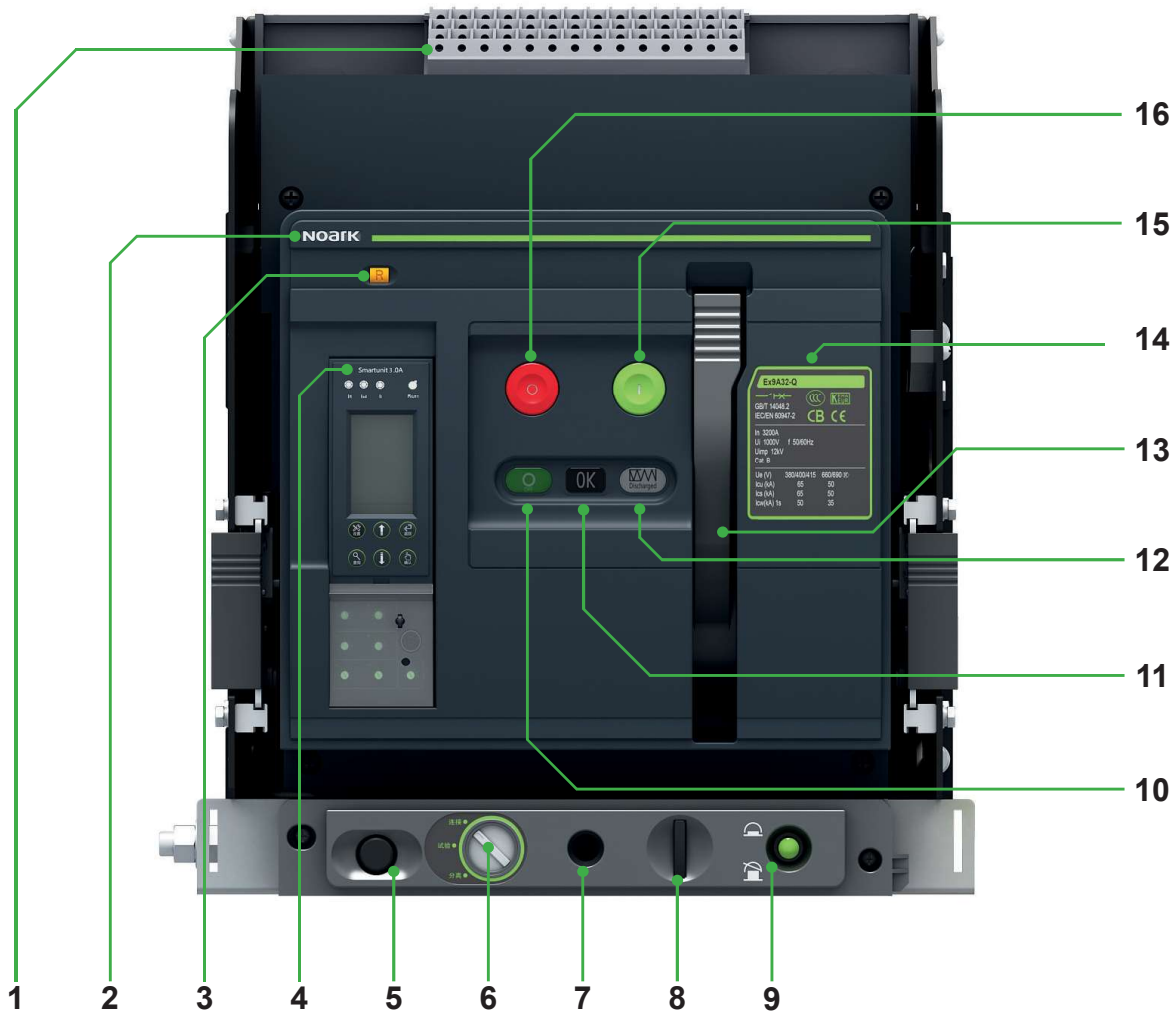
This equipment can only be installed by professionals. The manufacturer/importer is not responsible for any consequences caused by non-compliance with this manual.

- Installation and service of this equipment can only be performed by experienced and profesional personnel.
- This product should not be installed in flammable, explosive, humid and condensing environment.
- Do not touch conductive parts during the operation.
- Manipulation during commissioning/installation must be done with disconnected power.
- Safety space and distance around the device must be kept.
- Do not install the product in places where the ambient medium can cause metal corrosion and insulation damage.
- To avoid dangerous accidents, the product must be installed according to the instructions detailed in this document.
- After unpacking the product(s), check for any damage and integrity of the goods before installing.
- Not following the above instructions may lead to damage to the equipment and personal injury.

Environmental protection

In order to protect the environment, this product and its components should be disposed properly as industrial waste upon the end of its functional life or delivered to the recycling plant which will dismantle and recycle the product according to the relevant national regulations.

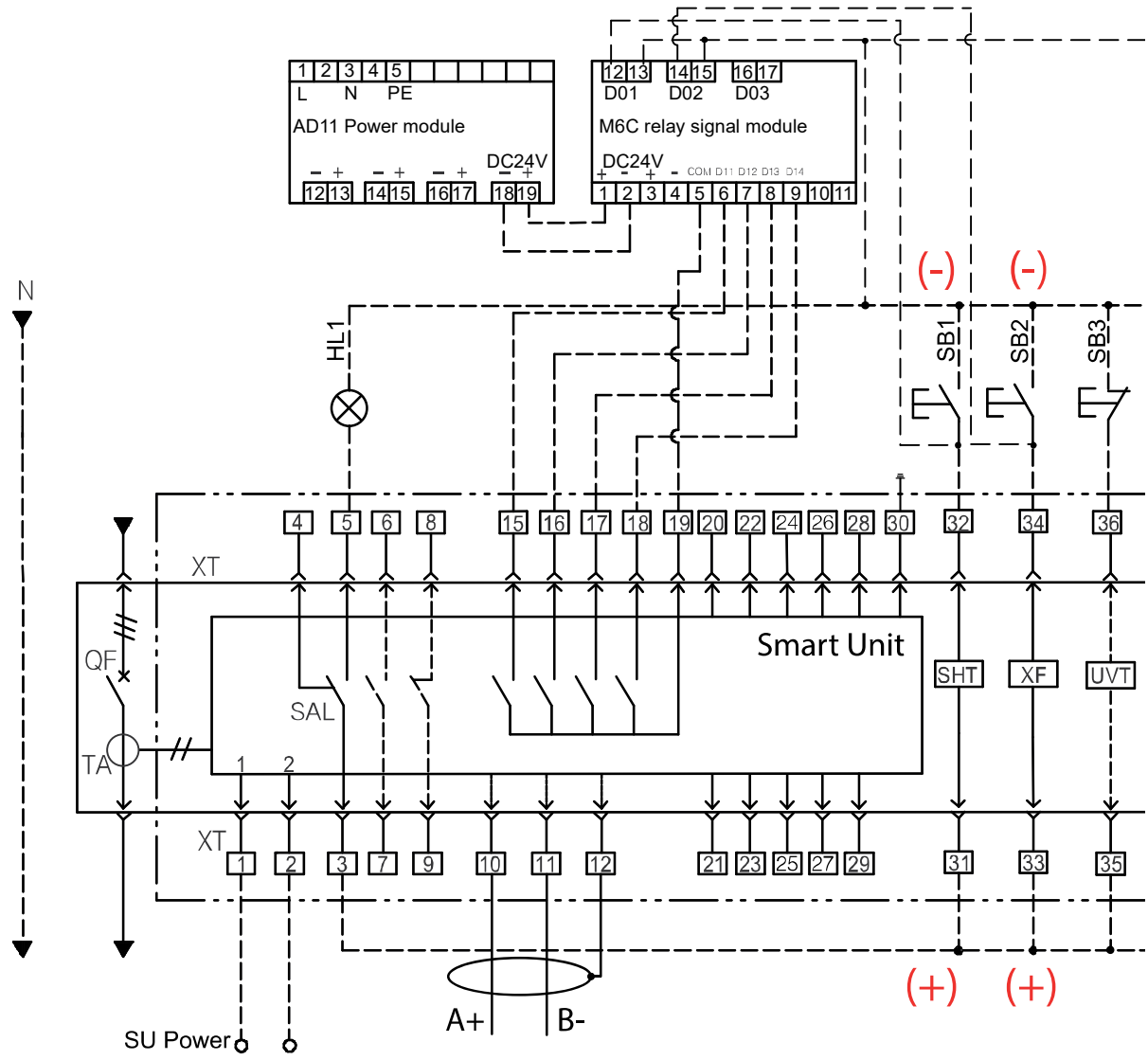
Before working on the device



Description

1. Auxiliary terminals, control circuit wiring
2. Brand name
3. Trip reset button
4. Smart Unit
5. Handle for withdrawable mechanism
6. Indicator of withdrawable mechanism position: Connected, Test, Disconnected
7. Withdrawable mechanism space for the handle
8. Padlock
9. Cassette possition lock, alerts of change on the position - Press when ejected to unlock the mechanism
10. Main contact position indicator:
    - O Open contacts
    - I Closed contacts
11. Main contact mechanism indicator:
    - OK Ready to close the contacts
    - ~~OK~~ Not ready to close the contacts
12. Spring status:
    - Spring charged
    - Spring discharged
13. Manual spring charge handle
14. Nameplate
15. Main terminals closing push-button (I)
16. Main terminals opening push button (O)

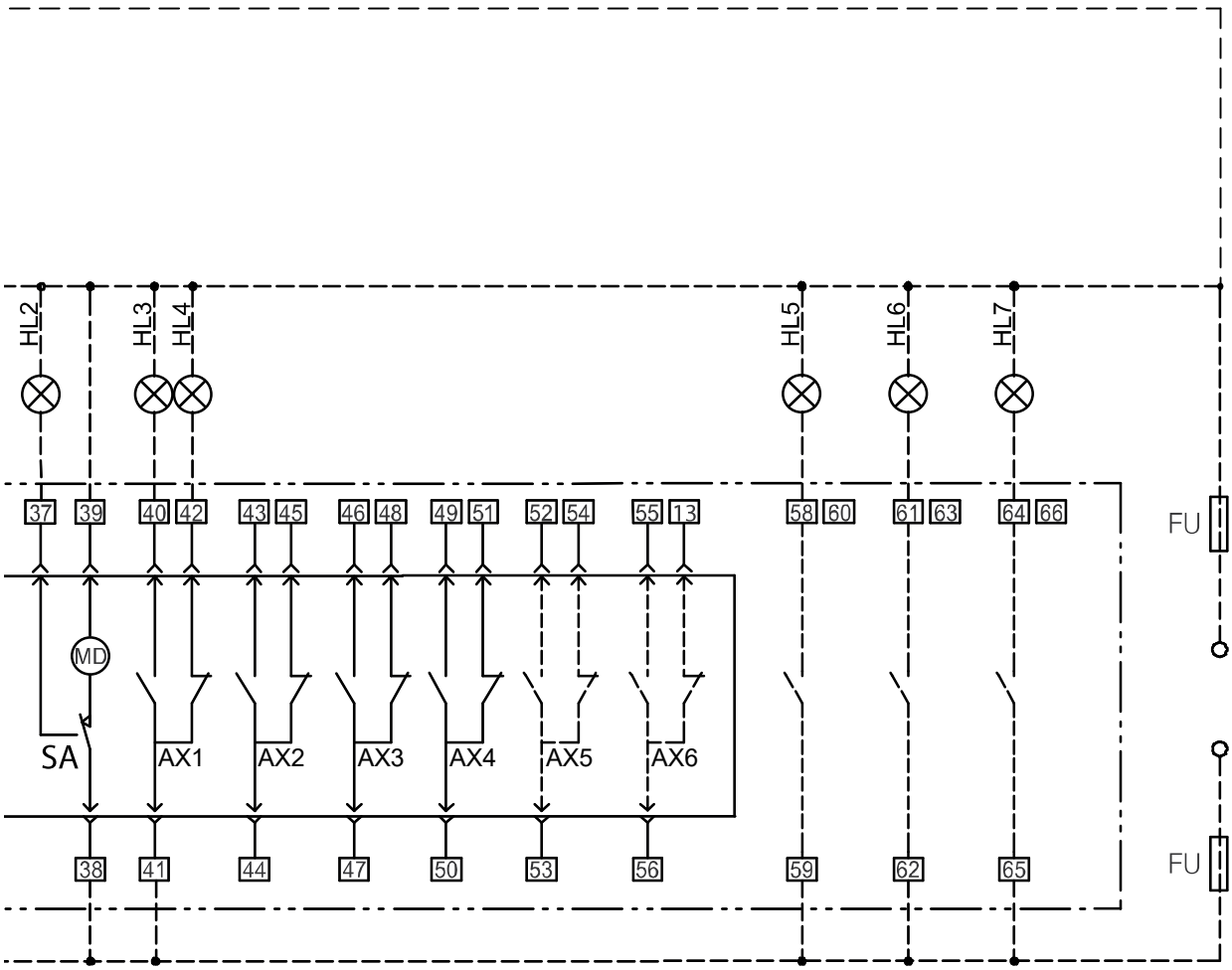
Connection diagram



Connection distribution Smart Unit

1, 2:	Smart Unit input power source, must be connected to a stable power source.
3, 4, 5:	Signal contact output. Electrical indicator of fault trip. Maximum 2A at 380V AC, 0.3A at 250V DC.
6, 7:	Optional synchronous auxiliary contact, NO contact. Maximum 1A at 380V AC, 0.15A at 250V DC.
8, 9:	Optional synchronous auxiliary contact, NC contact. Maximum 1A at 380V AC, 0.15A at 250V DC.
10, 11, 12:	Optional RS485 communication interface; 10: A+, 11: B-, 12: Shield ground.
15 ~19:	Optional programmable outputs DO; 15 ~ 18: NO contacts, 15: remote opening signal, 16: remote closing signal. Relay signal module needed. Maximum 5A at 250V AC, 0.5A at 110V DC.
20 ~ 23:	Optional programmable inputs DI; 20 - 21:Digital input 1, 22 - 23: Digital input 2. Operative voltage 24V DC.
24:	Phase A voltage input for Smart Units P, H, GP and GH types.
25:	Phase B voltage input for Smart Units P, H, GP and GH types.
26:	Phase C voltage input for Smart Units P, H, GP and GH types.
27:	Phase N voltage input for Smart Units P, H, GP and GH types.
28, 29:	External current transformer input. Used on 3P+N systems, for current measurement of the external N pole.
30:	Smart unit protective ground connection.

Connection diagram



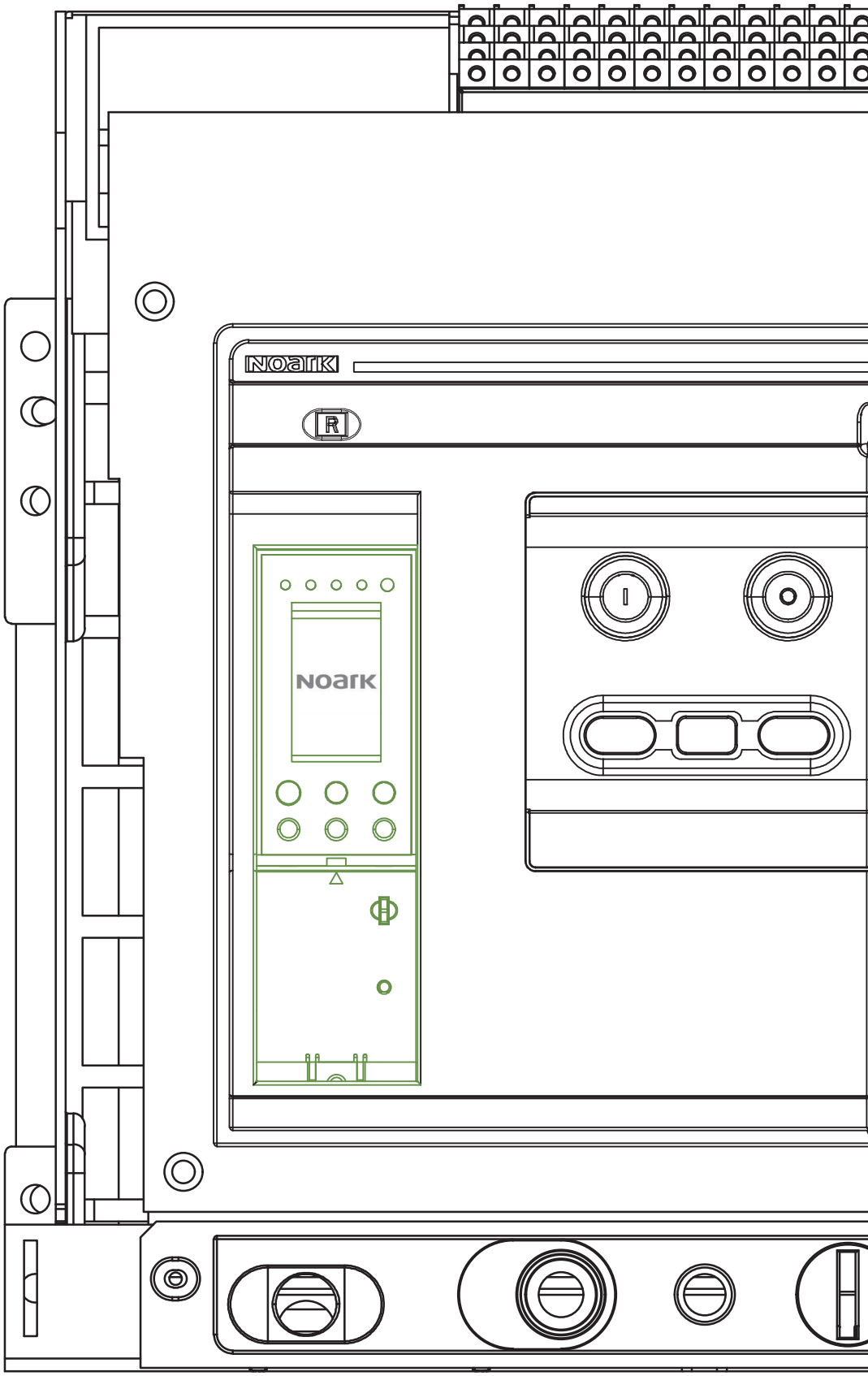
Connection distribution Circuit Breaker

31, 32:	SHT unit (remote OFF) connections, for DC devices; 31: Positive +, 32: Negative -. Polarity must be taken in consideration.
33, 34:	XF unit (remote ON) connections, for DC devices; 31: Positive +, 32: Negative -. Polarity must be taken in consideration.
35, 36:	UVT unit connections.
37, 38, 39:	MD unit (remote charging motor drive) connection; 37: status output of the mechanical energy storage spring.
40, 41, 42:	AX1 connections; 40: NO contact , 41: Common terminal, 42: NC contact.
43, 44, 45:	AX2 connections; 43: NO contact , 44: Common terminal, 45: NC contact.
46, 47, 48:	AX3 connections; 46: NO contact , 47: Common terminal, 48: NC contact.
49, 50, 51:	AX4 connections; 49: NO contact , 50: Common terminal, 51: NC contact.
52, 53, 54:	AX5 connections; 52: NO contact , 53: Common terminal, 54: NC contact.
55, 56, 13:	AX6 connections; 55: NO contact , 56: Common terminal, 13: NC contact.
58, 59:	Withdrawable base position indicator: “Connected“ position.
61, 62:	Withdrawable base position indicator: “Test“ position.
64, 65:	Withdrawable base position indicator: “Disconnected“ position.

Notes

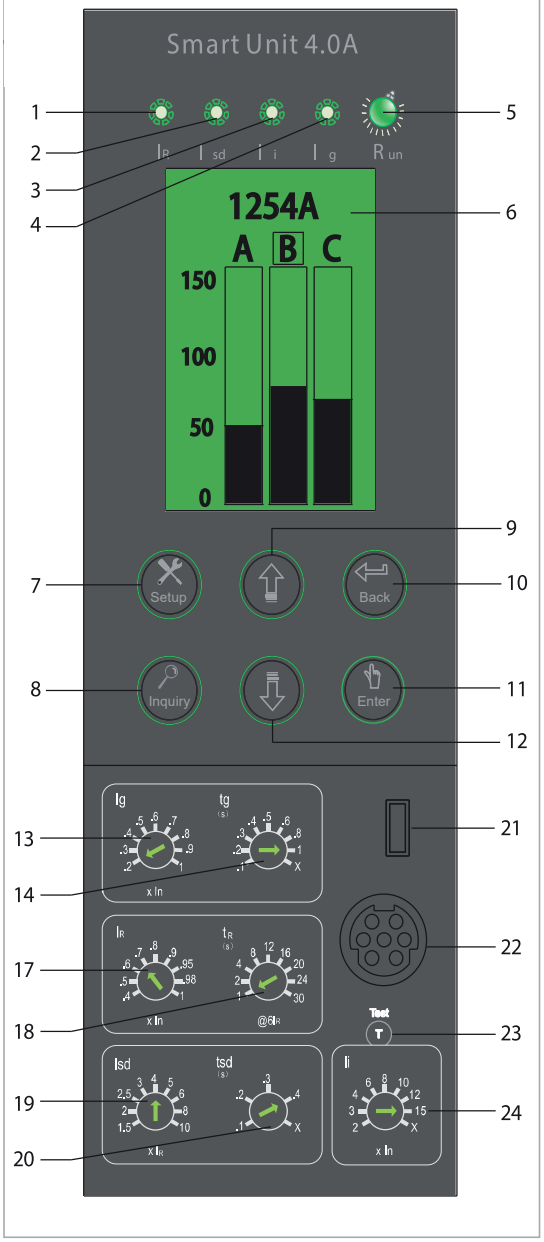
SMART UNIT

Basic configuration manual



Ex9A Smart Unit 3.0 / 4.0 / 5.0

Smart Unit SU4.0



Visual indicator interface

	Element	Description
1	LED Ir	Long overload fault indicator
2	LED Isd	Short delay fault indicator
3	LED Ii	Instantaneus trip fault indicator
4	LED Ig	Ground fault current indicator
5	LED Run	Normal operation indicator
6	LCD	Graphic representation of settings, parameters and system status

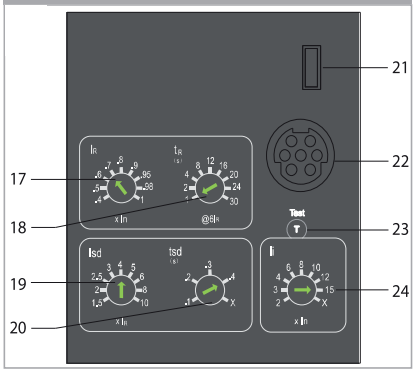
Navigation button panel

	Button	Description
7	Settings	Single press: System parameters interface Double press: Protection parameters interface
8	Inspection	Single press: Measurements interface Double press: History and maintenance interface
9	Up scroll	For scrolling up or increasing a specific value
10	Return	Exits the current menu and/or cancels the current parameter setting
11	Confirm	For scrolling down, activating an option or saving modifications
12	Down scroll	For scrolling down or decreasing a specific value

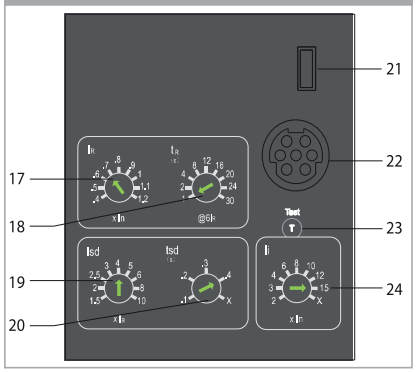
Protective parameter adjusting knobs

	Knob function	Description
13	Ground current setting	Ground protection: Current range setting
14	Ground delay setting	Ground protection: Time delay range setting
15	Earth current setting	Earth protection: Current range setting
16	Earth delay setting	Earth protection: Time delay range setting
17	Long time overload: current setting	Long time overload protection: Current range setting
18	Long time overload: delay setting	Long time overload protection: Time delay setting
19	Short time overload: current setting	Short time overload protection: Current range setting
20	Short time overload: delay setting	Short time overload protection: Time delay setting
21	Cover sealing	Sealing space to avoid unauthorized manipulation
22	Service port	Communication port for service purposes
23	Test button	Accessible test button to trip the circuit breaker
24	Instantaneous short circuit: current setting	Instantaneous short circuit protection: Current setting

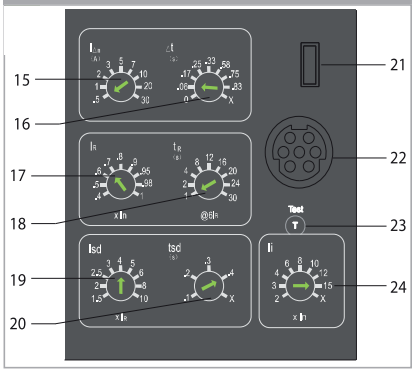
Smart Unit SU3.0-*i*



Smart Unit SU3.0-G*i*

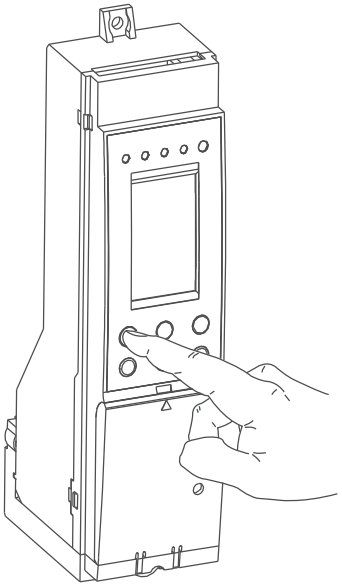


Smart Unit SU5.0-*i*



Smart unit parameter configuration interface

Setting via navigation button panel

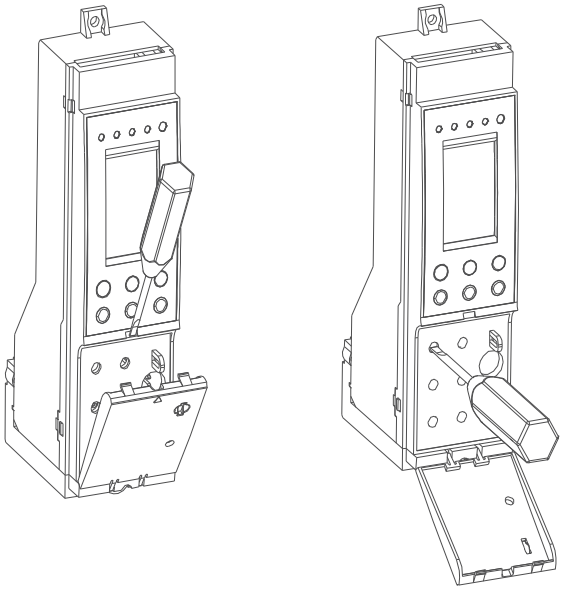


Inside of the software menu can be found all of the parameters adjustable for the air circuit breaker.

The submenus are being separated in the following groups:

- Setup (single press): System parameter settings; time/date settings, system configuration, and others.
- Setup (double press): Protection parameter settings; electrical protective parameters such as voltage/current protections, load monitor, thermal protections, phase frequency/sequence and others.
- Inquiry (single press): Measurement interface which displays real time voltages, currents, frequency, powers, energy and others.
- Inquiry (double press): History records which displays the historic information of the air circuit breakers which includes trip history, alarm history, contact status and others.

Setting via rotary knobs

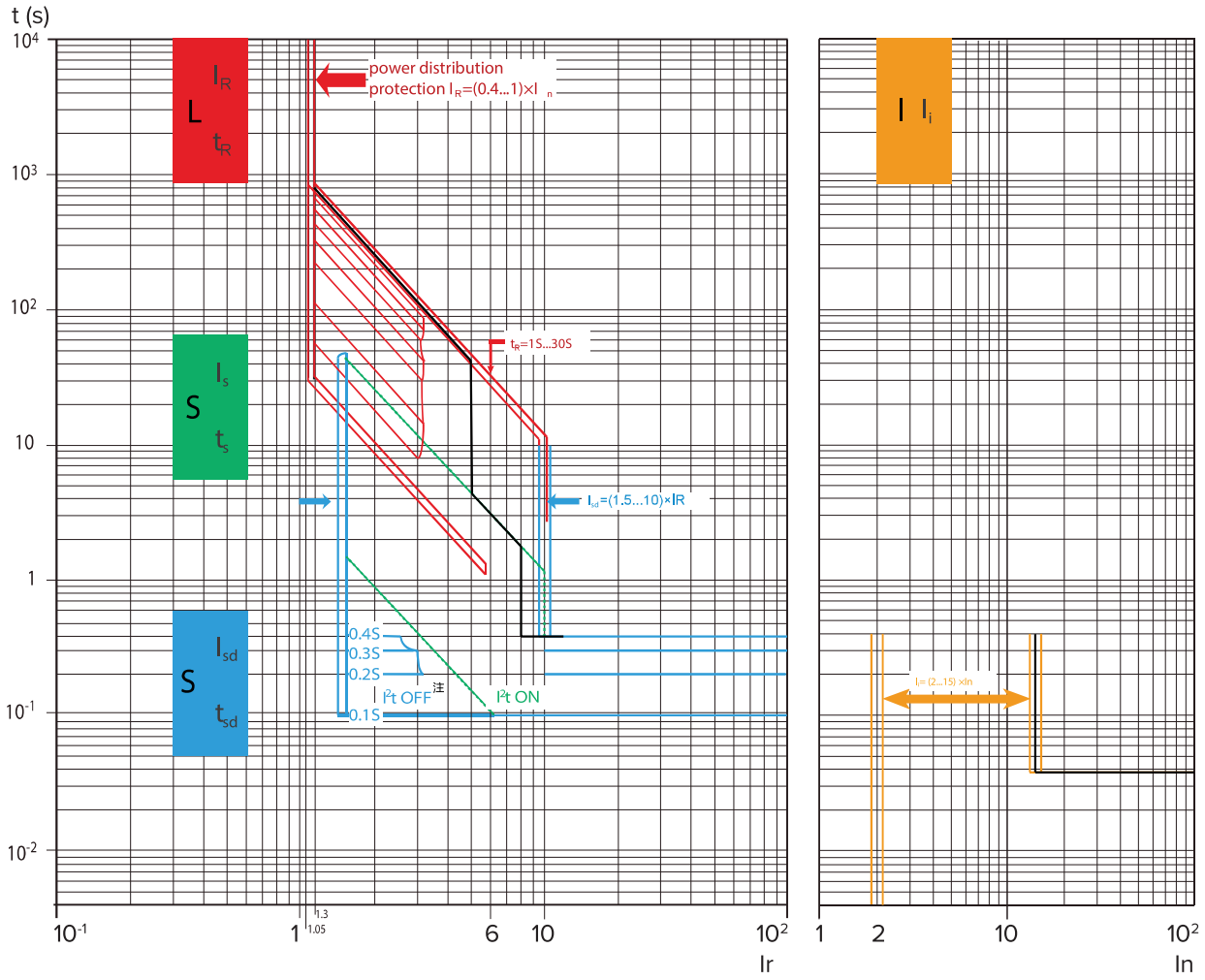


The rotary knobs are intended to configure the protective parameters, they will operate as a shortcut for the main electrical settings.

The parameters are configured in steps, which in some situations can be not accurate enough. In the case that additional accuracy is required, the same parameters can be configured via the navigation button panels with much higher resolution.

The rotary knobs cover may be sealed and the protective parameters on the menu may be protected by password, ensuring that unauthorized modification of the protective settings will not happen.

Tripping characteristics

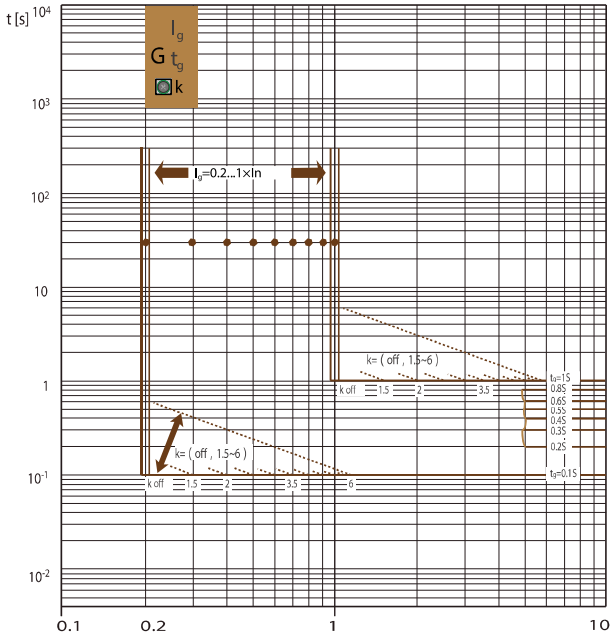


Long / Short / Instantaneous protection

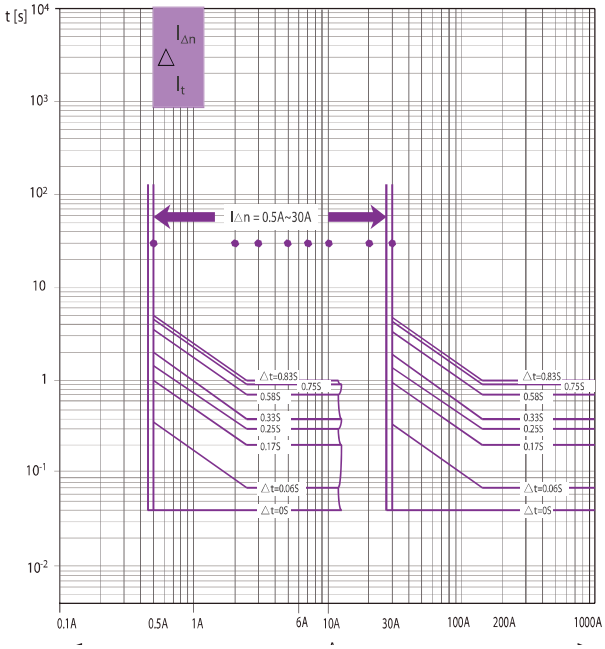
Long / Short / Instantaneous overload protection common to all tripping units variants		
Ir	Long overload	Initial value of the current on which the long overload protection will actuate. Range on power distribution unit: (0.4 — 1.0) × I_n
tr	Long overload	Delay time for the long overload to trip when an overload is detected at 6 × I_r. Range on power distribution unit: 1 — 30 s
Is	Short overload	Initial value of the current on which the short overload protection will be applied if "inverse time" option is ON. Range: 1.5 × I_r — 1.0 × I_{sd}
ts	Short overload	Delay time to trip when a short overload is detected. This delay depends on the long overload delay setting with a ratio of: ts = tr / 10
Isd	Short overload	Initial value of the current on which the short overload protection will be applied. Range: 1.5 × I_r — 1.0 × I_{sd}
tsd	Short overload	Constant time delay for the short overload protection to trip. Range: 0.1 — 0.4 s
Ii	Instantaneous protection	Initial value of the current on which the instantaneous protection will actuate. Range: (2 — 15) × I_n

Tripping characteristics

Ground protection (SU4.0)



Leakage protection (SU5.0)

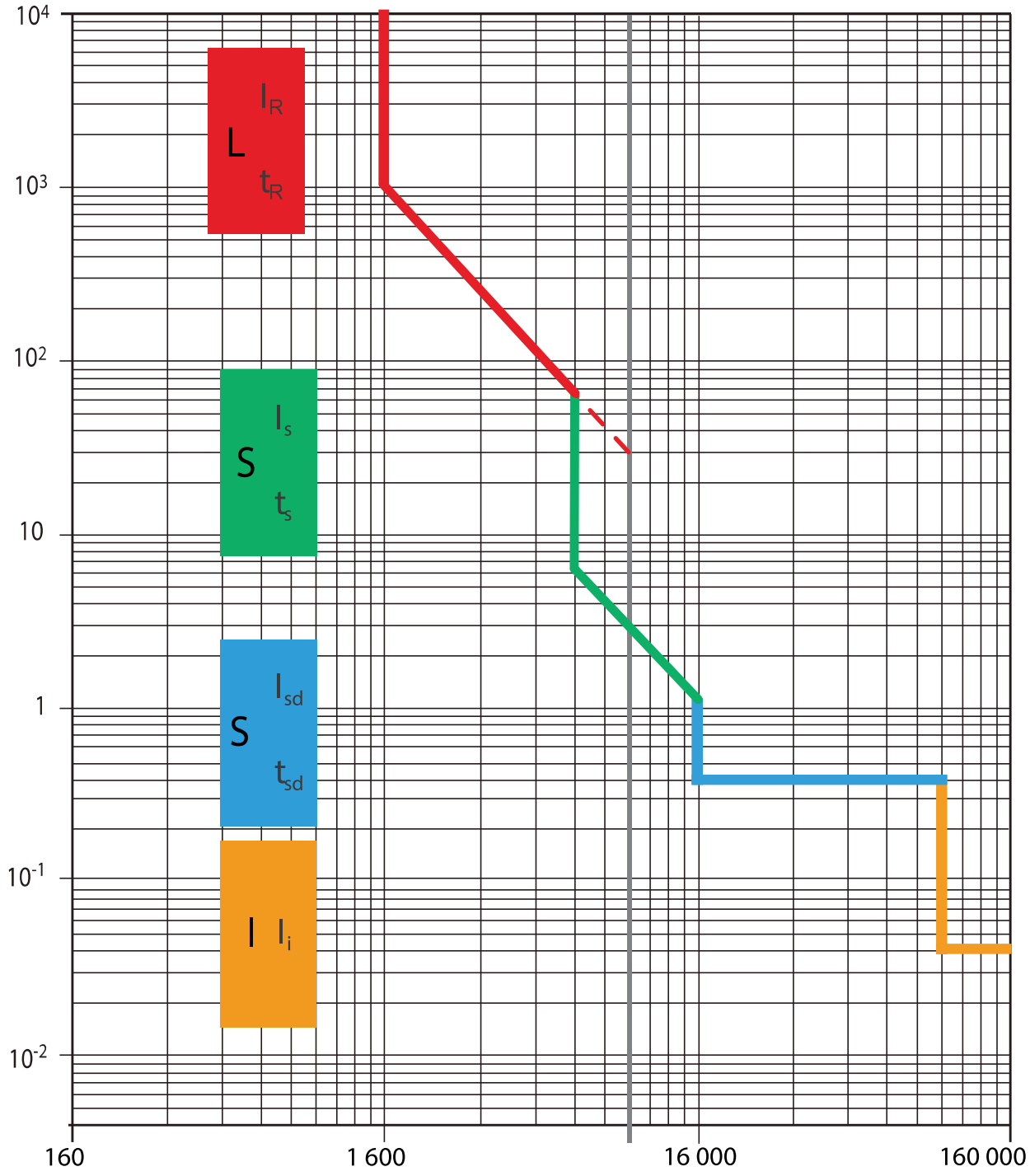


Groung / Earth fault protection

Additional ground / earth protection specific for 4.0 and 5.0 smart unit types respectively		
Ig	Ground fault current threshold	Initial value of the current on which the ground fault protection will be applied. Range: (0.2 — 1.0) × I_n
tg	Ground fault time delay setting	Delay time for the ground fault protection to trip when a ground fault is detected. Range: OFF / 0.1 — 1 s
Cr	Ground fault inverse time coefficient	Parameter to control the inverse-time curve area on the ground protection characteristics. Range: OFF / 1.5 — 6;
IΔn	Earth leakage protection operative current	Initial value of the current on which the Earth leakage protection will be applied. Range: (0.5 — 30) A
Δt	Earth leakage protection time delay setting	Inverse-time delay for the earth leakage protection to trip when a leakage is detected. Range: 0 — 0.83 s

Example of tripping characteristics: SU3.0A

SU3.0A 1600A



Long / Short / Instantaneous protection example: Ex9A16 1600 A SU3.0A

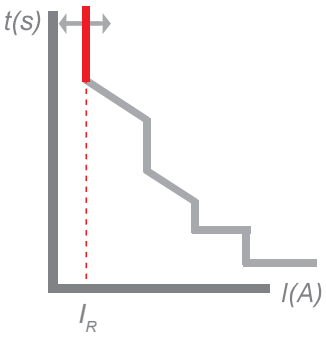
Long / Short / Instantaneous overload protection: Configuration example. Tolerances were not displayed		
I_R	Long overload	Current value: 1.0 × In ; I_R = 1 600 A. I^2t protection. While the current consumption is below 1 600 A, the circuit breaker will not trip.
t_R	Long overload	Delay time value: t_R = 30 s. Delay time at 6 x I_R. If an overload situation occurs for a duration shorter than the tr, the circuit breaker will not trip.
I_s	Short overload	Current value: 4.0 × I_R. I^2t short time protection to improve the protective functionalities and still keep the flexibility for selectivity.
t_s	Short overload	Delay time value: t_s = t_R / 10. Fixed value.
I_{sd}	Short overload	Current value: 10 × I_R. With a consumption bigger than 10 times de overload current, with duration bigger than t_{sd}, the device will trip.
t_{sd}	Short overload	Delay time value: t_{sd} = 0.4 s. Constant time delay not dependant on the consumed current.
I_i	Instantaneous protection	Current value: 15 × In. Value on which the circuit breaker will trip without additional delay.

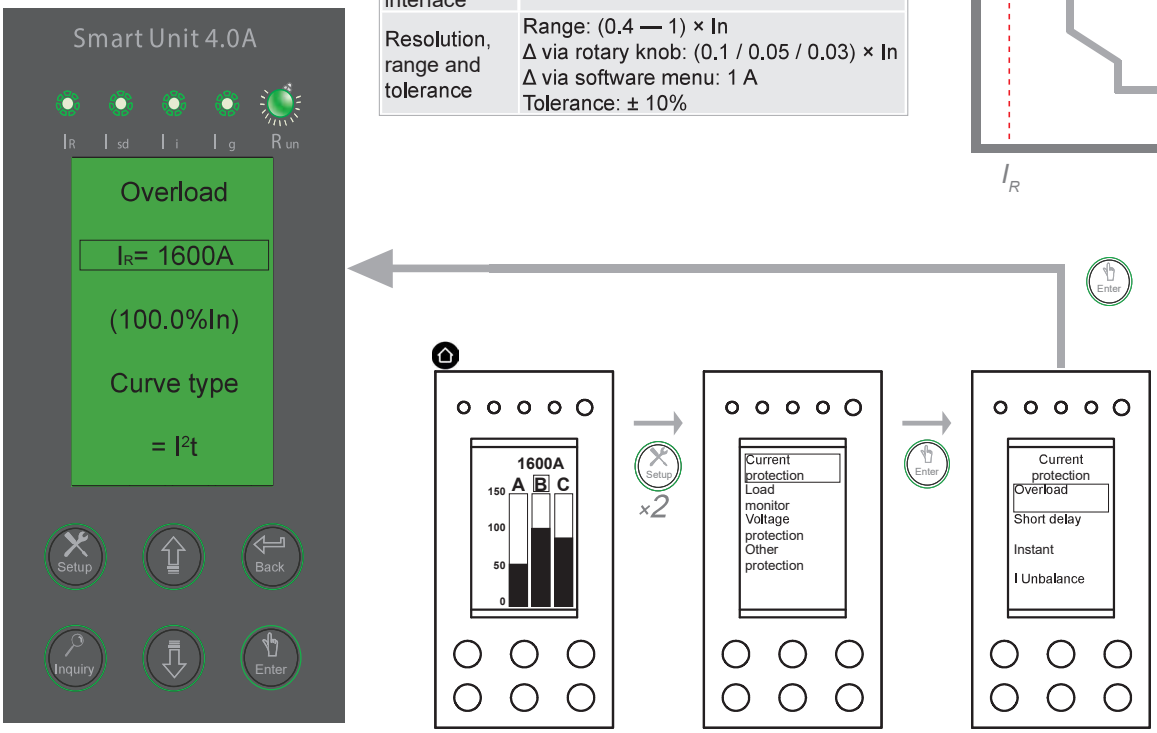
Long time overload protection: I_R

3.0 4.0 5.0

A P H

Parameter information	
I_R	Long time overload protection: overload current setting
Configuration interface	Rotary knobs and software menu
Resolution, range and tolerance	Range: (0.4 — 1) × In Δ via rotary knob: (0.1 / 0.05 / 0.03) × In Δ via software menu: 1 A Tolerance: ± 10%

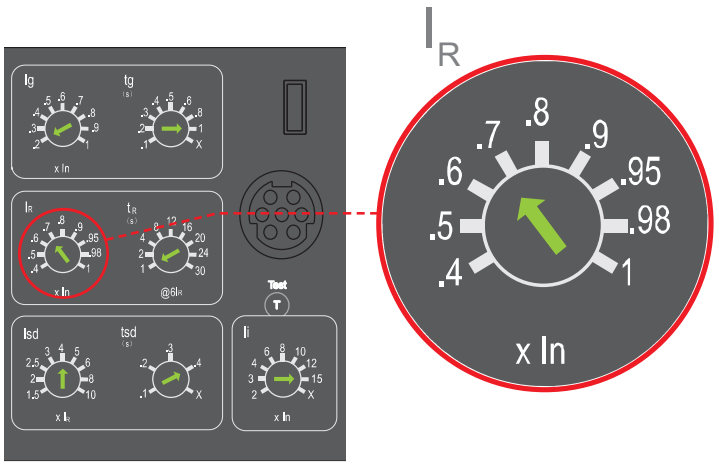




The *long overload protection* is a function that will protect the circuit installation against long time overload. One of the most important usages of this feature is to prevent prevent overheating of conductors that could permanently damage the installation or the electrical circuit because of long time light overloads.

The *long overload current setting* (I_R) parameter corresponds to the amount of current (I_R × I_n) expressed as coefficient of the nominal current, on which the air circuit breaker will start considering the measured current as an overload.

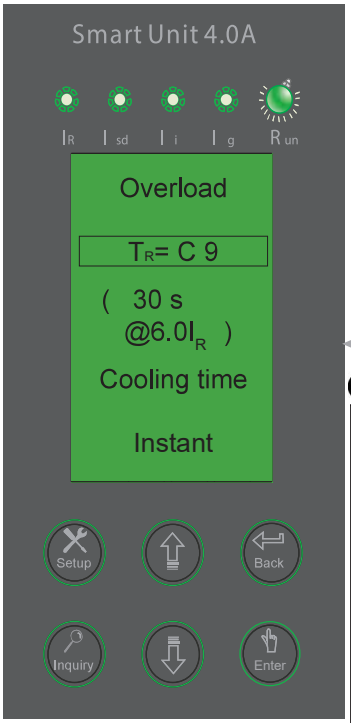
The moment that the measured current exceeds this threshold, the smart unit will monitor the amount of time that this condition is present, and if exceeded the maximum allowed time (t_R) the circuit breaker will trip or trigger an alarm, according to the user's configuration.



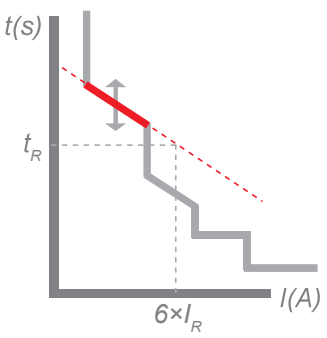
Long time overload protection: t_R

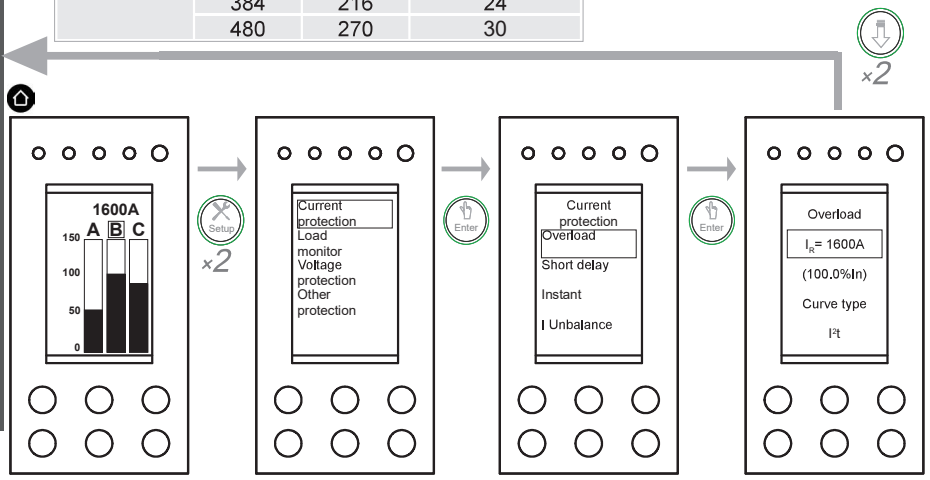
3.0 | 4.0 | 5.0

A | P | H



Parameter information			
t_R	Long time overload protection: overload time delay setting		
Configuration interface	Rotary knobs and software menu		
Resolution, range and tolerance	Range: (1 — 30)s @ 6 × I_R Tolerance: ± 15%		
Reference table of time delay at different overloads (s)	1.5 × I_R	2 × I_R	6 × I_R
	16	9	1
	32	18	2
	64	36	4
	128	72	8
	192	108	12
	256	144	16
	320	180	20
	384	216	24
	480	270	30

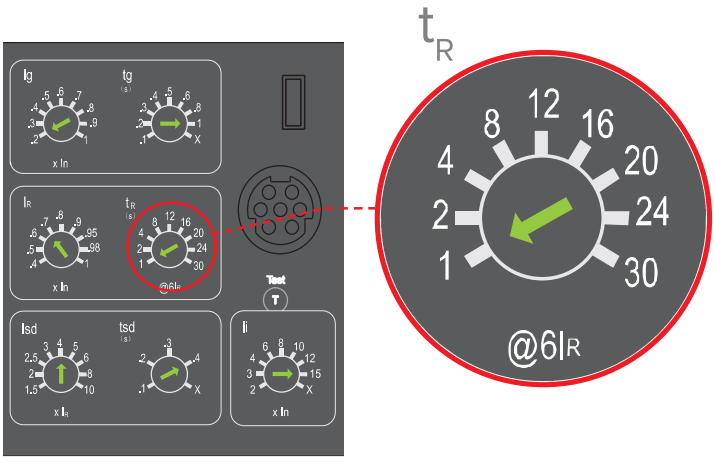




The *long overload protection* is a function that will protect the circuit installation against long time overload. One of the most important usages of this feature is to prevent overheating of conductors that could permanently damage the installation or the electrical circuit because of long time light overloads.

The *long overload time setting* (t_R) parameter corresponds to the amount of time that the overload protection will allow the abnormal condition without disconnecting the circuit breaker, based on the selected tripping curve (I^2t by default). The resultant time delay will depend on the inverse time setting, the magnitude of the overload and the type of curve selected. This parameter is expressed as the corresponding value of the delay when the overload is 6 × I_R with a range from 1s up to 30s.

The threshold I_R can be adjusted in the I_R settings parameter.

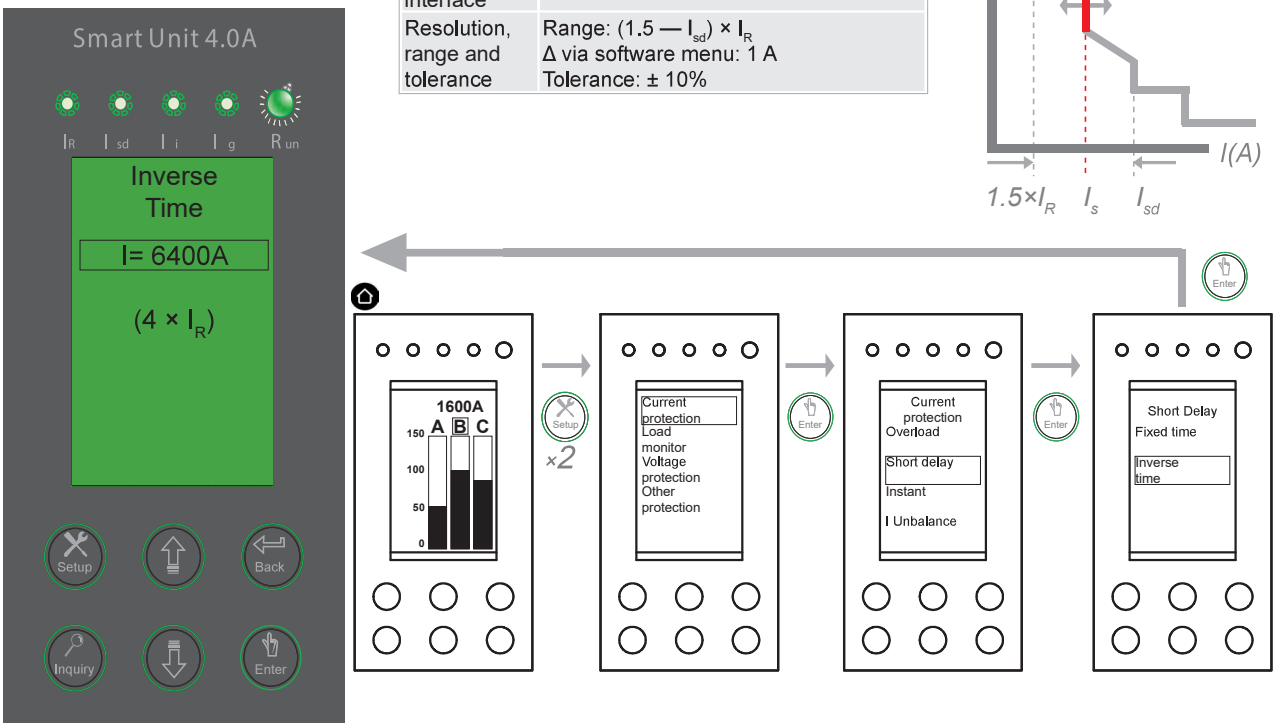


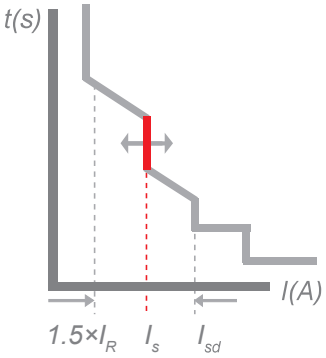
Short inverse time overload protection: I_s

3.0 4.0 5.0

A P H

Parameter information	
I_s	Short inverse time overload protection: overload current setting
Configuration interface	Only software menu
Resolution, range and tolerance	Range: (1.5 — I_{sd}) × I_R Δ via software menu: 1 A Tolerance: ± 10%





The *short inverse time overload protection* is a function that will protect the circuit installation against high overloads. This parameter allows a more accurate and faster safety disconnection of the breaker on the range of currents on which a long overlad delay time would mean a too late protection, but the instantaneous protection would suppose a too fast measure.

The *short inverse time overload current setting* (I_s) parameter corresponds to the amount of current (I_s × I_R) expressed as coefficient of the overload current, on which the air circuit breaker will start considering the measured current as a high overload on which is needed to readjust the maximum delay time. This parameter has a range from 1.5 I_R to I_{sd}. If I_s = I_{sd}, this parameter will be deactivated.

Above the I_S threshold, the air circuit breaker will decrease the amount of time t_R that the controller would allow the overload event.

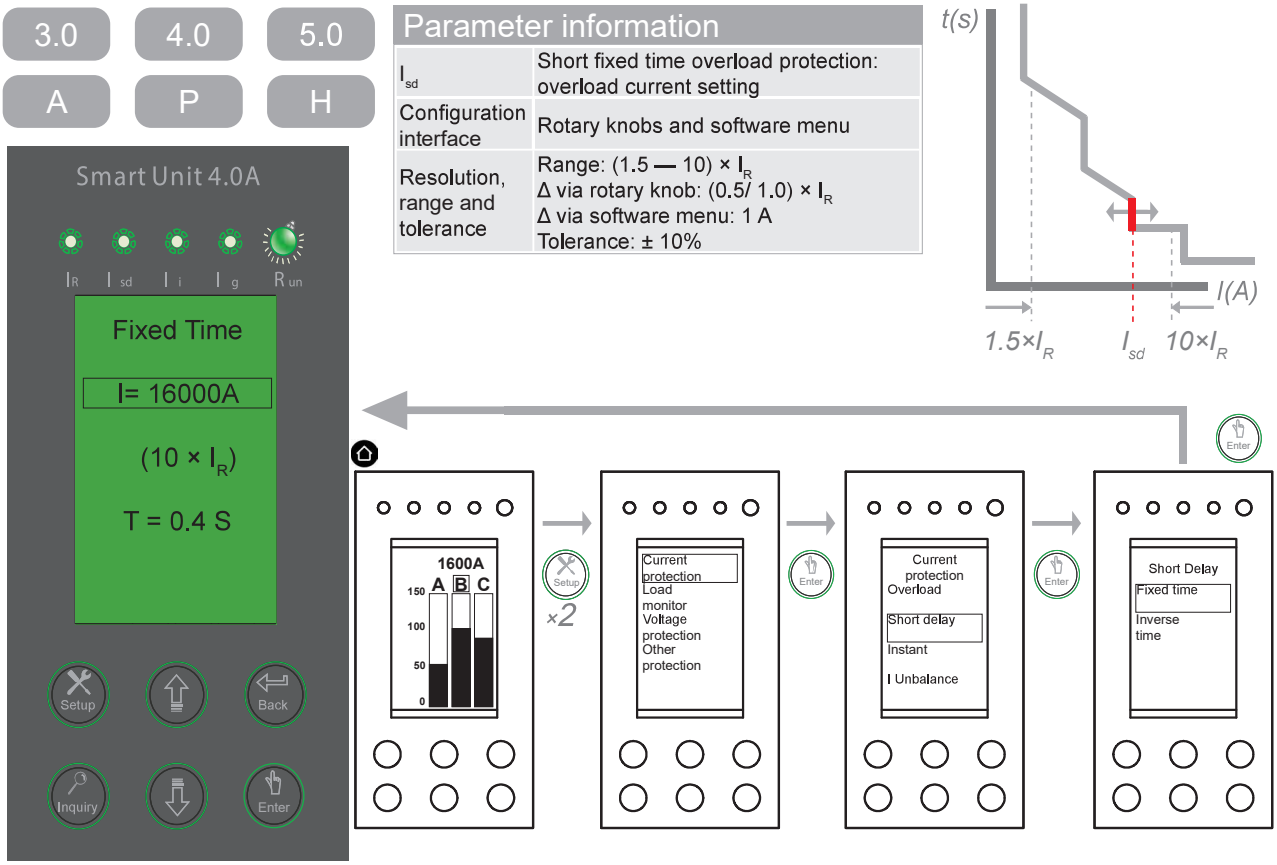
The new delay time t_s will be proportional to t_R according to the following ratio: t_s = t_R / 10

Short fixed time overload protection: I_{sd}

3.0 | 4.0 | 5.0

A | P | H

Parameter information	
I_{sd}	Short fixed time overload protection: overload current setting
Configuration interface	Rotary knobs and software menu
Resolution, range and tolerance	Range: (1.5 — 10) × I_R Δ via rotary knob: (0.5/ 1.0) × I_R Δ via software menu: 1 A Tolerance: ± 10%

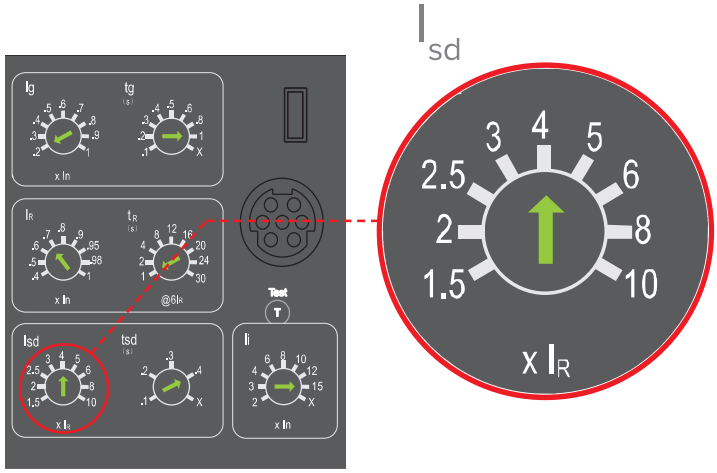


The *short fixed time overload protection* is a function that will protect the circuit installation against high overloads. This parameter allows a more accurate and faster safety disconnection of the breaker on the range of currents on which a long overlad delay time would mean a too late protection, but the instantaneous protection would suppose a too fast measure.

The *short fixed time overload current setting* (I_{sd}) parameter corresponds to the amount of current (I_{sd} × I_R) expressed as coefficient of the overload current, on which the air circuit breaker will start considering the measured current as a high overload on which is needed to readjust the maximum delay time. This parameter has a range from (1.5 — 10) × I_R.

Above the I_{sd} threshold, the air circuit breaker will decrease the amount of time (t_{sd}) that the controller would allow the overload event. This time delay (t_{sd}) can be adjusted and will be a constant value independently of the dimension of the high overload detected.

If a slower actuation time is required, the short inverse time overload current protection (I_s) can be enabled by the software menu.

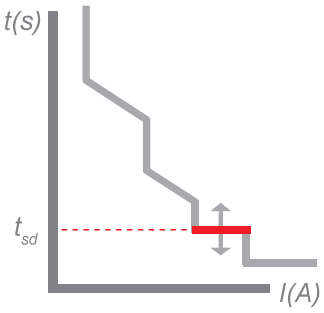


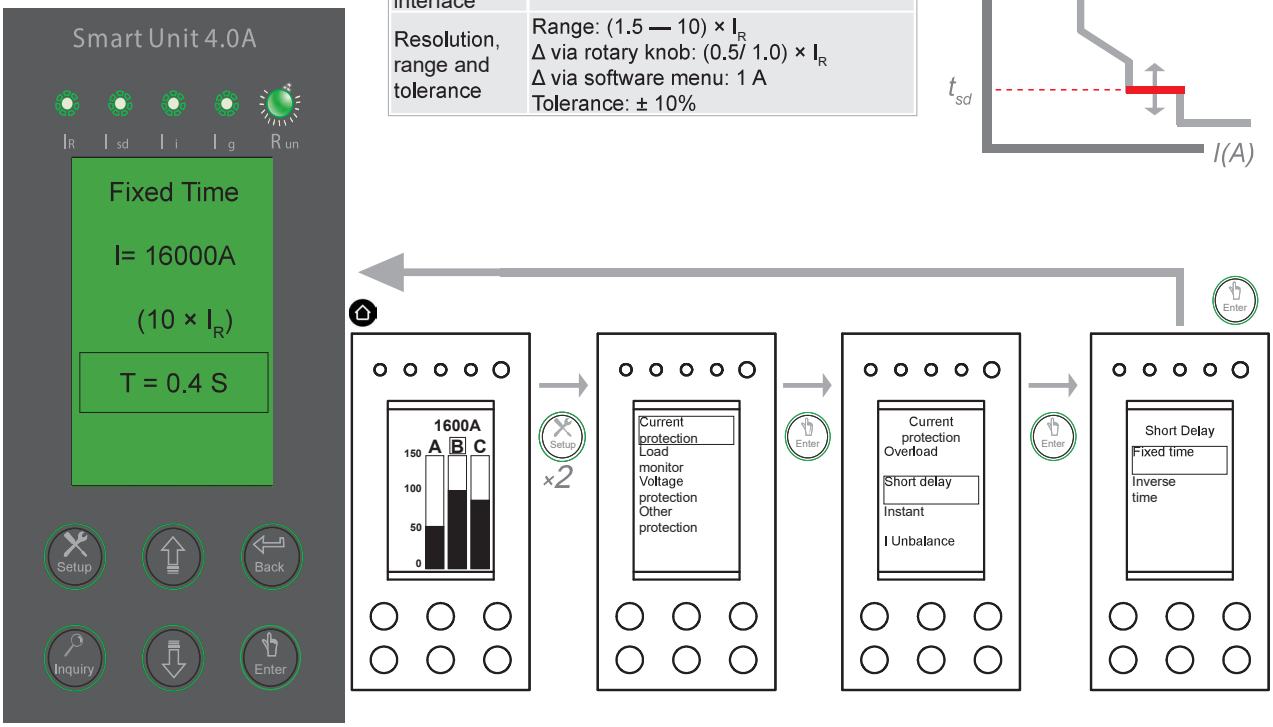
Short fixed time overload protection: t_{sd}

3.0 4.0 5.0

A P H

Parameter information	
t_{sd}	Short fixed time overload protection: time delay setting
Configuration interface	Rotary knobs and software menu
Resolution, range and tolerance	Range: (1.5 — 10) × I_R Δ via rotary knob: (0.5/ 1.0) × I_R Δ via software menu: 1 A Tolerance: ± 10%

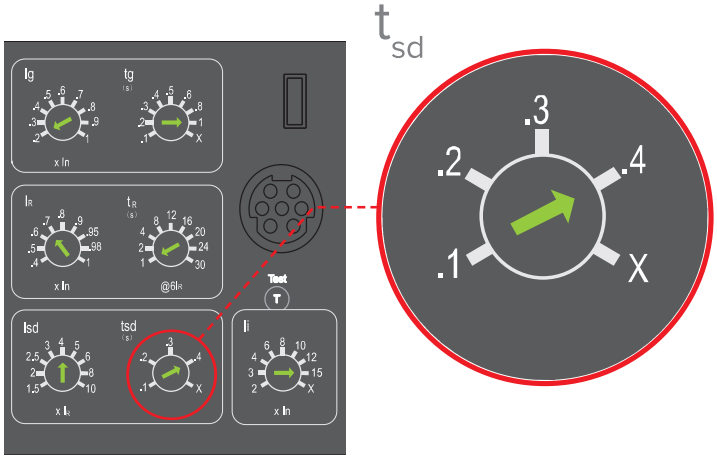




The *short fixed time overload protection* is a function that will protect the circuit installation against high overloads. This parameter allows a more accurate and faster safety disconnection of the breaker on the range of currents on which a long overlad delay time would mean a too late protection, but the instantaneous protection would suppose a too fast measure.

The *short fixed time overload time setting* (t_{sd}) parameter corresponds to the amount of time expressed in seconds, during which the air circuit breaker will allow a high overload event, starting from the moment on which the threshold of *short fixed time overload current setting* (I_{sd}) will be trespassed. This parameter has a range from (OFF / 0.1 — 0.4) s.

If a slower actuation time is required, the short inverse time overload current protection (I_s) can be enabled by the software menu, with a pre-defined time delay proportional to the *long overload time setting* (t_R).

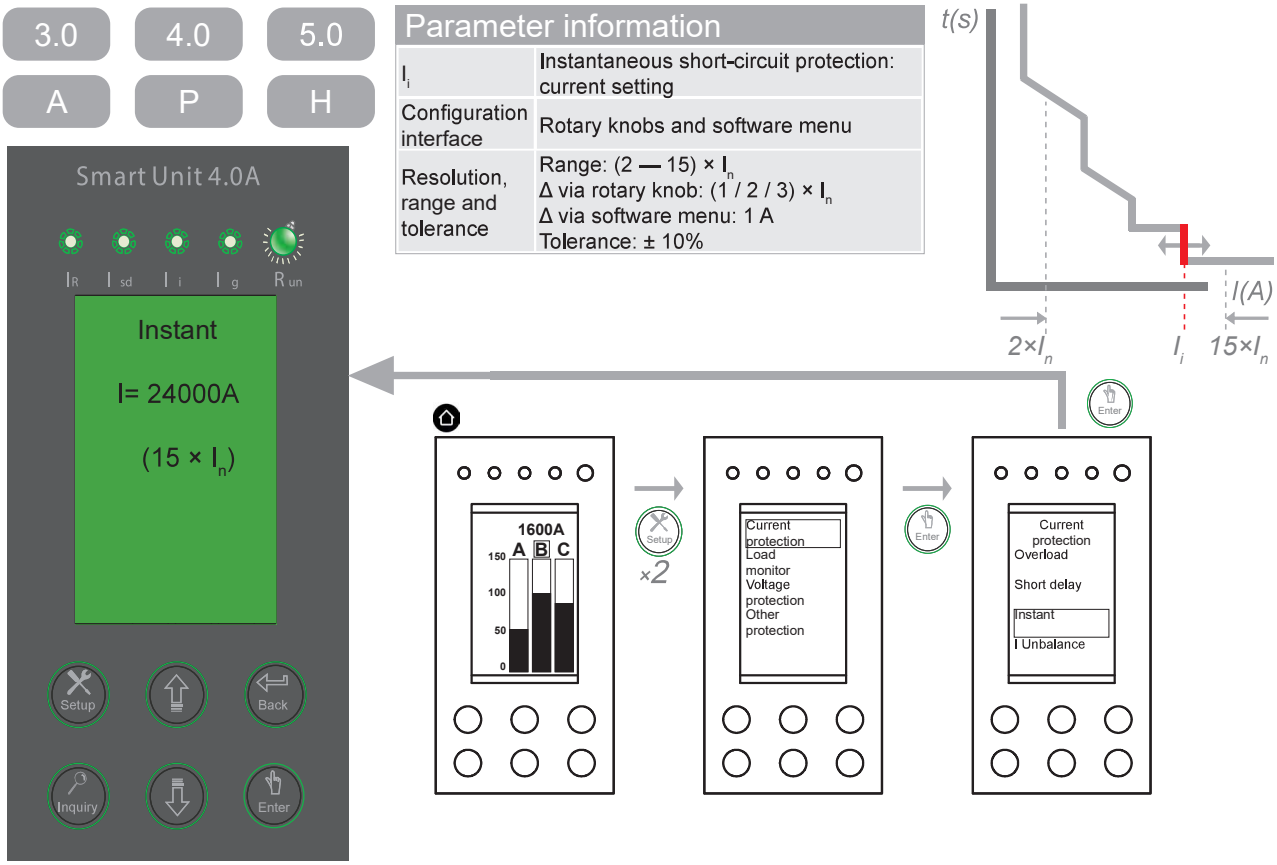


Instantaneous short-circuit protection: I_i

3.0 | 4.0 | 5.0

A | P | H

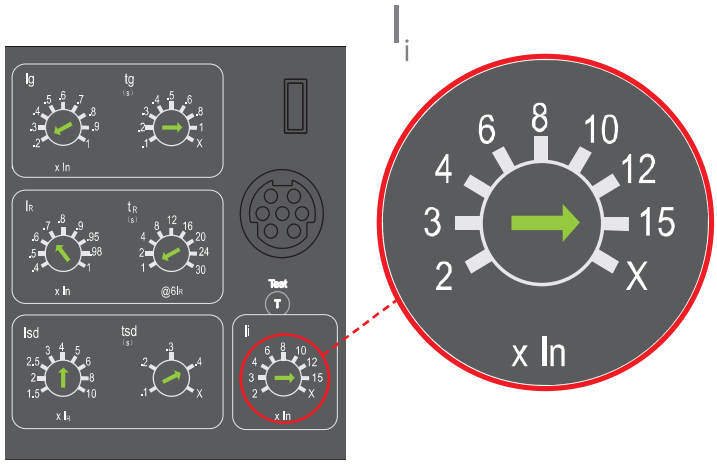
Parameter information	
I_i	Instantaneous short-circuit protection: current setting
Configuration interface	Rotary knobs and software menu
Resolution, range and tolerance	Range: (2 — 15) × I_n Δ via rotary knob: (1 / 2 / 3) × I_n Δ via software menu: 1 A Tolerance: ± 10%



The *instantaneous short-circuit protection* is a function that will protect the circuit installation against high short circuits. These short-circuits are normally caused by phase to phase or phase to neutral faults, for this reason the circuit breaker needs to actuate fast. This protection is based on true RMS values.

The *instantaneous short-circuit current setting* (I_i) parameter corresponds to the current threshold on which the circuit breaker will consider the measured current as a short-circuit condition, on which the breaker should trip as fast as possible. For this reason, the actuation time corresponds to the reaction time of the electromechanic system without any additional adjustable delay. The range of this parameter is (OFF / 2 — 15) × I_n.

If a slower actuation time is required, the *short inverse time overload protection* or the *short fixed time overload protection* can be enabled by the software menu, with a different delay configurations available.

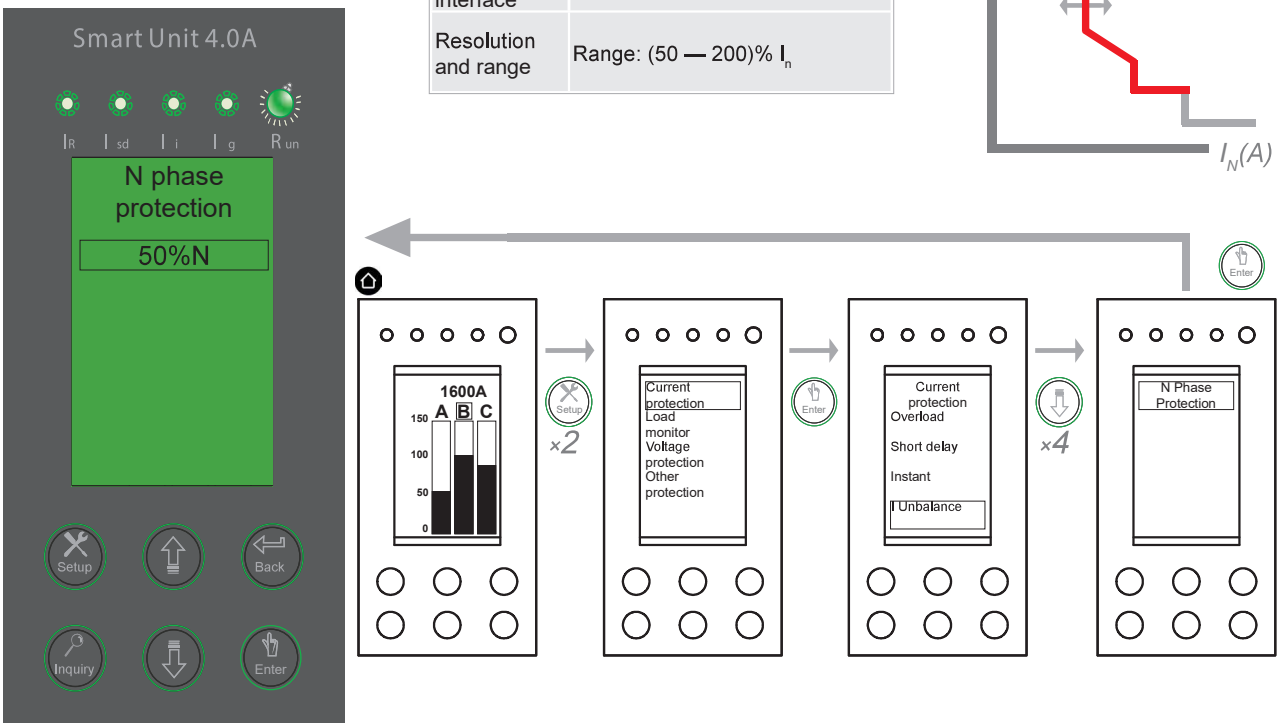


Neutral pole protection: I_{nN}

3.0 4.0 5.0

A P H

Parameter information	
I_{nN}	Neutral pole protection: coefficient setting
Configuration interface	Only software menu for 4P units
Resolution and range	Range: (50 — 200)% I_n



The *neutral pole protection* is a function that will allow a customized protection for the Neutral pole, since in many applications the wiring dimensions and characteristics of the N pole differs from a regular phase characteristics.

The *neutral pole current* (I_{nN}) parameter corresponds to the coefficient used for the customized rating of the protective parameters for the neutral pole. The range of this coefficient is 50% — 200%. It can be deactivated.

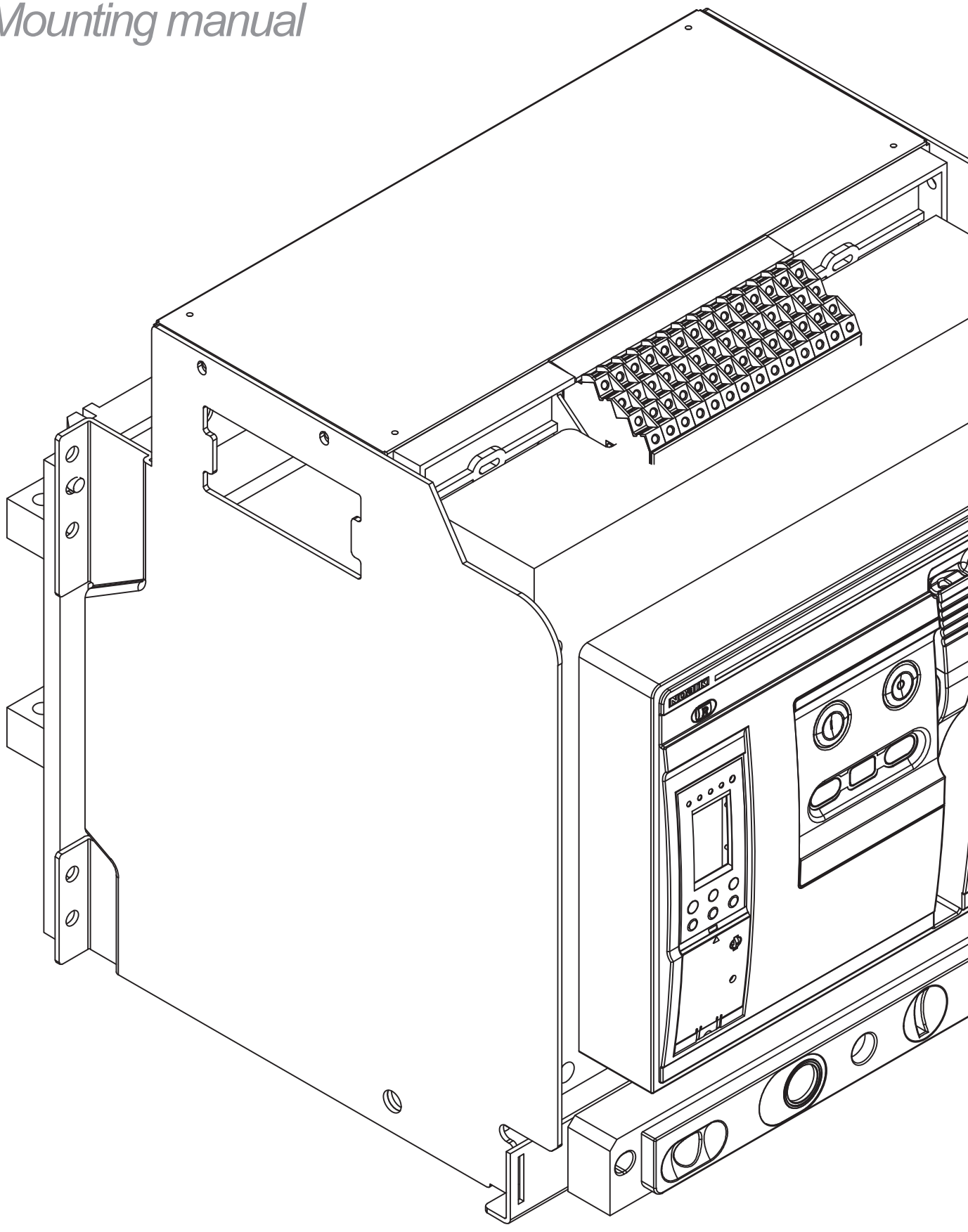
The parameters to be re-adjusted with this coefficient are:

Long time overload	Short inverse-time overload	Short fixed-time overload
$I_{RN} = I_{nN} \times I_R$	$I_{sN} = I_s \times I_{RN}$	$I_{sdN} = I_{sd} \times I_{RN}$
Example:	Example:	Example:
800A = 50% × 1600A	3200A = 4 × 800A	8000A = 10 × 800A

Notes

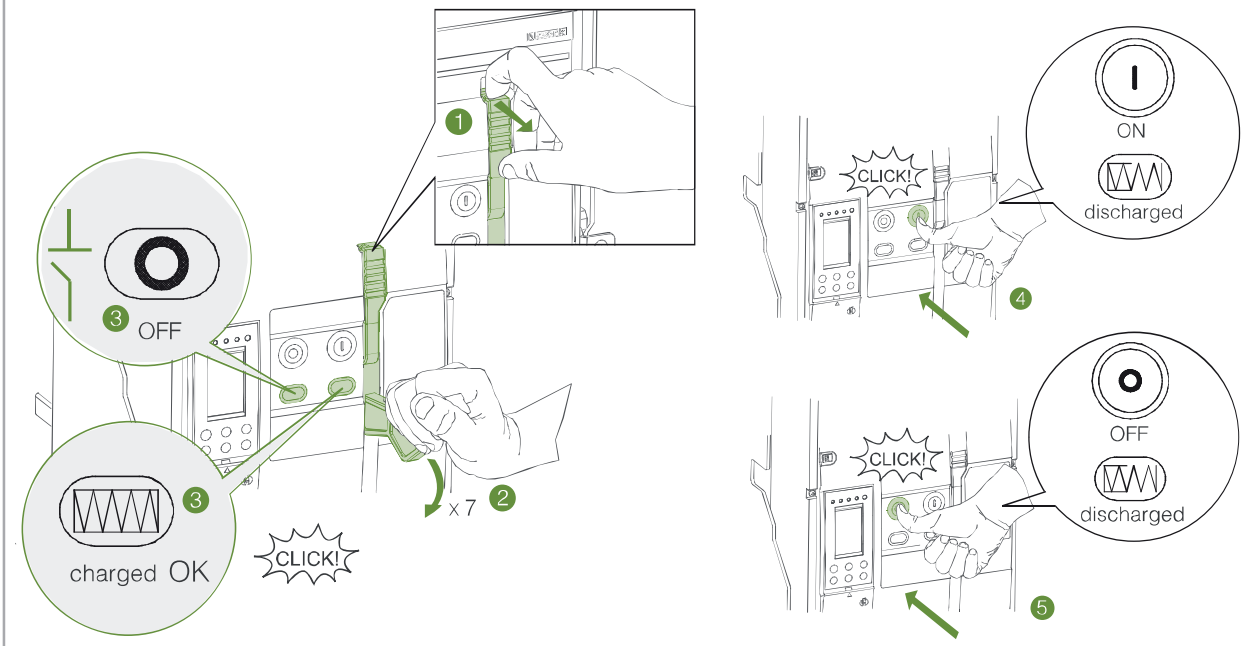
AIR CIRCUIT BREAKER

Mounting manual



Operating Principle

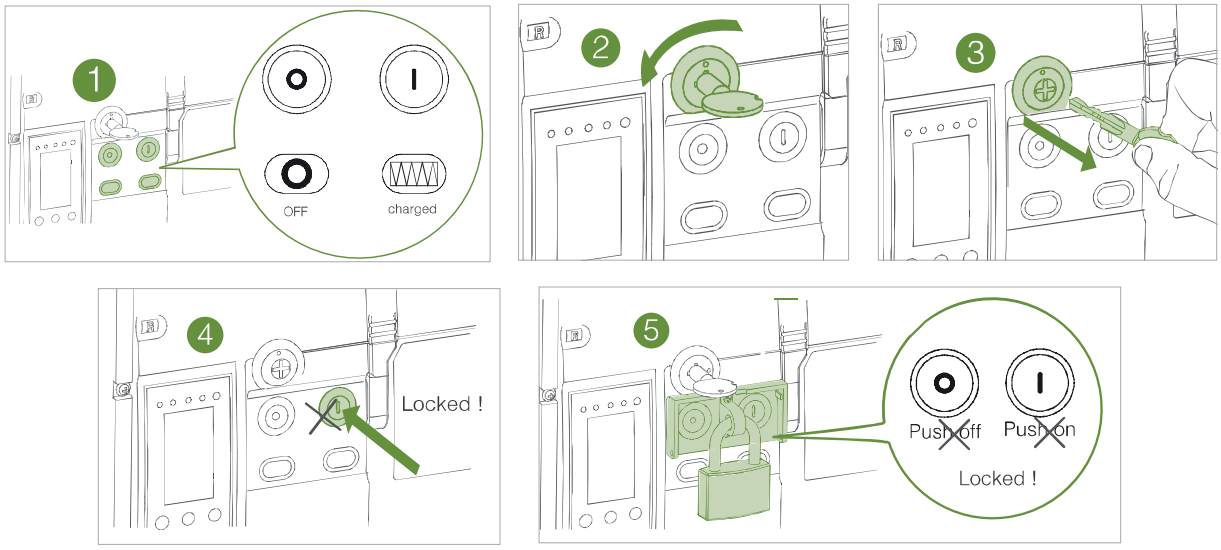
Ex9A16 / 25 / 32 / 40 Circuit breaker operating principle



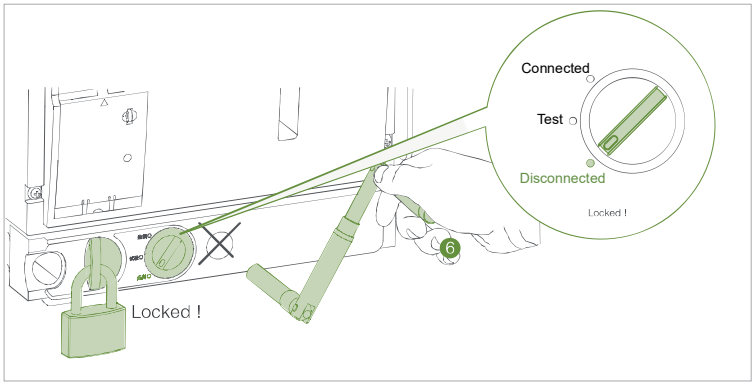
Note: each spring charge stores energy for performing a whole ON-OFF cycle

Ex9A16 / 25 / 32 / 40 with locking mechanisms

ON/OFF button lock (not premounted, under request only)

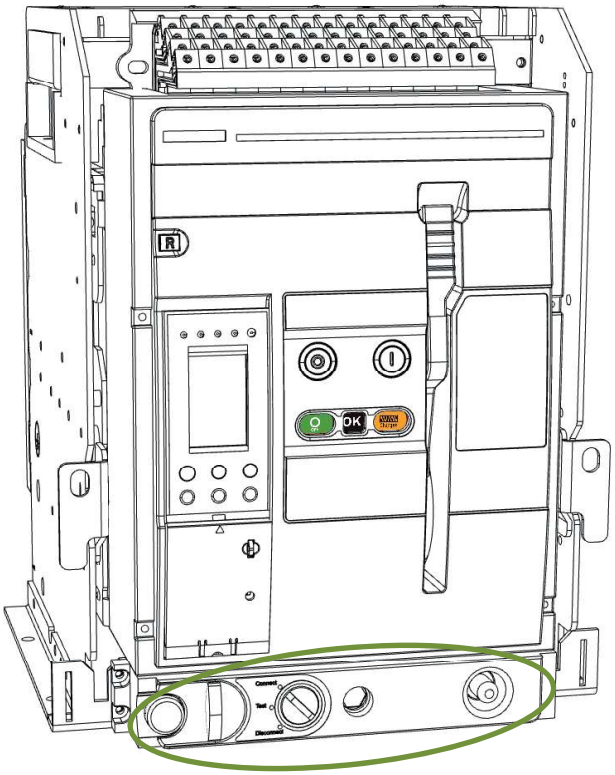


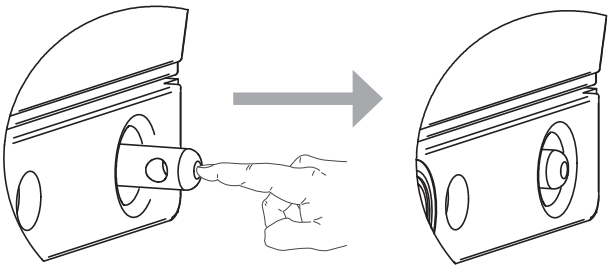
Cassette lock (premounted in the cassette)



Operating Principle

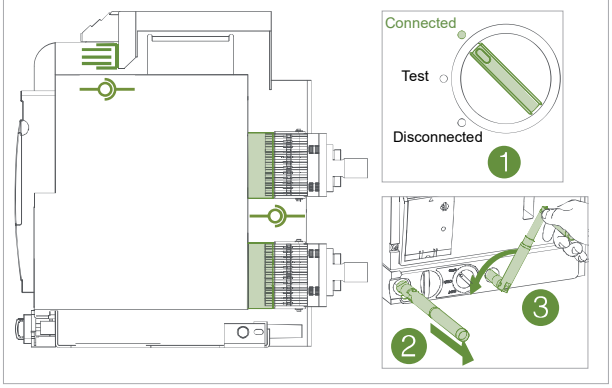
Ex9A16 / 25 / 32 / 40 draw-out operating principle



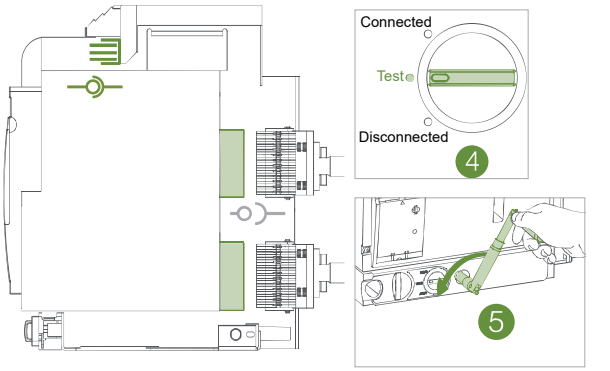


Note: when progressively extracting the cassette, the cassette position lock will trip notifying that the change is complete. The position lock will not allow any change to the cassette till reinserted, is possible to lock to avoid undesired modifications

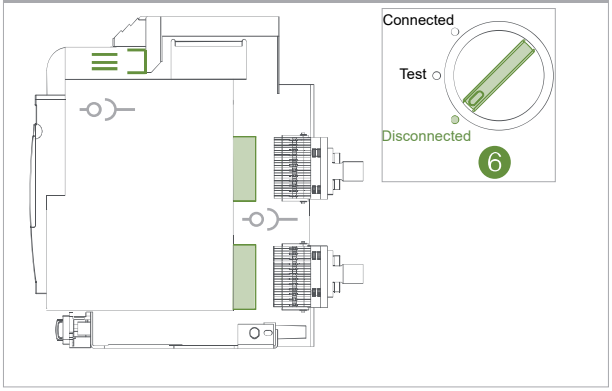
Connected



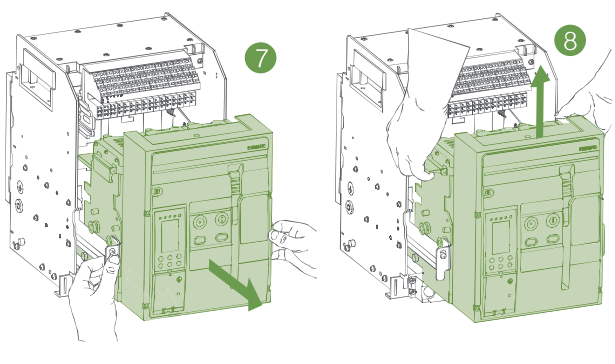
Test



Disconnected

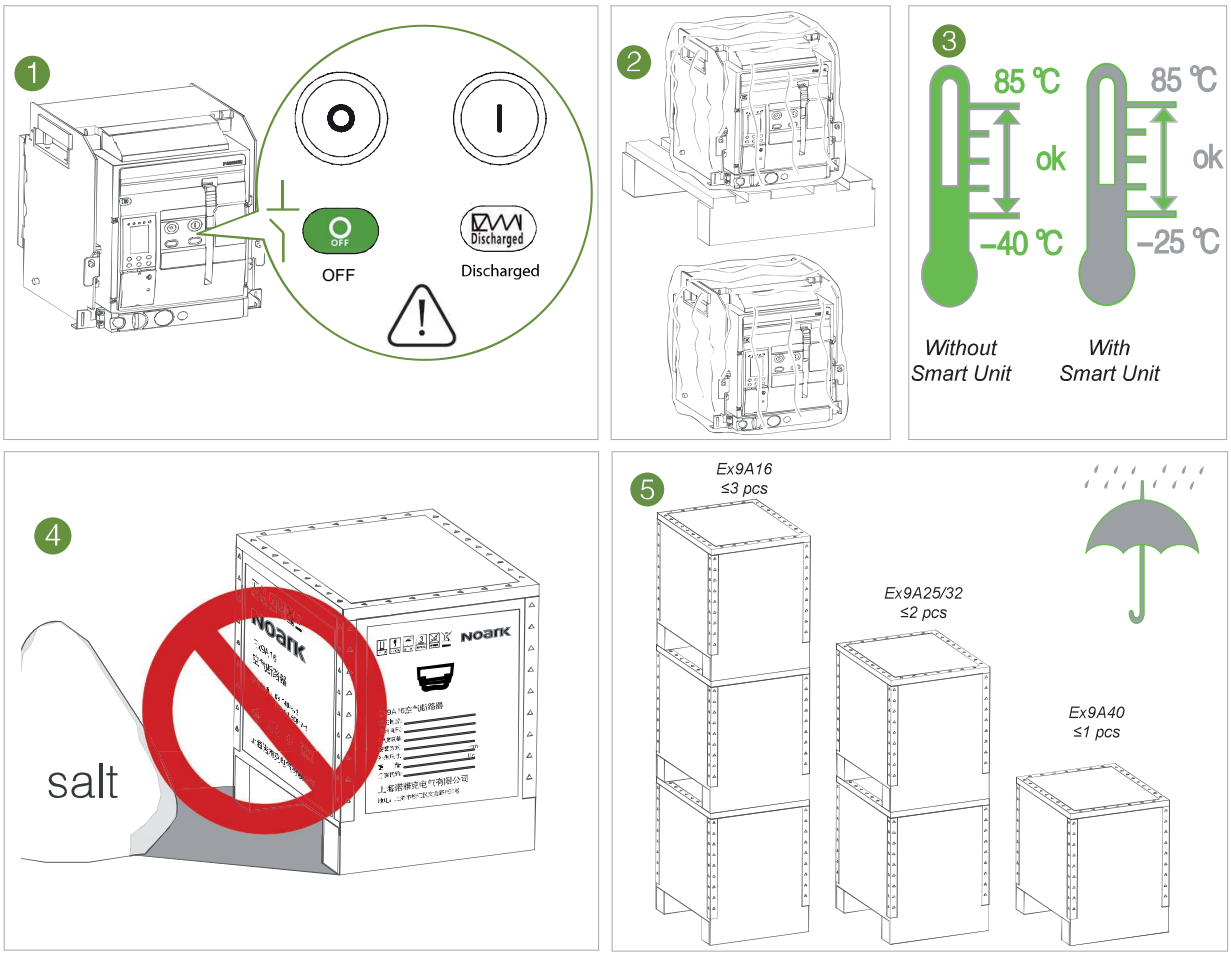


Extraction and removal

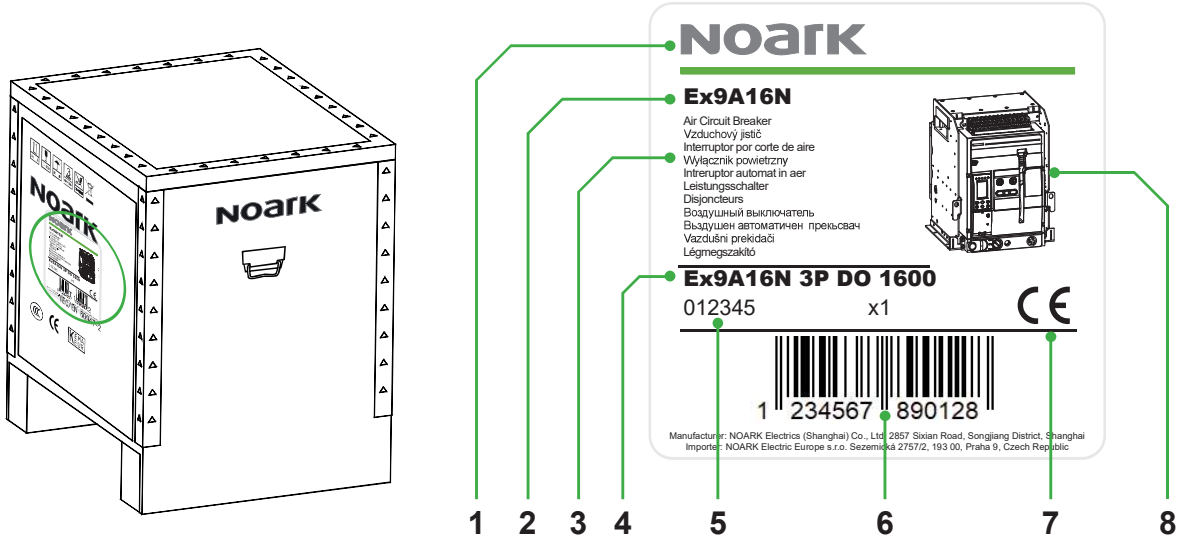


Storage

Storage conditions



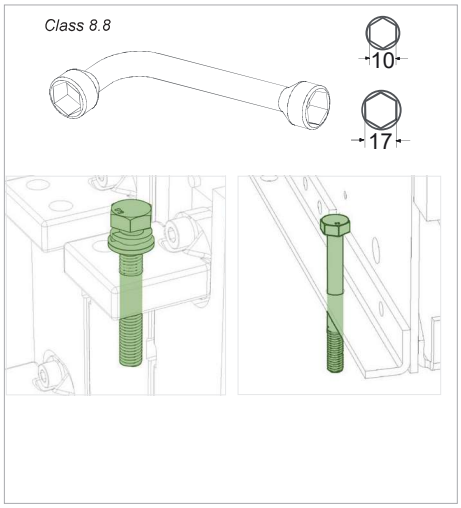
Package identification

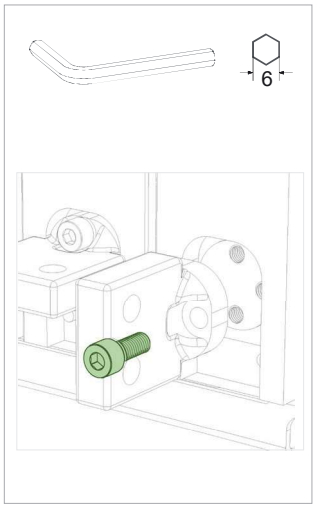


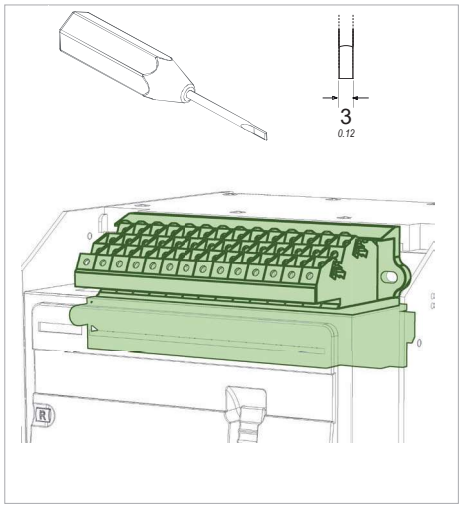
1. Brand name
2. Product series
3. Series name translated
4. Product model
5. Ordering code
6. EAN code
7. Certifications
8. Product preview

Unpacking

Required tools

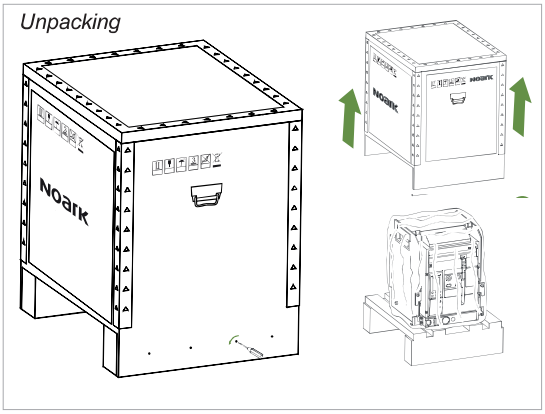




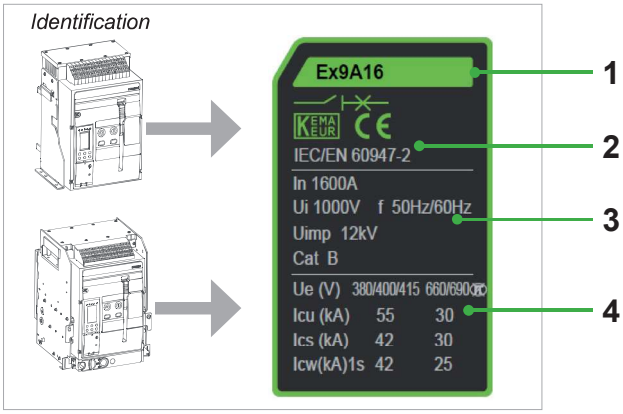


Unpacking

Unpacking

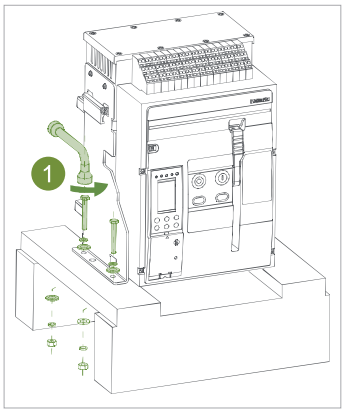


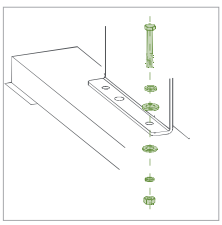
Identification



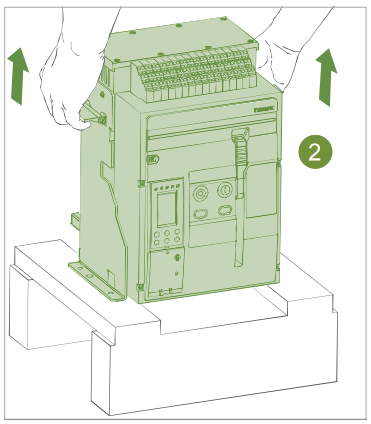
1. Product series
2. Certification information
3. Nominal parameters
4. Breaking capacities

Ex9A16/25/32/40 ***Fixed***





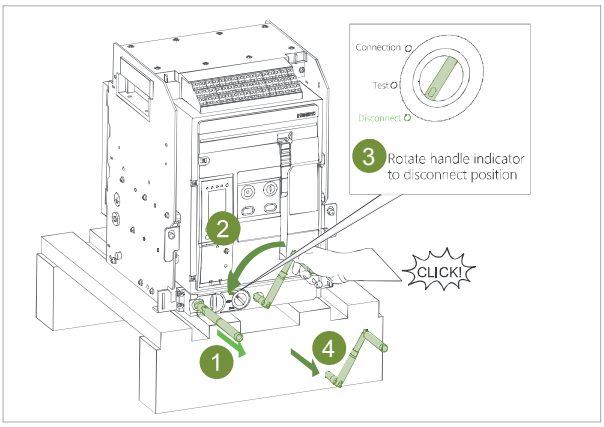
Ex9A16: 4 × M6
Ex9A25: 4 × M10
Ex9A32: 4 × M10
Ex9A40: 4 × M10

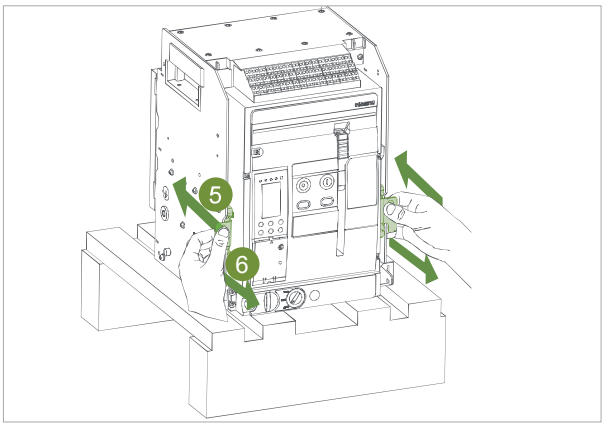


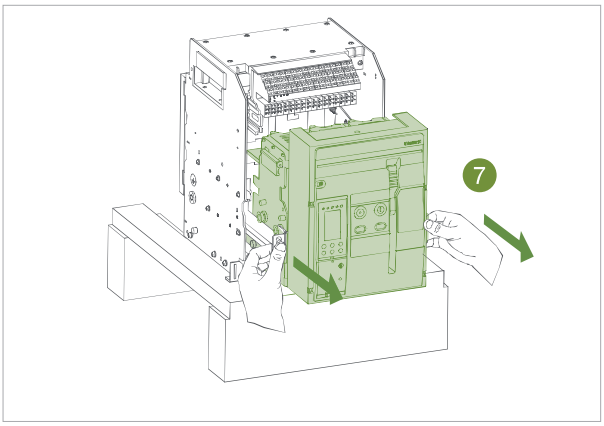
Unpacking

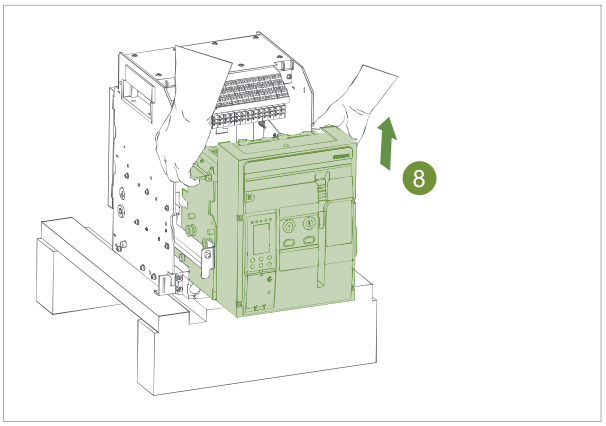
Unpacking

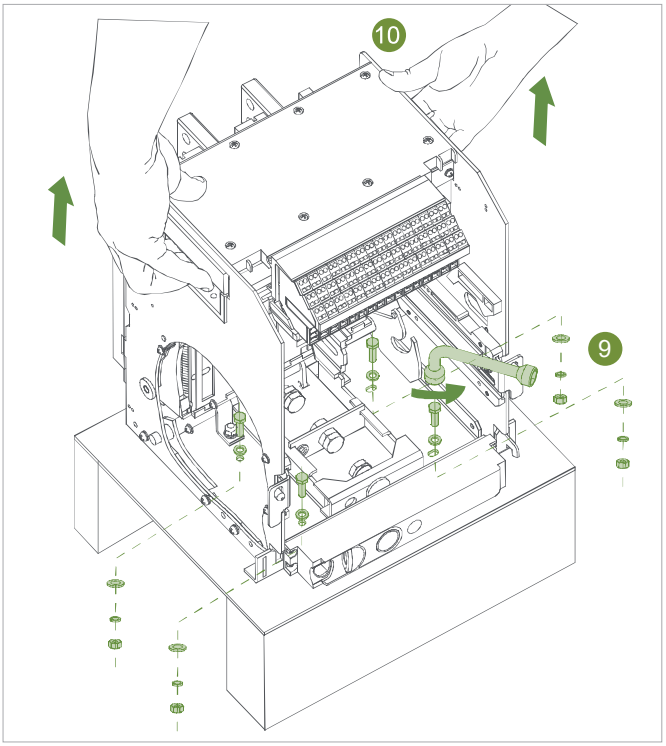
Ex9A16/25/32/40/75 ***Withdrawable***

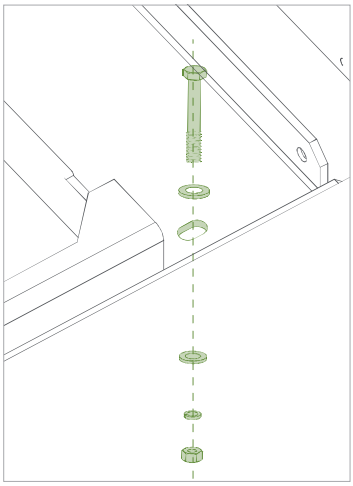








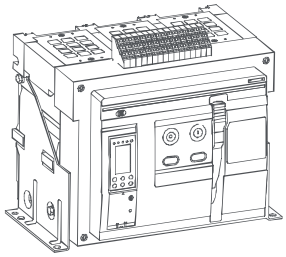
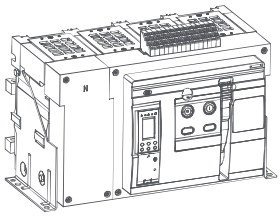
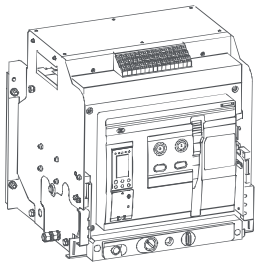
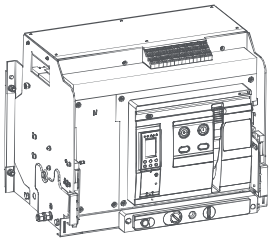




Ex9A16: 4 × M6
Ex9A25: 4 × M10
Ex9A32: 4 × M10
Ex9A40: 4 × M10

Handling

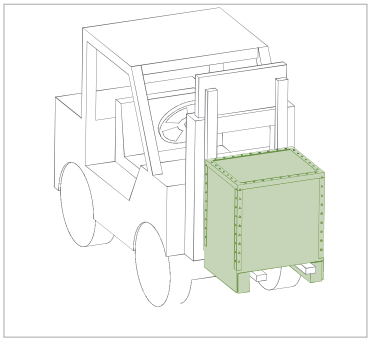
Weight table

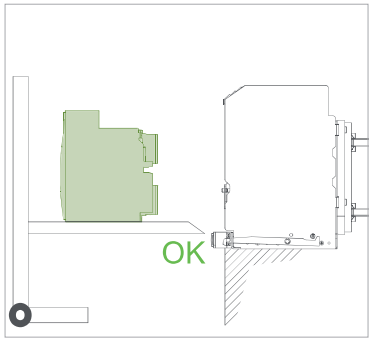
	Ex9A16		Ex9A25		Ex9A32		Ex9A40	
	400 — 800A	1000 — 1600A	630 — 1600A	2000 — 2500A	1600 — 2500A	3200A	2000 — 3200A	4000A
 Fixed; 3P	25kg	26kg	58kg	63kg	75kg	76.5kg	80kg	83.5kg
 Fixed; 4P	30kg	31kg	65kg	70kg	85kg	87.5kg	95kg	99.5kg
 Withdrawable; 3P	41kg	42kg	96kg	106kg	120kg	122.5kg	120kg	123kg
 Withdrawable; 4P	58kg	59kg	117kg	127kg	145kg	147kg	165kg	169.5kg

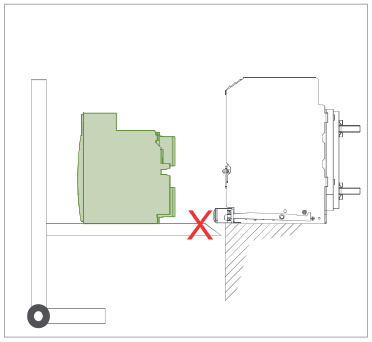
Handling

Transportation

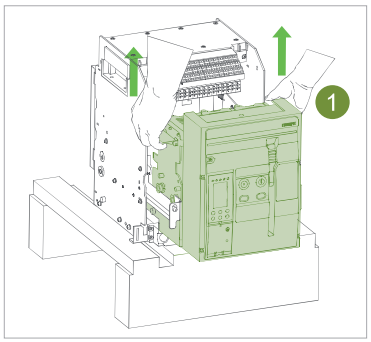
Ex9A16/25/32/40/75

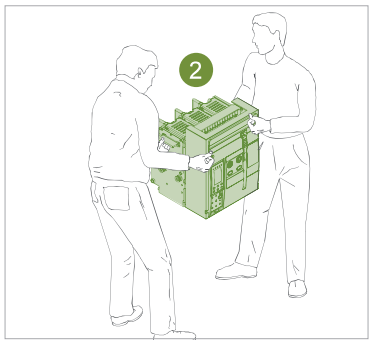


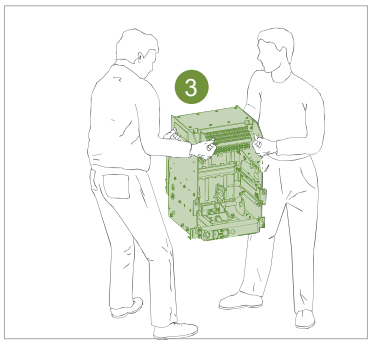




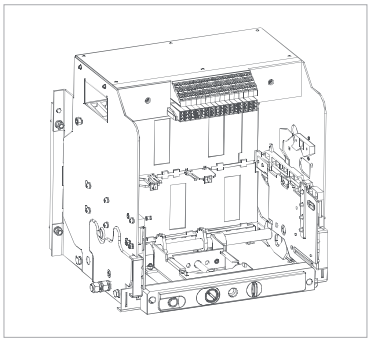
Ex9A16 Withdrawable

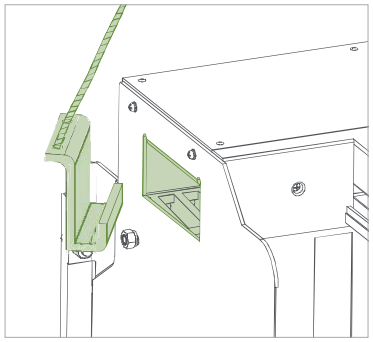


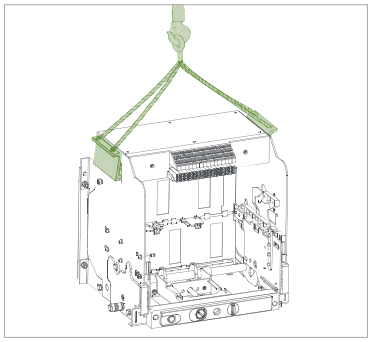


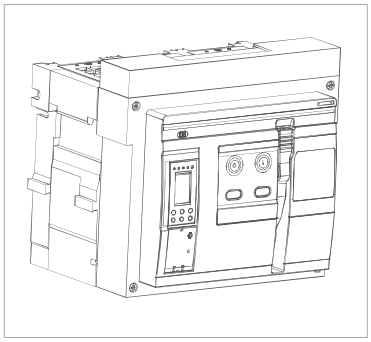


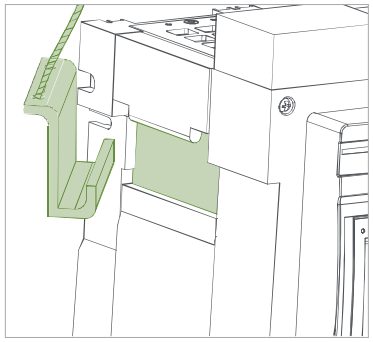
Ex9A25/32/40/75 Withdrawable

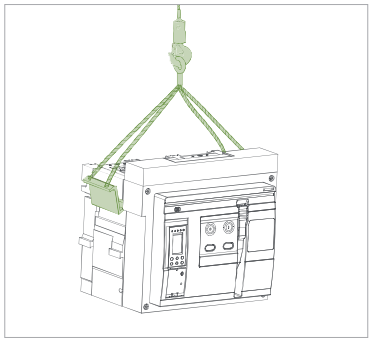








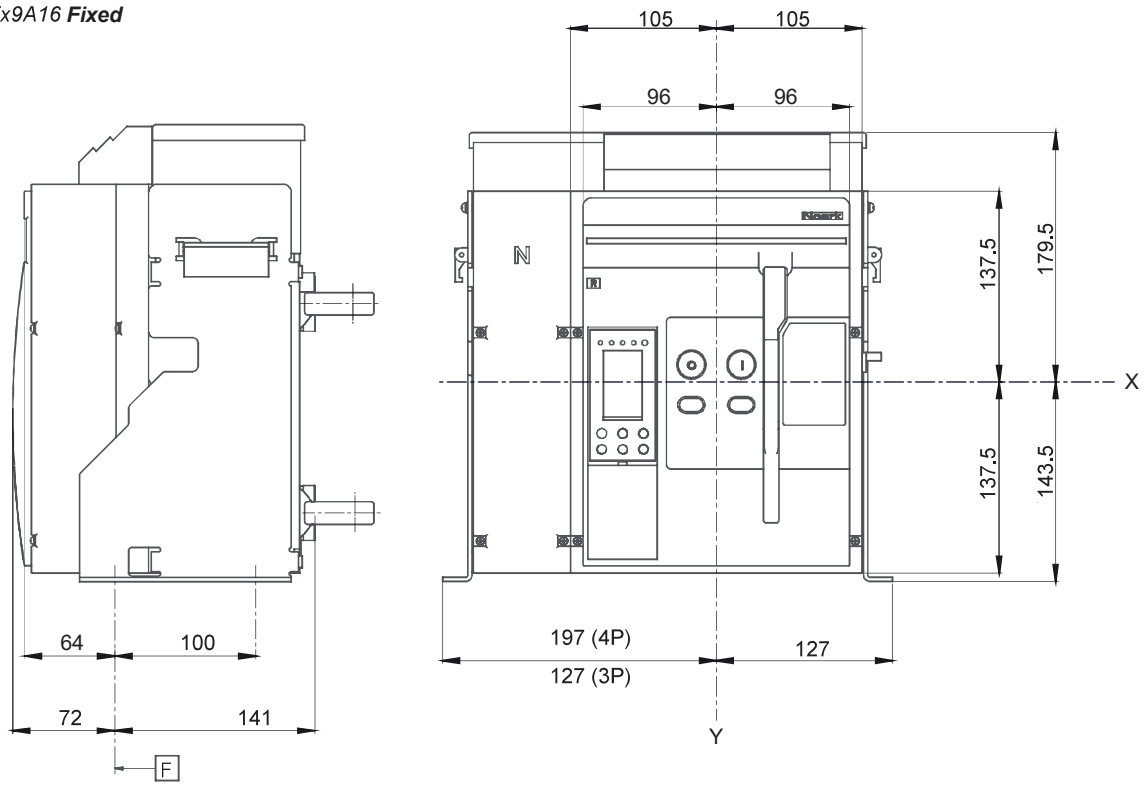




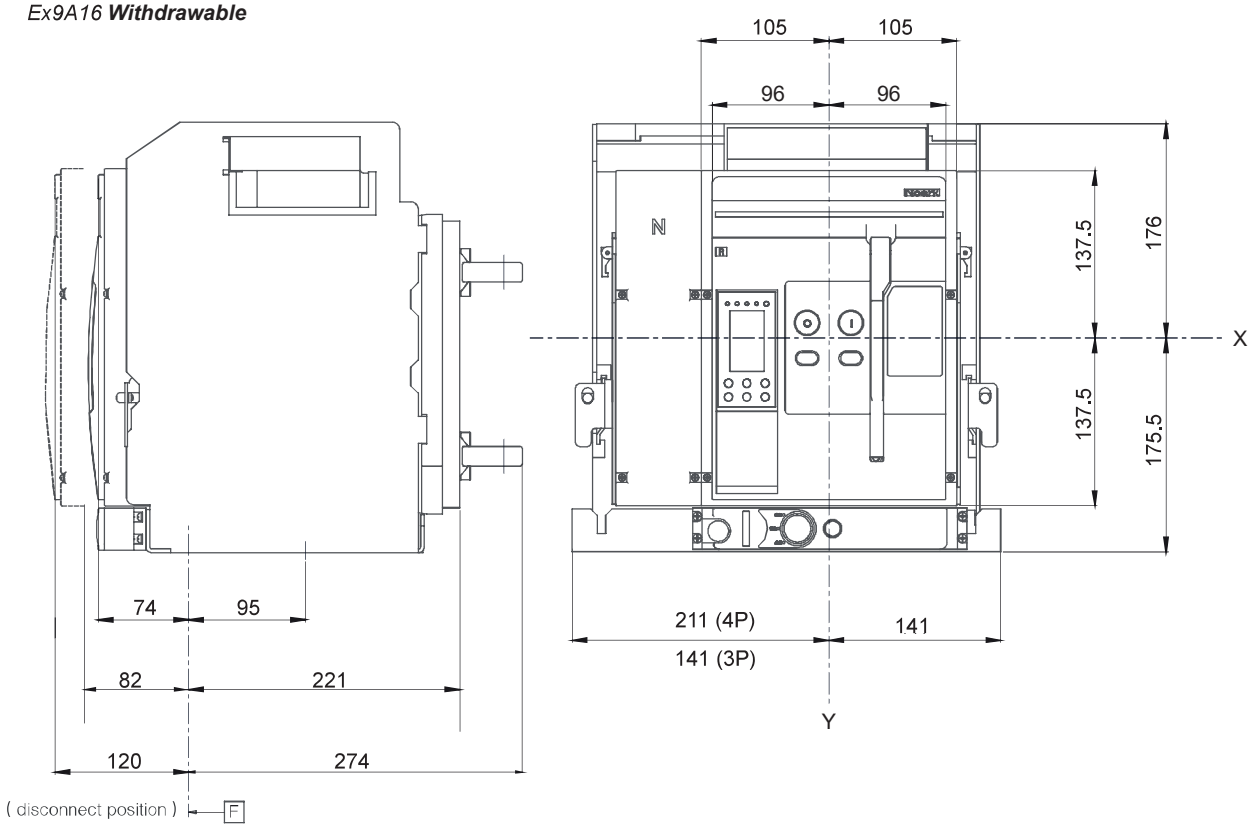
Ex9A16 Dimensions

Outline dimensions

Ex9A16 ***Fixed***



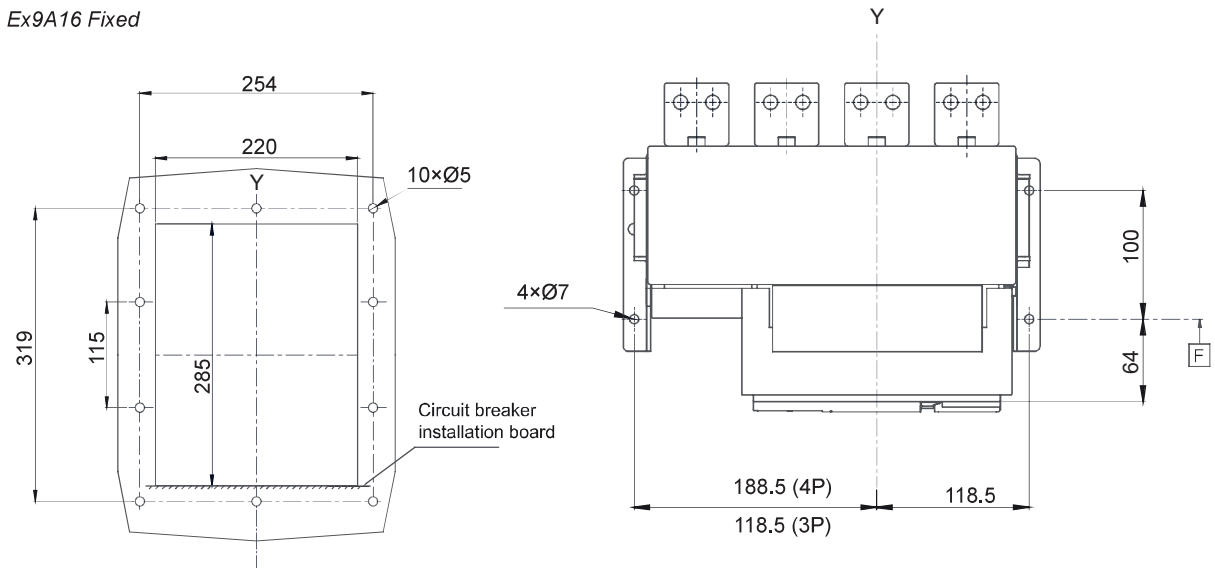
Ex9A16 ***Withdrawable***



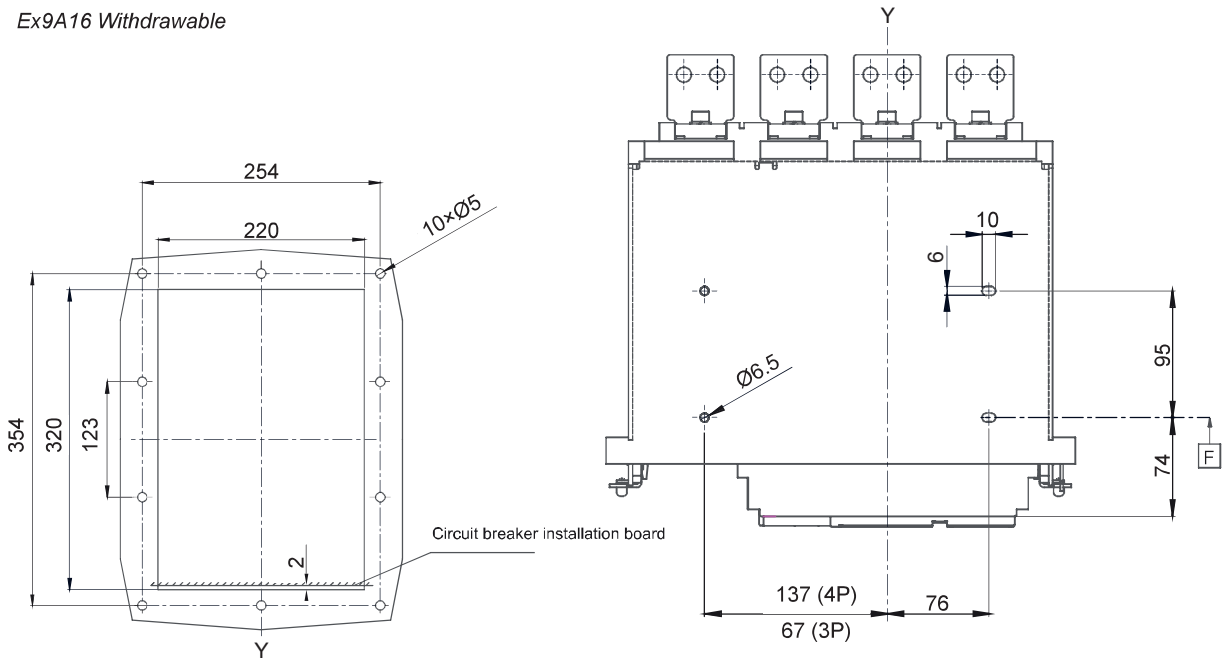
Ex9A16 Dimensions

Installation dimensions

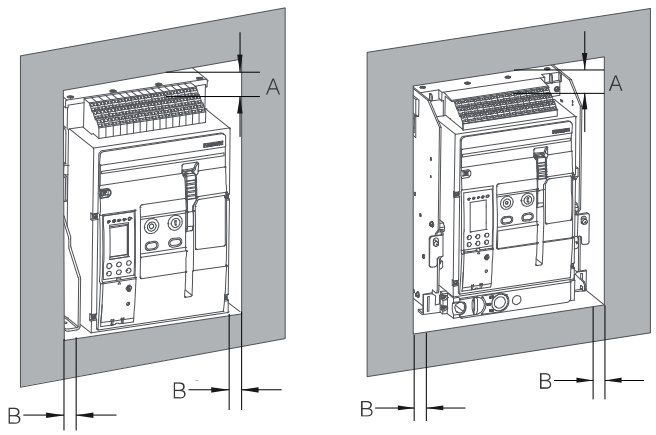
Ex9A16 Fixed



Ex9A16 Withdrawable



Ex9A16 Installation space



Fixed *Withdrawable*

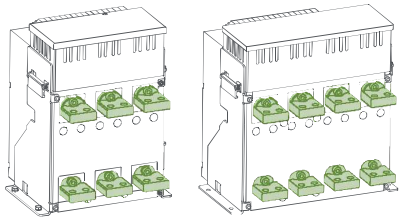
Safety distance

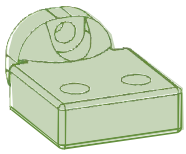
Safety distance (mm)	A	B
Insulated	0	0
Uncharge metal	0	0
Live conductor	100	60

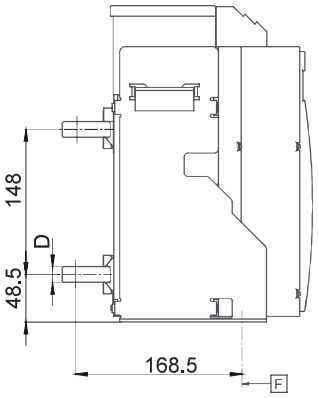
Ex9A16 Power connectors

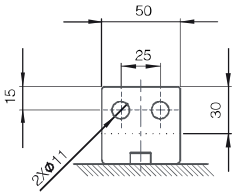
Power connector dimensions

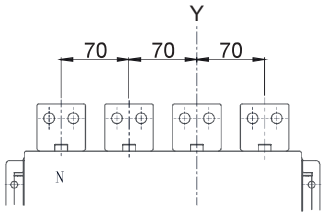
Ex9A16 Fixed horizontal connections





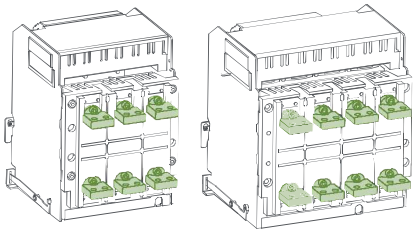


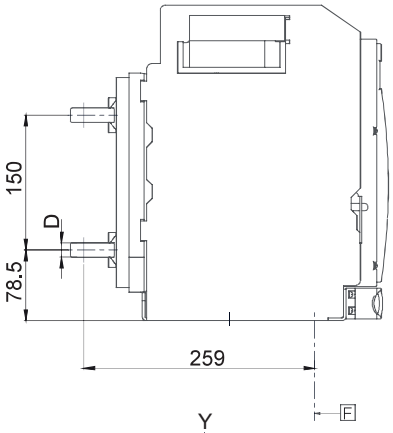


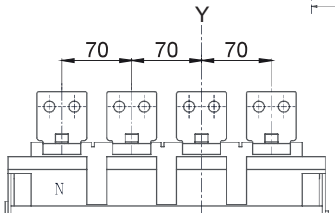


Rated current	D (mm)
400 — 800 A	10
1000 — 1600 A	16

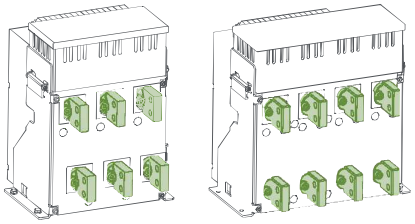
Ex9A16 Withdrawable horizontal connections

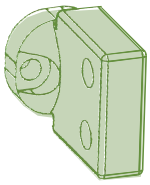


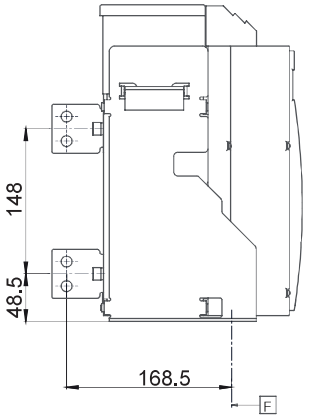


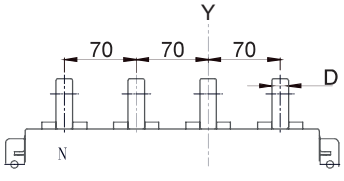


Ex9A16 Fixed vertical connections



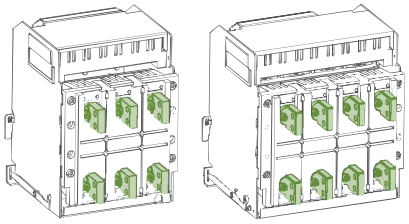


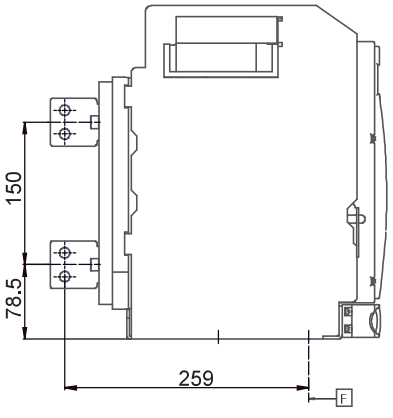


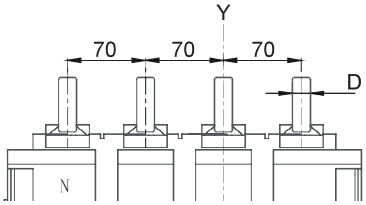


Rated current	D (mm)
400 — 800 A	10
1000 — 1600 A	16

Ex9A16 Withdrawable vertical connections

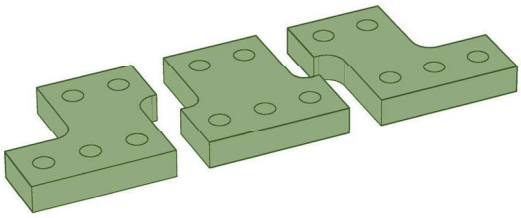




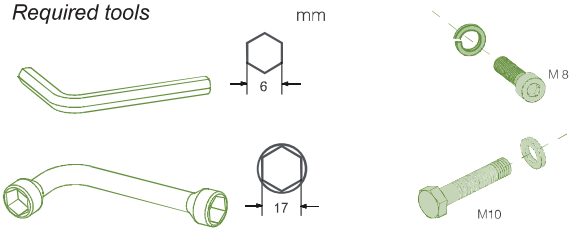


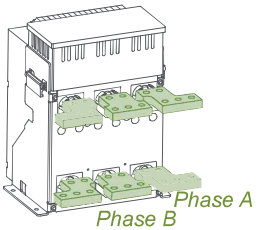
Ex9A16 Power connectors

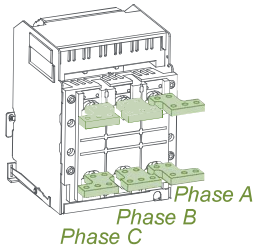
TEX terminals 3P

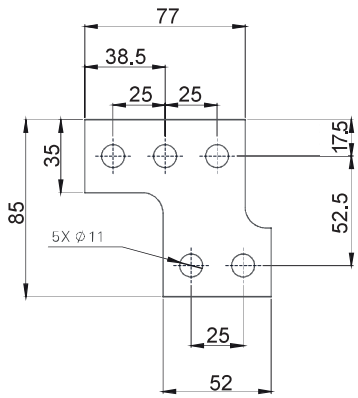


Required tools

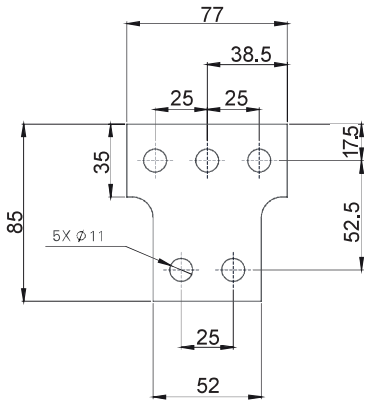






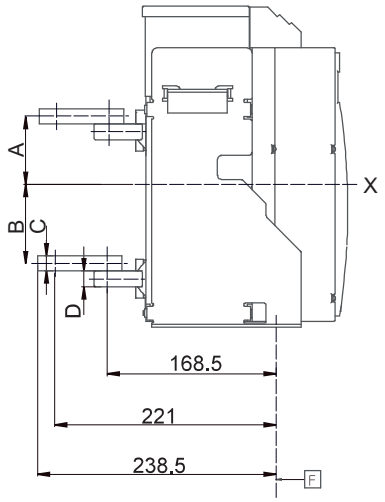


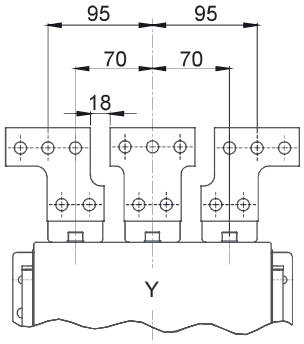
Phase A and phase C



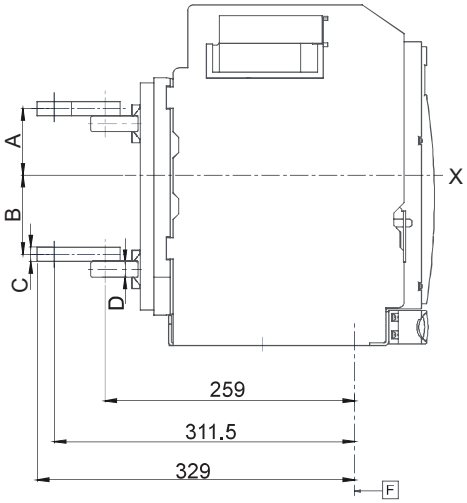
Phase B

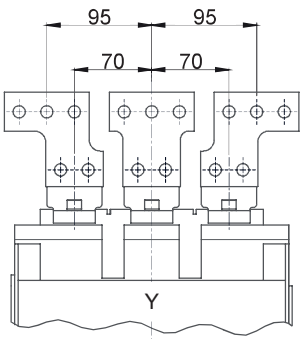
Ex9A16 Fixed TEX





Ex9A16 Withdrawable TEX

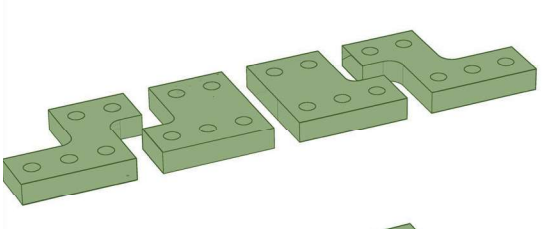




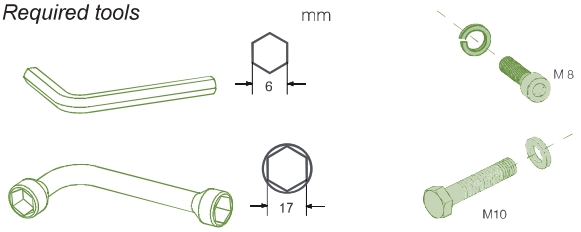
Rated current	A (mm)	B (mm)	C (mm)	D (mm)
400 — 800 A	63	85	10	10
1000 — 1600 A	68.5	79.5	15	16

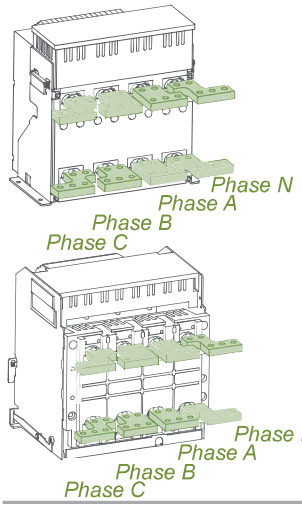
Ex9A16 Power connectors

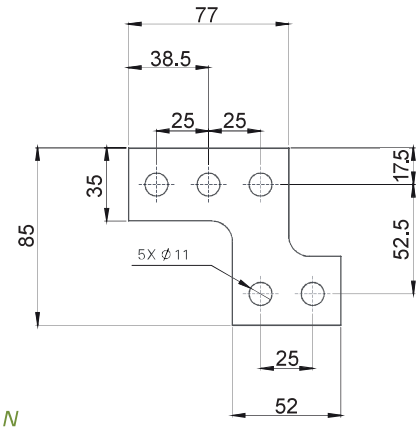
TEX terminals 4P



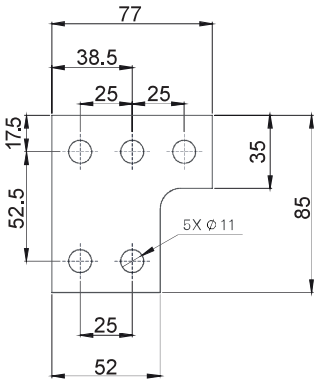
Required tools





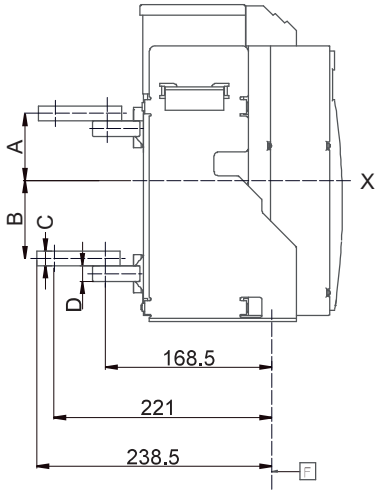


Phase N and phase C

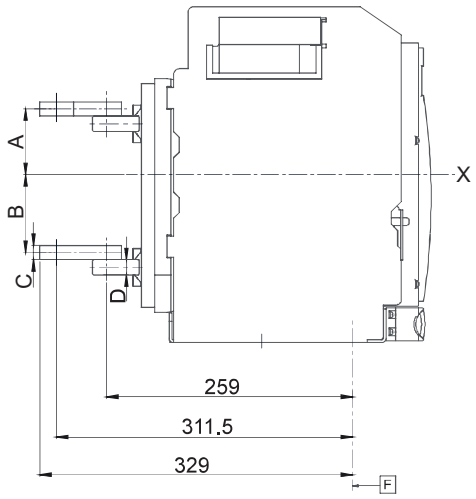


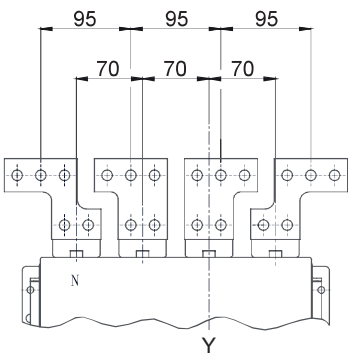
Phase A and phase B

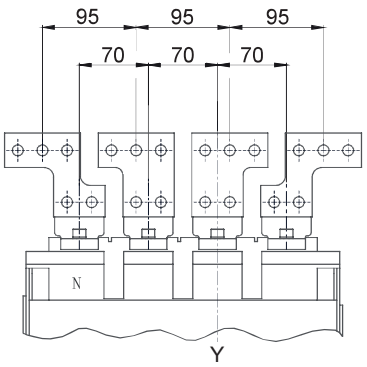
Ex9A16 Fixed TEX



Ex9A16 Withdrawable TEX





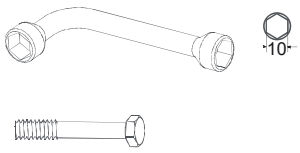


Rated current	A (mm)	B (mm)	C (mm)	D (mm)
400 — 800 A	63	85	10	10
1000 — 1600 A	68.5	79.5	15	16

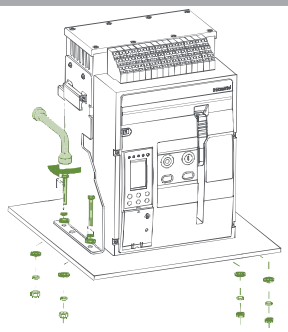
Ex9A16 Installation

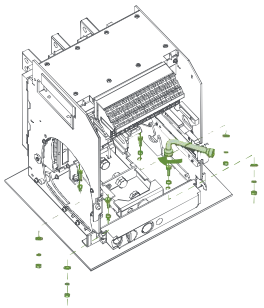
Ex9A16 Installation

Required tools

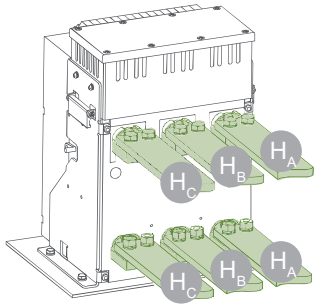


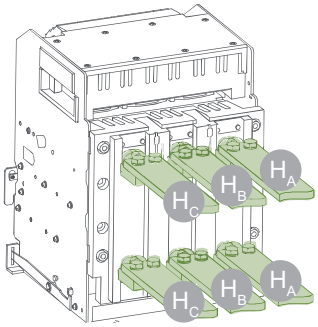
Ex9A16: 4 × M6

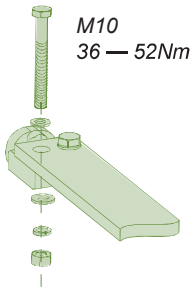


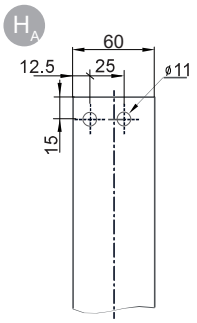


400 — 800A Horizontal busbars

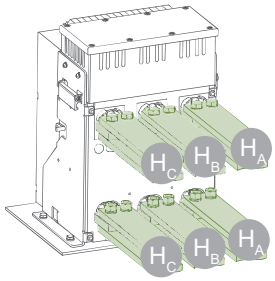


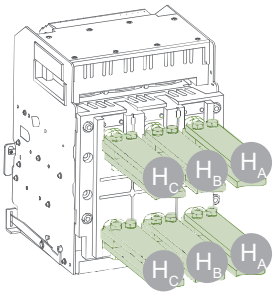


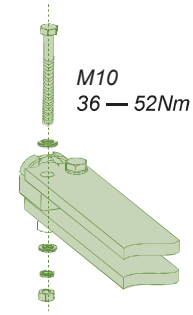


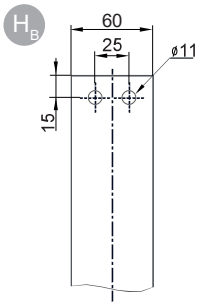


1000 — 1600A Horizontal busbars

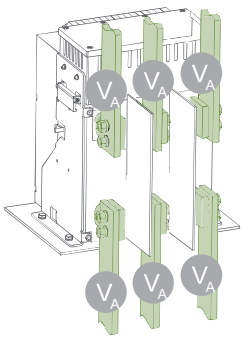


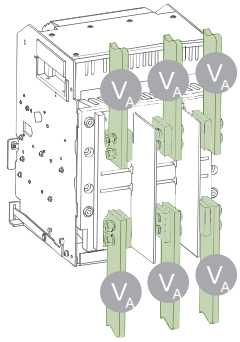


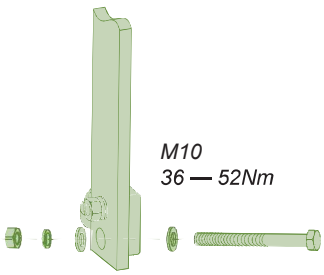


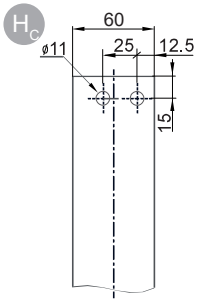


400 — 800A Vertical busbars

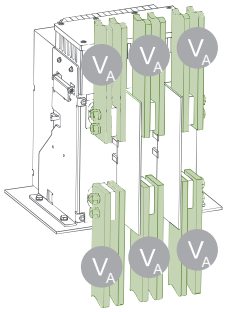


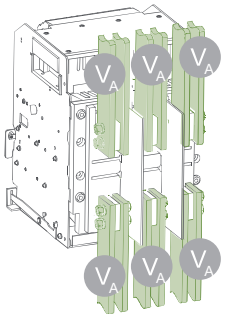


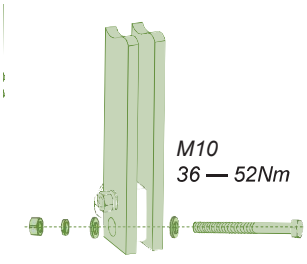


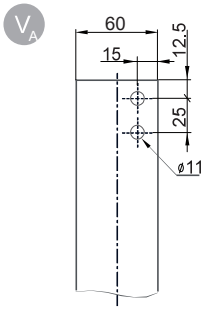


1000 — 1600A Vertical busbars





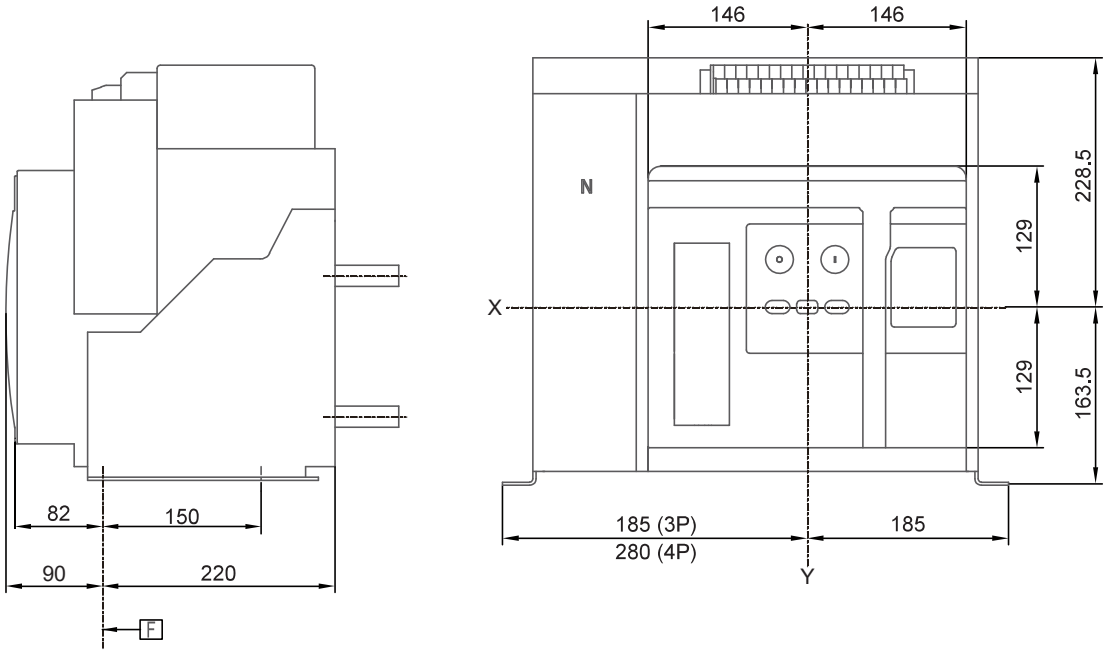




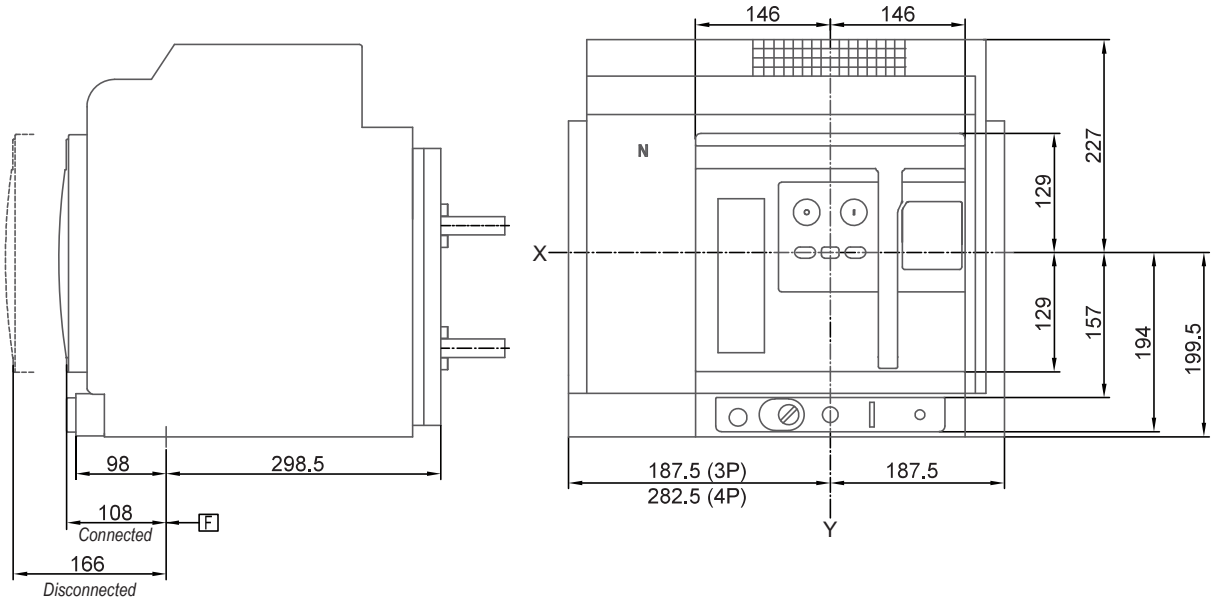
Ex9A25 Dimensions

Outline dimensions

Ex9A25 Fixed



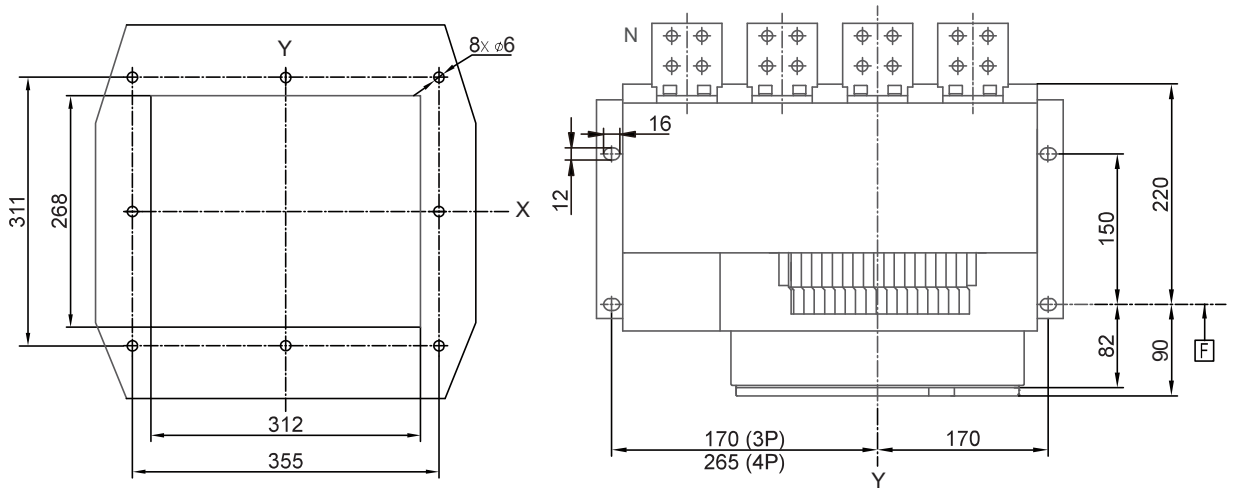
Ex9A25 Withdrawable



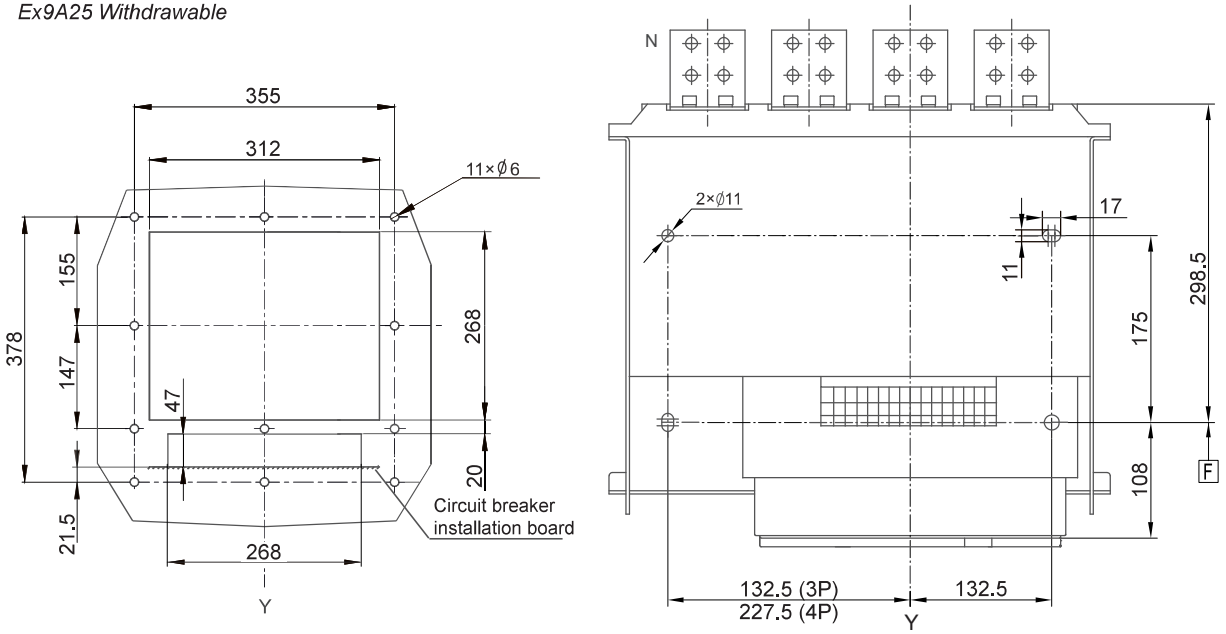
Ex9A25 Dimensions

Installation dimensions

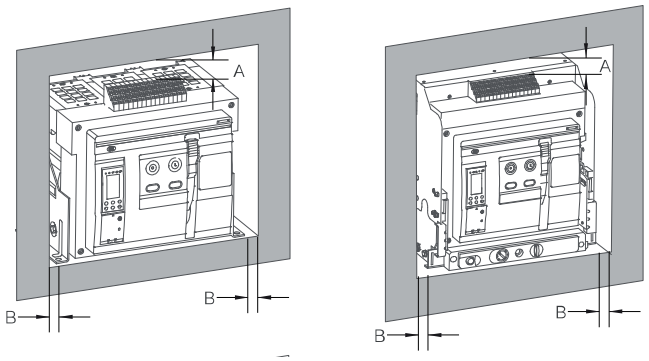
Ex9A25 Fixed



Ex9A25 Withdrawable



Ex9A25 Installation space



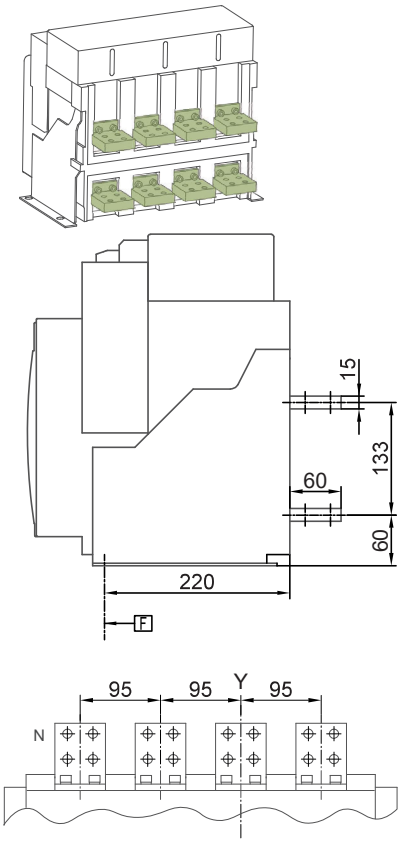
Fixed *Withdrawable*

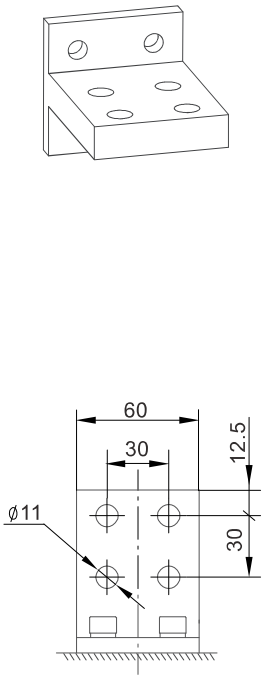
Safety distance		
Safety distance (mm)	A	B
Insulated	0	0
Uncharge metal	0	0
Live conductor	100	60

Ex9A25 Power connectors

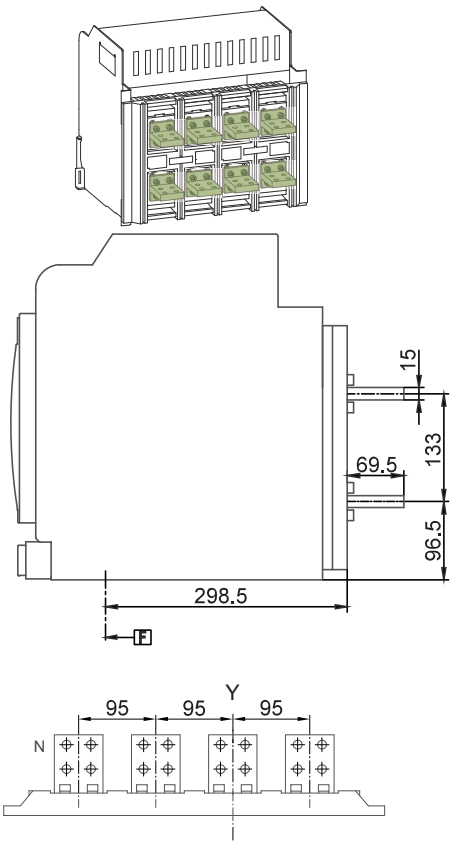
Power connector dimensions 630 — 1600 A

Ex9A25 Fixed horizontal connections

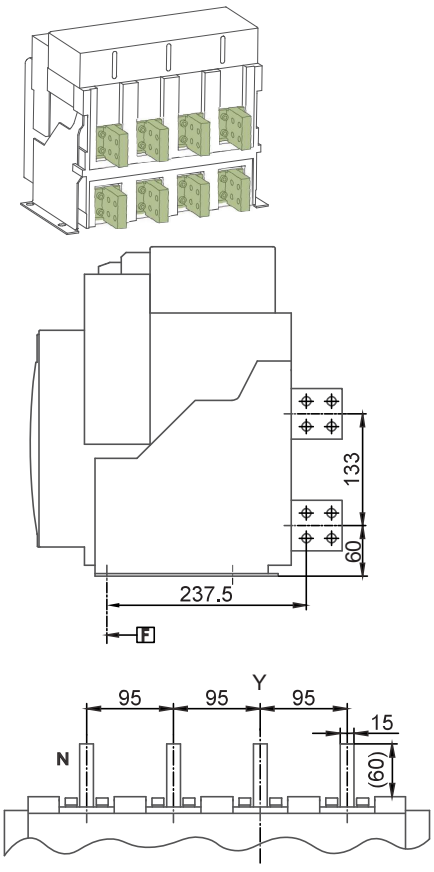


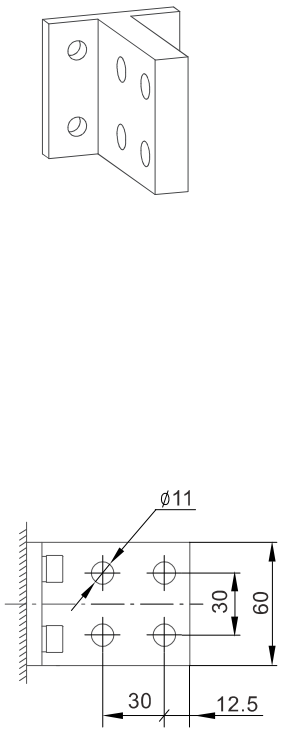


Ex9A25 Withdrawable horizontal connections

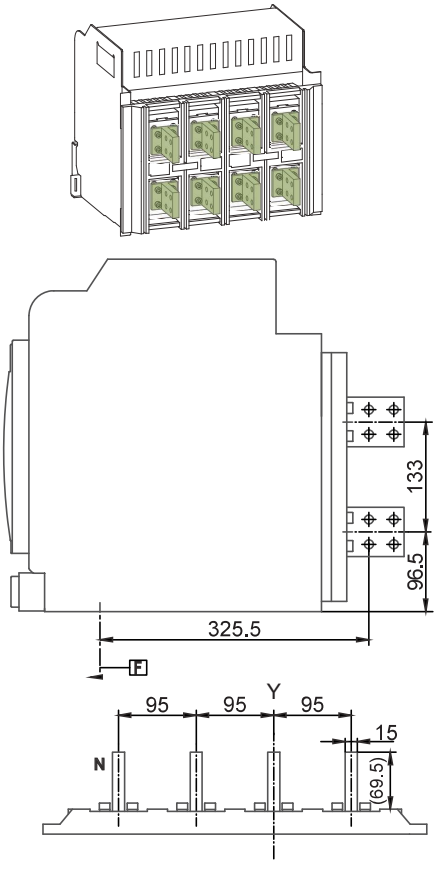


Ex9A25 Fixed vertical connections





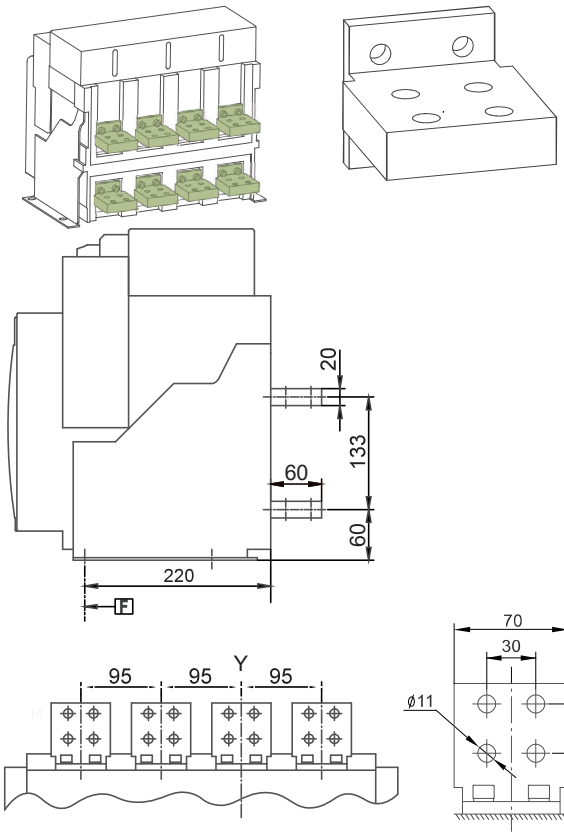
Ex9A25 Withdrawable vertical connections



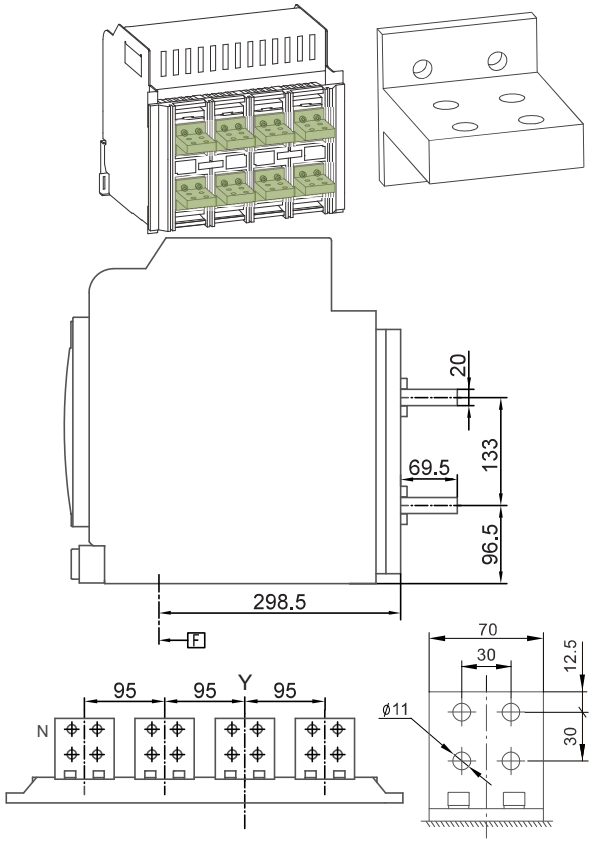
Ex9A25 Power connectors

Power connector dimensions 2000 — 2500 A

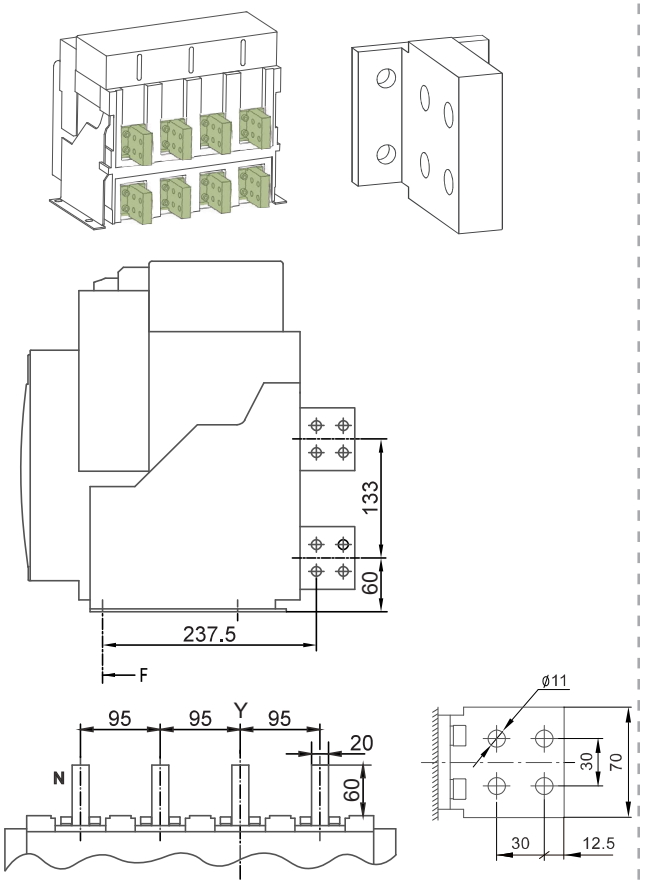
Ex9A25 Fixed horizontal connections



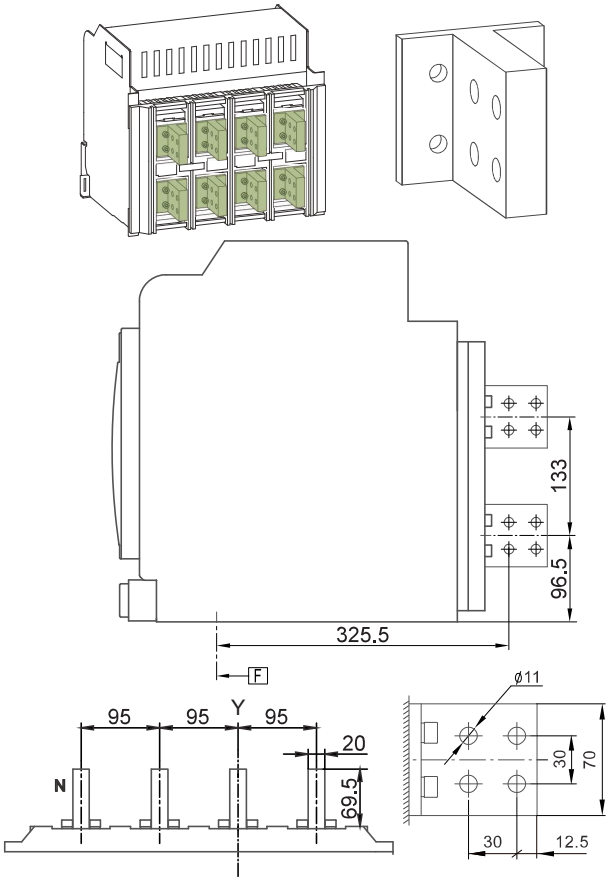
Ex9A25 Withdrawable horizontal connections



Ex9A25 Fixed vertical connections



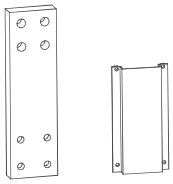
Ex9A25 Withdrawable vertical connections



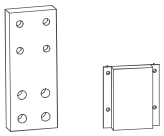
Ex9A25 Power connectors

Ex9A25 Fixed front connection terminals

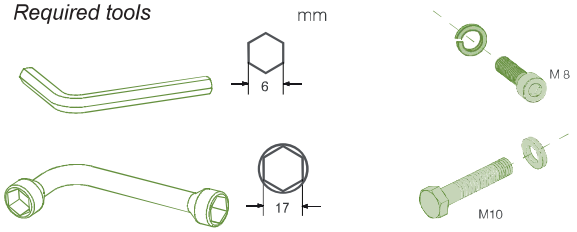
Top plate and cover



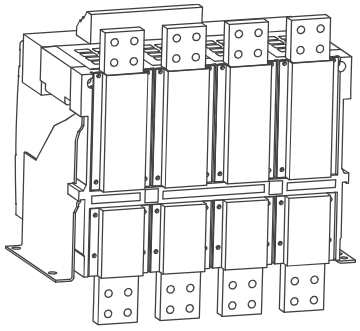
Bottom plate and cover



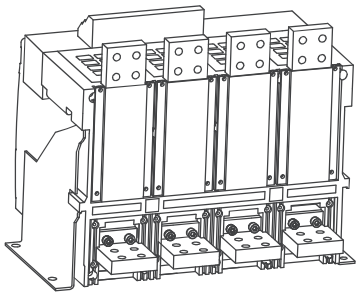
Required tools



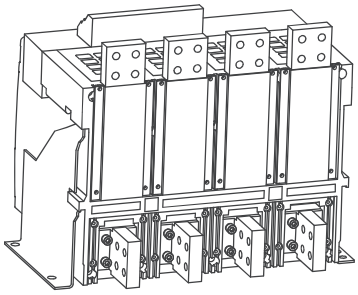
Installation examples



Front connection

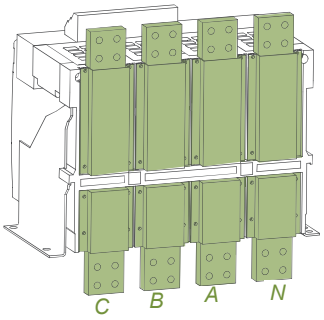


Mixed horizontal connection

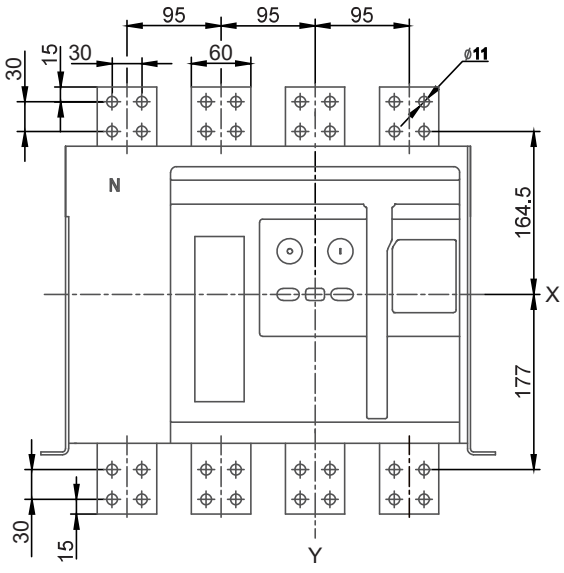


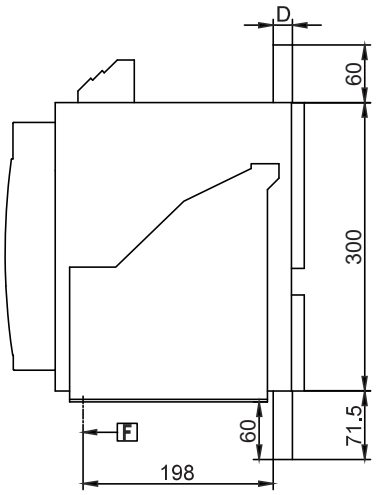
Mixed vertical connection

Ex9A25 Fixed front connection terminals dimensions



Terminal thickness	
Rated current	D
630 — 1600 A	15 mm
2000 — 2500 A	20 mm

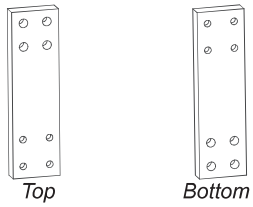




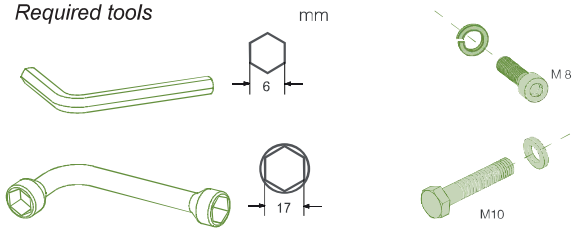
Ex9A25 Power connectors

Ex9A25 Withdrawable front connection terminals

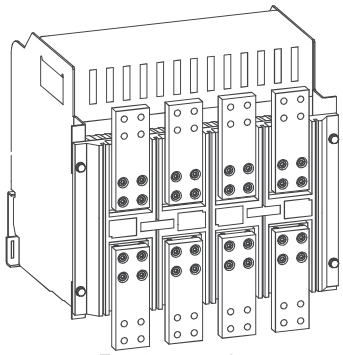
Top and bottom plates



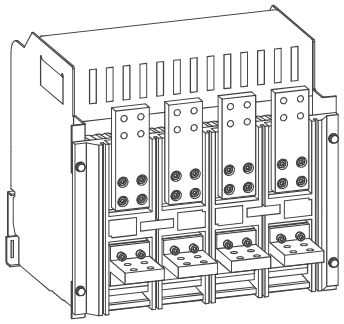
Required tools



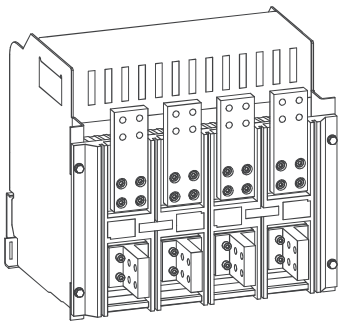
Installation examples



Front connection

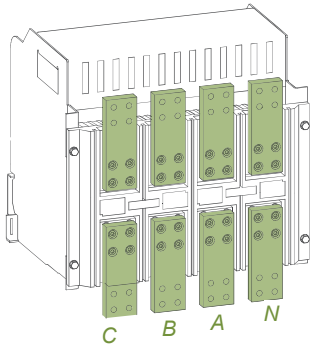


Mixed horizontal connection

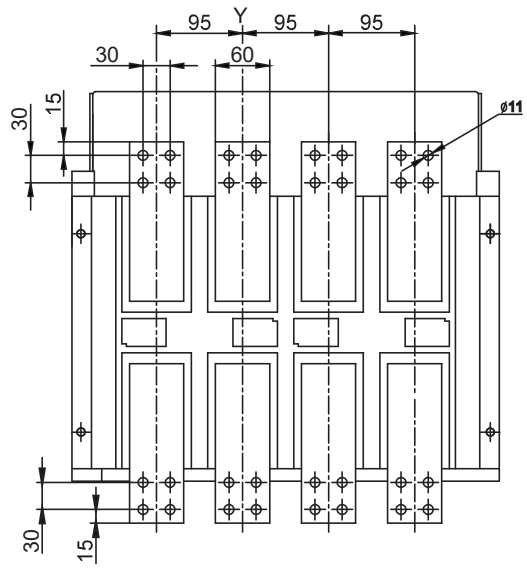


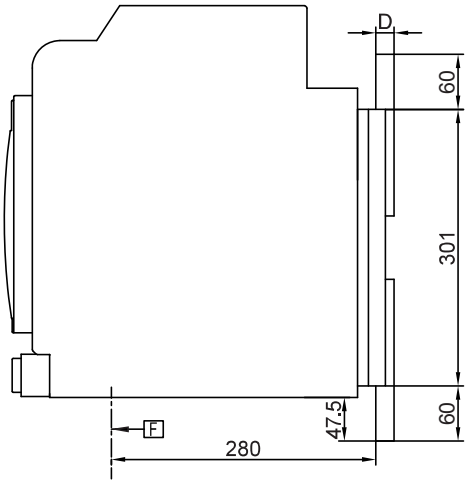
Mixed vertical connection

Ex9A25 Withdrawable front connection terminals dimensions



Terminal thickness	
Rated current	D
630 — 1600 A	15 mm
2000 — 2500 A	20 mm

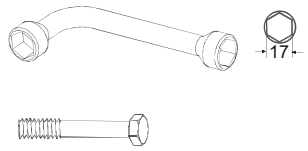




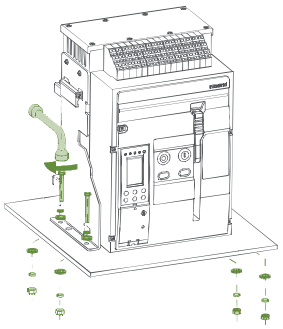
Ex9A25 Installation

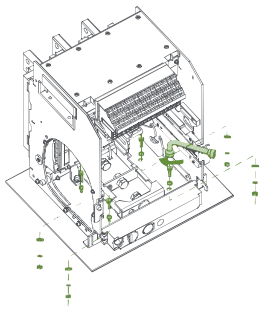
Ex9A25 Installation

Required tools



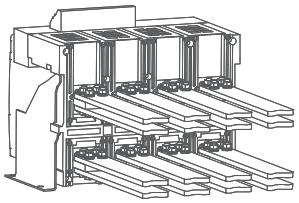
Ex9A25: 4 × M10

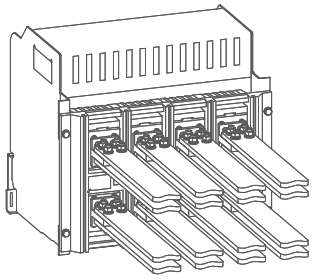


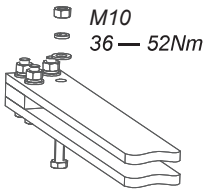


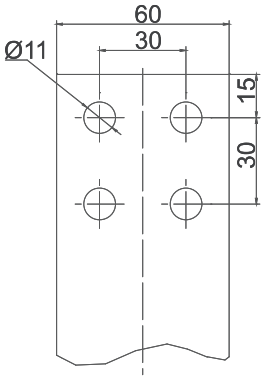
Same method as in Ex9A16 frame size

630 — 2000A Horizontal busbars

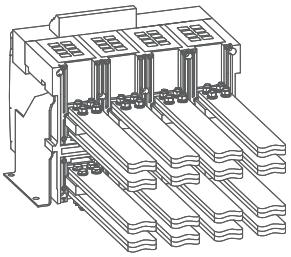


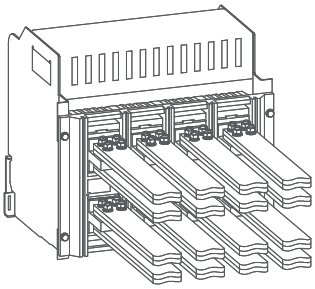


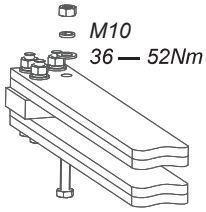




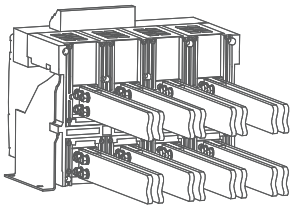
2000 — 2500A Horizontal busbars

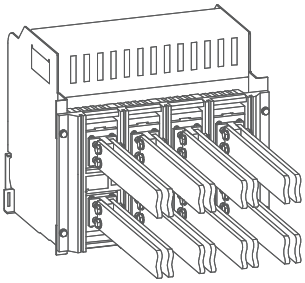


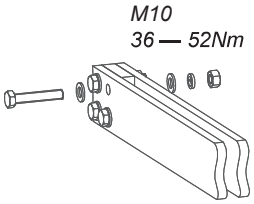




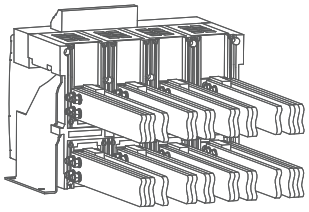
630 — 2000A Vertical busbars

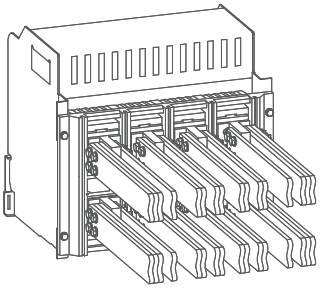


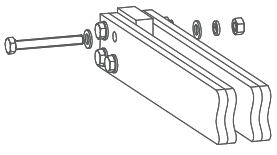




2000 — 2500A Vertical busbars



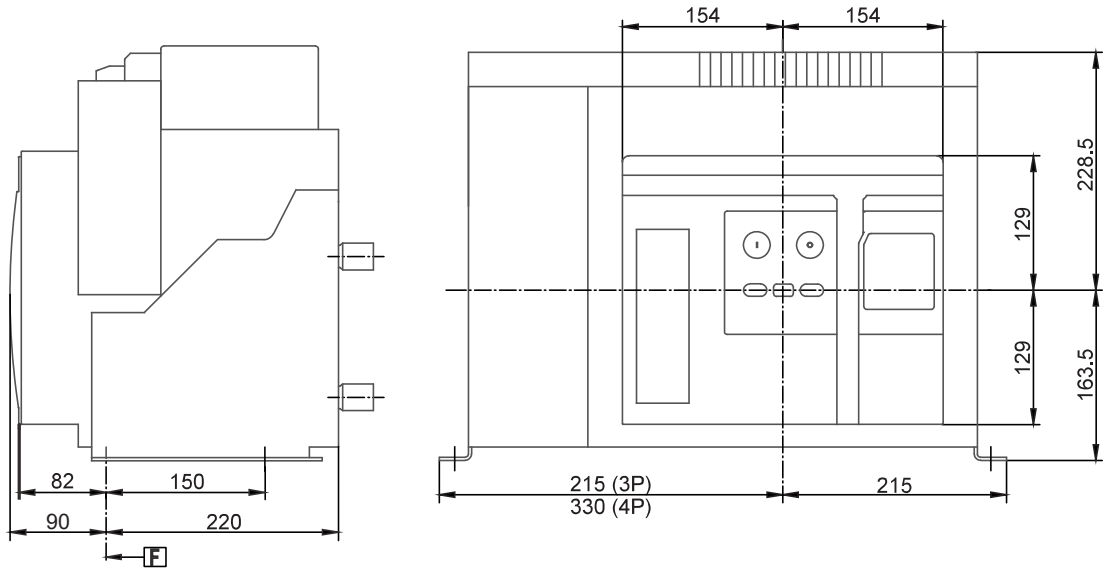




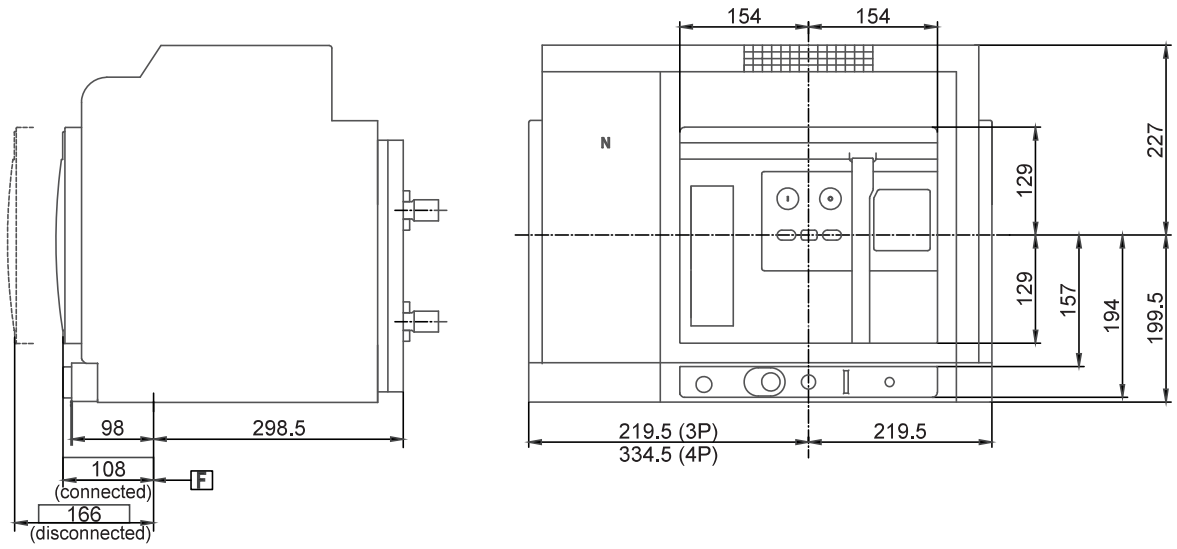
Ex9A32 Dimensions

Outline dimensions

Ex9A32 Fixed



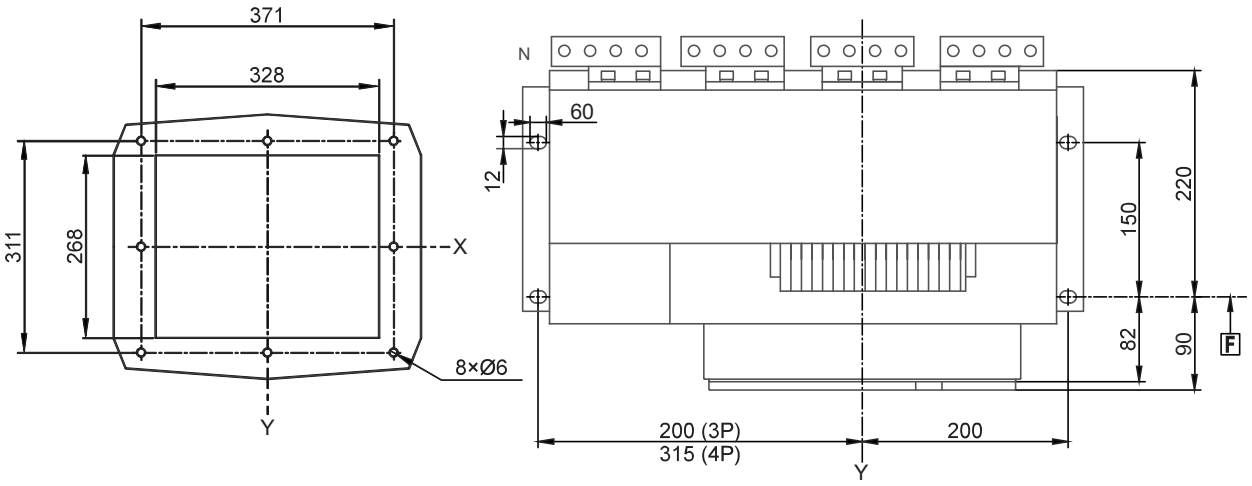
Ex9A32 Withdrawable



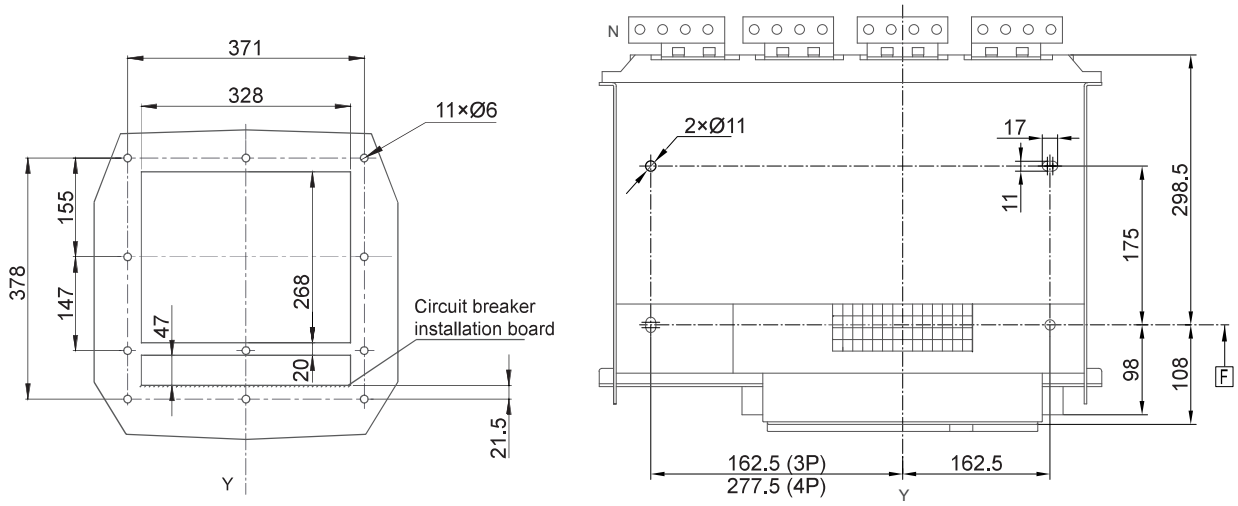
Ex9A32 Dimensions

Installation dimensions

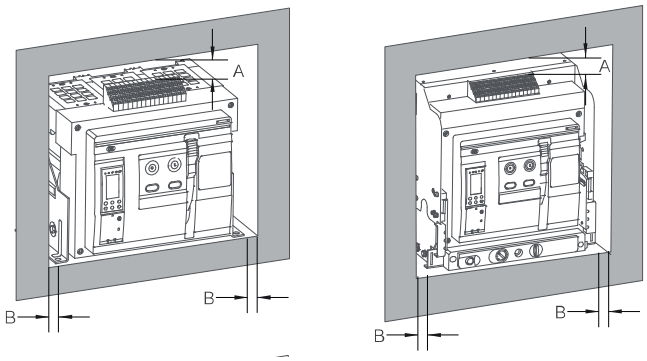
Ex9A32 Fixed



Ex9A32 Withdrawable



Ex9A32 Installation space



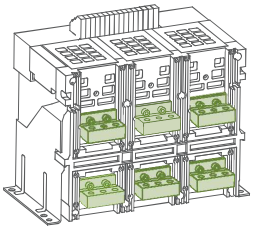
Fixed *Withdrawable*

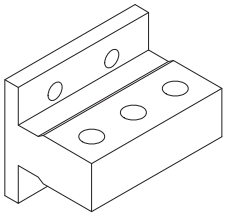
Safety distance		
Safety distance (mm)	A	B
Insulated	0	0
Uncharge metal	0	0
Live conductor	100	60

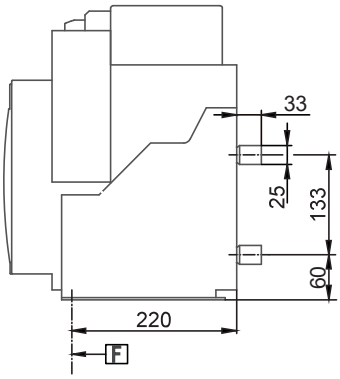
Ex9A32 Power connectors

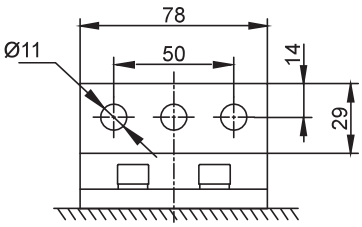
Power connector dimensions 1600 — 2500 A

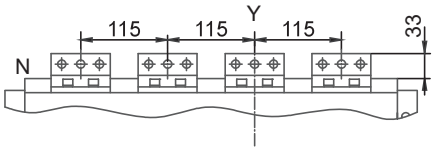
Ex9A32 Fixed horizontal connections



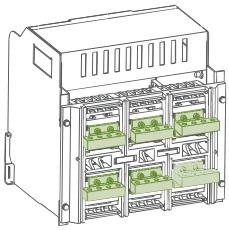


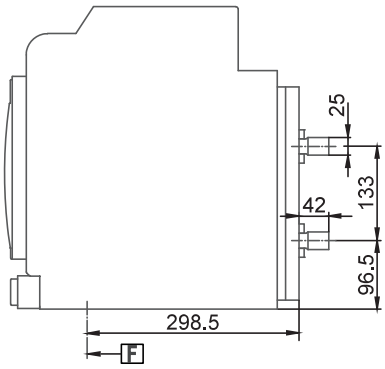


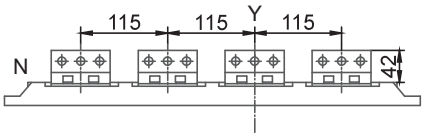




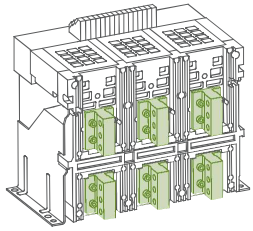
Ex9A32 Withdrawable horizontal connections

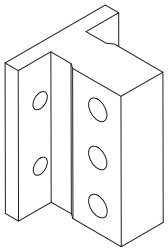


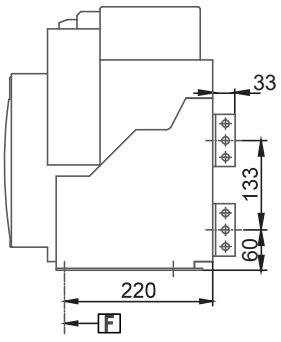


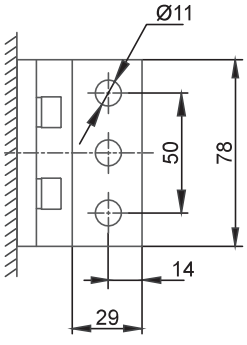


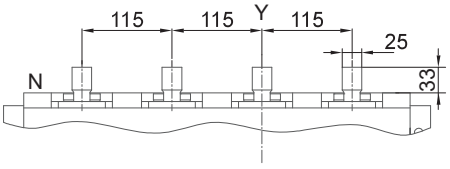
Ex9A32 Fixed vertical connections



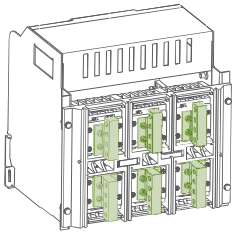


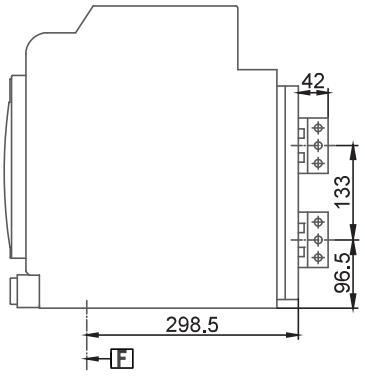


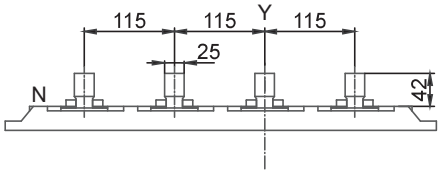




Ex9A32 Withdrawable vertical connections



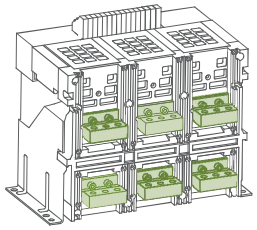


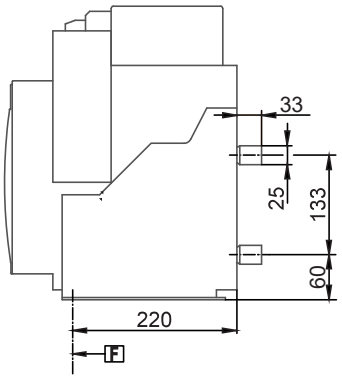


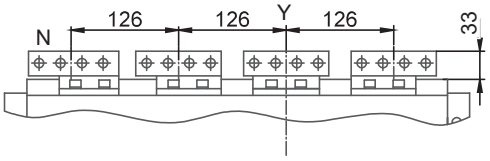
Ex9A32 Power connectors

Power connector dimensions 2500 — 3200 A Horizontal connections

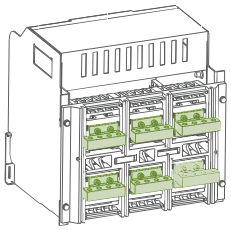
Ex9A32 Fixed horizontal connections

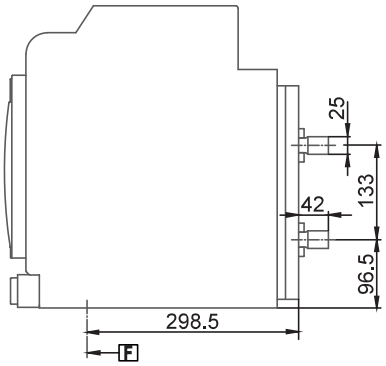


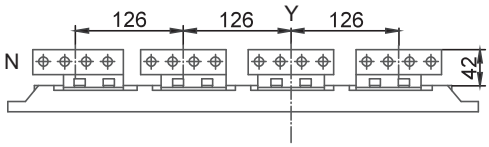




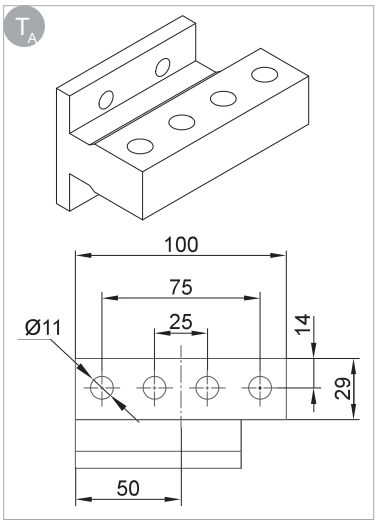
Ex9A32 Withdrawable horizontal connections

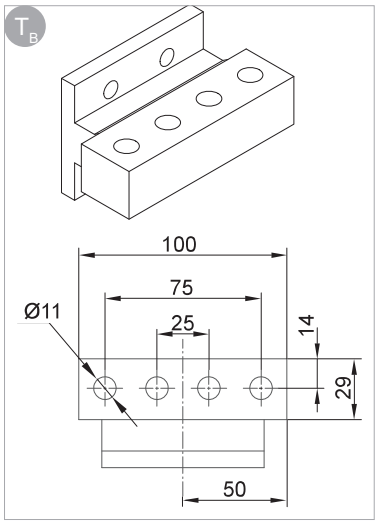


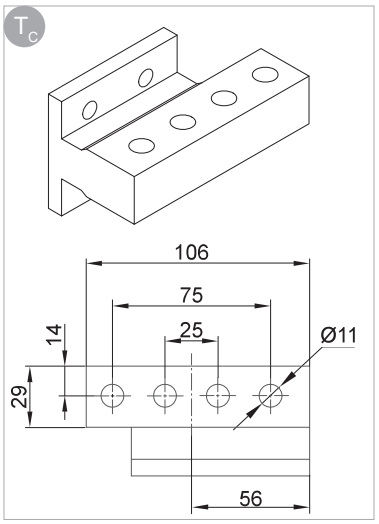


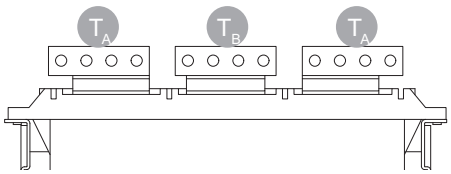


Power connectors 2500 — 3200 A details

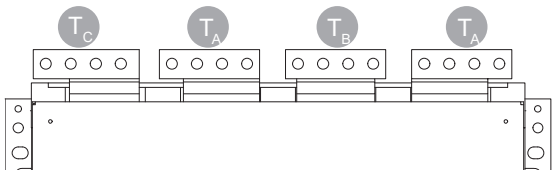








Fixed / Withdrawable 3P power connector distribution

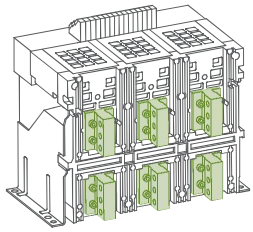


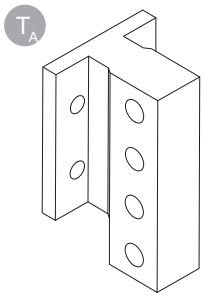
Fixed / Withdrawable 4P power connector distribution

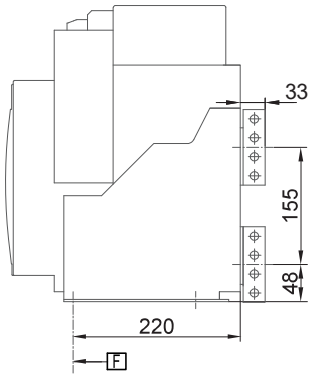
Ex9A32 Power connectors

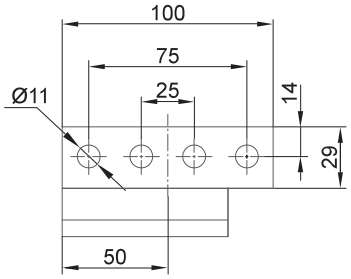
Power connector dimensions 2500 — 3200 A Vertical connections

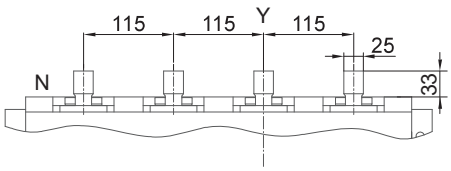
Ex9A32 Fixed vertical connections



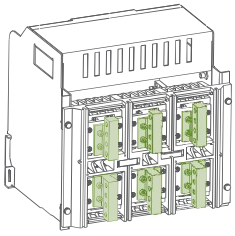


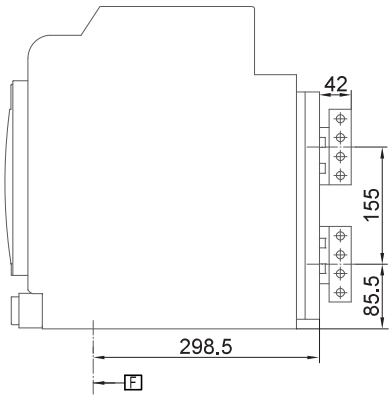


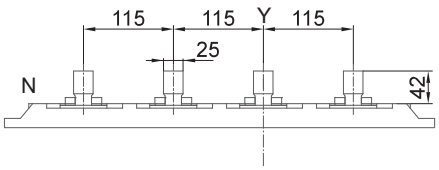




Ex9A32 Withdrawable vertical connections



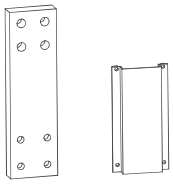




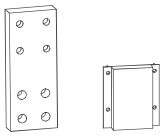
Ex9A32 Power connectors

Ex9A32 Fixed front connection terminals

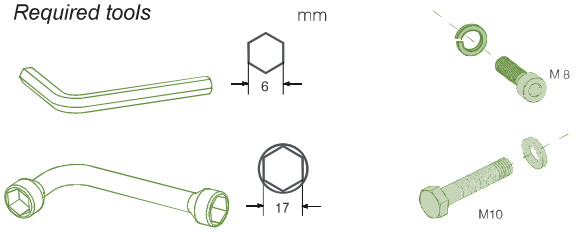
Top plate and cover



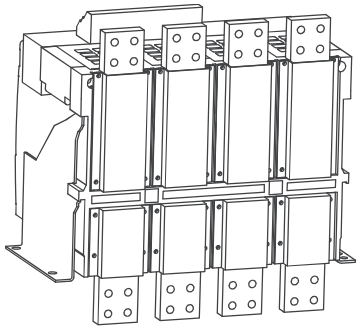
Bottom plate and cover



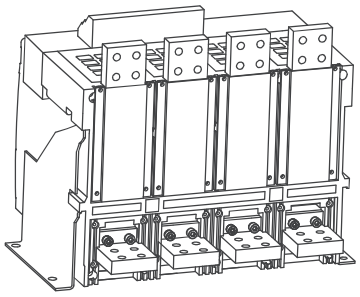
Required tools



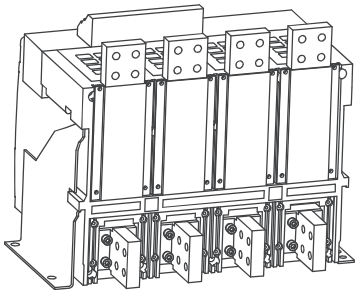
Installation examples



Front connection

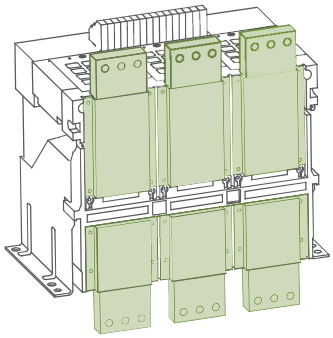


Mixed horizontal connection



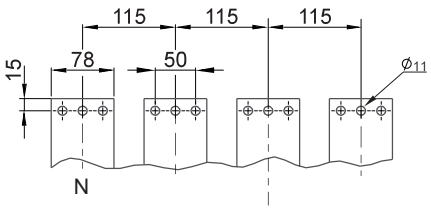
Mixed vertical connection

Ex9A32 Fixed front connection terminals dimensions

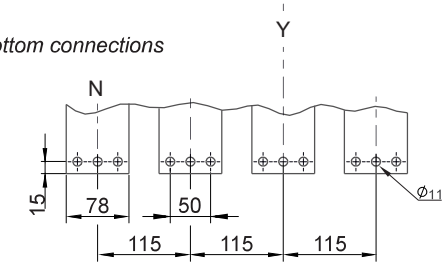


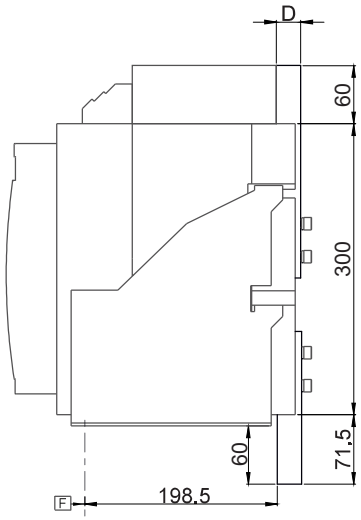
Terminal thickness	
Rated current	D
1600 — 2000 A	20
2500 A	25
3200 A	30

Top connections



Bottom connections

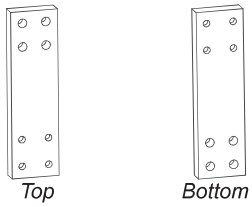




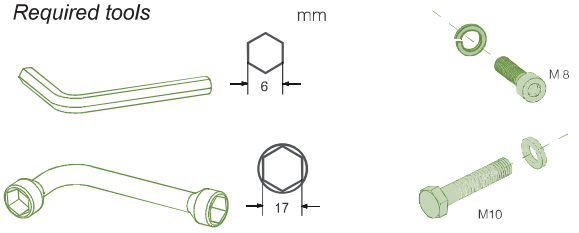
Ex9A32 Power connectors

Ex9A32 Withdrawable front connection terminals

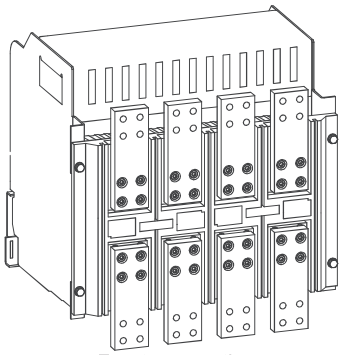
Top and bottom plates



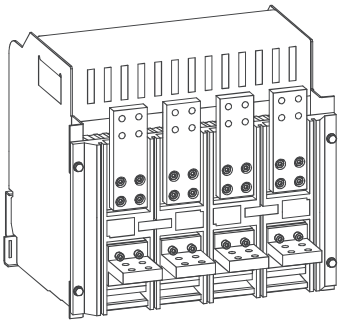
Required tools



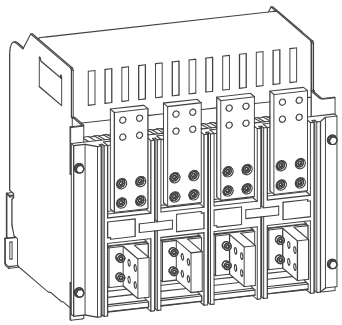
Installation examples



Front connection

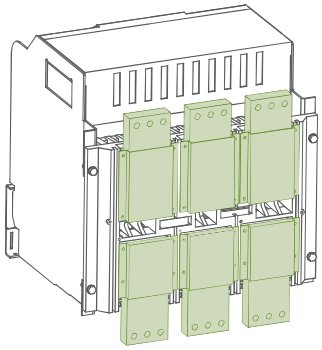


Mixed horizontal connection



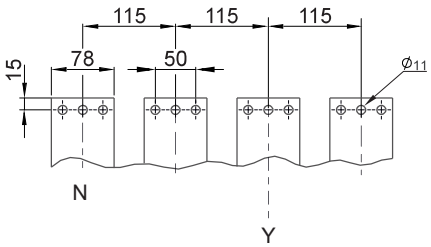
Mixed vertical connection

Ex9A32 Withdrawable front connection terminals dimensions

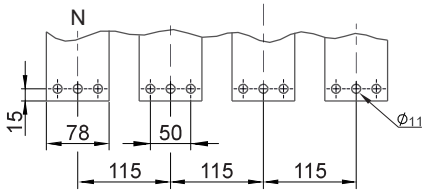


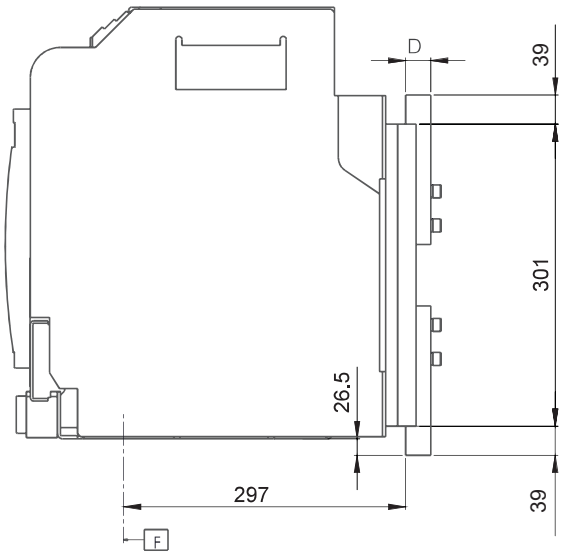
Terminal thickness	
Rated current	D
1600 — 2000 A	20
2500 A	25
3200 A	30

Top connections



Bottom connections

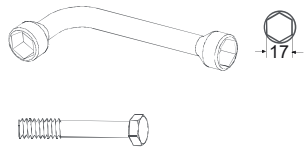




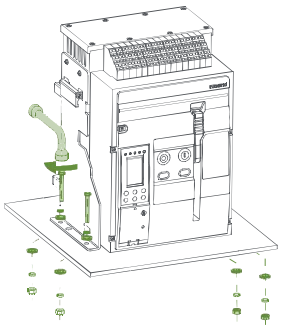
Ex9A32 Installation

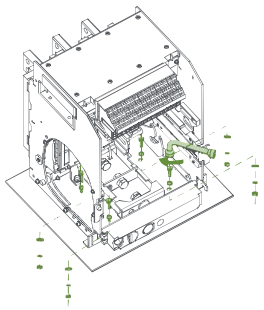
Ex9A32 Installation

Required tools



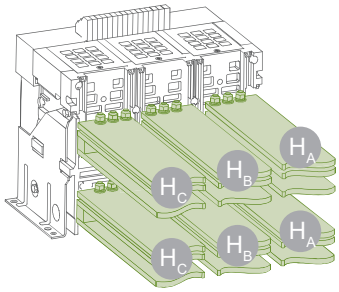
Ex9A32: 4 × M10

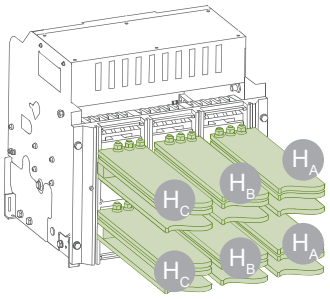


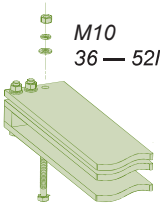


Same method as in Ex9A16 frame size

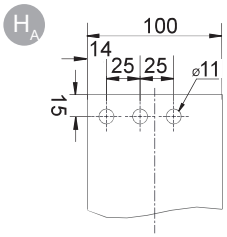
1600 — 2500A Horizontal busbars

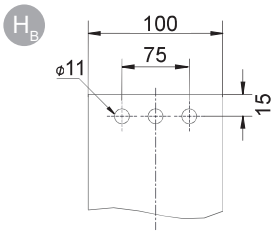




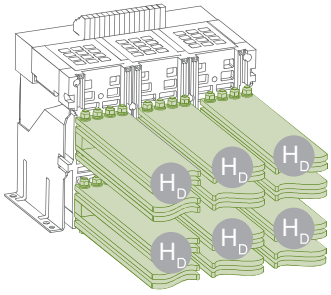


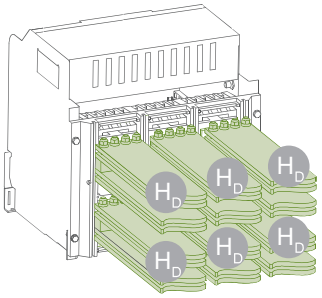
M10
36 — 52Nm

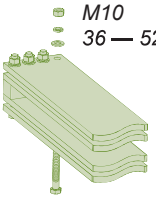




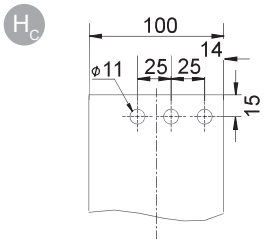
2500 — 3200A Horizontal busbars



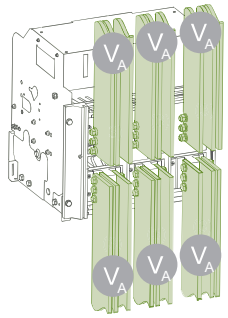


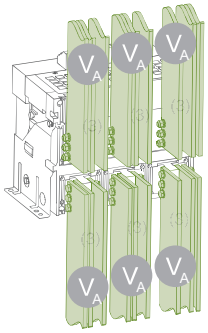


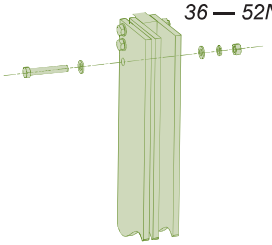
M10
36 — 52Nm



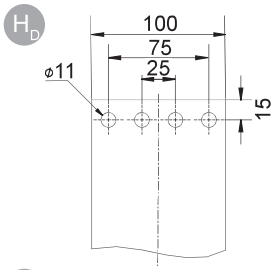
1600 — 2500A Vertical busbars

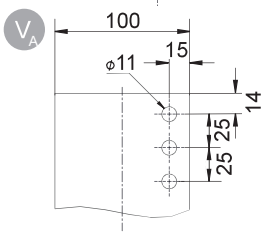




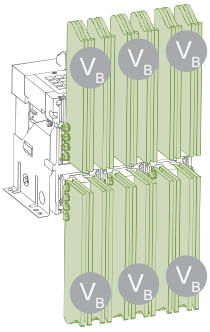


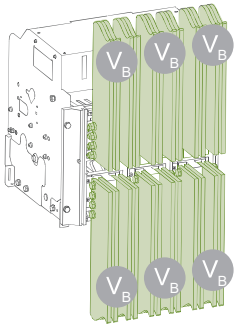
M10
36 — 52Nm

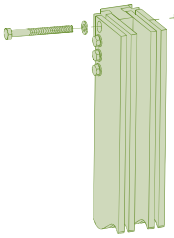




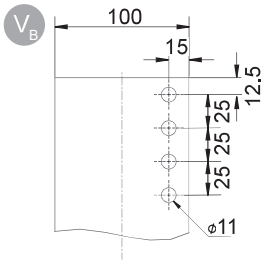
2500 — 3200A Vertical busbars







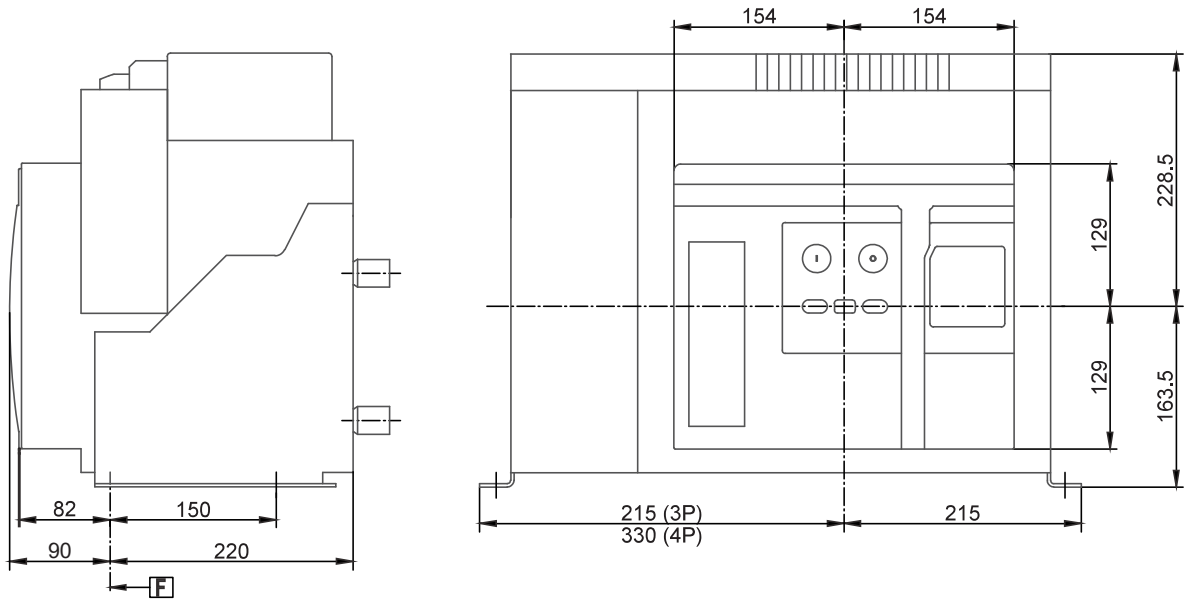
M10
36 — 52Nm



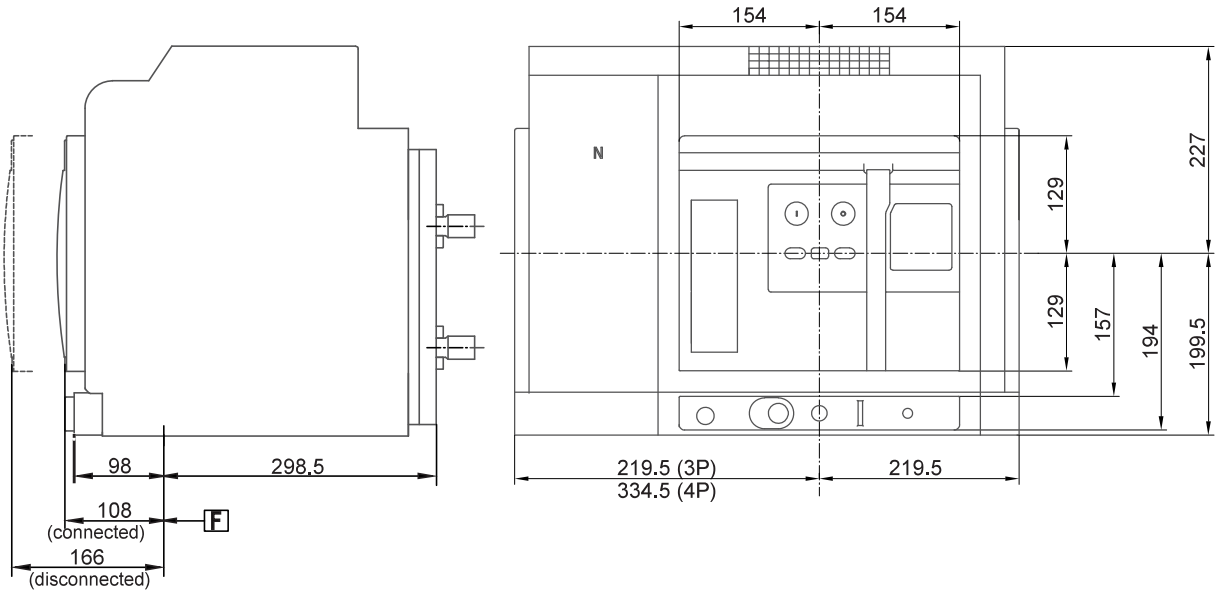
Ex9A40 Dimensions

Outline dimensions

Ex9A40 Fixed



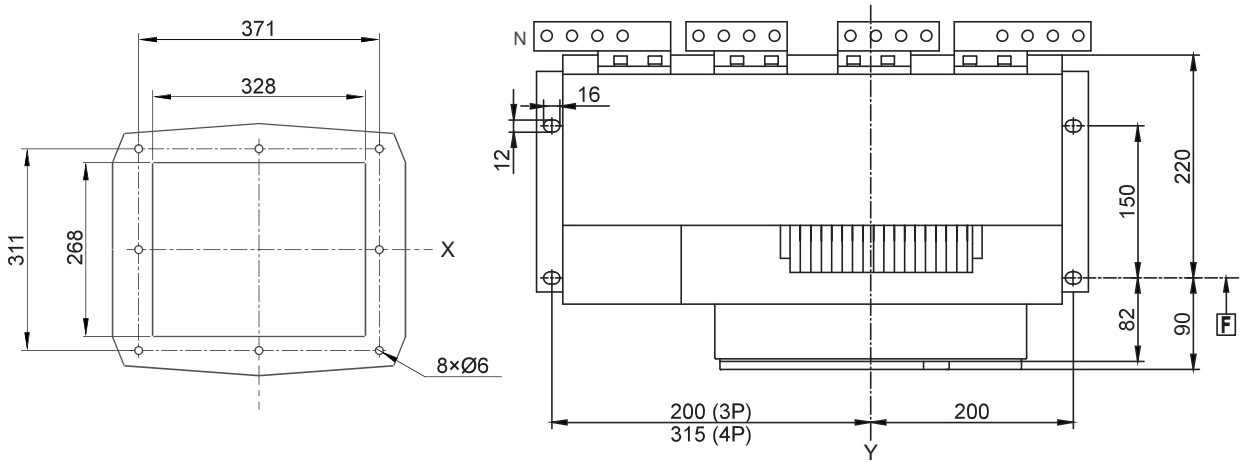
Ex9A40 Withdrawable



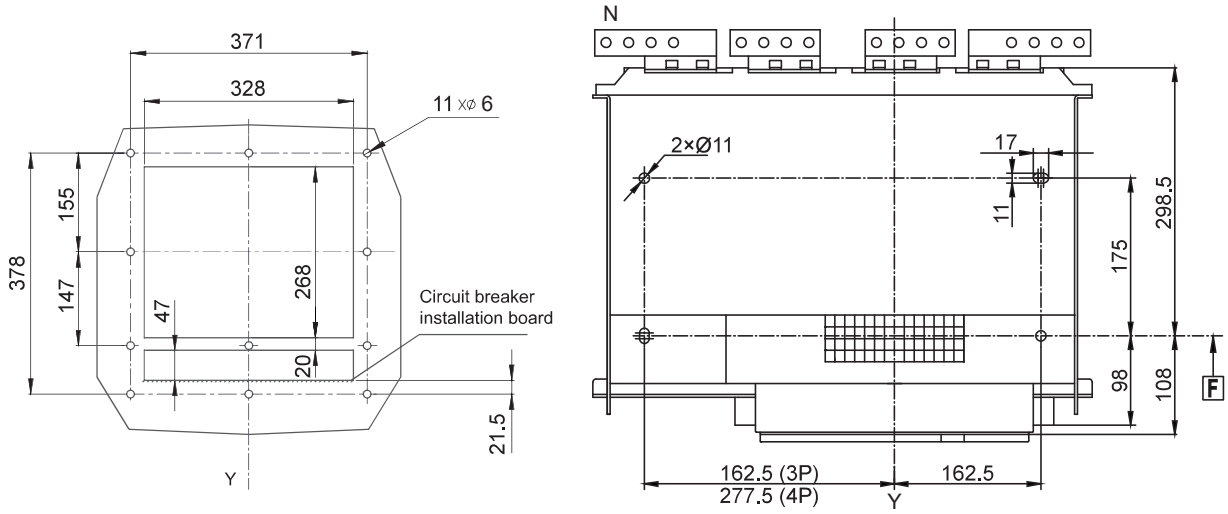
Ex9A40 Dimensions

Installation dimensions

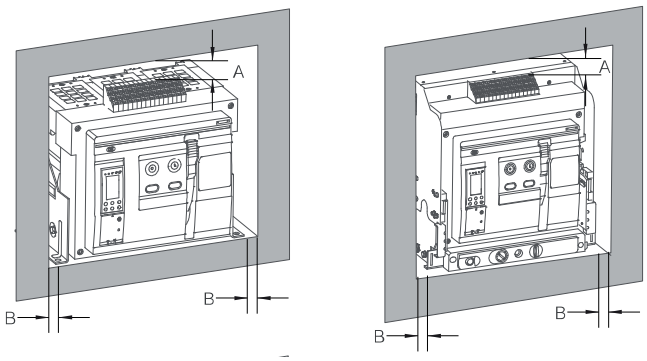
Ex9A40 Fixed



Ex9A40 Withdrawable



Ex9A40 Installation space



Fixed *Withdrawable*

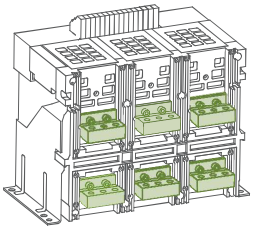
Safety distance

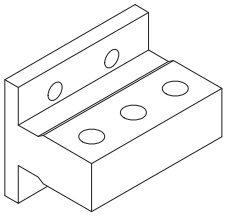
Safety distance (mm)	A	B
Insulated	0	0
Uncharge metal	0	0
Live conductor	100	60

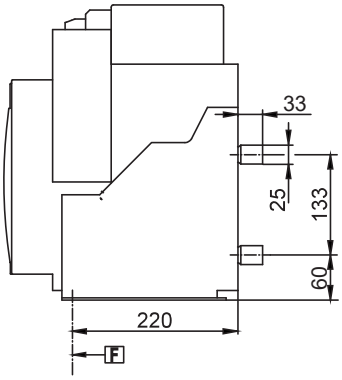
Ex9A40 Power connectors

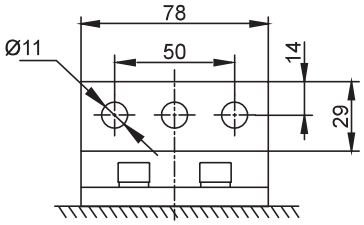
Power connector dimensions 2000 — 2500 A

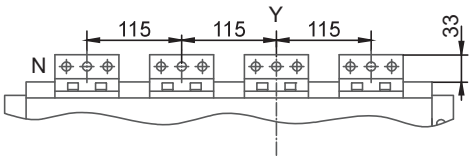
Ex9A40 Fixed horizontal connections



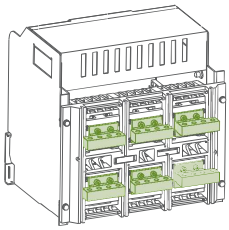


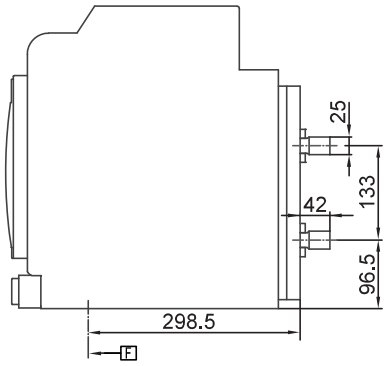


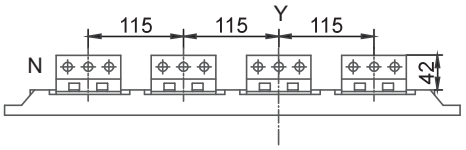




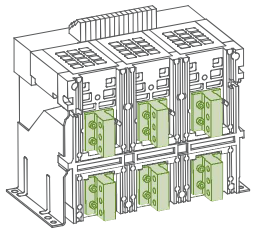
Ex9A40 Withdrawable horizontal connections

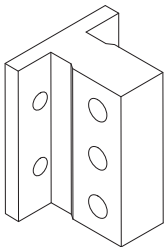


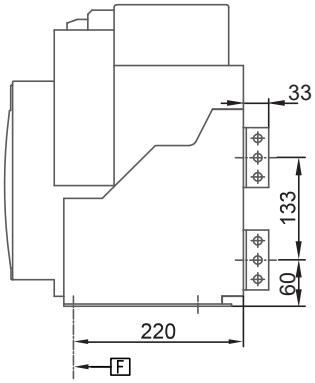


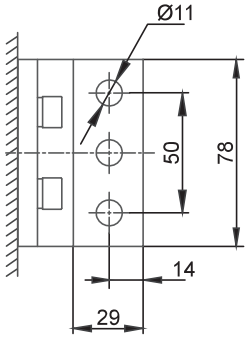


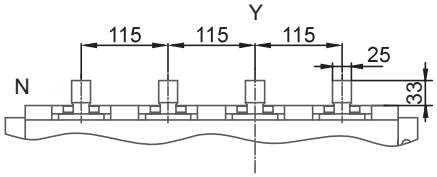
Ex9A40 Fixed vertical connections



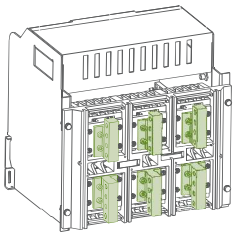


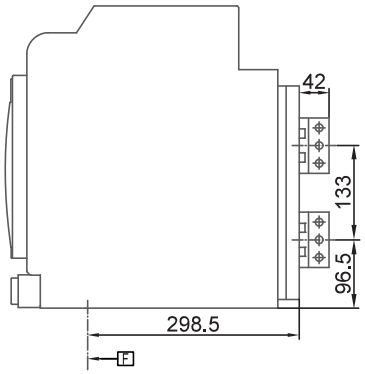


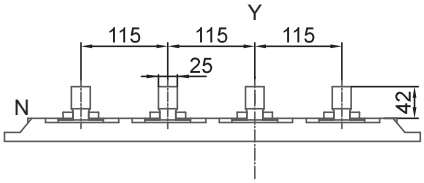




Ex9A40 Withdrawable vertical connections



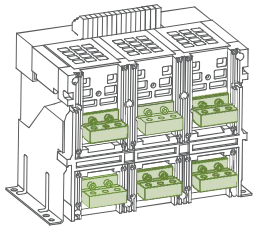


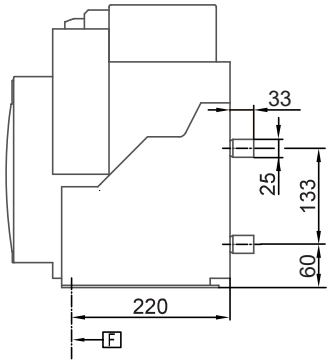


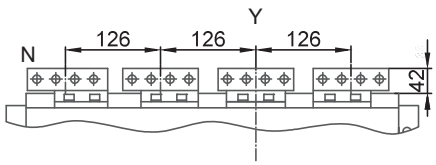
Ex9A40 Power connectors

Power connector dimensions 3200 A Horizontal connections

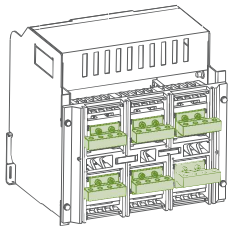
Ex9A40 Fixed horizontal connections

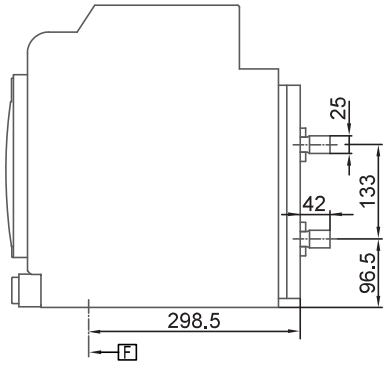


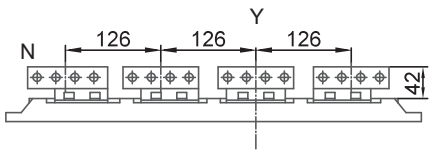




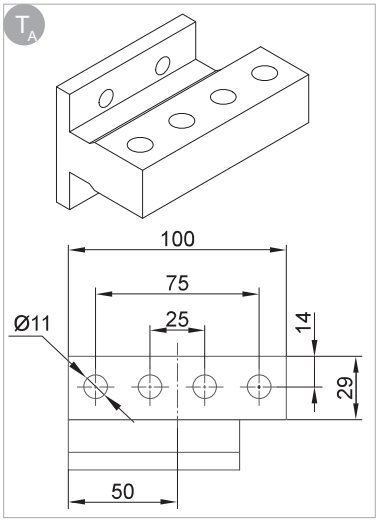
Ex9A40 Withdrawable horizontal connections

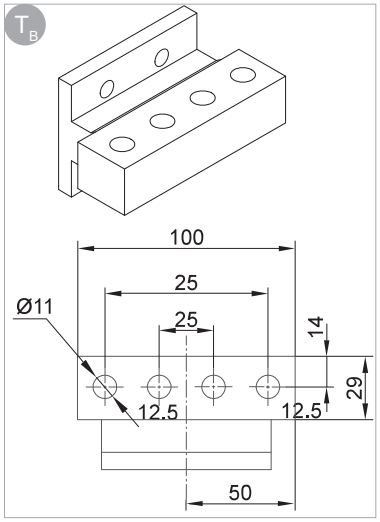


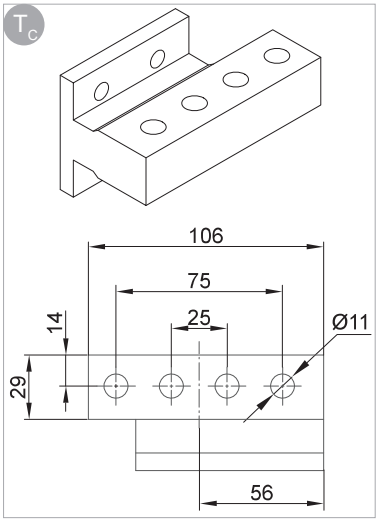


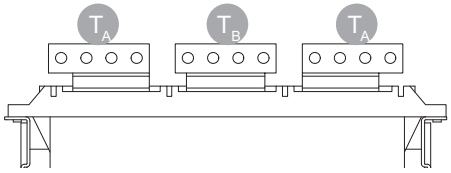


Power connectors 3200 A details

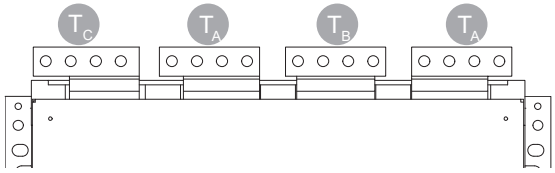








Fixed / Withdrawable 3P power connector distribution

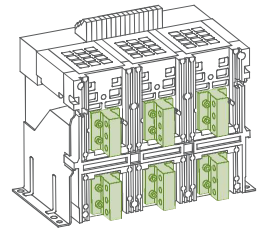


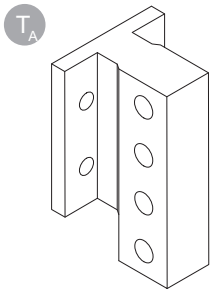
Fixed / Withdrawable 4P power connector distribution

Ex9A40 Power connectors

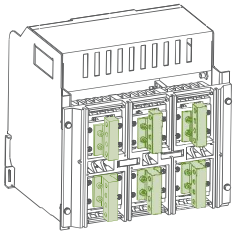
Power connector dimensions 3200A Vertical connections

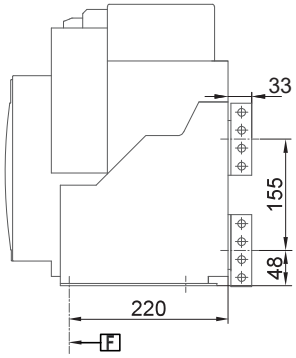
Ex9A40 Fixed vertical connections

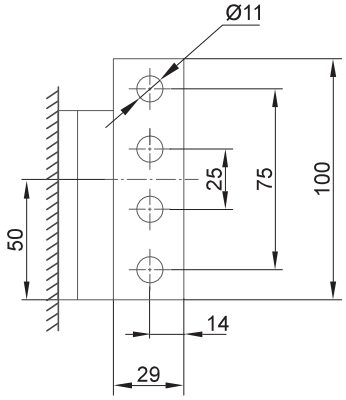


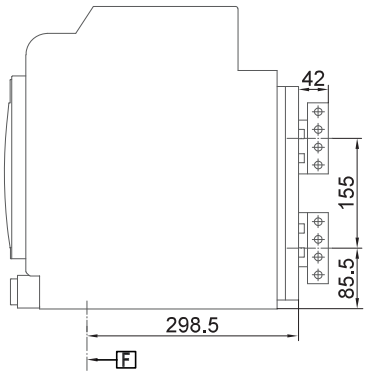


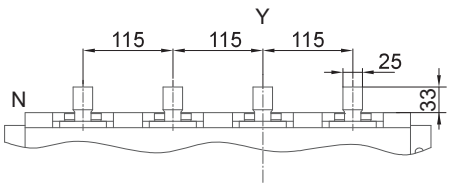
Ex9A40 Withdrawable vertical connections

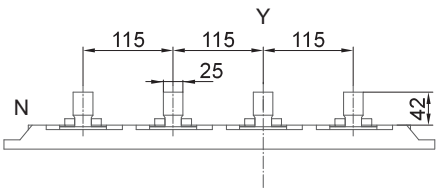








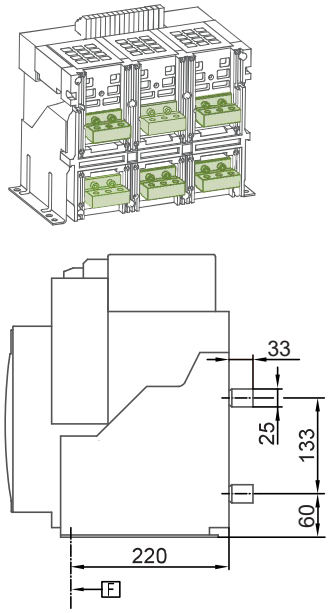


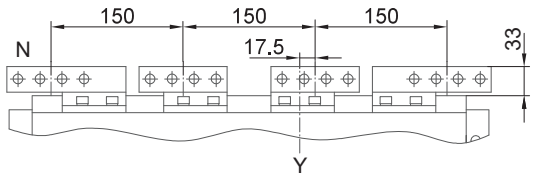


Ex9A40 Power connectors

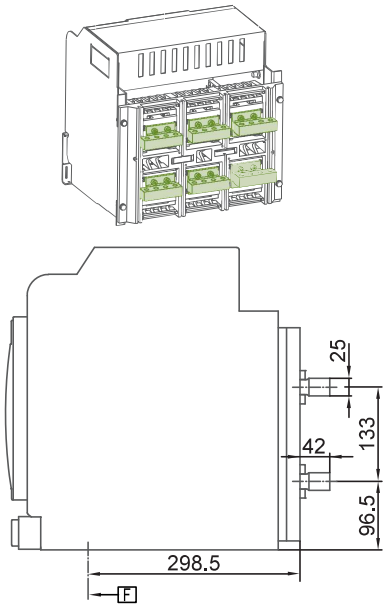
Power connector dimensions 4000 A Horizontal connections

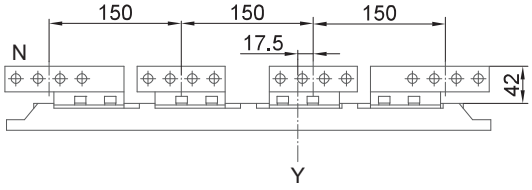
Ex9A40 Fixed horizontal connections



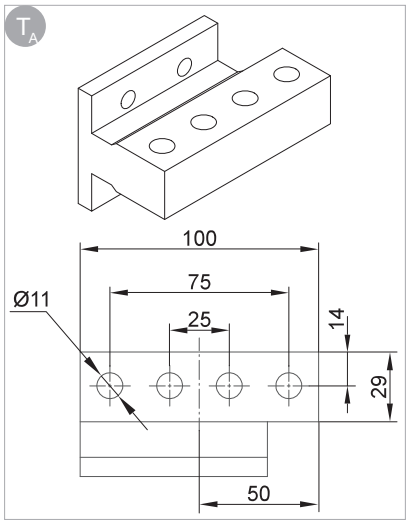


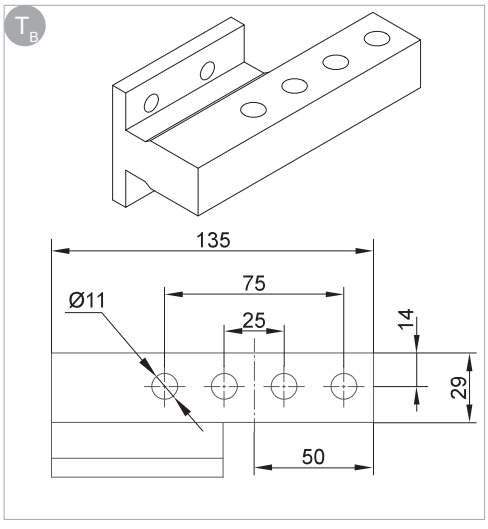
Ex9A40 Withdrawable horizontal connections

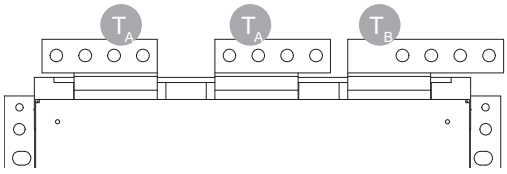




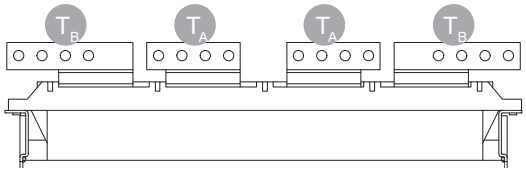
Power connectors 4000 A details







Fixed / Withdrawable 3P power connector distribution

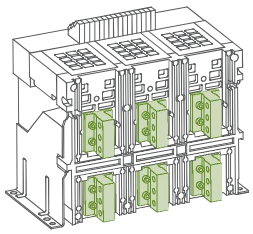


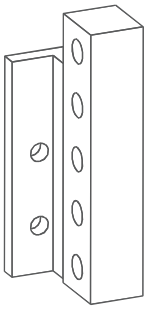
Fixed / Withdrawable 4P power connector distribution

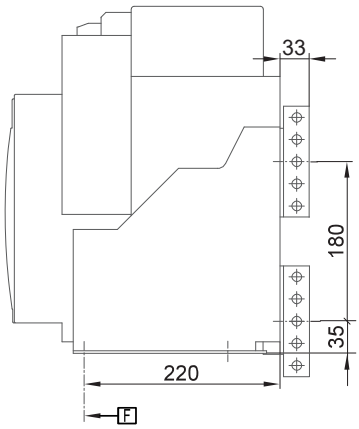
Ex9A40 Power connectors

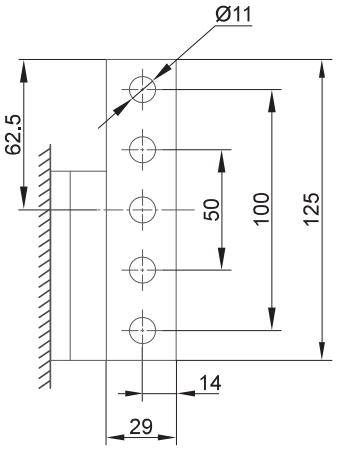
Power connector dimensions 4000 A Vertical connections

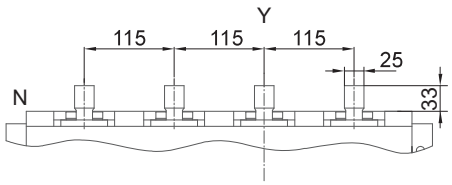
Ex9A40 Fixed vertical connections



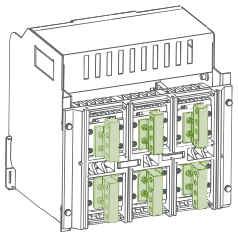


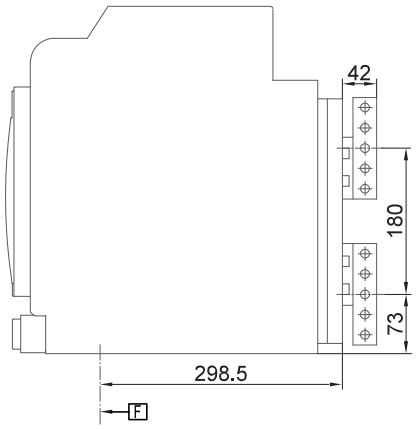


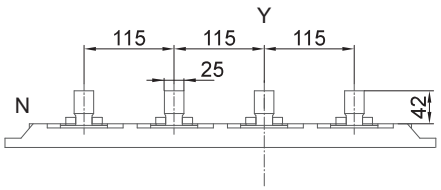




Ex9A40 Withdrawable vertical connections



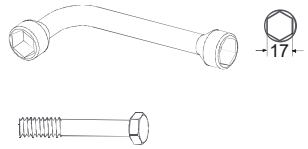




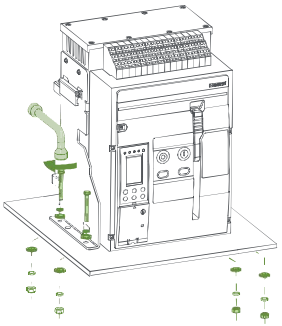
Ex9A40 Installation

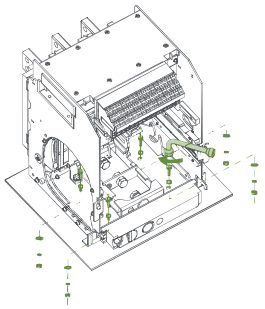
Ex9A40 Installation

Required tools



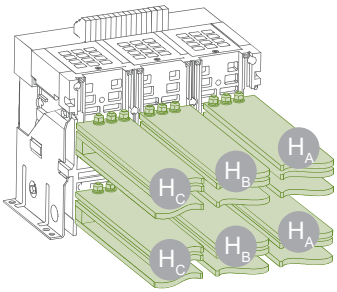
Ex9A40: 4 × M10

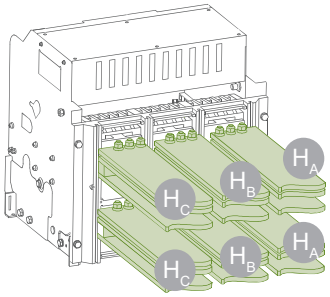


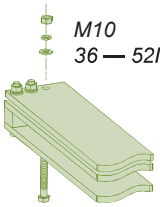


Same method as in Ex9A16 frame size

2000 — 2500A Horizontal busbars

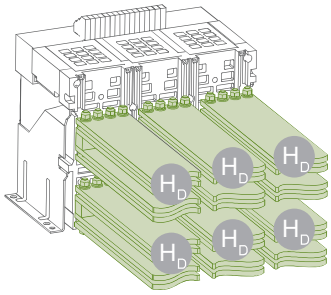


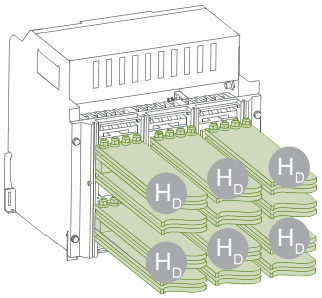


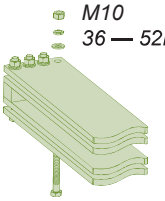


M10
36 — 52Nm

3200A Horizontal busbars

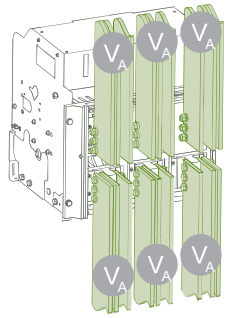


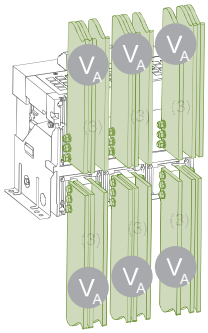


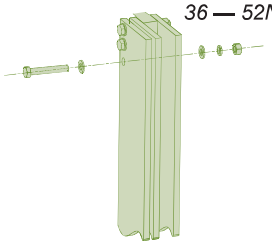


M10
36 — 52Nm

2000 — 2500A Vertical busbars

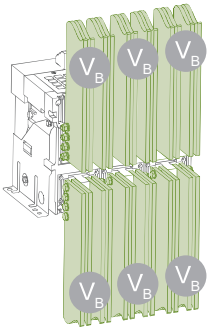


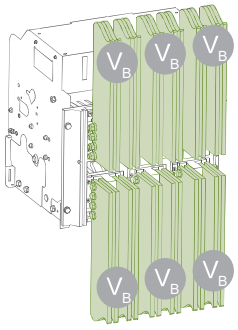


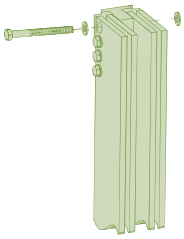


M10
36 — 52Nm

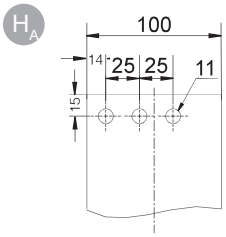
3200A Vertical busbars

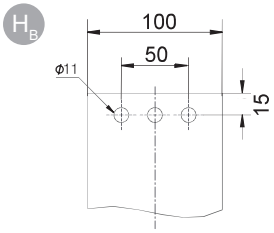


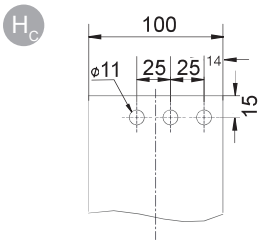


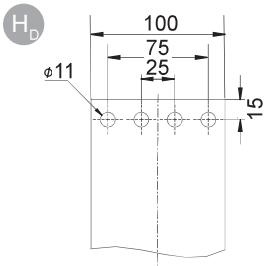


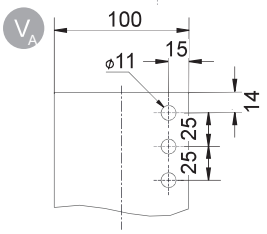
M10
36 — 52Nm

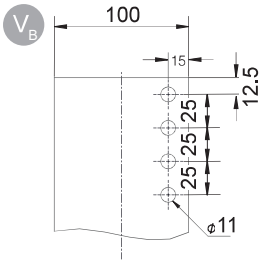








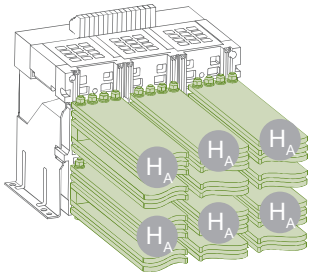


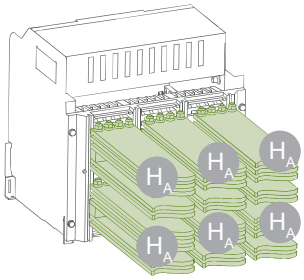


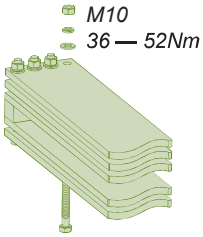
Ex9A40 Installation

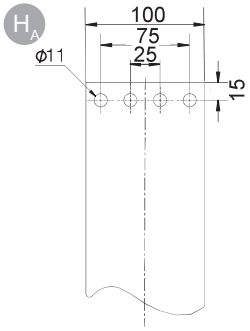
Ex9A40 Installation

4000A Horizontal busbars

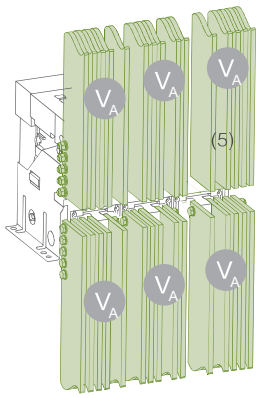


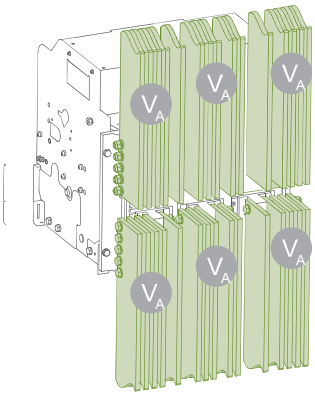


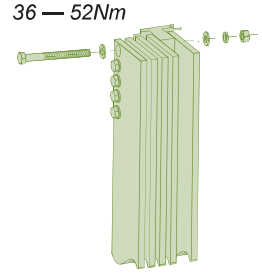


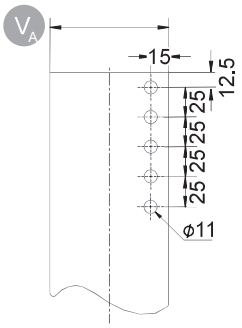


4000A Vertical busbars









Notes

NOARK Electric Europe s.r.o.
Sezemická 2757/2, 193 00 Prague 9, Czech Republic
Phone: +420 226 203 120
E-mail: Europe@noark-electric.com
www.noark-electric.eu

Manufacturer: NOARK Electrics (Shanghai) Co., Ltd, 3857 Sixian Road, Songjiang District, Shanghai
Importer: NOARK Electric Europe s.r.o. Sezemická 2757/2, 193 00 Praha 9, Czech Republic