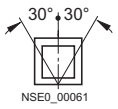
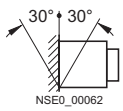
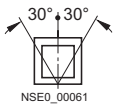
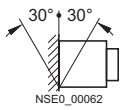
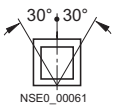
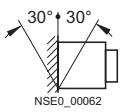
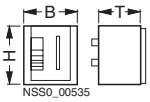
Air Circuit-Breakers (ACBs)

5

Introduction

Overview



Size		I		II		III	
Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL							
Rated current I_n	A	630, 800, 1000, 1250, 1600		800, 1000, 1250, 1600, 2000, 2500, 3200		4000, 5000, 6300	
Number of poles		3-pole, 4-pole		3-pole, 4-pole		3-pole, 4-pole	
Rated operating voltage U_e	AC V DC V	up to 690		up to 690/1000		up to 690/1000	
Rated ultimate short-circuit breaking capacity at AC 415 V	kA	50/65		55/80/100		100	
Endurance	Operating cycles	20000		15000		10000	
Service position		 NSE0_00061	 NSE0_00062	 NSE0_00061	 NSE0_00062	 NSE0_00061	 NSE0_00062
Degree of protection with cover without cover		IP55 IP20		IP55 IP20		IP55 IP20	
Dimensions 3-/4-pole  NSS0_00535	W mm	Fixed-mounted 320/410	Withdrawable 320/410	Fixed-mounted 460/590	Withdrawable 460/590	Fixed-mounted 704/914	Withdrawable 704/914
	H mm	434	465.5	434	465.5	434	466.5
	D mm	291	471	291	471	291	471

Electronic overcurrent trip units of SENTRON WL circuit-breakers

	 NSE0_01106	 NSE0_01107	 NSE0_01108	 NSE0_01109	 NSE0_01110	 NSE0_01111
Type	ETU15B	ETU25B	ETU27B	ETU45B	ETU55B	ETU76B
Overload protection	✓	✓	✓	✓	✓	✓
Short-time delayed short-circuit protection	–	✓	✓	✓	✓	✓
Instantaneous short-circuit protection	✓	✓	✓	✓	✓	✓
Neutral conductor protection	–	–	✓	✓	✓	✓
Ground-fault protection	–	–	✓	❑	❑	❑
Zone Selective Interlocking	–	–	–	❑	❑	❑
LCD, 4-line	–	–	–	❑	–	–
LCD, graphic	–	–	–	–	–	✓
Communication via PROFIBUS DP	–	–	–	❑	❑	❑
Measurement functions	–	–	–	❑	❑	❑
Selectable parameter sets	–	–	–	–	✓	✓
Parameters freely programmable	–	–	–	–	✓	✓

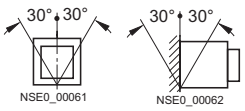
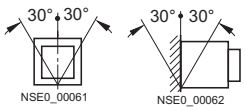
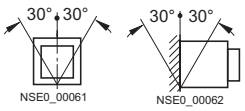
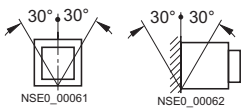
✓ Standard
- Not available
❑ Optional

I, II, III

II

I

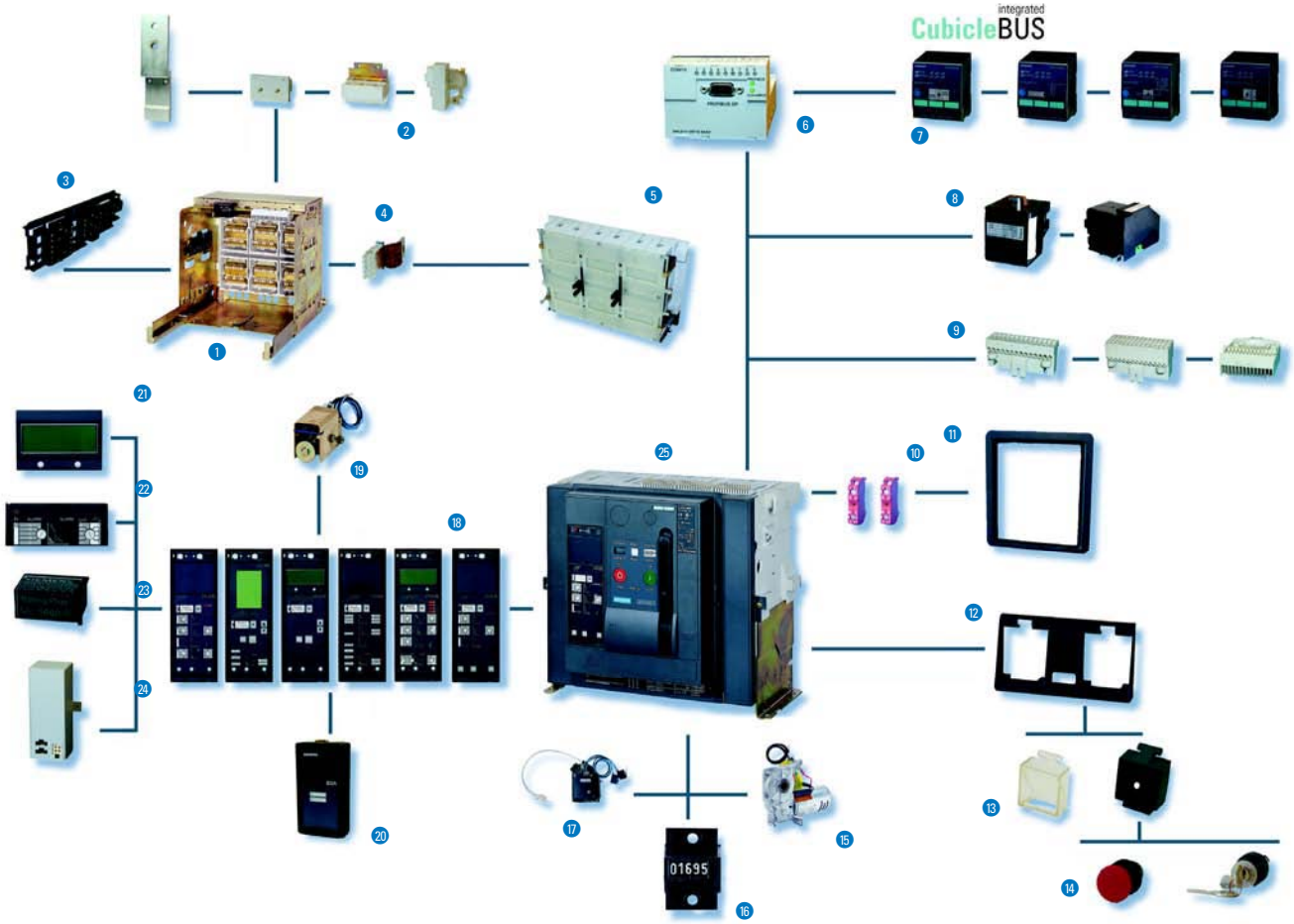
II

	Circuit-breakers, approved acc. to UL 489, up to 5000 A, SENTRON WL	Non-automatic circuit-breakers for DC, up to 4000 A, SENTRON WL		Circuit-breakers, up to 3200 A, discontinued series Non-automatic circuit-breakers, up to 3200 A, discontinued series			
	1000, 1600, 2000, 2500, 3000, 4000, 5000	1000, 2000, 4000		630, 800, 1000, 1250, 1600		2000, 2500, 3200	
	3-pole	3-pole, 4-pole		3-pole, 4-pole		3-pole, 4-pole	
	up to 600 Y/347	up to 1000		up to 690		up to 690	
	65/100	30/25/20 (at DC 300/600/1000 V)		65		80	
	20000/15000/10000	15000		20000		20000	
							
		IP55 IP20		IP54 IP20		IP54 IP20	
	For dimensions see circuit-breakers/ non-automatic circuit-breakers up to 6300 A, SENTRON WL	Fixed-mounted 460/590	Withdrawable 460/590	Fixed-mounted 300/390	Withdrawable 280/370	Fixed-mounted 400/520	Withdrawable 380/500
		434	465,5	470	485	470	485
		291	471	330	445	330	445

General data

Overview

SENTRON WL:
Superior individual products integrated into uniform power distribution systems – up to and including industry-specific industrial and infrastructure solutions



1 Guide frame
2 Main connection, front, flange, horizontal, vertical
3 Position indicator switch
4 Grounding contact, leading
5 Shutter
6 COM15 PROFIBUS module
7 External **Cubicle**BUS modules
8 Closing solenoid, auxiliary release
9 Auxiliary conductor plug-in system
10 Auxiliary switch block
11 Door sealing frame
12 Interlocking set for baseplate
13 Transparent panel, function insert
14 EMERGENCY-STOP pushbutton, key operated
15 Motorized operating mechanism
16 Operating cycles counter
17 Breaker status sensor (BSS)
18 Electronic overcurrent trip unit (ETU)
19 Reset solenoid
20 Breaker data adapter (BDA)
21 4-line LCD module
22 Ground-fault protection module
23 Rating plug
24 Measuring function module
25 Circuit-breaker

Benefits

Low space requirements

The SENTRON WL devices require very little space. Size I devices (up to 1600 A) fit into a 400 mm wide switchgear panel. Size III devices (up to 6300 A) are the smallest of their kind and with their construction width of 704 mm fit into a 800 mm wide switchgear panel.

Modular design

Components like auxiliary releases, motorized operating mechanisms, overcurrent trip units, current sensors, auxiliary circuit signaling switches, automatic reset devices and interlocks can all be exchanged or retrofitted at a later stage, thus allowing the circuit-breaker to be adapted to new, changing requirements.

The main contact elements can all be replaced in order to increase the endurance of the circuit-breaker.

Retrofittable modules for electronic overcurrent trip units

Modularity is one of the main features of the new SENTRON WL circuit-breakers.
Special LCDs, ground-fault modules, rated current modules, and communication modules for the electronic overcurrent trip units are available for retrofitting.

Rating plugs

It is no longer necessary to replace the transformers in order to change the rated current. The rating plugs, which have been integrated into the electronic overcurrent trip units and are easily accessible, are exchanged instead. In this way, the circuit-breaker is quickly set to the new rated current and is also marked accordingly.

Communication

The use of modern communication-capable circuit-breakers opens up completely new possibilities in terms of start-up, calibration, diagnosis, testing, maintenance, and power management.

This allows many different ways of reducing costs and improving productivity in industrial plants, buildings and infrastructure projects to be achieved.

Area of application

- As incoming-feeder, distribution, tie, and outgoing-feeder circuit-breakers in electrical installations.
- For switching and protecting motors, capacitors, generators, transformers, busbars and cables.
- Application as an EMERGENCY-STOP switch in conjunction with an EMERGENCY-STOP device (DIN VDE 0113, IEC 60 204-1).

Due to the reinforced use of electronic control systems, the demands made on air circuit-breakers in terms of operator control and monitoring of network processes have increased.

The extensive, coordinated SENTRON range of devices covers all applications between 16 A and 6300 A with compact and air circuit-breakers.

The AC devices are available as circuit-breakers and non-automatic circuit-breakers. DC devices are only available as non-automatic circuit-breakers.

Specifications

SENTRON WL circuit-breakers satisfy:

- IEC 60947-2
- DIN VDE 0660 Part 101
- climate-proof to DIN IEC 68 Part 30-2.

Also available with UL 489.

For further specifications, see Annex.

Design

- Rated currents: 630 A to 6300 A
- 3 sizes for different rated current ranges (see illustration "Overview of SENTRON WL circuit-breakers/non-automatic circuit-breakers")
- 3 and 4-pole versions
- Rated operational voltage up to AC 690 V and 1000 V. Special versions up to AC 1000 V available
- 3 different switching capacity classes in the range from 50 kA to 100 kA for AC applications and one switching capacity class for DC applications.

The SENTRON WL circuit-breakers are supplied complete with operating mechanism (manual operating mechanism with mechanical closing), electronic overcurrent trip unit and auxiliary switches (2 NO contacts + 2 NC contacts in the standard version), and can be equipped with auxiliary releases.

Installation types

Fixed-mounted or withdrawable version

Ambient temperatures

The SENTRON WL circuit-breakers are climate-proof in accordance with DIN IEC 68 Part 30-2. They are intended for use in enclosed areas where no severe operating conditions (e.g. dust, corrosive vapors, damaging gases) are present.

When installed in dusty and damp areas, suitable enclosures must be provided.

Coordinated dimensions

The dimensions of SENTRON WL circuit-breakers of the same installation type only differ in terms of the width of the device which depends on the number of poles and the frame size.

Due to the nature of the design, the dimensions of devices with a withdrawable design are determined by the dimensions of the guide frames, which are slightly larger.

Non-automatic circuit-breakers

One special type of circuit-breaker is utilized as a non-automatic circuit-breaker. The non-automatic circuit-breakers are designed without an electronic overcurrent trip unit system and do not perform any protection duties for the system.

One potential application is the use as a bus coupler in systems with parallel feed-ins.

The designs and specifications can be selected according to those of the circuit-breakers.

Operating mechanisms

The switches are available with various optional operating mechanisms:

- Manual operating mechanism with mechanical closing (standard design)
- Manual operating mechanism with mechanical and electrical closing
- Motorized operating mechanism with mechanical and electrical closing.

The operating mechanisms with electrical closing can be used for synchronization tasks.

General data

	Circuit-breaker max. rated current $I_{n\,max}$ (A)	Breaking capacity I_{cu} at 440 V AC (kA) or I_{cc} at 300 V DC (kA)	Dimensions Fixed-mounted, 3- /4-pole	Dimensions Draw-out 3- /4-pole	
Size III	6300 5000 4000	H 100	704 / 914 434 / 434 291 / 291	704 / 914 460 / 460 385 / 385	Width Height Depth
Size II	3200 2500 2000 1600 1250 1000 800	DC N S H 30 55 [1] 80 100	460 / 590 434 / 434 291 / 291	460 / 590 460 / 460 385 / 385	Width Height Depth
Size I	1600 1250 1000 800 630	N S 50 65	320 / 410 434 / 434 291 / 291	320 / 410 460 / 460 385 / 385	Width Height Depth

NSE0_00887 i

The dimension for the depth of the circuit-breaker is from the circuit-breaker rear to the inner surface of the closed switchgear door.

1) Size II, I_{cu} = 55 kA; deliverable for $I_{n\,max}$ = 2000 A and 2500 A

Overview of SENTRON WL circuit-breakers/non-automatic circuit-breakers

Main circuit connections

All circuit-breakers are equipped with horizontal main circuit connections on the rear for up to 5000 A as standard (horizontal connection to busbars).

Circuit-breakers with a max. rated current of 6300 A are equipped with vertical main circuit connections (for vertically installed busbars).

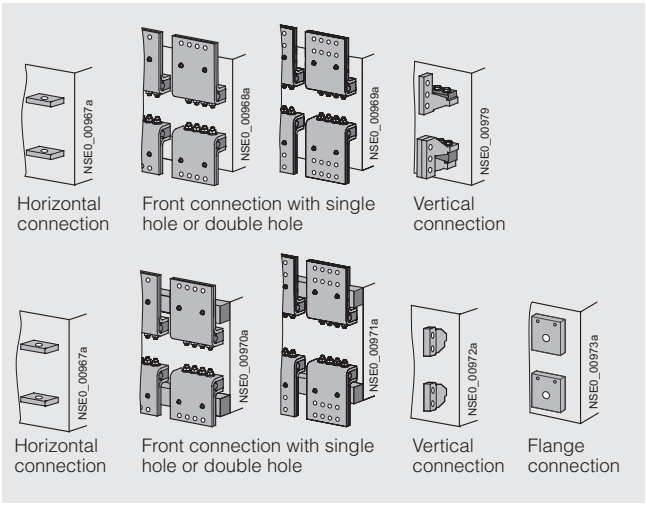
The following options are available:

- Accessible from the front, one hole (for vertically installed busbars)
- Accessible from the front, two holes (holes in accordance with DIN 43673) (for vertically installed busbars)
- At the rear, vertical (for vertically installed busbars)
- Connecting flange (for direct connection to guide frame up to 4000 A).

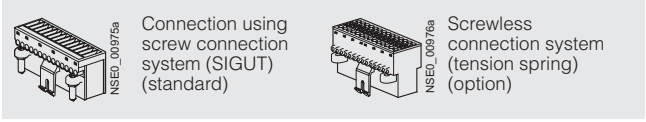
Auxiliary circuit connections

The type of connection for the auxiliary switches depends on the type of installation:

- Withdrawable version
  The internal auxiliary switches are connected to the male connector on the switch side. When the breaker is fully inserted, the blades make a connection with the slide module in the guide frame. Various adapters can then be used to complete the wiring (see illustration "Connection options for auxiliary circuit connections").
- Fixed-mounted version
  In this case the auxiliary circuit plugs are engaged directly onto the circuit-breaker. The connectors are equipped with coding pins that prevent them being mistakenly interchanged.



Main current connections – connection types



Connection options for auxiliary circuit connections

Operator panel

The operator panel is designed to protrude from a cutout in the door providing access to all operator controls and displays with the door closed.
The operator panels for all circuit-breakers (fixed-mounted/withdrawable designs, 3-/4-pole) are identical. The operator panel ensures degree of protection IP20.

Safety and reliability

To protect the circuit-breakers and plant against unauthorized switching as well as the maintenance and operator personnel, the system contains many blocking devices. Others can be retrofitted.

Other safety features include:

- Incoming supply from above or below, as required
- Locking of the guide frame with the circuit-breaker removed, as standard
- Locking of the withdrawable circuit-breaker against movement, as standard
- High degree of protection with cover IP55
- Mechanical closing lockout after overload or short-circuit tripping as standard
- The circuit-breaker is always equipped with the required number of auxiliary supply connectors
- Devices with electronic overcurrent trip units from ETU45B and higher are always equipped with temperature sensors on BSS and COM15 module.

Standard version

SENTRON WL circuit-breakers are equipped with the following features as standard:

- Mechanical ON and OFF pushbutton
- Manual drive with mechanical request
- Switch position indication
- Ready-to-close indicator
- Memory status indicator
- Auxiliary switches (2 NO + 2 NC)
- Rear horizontal main circuit connections for fixed mounted and withdrawable versions up to 5000 A, and rear vertical main circuit connections for 6300 A applications
- For 4-pole circuit-breakers, the fourth pole (N) is installed on the left and is 100% loadable
- Contact erosion indicator for the main contacts
- Auxiliary circuit plug system with SIGUT screw-type terminals. Delivery inclusive of all auxiliary circuit connectors to internal specifications including coding device for the prevention of incorrect installation of fixed-mounted circuit-breakers
- Mechanical "tripped" indicator for electronic overcurrent trip unit system
- Mechanical closing lockout after tripping operation
- Control panel cannot be taken off with the switch in the ON position
- User manual on CD-ROM (for printed version see options)

Additional features of the withdrawable design:

- Main contacts:
  Laminated receptacles in the guide frame, penetration blades on the withdrawable circuit-breaker
- Position indicator in the control panel of the withdrawable circuit-breaker
- Captive manual crank lever for moving the withdrawable circuit-breaker
- Guide frame with guide rails for easy moving of the withdrawable circuit-breaker
- The withdrawable circuit-breaker can be locked to prevent it being pushed out of position
- The withdrawable circuit-breaker cannot be moved when it is in the ON position
- Coding of the rated current between the guide frame and the withdrawable circuit-breaker.

Withdrawable short-circuit, ground, and bridging units

Portable positively-driven ground and short-circuit devices are used for the disconnected system sections to verify isolation from the supply at the workplace.

Withdrawable grounding units allow simple and comfortable grounding. They are simply inserted into the guide frames in place of the corresponding withdrawable circuit-breakers. This ensures that these devices are always first connected with the ground electrode and then with the components to be grounded.

The ground terminals are fitted to the side of the switch enclosure and establish the connection when inserted into the guide frame.

Short-time current of the ground terminal	15 kA (500 ms)
Rated operational voltage	1000 V
Specification	DIN VDE 0683

All withdrawable terminals are short-circuited and grounded on delivery.

Qualified electricians can easily convert it to a withdrawable bridging unit by following the enclosed instructions.

In addition, the withdrawable unit can be adapted to each rated current of a frame size.

Withdrawable short-circuit and grounding unit

The withdrawable short-circuit and grounding unit consists of a breaker enclosure with penetration blades which are connected with the short-circuiting link.

Depending on the version, the short-circuiting links are arranged at the top or bottom. The ground and short-circuit connections are established when the device is inserted.

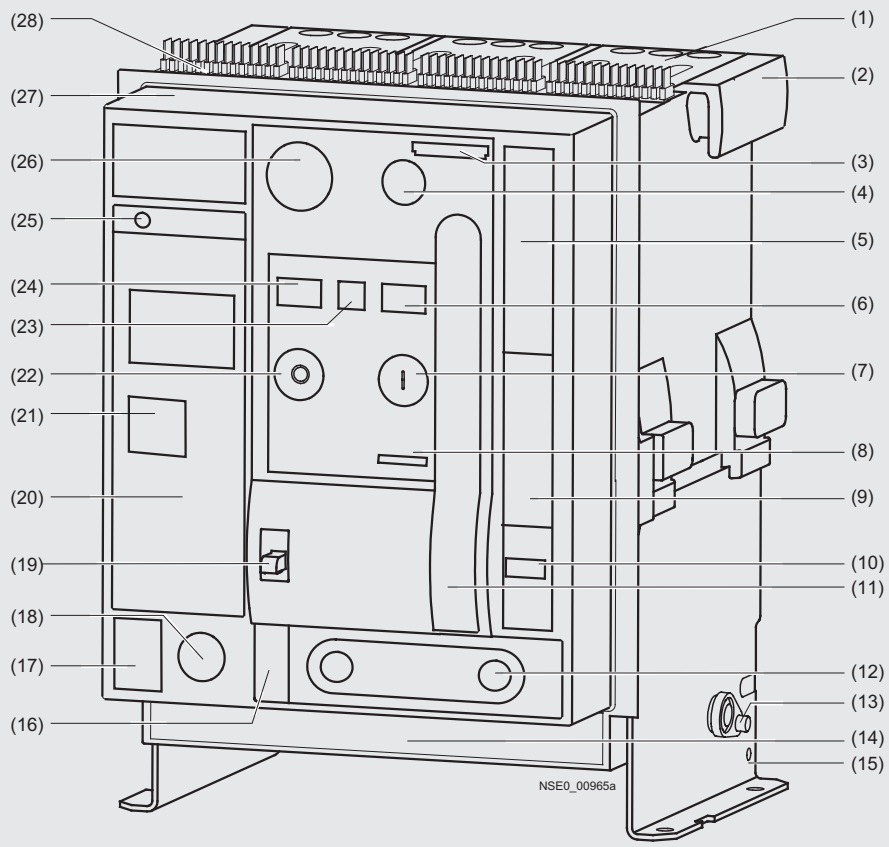
It must be ensured that the side to be short-circuited and grounded is not live. For this reason it is recommended that the withdrawable unit is only wound in when the door is closed.

Withdrawable bridging unit

The withdrawable bridging unit consists of a breaker enclosure in which all disconnection components and the operating mechanism have been replaced with simple connections between the upper and lower contacts.

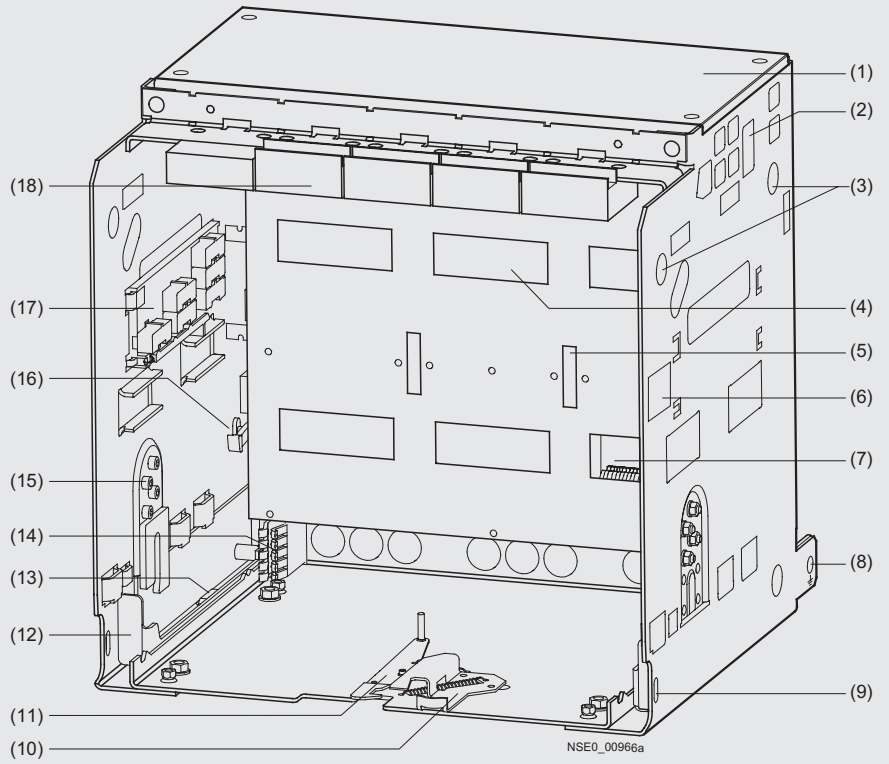
General data

Circuit-breaker



① Arc chute
② Carrying handle
③ Labeling plates
④ Motor cutout switch (option) or "Electrical ON" (option)
⑤ Name plate for circuit-breaker
⑥ Spring charge indicator
⑦ "Mechanical ON" button
⑧ Rated current indication
⑨ Positioning pictogram
⑩ Operating cycles counter (option)
⑪ Hand-operated lever
⑫ Crank handle
⑬ Withdrawable unit drive shaft
⑭ Equipment plate
⑮ Grounding connection
⑯ Position indicator
⑰ Table for ground-fault protection
⑱ Safety lock for crank handle (option)
⑲ Mechanical unlocking of crank handle (option)
⑳ Electronic overcurrent trip unit
㉑ Rating plug
㉒ "Mechanical OFF" button or "EMERGENCY-STOP" mushroom push-button (option)
㉓ Ready-to-close indicator
㉔ Switch position indication
㉕ "Tripped" indicator (reset button)
㉖ "Secure OFF" locking device (option)
㉗ Operator panel
㉘ Male connector for auxiliary connections

Guide frame



① Arc chute cover (option)
② Blow-out openings
③ Opening for crane hook
④ Shutter (option)
⑤ Locking device (shutter) (option)
⑥ Name plate for guide frame
⑦ Isolating contacts
⑧ Ground terminal Ø 14 mm
⑨ Locking device for racking rail
⑩ Locking device against movement when cabinet door is open (option)
⑪ Door interlock for guide frame (option)
⑫ Racking rail
⑬ Factory-set rated current coding
⑭ Sliding contact for breaker grounding (option)
⑮ Equipment-dependent coding (option)
⑯ Shutter actuator (option)
⑰ Position indication switch (option)
⑱ Sliding contact module for auxiliary conductors (number depends on equipment)

Auxiliary releases

Up to two auxiliary releases can be installed at the same time. The following are available:

1 shunt release
or 1 undervoltage release
or 2 shunt releases
or 1 shunt release
+ 1 undervoltage release.

Shunt release

When the operating voltage is connected to the shunt release, the circuit-breaker is opened immediately. The shunt release is available in the variants 5 % ON-time for overexcitation and 100 % ON-time for permanent excitation. This means that it is also possible to block the circuit-breaker against being jogged into closing.

An energy storage device for shunt releases allows the circuit-breaker to be opened even if the control voltage is no longer available.

Undervoltage release

The undervoltage release causes the circuit-breaker to be opened if the operating voltage falls below a certain value or is not applied. The circuit-breaker cannot be opened manually or by means of an electrical ON command if the undervoltage release is not connected to the rated voltage. The undervoltage release has no delay as standard. A delay can be set by the customer in the range between t_d < 80 ms and t_d < 200 ms.

In addition, an undervoltage release with a delay in the range from 0.2 to 3.2 s is available.

Alarm switch for auxiliary releases

One signal contact is used for each auxiliary release to determine the positions of the auxiliary releases.

Closing solenoid

The closing solenoid is used to close the circuit-breaker electrically by means of a local electrical ON command or by a remote unit.

Motorized operating mechanism

The operating mechanism is used to load the storage spring automatically.

The operating mechanism is activated if the storage spring has been unloaded and the control voltage is available.

It is switched off automatically after loading. This does not affect manual loading of the storage spring.

Indicators, signals, and operator controls

Motor STOP switch

Control switch for switching off the motorized operating mechanism (automatic loading).

Operating cycles counter

The motorized operating mechanism can be supplied with a 5-digit operating cycles counter. The display is incremented by "1" as soon as the storage spring is fully loaded.

Resetting the manual "tripped" signal

When the circuit-breaker has tripped, this is indicated by the red protruding reset button on the ETU. When the reset button is activated, the tripping solenoid and tripped signal are reset. If this display is to be reset remotely, the reset button can be equipped with a reset solenoid.

This option allows the circuit-breaker to be reset both manually and electrically.

Automatic resetting of closing lockout

When the ETU is activated, reclosing of the circuit-breaker is prevented until the trip unit is either electrically or manually reset. If the "Automatic resetting of closing lockout" option is used, the circuit-breaker is ready to close immediately after tripping. Resetting the manual "tripped" indicator is not included in this option.

Tripped signal switch

If the circuit-breaker has tripped due to an overload, short-circuit, ground fault or extended protection function, the tripped signal switch can indicate this. This signal switch is available as an option. If the circuit-breaker is used for communication, this option is supplied as standard.

Ready-to-close signal switch

The SENTRON WL circuit-breakers are equipped with an optical ready-to-close indicator as standard. In addition, the ready-to-close status can be transmitted by means of a signal switch as an option. If the switch is used for communication, the signal switch is supplied as standard.

Locking devices

Locking device in OFF position

This function prevents closing of the circuit-breaker and fulfills the specifications for main switches to EN 60204 (VDE 0113) – disconnector unit. This lockout only affects this switch.

If the circuit-breaker is replaced, closing is no longer prevented unless the new circuit-breaker is also protected against unauthorized closing.

To activate the locking device, the circuit-breaker must be opened. The locking device is disabled when the circuit-breaker is closed. The lock is only activated when the key is removed. The safety key can only be removed in the OFF position.

Locking device for "electrical ON"

This prevents unauthorized electrical closing from the operator panel. Mechanical closing and remote closing remain possible. The lock is only activated when the key is removed.

Locking device for "mechanical ON"

This prevents unauthorized mechanical closing. The mechanical ON button can only be activated if the key is inserted (key operation). Closing with the "electrical ON" button and remote closing remain possible. The lock is only activated when the key is removed.

"Secure OFF", switch-independent locking device against unauthorized closing

This special switch-independent function for withdrawable circuit-breakers prevents closing and fulfills the specifications for main switches to EN 60204 (VDE 0113) – disconnector unit. Unauthorized closing remains impossible even after the circuit-breaker has been exchanged.

To activate the lock, the circuit-breaker must be opened. The locking device is disabled when the circuit-breaker is closed. The lock is only activated when the key is removed. The safety key can only be removed in the OFF position.

General data

Locking device for manual crank

Prevents removal of the crank. The circuit-breaker is protected against movement. The lock is only activated when the key is removed.

Locking device for "mechanical OFF"

Prevents unauthorized mechanical opening from the operator panel. The mechanical OFF button can only be activated if the key is inserted (key operation). Remote opening remains possible. The lock is only activated when the key is removed.

Locking device for hand-operated lever

The hand-operated lever can be locked with a padlock. The storage spring cannot be loaded manually.

Locking device against resetting the "tripped" indicator

A lockable cover prevents manual resetting of the "tripped" indicator after overcurrent tripping. This locking device is supplied together with the transparent cover for electronic overcurrent trip units.

Sealing devices

Sealing cap for "electrical ON" button

The "electrical ON" button is equipped with a sealing cap as standard.

Sealing cap for "mechanical ON and OFF" buttons

The locking set contains covering caps which can be sealed.

Sealing device for electronic overcurrent trip units

The transparent cover can be sealed. The configuration sections are covered to prevent unauthorized access. Openings allow access to the query and test button.

Blocking devices

Closing lockout when cabinet door is open

Ready-to-close is deactivated mechanically when the cabinet door is open. The circuit-breaker can neither be mechanically nor electrically closed. The blocking signal is transmitted by means of a Bowden wire.

Blocking device against movement for withdrawable circuit-breakers when the cabinet door is open.

The manual crank is blocked when the cabinet door is open and cannot be removed. The withdrawable circuit-breaker cannot be moved. The lock only affects the inserted manual crank.

Locking of the control cabinet door

The control cabinet door cannot be opened if

- the fixed-mounted circuit-breaker is closed (the blocking signal is transmitted via the Bowden wire) or
- if the withdrawable circuit-breaker is in the connected position.

Blocking mechanism via "mechanical ON and OFF" buttons

The "mechanical ON" and "OFF" buttons are covered with a cap which only allows activation with a tool. These covering caps are part of the locking set.

Additional equipment for guide frames

Shutters

The sealing strips of the shutter seal the laminated contacts of the guide frame when the withdrawable circuit-breaker is removed and therefore implement shock protection.

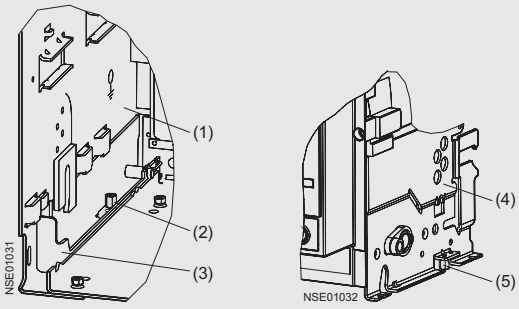
The sealing strips can be manually opened using the strip levers.

The position of the sealing strips can be locked in various positions using padlocks for securing against tampering.

Rated current coding unit between circuit-breaker and guide frame

Withdrawable circuit-breakers and guide frames are equipped with a rated current coding unit as standard.

This ensures that only circuit-breakers whose penetration blades are suited to the laminated contacts of the guide frame can be inserted into a guide frame (see diagram below).



(1) Guide frame, interior of l/h side; interior of r/h side similar
(2) Coding pin on racking rail in guide frame
(3) Racking rail
(4) Withdrawable circuit-breaker, r/h side; l/h side similar
(5) Coding pin on guide frame

Rated current coding unit between circuit-breaker and guide frame

Equipment-dependent coding

Withdrawable circuit-breakers and guide frames can be retrofitted with an equipment-dependent coding unit.

This allows different designs of circuit-breakers and guide frames to be uniquely assigned. If the circuit-breaker and guide frame have been assigned different codes, the circuit-breaker cannot be inserted.

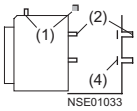
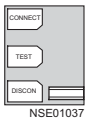
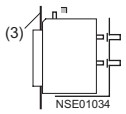
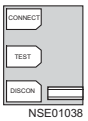
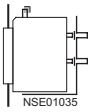
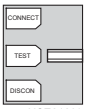
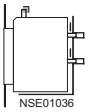
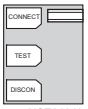
36 different coding options can be selected.

Position indicator switch for guide frames

The guide frame can be retrofitted with position indicator switches. These can be used to determine the position of the circuit-breaker in the guide frame.

The position indicator switches have factory-fitted 1.5 m long cables and are mounted on the supporting plate. Two versions are available (see table below).

Positions of the withdrawable circuit-breaker in the guide frame

	Display	Position indicator	Main circuit	Auxiliary circuit	Control cabinet door	Shutter
Maintenance position	 NSE01033	 NSE01037	disconnected	disconnected	open	closed
Disconnected position	 NSE01034	 NSE01038	disconnected	disconnected	closed	closed
Test position	 NSE01035	 NSE01039	disconnected	connected	closed	closed
Connected position	 NSE01036	 NSE01040	connected	connected	closed	open

(1) Auxiliary circuit (2) Main circuit (3) Control cabinet door (4) Shutter

Mutual mechanical circuit-breaker interlocking

The module for mutual mechanical interlocking can be used for one or two SENTRON WL circuit-breakers and can be adapted easily to the corresponding versions. The fixed-mounted and withdrawable circuit-breaker versions are fully compatible and can therefore be used in a mixed configuration in an installation. This also applies to circuit-breakers 3WN6 and 3WN1.

The circuit-breakers can be mounted alongside each other or one above the other, whereby the spacing of the circuit-breakers is determined solely by the length of the Bowden cable. The Bowden cables are supplied in standard lengths of 2 m. Interlock signals are looped through via the Bowden cables. Interlocking is only effective in the connected position in the case of withdrawable circuit-breakers. The mechanical lifetime of the Bowden wires is 10,000 operating cycles.

Also see the following table for mutual mechanical interlocking of circuit-breakers.

Phase barriers

The plant engineering company can manufacture phase barriers made of insulating material for the arcing fault barriers. The rear panel of the fixed-mounted circuit-breakers or guide frames are equipped with guide grooves.

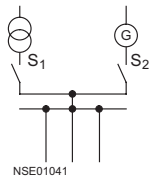
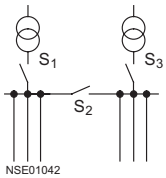
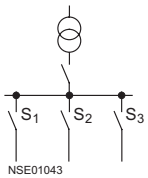
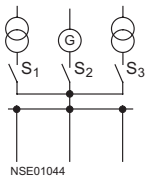
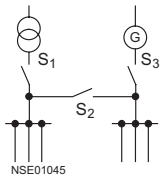
Arc chute cover

The arc chute cover is available as optional equipment for the guide frame (standard for versions in accordance with UL 489). The arc chute cover protects switchgear components which are located directly above the circuit-breaker.

Door sealing frame and cover

SENTRON WL circuit-breakers have degree of protection IP20 as standard. However, if the switchgear is to be equipped with a higher degree of protection, a door sealing frame with IP40 and a cover with IP55 are available.

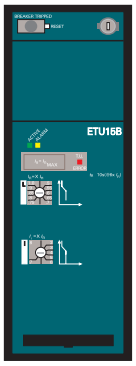
Mutual mechanical interlocking of circuit-breakers – examples

Mutual interlocking of two circuit-breakers	Interlocking between three circuit-breakers		Mutual interlocking of three circuit-breakers	Interlocking of three circuit-breakers, two of them mutual
 NSE01041	 NSE01042	 NSE01043	 NSE01044	 NSE01045

General data

Functions

Functions of the electronic overcurrent trip units



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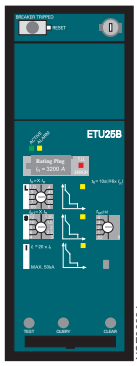

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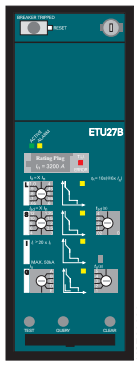

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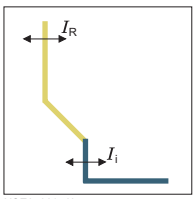

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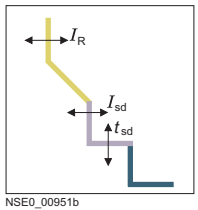

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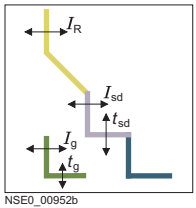


NSE0_00952b

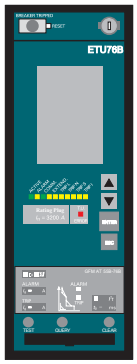
		ETU15B	ETU25B	ETU27B
Basic protection functions				
Overload protection	L	✔	✔	✔
Short-time delayed short-circuit protection	S	–	✔	✔
Instantaneous short-circuit protection	I	✔	✔	✔
Neutral conductor protection	N	–	–	✔
Ground-fault protection	G	–	–	✔
Additional functions				
N-conductor protection can be switched on/off		–	–	✔
Short-time delayed short-circuit protection can be switched on/off		–	–	–
Non-delayed short-circuit protection can be switched on/off		–	–	–
Thermal image can be switched on/off		–	–	–
Load monitoring		–	–	–
Short-time delayed short-circuit protection can be switched to I^2t		–	–	–
Non-delayed short-circuit protection adjustable		✔	–	–
Overload protection switchable to I^4t		–	–	–
Overload protection can be switched on/off		–	–	–
N-conductor protection adjustable		–	–	–
Selectable parameter sets		–	–	–
Configuration and displays				
Configuration via rotary coding switches (10 steps)		✔	✔	✔
Configuration via communication (absolute values)		–	–	–
Configuration via user interface of ETU (absolute values)		–	–	–
Configuration of expanded protection functions		–	–	–
LCD alphanumerical		–	–	–
Graphic LCD		–	–	–
Measurement function				
Measurement function		–	–	–
Measurement function *Plus*		–	–	–
Communication				
CubicleBUS		–	–	–
Communication via PROFIBUS DP		–	–	–
Communication via Ethernet		–	–	–

✔ Standard – Not available ❑ Optional

Detailed information about the functions of the electronic overcurrent trip units is given in the following.

NSE00883a

NSE00884a



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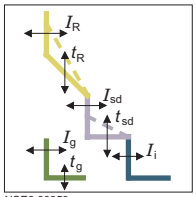

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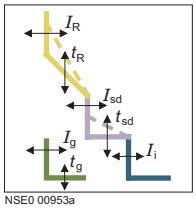

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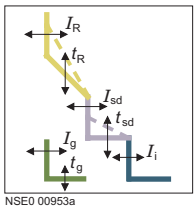

NSE0 00953a

ETU45B	ETU55B	ETU76B
✔	✔	✔
✔	✔	✔
✔	✔	✔
✔	✔	✔
❑	❑	❑
✔	✔	✔
✔	✔	✔
✔	✔	✔
✔	✔	✔
✔	✔	✔
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❑	❑	❑
❑	❑	❑
✔	✔	✔
❑	❑	❑
❑	❑	❑

General data

Electronic overcurrent trip units (ETU)

The electronic overcurrent trip unit is controlled by a microprocessor and operates independently of an auxiliary voltage. It enables systems to be adapted to the different protection requirements of distribution systems, motors, transformers and generators.

Communication capability

The international standard PROFIBUS DP can be used to transmit data such as current values, switching states, reasons for tripping etc. to central computers.

Data acquisition and energy management are possible in conjunction with the measurement function.

A new internal circuit-breaker data bus allows switchboard panel communication between the circuit-breaker and secondary devices in the circuit-breaker panel:

- Actuation of analog displays
- Ability to test the communication build-up with circuit-breakers
- Display of release status and tripping reasons
- Input module for reading in further switchgear panel signals and for transmission of these signals to the PROFIBUS DP
- Various output modules for displaying measured values.

This means that it is not only possible to monitor the device remotely, but also to transmit current values from the entire system and perform switching operations remotely.

I^2t and I^4t characteristic for overload protection

The best protection for the whole switchgear is achieved by setting the tripping characteristic to an optimum value. In order to achieve optimal discrimination for upstream fuses or medium voltage protection systems, the inclination of the characteristic can be selected for the overload range.

The overload protection L (long time protection) for the electronic overcurrent trip units ETU45B, ETU55B, and ETU76B allows the characteristic to be switched between I^2t and I^4t.

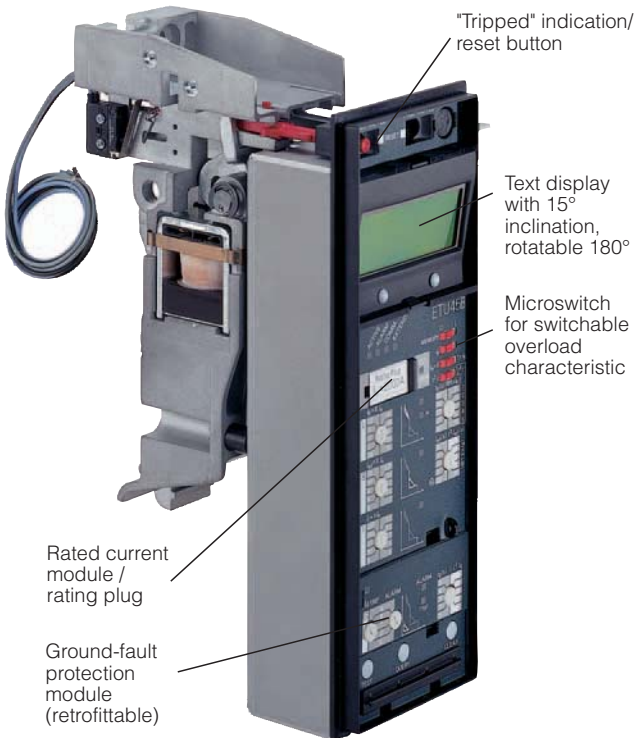
The I^4t characteristic improves discrimination for downstream circuit-breakers and fuses.

Electronic overcurrent trip units ETU

Modularity has also been strictly emphasized during the development of the electronic overcurrent trip units. These are some of the modules which can be easily retrofitted at any time:

- Ground-fault protection modules
- Communication
- Measurement function
- Displays
- Rated current modules (rating plugs)

This allows quick adaptation to new local mains specifications. In addition, new innovative functions have been included in the ETUs.



Example of configuration for ETU45B

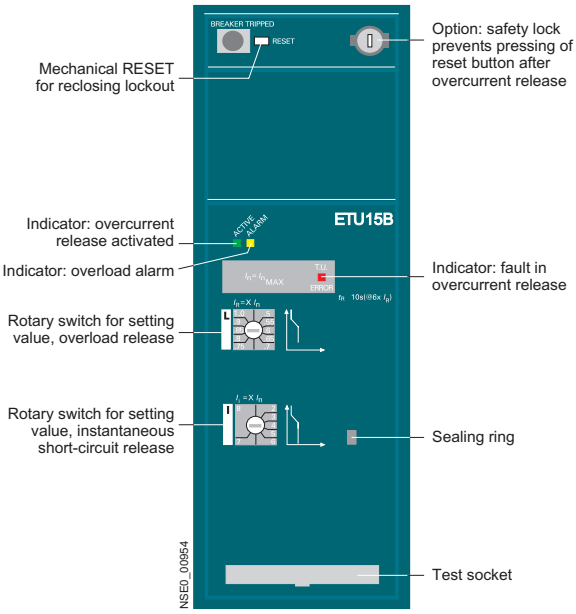
Rated current module / rating plug

The rated current module is an exchangeable module which allows the user to reduce the rated device current so as to adapt it optimally to the plant; e.g. if a new plant section is taken into operation. The rated current module must be selected to fit the rated current of the plant.

Selectable parameters

In the case of quick changes of power supply conditions, e.g. for switchovers from transformer to generator operation or if a section of the supply is shutdown when the shift changes, SENTRON WL allows the relevant protection parameters to be quickly adapted to the new conditions.
The ETUs contain two independent tripping characteristics (parameter sets). The switchover is completed within 200 ms and is performed with the help of an external signal.

ETU15B electronic overcurrent trip unit



Application:

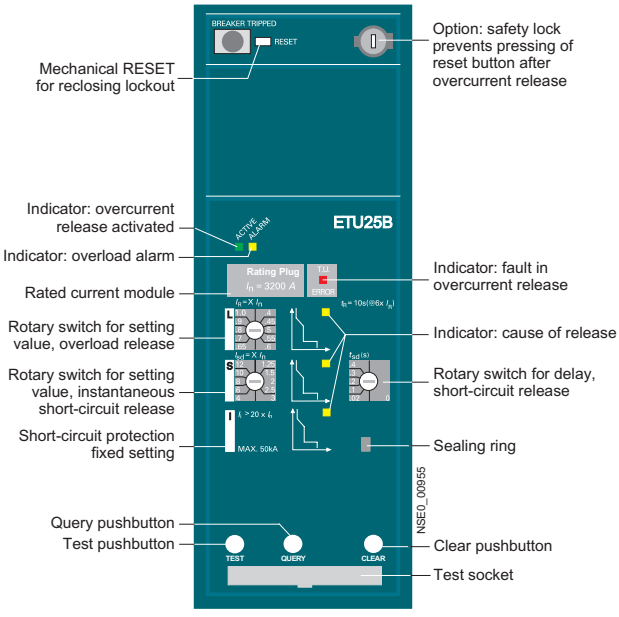
Simple building and plant protection without time-selective grading up to 3200 A

Features:

- Adjustable overload protection with I^2t characteristic with preset delay time t_R = 10 seconds at 6 × I_R
- Non-delayed short-circuit protection adjustable in the range from 2 to 8 × I_n
- Overload display
- Protection function is set by means of the rotary coding switch

For technical details see table "Function overview of the electronic overcurrent trip unit system" under "Technical specifications".

ETU25B electronic overcurrent trip unit



Application:

Classical building, motor and plant protection with time-selective coordination for up to 6300 A

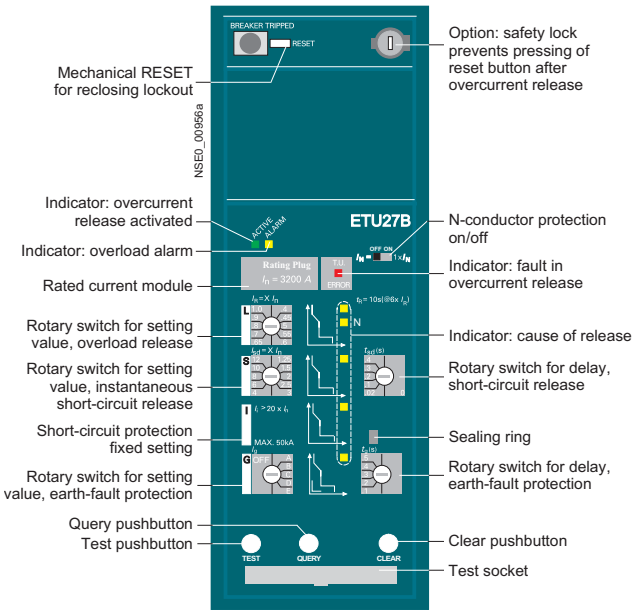
Features:

- Adjustable overload protection with I^2t characteristic preset delay time t_R = 10 seconds at 6 × I_R
- Short-time delayed short-circuit protection adjustable in the range from 1.25 to 12 × I_n and
- Non-delayed short-circuit protection preset to 20 × I_n/max. 50 kA
- Can be adapted to the required plant currents through retrofittable rated current module to ensure overload protection in the range from 100 A to 6300 A.
- Overload display
- Indicates the reason for tripping by means of an LED
- Test option for the trip unit
- Protection functions are set by means of the rotary coding switch

For technical details see table "Function overview of the electronic overcurrent trip unit system" under "Technical specifications".

General data

ETU27B electronic overcurrent trip unit



Application:

Classical building, motor and plant protection with time-selective coordination for up to 6300 A

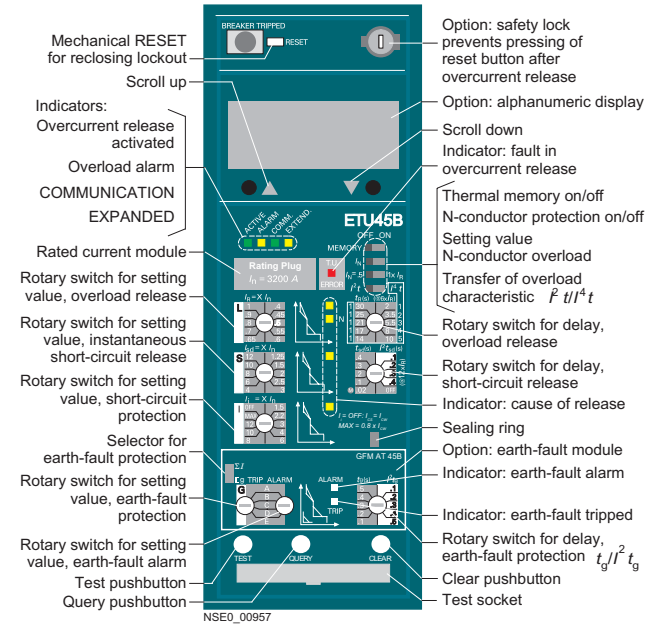
Features:

The same as ETU25B but also including

- Reversible neutral conductor protection
- Permanently integrated ground-fault protection. Calculation of the ground-fault current through vectorial summation current formation

For technical details see table "Function overview of the electronic overcurrent trip unit system" under "Technical specifications".

ETU45B electronic overcurrent trip unit



Application:

Low-cost all-round system for intelligent buildings and all types of industrial applications – "**Cubicle**BUS integrated"

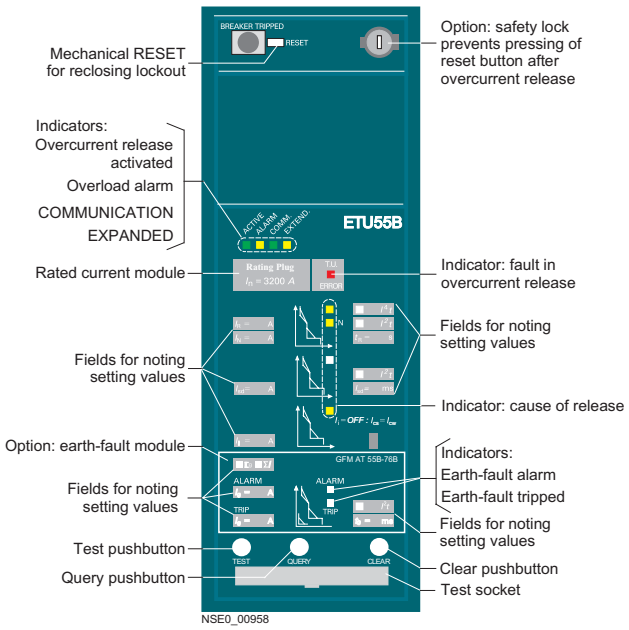
Features:

The same as ETU25B but also including

- Adjustable time-lag class for overload protection
- Selectable characteristic for overload and short-delayed short-circuit range (current discrimination) for more accurate discrimination adaptation to upstream fuses and protection devices
- Thermal image as restart protection for tripped motor outgoing feeders
- Reversible and adjustable neutral conductor protection
- Modular ground-fault module with alarm and tripping functions which can be set separately
- Communication interface, measurement function (*Plus*), optional connection of external modules or for retrofitting
- Extended protection functions possible with measurement function
- Optional high-contrast display with viewing angle adjustment option
- The protection functions can be set by means of a rotary coding switch or sliding-dolly switch

For technical details see table "Function overview of the electronic overcurrent trip unit system" under "Technical specifications".

ETU55B electronic overcurrent trip unit



Application:

The trip unit for special safety requirements which can be set via exclusive external parameter access for generator and motor protection as well as industrial applications – "**Cubicle**BUS integrated"

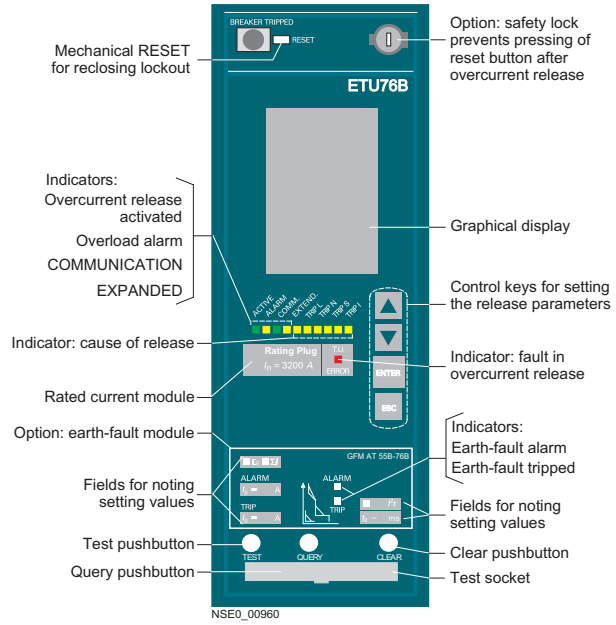
Features:

The same as ETU45B but also including

- Two protection parameter sets which can be stored separately in the trip unit (switchover is performed via external signal)
- With overload protection which can be deactivated for use in modern drive technology
- Adjustable delay of delayed short-circuit protection up to 4000 ms
- Neutral conductor protection adjustable up to $I_N = 2 \times I_n$
- Setting of protection functions by means of Breaker Data Adapter (BDA) or via communication interface

For technical details see table "Function overview of the electronic overcurrent trip unit system"

ETU76B electronic overcurrent trip unit



Application:

The multi-talent with graphical display for system analysis – "**Cubicle**BUS integrated"

Features:

The same as ETU55B but also including

- Graphical display of all parameters and events/ curve trends
- Storage of events and causes for tripping for detailed fault analysis
- Graphics display with high contrast, backlit display, and sleep mode.

For technical details see table "Function overview of the electronic overcurrent trip unit system" under "Technical specifications".

General data

Ground-fault protection

Ground-fault releases "G" sense fault currents that flow to ground and that can cause fire in the plant. Multiple circuit-breakers connected in series can have their delay times adjusted so as to provide graduated discrimination.

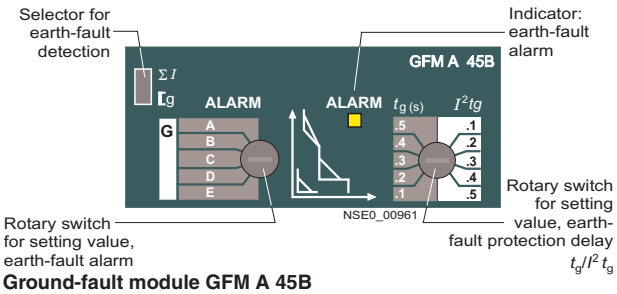
When setting the parameters for the electronic overcurrent trip unit it is possible to choose between "alarm" and "trip" in the event that the set current value is exceeded. The reason for tripping is indicated by means of an LED when the query button is activated.

Modules

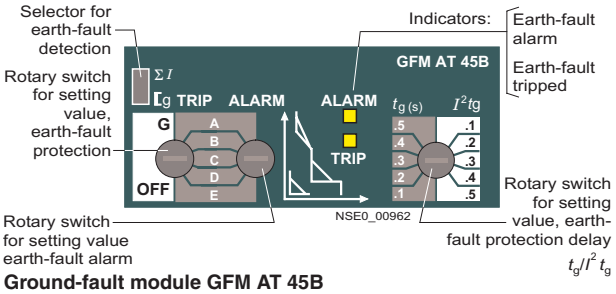
The electronic overcurrent trip unit versions ETU45B, ETU55B and ETU76B can be retrofitted with a ground-fault module. The electronic overcurrent trip unit ETU27B is fitted with this module as standard.

Two versions can be ordered:

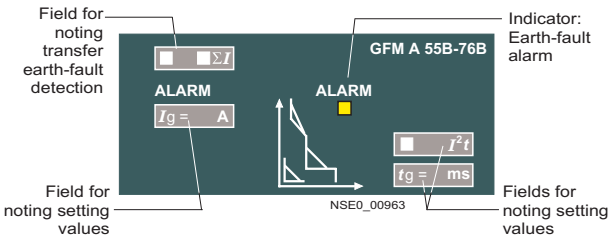
- GFM AT: Alarm and tripping
- GFM A: Only alarm.



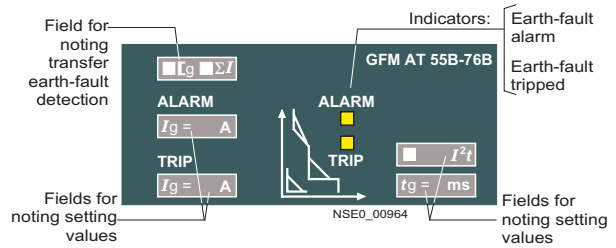
Ground-fault module GFM A 45B



Ground-fault module GFM AT 45B



Ground-fault module GFM A 55B-76B



Ground-fault module GFM AT 55B-76B

Measurement method

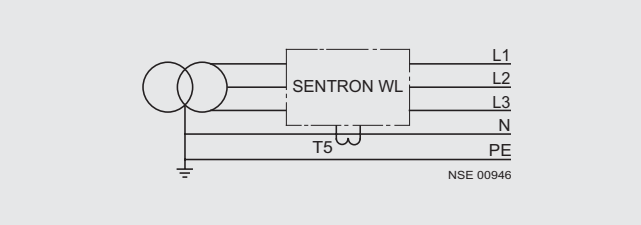
Vectorial summation current formation

The N-conductor current and the three phase currents are measured directly.

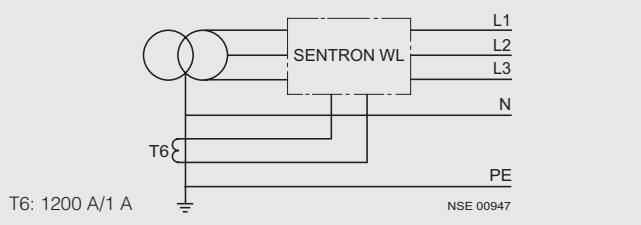
The electronic overcurrent trip unit determines the ground-fault current by means of vectorial summation current formation for the three phase currents and the N-conductor current.

Direct measurement of the ground-fault current

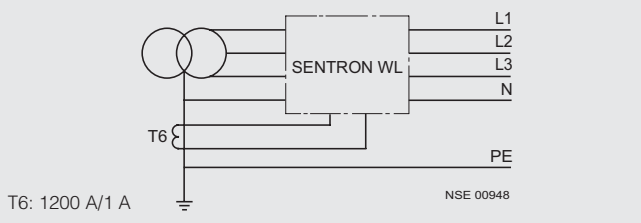
A current transformer with the transformation ratio 1200 A/1A is used for measurement of the ground-fault current. The transformer can be installed directly in the grounded neutral point of a transformer.



Three-pole circuit-breakers, current transformers in the neutral conductor

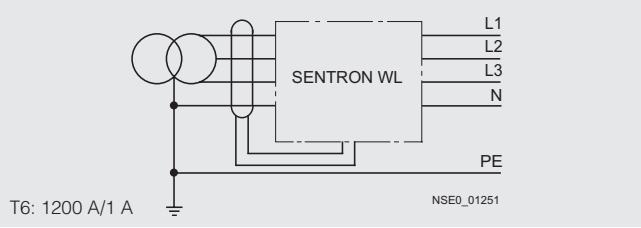


Four-pole circuit-breakers, current transformers in the grounded neutral point of the transformer.



Four-pole circuit-breakers, current transformers in the grounded neutral point of the transformer.

It is also possible to use a summation current transformer.



Use of a summation current transformer

Setting

How the module is set depends on the measurement method used (see above):

Measurement method 1: in position Sum I
Measurement method 2: in position G.

This setting can be implemented for the electronic overcurrent trip unit versions ETU55B and ETU76B with Menu/Comm.

Ground-fault protection with I^2t characteristic

With the exception of the electronic overcurrent trip unit ETU27B, all versions of the ground-fault modules are supplied with an I^2t characteristic which can be activated.

This characteristic reduces the thermal load of the PE conductor for ground faults with delayed tripping.

Selection criteria for SENTRON WL circuit-breakers

Basic criteria for selecting circuit-breakers are:

- Max. short-circuit current at mounting location of circuit-breaker $I''_{k\,max}$.
  This value determines the short-circuit breaking capacity or short-circuit current carrying capacity of the circuit-breaker.
- It is compared with the value I_{cu}, I_{cs}, I_{cw} of the circuit-breaker and essentially determines the size of the circuit-breaker.
  See "Overview of SENTRON WL circuit-breakers/non-automatic circuit-breakers".
- Rated current I_n which is to flow through the branch circuit. This value must not be larger than the maximum rated current for the circuit-breaker.
  The rated current for the SENTRON WL is set with the rating plug. See "Overview of SENTRON WL circuit-breakers/non-automatic circuit-breakers".
- Ambient temperature for the circuit-breaker.
  This is usually the temperature inside the switchgear cabinet.
- Version of the circuit-breaker
- Minimum short-circuit current, which flows through the switching device. The trip unit must still detect this value as a short-circuit and must respond by tripping.

Protection functions of the circuit-breaker.
These are determined by the selection of the corresponding electronic overcurrent trip unit. See table "Functions of the electronic overcurrent trip units" under "Functions".

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General data

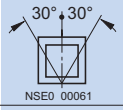
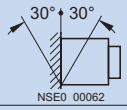
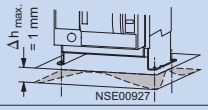
Technical specifications

Short-circuit breaking capacity							
Size		**I**		**II**			**III**
Type		**3WL11**		**3WL12**			**3WL13**
Switching capacity class		**N**	**S**	**N**	**S**	**H**	**H**
up to AC 415 V							
I_{cu}	kA	50	65	55	80	100	100
I_{cs}	kA	50	65	55	80	100	100
I_{cm}	kA	105	143	121	176	220	220
up to AC 500 V							
I_{cu}	kA	50	65	55	80	100	100
I_{cs}	kA	50	65	55	80	100	100
I_{cm}	kA	105	143	121	176	220	220
up to AC 690 V							
I_{cu}	kA	42	50	50	75	85	85
I_{cs}	kA	42	50	50	75	85	85
I_{cm}	kA	88	105	105	165	187	187
up to AC 1000 V							
I_{cu}	kA	–	–	–	–	45	50
I_{cs}	kA	–	–	–	–	45	50
I_{cm}	kA	–	–	–	–	95	105

Rated short-time withstand current I_{cw} of circuit-breakers							
Size		**I**		**II**			**III**
Type		**3WL11**		**3WL12**			**3WL13**
Switching capacity class		**N**	**S**	**N**	**S**	**H**	**H**
0.5 s	kA	42	65	55	80	100	100
1 s	kA	42	50	55	65	80	100
2 s	kA	29.5	35	39	46	65[1])/70[2])	80
3 s	kA	24	29	32	37	50[1])/65[2])	65

Short-circuit breaking capacity I_{cc} of non-automatic circuit-breakers							
Size		**I**		**II**			**III**
Type		**3WL11**		**3WL12**			**3WL13**
Switching capacity class		**N**	**S**	**N**	**S**	**H**	**H**
up to AC 500 V	kA	42	65	55	80	100	100
up to AC 690 V	kA	42	50	50	75	85	85

1) Size II with $I_{n\,max} \leq 2500$ A.
2) Size II with $I_{n\,max} = 3200$ A.

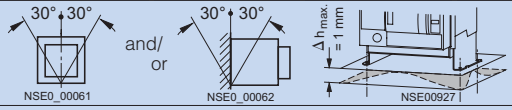
Size			I			II				
Type			**up to 3WL11 10**	**3WL11 12**	**3WL11 16**	**3WL12 08**	**3WL12 10**	**3WL12 12**	**3WL12 16**	**3WL12 20**
Rated current I_n at 40 °C, at 50/60 Hz										
Main conductor		A	up to 1000	1250	1600	800	1000	1250	1600	2000
Neutral conductor (only with 4-pole versions)		A	up to 1000	1250	1600	800	1000	1250	1600	2000
Rated operating voltage U_e at 50/60 Hz (1000 V design, see options)		AC V	up to 690	up to 690	up to 690	up to 690/1000	up to 690/1000	up to 690/1000	up to 690/1000	up to 690/1000
Rated insulation voltage U_i		AC V	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp}										
Main circuits		kV	12	12	12	12	12	12	12	12
Auxiliary circuits		kV	4	4	4	4	4	4	4	4
Control circuits		kV	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Isolating function to EN 60947-2			yes	yes	yes	yes	yes	yes	yes	yes
Utilization category			B							
Permissible ambient temperature										
in operation (in operation with LCD max. 55 °C)		°C	–25/+70	–25/+70	–25/+70	–25/+70	–25/+70	–25/+70	–25/+70	–25/+70
Storage (special conditions for LCDs must be observed)		°C	–40/+70	–40/+70	–40/+70	–40/+70	–40/+70	–40/+70	–40/+70	–40/+70
Permissible load at rear horizontal main circuit connections	up to 55 °C (Cu bare)	A	1000	1250	1600	800	1000	1250	1600	2000
	up to 60 °C (Cu bare)	A	1000	1250	1600	800	1000	1250	1600	2000
	up to 70 °C (Cu painted black)	A	1000	1210	1490	800	1000	1250	1600	2000
Power loss at I_n with AC symmetrical load										
Fixed-mounted circuit-breaker		W	100	105	150	40	45	80	85	180
Withdrawable circuit-breaker		W	195	205	350	85	95	165	175	320
Operating times										
Make-time		ms	35	35	35	35	35	35	35	35
Break-time		ms	38	38	38	34	34	34	34	34
Electr. make-time (via activation solenoid)[2]		ms	80	80	80	100	100	100	100	100
Electr. break-time (via shunt release)		ms	73	73	73	73	73	73	73	73
Electr. break-time (instantaneous undervoltage release)		ms	73	73	73	73	73	73	73	73
Break-time through ETU, instantaneous short-circuit release		ms	50[1]	50[1]	50[1]	50[1]	50[1]	50[1]	50[1]	50[1]
Service life										
mechanical (without maint.)		Operating cycles	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
mechanical (with maint.)[3]		Operating cycles	20 000	20 000	20 000	15 000	15 000	15 000	15 000	15 000
electrical (without maint.)		Operating cycles	10 000	10 000	10 000	7500	7500	7500	7500	7500
1000 V design		Operating cycles	–	–	–	1000	1000	1000	1000	1000
electrical (with maint.)[3]		Operating cycles	20 000	20 000	20 000	15 000	15 000	15 000	15 000	15 000
Operating frequency										
690 V design		1/h	60	60	60	60	60	60	60	60
1000 V design		1/h	–	–	–	20	20	20	20	20
Minimum interval between tripping operation by overcurrent release and next making operation of the circuit-breaker (only with autom. mechanical resetting of the lockout device)		ms	80	80	80	80	80	80	80	80
Service position			 NSE0 00061 and/or  NSE0 00062  NSE00927							
Degree of protection			IP20 without cabinet door, IP30 with door mounting frame, IP55 with cover							
Main conductor minimum cross-sections	Copper bars, bare	Qty. mm²	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	3 × 50 × 10
	Copper bars, painted black	Qty. mm²	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	3 × 50 × 10
Auxiliary conductors (Cu) Max. no. of auxiliary conductors × cross-section (solid/stranded)	Standard connection = strain-relief clamp without end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16); 1 × 2.5 mm² (AWG 14)							
	with end sleeve to DIN 46228 T.2		1 × 0.5 mm² (AWG 20) to 1 × 1.5 mm² (AWG 16)							
	with twin end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16)							
	optional conn. = tension spring without end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 2.5 mm² (AWG 14)							
	with end sleeve to DIN 46228 T.2		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16)							
Weights 3-pole	Fixed-mounted circ.-br.	kg	43	43	43	56	56	56	56	56
	Withdrawable circ.-br.	kg	45	45	45	60	60	60	60	60
	Guide frame	kg	25	25	25	31	31	31	31	31
4-pole	Fixed-mounted circ.-br.	kg	50	50	50	67	67	67	67	67
	Withdrawable circ.-br	kg	54	54	54	72	72	72	72	72
	Guide frame	kg	30	30	30	37	37	37	37	37

1) Break-time on instantaneous short-circuit release with ETU15B = 85 ms.

2) Make-time via activation solenoid for synchronization purposes (short-time excited) 50 ms.

3) Maintenance means: replace main contact elements and arc chutes (see Operator's Guide).

General data

Size			II		III		
Type			**3WL12 25**	**3WL12 32**	**3WL13 40**	**3WL13 50**	**3WL13 63**
Rated current I_n at 40 °C, at 50/60 Hz							
Main conductor		A	2500	3200	4000	5000	6300
Neutral conductor (only on 4-pole versions)		A	2500	3200	4000	5000	6300
Rated operating voltage U_e at 50/60 Hz (1000 V design, see options)		AC V	up to 690/1000	up to 690/1000	up to 690/1000	up to 690/1000	up to 690/1000
Rated insulation voltage U_i		AC V	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp}							
Main circuits		kV	12	12	12	12	12
Auxiliary circuits		kV	4	4	4	4	4
Control circuits		kV	2.5	2.5	2.5	2.5	2.5
Isolating function to EN 60947-2			yes	yes	yes	yes	yes
Utilization category			B (except switching capacity class DC)				
Permissible ambient temperature							
in operation (in operation with LCD max. 55 °C)		°C	–25/+70	–25/+70	–25/+70	–25/+70	–25/+70
Storage (special conditions for LCDs must be observed)		°C	–40/+70	–40/+70	–40/+70	–40/+70	–40/+70
Permissible load	up to 55 °C (Cu bare)	A	2500	3200	4000	5000	5920
	up to 60 °C (Cu bare)	A	2500	3020	4000	5000	5810
	up to 70 °C (Cu painted black)	A	2280	2870	4000	5000	5500
Power loss at I_n							
with AC symmetrical load							
Fixed-mounted circuit-breaker		W	270	410	520	630	900
Withdrawable circuit-breaker		W	520	710	810	1050	1600
Operating times							
Make-time		ms	35	35	35	35	35
Break-time		ms	34	34	34	34	34
Electr. make-time (via activation solenoid) [2]		ms	100	100	100	100	100
Electr. break-time (via shunt release)		ms	73	73	73	73	73
Electr. break-time (instantaneous undervoltage release)		ms	73	73	73	73	73
Break-time through ETU, instantaneous short-circuit release		ms	50[1]	50[1]	50	50	50
Service life							
mechanical (without maint.)	Operating cycles		10000	10000	5000	5000	5000
mechanical (with maint.)[3]	Operating cycles		15000	15000	10000	10000	10000
electrical (without maint.)	Operating cycles		7500	4000	2000	2000	2000
1000 V design	Operating cycles		1000	1000	1000	1000	1000
electrical (with maint.)[3]	Operating cycles		15000	15000	10000	10000	10000
Operating frequency							
690 V design		1/h	60	60	60	60	60
1000 V design		1/h	20	20	20	20	20
Minimum interval between tripping operation by over-current release and next making operation of the circuit-breaker (only with autom. mechanical resetting of the lock-out device)		ms	80	80	80	80	80
Service position							
Degree of protection			IP20 without cabinet door, IP30 with door mounting frame, IP55 with cover				
Main conductor minimum cross-sections	Copper bars, bare	Qty. mm²	2 × 100 × 10	3 × 100 × 10	4 × 100 × 10	6 × 100 × 10	6 × 120 × 10
	Copper bars, painted black	Qty. mm²	2 × 100 × 10	3 × 100 × 10	4 × 100 × 10	6 × 100 × 10	6 × 120 × 10
Auxiliary conductors (Cu) Max. no. of auxiliary conductors × cross-section (solid/stranded)	Standard connection = strain-relief clamp						
	without end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16); 1 × 2.5 mm² (AWG 14)				
	with end sleeve to DIN 46228 T.2		1 × 0.5 mm² (AWG 20) to 1 × 1.5 mm² (AWG 16)				
	with twin end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16)				
	optional connection = tension spring						
	without end sleeve		2 × 0.5 mm² (AWG 20) to 2 × 2.5 mm² (AWG 14)				
	with end sleeve to DIN 46228 T.2		2 × 0.5 mm² (AWG 20) to 2 × 1.5 mm² (AWG 16)				
Weights 3-pole	Fixed-mounted circuit-breaker	kg	59	64	82	82	90
	Withdrawable circuit-breaker	kg	63	68	88	88	96
	Guide frame	kg	39	45	60	60	70
4-pole	Fixed-mounted circuit-breaker	kg	71	77	99	99	108
	Withdrawable circuit-breaker	kg	76	82	106	106	108
	Guide frame	kg	47	54	84	84	119

1) Break-time on instantaneous short-circuit release with ETU15B = 85 ms.

2) Make-time via activation solenoid for synchronization purposes (short-time excited) 50 ms.

3) Maintenance means: replace main contact elements and arc chutes (see Operator's Guide).

Size					**I ... III**
Manual operating mechanism with mechanical closing					
Closing/ charging stored-energy feature	Max. force required to operate the hand lever Required number of strokes on the hand lever			N	≤ 230 9
Manual operating mechanism with mechanical and electrical closing					
Charging stored-energy feature					
Closing solenoid (CC)	Operating range				0.85 ... 1.1 × U_s
	Extended operating range for battery operation		for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		0.7 ... 1.26 × U_s
	Power input		AC/DC	VA/W	15/15
	Minimum command duration at U_s for the closing solenoid			ms	60
	Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/ miniature circuit-breaker with C-characteristic				1 A TDz (time-lag)/1 A
Manual/motorized operating mechanism with mechanical and electrical closing					
Manual operating mechanism					For data see above.
Motor	Operating range				0.85 ... 1.1 × U_s
	Extended coil voltage tolerance for battery operation		for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		0.7 ... 1.26 × U_s
	Power input to motor		AC/DC	VA/W	110/110
	Time required to charge the stored-energy mechanism at 1 × U_s			s	≤ 10
Closing solenoid					For data see above.
For motor and closing solenoid	Short-circuit protection Motor and closing solenoid for the same rated control supply voltages				2 A TDz (time-lag)/1 A
	Smallest permissible DIAZED fuse (operational class gL)/ miniature circuit-breaker with C-characteristic (for different rated control supply voltages		at U_s = 24–30 V at U_s = 48–60 V at U_s = 110–127 V at U_s = 220–250 V		2 A 2 A 1 A 1 A
Electronic trip unit signals					
Measuring accuracy of the electronic trip unit					Protection functions to EN 60947; current indication ≤ 5 %; measurement functions base quantities ≤ 1 %; measurement functions derived quantities ≤ 4 %
Auxiliary releases					
shunt release (ST) (F1, F2)	For continuous command (100 % ON-time), locks out on momentary-contact commands	Operating value	pickup		> 0.7 × U_s (circuit-breaker is tripped)
		Operating range			0.85 ... 1.1 × U_s
		Extended operating range for battery operation	for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		0.7 ... 1.26 × U_s
		Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110; 230 24; 30; 48; 60; 110; 220
		Power input	AC/DC	VA/W	15/15
		Minimum command duration at U_s		ms	60
		Opening time of circuit-breaker at U_s = 100 %	AC/DC	ms	80
		Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/ miniature circuit-breaker with C-characteristic			1 A TDz (time-lag)/1 A
	With stored energy feature consisting of shunt release and capacitor storage device	Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110; 230 110; 220
		Operating range			0.85 ... 1.1 × U_s
		Power input	AC/DC	VA/W	1/1
		Storage time at U_s/recharging time at U_s			max. 5 min/min. 5 s
		Opening time of circuit-breaker, short-circuit protection			as with "for continuous command"

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General data

Size					I ... III			
Auxiliary releases								
Undervoltage release UVR (F3) and UVR-t_d (F4)	Operating values		pickup dropout		≥ 0.85 × U_s (circuit-breaker can be closed) 0.35 ... 0.7× U_s (circuit-breaker is tripped)			
	Operating range				0.85 ... 1.1			
	Extended operating range for battery operation		for DC 24 V, DC 30 V, DC 48 V, DC 110 V, DC 220 V		0.85 ... 1.26			
	Rated control supply voltage U_s		AC 50/60 Hz DC	V V	110 ... 127/208 ... 240/380 ... 415 24/30/48/110/220 ... 250[1])			
	Power input (pickup/continuous duty)		AC DC	VA W	200/5 200/5			
	Opening time of circuit-breaker at U_s = 0			ms	200			
	Design UVR (F3)							
	Instantaneous			ms	80			
	With delay			ms	200			
	Design UVR-t_d (F8)							
	With delay, t_d = 0.2 ... 3.2 s			s	0.2 ... 3.2			
	Reset via additional NC contact – direct switching-off			ms	≤ 100			
	Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/ miniature circuit-breaker with C-characteristic				1 A TDz (time-lag) 1 A			
Contact position-driven auxiliary switches (S1, S2, S3, S4, S7, S8)								
Rated insulation voltage U_i				AC/DC V	500			
Rated operating voltage U_e				AC/DC V	500			
Switching capacity	AC 50/60 Hz	Rated operating voltage U_e Rated operating current		V	24 ... 230	380/400	500	
		I_e/AC-12		A	10	10	10	
		I_e/AC-15		A	4	3	2	
	DC	Rated operating voltage U_e		V	24	48	110	220
		Rated operating current						
		I_e/DC-12		A	10	8	3.5	1
		I_e/DC-13		A	8	4	1.2	0.4
Short-circuit protection	Largest permissible DIAZED fuse (operational class gL) Largest permissible miniature circuit-breaker with C-characteristic				10 A TDz, 10 A Dz 10 A			

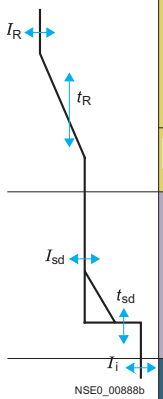
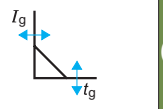
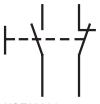
1) 24 V and 30 V only with undervoltage release UVR (F3).

Size					I ... III		
Ready-to-close signaling switch (S20) (to DIN VDE 0630)							
Switching capacity	AC	Rated operating voltage U_e Rated operating current I_e		V A	110 0.14	220 0.1	
	DC	Rated operating voltage U_e Rated operating current I_e		V A	24 0.2	220 0.1	
Short-circuit protection	Largest permissible DIAZED fuse (operational class gL)				2 A	Dz (quick)	
"Tripped" switch	Signal duration after tripping				on req.		
Tripped signaling switch (S24) (to DIN VDE 0630)							
Switching capacity	AC	Rated operating voltage U_e Rated operating current I_e/AC-12		V A	230 6		
	DC	Rated operating voltage U_e Rated operating current I_e/DC-12		V A	24 6	110 0.4	220 0.2
Short-circuit protection	Largest permissible DIAZED fuse (operational class gL)				6 A	Dz (quick)	
"Tripped" switch	Signal duration after tripping				until manual or electrical remote-controlled reset (option)		
Position indicator switch on guide frame							
Type of contact	Signal:	"Circuit-breaker in connected position" "Circuit-breaker in test position" "Circuit-breaker in disconnected position"			3 W 2 W 1 W	or	1 W 1 W 1 W
Rated insulation voltage U_i			AC 50/60 Hz DC	V V	440 250		
Rated operating voltage U_e				V	250		
Switching capacity	Rated operating current I_e	I_e/AC-12 I_e/AC-15 I_e/DC-12 I_e/DC-13			110/127 V 13 A, 220/230 V 13 A, 320/400 V 0.6 A 110/127 V 5 A, 220/230 V 4 A, 320/440 V 3 A 24 V 13 A, 30 V 10 A, 48 V 2.5 A, 110 V 0.8 A, 220/250 V 0.6 A 24 V 3.0 A, 220/250 V 0.1 A		
Short-circuit protection	Largest permissible DIAZED fuse (operational class gL) Largest permissible miniature circuit-breaker with C-characteristic				8 A TDz (slow) 8 A TDz (slow)		

5

General data

Functional overview of the electronic trip unit system

Protection functions			ETU15B	ETU25B	ETU27B
	L	**Configuration via**	D	D	D & S
		Overload protection	✓	✓	✓
		Function can be switched on/off	–	–	–
		Setting range $I_R = I_n \times$ ...	0.5-0.6-0.7-0.8-0.9-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1
		Switchable overload protection (I^2t- or I^4t-dependent function)	–	–	–
		Setting range for time-lag class t_R at I^2t	10 s fixed	10 s fixed	10 s fixed
		Setting range for time-lag class t_R at I^4t	–	–	–
		Thermal image can be switched on/off	–	–	–
		Phase loss sensitivity	–	at t_{sd} = 20 ms (M)	at t_{sd} = 20 ms (M)
	N	**Neutral conductor protection**	–	–	✓
		Function can be switched on/off	–	–	✓
		N conductor setting range $I_N = I_n \times$ ...	–	–	1
	S	**Short-time delayed short-circuit protection**	–	✓	✓
		Function can be switched on/off	–	–	–
		Setting range $I_{sd} = I_n \times$ ...	–	1.25-1.5-2-2.5-3-4-6-8-10-12	1.25-1.5-2-2.5-3-4-6-8-10-12
		Setting range for delay time t_{sd}	–	0-M-100-200-300-400	0-M-100-200-300-400
		Switchable short-time delayed short-circuit protection (I^2t-dependent function)	–	–	–
		Setting range for delay time t_{sd} at I^2t	–	–	–
		Zone Selective Interlocking function	–	–	–
NSE0_00888b	I	**Instantaneous short-circuit protection**	✓	✓	✓
		Function can be switched on/off	–	–	–
		Setting range $I_i = I_n \times$ ...	2-3-4-5-6-7-8	fixed for $I_i \geq 20 \times I_n$, max. 50 kA	fixed for $I_i \geq 20 \times I_n$, max. 50 kA
	G	**Ground-fault protection**	–	–	✓ fixed-mounting
		Tripping and alarm function	–	–	–
		Tripping function can be switched on/off	–	–	✓
		Alarm function can be switched on/off	–	–	–
		Detection of the ground-fault current via summation current formation with internal or external neutral conductor transformer	–	–	✓
		Detection of ground-fault current via external transformer	–	–	–
		Setting range of the operating current I_g for release	–	–	A-B-C-D-E
		Setting range of the operating current I_g for alarm	–	–	–
		Setting range of the delay time t_g	–	–	100-200-300-400-500 ms
		Switchable ground-fault protection characteristic (I^2t-dependent function)	–	–	–
		Setting range for delay time t_g at I^2t	–	–	–
		Zone Selective Interlocking G-function	–	–	–
NSE0_00889a					
Parameter sets switchable					
		Switchable between parameter sets A and B	–	–	–
LCD					
		Alphanumeric LCD (4-line)	–	–	–
		Graphical LCD (24 V, external power supply required)	–	–	–
Communication					
		CubicleBUS integrated	–	–	–
		Communication-capable via PROFIBUS DP	–	–	–
Measurement function					
		Measurement function-capable with meas. function/meas. function *Plus*	–	–	–
LED display					
		Electronic trip unit active	✓	✓	✓
		Alarm	✓	✓	✓
		ETU fault	✓	✓	✓
		L-release	–	✓	✓
		S-release	–	✓	✓
		I-release	–	✓	✓
		N-release	–	–	✓
		G-release	–	–	✓
		G-alarm	–	–	–
		Release via extended protection function	–	–	–
		Communication	–	–	–
NSE00890					
Signals from signaling switches with external CubicleBUS **modules (Opto or relays)**					
		Overload warning	–	–	–
		Load shedding, load receiving	–	–	–
		Leading signal overload release 200 ms	–	–	–
		Temperature alarm	–	–	–
		Phase unbalance	–	–	–
		Instantaneous short-circuit release	–	–	–
		Short-time delayed short-circuit release	–	–	–
		Overload release	–	–	–
		Neutral conductor release	–	–	–
		Ground-fault protection release	–	–	–
		Ground-fault alarm	–	–	–
		Auxiliary relay	–	–	–
		ETU fault	–	–	–
NSE00891					

Increment size for adjustment of menu/comm or comm

From ... to	Increment size	From ... to	Increment size
0 ... 1	0.1	1 000 ... 1 600	50
1 ... 100	1	1600 ... 10 000	100
100 ... 500	5	10 000 ... max.	1 000
500 ... 1 000	10		

Delay-time figures given in ms.
M = motor protection, corresponds to 20 ms.
D = rotary coding switch
D & S = rotary coding switch and sliding-dolly switch
K = communication
M/K = menu/communication

✓ Available.
– Not available.
❑ Optional.

Protection functions	ETU45B:	ETU55B	ETU76B:
Configuration via	D & S	K	M/K
Overload protection	✓	✓	✓
Function can be switched on/off	–	✓	✓
Setting range $I_R = I_n \times ...$	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1	0.4 ... 1	0.4 ... 1
Switchable overload protection (I^2t- or I^4t-dependent function)	✓	✓	✓
Setting range for time-lag class t_R at I^2t	2-3-5-5.5-8-10-14-17-21-25-30 s	2 ... 30 s	2 ... 30 s
Setting range for time-lag class t_R at I^4t	1-2-3-4-5 s	1 ... 5 s	1 ... 5 s
Thermal image can be switched on/off	✓	✓	✓
Phase loss sensitivity	at t_{sd} = 20 ms (M)	✓ (on/off)	✓ (on/off)
Neutral conductor protection	✓	✓	✓
Function can be switched on/off	✓	✓	✓
N conductor setting range $I_N = I_n \times ...$	0.5 ... 1	0.2 ... 2	0.2 ... 2
Short-time delayed short-circuit protection	✓	✓	✓
Function can be switched on/off	✓	✓	✓
Setting range $I_{sd} = I_n \times ...$	1.25-1.5-2-2.5-3-4-6-8-10-12	1.25 I_n ... 0.8 × I_{cw}	1.25 I_n ... 0.8 × I_{cw}
Setting range for delay time t_{sd}	M-100-200-300-400 ms	M-80 ... 4000 ms	M-80 ... 4000 ms
Switchable short-time delayed short-circuit protection (I^2t-dependent function)	✓	✓	✓
Setting range for delay time t_{sd} at I^2t	100-200-300-400 ms	100 ... 400 ms	100 ... 400 ms
Zone Selective Interlocking function	by **Cubicle**BUS module	by **Cubicle**BUS module	by **Cubicle**BUS module
Instantaneous short-circuit protection	✓	✓	✓
Function can be switched on/off	✓	✓	✓
Setting range $I_i = I_n \times ...$	1.5-2.2-3-4-6-8-10-12-0.8 x I_{cs}	1.5 × I_n ... 0.8 × I_{cs}	1.5 × I_n ... 0.8 × I_{cs}
Ground-fault protection	❑ Module can be retrofitted	❑ Module can be retrofitted	❑ Module can be retrofitted
Tripping and alarm function	✓	✓	✓
Tripping function can be switched on/off	✓	✓	✓
Alarm function can be switched on/off	–	✓	✓
Detection of the ground-fault current via summation current formation with internal or external neutral conductor transformer	✓	✓	✓
Detection of ground-fault current via external transformer	✓	✓	✓
Setting range of the operating current I_g for release	A-B-C-D-E	A ... E	A ... E
Setting range of the operating current I_g for alarm	A-B-C-D-E	A ... E	A ... E
Setting range of the delay time t_g	100-200-300-400-500 ms	100 ... 500 ms	100 ... 500 ms
Switchable ground-fault protection characteristic (I^2t-dependent function)	✓	✓	✓
Setting range for delay time t_g at I^2t	100-200-300-400-500 ms	100 ... 500 ms	100 ... 500 ms
Zone Selective Interlocking G-function	by **Cubicle**BUS module	by **Cubicle**BUS module	by **Cubicle**BUS module
Parameter set switchover			
Switchable between parameter set A and B	–	✓	✓
LCD			
Alphanumeric LCD (4-line)	❑	–	–
Graphical LCD (24 V, external power supply required)	–	–	✓
Communication			
CubicleBUS integrated	✓	✓	✓
Communication-capable via PROFIBUS DP	✓	✓	✓
Measurement function			
Measurement function-capable with meas. function/meas. function *Plus*	✓	✓	✓
LED display			
Electronic trip unit active	✓	✓	✓
Alarm	✓	✓	✓
ETU fault	✓	✓	✓
L-release	✓	✓	✓
S-release	✓	✓	✓
I-release	✓	✓	✓
N-release	✓	✓	✓
G-release	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)
G-alarm	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)
Release via extended protection functions	✓	✓	✓
Communication	✓	✓	✓
Signals from signaling switches with external CubicleBUS **modules (optical or relays)**			
Overload warning	✓	✓	✓
Load shedding, load receiving	✓	✓	✓
Leading signal overload release 200 ms	✓	✓	✓
Temperature alarm	✓	✓	✓
Phase unbalance	✓	✓	✓
Instantaneous short-circuit release	✓	✓	✓
Short-time delayed short-circuit release	✓	✓	✓
Overload release	✓	✓	✓
Neutral conductor release	✓	✓	✓
Ground-fault protection release	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)
Ground-fault alarm	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)	✓ (only with ground-fault prot. mod.)
Auxiliary relay	✓	✓	✓
ETU fault	✓	✓	✓

Setting range of the operating current I_g

	Size I and Size II	Size III
A	100 A	400 A
B	300 A	600 A
C	600 A	800 A
D	900 A	1000 A
E	1200 A	1200 A

3-pole, fixed-mounted design

Selection and ordering data

Size	Max. rated circuit-breaker current $I_{n\ max.}$	Rated current[1] I_n	ECO switching capacity N, I_{cu}/440 V		Order No. Order No. supplement see Page 5/36	PS*	Weight per PU approx.	Standard switching capacity S, I_{cu}/440 V		Order No. Order No. supplement see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg	kA	DT			kg
Horizontal main circuit connection												
I	630	630	50	B	**3WL11 06-2□□32-....**	1 unit	43.000	65	B	**3WL11 06-3□□32-....**	1 unit	43.000
I	800	800	50	B	**3WL11 08-2□□32-....**	1 unit	43.000	65	B	**3WL11 08-3□□32-....**	1 unit	43.000
I	1000	1000	50	B	**3WL11 10-2□□32-....**	1 unit	43.000	65	B	**3WL11 10-3□□32-....**	1 unit	43.000
I	1250	1250	50	B	**3WL11 12-2□□32-....**	1 unit	43.000	65	B	**3WL11 12-3□□32-....**	1 unit	43.000
I	1600	1600	50	B	**3WL11 16-2□□32-....**	1 unit	43.000	65	B	**3WL11 16-3□□32-....**	1 unit	43.000
II	800	800	–		–			80	B	**3WL12 08-3□□32-....**	1 unit	56.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□32-....**	1 unit	56.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□32-....**	1 unit	56.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□32-....**	1 unit	56.000
II	2000	2000	55	B	**3WL12 20-2□□32-....**	1 unit	56.000	80	B	**3WL12 20-3□□32-....**	1 unit	56.000
II	2500	2500	55	B	**3WL12 25-2□□32-....**	1 unit	59.000	80	B	**3WL12 25-3□□32-....**	1 unit	59.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□32-....**	1 unit	64.000
Vertical main circuit connection												
I	630	630	50	B	**3WL11 06-2□□31-....**	1 unit	43.000	65	B	**3WL11 06-3□□31-....**	1 unit	43.000
I	800	800	50	B	**3WL11 08-2□□31-....**	1 unit	43.000	65	B	**3WL11 08-3□□31-....**	1 unit	43.000
I	1000	1000	50	B	**3WL11 10-2□□31-....**	1 unit	43.000	65	B	**3WL11 10-3□□31-....**	1 unit	43.000
I	1250	1250	50	B	**3WL11 12-2□□31-....**	1 unit	43.000	65	B	**3WL11 12-3□□31-....**	1 unit	43.000
I	1600	1600	50	B	**3WL11 16-2□□31-....**	1 unit	43.000	65	B	**3WL11 16-3□□31-....**	1 unit	43.000
II	800	800	–		–			80	B	**3WL12 08-3□□31-....**	1 unit	56.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□31-....**	1 unit	56.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□31-....**	1 unit	56.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□31-....**	1 unit	56.000
II	2000	2000	55	B	**3WL12 20-2□□31-....**	1 unit	56.000	80	B	**3WL12 20-3□□31-....**	1 unit	56.000
II	2500	2500	55	B	**3WL12 25-2□□31-....**	1 unit	59.000	80	B	**3WL12 25-3□□31-....**	1 unit	59.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□31-....**	1 unit	64.000
Front main circuit connection, single hole												
I	630	630	50	B	**3WL11 06-2□□33-....**	1 unit	43.000	65	B	**3WL11 06-3□□33-....**	1 unit	43.000
I	800	800	50	B	**3WL11 08-2□□33-....**	1 unit	43.000	65	B	**3WL11 08-3□□33-....**	1 unit	43.000
I	1000	1000	50	B	**3WL11 10-2□□33-....**	1 unit	43.000	65	B	**3WL11 10-3□□33-....**	1 unit	43.000
I	1250	1250	50	B	**3WL11 12-2□□33-....**	1 unit	43.000	65	B	**3WL11 12-3□□33-....**	1 unit	43.000
I	1600	1600	50	B	**3WL11 16-2□□33-....**	1 unit	43.000	65	B	**3WL11 16-3□□33-....**	1 unit	43.000
II	800	800	–		–			80	B	**3WL12 08-3□□33-....**	1 unit	56.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□33-....**	1 unit	56.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□33-....**	1 unit	56.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□33-....**	1 unit	56.000
II	2000	2000	55	B	**3WL12 20-2□□33-....**	1 unit	56.000	80	B	**3WL12 20-3□□33-....**	1 unit	56.000
II	2500	2500	55	B	**3WL12 25-2□□33-....**	1 unit	59.000	80	B	**3WL12 25-3□□33-....**	1 unit	59.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□33-....**	1 unit	64.000
Front main circuit connection, double hole												
I	630	630	50	B	**3WL11 06-2□□34-....**	1 unit	43.000	65	B	**3WL11 06-3□□34-....**	1 unit	43.000
I	800	800	50	B	**3WL11 08-2□□34-....**	1 unit	43.000	65	B	**3WL11 08-3□□34-....**	1 unit	43.000
I	1000	1000	50	B	**3WL11 10-2□□34-....**	1 unit	43.000	65	B	**3WL11 10-3□□34-....**	1 unit	43.000
I	1250	1250	50	B	**3WL11 12-2□□34-....**	1 unit	43.000	65	B	**3WL11 12-3□□34-....**	1 unit	43.000
I	1600	1600	50	B	**3WL11 16-2□□34-....**	1 unit	43.000	65	B	**3WL11 16-3□□34-....**	1 unit	43.000
II	800	800	–		–			80	B	**3WL12 08-3□□34-....**	1 unit	56.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□34-....**	1 unit	56.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□34-....**	1 unit	56.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□34-....**	1 unit	56.000
II	2000	2000	55	B	**3WL12 20-2□□34-....**	1 unit	56.000	80	B	**3WL12 20-3□□34-....**	1 unit	56.000
II	2500	2500	55	B	**3WL12 25-2□□34-....**	1 unit	59.000	80	B	**3WL12 25-3□□34-....**	1 unit	59.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□34-....**	1 unit	64.000

	Order No. supplements		Order No. supplements	
Non-automatic circuit-breakers[2]				
without electronic trip unit	**AA**		**AA**	
without electronic trip unit, communication/ measurement function optional[3] ■	**AB**		**AB**	
Electronic trip units				
Design without ground-fault protection				
ETU15B: protection functions LI	**BB**		**BB**	
ETU25B: protection functions LSI	**CB**		**CB**	
ETU45B: protection functions LSIN[4])	**EB**		**EB**	
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**		**FB**	
ETU55B: protection functions LSIN[4])	**JB**		**JB**	
ETU76B: prot. functions LSIN[4]) with pixel graphics display	**NB**		**NB**	
Design with ground-fault protection				
ETU27B: protection functions LSING[4])	**DG**		**DG**	
ETU45B: protection functions LSING[4])[6])	**EG**		**EG**	
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**		**FG**	
ETU55B: protection functions LSING[4])[6])	**JG**		**JG**	
ETU76B: prot. functions LSING[4]) w. pixel graphic display[6])	**NG**		**NG**	
Standard Order No. supplements (for further Order No. supplements see Page 5/36)				
Manual operating mechanism with mechanical closing Without 1st and 2nd aux. releases; aux. sw. 2 NC + 2 NO		**1AA2**		**1AA2**

For footnotes see Page 5/29.

*** This quantity or a multiple thereof can be ordered.**

Size	Max. rated circuit-breaker current $I_{n\ max.}$	Rated current[1] I_n	High switching capacity H, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Horizontal main circuit connection							
II	800	800	100	B	**3WL12 08-4□□32-....**	1 unit	56.000
II	1000	1000	100	B	**3WL12 10-4□□32-....**	1 unit	56.000
II	1250	1250	100	B	**3WL12 12-4□□32-....**	1 unit	56.000
II	1600	1600	100	B	**3WL12 16-4□□32-....**	1 unit	56.000
II	2000	2000	100	B	**3WL12 20-4□□32-....**	1 unit	56.000
II	2500	2500	100	B	**3WL12 25-4□□32-....**	1 unit	59.000
II	3200	3200	100	B	**3WL12 32-4□□32-....**	1 unit	64.000
III[5])	4000	4000	100	C	**3WL13 40-4□□32-....**	1 unit	82.000
III[5])	5000	5000	100	C	**3WL13 50-4□□32-....**	1 unit	82.000
Vertical main circuit connection							
II	800	800	100	B	**3WL12 08-4□□31-....**	1 unit	56.000
II	1000	1000	100	B	**3WL12 10-4□□31-....**	1 unit	56.000
II	1250	1250	100	B	**3WL12 12-4□□31-....**	1 unit	56.000
II	1600	1600	100	B	**3WL12 16-4□□31-....**	1 unit	56.000
II	2000	2000	100	B	**3WL12 20-4□□31-....**	1 unit	56.000
II	2500	2500	100	B	**3WL12 25-4□□31-....**	1 unit	59.000
II	3200	3200	100	B	**3WL12 32-4□□31-....**	1 unit	64.000
III[5])	4000	4000	100	C	**3WL13 40-4□□31-....**	1 unit	82.000
III[5])	5000	5000	100	C	**3WL13 50-4□□31-....**	1 unit	82.000
III[5])	6300	6300	100	C	**3WL13 63-4□□31-....**	1 unit	82.000
Front main circuit connection, single hole							
II	800	800	100	B	**3WL12 08-4□□33-....**	1 unit	56.000
II	1000	1000	100	B	**3WL12 10-4□□33-....**	1 unit	56.000
II	1250	1250	100	B	**3WL12 12-4□□33-....**	1 unit	56.000
II	1600	1600	100	B	**3WL12 16-4□□33-....**	1 unit	56.000
II	2000	2000	100	B	**3WL12 20-4□□33-....**	1 unit	56.000
II	2500	2500	100	B	**3WL12 25-4□□33-....**	1 unit	59.000
II	3200	3200	100	B	**3WL12 32-4□□33-....**	1 unit	64.000
III[5])	4000	4000	100	C	**3WL13 40-4□□33-....**	1 unit	82.000
Front main circuit connection, double hole							
II	800	800	100	B	**3WL12 08-4□□34-....**	1 unit	56.000
II	1000	1000	100	B	**3WL12 10-4□□34-....**	1 unit	56.000
II	1250	1250	100	B	**3WL12 12-4□□34-....**	1 unit	56.000
II	1600	1600	100	B	**3WL12 16-4□□34-....**	1 unit	56.000
II	2000	2000	100	B	**3WL12 20-4□□34-....**	1 unit	56.000
II	2500	2500	100	B	**3WL12 25-4□□34-....**	1 unit	59.000
II	3200	3200	100	B	**3WL12 32-4□□34-....**	1 unit	64.000
III[5])	4000	4000	100	C	**3WL13 40-4□□34-....**	1 unit	82.000

	Order No. supplements	
Non-automatic circuit-breakers[2])		
without electronic trip unit	**AA**	
without electronic trip unit, communication/measurement function optional[3]) ■	**AB**	
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI[5])	**BB**	
ETU25B: protection functions LSI	**CB**	
ETU45B: protection functions LSIN[4])	**EB**	
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	
ETU55B: protection functions LSIN[4])	**JB**	
ETU76B: protection functions LSIN[4]) with pixel graphics display	**NB**	
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	
ETU45B: protection functions LSING[4]) [6])	**EG**	
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**	
ETU55B: protection functions LSING[4]) [6])	**JG**	
ETU76B: protection functions LSING[4]) with pixel graphics display[6])	**NG**	
Standard Order No. supplements (for further Order No. supplements see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO		**1AA2**

Footnotes for pages 5/28 and 5/29:

1) Rated current determined by rated current module.
On the standard design the supplied module is equal to the max. circuit-breaker rated current.
If a lower rated current is required, adaptation by order code on page 5/37.

2) Permissible short-time current rating I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic circuit-breakers - see Page 5/20.

3) Required accessories "PROFIBUS communication setup" or "Measurement function *Plus*": Order No. with "–Z" and order code "F02" or "F05" respectively, see Page 5/38.

4) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer must be ordered separately, see Page 5/46.

5) Size III circuit-breakers are not available with electronic trip unit design ETU15B.

6) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/46.

■ Start of delivery on request

*** This quantity or a multiple thereof can be ordered.**

3-pole, withdrawable design

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1] I_n	ECO switching capacity N, I_{cu}/440 V		Order No. Order No. supplement see Page 5/36	PS*	Weight per PU approx.	Standard switching capacity S, I_{cu}/440 V		Order No. Order No. supplement see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg	kA	DT			kg
Without guide frame (for guide frames see Page 5/45)												
I	630	630	50	B	**3WL11 06-2□□35-....**	1 unit	45.000	65	B	**3WL11 06-3□□35-....**	1 unit	45.000
I	800	800	50	B	**3WL11 08-2□□35-....**	1 unit	45.000	65	B	**3WL11 08-3□□35-....**	1 unit	45.000
I	1000	1000	50	B	**3WL11 10-2□□35-....**	1 unit	45.000	65	B	**3WL11 10-3□□35-....**	1 unit	45.000
I	1250	1250	50	B	**3WL11 12-2□□35-....**	1 unit	45.000	65	B	**3WL11 12-3□□35-....**	1 unit	45.000
I	1600	1600	50	B	**3WL11 16-2□□35-....**	1 unit	45.000	65	B	**3WL11 16-3□□35-....**	1 unit	45.000
II	800	800	–		–			80	B	**3WL12 08-3□□35-....**	1 unit	60.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□35-....**	1 unit	60.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□35-....**	1 unit	60.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□35-....**	1 unit	60.000
II	2000	2000	55	B	**3WL12 20-2□□35-....**	1 unit	60.000	80	B	**3WL12 20-3□□35-....**	1 unit	60.000
II	2500	2500	55	B	**3WL12 25-2□□35-....**	1 unit	63.000	80	B	**3WL12 25-3□□35-....**	1 unit	63.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□35-....**	1 unit	68.000
With guide frame, horizontal main circuit connection												
I	630	630	50	B	**3WL11 06-2□□36-....**	1 unit	70.000	65	B	**3WL11 06-3□□36-....**	1 unit	70.000
I	800	800	50	B	**3WL11 08-2□□36-....**	1 unit	70.000	65	B	**3WL11 08-3□□36-....**	1 unit	70.000
I	1000	1000	50	B	**3WL11 10-2□□36-....**	1 unit	70.000	65	B	**3WL11 10-3□□36-....**	1 unit	70.000
I	1250	1250	50	B	**3WL11 12-2□□36-....**	1 unit	70.000	65	B	**3WL11 12-3□□36-....**	1 unit	70.000
I	1600	1600	50	B	**3WL11 16-2□□36-....**	1 unit	70.000	65	B	**3WL11 16-3□□36-....**	1 unit	70.000
II	800	800	–		–			80	B	**3WL12 08-3□□36-....**	1 unit	91.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□36-....**	1 unit	91.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□36-....**	1 unit	91.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□36-....**	1 unit	91.000
II	2000	2000	55	B	**3WL12 20-2□□36-....**	1 unit	91.000	80	B	**3WL12 20-3□□36-....**	1 unit	91.000
II	2500	2500	55	B	**3WL12 25-2□□36-....**	1 unit	102.000	80	B	**3WL12 25-3□□36-....**	1 unit	102.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□36-....**	1 unit	113.000
With guide frame, vertical main circuit connection												
I	630	630	50	B	**3WL11 06-2□□37-....**	1 unit	70.000	65	B	**3WL11 06-3□□37-....**	1 unit	70.000
I	800	800	50	B	**3WL11 08-2□□37-....**	1 unit	70.000	65	B	**3WL11 08-3□□37-....**	1 unit	70.000
I	1000	1000	50	B	**3WL11 10-2□□37-....**	1 unit	70.000	65	B	**3WL11 10-3□□37-....**	1 unit	70.000
I	1250	1250	50	B	**3WL11 12-2□□37-....**	1 unit	70.000	65	B	**3WL11 12-3□□37-....**	1 unit	70.000
I	1600	1600	50	B	**3WL11 16-2□□37-....**	1 unit	70.000	65	B	**3WL11 16-3□□37-....**	1 unit	70.000
II	800	800	–		–			80	B	**3WL12 08-3□□37-....**	1 unit	91.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□37-....**	1 unit	91.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□37-....**	1 unit	91.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□37-....**	1 unit	91.000
II	2000	2000	55	B	**3WL12 20-2□□37-....**	1 unit	91.000	80	B	**3WL12 20-3□□37-....**	1 unit	91.000
II	2500	2500	55	B	**3WL12 25-2□□37-....**	1 unit	102.000	80	B	**3WL12 25-3□□37-....**	1 unit	102.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□37-....**	1 unit	113.000
With guide frame, connecting flange												
I	630	630	50	B	**3WL11 06-2□□38-....**	1 unit	70.000	65	B	**3WL11 06-3□□38-....**	1 unit	70.000
I	800	800	50	B	**3WL11 08-2□□38-....**	1 unit	70.000	65	B	**3WL11 08-3□□38-....**	1 unit	70.000
I	1000	1000	50	B	**3WL11 10-2□□38-....**	1 unit	70.000	65	B	**3WL11 10-3□□38-....**	1 unit	70.000
I	1250	1250	50	B	**3WL11 12-2□□38-....**	1 unit	70.000	65	B	**3WL11 12-3□□38-....**	1 unit	70.000
I	1600	1600	50	B	**3WL11 16-2□□38-....**	1 unit	70.000	65	B	**3WL11 16-3□□38-....**	1 unit	70.000
II	800	800	–		–			80	B	**3WL12 08-3□□38-....**	1 unit	91.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□38-....**	1 unit	91.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□38-....**	1 unit	91.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□38-....**	1 unit	91.000
II	2000	2000	55	B	**3WL12 20-2□□38-....**	1 unit	91.000	80	B	**3WL12 20-3□□38-....**	1 unit	91.000
II	2500	2500	55	B	**3WL12 25-2□□38-....**	1 unit	102.000	80	B	**3WL12 25-3□□38-....**	1 unit	102.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□38-....**	1 unit	113.000

Non-automatic circuit-breakers[2])	Order No. supplements	Order No. supplements
without electronic trip unit	**AA**	**AA**
without electronic trip unit, communication/ measurement function optional[3]) ■	**AB**	**AB**
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI	**BB**	**BB**
ETU25B: protection functions LSI	**CB**	**CB**
ETU45B: protection functions LSIN[4])	**EB**	**EB**
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	**FB**
ETU55B: protection functions LSIN[4])	**JB**	**JB**
ETU76B: prot. func.LSIN[4]) with pixel graphics display	**NB**	**NB**
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	**DG**
ETU45B: protection functions LSING[4])[6])	**EG**	**EG**
ETU45B: prot. functions LSING[4]) with 4-line display[6])	**FG**	**FG**
ETU55B: protection functions LSING[4])[6])	**JG**	**JG**
ETU76B: prot. func. LSING[4]) w. pixel graphics display[6])	**NG**	**NG**
Standard Order No. supplements (for further Order No. supplements for circuit-breakers and guide frames, see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO	**1AA2**	**1AA2**

For footnotes see Page 5/31.

*** This quantity or a multiple thereof can be ordered.**

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1]) I_n	High switching capacity H, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Without guide frame (for guide frames see Page 5/45)							
II	800	800	100	B	**3WL12 08-4□□35-....**	1 unit	60.000
II	1000	1000	100	B	**3WL12 10-4□□35-....**	1 unit	60.000
II	1250	1250	100	B	**3WL12 12-4□□35-....**	1 unit	60.000
II	1600	1600	100	B	**3WL12 16-4□□35-....**	1 unit	60.000
II	2000	2000	100	B	**3WL12 20-4□□35-....**	1 unit	60.000
II	2500	2500	100	B	**3WL12 25-4□□35-....**	1 unit	63.000
II	3200	3200	100	B	**3WL12 32-4□□35-....**	1 unit	68.000
III[5])	4000	4000	100	C	**3WL13 40-4□□35-....**	1 unit	88.000
III[5])	5000	5000	100	C	**3WL13 50-4□□35-....**	1 unit	88.000
III[5])	6300	6300	100	C	**3WL13 63-4□□35-....**	1 unit	96.000
With guide frame, horizontal main circuit connection							
II	800	800	100	B	**3WL12 08-4□□36-....**	1 unit	91.000
II	1000	1000	100	B	**3WL12 10-4□□36-....**	1 unit	91.000
II	1250	1250	100	B	**3WL12 12-4□□36-....**	1 unit	91.000
II	1600	1600	100	B	**3WL12 16-4□□36-....**	1 unit	91.000
II	2000	2000	100	B	**3WL12 20-4□□36-....**	1 unit	91.000
II	2500	2500	100	B	**3WL12 25-4□□36-....**	1 unit	102.000
II	3200	3200	100	B	**3WL12 32-4□□36-....**	1 unit	113.000
III[5])	4000	4000	100	C	**3WL13 40-4□□36-....**	1 unit	148.000
III[5])	5000	5000	100	C	**3WL13 50-4□□36-....**	1 unit	148.000
With guide frame, vertical main circuit connection							
II	800	800	100	B	**3WL12 08-4□□37-....**	1 unit	91.000
II	1000	1000	100	B	**3WL12 10-4□□37-....**	1 unit	91.000
II	1250	1250	100	B	**3WL12 12-4□□37-....**	1 unit	91.000
II	1600	1600	100	B	**3WL12 16-4□□37-....**	1 unit	91.000
II	2000	2000	100	B	**3WL12 20-4□□37-....**	1 unit	91.000
II	2500	2500	100	B	**3WL12 25-4□□37-....**	1 unit	102.000
II	3200	3200	100	B	**3WL12 32-4□□37-....**	1 unit	113.000
III[5])	4000	4000	100	C	**3WL13 40-4□□37-....**	1 unit	148.000
III[5])	5000	5000	100	C	**3WL13 50-4□□37-....**	1 unit	148.000
III[5])	6300	6300	100	C	**3WL13 63-4□□37-....**	1 unit	166.000
With guide frame, connecting flange							
II	800	800	100	B	**3WL12 08-4□□38-....**	1 unit	91.000
II	1000	1000	100	B	**3WL12 10-4□□38-....**	1 unit	91.000
II	1250	1250	100	B	**3WL12 12-4□□38-....**	1 unit	91.000
II	1600	1600	100	B	**3WL12 16-4□□38-....**	1 unit	91.000
II	2000	2000	100	B	**3WL12 20-4□□38-....**	1 unit	91.000
II	2500	2500	100	B	**3WL12 25-4□□38-....**	1 unit	102.000
II	3200	3200	100	B	**3WL12 32-4□□38-....**	1 unit	113.000
III[5])	4000	4000	100	C	**3WL13 40-4□□38-....**	1 unit	148.000

	Order No. supplements	
Non-automatic circuit-breakers[2])		
without electronic trip unit	**AA**	
without electronic trip unit, communication/measurement function optional[3]) ■	**AB**	
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI[5])	**BB**	
ETU25B: protection functions LSI	**CB**	
ETU45B: protection functions LSIN[4])	**EB**	
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	
ETU55B: protection functions LSIN[4])	**JB**	
ETU76B: protection functions LSIN[4]) with pixel graphics display	**NB**	
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	
ETU45B: protection functions LSING[4])[6])	**EG**	
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**	
ETU55B: protection functions LSING[4])[6])	**JG**	
ETU76B: protection functions LSING[4]) with pixel graphics display[6])	**NG**	
Standard Order No. supplements (for further Order No. supplements for circuit-breakers and guide frames, see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO		**1AA2**

Footnotes for pages 5/30 and 5/31:

1) Rated current determined by rated current module. On the standard design the supplied module is equal to the max. rated type current. If a lower rated current is required, adaptation by order code on page 5/37.

2) Permissible short-time current rating I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic circuit-breakers - see Page 5/20.

3) Required accessories "PROFIBUS communication setup" and "Measurement function *Plus*": Order No. with "–Z" and order code "F02" and"F05" respectively, see Page 5/38.

4) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer must be ordered separately, see Page 5/46.

5) Size III circuit-breakers are not available with electronic trip unit design ETU15B.

6) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/46.

■ Start of delivery on request

*** This quantity or a multiple thereof can be ordered.**

4-pole, fixed-mounted design

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1] I_n	ECO switching capacity N, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.	Standard switching capacity S, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg	kA	DT			kg
Horizontal main circuit connection												
I	630	630	50	B	**3WL11 06-2□□42-....**	1 unit	50.000	65	B	**3WL11 06-3□□42-....**	1 unit	50.000
I	800	800	50	B	**3WL11 08-2□□42-....**	1 unit	50.000	65	B	**3WL11 08-3□□42-....**	1 unit	50.000
I	1000	1000	50	B	**3WL11 10-2□□42-....**	1 unit	50.000	65	B	**3WL11 10-3□□42-....**	1 unit	50.000
I	1250	1250	50	B	**3WL11 12-2□□42-....**	1 unit	50.000	65	B	**3WL11 12-3□□42-....**	1 unit	50.000
I	1600	1600	50	B	**3WL11 16-2□□42-....**	1 unit	50.000	65	B	**3WL11 16-3□□42-....**	1 unit	50.000
II	800	800	–		–			80	B	**3WL12 08-3□□42-....**	1 unit	67.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□42-....**	1 unit	67.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□42-....**	1 unit	67.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□42-....**	1 unit	67.000
II	2000	2000	55	B	**3WL12 20-2□□42-....**	1 unit	67.000	80	B	**3WL12 20-3□□42-....**	1 unit	67.000
II	2500	2500	55	B	**3WL12 25-2□□42-....**	1 unit	71.000	80	B	**3WL12 25-3□□42-....**	1 unit	71.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□42-....**	1 unit	77.000
Vertical main circuit connection												
I	630	630	50	B	**3WL11 06-2□□41-....**	1 unit	50.000	65	B	**3WL11 06-3□□41-....**	1 unit	50.000
I	800	800	50	B	**3WL11 08-2□□41-....**	1 unit	50.000	65	B	**3WL11 08-3□□41-....**	1 unit	50.000
I	1000	1000	50	B	**3WL11 10-2□□41-....**	1 unit	50.000	65	B	**3WL11 10-3□□41-....**	1 unit	50.000
I	1250	1250	50	B	**3WL11 12-2□□41-....**	1 unit	50.000	65	B	**3WL11 12-3□□41-....**	1 unit	50.000
I	1600	1600	50	B	**3WL11 16-2□□41-....**	1 unit	50.000	65	B	**3WL11 16-3□□41-....**	1 unit	50.000
II	800	800	–		–			80	B	**3WL12 08-3□□41-....**	1 unit	75.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□41-....**	1 unit	75.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□41-....**	1 unit	75.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□41-....**	1 unit	75.000
II	2000	2000	55	B	**3WL12 20-2□□41-....**	1 unit	75.000	80	B	**3WL12 20-3□□41-....**	1 unit	75.000
II	2500	2500	55	B	**3WL12 25-2□□41-....**	1 unit	71.000	80	B	**3WL12 25-3□□41-....**	1 unit	71.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□41-....**	1 unit	77.000
Front main circuit connection, single hole												
I	630	630	50	B	**3WL11 06-2□□43-....**	1 unit	50.000	65	B	**3WL11 06-3□□43-....**	1 unit	50.000
I	800	800	50	B	**3WL11 08-2□□43-....**	1 unit	50.000	65	B	**3WL11 08-3□□43-....**	1 unit	50.000
I	1000	1000	50	B	**3WL11 10-2□□43-....**	1 unit	50.000	65	B	**3WL11 10-3□□43-....**	1 unit	50.000
I	1250	1250	50	B	**3WL11 12-2□□43-....**	1 unit	50.000	65	B	**3WL11 12-3□□43-....**	1 unit	50.000
I	1600	1600	50	B	**3WL11 16-2□□43-....**	1 unit	50.000	65	B	**3WL11 16-3□□43-....**	1 unit	50.000
II	800	800	–		–			80	B	**3WL12 08-3□□43-....**	1 unit	67.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□43-....**	1 unit	67.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□43-....**	1 unit	67.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□43-....**	1 unit	67.000
II	2000	2000	55	B	**3WL12 20-2□□43-....**	1 unit	67.000	80	B	**3WL12 20-3□□43-....**	1 unit	67.000
II	2500	2500	55	B	**3WL12 25-2□□43-....**	1 unit	71.000	80	B	**3WL12 25-3□□43-....**	1 unit	71.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□43-....**	1 unit	77.000
Front main circuit connection, double hole												
I	630	630	50	B	**3WL11 06-2□□44-....**	1 unit	50.000	65	B	**3WL11 06-3□□44-....**	1 unit	50.000
I	800	800	50	B	**3WL11 08-2□□44-....**	1 unit	50.000	65	B	**3WL11 08-3□□44-....**	1 unit	50.000
I	1000	1000	50	B	**3WL11 10-2□□44-....**	1 unit	50.000	65	B	**3WL11 10-3□□44-....**	1 unit	50.000
I	1250	1250	50	B	**3WL11 12-2□□44-....**	1 unit	50.000	65	B	**3WL11 12-3□□44-....**	1 unit	50.000
I	1600	1600	50	B	**3WL11 16-2□□44-....**	1 unit	50.000	65	B	**3WL11 16-3□□44-....**	1 unit	50.000
II	800	800	–		–			80	B	**3WL12 08-3□□44-....**	1 unit	67.000
II	1000	1000	–		–			80	B	**3WL12 10-3□□44-....**	1 unit	67.000
II	1250	1250	–		–			80	B	**3WL12 12-3□□44-....**	1 unit	67.000
II	1600	1600	–		–			80	B	**3WL12 16-3□□44-....**	1 unit	67.000
II	2000	2000	55	B	**3WL12 20-2□□44-....**	1 unit	67.000	80	B	**3WL12 20-3□□44-....**	1 unit	67.000
II	2500	2500	55	B	**3WL12 25-2□□44-....**	1 unit	71.000	80	B	**3WL12 25-3□□44-....**	1 unit	71.000
II	3200	3200	–		–			80	B	**3WL12 32-3□□44-....**	1 unit	77.000

	Order No. supplements	Order No. supplements
Non-automatic circuit-breakers[2]		
without electronic trip unit	**AA**	**AA**
without electronic trip unit, communication/ measurement function optional[3] ■	**AB**	**AB**
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI	**BB**	**BB**
ETU25B: protection functions LSI	**CB**	**CB**
ETU45B: protection functions LSIN[4])	**EB**	**EB**
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	**FB**
ETU55B: protection functions LSIN[4])	**JB**	**JB**
ETU76B: prot. func. LSIN[4]) with pixel graphics display	**NB**	**NB**
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	**DG**
ETU45B: protection functions LSING[4])[6])	**EG**	**EG**
ETU45B: prot. functions LSING[4]) with 4-line display[6])	**FG**	**FG**
ETU55B: protection functions LSING[4])[6])	**JG**	**JG**
ETU76B: prot. func. LSING[4]) with pixel graphics display[6])	**NG**	**NG**
Standard Order No. supplements (for further Order No. supplements see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO	**1AA2**	**1AA2**

For footnotes see Page 5/33.

*** This quantity or a multiple thereof can be ordered.**

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1]) I_n	High switching capacity H, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Horizontal main circuit connection							
II	800	800	100	B	**3WL12 08-4□□42-....**	1 unit	67.000
II	1000	1000	100	B	**3WL12 10-4□□42-....**	1 unit	67.000
II	1250	1250	100	B	**3WL12 12-4□□42-....**	1 unit	67.000
II	1600	1600	100	B	**3WL12 16-4□□42-....**	1 unit	67.000
II	2000	2000	100	B	**3WL12 20-4□□42-....**	1 unit	67.000
II	2500	2500	100	B	**3WL12 25-4□□42-....**	1 unit	71.000
II	3200	3200	100	B	**3WL12 32-4□□42-....**	1 unit	77.000
III[5])	4000	4000	100	C	**3WL13 40-4□□42-....**	1 unit	106.000
III[5])	5000	5000	100	C	**3WL13 50-4□□42-....**	1 unit	106.000
Vertical main circuit connection							
II	800	800	100	B	**3WL12 08-4□□41-....**	1 unit	75.000
II	1000	1000	100	B	**3WL12 10-4□□41-....**	1 unit	75.000
II	1250	1250	100	B	**3WL12 12-4□□41-....**	1 unit	75.000
II	1600	1600	100	B	**3WL12 16-4□□41-....**	1 unit	75.000
II	2000	2000	100	B	**3WL12 20-4□□41-....**	1 unit	75.000
II	2500	2500	100	B	**3WL12 25-4□□41-....**	1 unit	71.000
II	3200	3200	100	B	**3WL12 32-4□□41-....**	1 unit	77.000
III[5])	4000	4000	100	C	**3WL13 40-4□□41-....**	1 unit	106.000
III[5])	5000	5000	100	C	**3WL13 50-4□□41-....**	1 unit	106.000
III[5])	6300	6300	100	C	**3WL13 63-4□□41-....**	1 unit	106.000
Front main circuit connection, single hole							
II	800	800	100	B	**3WL12 08-4□□43-....**	1 unit	67.000
II	1000	1000	100	B	**3WL12 10-4□□43-....**	1 unit	67.000
II	1250	1250	100	B	**3WL12 12-4□□43-....**	1 unit	67.000
II	1600	1600	100	B	**3WL12 16-4□□43-....**	1 unit	67.000
II	2000	2000	100	B	**3WL12 20-4□□43-....**	1 unit	67.000
II	2500	2500	100	B	**3WL12 25-4□□43-....**	1 unit	71.000
II	3200	3200	100	B	**3WL12 32-4□□43-....**	1 unit	77.000
III[5])	4000	4000	100	C	**3WL13 40-4□□43-....**	1 unit	106.000
Front main circuit connection, double hole							
II	800	800	100	B	**3WL12 08-4□□44-....**	1 unit	67.000
II	1000	1000	100	B	**3WL12 10-4□□44-....**	1 unit	67.000
II	1250	1250	100	B	**3WL12 12-4□□44-....**	1 unit	67.000
II	1600	1600	100	B	**3WL12 16-4□□44-....**	1 unit	67.000
II	2000	2000	100	B	**3WL12 20-4□□44-....**	1 unit	67.000
II	2500	2500	100	B	**3WL12 25-4□□44-....**	1 unit	71.000
II	3200	3200	100	B	**3WL12 32-4□□44-....**	1 unit	77.000
III[5])	4000	4000	100	C	**3WL13 40-4□□44-....**	1 unit	106.000

	Order No. supplements	
Non-automatic circuit-breakers[2])		
without electronic trip unit	**AA**	
without electronic trip unit, communication/measurement function optional[3]) ■	**AB**	
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI[5])	**BB**	
ETU25B: protection functions LSI	**CB**	
ETU45B: protection functions LSIN[4])	**EB**	
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	
ETU55B: protection functions LSIN[4])	**JB**	
ETU76B: protection functions LSIN[4]) with pixel graphics display	**NB**	
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	
ETU45B: protection functions LSING[4])[6])	**EG**	
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**	
ETU55B: protection functions LSING[4])[6])	**JG**	
ETU76B: protection functions LSING[4]) with pixel graphics display[6])	**NG**	
Standard Order No. supplements (for further Order No. supplements see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO		**1AA2**

Footnotes for pages 5/32 and 5/33:

1) Rated current determined by rated current module.
On the standard design the supplied module is equal to the max. rated type current.
If a lower rated current is required, adaptation by order code on page 5/37.

2) Permissible short-time current rating I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic circuit-breakers - see Page 5/20.

3) Required accessories "PROFIBUS communication interface" or "Measurement function Plus": Order No. with "–Z" and order code "F02" or "F05" respectively, see Page 5/38.

4) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer must be ordered separately, see Page 5/46, or they can be ordered by adding the supplement "–Z" and order code "F23 ", see Page 5/37.

5) Size III circuit-breakers are not available with electronic trip unit design ETU15B.

6) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/46.

■ Start of delivery on request

*** This quantity or a multiple thereof can be ordered.**

4-pole, withdrawable design

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1] I_n	ECO switching capacity N, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.	Standard switching capacity S, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg	kA	DT			kg
Without guide frame (for guide frames see Page 5/45)												
I	630	630	50	B	**3WL11 06-2□□45-....**	1 unit	54.000	65	B	**3WL11 06-3□□45-....**	1 unit	54.000
I	800	800	50	B	**3WL11 08-2□□45-....**	1 unit	54.000	65	B	**3WL11 08-3□□45-....**	1 unit	54.000
I	1000	1000	50	B	**3WL11 10-2□□45-....**	1 unit	54.000	65	B	**3WL11 10-3□□45-....**	1 unit	54.000
I	1250	1250	50	B	**3WL11 12-2□□45-....**	1 unit	54.000	65	B	**3WL11 12-3□□45-....**	1 unit	54.000
I	1600	1600	50	B	**3WL11 16-2□□45-....**	1 unit	54.000	65	B	**3WL11 16-3□□45-....**	1 unit	54.000
II	800	800		–	**–**			80	B	**3WL12 08-3□□45-....**	1 unit	75.000
II	1000	1000		–	**–**			80	B	**3WL12 10-3□□45-....**	1 unit	75.000
II	1250	1250		–	**–**			80	B	**3WL12 12-3□□45-....**	1 unit	75.000
II	1600	1600		–	**–**			80	B	**3WL12 16-3□□45-....**	1 unit	75.000
II	2000	2000	55	B	**3WL12 20-2□□45-....**	1 unit	75.000	80	B	**3WL12 20-3□□45-....**	1 unit	75.000
II	2500	2500	55	B	**3WL12 25-2□□45-....**	1 unit	76.000	80	B	**3WL12 25-3□□45-....**	1 unit	76.000
II	3200	3200		–	**–**			80	B	**3WL12 32-3□□45-....**	1 unit	82.000
With guide frame, horizontal main circuit connection												
I	630	630	50	B	**3WL11 06-2□□46-....**	1 unit	84.000	65	B	**3WL11 06-3□□46-....**	1 unit	84.000
I	800	800	50	B	**3WL11 08-2□□46-....**	1 unit	84.000	65	B	**3WL11 08-3□□46-....**	1 unit	84.000
I	1000	1000	50	B	**3WL11 10-2□□46-....**	1 unit	84.000	65	B	**3WL11 10-3□□46-....**	1 unit	84.000
I	1250	1250	50	B	**3WL11 12-2□□46-....**	1 unit	84.000	65	B	**3WL11 12-3□□46-....**	1 unit	84.000
I	1600	1600	50	B	**3WL11 16-2□□46-....**	1 unit	84.000	65	B	**3WL11 16-3□□46-....**	1 unit	84.000
II	800	800		–	**–**			80	B	**3WL12 08-3□□46-....**	1 unit	109.000
II	1000	1000		–	**–**			80	B	**3WL12 10-3□□46-....**	1 unit	109.000
II	1250	1250		–	**–**			80	B	**3WL12 12-3□□46-....**	1 unit	109.000
II	1600	1600		–	**–**			80	B	**3WL12 16-3□□46-....**	1 unit	109.000
II	2000	2000	55	B	**3WL12 20-2□□46-....**	1 unit	109.000	80	B	**3WL12 20-3□□46-....**	1 unit	109.000
II	2500	2500	55	B	**3WL12 25-2□□46-....**	1 unit	123.000	80	B	**3WL12 25-3□□46-....**	1 unit	123.000
II	3200	3200		–	**–**			80	B	**3WL12 32-3□□46-....**	1 unit	136.000
With guide frame, vertical main circuit connection												
I	630	630	50	B	**3WL11 06-2□□47-....**	1 unit	84.000	65	B	**3WL11 06-3□□47-....**	1 unit	84.000
I	800	800	50	B	**3WL11 08-2□□47-....**	1 unit	84.000	65	B	**3WL11 08-3□□47-....**	1 unit	84.000
I	1000	1000	50	B	**3WL11 10-2□□47-....**	1 unit	84.000	65	B	**3WL11 10-3□□47-....**	1 unit	84.000
I	1250	1250	50	B	**3WL11 12-2□□47-....**	1 unit	84.000	65	B	**3WL11 12-3□□47-....**	1 unit	84.000
I	1600	1600	50	B	**3WL11 16-2□□47-....**	1 unit	84.000	65	B	**3WL11 16-3□□47-....**	1 unit	84.000
II	800	800		–	**–**			80	B	**3WL12 08-3□□47-....**	1 unit	109.000
II	1000	1000		–	**–**			80	B	**3WL12 10-3□□47-....**	1 unit	109.000
II	1250	1250		–	**–**			80	B	**3WL12 12-3□□47-....**	1 unit	109.000
II	1600	1600		–	**–**			80	B	**3WL12 16-3□□47-....**	1 unit	109.000
II	2000	2000	55	B	**3WL12 20-2□□47-....**	1 unit	109.000	80	B	**3WL12 20-3□□47-....**	1 unit	109.000
II	2500	2500	55	B	**3WL12 25-2□□47-....**	1 unit	123.000	80	B	**3WL12 25-3□□47-....**	1 unit	123.000
II	3200	3200			**–**			80	B	**3WL12 32-3□□47-....**	1 unit	136.000
With guide frame, connecting flange												
I	630	630	50	B	**3WL11 06-2□□48-....**	1 unit	84.000	65	B	**3WL11 06-3□□48-....**	1 unit	84.000
I	800	800	50	B	**3WL11 08-2□□48-....**	1 unit	84.000	65	B	**3WL11 08-3□□48-....**	1 unit	84.000
I	1000	1000	50	B	**3WL11 10-2□□48-....**	1 unit	84.000	65	B	**3WL11 10-3□□48-....**	1 unit	84.000
I	1250	1250	50	B	**3WL11 12-2□□48-....**	1 unit	84.000	65	B	**3WL11 12-3□□48-....**	1 unit	84.000
I	1600	1600	50	B	**3WL11 16-2□□48-....**	1 unit	84.000	65	B	**3WL11 16-3□□48-....**	1 unit	84.000
II	800	800		–	**–**			80	B	**3WL12 08-3□□48-....**	1 unit	109.000
II	1000	1000		–	**–**			80	B	**3WL12 10-3□□48-....**	1 unit	109.000
II	1250	1250		–	**–**			80	B	**3WL12 12-3□□48-....**	1 unit	109.000
II	1600	1600		–	**–**			80	B	**3WL12 16-3□□48-....**	1 unit	109.000
II	2000	2000	55	B	**3WL12 20-2□□48-....**	1 unit	109.000	80	B	**3WL12 20-3□□48-....**	1 unit	109.000
II	2500	2500	55	B	**3WL12 25-2□□48-....**	1 unit	123.000	80	B	**3WL12 25-3□□48-....**	1 unit	123.000
II	3200	3200		–	**–**			80	B	**3WL12 32-3□□48-....**	1 unit	136.000

Non-automatic circuit-breakers[2])	Order No. supplements	Order No. supplements
without electronic trip unit	**AA**	**AA**
without electronic trip unit, communication/measurement function optional[3]) ■	**AB**	**AB**
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI	**BB**	**BB**
ETU25B: protection functions LSI	**CB**	**CB**
ETU45B: protection functions LSIN[4])	**EB**	**EB**
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	**FB**
ETU55B: protection functions LSIN[4])	**JB**	**JB**
ETU76B: prot. functions LSIN[4]) with pixel graphics display	**NB**	**NB**
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	**DG**
ETU45B: protection functions LSING[4])[6])	**EG**	**EG**
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**	**FG**
ETU55B: protection functions LSING[4])[6])	**JG**	**JG**
ETU76B: prot. func. LSING[4]) with pixel graphics display[6])	**NG**	**NG**
Standard Order No. supplements (for further Order No. supplements for circuit-breakers and guide frames, see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO	**1AA2**	**1AA2**

For footnotes see Page 5/35.

*** This quantity or a multiple thereof can be ordered.**

Size	Max. rated circuit-breaker current $I_{n\,max.}$	Rated current[1]) I_n	High switching capacity H, I_{cu}/440 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Without guide frame (for guide frames see Page 5/45)							
II	800	800	100	B	**3WL12 08-4□□45-....**	1 unit	75.000
II	1000	1000	100	B	**3WL12 10-4□□45-....**	1 unit	75.000
II	1250	1250	100	B	**3WL12 12-4□□45-....**	1 unit	75.000
II	1600	1600	100	B	**3WL12 16-4□□45-....**	1 unit	75.000
II	2000	2000	100	B	**3WL12 20-4□□45-....**	1 unit	75.000
II	2500	2500	100	B	**3WL12 25-4□□45-....**	1 unit	76.000
II	3200	3200	100	B	**3WL12 32-4□□45-....**	1 unit	82.000
III[5])	4000	4000	100	C	**3WL13 40-4□□45-....**	1 unit	106.000
III[5])	5000	5000	100	C	**3WL13 50-4□□45-....**	1 unit	106.000
III[5])	6300	6300	100	C	**3WL13 63-4□□45-....**	1 unit	227.000
With guide frame, horizontal main circuit connection							
II	800	800	100	B	**3WL12 08-4□□46-....**	1 unit	109.000
II	1000	1000	100	B	**3WL12 10-4□□46-....**	1 unit	109.000
II	1250	1250	100	B	**3WL12 12-4□□46-....**	1 unit	109.000
II	1600	1600	100	B	**3WL12 16-4□□46-....**	1 unit	109.000
II	2000	2000	100	B	**3WL12 20-4□□46-....**	1 unit	109.000
II	2500	2500	100	B	**3WL12 25-4□□46-....**	1 unit	123.000
II	3200	3200	100	B	**3WL12 32-4□□46-....**	1 unit	136.000
III[5])	4000	4000	100	C	**3WL13 40-4□□46-....**	1 unit	190.000
III[5])	5000	5000	100	C	**3WL13 50-4□□46-....**	1 unit	190.000
With guide frame, vertical main circuit connection							
II	800	800	100	B	**3WL12 08-4□□47-....**	1 unit	109.000
II	1000	1000	100	B	**3WL12 10-4□□47-....**	1 unit	109.000
II	1250	1250	100	B	**3WL12 12-4□□47-....**	1 unit	109.000
II	1600	1600	100	B	**3WL12 16-4□□47-....**	1 unit	109.000
II	2000	2000	100	B	**3WL12 20-4□□47-....**	1 unit	109.000
II	2500	2500	100	B	**3WL12 25-4□□47-....**	1 unit	123.000
II	3200	3200	100	B	**3WL12 32-4□□47-....**	1 unit	136.000
III[5])	4000	4000	100	C	**3WL13 40-4□□47-....**	1 unit	190.000
III[5])	5000	5000	100	C	**3WL13 50-4□□47-....**	1 unit	190.000
III[5])	6300	6300	100	C	**3WL13 63-4□□47-....**	1 unit	227.000
With guide frame, connecting flange							
II	800	800	100	B	**3WL12 08-4□□48-....**	1 unit	109.000
II	1000	1000	100	B	**3WL12 10-4□□48-....**	1 unit	109.000
II	1250	1250	100	B	**3WL12 12-4□□48-....**	1 unit	109.000
II	1600	1600	100	B	**3WL12 16-4□□48-....**	1 unit	109.000
II	2000	2000	100	B	**3WL12 20-4□□48-....**	1 unit	109.000
II	2500	2500	100	B	**3WL12 25-4□□48-....**	1 unit	123.000
II	3200	3200	100	B	**3WL12 32-4□□48-....**	1 unit	136.000
III[5])	4000	4000	100	C	**3WL13 40-4□□48-....**	1 unit	190.000

	Order No. supplements	
Non-automatic circuit-breakers[2])		
without electronic trip unit	**AA**	
without electronic trip unit, communication/measurement function optional[3]) ■	**AB**	
Electronic trip units		
Design without ground-fault protection		
ETU15B: protection functions LI[5])	**BB**	
ETU25B: protection functions LSI	**CB**	
ETU45B: protection functions LSIN[4])	**EB**	
ETU45B: protection functions LSIN[4]) with 4-line display	**FB**	
ETU55B: protection functions LSIN[4])	**JB**	
ETU76B: protection functions LSIN[4]) with pixel graphics display	**NB**	
Design with ground-fault protection		
ETU27B: protection functions LSING[4])	**DG**	
ETU45B: protection functions LSING[4])[6])	**EG**	
ETU45B: protection functions LSING[4]) with 4-line display[6])	**FG**	
ETU55B: protection functions LSING[4])[6])	**JG**	
ETU76B: protection functions LSING[4]) with pixel graphics display[6])	**NG**	
Standard Order No. supplements (for further Order No. supplements for circuit-breakers and guide frames, see Page 5/36)		
Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO		**1AA2**

Footnotes for pages 5/34 and 5/35:

1) Rated current determined by rated current module. On the standard design the supplied module is equal to the max. rated type current. If a lower rated current is required, adaptation by order code on page 5/37.

2) Permissible short-time current rating I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic circuit-breakers - see Page 5/20.

3) Required accessories "PROFIBUS communication setup" or "Measurement function Plus": Order No. with "–Z" and order code "F02" or "F05" respectively, see Page 5/38.

4) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer must be ordered separately, see Page 5/46, or they can be ordered by adding the supplement "–Z" and order code "F23 ", see Page 5/37.

5) Size III circuit-breakers are not available with electronic trip unit design ETU15B.

6) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/46.

■ Start of delivery on request

*** This quantity or a multiple thereof can be ordered.**

Options

Selection and ordering data

	Order No. supplement 3WL 1. . .-. . . . .-
Operating mechanism	
Manual operating mechanism with mechanical closing	**1**
Manual operating mechanism with mechanical and electrical closing, closing solenoid suitable for continuous duty, 100 % ON-time	
Closing solenoid: AC 50/60 Hz V / DC V	
110 / 110	**2**
230 / 220	**3**
Manual/motorized operating mechanism with mechanical and electrical closing, closing solenoid suitable for continuous duty, 100 % ON-time	
Motor: AC 50/60 Hz V / DC V; Closing solenoid: AC 50/60 Hz V / DC V	
208-240 / 220-250; 230 / 220	**4**
110-127 / 110-125; 110 / 110	**5**
– / 24; – / 24	**6**
To order different voltages for motorized operating mechanism and closing solenoid: "1" at the 13th digit of the Order No. and order codes, see Page 5/38.	
1st auxiliary release	
Without 1st auxiliary release	**A**
Shunt release suitable for continuous duty, 100 % ON-time	
AC 50/60 Hz V / DC V	
– / 24	**B**
– / 30	**C**
– / 48	**D**
– / 60	**E**
110 / 110	**F**
230 / 220	**G**
2nd auxiliary release	
Without 2nd auxiliary release	**A**
Shunt release suitable for continuous duty, 100 % ON-time	
AC 50/60 Hz V / DC V	
– / 24	**B**
– / 30	**C**
– / 48	**D**
– / 60	**E**
110 / 110	**F**
230 / 220	**G**
Undervoltage release, instantaneous (≤ 80 ms), short-time delay (≤ 200 ms)	
AC 50/60 Hz V / DC V	
– / 24	**J**
– / 30	**K**
– / 48	**L**
110–127 / 110–125	**M**
208–240 / 220–250	**N**
380–415 / –	**P**
Undervoltage release, can be delayed between 0.2 s and 3.2 s	
AC 50/60 Hz V / DC V	
– / 48	**Q**
110–127 / 110–125	**R**
208–240 / 220–250	**S**
380–415 / –	**T**
Auxiliary switches	
1st auxiliary switch block	
2 NO + 2 NC	**2**
1st + 2nd auxiliary switch block	
4 NO + 4 NC	**4**
6 NO + 2 NC	**7**
5 NO + 3 NC	**8**

5

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with "–Z"
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□ + . . . + . . .
Code for "further versions" **–Z**

Operator's Guide

Printed version (version on CD-ROM included in the scope of supply of the circuit-breaker	German/English	A10
	French/Italian	A11
	Spanish/Portuguese	A12

Rated voltage AC/DC 1000 V

Only for circuit-breakers with high switching capacity (8th digit of the Order No. is a "4")

Size II[4])	up to 2000 A up to 2500 A up to 3200 A	A05
Size III[4])	up to 4000 A up to 5000 A up to 6300 A	A05

Rated current module / rating plug

	Size I	Size II	Size III	Rated current I_n A	
Only one module is possible per circuit-breaker (not in conjunction with electronic trip unit ETU15B). As standard the overcurrent releases are equipped with a rated current module. The supplied rated current module is equal to the max. rated circuit-breaker current.	×	×	–	250	B02
	×	×	–	315	B03
	×	×	–	400	B04
	×	×	–	500	B05
	×	×	–	630	B06
	×	×	–	800	B08
	×	×	–	1000	B10
	×	×	×	1250	B12
	×	×	×	1600	B16
	–	×	×	2000	B20
	–	×	×	2500	B25
	–	×	×	3200	B32
	–	–	×	4000	B40
	–	–	×	5000	B50
	–	–	×	6300	B63

Indication/operator control elements, door sealing frame

5-digit mechanical operating cycles counter[1])		C01
Electrical ON button in the operator control panel[2]) only possible with circuit-breakers with closing solenoid	Button with sealing cap	C11
	Key operation with lock CES	C12
	Key operation with lock IKON	C14
Storage status signaling switch[2]) (S21)	1 NO contact	C20
Ready-to-close signaling switch (S20)	1 NO contact	C22
Signaling switch[2])	for the first auxiliary release (S22)	C26
	for the second auxiliary release (S23)	C27
Motor shutdown switch on the operator control panel[3])		S25
EMERGENCY-STOP button	Mushroom-head pushbutton instead of the mechanical OFF button	S24
Door sealing frame		T40

Neutral conductor transformer

Internal transformer for neutral conductor (ETU with N conductor protection required)	Size I Size II Size III	F23
Overload and short-circuit protection of neutral conductor as for one-pole load only	Only possible with 4-pole circuit-breakers with ETU27B, ETU45B, ETU55B or ETU76B with internal transformer for neutral conductor. Delivery as of July 2004.	F30

1) Only possible with motorized operating mechanism.

2) Not possible with "PROFIBUS communication interface" option, order code "F02".

3) Only for circuit-breakers with motorized operating mechanism, not possible with order codes "C11", "C12", "C14".

4) If ordering withdrawable circuit-breaker and guide frame separately, specify order code "A05" for withdrawable circuit-breaker and guide frame.

× available

– not available

Options

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with "–Z"
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□ + . . . + . . .
Code for "Further versions" **–Z**

Lockout device and remote reset

Automatic reset of the lockout device		K 0 1
Tripped signaling switch[1])	1 changeover	K 0 7

Remote reset solenoid for display and reset button including automatic reset of the lockout device

AC 50/60 Hz V	DC V	
–	24	K 1 0
–	48	K 1 1
120	125	K 1 2
220–240	250	K 1 3

Motorized operating mechanism and closing solenoid

Motorized operating mechanism
Only possible if the 13th digit of the Order No. = "1"

Motor

AC 50/60 Hz V	DC V	
–	24–30	M 0 1
–	48–60	M 0 3
110–127	110–125	M 0 5
208–240	220–250	M 0 6

Closing solenoid suitable for continuous duty, 100 % ON-time – Only possible if the 13th digit of the Order No. = "1"

Activation solenoid

AC 50/60 Hz V	DC V	
–	24	M 2 1
–	30	M 2 2
–	48	M 2 3
–	60	M 2 4
110	110	M 2 5
230	220	M 2 6

Closing solenoid[2]) – unsuitable for continuous duty, 5 % ON-time – Only possible if the 13th digit of the Order No. = "1"

Activation solenoid

AC 50/60 Hz V	DC V	
–	24	M 3 1
–	48	M 3 3
110–127	110–125	M 3 5
208–240	220–250	M 3 6

Communication and measurement function[3])

Breaker status sensor (BSS) connection	F 0 1
PROFIBUS communication interface[5]) including COM15 and Breaker status sensor (BSS)	F 0 2
Measurement function (without PROFIBUS communication interface)[4])	F 0 4
Measurement function *Plus* (without PROFIBUS communication interface)[4])	F 0 5

EMC filter

EMC filter Delivery as of July 2004	F 3 1

1) Not possible with "PROFIBUS communication interface" option, order code "F02".

2) Overexcited, i.e. closing time 25 ms (standard 60 ms).

3) For further information, see Section "Communication-capable circuit-breakers".

4) Additional voltage transformers are required for connection of the measurement function, see Page 5/51.

5) If ordering withdrawable circuit-breaker and guide frame separately, specify order code "F02" for withdrawable circuit-breaker only.

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□

Code for "Further versions" **–Z**

		Order code for fixed-mounted version	Order code for withdrawable version
Interlocks, covers, position indicator switches			
Mutual mechanical interlocking (Interlocking module with Bowden wire 2 m)	Fixed-mounted circuit-breaker	S55	–
	For withdrawable circuit-breaker with guide frame	–	R55
	For guide frame	–	R56
	For withdrawable circuit-breaker	–	R57
Arc chute cover[2]	3-pole Size I Size II Size III	 – – –	 R10 R10 R10
	4-pole Size I Size II Size III	 – – –	 R10 R10 R10
Shutters 2 parts lockable with padlocks[1])	3-pole Size I Size II Size III	 – – –	 R21 R21 R21
	4-pole Size I Size II Size III	 – – –	 R21 R21 R21

Position indicator switch for guide frames	Connected position	Test position	Disconnected position		
	1 CO	1 CO	1 CO	–	R15
	3 CO	2 CO	1 CO	–	R16

1) Padlocks not included in scope of supply.

2) Not possible with option "rated voltage AC/DC 1000 V", order code "A05".
Not possible with DC version.
Not possible with fixed-mounted design.

5

Options

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□

Code for "Further versions" **–Z**

		Order code for fixed-mounted version	Order code for withdrawable version
Locking devices			
Locking device against unauthorized closing, in the operator control panel The disconnector unit fulfills the requirements for main circuit-breakers to EN 60204 (VDE 0113)	Made by CES	S01	S01
	Made by IKON	S03	S03
	Mounting set FORTRESS or Castell[1])	S05	S05
	■ Made by KIRK-Key[1])	S06	■ S06
	Mounting set for padlocks[2])	S07	S07
	Made by Ronis	S08	S08
	Made by Profalux	S09	S09
EMERGENCY-STOP button	Mushroom-head pushbutton instead of the mechanical OFF button	S24	S24
Locking device against unauthorized closing, for withdrawable circuit-breakers The disconnector unit fulfills the requirements for main circuit-breakers to EN 60204 (VDE 0113), consisting of a lock in the cabinet door, active in the connected position; the function is retained when the circuit-breaker is replaced	Made by CES	–	R61
	Made by IKON	–	R63
	Made by Ronis	–	R68
	Made by Profalux	–	R60
	Made by KIRK-Key	–	■ R66
Locking device for operating mechanism hand lever with padlock[2])		S33	S33
Locking device to prevent movement of the withdrawable circuit-breaker Safety lock for fitting to circuit-breaker	Made by CES	–	S71
	Made by IKON	–	S73
	Made by O.M.R.	–	■ S77
	Made by Profalux	–	S75
	Made by Ronis	–	S76
	Made by KIRK-Key	–	■ S74
Locking devices			
Locking device to prevent movement of the withdrawable circuit-breaker in disconnected position, consisting of Bowden wire and lock in the cabinet door	Made by CES	–	R81
	Made by IKON	–	R83
	Made by O.M.R.	–	■ R84
	Made by Profalux	–	R85
	Made by Ronis	–	R86
	Mounting set for padlocks[2])	–	R88
Locking device	to prevent opening of the cabinet door in: ON position (fixed mounted version)/ in connected position (withdrawable version)	S30	R30
	to prevent closing with the cabinet door open (on withdrawable version active in connected position)	S40	R40
	to prevent movement with the cabinet door open	–	R50
Connection system for auxiliary conductors			
Connections for screwless connection system (tension spring)		N61	P61

1) Locks must be ordered from the manufacturer.

2) Padlock not included in the scope of supply.

■ Start of delivery on request.

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□

Code for "Further versions" **–Z**

For withdrawable circuit-breaker including guide frame or guide frame only

To select this connection system the 12th digit of the Order No. for the circuit-breaker must be a "6"

Order code for 3- and 4-pole

Connection system for main circuit connections

Top and bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 0
Top and bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 1
Top: accessible from front, double hole Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 6
Top: rear horizontal, double hole Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 7
Top: rear vertical Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 8
Top: connecting flange Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 0 9
Top: accessible from front, single hole Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 1 1
Top: rear horizontal Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 1 2
Top: rear vertical Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 1 3
Top: connecting flange Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 1 4
Top: accessible from front, single hole Bottom: rear horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P 1 6

5

Options

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□

Identification code for "Further versions" **–Z**

For withdrawable circuit-breaker with guide frame or guide frame To select this connection system the 12th digit of the Order No. for the circuit-breaker must be a "6"		Order code for 3 and 4-pole
Connection system for main circuit connections		
Top: accessible from front, double hole Bottom: rear horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P17
Top: rear vertical Bottom: rear horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A Size III, up to 5000 A	P18
Top: connecting flange Bottom: rear horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P19
Top: accessible from front, single hole Bottom: front vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P21
Top: accessible from front, double hole Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P22
Top: rear horizontal Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A Size III, up to 5000 A	P23 □□□
Top: connecting flange Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P24
Top: accessible from front, single hole Bottom: connecting flange	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P26
Top: accessible from front, double hole Bottom: connecting flange	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P27
Top: rear horizontal Bottom: connecting flange	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P28
Top: rear vertical Bottom: connecting flange	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	P29

5

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL . . . . – . . . . . – . . . . **–Z**
and additional order code(s)
□□□

Identification code for "Further versions" **–Z**

For fixed-mounted circuit-breakers

To select this connection system the 12th digit of the Order No. for the circuit-breaker must be a "2"

Order code for 3 and 4-pole

Connection system for main circuit connections

Top: accessible from front, double hole Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N10
Top: rear horizontal Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N11
Top: rear vertical Bottom: accessible from front, single hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N12
Top: accessible from front, single hole Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N14
Top: rear horizontal Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N15
Top: rear vertical Bottom: accessible from front, double hole	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N16 □□□
Top: accessible from front, single hole Bottom: front horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N18
Top: accessible from front, double hole Bottom: rear horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N19
Top: rear vertical Bottom: front horizontal	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A Size III, up to 5000 A	N20
Top: accessible from front, single hole Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N22
Top: accessible from front, double hole Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A	N23
Top: rear horizontal Bottom: rear vertical	Size I, up to 1600 A Size II, up to 2000 A Size II, up to 2500 A Size II, up to 3200 A Size III, up to 4000 A Size III, up to 5000 A	N24

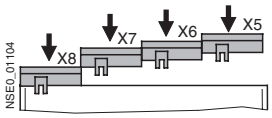
5

Accessories/spare parts

Overview

Determination of the number of auxiliary supply connectors required

This selection is only required if the guide frame is ordered under a separate Order No..



The required number of auxiliary supply connectors depends on:
- operating mechanism type
- electronic trip unit with/without current transformer
- type and number of auxiliary releases
- number of auxiliary switches
- COM15 communication link

		Number of auxiliary supply connectors	Terminal
a	**First auxiliary supply connector X6 always required.**	**1**	X6
b	**Operating mechanism**		
b1	Manual operating mechanism with stored-energy feature with mechanical closing	**0**	
b2	Manual operating mechanism with stored-energy feature with mechanical and electrical closing	**0**	X6
b3	Manual/motorized operating mechanism with stored-energy feature with mechanical and electrical closing	**+1**	X5
c	**Electronic trip unit**		
c1	Electronic trip unit ETU15B, ETU25B, ETU27B	**0**	
c2	Electronic trip unit ETU45B, ETU55B, ETU76B (internal Cubicle**BUS**)	**+1**	X8
	Terminals for external current transformer for overload protection in the neutral conductor and ground-fault protection		
c3	Current transformer fitted in the neutral conductor (required with 3-pole circuit-breakers if c2 is not selected)	**+1**	X8
c4	Current transformer in the star point of the transformer (required if c2 or c3 is not selected)	**+1**	X8
d	**Auxiliary release**		
d1	With/without 1st auxiliary release (shunt release F1)	**0**	X6
d2	2nd auxiliary release (shunt release F2, undervoltage release F3, undervoltage release F4 that can be delayed)	**+1**	X5
e	**Auxiliary switch block**		
e1	1st auxiliary switch block 2 NO + 2 NC	**0**	X6
e2	1st and 2nd auxiliary switch block 4 NO + 4 NC or 6 NO + 2 NC or 5 NO + 3 NC (required if b3 or d2 is not selected)	**+1**	X5
f	**Communication module**		
f1	Without communication module COM15	**0**	
f2	With communication module COM15 - occupies the entire terminal block X7, making the following options no longer possible: • Tripped signaling switch S24 • Stored-energy status indication S21 • Electrical ON button S10 • Signaling switch on first and second auxiliary release S22 + S23	**+1**	X7
g	**Optional signals/accessories**		
g1	Tripped signaling switch S24 (only possible if f2 is not selected)	**+1**	X7
g2	Stored-energy status indication S21 (only possible if f2 is not selected, required if g1 is not selected)	**+1**	X7
g3	Electrical ON button S10 (only possible if f2 is not selected, required if g1 or g2 is not selected)	**+1**	X7
g4	Signaling switch on first auxiliary release S22 (only possible if f2 is not selected, required if g1, g2 or g3 is not selected)	**+1**	X7
g5	Signaling switch on second auxiliary release S23 (only possible if f2 is not selected, required if g1, g2, g3 or g4 is not selected)	**+1**	X7
g6	Ready-to-close signaling switch S20	**0**	X6
g7	Motor shutdown switch S12 (only possible if motorized operating mechanism is selected)	**0**	X5
g8	Remote reset magnet F7 (required if c2 is not selected)	**+1**	X8
h	**Total number of auxiliary supply connectors**	**(max. 4)**	

Selection and ordering data

Guide frame for AC circuit-breakers/non-automatic circuit-breakers

Size	Max. rated circuit-breaker current $I_{n\ max.}$	DT	Guide frame for 3-pole circuit-breakers/non-automatic circuit-breakers: Order No. (Order No. supplements required according to table below)	PS*	Weight per PU approx.	DT	Guide frame for 4-pole circuit-breakers/non-automatic circuit-breakers: Order No. (Order No. supplements required according to table below)	PS*	Weight per PU approx.
	A				kg				kg
Front main circuit connection, single hole									
I	1000	B	**3WL9 211-1AA□□-□□A 1**	1 unit	25.000	B	**3WL9 211–1BA□□-□□A 1**	1 unit	30.000
I	1600	B	**3WL9 211-2AA□□-□□A 1**	1 unit	25.000	B	**3WL9 211–2BA□□-□□A 1**	1 unit	30.000
II	2000	B	**3WL9 212-3AA□□-□□A 1**	1 unit	31.000	B	**3WL9 212–3BA□□-□□A 1**	1 unit	37.000
II	2500	B	**3WL9 212-4AA□□-□□A 1**	1 unit	39.000	B	**3WL9 212–4BA□□-□□A 1**	1 unit	47.000
II	3200	B	**3WL9 212-5AA□□-□□A 1**	1 unit	45.000	B	**3WL9 212–5BA□□-□□A 1**	1 unit	54.000
III	4000	B	**3WL9 213-6AA□□-□□A 1**	1 unit	60.000	B	**3WL9 213–6BA□□-□□A 1**	1 unit	84.000
Front main circuit connection, double hole									
I	1000	B	**3WL9 211-1AB□□-□□A 1**	1 unit	25.000	B	**3WL9 211-1BB□□-□□A 1**	1 unit	30.000
I	1600	B	**3WL9 211-2AB□□-□□A 1**	1 unit	25.000	B	**3WL9 211-2BB□□-□□A 1**	1 unit	30.000
II	2000	B	**3WL9 212-3AB□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3BB□□-□□A 1**	1 unit	37.000
II	2500	B	**3WL9 212-4AB□□-□□A 1**	1 unit	39.000	B	**3WL9 212-4BB□□-□□A 1**	1 unit	47.000
II	3200	B	**3WL9 212-5AB□□-□□A 1**	1 unit	45.000	B	**3WL9 212-5BB□□-□□A 1**	1 unit	54.000
III	4000	B	**3WL9 213-6AB□□-□□A 1**	1 unit	60.000	B	**3WL9 213-6BB□□-□□A 1**	1 unit	84.000
Horizontal main circuit connection									
I	1000	B	**3WL9 211-1AC□□-□□A 1**	1 unit	25.000	B	**3WL9 211-1BC□□-□□A 1**	1 unit	30.000
I	1600	B	**3WL9 211-2AC□□-□□A 1**	1 unit	25.000	B	**3WL9 211-2BC□□-□□A 1**	1 unit	30.000
II	2000	B	**3WL9 212-3AC□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3BC□□-□□A 1**	1 unit	37.000
II	2500	B	**3WL9 212-4AC□□-□□A 1**	1 unit	39.000	B	**3WL9 212-4BC□□-□□A 1**	1 unit	47.000
II	3200	B	**3WL9 212-5AC□□-□□A 1**	1 unit	45.000	B	**3WL9 212-5BC□□-□□A 1**	1 unit	54.000
III	4000	B	**3WL9 213-6AC□□-□□A 1**	1 unit	60.000	B	**3WL9 213-6BC□□-□□A 1**	1 unit	84.000
III	5000	B	**3WL9 213-7AC□□-□□A 1**	1 unit	60.000	B	**3WL9 213-7BC□□-□□A 1**	1 unit	84.000
Vertical main circuit connection									
I	1000	B	**3WL9 211-1AD□□-□□A 1**	1 unit	25.000	B	**3WL9 211-1BD□□-□□A 1**	1 unit	30.000
I	1600	B	**3WL9 211-2AD□□-□□A 1**	1 unit	25.000	B	**3WL9 211-2BD□□-□□A 1**	1 unit	30.000
II	2000	B	**3WL9 212-3AD□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3BD□□-□□A 1**	1 unit	37.000
II	2500	B	**3WL9 212-4AD□□-□□A 1**	1 unit	39.000	B	**3WL9 212-4BD□□-□□A 1**	1 unit	47.000
II	3200	B	**3WL9 212-5AD□□-□□A 1**	1 unit	45.000	B	**3WL9 212-5BD□□-□□A 1**	1 unit	54.000
III	4000	B	**3WL9 213-6AD□□-□□A 1**	1 unit	60.000	B	**3WL9 213-6BD□□-□□A 1**	1 unit	84.000
III	5000	B	**3WL9 213-7AD□□-□□A 1**	1 unit	60.000	B	**3WL9 213-7BD□□-□□A 1**	1 unit	84.000
III	6300	B	**3WL9 213-8AD□□-□□A 1**	1 unit	70.000	B	**3WL9 213-8BD□□-□□A 1**	1 unit	119.000
Main circuit connection, connecting flange									
I	1000	B	**3WL9 211-1AE□□-□□A 1**	1 unit	25.000	B	**3WL9 211-1BE□□-□□A 1**	1 unit	30.000
I	1600	B	**3WL9 211-2AE□□-□□A 1**	1 unit	25.000	B	**3WL9 211-2BE□□-□□A 1**	1 unit	30.000
II	2000	B	**3WL9 212-3AE□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3BE□□-□□A 1**	1 unit	37.000
II	2500	B	**3WL9 212-4AE□□-□□A 1**	1 unit	39.000	B	**3WL9 212-4BE□□-□□A 1**	1 unit	47.000
II	3200	B	**3WL9 212-5AE□□-□□A 1**	1 unit	45.000	B	**3WL9 212-5BE□□-□□A 1**	1 unit	54.000
III	4000	B	**3WL9 213-6AE□□-□□A 1**	1 unit	60.000	B	**3WL9 213-6BE□□-□□A 1**	1 unit	84.000

Number of auxiliary supply connectors
none — 0
1 connector — 1
2 connectors — 2
3 connectors — 3
4 connectors — 4
Required number of auxiliary supply connectors, see table on page 5/44

Type of auxiliary circuit connections
without — 0
with screw-type terminals (SIGUT) — 1
with screwless connection system (tension spring) — 2

Position indicator switches
without — 0
Option 1: connected position 1 changeover, test position 1 changeover, disconnected position 1 changeover — 1
Option 2: connected position 3 changeovers, test position 2 changeovers, disconnected position 1 changeover — 2

Shutters
without
with shutter, 2 parts, lockable — Size I, Size II, Size III — A, B

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order No. with "–Z" and additional order code

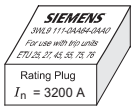
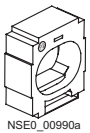
1 2 3 4 5 6 7	8	9 10 11 12	13 14 15 16
3WL9 2 1 . – . . . . . – . . . . –Z			
□□□			
A 0 5			

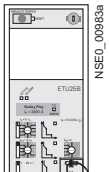
Rated voltage AC 1000 V

All other accessory parts must be ordered by specifying "–Z" and the corresponding order code, see Pages 5/37 to 5/43.

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

Designation			DT	Order No.	PS*	Weight per PU approx.
						kg
Electronic trip unit ETU and measurement function option						
	with protection function	Measurement function				
ETU15B	LI	without	C	**3WL9 311-5AA00-0AA1**	1 unit	on req.
ETU25B	LSI	without	C	**3WL9 312-5AA00-0AA1**	1 unit	on req.
ETU27B	LSING	without	C	**3WL9 312-7AA00-0AA1**	1 unit	on req.
ETU45B: (without display)	LSIN(G)	without	C	**3WL9 314-5AA00-0AA1**	1 unit	on req.
		with measurement func.	C	**3WL9 314-5AA10-0AA1**	1 unit	on req.
		with measurement function *Plus*	C	**3WL9 314-5AA20-0AA1**	1 unit	on req.
ETU55B	LSIN(G)	without	C	**3WL9 315-5AA00-0AA1**	1 unit	on req.
		with measurement func.	C	**3WL9 315-5AA10-0AA1**	1 unit	on req.
		with measurement function *Plus* ●	C	**3WL9 315-5AA20-0AA1**	1 unit	on req.
ETU76B:	LSIN(G)	without	C	**3WL9 317-6AA00-0AA1**	1 unit	on req.
		with measurement func.	C	**3WL9 317-6AA10-0AA1**	1 unit	on req.
		with measurement function *Plus* ●	C	**3WL9 317-6AA20-0AA1**	1 unit	on req.
Rated current module / rating plug						
		Rated current I_n (A)				
 NSE0_00992a 3WL9 111-0AA64-0AA0	For sizes I, II	250	B	**3WL9 111-0AA51-0AA0**	1 unit	on req.
		315	B	**3WL9 111-0AA52-0AA0**	1 unit	on req.
		400	B	**3WL9 111-0AA53-0AA0**	1 unit	on req.
		500	B	**3WL9 111-0AA54-0AA0**	1 unit	on req.
		630	B	**3WL9 111-0AA55-0AA0**	1 unit	on req.
		800	B	**3WL9 111-0AA56-0AA0**	1 unit	on req.
		1000	B	**3WL9 111-0AA57-0AA0**	1 unit	on req.
 NSE0_01027a 3WL9 111-0AT51-0AA0	For size I, II, III	1250	B	**3WL9 111-0AA58-0AA0**	1 unit	on req.
		1600	B	**3WL9 111-0AA61-0AA0**	1 unit	on req.
	For size II, III	2000	B	**3WL9 111-0AA62-0AA0**	1 unit	on req.
		2500	B	**3WL9 111-0AA63-0AA0**	1 unit	on req.
		3200	B	**3WL9 111-0AA64-0AA0**	1 unit	on req.
 NSE0_00990a 3WL9 111-0AA2.-0AA0	For size III	4000	B	**3WL9 111-0AA65-0AA0**	1 unit	on req.
		5000	B	**3WL9 111-0AA66-0AA0**	1 unit	on req.
		6300	B	**3WL9 111-0AA67-0AA0**	1 unit	on req.
Ground-fault module						
GFM AT 45B (only for ETU45B) alarm only			B	**3WL9 111-0AT51-0AA0**	1 unit	on req.
GFM AT 45B (only for ETU45B) alarm and release			B	**3WL9 111-0AT53-0AA0**	1 unit	on req.
GFM AT 55B–76B (only for ETU55B, ETU76B) alarm only			B	**3WL9 111-0AT54-0AA0**	1 unit	on req.
GFM AT 55B–76B (only for ETU55B, ETU76B) alarm and release			B	**3WL9 111-0AT56-0AA0**	1 unit	on req.
Display						
4-line display for ETU45B			B	**3WL9 111-0AT81-0AA0**	1 unit	on req.
Transformers						
Internal transformers for neutral conductor including wiring kit		Size I	B	**3WL9 111-0AA11-0AA0**	1 unit	on req.
		Size II	B	**3WL9 111-0AA12-0AA0**	1 unit	on req.
		Size III	B	**3WL9 111-0AA13-0AA0**	1 unit	on req.
External transformers for neutral conductor (T5, see Page 5/19)		Size I	B	**3WL9 111-0AA21-0AA0**	1 unit	on req.
		Size II	B	**3WL9 111-0AA22-0AA0**	1 unit	on req.
		Size III	B	**3WL9 111-0AA23-0AA0**	1 unit	on req.
External transformers for neutral conductor (T5, see Page 5/19) with copper connection pieces		Size I	B	**3WL9 111-0AA31-0AA0**	1 unit	on req.
		Size II	B	**3WL9 111-0AA32-0AA0**	1 unit	on req.
		Size III	B	**3WL9 111-0AA33-0AA0**	1 unit	on req.
Locking devices, operator control elements						
Sealable cover		for ETU15B to ETU55B	B	**3WL9 111-0AT45-0AA0**	1 unit	on req.
		for ETU76	B	**3WL9 111-0AT46-0AA0**	1 unit	on req.
Automatic reset of the lockout device			B	**3WL9 111-0AK01-0AA0**	1 unit	on req.
Remote reset solenoid[2] for mechanical "tripped" indicator		DC 24 V	B	**3WL9 111-0AK03-0AA0**	1 unit	on req.
		DC 48 V	B	**3WL9 111-0AK04-0AA0**	1 unit	on req.
		AC 120 V, DC 125 V	B	**3WL9 111-0AK05-0AA0**	1 unit	on req.
		AC 208-240 V/ DC 220-250 V	B	**3WL9 111-0AK06-0AA0**	1 unit	on req.
Retrofittable internal CubicleBUS wiring for connection to terminal X8 (without male connector[1])		for ETU45B to ETU76B	B	**3WL9 111-0AK30-0AA0**	1 unit	on req.
Retrofittable internal wiring for connection of the external N- and G-transformers to terminal X8 (without male connector)			D	**3WL9 111-0AK31-0AA0**	1 unit	on req.

 NSE0_00983a
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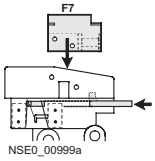
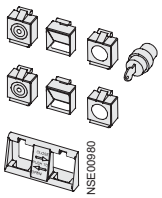
 NSE0_00999a
3WL9 111-0AK0.-0AA0

1) Required if communication is retrofitted.

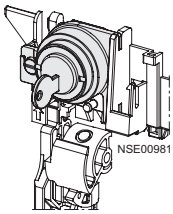
2) Can only be used in conjunction with "automatic reset of lockout device", e.g. "–Z" + "K01", 3WL9 111-0AK01-0AA0.

● Start of delivery March 2004.

*** This quantity or a multiple thereof can be ordered.**



3WL9 111-0BA22-0AA0



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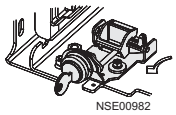

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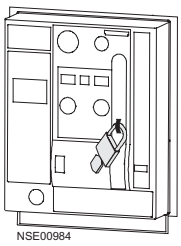

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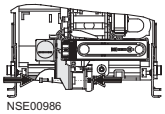

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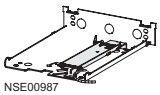

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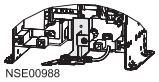

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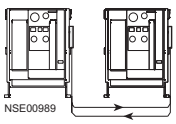


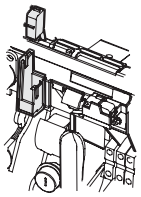
3WL9 111-0BB21-0AA0

Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Locking devices					
Protective covers for mechanical ON/OFF consisting of 2 transparent covers each for sealing or for attaching padlocks[2]), cover with 6.35 mm hole (for tool actuation), lock mount for safety lock for key operation	without safety lock	B	**3WL9 111-0BA21-0AA0**	1 unit	on req.
	made by CES	B	**3WL9 111-0BA22-0AA0**	1 unit	on req.
	made by IKON	B	**3WL9 111-0BA24-0AA0**	1 unit	on req.
Locking device against unauthorized closing, in the operator control panel Disconnector unit meets requirements for main circuit-breakers to EN 60204 (VDE 0113)	Mounting set FORTRESS or CASTELL[1])	B	**3WL9 111-0BA31-0AA0**	1 unit	on req.
■	Made by Ronis	B	**3WL9 111-0BA33-0AA0**	1 unit	on req.
	Made by KIRK-Key	B	**3WL9 111-0BA34-0AA0**	1 unit	on req.
	Made by Profalux	B	**3WL9 111-0BA35-0AA0**	1 unit	on req.
	Made by CES	B	**3WL9 111-0BA36-0AA0**	1 unit	on req.
	Made by IKON	B	**3WL9 111-0BA38-0AA0**	1 unit	on req.
	Mounting set for padlocks[2])	B	**3WL9 111-0BA41-0AA0**	1 unit	on req.
Locking device against unauthorized closing, for withdrawable circuit-breakers Disconnector unit meets requirements for main circuit-breakers to EN 60204 (VDE 0113) consisting of lock in the cabinet door, active in connected position; function is retained when circuit-breaker is replaced	Made by CES	B	**3WL9 111-0BA51-0AA0**	1 unit	on req.
	Made by IKON	B	**3WL9 111-0BA53-0AA0**	1 unit	on req.
■	Made by KIRK-Key	B	**3WL9 111-0BA57-0AA0**	1 unit	on req.
	Made by Ronis	B	**3WL9 111-0BA58-0AA0**	1 unit	on req.
	Made by Profalux	B	**3WL9 111-0BA50-0AA0**	1 unit	on req.
Locking device for operating mechanism handle with padlock[2])		B	**3WL9 111-0BA71-0AA0**	1 unit	on req.
Locking device to prevent movement of the withdrawable circuit-breaker Safety lock for mounting on the circuit-breaker	Made by CES	B	**3WL9 111-0BA73-0AA0**	1 unit	on req.
	Made by IKON	B	**3WL9 111-0BA75-0AA0**	1 unit	on req.
	Made by Profalux	B	**3WL9 111-0BA76-0AA0**	1 unit	on req.
	Made by Ronis	B	**3WL9 111-0BA77-0AA0**	1 unit	on req.
■	Made by KIRK-Key	B	**3WL9 111-0BA80-0AA0**	1 unit	on req.
Locking devices					
to prevent movement of the withdrawable circuit-breaker in disconnected position, consisting of Bowden wire and lock in the cabinet door	Made by CES	B	**3WL9 111-0BA81-0AA0**	1 unit	on req.
	Made by IKON	B	**3WL9 111-0BA83-0AA0**	1 unit	on req.
	Made by Profalux	B	**3WL9 111-0BA85-0AA0**	1 unit	on req.
	Made by Ronis	B	**3WL9 111-0BA86-0AA0**	1 unit	on req.
	Mounting set for padlocks[2])	B	**3WL9 111-0BA87-0AA0**	1 unit	on req.
to prevent opening of the cabinet door in ON position (can be defeated)	Fixed-mounted version	B	**3WL9 111-0BB12-0AA0**	1 unit	on req.
to prevent opening of the cabinet door (can be defeated)	Guide frames	B	**3WL9 111-0BB13-0AA0**	1 unit	on req.
to prevent movement of circuit-breaker when cabinet door is open	Guide frames	B	**3WL9 111-0BB15-0AA0**	1 unit	on req.
Interlocking					
Mutual mechanical interlocking, with 2000 mm Bowden wire (one required for each circuit-breaker)	Fixed-mounted circuit-breaker	B	**3WL9 111-0BB21-0AA0**	1 unit	on req.
	Module for withdrawable circuit-breaker with frame	B	**3WL9 111-0BB24-0AA0**	1 unit	on req.
	When ordered separately				
	Module for guide frame	B	**3WL9 111-0BB22-0AA0**	1 unit	on req.
	Module for withdrawable circuit-breaker	B	**3WL9 111-0BB23-0AA0**	1 unit	on req.
	Adapter for size III Withdrawable circuit-breaker	B	**3WL9 111-0BB30-0AA0**	1 unit	on req.
Bowden wire	2000 mm	B	**3WL9 111-0BB25-0AA0**	1 unit	on req.
	3000 mm	B	**3WL9 111-0BB26-0AA0**	1 unit	on req.
	4500 mm	B	**3WL9 111-0BB27-0AA0**	1 unit	on req.
	6000 mm	B	**3WL9 111-0BB28-0AA0**	1 unit	on req.

1) Locks must be ordered from the manufacturer.
2) Padlock not included in the scope of supply.
■ Start of delivery on request.

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts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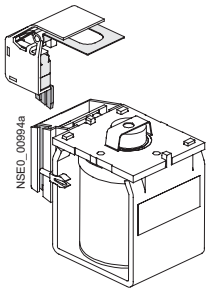
3WL9 111-0AH01-0AA0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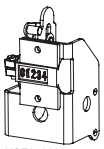
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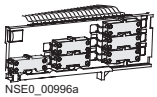
3WL9 111-0AH07-0AA0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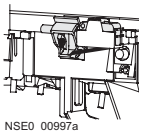
3WL9 111-0AH12-0AA0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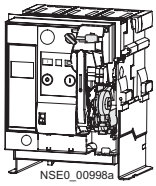
3WL9 111-0AJ0.-0AA0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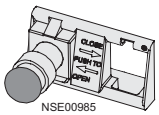
3WL9 111-0AJ06-0AA0

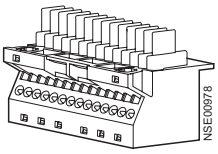

NSE00985

3WL9 111-0BA72-0AA0

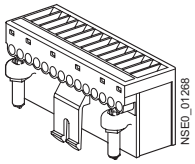
Designation			DT	Order No.	PS*	Weight per PU approx.
						kg
Indicators, operator control elements						
Ready-to-close indicator switch			B	**3WL9 111-0AH01-0AA0**	1 unit	on req.
Signaling switch[4)5)]	First or second auxiliary releases		B	**3WL9 111-0AH02-0AA0**	1 unit	on req.
Tripped signaling switch[4)5)]			B	**3WL9 111-0AH04-0AA0**	1 unit	on req.
Operating cycles counter, mechanical[3)]			B	**3WL9 111-0AH07-0AA0**	1 unit	on req.
Stored energy status signaling switch[4)5)]			B	**3WL9 111-0AH08-0AA0**	1 unit	on req.
Position indicator switch for guide frames	1st block (3 microswitches)		B	**3WL9 111-0AH11-0AA0**	1 unit	on req.
	2nd block (6 microswitches)		B	**3WL9 111-0AH12-0AA0**	1 unit	on req.
Electrical ON button[1)4)] (button+wiring)[5)]	with sealing cap		B	**3WL9 111-0AJ02-0AA0**	1 unit	on req.
	with CES mounting set		B	**3WL9 111-0AJ03-0AA0**	1 unit	on req.
	with BKS mounting set		B	**3WL9 111-0AJ04-0AA0**	1 unit	on req.
	with IKON mounting set		B	**3WL9 111-0AJ05-0AA0**	1 unit	on req.
Motor shutdown switch[2)] (mounting on operator control panel)			B	**3WL9 111-0AJ06-0AA0**	1 unit	on req.
EMERGENCY-STOP button Mushroom-head pushbutton instead of the mechanical OFF button			B	**3WL9 111-0BA72-0AA0**	1 unit	on req.
Test device						
Manual test device for electronic trip unit ETU15B to ETU76B For testing the overcurrent tripping functions			B	**3WL9 111-0AT31-0AA0**	1 unit	on req.
Capacitor store unit						
Capacitor store unit for shunt release	Rated control supply voltage/ rated operating voltage					
Storage time 5 min. Rated control supply voltage must correspond with rated control supply voltage of shunt release.	AC 50/60 Hz V	DC V				
	110-127	110-115	B	**3WL9 111-0BA13-0AA0**	1 ST	0,500
	220-240	220-250	B	**3WL9 111-0BA14-0AA0**	1 ST	0,500
EMC Filter						
EMC Filter	Delivery as of July 2004		X	**3WL9 111-0AK32-0AA0**	1 ST	on req.

1) Not possible with motor shutdown switch.
2) Not possible with electrical ON button.
3) Only in conjunction with motorized operating mechanism.
4) Not possible with communication connection option, order code "F02".
5) X7 manual connector required for circuit-breakers or guide frames. If this is not already available, please order additionally (see Pages 5/44 and 5/49).

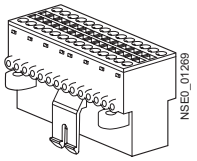
*** This quantity or a multiple thereof can be ordered.**



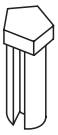
3WL9 111-0AB01-0AA0



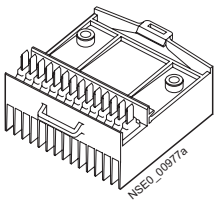
3WL9 111-0AB03-0AA0



3WL9 111-0AB04-0AA0

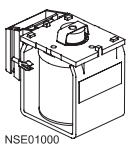


3WL9 111-0AB07-0AA0

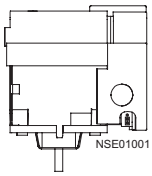


3WL9 111-0AB08-0AA0

Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Auxiliary conductor connections					
Male connector for circuit-breakers		B	**3WL9 111-0AB01-0AA0**	1 unit	on req.
Prolongation for male connector 1000 V version (male connector must be ordered separately)		B	**3WL9 111-0AB02-0AA0**	1 unit	on req.
Male connector and prolongation for 1000 V		B	**3WL9 111-0AB10-0AA0**	1 unit	on req.
Manual connector for circuit-breaker or guide frame	Screw-type terminals (SIGUT)	B	**3WL9 111-0AB03-0AA0**	1 unit	on req.
	Screwless type terminals (tension spring)	B	**3WL9 111-0AB04-0AA0**	1 unit	on req.
Coding kit for fixed mounting (X5 to X8)		B	**3WL9 111-0AB07-0AA0**	1 unit	on req.
Sliding contact module for guide frame		B	**3WL9 111-0AB08-0AA0**	1 unit	on req.
Blanking block for circuit-breakers		B	**3WL9 111-0AB12-0AA0**	1 unit	on req.
Auxiliary releases					
Closing solenoid/shunt release					
DC 24 V	100 % ON-time	B	**3WL9 111-0AD01-0AA0**	1 unit	on req.
DC 30 V		B	**3WL9 111-0AD02-0AA0**	1 unit	on req.
DC 48 V		B	**3WL9 111-0AD03-0AA0**	1 unit	on req.
DC 60 V		B	**3WL9 111-0AD04-0AA0**	1 unit	on req.
DC 110 V/AC 110 V		B	**3WL9 111-0AD05-0AA0**	1 unit	on req.
DC 220 V/AC 230 V		B	**3WL9 111-0AD06-0AA0**	1 unit	on req.
DC 24 V	5 % ON-time	B	**3WL9 111-0AD11-0AA0**	1 unit	on req.
DC 48 V		B	**3WL9 111-0AD12-0AA0**	1 unit	on req.
DC 110-125 V/AC 110-127 V		B	**3WL9 111-0AD13-0AA0**	1 unit	on req.
DC 220-250 V/AC 208-240 V		B	**3WL9 111-0AD14-0AA0**	1 unit	on req.
Undervoltage releases					
instantaneous					
DC 24 V		B	**3WL9 111-0AE01-0AA0**	1 unit	on req.
DC 30 V		B	**3WL9 111-0AE02-0AA0**	1 unit	on req.
DC 48 V		B	**3WL9 111-0AE03-0AA0**	1 unit	on req.
DC 110-125 V/AC 110-127 V		B	**3WL9 111-0AE04-0AA0**	1 unit	on req.
DC 220-250 V/AC 208-240 V		B	**3WL9 111-0AE05-0AA0**	1 unit	on req.
AC 380-415 V		B	**3WL9 111-0AE06-0AA0**	1 unit	on req.
delayed					
DC 48 V		B	**3WL9 111-0AE11-0AA0**	1 unit	on req.
DC 110-125 V/AC 110-127 V		B	**3WL9 111-0AE12-0AA0**	1 unit	on req.
DC 220-250 V/AC 208-240 V		B	**3WL9 111-0AE13-0AA0**	1 unit	on req.
AC 380-415 V		B	**3WL9 111-0AE14-0AA0**	1 unit	on req.
Operating mechanism					
Motorized operating mechanism					
DC 24-30 V		B	**3WL9 111-0AF01-0AA0**	1 unit	on req.
DC 48-60 V		B	**3WL9 111-0AF02-0AA0**	1 unit	on req.
DC 110-125 V/AC 110-127 V		B	**3WL9 111-0AF03-0AA0**	1 unit	on req.
DC 220-250 V/AC 208-240 V		B	**3WL9 111-0AF04-0AA0**	1 unit	on req.
Auxiliary contacts					
Auxiliary contact block	2 NO + 2 NC	B	**3WL9 111-0AG01-0AA0**	1 unit	on req.
	2 NO	B	**3WL9 111-0AG02-0AA0**	1 unit	on req.
	1 NO + 1 NC	B	**3WL9 111-0AG03-0AA0**	1 unit	on req.



3WL9 111-0AD06-0AA0



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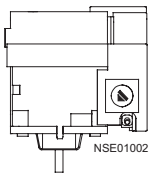

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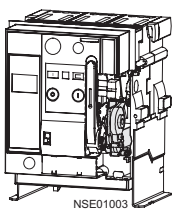

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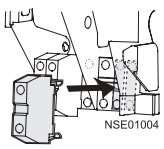
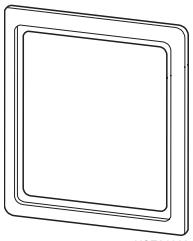


3WL9 111-0AG03-0AA0

* This quantity or a multiple thereof can be ordered.

Accessories/spare parts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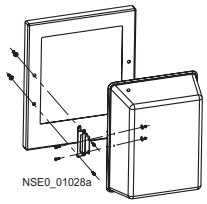
3WL9 111-0AP01-0AA0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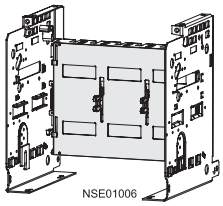
3WL9 111-0AP02-0AA0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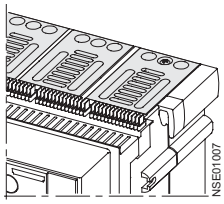
3WL9 111-0AP0.-0AA0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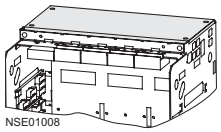
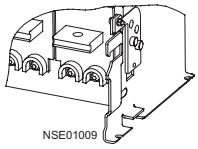
3WL9 111-0AS0.-0AA0


NSE01008

3WL9 111-0AS3.-0AA0

Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Door sealing frame, hood, shutter					
Door sealing frame		B	**3WL9 111-0AP01-0AA0**	1 unit	on req.
Protective cover, IP55 cannot be used in conjunction with door sealing frames, cover removable and can be opened on both sides		B	**3WL9 111-0AP02-0AA0**	1 unit	on req.
Shutters					
3-pole	Size I	B	**3WL9 111-0AP04-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AP06-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AP07-0AA0**	1 unit	on req.
4-pole	Size I	B	**3WL9 111-0AP08-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AP11-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AP12-0AA0**	1 unit	on req.
Arc chute					
Arc chute					
690 V	Size I	B	**3WL9 111-0AS01-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AS02-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AS03-0AA0**	1 unit	on req.
1000 V	Size II	B	**3WL9 111-0AS05-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AS06-0AA0**	1 unit	on req.
Arc chute cover[1]) Parts kit for guide frame					
3-pole	Size I	B	**3WL9 111-0AS32-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AS36-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AS38-0AA0**	1 unit	on req.
4-pole	Size I	B	**3WL9 111-0AS42-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AS44-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AS46-0AA0**	1 unit	on req.
Withdrawable part coding					
Withdrawable part coding by customer, for 36 coding variants		B	**3WL9 111-0AR12-0AA0**	1 unit	on req.
Ground-fault protection					
Ground-fault protection between guide frame and withdrawable circuit-breaker For 30 kA switching capacity[2]) Contact module for guide frame	Size I, II	B	**3WL9 111-0BA01-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0BA02-0AA0**	1 unit	on req.
Contact module for withdrawable circuit-breaker					
3-pole	Size I	B	**3WL9 111-0BA05-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0BA06-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0BA07-0AA0**	1 unit	on req.
4-pole	Size I	B	**3WL9 111-0BA08-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0BA04-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0BA10-0AA0**	1 unit	on req.
Support bracket					
Support bracket for mounting fixed-mounted circuit-breakers on vertical plane, only for sizes I and II (1 set = 2 units)		B	**3WL9 111-0BB50-0AA0**	1 set	4.800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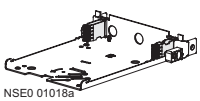
3WL9 111-0AR12-0AA0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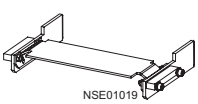
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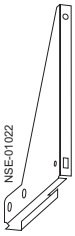
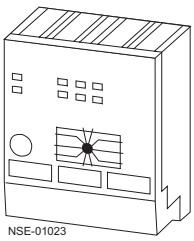

NSE-01022

3WL9 111-0BB50-0AA0

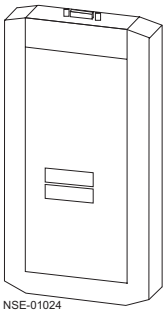
1) Not possible with 1000 V version, DC version, fixed-mounted version

2) 60 kA switching capacity is achieved with 2 modules each.

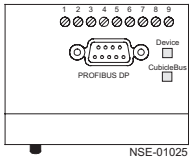
*** This quantity or a multiple thereof can be ordered.**



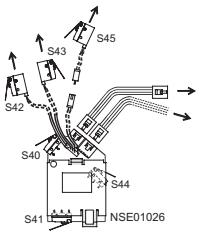
3WL9 111-0AT23-0AA0



3WL6 111-0AB01



3WL9 111-0AT15-0AA0



3WL9 111-0AT16-0AA0

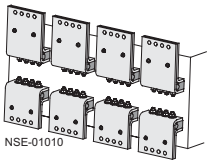
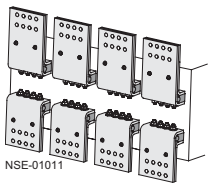
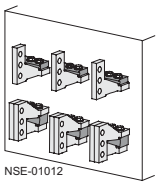
Designation		DT	Order No.	PS*	Weight per PU approx. kg
CubicleBUS modules[1])					
Digital output module with rotary coding switch, optical coupler outputs		B	**3WL9 111-0AT25-0AA0**	1 unit	on req.
Digital output module with rotary coding switch, relay outputs		B	**3WL9 111-0AT26-0AA0**	1 unit	on req.
Digital output module, configurable, optocoupler outputs		B	**3WL9 111-0AT30-0AA0**	1 unit	on req.
Digital output module, configurable, relay outputs		B	**3WL9 111-0AT20-0AA0**	1 unit	0.400
Digital input module		B	**3WL9 111-0AT27-0AA0**	1 unit	on req.
Analog output module		B	**3WL9 111-0AT23-0AA0**	1 unit	on req.
Zone Selective Interlocking module		B	**3WL9 111-0AT21-0AA0**	1 unit	on req.
Parameterization systems					
Breaker Data Adapter (BDA)	Calibration, operation, monitoring, and diagnosis of SENTRON circuit-breakers via local interface; Breaker Data Adapter, connecting cable to SENTRON circuit-breaker and to programming device (e.g. notebook); can be run with Internet Explorer with JAVA2 VM 1.4.0-01	B	**3WL9 111-0AT28-0AA0**	1 unit	on req.
BDA *Plus*	Same as BDA, but with additional Ethernet interface for connection to Ethernet/Intranet/Internet	B	**3WL9 111-0AT33-0AA0**	1 unit	on req.
Connecting cable for BDA and BDA *Plus*	Connecting cable for connection of BDA and BDA *Plus* to LCD ETU trip unit of circuit-breaker SENTRON VL, length 1 m	C	**3WL9 111-0BC20-0AA0**	1 unit	on req.
Connecting cable for BDA *Plus*	Connecting cable for connection of BDA *Plus* to terminal X8 of circuit-breaker SENTRON WL. Required if neither COM 15 nor other external **Cubicle**BUS modules are available, length 2 m.	B	**3WL9 111-0BC21-0AA0**	1 unit	on req.
Parameterization software Switch ES Power	Calibration, operation, monitoring, and diagnosis of SENTRON circuit-breakers via PROFIBUS DP; runs under Windows 95, Windows 98, Windows NT, Windows 2000 and Windows XP Professional, requires additional PROFIBUS card e.g. CP5613	A	**3ZS2 311-0CC10-0YA0**	1 unit	on req.
Accessories for communication					
Factory-connected cables for CubicleBUS **modules**	0.2 m long, for connection to SENTRON WL with COM15	B	**3WL9 111-0BC04-0AA0**	1 unit	on req.
	1 m long, for connection to SENTRON WL with COM15	B	**3WL9 111-0BC02-0AA0**	1 unit	on req.
	2 m long, for connection to SENTRON WL with COM15	B	**3WL9 111-0BC03-0AA0**	1 unit	on req.
	2 m long, for connection to SENTRON WL without COM15	B	**3WL9 111-0BC05-0AA0**	1 unit	on req.
SENTRON manual for communication solutions	Detailed description of the communication functions for SENTRON circuit-breakers. Installation, connection, commissioning and description of Switch ES Power and BDA. German	X	**E20001-A201-P307**	1 unit	on req.
	English	X	**E20001-A201-P307-X-7600**	1 unit	on req.
	Free download under: www.siemens.de/energieverteilung				
Voltage transformer, 3-pole, for SENTRON WL with measurement function and measurement function *Plus*	230 V/100 V, class 0.5	B	**3WL9 111-0BB70-0AA0**	1 unit	on req.
	380–440 V/100 V, class 0.5	B	**3WL9 111-0BB63-0AA0**	1 unit	on req.
	500–690 V/100 V, class 0.5	B	**3WL9 111-0BB64-0AA0**	1 unit	on req.
Retrofitting and spare parts					
PROFIBUS retrofit kit	Retrofit kit for PROFIBUS communication including COM15, BSS and set of cables for all SENTRON WL circuit-breakers with ETU45B, ETU55B and ETU76B trip units	B	**3WL9 111-0AT12-0AA0**	1 unit	on req.
	COM15 PROFIBUS module	B	**3WL9 111-0AT15-0AA0**	1 unit	on req.
	Breaker status sensor (BSS)	B	**3WL9 111-0AT16-0AA0**	1 unit	on req.
	Measurement function, without voltage transformer	B	**3WL9 111-0AT02-0AA0**	1 unit	on req.
	Measurement function *Plus*, without voltage transformer	B	**3WL9 111-0AT03-0AA0**	1 unit	on req.

All communication components, **Cubicle**BUS modules and measurement functions are available for the ETU45B, ETU55B and ETU76B trip units.

1) Each **Cubicle**BUS module is supplied with a 0.2 m factory-fitted cable to connect the modules with each other. A longer factory-fitted cable is required for connection to the circuit-breaker.

*** This quantity or a multiple thereof can be ordered.**

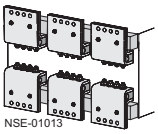
Accessories/spare parts

	Designation		DT	Order No.	PS*	Weight per PU approx.
						kg
	Main circuit connections, fixed mounting					
3WL9 111-0AL06-0AA0	Specified for each connection					
 NSE-01010	**Front-accessible main circuit connections, single hole at top**	Size I, up to 1000 A	B	**3WL9 111-0AL01-0AA0**	1 unit	on req.
		Size I, 1250 A ... 1600 A	B	**3WL9 111-0AL02-0AA0**	1 unit	on req.
		Size II, up to 2000 A	B	**3WL9 111-0AL03-0AA0**	1 unit	on req.
		Size II, up to 2500 A	B	**3WL9 111-0AL04-0AA0**	1 unit	on req.
		Size II, up to 3200 A	B	**3WL9 111-0AL05-0AA0**	1 unit	on req.
3WL9 111-0AL56-0AA0		Size III, up to 4000 A	B	**3WL9 111-0AL06-0AA0**	1 unit	on req.
	Front-accessible main circuit connections, single hole at bottom	Size I, up to 1000 A	B	**3WL9 111-0AL51-0AA0**	1 unit	on req.
		Size I, 1250 A ... 1600 A	B	**3WL9 111-0AL52-0AA0**	1 unit	on req.
		Size II, up to 2000 A	B	**3WL9 111-0AL53-0AA0**	1 unit	on req.
		Size II, up to 2500 A	B	**3WL9 111-0AL54-0AA0**	1 unit	on req.
		Size II, up to 3200 A	B	**3WL9 111-0AL55-0AA0**	1 unit	on req.
3WL9 111-0AL14-0AA0		Size III, up to 4000 A	B	**3WL9 111-0AL56-0AA0**	1 unit	on req.
 NSE-01011	**Front-accessible main circuit connections to DIN 43673, double hole at top**	Size I, up to 1000 A	B	**3WL9 111-0AL07-0AA0**	1 unit	on req.
		Size I, 1250 A ... 1600 A	B	**3WL9 111-0AL08-0AA0**	1 unit	on req.
		Size II, up to 2000 A	B	**3WL9 111-0AL11-0AA0**	1 unit	on req.
		Size II, up to 2500 A	B	**3WL9 111-0AL12-0AA0**	1 unit	on req.
		Size II, up to 3200 A	B	**3WL9 111-0AL13-0AA0**	1 unit	on req.
3WL9 111-0AL64-0AA0		Size III, up to 4000 A	B	**3WL9 111-0AL14-0AA0**	1 unit	on req.
	Front-accessible main circuit connections to DIN 43673, double hole at bottom	Size I, up to 1000 A	B	**3WL9 111-0AL57-0AA0**	1 unit	on req.
		Size I, 1250 A ... 1600 A	B	**3WL9 111-0AL58-0AA0**	1 unit	on req.
		Size II, up to 2000 A	B	**3WL9 111-0AL61-0AA0**	1 unit	on req.
		Size II, up to 2500 A	B	**3WL9 111-0AL62-0AA0**	1 unit	on req.
		Size II, up to 3200 A	B	**3WL9 111-0AL63-0AA0**	1 unit	on req.
		Size III, up to 4000 A	B	**3WL9 111-0AL64-0AA0**	1 unit	on req.
 NSE-01012	**Rear vertical main circuit connections**	Size I[1]), up to 1600 A	B	**3WL9 111-0AM01-0AA0**	1 unit	on req.
		Size II[2]), up to 3200 A	B	**3WL9 111-0AM02-0AA0**	1 unit	on req.
3WL9 111-0AM03-0AA0		Size III, up to 6300 A	B	**3WL9 111-0AM03-0AA0**	1 unit	on req.

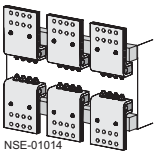
1) In the case of vertical connection size I, up to 1000 A 1 vertical connection 3WL9 111–0AM01-0AA0 is required, up to 1600 A 2 vertical connections 3WL9 111-0AM01-0AA0 are required.

2) In the case of vertical connection size II, up to 2500 A 1 vertical connection 3WL9 111–0AM02–0AA0 is required, up to 3200 A 2 vertical connections 3WL9 111-0AM02-0AA0 are required.

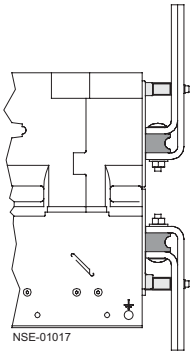
*** This quantity or a multiple thereof can be ordered.**


NSE-01013

3WL9 111-0AN06-0AA0


NSE-01014

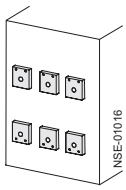
3WL9 111-0AN14-0AA0


NSE-01017

3WL9 111-0AN41-0AA0


NSE-01015

3WL9 111-0AN23-0AA0


NSE-01016

3WL9 111-0AN24-0AA0

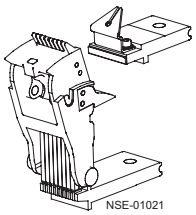
Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Main circuit connections, withdrawable version					
Specified for each connection					
Front-accessible main circuit connections, single hole top or bottom	Size I, up to 1000 A	B	**3WL9 111-0AN01-0AA0**	1 unit	on req.
	Size I, 1250 A ... 1600 A	B	**3WL9 111-0AN02-0AA0**	1 unit	on req.
	Size II, up to 2000 A	B	**3WL9 111-0AN03-0AA0**	1 unit	on req.
	Size II, up to 2500 A	B	**3WL9 111-0AN04-0AA0**	1 unit	on req.
	Size II, up to 3200 A	B	**3WL9 111-0AN05-0AA0**	1 unit	on req.
	Size III, up to 4000 A	B	**3WL9 111-0AN06-0AA0**	1 unit	on req.
Front-accessible main circuit connections to DIN 43673, double hole at top or bottom	Size I, up to 1000 A	B	**3WL9 111-0AN07-0AA0**	1 unit	on req.
	Size I, 1250 A ... 1600 A	B	**3WL9 111-0AN08-0AA0**	1 unit	on req.
	Size II, up to 2000 A	B	**3WL9 111-0AN11-0AA0**	1 unit	on req.
	Size II, up to 2500 A	B	**3WL9 111-0AN12-0AA0**	1 unit	on req.
	Size II, up to 3200 A	B	**3WL9 111-0AN13-0AA0**	1 unit	on req.
	Size III, up to 4000 A	B	**3WL9 111-0AN14-0AA0**	1 unit	on req.
Support for front and DIN connecting bars					
3-pole for 3 bars	Size I	B	**3WL9 111-0AN41-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AN42-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AN43-0AA0**	1 unit	on req.
4-pole for 4 bars	Size I	B	**3WL9 111-0AN44-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0AN45-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0AN46-0AA0**	1 unit	on req.
Rear vertical main circuit connections	Size I, up to 1000 A	B	**3WL9 111-0AN15-0AA0**	1 unit	on req.
	Size I, 1250 A ... 1600 A	B	**3WL9 111-0AN16-0AA0**	1 unit	on req.
	Size II, up to 2000 A	B	**3WL9 111-0AN17-0AA0**	1 unit	on req.
	Size II, up to 2500 A	B	**3WL9 111-0AN18-0AA0**	1 unit	on req.
	Size II, up to 3200 A	B	**3WL9 111-0AN21-0AA0**	1 unit	on req.
	Size III, up to 5000 A	B	**3WL9 111-0AN22-0AA0**	1 unit	on req.
	Size III, up to 6300 A (3 busbar connection pieces for 3-pole circuit-breakers)	B	**3WL9 111-0AN23-0AA0**	1 unit	on req.
	Size III, up to 6300 A (4 busbar connection pieces for 4-pole circuit-breakers)	B	**3WL9 111-0AN20-0AA0**	1 unit	on req.
	Size III, up to 6300 A (4 busbar connection pieces for 4-pole circuit-breakers)	B	**3WL9 111-0AN10-0AA0**	1 unit	on req.
Rear horizontal circuit connections	Size I, up to 1000 A	B	**3WL9 111-0AN32-0AA0**	1 unit	on req.
	Size I, 1250 A ... 1600 A	B	**3WL9 111-0AN33-0AA0**	1 unit	on req.
	Size II, up to 2000 A	B	**3WL9 111-0AN34-0AA0**	1 unit	on req.
	Size II, up to 2500 A	B	**3WL9 111-0AN35-0AA0**	1 unit	on req.
	Size II, up to 3200 A	B	**3WL9 111-0AN36-0AA0**	1 unit	on req.
	Size III, up to 5000 A	B	**3WL9 111-0AN37-0AA0**	1 unit	on req.
Connecting flange	Size I, up to 1000 A	B	**3WL9 111-0AN24-0AA0**	1 unit	on req.
	Size I, 1250 A ... 1600 A	B	**3WL9 111-0AN25-0AA0**	1 unit	on req.
	Size II, up to 2000 A	B	**3WL9 111-0AN26-0AA0**	1 unit	on req.
	Size II, up to 2500 A	B	**3WL9 111-0AN27-0AA0**	1 unit	on req.
	Size II, up to 3200 A	B	**3WL9 111-0AN28-0AA0**	1 unit	on req.
	Size III, up to 4000 A	B	**3WL9 111-0AN31-0AA0**	1 unit	on req.

When using front-accessible main circuit connections (withdrawable circuit-breakers) supports are required.

5

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts



3WL9 111-0AM50-0AA0

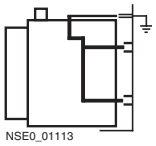
Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Conversion set					
For converting fixed-mounted circuit-breakers to withdrawable circuit-breakers Guide frames and sliding contact modules must be ordered separately.					
3-pole	Size I	B	**3WL9 111-0BC11-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0BC12-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0BC13-0AA0**	1 unit	on req.
4-pole	Size I	B	**3WL9 111-0BC14-0AA0**	1 unit	on req.
	Size II	B	**3WL9 111-0BC15-0AA0**	1 unit	on req.
	Size III	B	**3WL9 111-0BC16-0AA0**	1 unit	on req.

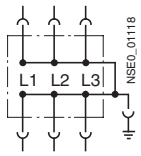
Auxiliary contacts

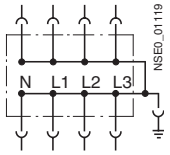
Specified for each connection (depending on the number of poles on the circuit-breaker, order 3 or 4 units)

For basic circuit-breaker type	Size	$I_{n\,max}$	Switching capacity class	Number of poles				
3WL11 06–□..□.–.... ... 10	I	up to 1000 A	N/S	3/4	B	**3WL9 111-0AM50-0AA0**	1 unit	on req.
3WL11 12–□..□.–.... ... 16	I	up to 1600 A	N/S	3/4	B	**3WL9 111-0AM51-0AA0**	1 unit	on req.
3WL12 08–□..□.–.... ... 20	II	up to 2000 A	N/S	3	B	**3WL9 111-0AM52-0AA0**	1 unit	on req.
3WL12 25–□..□.–....	II	up to 2500 A	N/S	3	B	**3WL9 111-0AM54-0AA0**	1 unit	on req.
3WL12 32–□..□.–....	II	up to 3200 A	N/S	3	B	**3WL9 111-0AM56-0AA0**	1 unit	on req.
3WL12 08–□..□.–.... ... 20	II	up to 2000 A	N/S/H	4	B	**3WL9 111-0AM53-0AA0**	1 unit	on req.
3WL12 25–□..□.–....	II	up to 2500 A	N/S/H	4	B	**3WL9 111-0AM55-0AA0**	1 unit	on req.
3WL12 32–□..□.–....	II	up to 3200 A	N/S/H	4	B	**3WL9 111-0AM57-0AA0**	1 unit	on req.
3WL12 08–□..□.–.... ... 20	II	up to 2000 A	H	3/4	B	**3WL9 111-0AM53-0AA0**	1 unit	on req.
3WL12 25–□..□.–....	II	up to 2500 A	H	3/4	B	**3WL9 111-0AM55-0AA0**	1 unit	on req.
3WL12 32–□..□.–....	II	up to 3200 A	H	3/4	B	**3WL9 111-0AM57-0AA0**	1 unit	on req.
3WL13 40–□..□.–.... ... 50	III	up to 5000 A	H	3/4	B	**3WL9 111-0AM58-0AA0**	1 unit	on req.
3WL13 63–□..□.–....	III	up to 6300 A	H	3/4	B	**3WL9 111-0AM60-0AA0**	1 unit	on req.

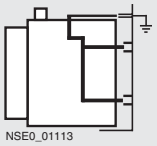
*** This quantity or a multiple thereof can be ordered.**

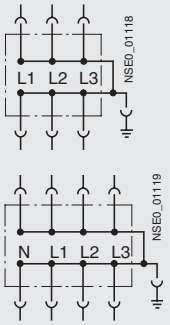
Circuit diagram in as-supplied state	Version	Size	DT	Order No.	PS*	Weight per PU approx.
						kg
Withdrawable short-circuit, ground, and bridging units						
 NSE0_01113 (as-supplied state)	Top and bottom parts of system are short-circuited and grounded	3-pole				
		up to 1600 A	I	C	**3WL9 111-0BD01-0AA0**	1 unit on req.
		up to 3200 A	II	C	**3WL9 111-0BD03-0AA0**	1 unit on req.
		up to 6300 A	III	C	**3WL9 111-0BD05-0AA0**	1 unit on req.
		4-pole				
		up to 1600 A	I	C	**3WL9 111-0BD02-0AA0**	1 unit on req.
		up to 3200 A	II	C	**3WL9 111-0BD04-0AA0**	1 unit on req.
		up to 6300 A	III	C	**3WL9 111-0BD06-0AA0**	1 unit on req.



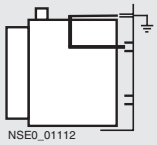


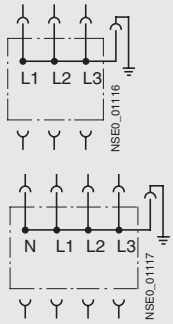
Conversion for the following applications is possible



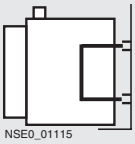


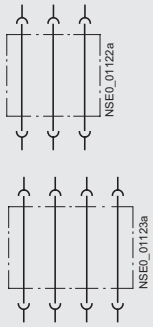
Top and bottom part of system are short-circuited and grounded (as-supplied state)



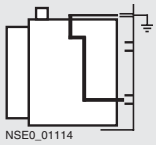


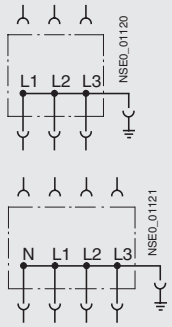
Top and bottom part of system are short-circuited and grounded, incoming supply from below





Withdrawable bridging unit, incoming and outgoing side are permanently connected to each other





Bottom part of system is short-circuited and grounded, incoming supply from above

*** This quantity or a multiple thereof can be ordered.**

Project planning aids

Overview

Structure of the Order No.

Example

3WL1 2 2 0 – 4 N G 3 1 – 1 F A 2

5th position:	Size	Size II
6th and 7th positions:	Max. rated circuit-breaker current $I_{n\,max}$	I_u and $I_{n\,max}$ = 2000 A
8th position:	Switching capacity class	High switching capacity "H": 100 kA
9th position:	Electronic trip units	ETU76 with pixel graphics display ...
10th position:	Electronic trip unit supplement	... with ground-fault protection
11th position:	Number of poles	3-pole
12th position:	Installation type	Fixed-mounted design, main terminals or vertical
13th position:	Operating mechanism	Manual operating mechanism with mechanical closing
14th position:	1st auxiliary switch	Shunt release AC 50/60 Hz 110 V
15th position:	2nd auxiliary switch	Without 2nd auxiliary release
16th position:	Auxiliary switches	2 NO + 2 NC

An important prerequisite for computer-based order processing is that order numbers must be structured according to standardized criteria.

They are used as an unambiguous means of communication for various purposes:

- Offer processing
  Selection and configuration
- Order processing
  Ordering
  Order confirmation
  Handling warehouse products
  Order processing at the supply bases
  Delivery and shipment
- Reporting and planning
- Service and warranty

The standardized structure ensures that only one Order No. has to be administered for one device.

This saves time and effort during planning, project engineering, ordering and stock keeping, and consequently above all it saves costs.

The example opposite explains the various positions within an order number.

Accessories: with first order (components are already mounted)

Example

3WL1 2 1 6 – 4 J G 3 1 – 1 F A 3 – 3 **F 0 2**

–Z with order code

Communication connection **3** **F 0 2**
"Standard" + Breaker Status Sensor (BSS)
+ communication module COM15 for connection to PROFIBUS DP

Additional accessory components can be ordered ready-mounted.

These supplements are identified by **"–Z"**.

Even with additional components, one Order No. is sufficient.

Accessories: for retrofitting (components for subsequent fitting)

Example

3WL9 1 1 1 – 0 B A 2 1 – 0 A A 0

Protective cover for mechanical ON/OFF without lock

Additional accessories which are not intended to be ready-mounted in the factory, such as spare parts for storage, can also be ordered separately from the circuit-breaker.

Accessories for retrofitting are identified by the item No. 3WL9.

Documentation

Operator's Guide	German/English	Order No.	**3ZX18 12–0WL00–0AN0**	Delivery time C
complete set	French/Italian	Order No.	**3ZX18 12–0WL00–0AJ0**	on request
	Spanish/Portuguese	Order No.	**3ZX18 12–0WL00–0AL0**	on request
Manual	German	Order No.	**E20001–A201–P307**	
Communication	English	Order No.	**E20001–A201–P307–X–7600**	

Free download of the documentation from www.siemens.de/energieverteilung

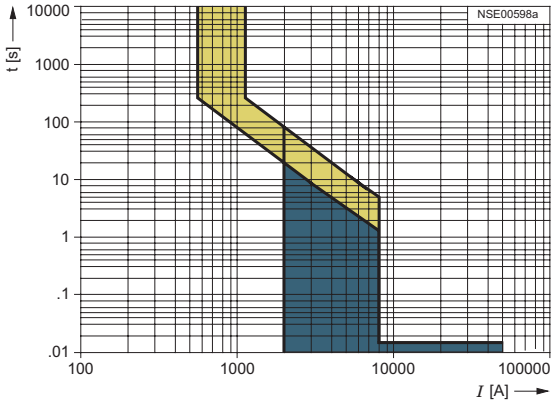
Further information

Up-to-date information on the Internet at: www.siemens.de/sentron

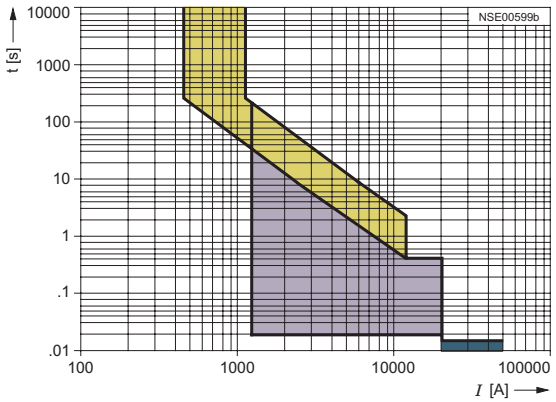
Characteristics

Every electronic trip unit type and every setting has its own characteristic. Only a selection is shown in the following. The characteristics show the largest and smallest setting range of SENTRON WL circuit-breakers with 1000 A rated current at 440 V rated voltage with various trip units. In order to obtain a complete tripping characteristic, the relevant parts of the characteristics have to be combined. The characteristics show the behavior of the electronic trip unit when it is activated by a current that is already flowing before the tripping operation. If the overcurrent tripping occurs immediately after switch on and the electronic trip unit is therefore not yet enabled, the opening time is extended, depending on the level of the overcurrent by up to 15 ms. In order to determine the total break-times of the circuit-breakers, approximately 15 ms must be added to the opening times shown for the arcing time. Refer to the following table for tolerances.

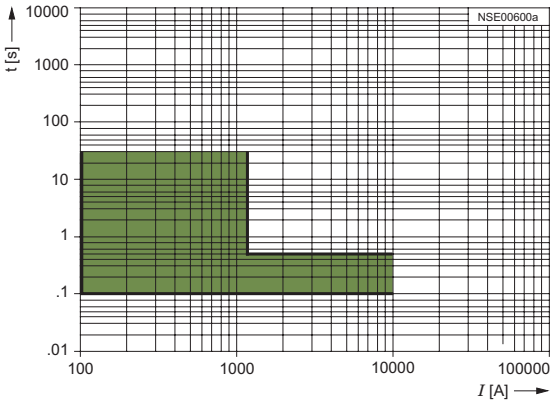
The characteristics shown apply to ambient temperatures at the circuit-breaker between –5 and +55 °C. The trip unit can be operated at ambient temperatures of –20 to +70 °C. An extended tolerance band can apply at these temperatures.



SENTRON WL circuit-breaker with I_n= 1000 A and electronic trip unit **ETU15B**



SENTRON WL circuit-breaker with I_n= 1000 A and electronic trip unit **ETU25B** or **ETU27B** (tripping characteristic "ground-fault protection" **G** for ETU27B see below)



SENTRON WL circuit-breaker with I_n= 1000 A and electronic trip unit **ETU27B** (ground-fault protection **G**)

- Inverse-time delayed overload range **L** I^2t = constant
- Overlapping of the inverse-time delayed overload range **L** of I^2t and I^4t
- Inverse-time delayed overload range **L** I^4t = constant
- Short-time delayed short-circuit range **S**
- Instantaneous short-circuit range **I**
- Ground-fault protection range **G**

Tolerances for the operating currents
L: tripping operations between 1.05 and 1.2 x I_R
S: –0 %, +20 %
I: –0 %, +20 %
G: –0 %, +20 %

Tolerances for the tripping times
L: –20 %, +0 %
S: –0 %, +60 ms
I: <50 ms
G: –0 ms, +60 ms

5

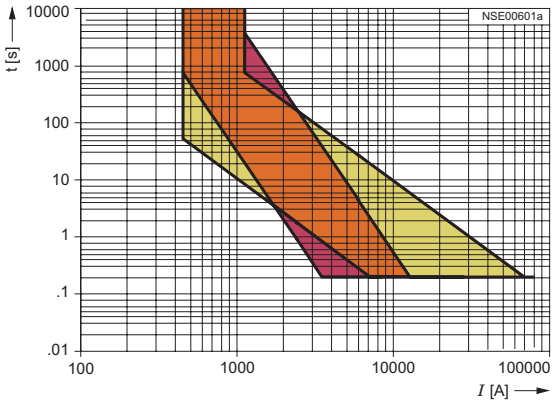
Project planning aids

Every electronic trip unit type and every setting has its own characteristic. Only a selection is shown in the following. The characteristics each show the largest and smallest setting range of SENTRON WL circuit-breakers with 1000 A rated current at 440 V rated voltage with various trip units.

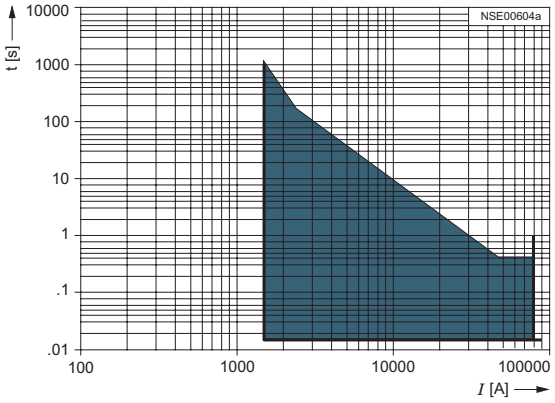
In order to obtain a complete tripping characteristic the relevant parts of the characteristics have to be combined.

The characteristics show the behavior of the electronic trip unit when it is activated by a current that is already flowing before the tripping operation. If the overcurrent tripping occurs immediately after switch on and the electronic trip unit is therefore not yet enabled, the opening time is extended, depending on the level of the overcurrent by up to 15 ms. In order to determine the total break-times of the circuit-breakers, approximately 15 ms must be added to the opening times shown for the arcing time. Refer to the following table for tolerances.

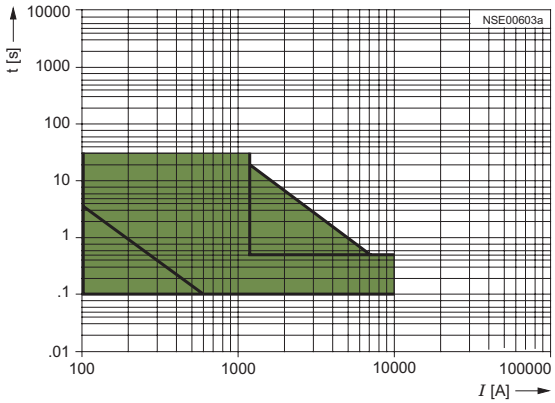
The characteristics shown apply to ambient temperatures at the circuit-breaker between –5 and +55 °C. The trip unit can be operated at ambient temperatures of –20 to +70 °C. An extended tolerance band can apply at these temperatures.



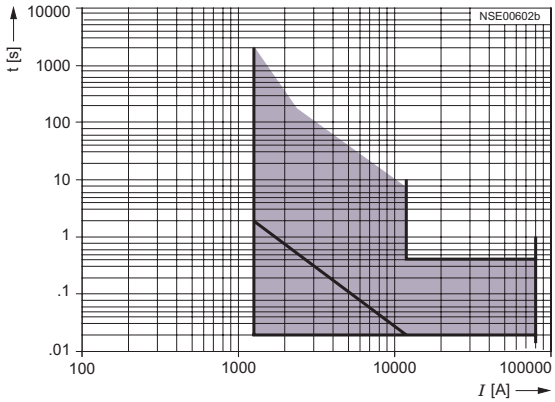
SENTRON WL circuit-breaker with I_n = 1000 A and electronic trip unit **ETU45B** or **ETU55B**
Inverse-time delayed overload range **L**



SENTRON WL circuit-breaker with I_n = 1000 A and electronic trip unit **ETU45B** or **ETU55B**
Instantaneous short-circuit range **I**



SENTRON WL circuit-breaker with I_n = 1000 A and electronic trip unit **ETU45B** or **ETU55B**
Ground-fault protection range **G**



SENTRON WL circuit-breaker with I_n = 1000 A and electronic trip unit **ETU45B** or **ETU55B**
Short-time delayed short-circuit range **S**

Inverse-time delayed overload range **L**
I^2t = constant

Overlapping of the inverse-time delayed overload range **L** of I^2t and I^4t

Inverse-time delayed overload range **L**
I^4t = constant

Short-time delayed short-circuit range **S**

Instantaneous short-circuit range **I**

Ground-fault protection range **G**

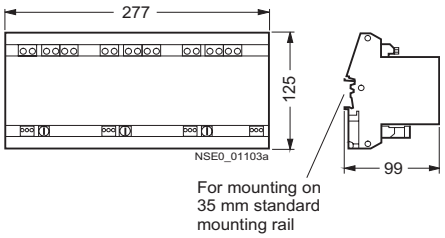
Further characteristics are shown in the manual and the planning and configuring tool SIMARIS deSign, or ask your Siemens contact person.

Tolerances for the operating currents
L: tripping operations between 1.05 and 1.2 × I_R
S: –0 %, +20 %
I: –0 %, +20 %
G: –0 %, +20 %

Tolerances for the tripping times
L: –20 %, +0 %
S: –0 %, +60 ms
I: <50 ms
G: –0 ms, +60 ms

Dimension drawings

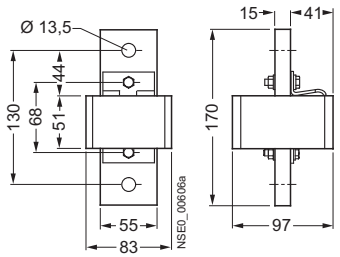
Voltage transformer for SENTRON WL with measurement function and measurement function Plus



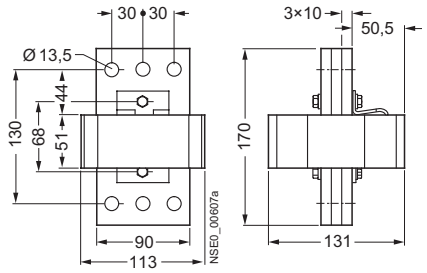
Current transformers for overload protection in the neutral conductor

External transformer for neutral conductors with copper connection pieces

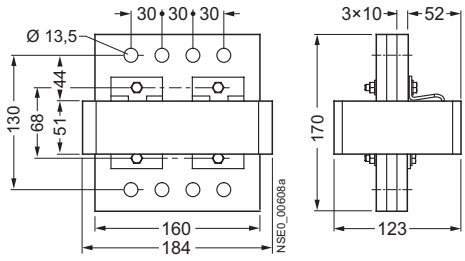
Size I, 3WL9 111-0AA31-0AA0



Size II, 3WL9 111-0AA32-0AA0



Size III, 3WL9 111-0AA33-0AA0



■ Dimensions for option with door interlocking

1) Mounting surface

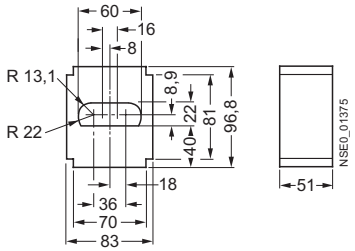
2) Center SENTRON WL operator's panel

3) 8 borings for mounting of door sealing frames

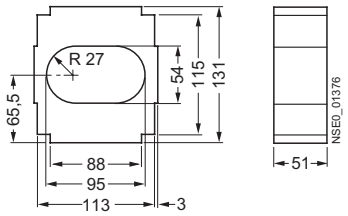
4) 3 borings for mounting of door interlockings

External transformer for neutral conductors (without copper connection pieces)

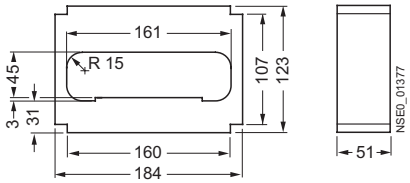
Size I, 3WL9 111-0AA21-0AA0



Size II, 3WL9 111-0AA22-0AA0

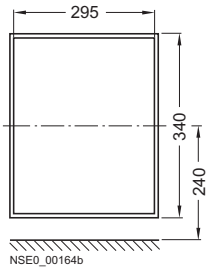


Size III, 3WL9 111-0AA23-0AA0



Door cutout for operator's panel

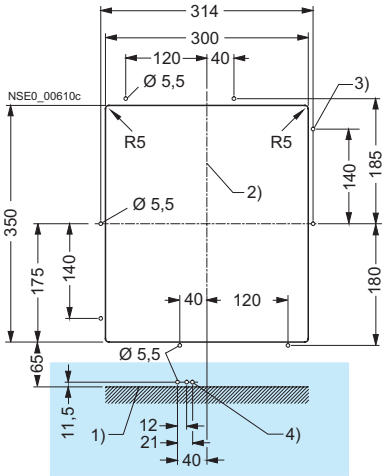
Door cutout with edge protection



Cutout after mounting of edge protection

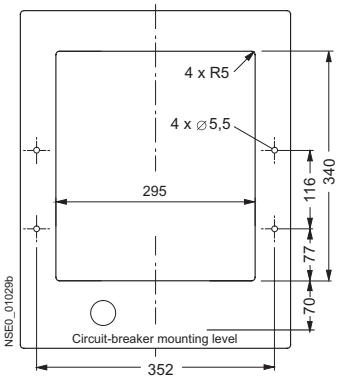
Door cutout for operator's panel when using door sealing frame

Option with/without door sealing

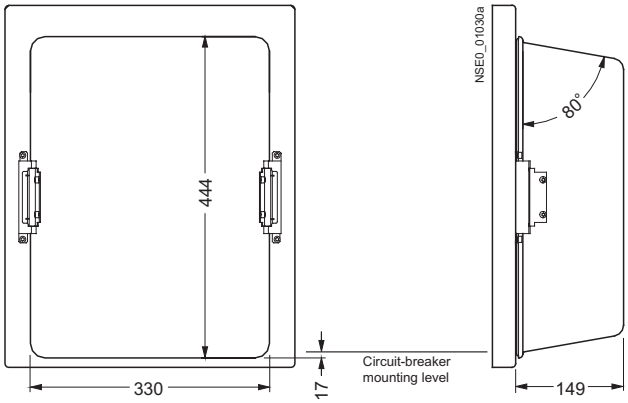


Project planning aids

Door cut-out for operator panel using the protection cover IP55



Protection cover IP55



Safety distances to earthed parts

Nominal rated voltage V/AC	above auxiliary connector mm	lateral (each) mm	behind mm
Size I, fixed-mounted design			
440	75[1]	0	0
690	75[1]	0	0
Size I, withdrawable design, without arc chute cover			
440	50[1]	0	0
690	50[1]	0	0
Size I, withdrawable design, with arc chute cover			
440	0	0[2]	0
690	0	0[2]	0
Size II, fixed-mounted design			
440	75[1]	0	0
690	75[1]	0	0
1000	180	0	0
Size II, withdrawable design, without arc chute cover			
440	50[1]	0	0
690	50[1]	0	0
1000	100	0	0
Size II, withdrawable design, with arc chute cover			
440	0	0[2]	0
690	0	0[2]	0
Size III, fixed-mounted design			
440	75[1]	0	0
690	75[1]	0	0
1000	180	0	0
Size III, withdrawable design, without arc chute cover			
440	50[1]	0	0
690	50[1]	0	0
1000	100	0	0
Size III, withdrawable design, with arc chute cover			
440	0	0[2]	0
690	0	0[2]	0

Safety distances to live parts

Nominal rated voltage V/AC	above auxiliary connector mm	lateral (each) mm	behind mm
Size I, fixed-mounted design			
440	150	20	20
690	300	50	125
Size I, withdrawable design, without arc chute cover			
440	150	20	14
690	300	50	14
Size I, withdrawable design, with arc chute cover			
440	14	100	14
690	14	100	14
Size II, fixed-mounted design			
440	250	50	20
690	600	100	140
1000	430	100	125
Size II, withdrawable design, without arc chute cover			
440	250	50	14
690	600	100	30
1000	350	100	14
Size II, withdrawable design, with arc chute cover			
440	14	50	14
690	14	225	14
Size III, fixed-mounted design			
440	75	20	20
690	500	100	125
1000	430	100	125
Size III, withdrawable design, without arc chute cover			
440	50	20	14
690	500	100	14
1000	350	100	14
Size III, withdrawable design, with arc chute cover			
440	14	50	14
690	14	200	14

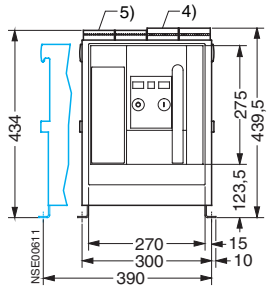
1) Value for plate; 0 mm for strut und grid pattern

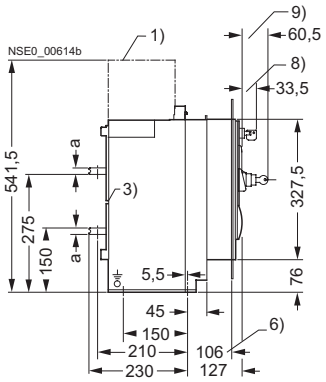
2) 40 mm (Size II: 70 mm) for plates, which hide lateral apertures in the withdrawable frame

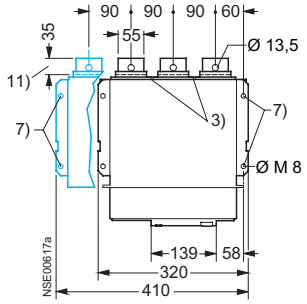
All Safety distances above circuit-breaker refer to the upper edge of auxiliary plug and not to the upper edge of the arc chute! See dimension drawings on pages 5/61 to 5/66, parts 4 and 5.

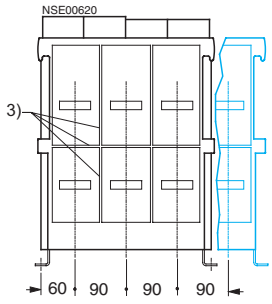
Size I, up to 1600 A, fixed-mounted design, 3- and 4-pole

Standard design
Horizontal connection

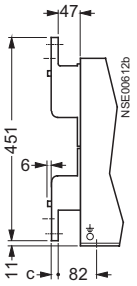


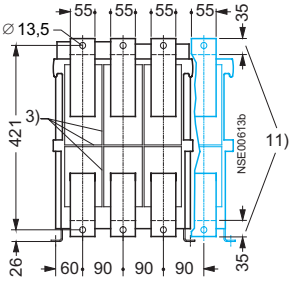




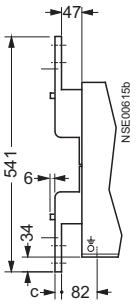


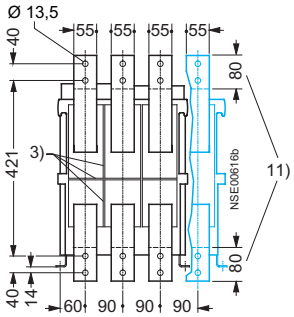
Optional connection variants
Front connection (single)



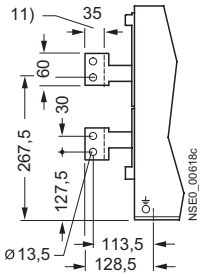


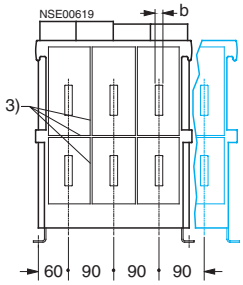
Front connection (double hole)
to DIN 43673





Vertical connection





4-pole design

1) Mounting space for removal of the arc chutes.
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with screw-type terminals (SIGUT).
5) Auxiliary connector with screwless connection system (tension spring).
6) Dimension to inside surface of the closed cabinet door.
7) Fixing points for mounting the circuit-breaker in the system.
8) "Secure OFF" locking device.
9) Key operation.
11) Termination surface.

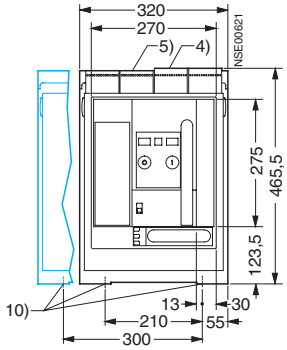
Rated circuit-breaker current A	a	b	c
up to 1000	10	10	10
1250–1600	15	15	15

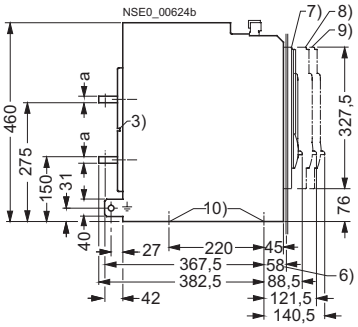
Safety clearances to grounded parts as well as to live parts, see page 5/60.

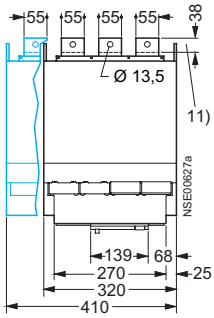
Project planning aids

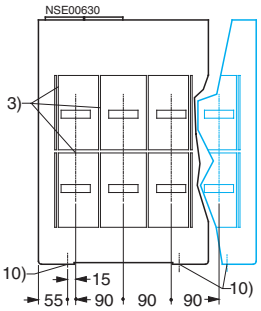
Size I, up to 1600 A, withdrawable design, 3- and 4-pole

Standard design
Horizontal connection

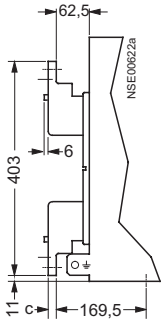


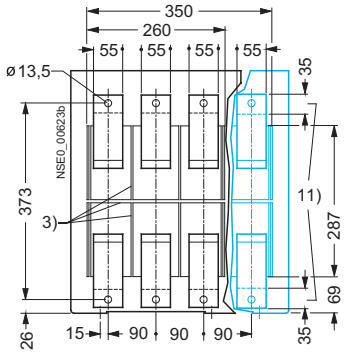




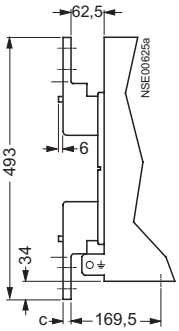


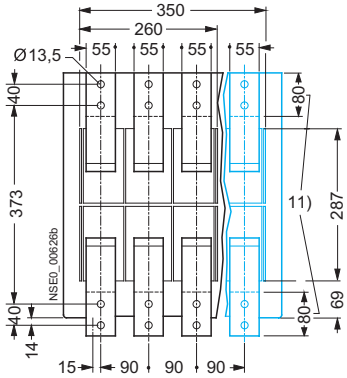
Optional connection variants
Front connection (single)



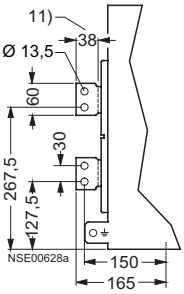


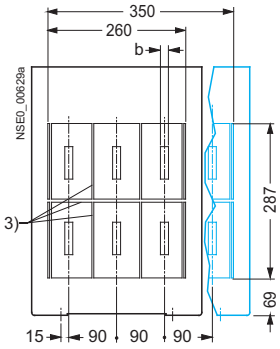
Front connection (double hole)
to DIN 43673



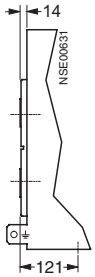


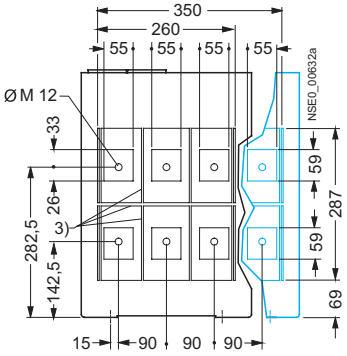
Vertical connection





Flange connection





4-pole design

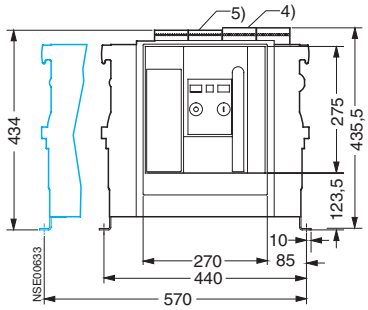
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with screw-type terminals (SIGUT).
5) Auxiliary connector with screwless connection system (tension spring).
6) Dimension to inside surface of the closed cabinet door.
7) SENTRON WL in connected position.
8) SENTRON WL in test position.
9) SENTRON WL in disconnected position.
10) Fixing holes 10 mm.
11) Terminal face.

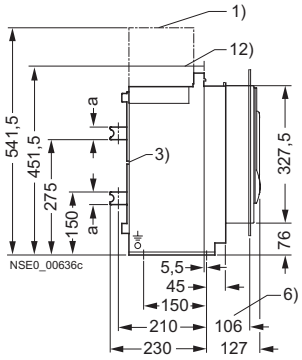
Rated circuit-breaker current A	a	b	c
up to 1000	10	10	10
1250–1600	15	15	15

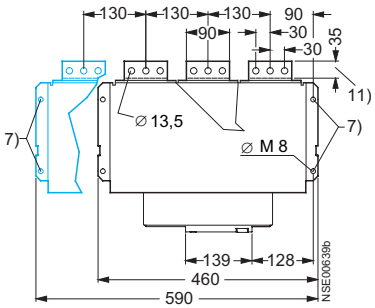
Safety clearances to grounded parts as well as to live parts, see page 5/60.

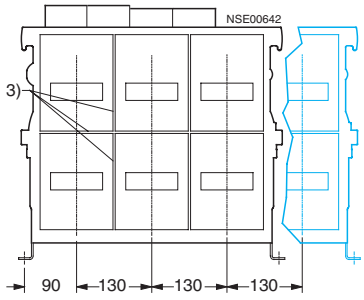
Size II, up to 3200 A, fixed-mounted design, 3- and 4-pole

Standard design
Horizontal connection

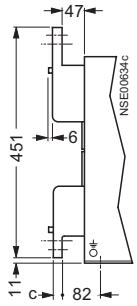


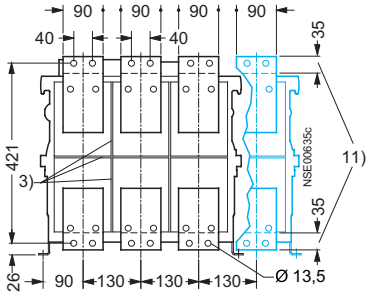




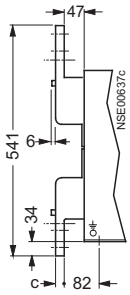


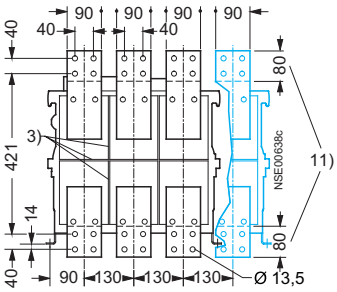
Optional connection variants
Front connection (single)



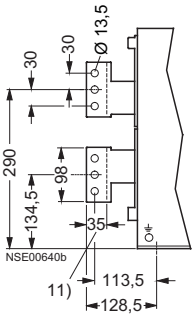


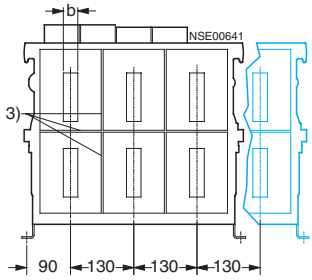
Front connection (double hole)
to DIN 43673





Vertical connection





4-pole design

1) Mounting space for removal of the arc chutes.
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with SIGUT screw-type terminals.
5) Auxiliary connector with tension spring connection.
6) Dimension to inside surface of the closed cabinet door.
7) Fixing points for mounting the circuit-breaker in the system.
11) Terminal face.
12) Top edge of circuit-breaker – only AC 1000 V design.
* Clearance to grounded parts.

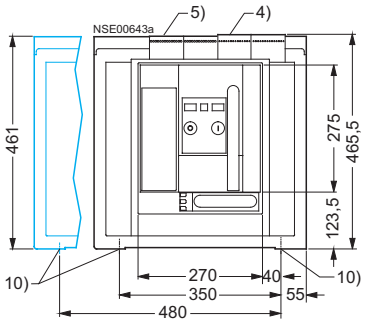
Rated circuit-breaker current A	a	b	c
up to 2000	10	10	10
2500	15	15	20
3200	30	30	20

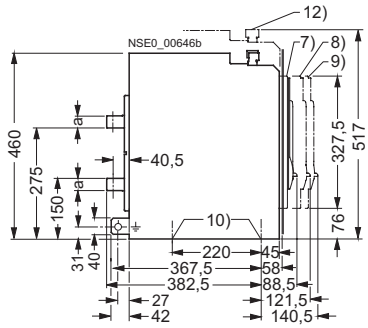
Safety clearances to grounded parts as well as to live parts, see page 5/60.

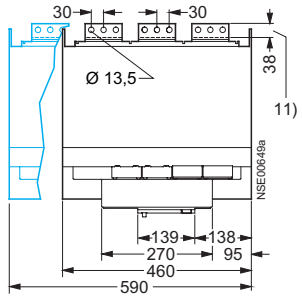
Project planning aids

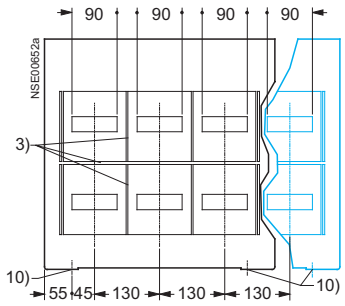
Size II, up to 3200 A, withdrawable design, 3- and 4-pole

Standard design
Horizontal connection

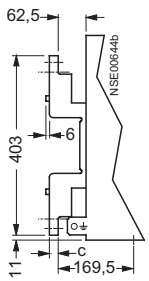


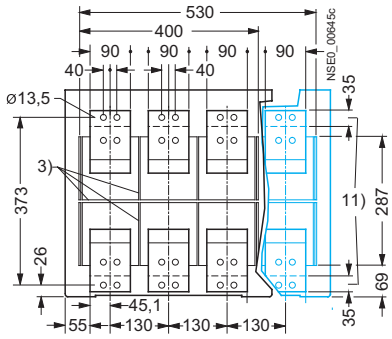




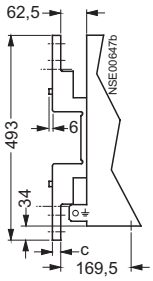


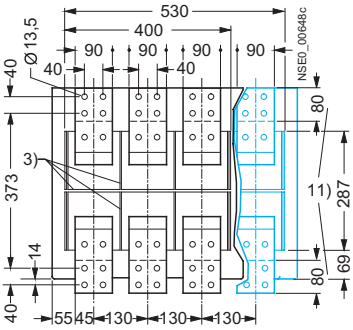
Optional connection variants
Front connection (single)



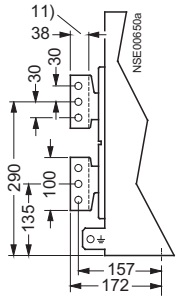


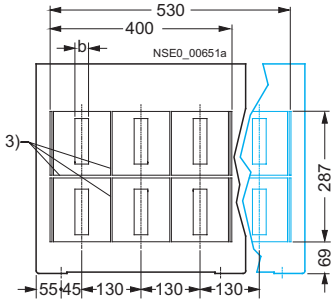
Front connection (double hole)
to DIN 43673



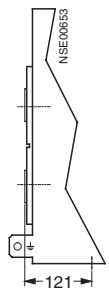


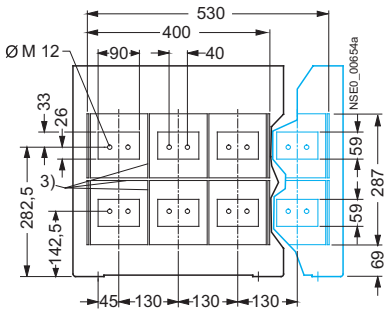
Vertical connection





Flange connection





4-pole design

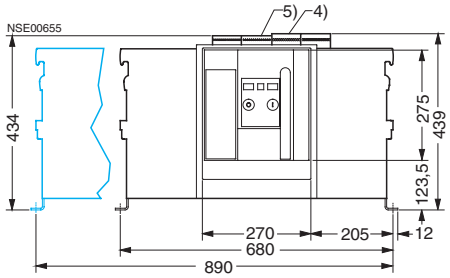
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with SIGUT screw-type terminals.
5) Auxiliary connector with tension spring connection.
7) SENTRON WL in connected position.
8) SENTRON WL in test position.
9) SENTRON WL in disconnected position.
10) Fixing holes, diameter 10 mm.
11) Terminal face.
12) Top edge of circuit-breaker – only AC 1000 V design.
* Clearance to grounded parts.

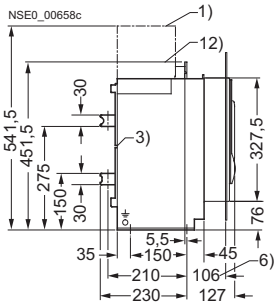
Rated circuit-breaker current A	a	b	c
up to 2000	10	10	10
2500	15	15	20
3200	30	30	20

Safety clearances to grounded parts as well as to live parts, see page 5/60.

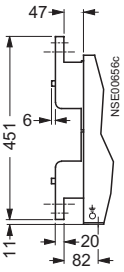
Size III, up to 6300 A, fixed-mounted design, 3- and 4-pole

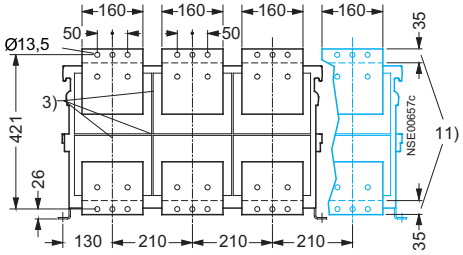
Standard design
Horizontal connection



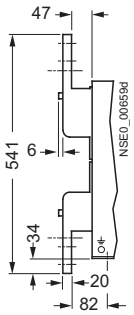


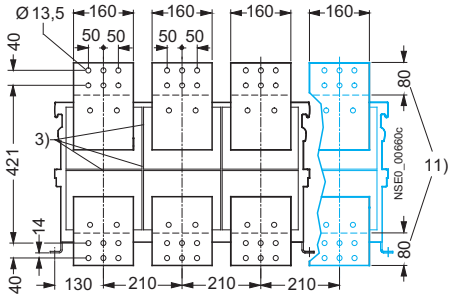
Optional connection variants
Front connection (single)



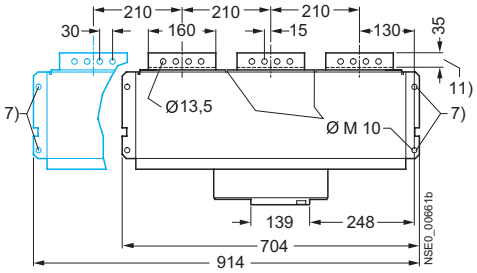


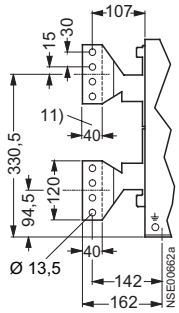
Front connection (double hole)
to DIN 43673

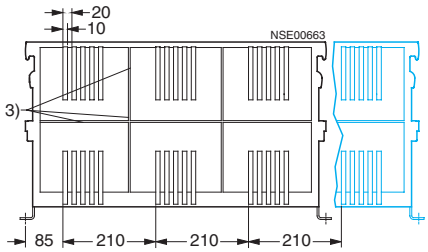


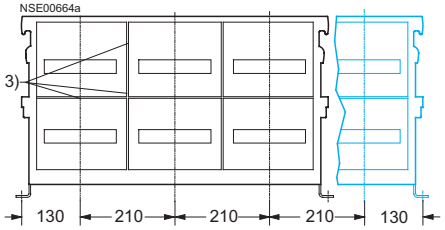


Vertical connection









4-pole design

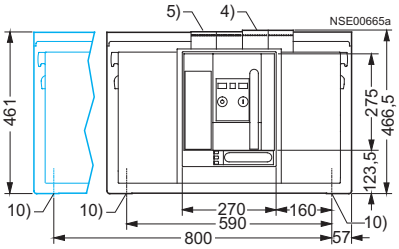
1) Mounting space for removal of the arc chutes.
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with SIGUT screw-type terminals.
5) Auxiliary connector with tension spring connection.
6) Dimension to inside surface of the closed cabinet door.
7) Fixing points for mounting the circuit-breaker in the system.
11) Terminal face.
12) Top edge of circuit-breaker – only AC 1000 V design.
* Clearance to grounded parts.

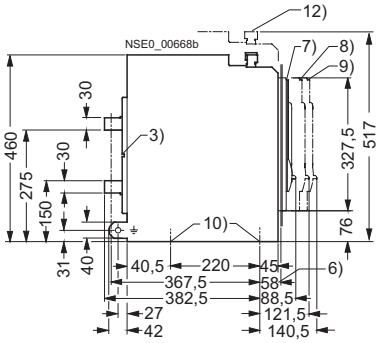
Safety clearances to grounded parts as well as to live parts, see page 5/60.

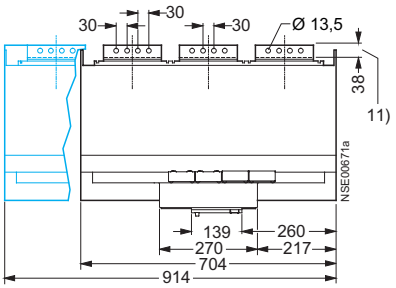
Project planning aids

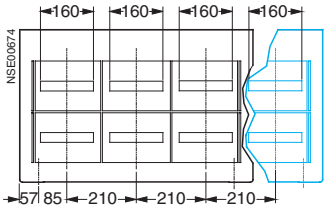
Size III, up to 6300 A, withdrawable design, 3- and 4-pole

Standard design
Horizontal connection, up to 5000 A

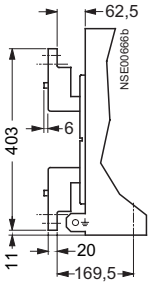


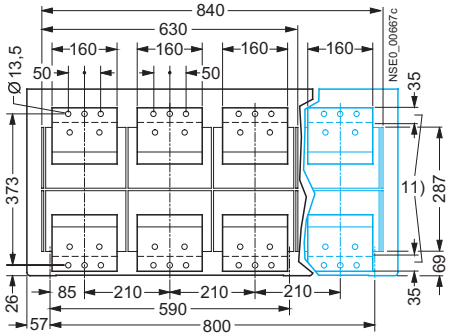




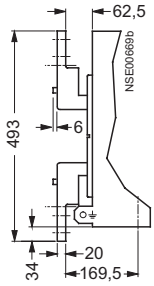


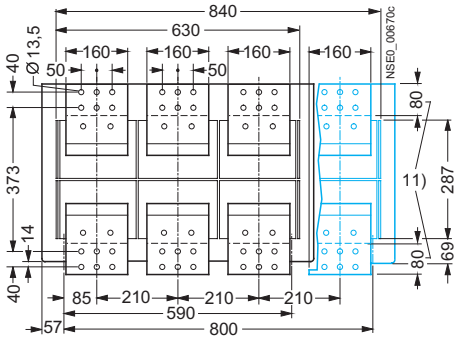
Optional connection variants
Front connection (single hole), up to 4000 A



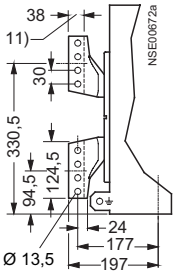


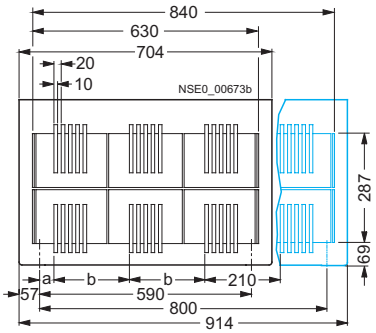
Front connection (double hole) to DIN 43673, up to 4000 A



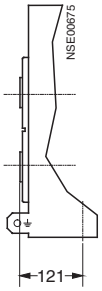


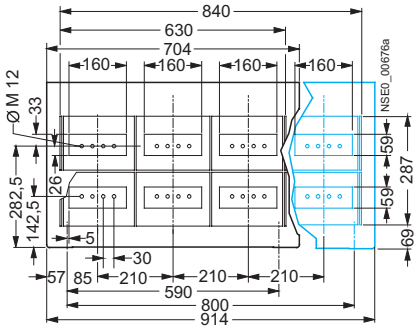
Vertical connection, up to 6300 A





Flange connection, up to 4000 A





4-pole design

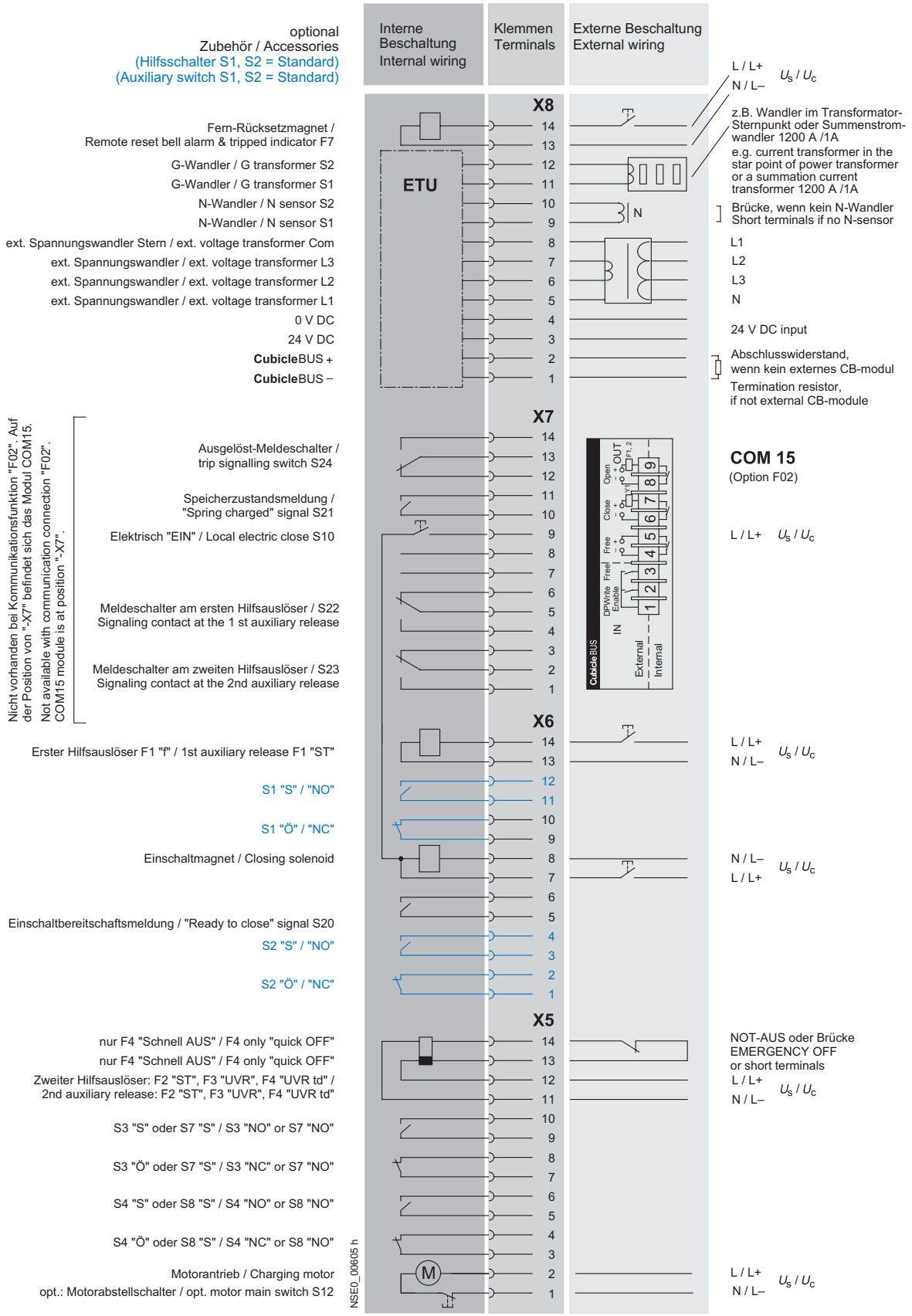
3) Slots (4 mm wide, 5 mm deep) for supporting phase barriers in the system.
4) Auxiliary connector with SIGUT screw-type terminals.
5) Auxiliary connector with tension spring connection.
6) Dimension to inside surface of the closed cabinet door.
7) SENTRON WL in connected position.
8) SENTRON WL in test position.
9) SENTRON WL in disconnected position.
10) Fixing holes, diameter 10 mm.
11) Terminal face.
12) Top edge of circuit-breaker – only AC 1000 V design.
* Clearance to grounded parts.

Rated circuit-breaker current A	a	b
4000	40	210
5000	40	210
6300	5	245

Safety clearances to grounded parts as well as to live parts, see page 5/60.

Circuit diagrams

Terminal assignment diagram



General data

Technical specifications

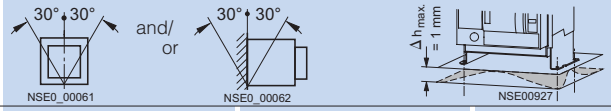
Short-circuit breaking capacity

Size		I	II	III
Type		**3WL51**	**3WL52**	**3WL53**
Switching capacity class		**S**	**H**	**H**
up to AC 480 V	kA	65	100	100
up to AC 600 V Y/347 V	kA	50	–	85
up to AC 600 V	kA	–	85	–

Rated short-time withstand current

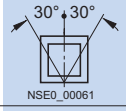
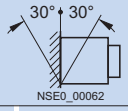
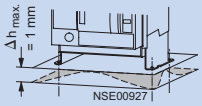
Size		I	II	III
Type		**3WL51**	**3WL52**	**3WL53**
Switching capacity class		**S**	**H**	**H**
at max. delay time t_{sd} = 0.4 s	kA	65	85	85

Further technical specifications

Size			I		II
Type			**3WL51 10**	**3WL51 16**	**3WL52 20**
Rated current I_n at 40 °C, at 50/60 Hz Main conductor		A	up to 1000	1600	2000
Rated voltage U_e at 50/60 Hz		AC V	600 Y/347	600 Y/347	600
Ambient temperature of the system		°C	–25/+40	–25/+40	–25/+40
Power loss at rated current with AC symmetrical load Fixed-mounted circuit-breaker Withdrawable circuit-breaker		 W W	 100 195	 150 350	 180 320
Operating times Make-time Break-time		 ms ms	 35 38	 35 38	 35 34
Electr. make-time (via activation solenoid)[1]) Electr. break-time (via shunt release)		ms ms	80 73	80 73	100 73
Electr. break-time (instantaneous undervoltage release) Break-time due to ETU, instantaneous short-circuit release		ms ms	73 50	73 50	73 50
Service life mechanical (without maintenance) mechanical (with maintenance)[2]) electrical (without maintenance)		 Operating cycles Operating cycles Operating cycles	 10000 20000 4000	 10000 20000 4000	 10000 15000 4000
Operating frequency		1/h	60	60	60
Minimum interval between tripping operation by electronic trip unit and next making operation of the circuit-breaker (only with autom. mechanical resetting of the lockout device)		ms	80	80	80
Minimum dimension Circuit-breaker section (width × height × depth)	3-pole	mm	400 × 460 × 380	400 × 460 × 380	500 × 460 × 380
Service position					
Main conductor minimum cross-sections		Qty. mm² or inches	2 6.4 × 76.2 1/4 × 3	2 6.4 × 76.2 1/4 × 3	2 6.4 × 102 1/4 × 4
Auxiliary conductors (Cu) Max. no. of auxiliary conductors × cross-section (solid/stranded)	Standard connection = strain-relief clamp without end sleeve with end sleeve to DIN 46228 Part 2 with twin end sleeve Optional connection = tension spring without end sleeve with end sleeve to DIN 46228 Part 2		2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16); 1 × 2.5 mm² (AWG 14) 1 × 0.5 mm² (AWG 20) ... 1 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 2.5 mm² (AWG 14) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16)		
Weights 3-pole	Fixed-mounted circuit-breaker Withdrawable circuit-breaker Guide frame	kg kg kg	43 45 25	43 45 25	56 60 31

1) Make-time via activation solenoid for synchronization purposes (short-time excited) 85 ms.

2) Maintenance means: replace the main contact elements and arc chutes (see Operator's Guide).

Size			**II**		**III**	
Type			**3WL52 25**	**3WL52 30**	**3WL53 40**	**3WL53 50**
Rated current I_n at 40 °C, at 50/60 Hz Main conductor		A	2500	3000	4000	5000
Rated voltage U_e at 50/60 Hz		AC V	600	600	up to 600 Y/347	up to 600 Y/347
Ambient temperature of the system		°C	–25/+40	–25/+40	–25/+40	–25/+40
Power loss at rated current with AC symmetrical load Fixed-mounted circuit-breaker Withdrawable circuit-breaker		 W W	 270 520	 410 710	 520 810	 630 1050
Operating times Make-time Break-time Electr. make-time (via activation solenoid)[1]) Electr. break-time (via shunt release) Electr. break-time (instantaneous undervoltage release) Break-time due to ETU, instantaneous short-circuit release		 ms ms ms ms ms ms	 35 34 100 73 73 50	 35 34 100 73 73 50	 35 34 100 73 73 50	 35 34 100 73 73 50
Service life mechanical (without maintenance) mechanical (with maintenance)[2]) electrical (without maintenance)		 Operating cycles Operating cycles Operating cycles	 10000 15000 4000	 10000 15000 4000	 5000 10000 1000	 5000 10000 1000
Operating frequency		1/h	60	60	60	60
Minimum interval between tripping operation by electronic trip unit and next making operation of the circuit-breaker (only with autom. mechanical resetting of the lockout device)		ms	80	80	80	80
Minimum dimension Circuit-breaker section (width × height × depth)	3-pole	mm	500 × 460 × 380	500 × 460 × 380	800 × 460 × 380	800 × 460 × 380
Service position			 NSE0_00061 and/or  NSE0_00062		 NSE00927	
Main conductor minimum cross-sections		Qty. mm² or inches	2 6.4 × 127 1/4 × 5	4 6.4 × 63.5 1/4 × 2–1/2	4 6.4 × 102 1/4 × 4	4 10 × 120 1/4 × 5[3])	4 10 × 120 1/4 × 5[3])
Auxiliary conductors (Cu) Max. no. of auxiliary conductors × cross-section (solid/stranded)	Standard connection = strain-relief clamp without end sleeve with end sleeve to DIN 46228 T.2 with twin end sleeve optional connection = tension spring without end sleeve with end sleeve to DIN 46228 T.2		 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16); 1 × 2.5 mm² (AWG 14) 1 × 0.5 mm² (AWG 20) ... 1 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 2.5 mm² (AWG 14) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16)			
Weights 3-pole	Fixed-mounted circuit-breaker Withdrawable circuit-breaker Guide frame	kg kg kg	59 63 39	64 68 45	82 88 60	82 88 60

1) Make-time via activation solenoid for synchronization purposes (short-time excited) 50 ms.

2) Maintenance means: replace the main contact elements and arc chutes (see Operator's Guide).

3) 1/4 × 5 for fixed-mounted circuit-breakers on request.

General data

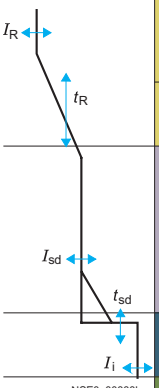
Size					**I ... III**
Manual operating mechanism with mechanical closing					
Closing/ charging stored-energy feature	Max. force required to operate the hand lever Required number of strokes on the hand lever			N	≤ 230 9
Manual operating mechanism with mechanical and electrical closing					
Charging stored-energy feature					
Closing solenoid (CC)	Operating range				85 ... 110 %
	Extended operating range for battery operation		for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		70 ... 126 %
	Power input		AC/DC	VA/W	15/15
	Minimum command duration rated voltage for the closing solenoid			ms	60
	Short-circuit protection		Fuse		1 A
Manual/motorized operating mechanism with mechanical and electrical closing					
Manual operating mechanism					
Motor	Operating range				85 ... 110 %
	Extended operating range for battery operation		for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		70 ... 126 %
	Power input to motor		AC/DC	VA/W	110/110
	Time required to charge the stored-energy mechanism at 1 × rated voltage			S	≤ 10
Closing solenoid					
For motor and closing solenoid	Short-circuit protection Motor and closing solenoid for the same rated control supply voltages		Fuse		2 A
	Smallest permissible fuse		at 24–30 V at 48–60 V at 110–127 V at 220–250 V		2 A 2 A 1 A 1 A
Electronic trip unit signals					
Measuring accuracy of the electronic trip unit					protection functions to UL 489 Current indication ≤ 5 %; Measurement functions base quantities ≤ 1 %; Measurement functions derived quantities ≤ 4 %
Auxiliary releases					
Shunt release (ST) (F1, F2)/ Closing solenoid	For continuous command (100 % ON-time), locks out on momentary-contact commands	Operating value	Pickup		> 0.7 × rated voltage (circuit-breaker is tripped)
		Operating range			85 ... 110 %
		Extended operating range for battery operation	for DC 24 V, DC 48 V DC 60 V, DC 110 V DC 220 V		70 ... 126 %
		Rated voltage	AC 50/60 Hz DC	V V	110; 230 24; 30; 48; 60; 110; 220
		Power input	AC/DC	VA/W	15/15
		Minimum command duration at rated voltage		ms	60
		Opening time of the circuit-breaker at rated voltage	AC/DC	ms	80
		Short-circuit protection Smallest permissible fuse			1 A
	With stored energy feature consisting of shunt release and capacitor storage device	Rated voltage	AC 50/60 Hz DC	V V	110; 230 110; 220
		Operating range			85 ... 110 %
		Power input	AC/DC	VA/W	1/1
		Storage time/recharging time at rated voltage			max. 5 min/min. 5 s
		Opening time of circuit-breaker, short-circuit protection		ms	80

Size					I ... III
Auxiliary releases					
Undervoltage release UVR (F3) and UVR-t_d (F4)	Operating values		pickup dropout		≥ 0.85 × U_s (circuit-breaker can be closed) 0.35 ... 0.7 × U_s (circuit-breaker is tripped)
	Operating range				0.85 ... 1.1
	Extended operating range for battery operation		for DC 24 V, DC 30 V, DC 48 V, DC 110 V, DC 220 V		0.85 ... 1.26
	Rated control supply voltage U_s		AC 50/60 Hz DC	V V	110 ... 127/208 ... 240/380 ... 415 24/30/48/110/220 ... 250[1])
	Power input (pickup/continuous duty)		AC DC	VA W	(200 = pickup) 5 (200 = pickup) 5
	Opening time of circuit-breaker at U_s = 0			ms	200
	Design UVR (F3) Instantaneous With delay			 ms ms	 80 200
	Design UVR-t_d (F8) With delay, t_d = 0.2 ... 3.2 s Reset via additional NC contact, direct switching-off			 S ms	 0.2 ... 3.2 ≤ 100
	Short-circuit protection Smallest permissible fuse				1 A
Contact position-driven auxiliary switches (S1, S2, S3, S4, S7, S8)					
Rated insulation voltage U_i				AC/DC V	300
Rated operating voltage U_e				AC/DC V	240
Switching capacity	AC 50/60 Hz	A 300 heavy duty		A	10
	DC	P 300 heavy duty		A	10
Ready-to-close signaling switch (S20) (to UL 1054)					
Switching capacity	Rated operating voltage Rated operating current			V A	250 3

1) 24 V and 30 V only with undervoltage release UVR (F3).

General data

Functional overview of the electronic trip unit system

Basic functions			ETU25B	ETU45B:
	L	**Overload protection**	✓	✓
		Setting range $I_R = I_n \times$ ...	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1	0.4-0.45-0.5-0.55-0.6-0.65-0.7-0.8-0.9-1
		Switchable overload protection (I^2t- or I^4t-dependent function)	–	✓ (using sliding-dolly switch)
		Setting range for time-lag class t_R at I^2t	10 s fixed	2-3-5-5.5-8-10-14-17-21-25-30 s
		Setting range for time-lag class t_R at I^4t	–	1-2-3-4-5 s
		Thermal image	–	✓ (on/off using sliding-dolly switch)
		Phase loss sensitivity	at t_{sd} = 20 ms (M)	at t_{sd} = 20 ms (M)
	N	**Neutral conductor protection**	–	✓
		Function can be switched on/off	–	✓ using sliding-dolly switch
		N conductor setting range $I_N = I_n \times$ ...	–	0.5 ... 1
	S	**Short-time delayed short-circuit protection**	✓	✓
		Function can be switched on/off	–	✓ (using rotary coding switch)
		Setting range $I_{sd} = I_n \times$ ...	1.25-1.5-2-2.5-3-4-6-8-10-12	1.25-1.5-2-2.5-3-4-6-8-10-12
		Setting range for delay time t_{sd}	0-M-100-200-300-400	M-100-200-300-400 ms
		Switchable short-time delayed short-circuit protection (I^2t-dependent function)	–	✓ (using rotary coding switch)
		Setting range for delay time t_{sd} at I^2t	–	100-200-300-400 ms
		Zone Selective Interlocking function	–	by **Cubicle**BUS module
	I	**Instantaneous short-circuit protection**	✓	✓
		Function can be switched on/off	–	✓ (using rotary coding switch)
NSE0_00888b		Setting range $I_i = I_n \times$ ...	fixed for $I_i \geq 20 \times I_n$, max. 50 kA	1.5-2.2-3-4-6-8-10-12-0.8 × I_{cs}
	G	**Ground-fault protection**	–	❑ Module can be retrofitted
		Tripping and alarm function	–	✓
		Tripping function can be switched on/off	–	✓ (using rotary coding switch)
		Detection of the ground-fault current via summation current formation with internal or external neutral conductor transformer	–	✓
		Detection of ground-fault current via external transformer	–	✓
		Setting range of the operating current I_g for release	–	A-B-C-D-E[1])
		Setting range of the operating current I_g for alarm	–	A-B-C-D-E[1])
		Setting range of the delay time t_g	–	100-200-300-400-500 ms
		Switchable ground-fault protection characteristic (I^2t-dependent function)	–	✓
		Setting range for delay time t_g at I^2t	–	100-200-300-400-500 ms
		Zone Selective Interlocking function	–	by **Cubicle**BUS-Modul
LCD				
		Alphanumeric LCD (4-line)	–	❑
Communication				
		CubicleBUS integrated	–	✓
		Communication-capable via PROFIBUS-DP	–	✓
Measurement function				
		Meas. func.-capable with meas. func./meas. func. *Plus*	–	✓
LED display				
		Electronic trip unit active	✓	✓
		Alarm	✓	✓
		ETU fault	✓	✓
		L-release	✓	✓
		S-release	✓	✓
		I-release	✓	✓
NSE00890		N-release	–	✓
		G-release	–	✓ (only with ground-fault protec. module)
		G-alarm	–	✓ (only with ground-fault protec. module)
		Release via extended protection function	–	✓
		Communication	–	✓
Signals from signaling switches with external CubicleBUS **modules (optical or relays)**				
		Overload warning	–	✓
		Load shedding, load receiving	–	✓
		Leading signal overload release 200 ms	–	✓
		Temperature alarm	–	✓
		Phase unbalance	–	✓
		Instantaneous short-circuit release	–	✓
		Short-time delayed short-circuit release	–	✓
		Overload release	–	✓
NSE00891		Neutral conductor release	–	✓
		Ground-fault protection release	–	✓ (only with ground-fault protec. module)
		Ground-fault alarm	–	✓ (only with ground-fault protec. module)
		Auxiliary relay	–	✓
		ETU fault	–	✓

Delay-time figures given in ms.
M = motor protection, corresponds to 20 ms.

✓ Available.
– Not available.
❑ Optional.

1) Setting range of the operating current

	Size I and size II	Size III
A	100 A	400 A
B	300 A	600 A
C	600 A	800 A
D	900 A	1000 A
E	1200 A	1200 A

For tripping characteristics and dimensions as for "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", see Pages 5/57 to 5/67.

Selection and ordering data

Size	Max. rated circuit-breaker current $I_{n\ max.}$	Rated current[1] I_n	Switching capacity 480 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Horizontal main circuit connection							
I	1000	1000	65	B	**3WL51 10-3□□32-....**	1 unit	43.000
I	1600	1600	65	B	**3WL51 16-3□□32-....**	1 unit	43.000
II	2000	2000	100	B	**3WL52 20-4□□32-....**	1 unit	56.000
II	2500	2500	100	B	**3WL52 25-4□□32-....**	1 unit	59.000
II	3000	3000	100	B	**3WL52 30-4□□32-....**	1 unit	64.000
III	4000	4000	100	C	**3WL53 40-4□□32-....**	1 unit	82.000
III	5000	5000	100	C	**3WL53 50-4□□32-....**	1 unit	82.000
Vertical main circuit connection							
I	1000	1000	65	B	**3WL51 10-3□□31-....**	1 unit	43.000
I	1600	1600	65	B	**3WL51 16-3□□31-....**	1 unit	43.000
II	2000	2000	100	B	**3WL52 20-4□□31-....**	1 unit	56.000
II	2500	2500	100	B	**3WL52 25-4□□31-....**	1 unit	59.000
II	3000	3000	100	B	**3WL52 30-4□□31-....**	1 unit	64.000
III	4000	4000	100	C	**3WL53 40-4□□31-....**	1 unit	82.000
III	5000	5000	100	C	**3WL53 50-4□□31-....**	1 unit	82.000
Front main circuit connection, single hole							
I	1000	1000	65	B	**3WL51 10-3□□33-....**	1 unit	43.000
I	1600	1600	65	B	**3WL51 16-3□□33-....**	1 unit	43.000
II	2000	2000	100	B	**3WL52 20-4□□33-....**	1 unit	56.000
II	2500	2500	100	B	**3WL52 25-4□□33-....**	1 unit	59.000
II	3000	3000	100	B	**3WL52 30-4□□33-....**	1 unit	64.000
III	4000	4000	100	C	**3WL53 40-4□□33-....**	1 unit	82.000
Front main circuit connection, double hole							
I	1000	1000	65	B	**3WL51 10-3□□34-....**	1 unit	43.000
I	1600	1600	65	B	**3WL51 16-3□□34-....**	1 unit	43.000
II	2000	2000	100	B	**3WL52 20-4□□34-....**	1 unit	56.000
II	2500	2500	100	B	**3WL52 25-4□□34-....**	1 unit	59.000
II	3000	3000	100	B	**3WL52 30-4□□34-....**	1 unit	64.000
III	4000	4000	100	C	**3WL53 40-4□□34-....**	1 unit	82.000

Order No. supplements

Electronic trip units

Design without ground-fault protection

ETU25B: protection functions LSI	**CB**
ETU45B: protection functions LSIN[2])	**EB**
ETU45B: protection functions LSIN[2]) with 4-line display	**FB**

Design with ground-fault protection

ETU45B: protection functions LSING[2])[3])	**EG**
ETU45B: protection functions LSING[2])[3]) with 4-line display	**FG**

Standard Order No. supplements (for further Order No. supplements see Page 5/36)

Manual operating mechanism with mechanical closing Without 1st and 2nd auxiliary release; auxiliary switch 2 NC + 2 NO	**1AA2**

Further Order No. supplements see Page 5/36

Note: max. voltage for auxiliary circuits 240 V.

1) Rated current determined by rated current module. On the standard design the supplied module is equal to the max. rated type current. If a lower rated current is required, adaptation by order code on page 5/76.

2) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer should be ordered separately, see Pages 5/37 and 5/46.

3) ETU45B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/76.

*** This quantity or a multiple thereof can be ordered.**

3-pole, withdrawable design

Size	Max. rated circuit-breaker current $I_{n\ max.}$	Rated current[1] I_n	Switching capacity 480 V		Order No. Order No. supplements see Page 5/36	PS*	Weight per PU approx.
	A	A	kA	DT			kg
Without guide frame (for guide frames see Page 5/75)							
I	1000	1000	65	B	**3WL51 10-3□□35-....**	1 unit	45.000
I	1600	1600	65	B	**3WL51 16-3□□35-....**	1 unit	45.000
II	2000	2000	100	B	**3WL52 20-4□□35-....**	1 unit	60.000
II	2500	2500	100	B	**3WL52 25-4□□35-....**	1 unit	63.000
II	3000	3000	100	B	**3WL52 30-4□□35-....**	1 unit	68.000
III	4000	4000	100	C	**3WL53 40-4□□35-....**	1 unit	88.000
III	5000	5000	100	C	**3WL53 50-4□□35-....**	1 unit	88.000
With guide frame, horizontal main circuit connection							
I	1000	1000	65	B	**3WL51 10-3□□36-....**	1 unit	70.000
I	1600	1600	65	B	**3WL51 16-3□□36-....**	1 unit	70.000
II	2000	2000	100	B	**3WL52 20-4□□36-....**	1 unit	91.000
II	2500	2500	100	B	**3WL52 25-4□□36-....**	1 unit	102.000
II	3000	3000	100	B	**3WL52 30-4□□36-....**	1 unit	113.000
III	4000	4000	100	C	**3WL53 40-4□□36-....**	1 unit	148.000
III	5000	5000	100	C	**3WL53 50-4□□36-....**	1 unit	148.000
With guide frame, vertical main circuit connection							
I	1000	1000	65	B	**3WL51 10-3□□37-....**	1 unit	70.000
I	1600	1600	65	B	**3WL51 16-3□□37-....**	1 unit	70.000
II	2000	2000	100	B	**3WL52 20-4□□37-....**	1 unit	91.000
II	2500	2500	100	B	**3WL52 25-4□□37-....**	1 unit	102.000
II	3000	3000	100	B	**3WL52 30-4□□37-....**	1 unit	113.000
III	4000	4000	100	C	**3WL53 40-4□□37-....**	1 unit	148.000
III	5000	5000	100	C	**3WL53 50-4□□37-....**	1 unit	148.000
With guide frame, connecting flange							
I	1000	1000	65	B	**3WL51 10-3□□38-....**	1 unit	70.000
I	1600	1600	65	B	**3WL51 16-3□□38-....**	1 unit	70.000
II	2000	2000	100	B	**3WL52 20-4□□38-....**	1 unit	91.000
II	2500	2500	100	B	**3WL52 25-4□□38-....**	1 unit	102.000
II	3000	3000	100	B	**3WL52 30-4□□38-....**	1 unit	113.000
III	4000	4000	100	C	**3WL53 40-4□□38-....**	1 unit	148.000

Order No. supplement

Electronic trip units

Design without ground-fault protection

ETU25B: protection functions LSI — **CB**

ETU45B: protection functions LSIN[2]) — **EB**

ETU45B: protection functions LSIN[2]) with 4-line display — **FB**

Design with ground-fault protection

ETU45B: protection functions LSING[2])[3]) — **EG**

ETU45B: protection functions LSING[2])[3]) with 4-line display — **FG**

Standard Order No. supplements (for further Order No. supplements for circuit-breakers and guide frames, see Page 5/36)

Manual operating mechanism with mechanical closing
Without 1st and 2nd auxiliary release; auxiliary switch
2 NC + 2 NO — **1AA2**

Further Order No. supplements see Page 5/36

Note: max. voltage for auxiliary circuits 240 V.

1) Rated current determined by rated current module.
On the standard design the supplied module is equal to the max. rated type current. If a lower rated current is required, adaptation by order code on page 5/76.

2) Current transformers for vectorial summation current formation or for protection of the neutral conductor and current transformers for detection of the ground-fault current in the grounded star point of the transformer should be ordered separately, see Pages 5/37 and 5/46.

3) ETU45B with ground-fault protection module GFM AT (alarm and tripping), see Page 5/76.

*** This quantity or a multiple thereof can be ordered.**

Selection and ordering data

Guide frame for circuit-breakers approved to UL 489

Size	Max. rated circuit-breaker current $I_{n\ max.}$		Guide frame for 3-pole circuit-breakers Order No. (Order No. supplements required according to table below)	PS*	Weight per PU approx.
	A	DT			kg
Front main circuit connection, single hole					
I	1000	B	**3WL9 251-1AA□□-□□A 1**	1 unit	25.000
I	1600	B	**3WL9 251-2AA□□-□□A 1**	1 unit	25.000
II	2000	B	**3WL9 252-3AA□□-□□A 1**	1 unit	31.000
II	2500	B	**3WL9 252-4AA□□-□□A 1**	1 unit	39.000
II	3000	B	**3WL9 252-5AA□□-□□A 1**	1 unit	45.000
III	4000	B	**3WL9 253-6AA□□-□□A 1**	1 unit	60.000
Front main circuit connection, double hole					
I	1000	B	**3WL9 251-1AB□□-□□A 1**	1 unit	25.000
I	1600	B	**3WL9 251-2AB□□-□□A 1**	1 unit	25.000
II	2000	B	**3WL9 252-3AB□□-□□A 1**	1 unit	31.000
II	2500	B	**3WL9 252-4AB□□-□□A 1**	1 unit	39.000
II	3000	B	**3WL9 252-5AB□□-□□A 1**	1 unit	45.000
III	4000	B	**3WL9 253-6AB□□-□□A 1**	1 unit	60.000
Horizontal main circuit connection					
I	1000	B	**3WL9 251-1AC□□-□□A 1**	1 unit	25.000
I	1600	B	**3WL9 251-2AC□□-□□A 1**	1 unit	25.000
II	2000	B	**3WL9 252-3AC□□-□□A 1**	1 unit	31.000
II	2500	B	**3WL9 252-4AC□□-□□A 1**	1 unit	39.000
II	3000	B	**3WL9 252-5AC□□-□□A 1**	1 unit	45.000
III	4000	B	**3WL9 253-6AC□□-□□A 1**	1 unit	60.000
III	5000	B	**3WL9 253-7AC□□-□□A 1**	1 unit	60.000
Vertical main circuit connection					
I	1000	B	**3WL9 251-1AD□□-□□A 1**	1 unit	25.000
I	1600	B	**3WL9 251-2AD□□-□□A 1**	1 unit	25.000
II	2000	B	**3WL9 252-3AD□□-□□A 1**	1 unit	31.000
II	2500	B	**3WL9 252-4AD□□-□□A 1**	1 unit	39.000
II	3000	B	**3WL9 252-5AD□□-□□A 1**	1 unit	45.000
III	4000	B	**3WL9 253-6AD□□-□□A 1**	1 unit	60.000
III	5000	B	**3WL9 253-7AD□□-□□A 1**	1 unit	60.000
Main circuit connection, connecting flange					
I	1000	B	**3WL9 251-1AE□□-□□A 1**	1 unit	25.000
I	1600	B	**3WL9 251-2AE□□-□□A 1**	1 unit	25.000
II	2000	B	**3WL9 252-3AE□□-□□A 1**	1 unit	31.000
II	2500	B	**3WL9 252-4AE□□-□□A 1**	1 unit	39.000
II	3200	B	**3WL9 252-5AE□□-□□A 1**	1 unit	45.000
III	4000	B	**3WL9 253-6AE□□-□□A 1**	1 unit	60.000

Number of auxiliary supply connectors

none	**0**
1 connector	**1**
2 connectors	**2**
3 connectors	**3**
4 connectors	**4**

For required number of auxiliary supply connectors, see table on page 5/44

Type of auxiliary terminals

without	**0**
with screw-type terminals (SIGUT)	**1**
with screwless connection system (tension spring)	**2**

Position indicator switches

without	**0**
Option 1 connected position 1 changeover, test position 1 changeover, disconnected position 1 changeover	**1**
Option 2 connected position 3 changeovers, test position 2 changeovers, disconnected position 1 changeover	**2**

Shutters

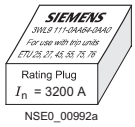
without		
with shutter, 2-part, lockable	Size I	**A**
	Size II	**B**
	Size III	

All other accessory parts must be ordered by specifying "–Z" and the corresponding order code, see Page 5/39.

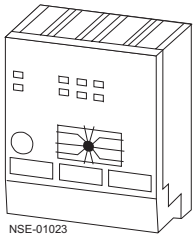
*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

Designation		DT	Order No.	PS*	Weight per PU approx.
					kg
Electronic trip units	with protection function				
ETU25B	LSI	C	**3WL9 352-5AA00-0AA1**	1 unit	on req.
ETU45B without measurement function	LSIN(G)	C	**3WL9 354-5AA00-0AA1**	1 unit	on req.
ETU45B with measurement function	LSIN(G)	C	**3WL9 354-5AA10-0AA1**	1 unit	on req.
Rated current module / rating plug	Rated current I_n (A)				
For size I, II	250	B	**3WL9 111-2AA51-0AA0**	1 unit	on req.
	315	B	**3WL9 111-2AA52-0AA0**	1 unit	on req.
	400	B	**3WL9 111-2AA53-0AA0**	1 unit	on req.
	500	B	**3WL9 111-2AA54-0AA0**	1 unit	on req.
	630	B	**3WL9 111-2AA55-0AA0**	1 unit	on req.
	800	B	**3WL9 111-2AA56-0AA0**	1 unit	on req.
	1000	B	**3WL9 111-2AA57-0AA0**	1 unit	on req.
For size I, II, III	1250	B	**3WL9 111-2AA58-0AA0**	1 unit	on req.
	1600	B	**3WL9 111-2AA61-0AA0**	1 unit	on req.
For size II, III	2000	B	**3WL9 111-2AA62-0AA0**	1 unit	on req.
	2500	B	**3WL9 111-2AA63-0AA0**	1 unit	on req.
	3000	B	**3WL9 111-2AA77-0AA0**	1 unit	on req.
For size III	4000	B	**3WL9 111-2AA65-0AA0**	1 unit	on req.
	5000	B	**3WL9 111-2AA66-0AA0**	1 unit	on req.
Ground-fault module					
GFM A 45B (only for ETU45B) alarm only		B	**3WL9 111-2AT51-0AA0**	1 unit	on req.
GFM AT 45B (only for ETU45B) alarm and tripping		B	**3WL9 111-2AT53-0AA0**	1 unit	on req.
Display					
4-line display for ETU45B		B	**3WL9 111-1AT81-0AA0**	1 unit	on req.
CubicleBUS modules[1])					
Digital output module with rotary coding switch, optical coupler outputs		C	**3WL9 111-1AT25-0AA0**	1 unit	on req.
Digital output module with rotary coding switch, relay outputs		C	**3WL9 111-1AT26-0AA0**	1 unit	on req.
Digital output module, configurable, optical coupler outputs		C	**3WL9 111-1AT30-0AA0**	1 unit	on req.
Digital output module, configurable, relay outputs		C	**3WL9 111-1AT20-0AA0**	1 unit	on req.
Digital input module		C	**3WL9 111-1AT27-0AA0**	1 unit	on req.
Analog output module		C	**3WL9 111-1AT23-0AA0**	1 unit	on req.
Zone Selective Interlocking module		C	**3WL9 111-1AT21-0AA0**	1 unit	on req.
Tools for configuration, operation, and monitoring					
Breaker Data Adapter (BDA) Configuration, control, diagnostics, and test of SENTRON circuit-breakers via local interface; Breaker Data Adapter, connecting cable to SENTRON circuit-breakers for programming device (e.g. notebook); can be run with Internet Explorer with JAVA2 VM		B	**3WL9 111-2AT28-0AA0**	1 unit	on req.
BDA *Plus* Same as BDA, but with additional Ethernet interface for connection to Ethernet/Intranet/Internet		B	**3WL9 111-2AT33-0AA0**	1 unit	on req.
Retrofitting and spare parts for communication via PROFIBUS					
COM15 PROFIBUS module[2])		C	**3WL9 111-1AT65-0AA0**	1 unit	on req.
Breaker status sensor (BSS)		C	**3WL9 111-1AT16-0AA0**	1 unit	on req.
Measurement function, without voltage transformer		X	**3WL9 111-1AT02-0AA0**	1 unit	on req.
Test devices					
Manual test device for electronic trip units		D	**3WL9 111-2AT31-0AA0**	1 unit	on req.



3WL9 111-2AA65-0AA00



3WL9 111-1AT23-0AA0

For further mechanical accessories see Pages 5/46 to 5/55.

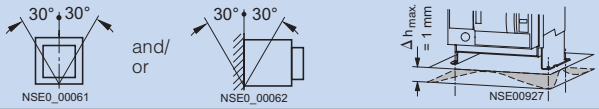
For tripping characteristics and dimensions as for "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", see Pages 5/57 to 5/67.

1) Every **Cubicle**BUS module is supplied with a factory-fitted 0.2 m cable.

2) Contains a 2 m **Cubicle**BUS cable in addition.

*** This quantity or a multiple thereof can be ordered.**

Technical specifications

Size			**II**		
Type			**3WL12 10**	**3WL12 20**	**3WL12 40**
Rated current I_n at 40 °C Main conductor		A	up to 1000	2000	4000
Rated operating voltage U_e (1000 V design, see Page 5/37)		DC V	up to 600/1000	up to 600/1000	up to 600/1000
Rated insulation voltage U_i		AC V	1000	1000	1000
Rated impulse withstand voltage U_{imp} Main circuits Auxiliary circuits Control circuits		 kV kV kV	 12 4 2.5	 12 4 2.5	 12 4 2.5
Isolating function to EN 60947-2			yes	yes	yes
Permissible ambient temperature Operation Storage		 °C °C	 –25/+75 –40/+70	 –25/+75 –40/+70	 –25/+75 –40/+70
Permissible load at rear horizontal main circuit connections (Cu painted black)	 up to 40 °C up to 55 °C up to 60 °C up to 70 °C	 A A A A	 1000 1000 1000 1000	 2000 2000 2000 1950	 4000 3640 3500 3250
Power loss at I_n with AC symmetrical load Withdrawable circuit-breaker		 W	 280	 770	 1640
Operating times Make-time Break-time		 ms ms	 35 34	 35 34	 35 34
Electr. make-time (via closing solenoid)[1]) Electr. break-time (via shunt release)		ms ms	100 73	100 73	100 73
Electr. break-time (instantaneous undervoltage release)		ms	73	73	73
Service life[3]) mechanical (without maintenance) mechanical (with maintenance)[2]) electrical (without maintenance) 1000 V design electrical (with maintenance)[2])		 Operating cycles Operating cycles Operating cycles Operating cycles Operating cycles	 10 000 15 000 6 000 1 000 15 000	 10 000 15 000 6 000 1 000 15 000	 10 000 15 000 4 000 1 000 15 000
Operating frequency 600 V design 1000 V design		 1/h 1/h	 60 20	 60 20	 60 20
Service position					
Degree of protection			IP20 without cabinet door, IP30 with door mounting frame, IP55 with cover		
Auxiliary conductors (Cu) Max. no. of auxiliary conductors × cross-section (solid/stranded)	Standard connection = strain-relief clamp without end sleeve with end sleeve to DIN 46228 Part 2 with twin end sleeve optional connection = tension spring without end sleeve with end sleeve to DIN 46228 Part 2		 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16); 1 × 2.5 mm² (AWG 14) 1 × 0.5 mm² (AWG 20) ... 1 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16) 2 × 0.5 mm² (AWG 20) ... 2 × 2.5 mm² (AWG 14) 2 × 0.5 mm² (AWG 20) ... 2 × 1.5 mm² (AWG 16)		
Weights 3-pole	Fixed-mounted circuit-breaker Withdrawable circuit-breaker Guide frames	kg kg kg	56 60 31	56 60 31	64 68 45
4-pole	Fixed-mounted circuit-breaker Withdrawable circuit-breaker Guide frames	kg kg kg	67 72 37	67 72 37	77 82 54

1) Make-time via closing solenoid for synchronization purposes (short-time excited) 50 ms.

2) Maintenance means: replace main contact elements and arc chutes (see Operator's Guide).

3) Further technical specifications on request.

Short-circuit breaking capacity

Size			**II**		
Type			**3WL12**		
Switching capacity class			**DC**		
up to DC 300 V up to DC 600 V up to DC 1000 V	I_{cc} I_{cc} I_{cc}	kA kA kA	30 25 20		
Rated short-time withstand current I_{cw}					
0.5 s 1 s 2 s 3 s		kA kA kA kA	– 30[1])/25[2])/20[3]) – –		

1) at U_e = DC 300 V.

2) at U_e = DC 600 V.

3) at U_e = DC 1000 V.

3- and 4-pole, fixed-mounted design

Selection and ordering data

Size	Max. rated circuit-breaker current $I_{n\ max.}$	3-pole non-automatic circuit-breakers		PS*	Weight per PU approx.	4-pole non-automatic circuit-breakers		PS*	Weight per PU approx.
	A	DT	Order No. Order No. supplements see Page 5/36		kg	DT	Order No. Order No. supplements see Page 5/36		kg
Horizontal main circuit connection									
II	1000	B	**3WL12 10-8□□32-....**	1 unit	56.000	B	**3WL12 10-8□□42-....**	1 unit	67.000
II	2000	B	**3WL12 20-8□□32-....**	1 unit	56.000	B	**3WL12 20-8□□42-....**	1 unit	67.000
II	4000[1])	B	**3WL12 40-8□□32-....**	1 unit	64.000	B	**3WL12 40-8□□42-....**	1 unit	77.000
Vertical main circuit connection									
II	1000	B	**3WL12 10-8□□31-....**	1 unit	56.000	B	**3WL12 10-8□□41-....**	1 unit	75.000
II	2000	B	**3WL12 20-8□□31-....**	1 unit	56.000	B	**3WL12 20-8□□41-....**	1 unit	75.000
II	4000[1])	B	**3WL12 40-8□□31-....**	1 unit	64.000	B	**3WL12 40-8□□41-....**	1 unit	77.000
Front main circuit connection, single hole									
II	1000	B	**3WL12 10-8□□33-....**	1 unit	56.000	B	**3WL12 10-8□□43-....**	1 unit	67.000
II	2000	B	**3WL12 20-8□□33-....**	1 unit	56.000	B	**3WL12 20-8□□43-....**	1 unit	67.000
Front main circuit connection, double hole									
II	1000	B	**3WL12 10-8□□34-....**	1 unit	56.000	B	**3WL12 10-8□□44-....**	1 unit	67.000
II	2000	B	**3WL12 20-8□□34-....**	1 unit	56.000	B	**3WL12 20-8□□44-....**	1 unit	67.000
Non-automatic circuit-breakers[2])			Order No. supplements				Order No. supplements		
without electronic trip unit			**AA**				**AA**		
Standard Order No. supplements (for further Order No. supplements see Page 5/36)									
Manual operating mechanism with mechanical closing			**1AA2**				**1AA2**		

Rated voltage DC 1000 V: order with "–Z" and order code "A05".

All other accessory parts must be ordered with "–Z" and order codes, see "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", "Options", Page 5/36 onwards.

1) Provisons to dissipate heat must be made on the line side.

2) For permissible short-time current rating I_{cw} and short-circuit switching capacity I_{cc} for non-automatic circuit-breakers, see Page 5/77.

*** This quantity or a multiple thereof can be ordered.**

Size	Max. rated circuit-breaker current $I_{n\ max.}$	3-pole non-automatic circuit-breakers			PS*	Weight per PU approx.	4-pole non-automatic circuit-breakers			PS*	Weight per PU approx.
	A	DT	Order No. Order No. supplements see Page 5/36			kg	DT	Order No. Order No. supplements see Page 5/36			kg
Without guide frame (for guide frames see Page 5/80)											
II	1000	B	**3WL12 10-8□□35-....**		1 unit	60.000	B	**3WL12 10-8□□45-....**		1 unit	75.000
II	2000	B	**3WL12 20-8□□35-....**		1 unit	60.000	B	**3WL12 20-8□□45-....**		1 unit	75.000
II	4000[1])	B	**3WL12 40-8□□35-....**		1 unit	68.000	B	**3WL12 40-8□□45-....**		1 unit	82.000
With guide frame, horizontal main circuit connection											
II	1000	B	**3WL12 10-8□□36-....**		1 unit	91.000	B	**3WL12 10-8□□46-....**		1 unit	109.000
II	2000	B	**3WL12 20-8□□36-....**		1 unit	91.000	B	**3WL12 20-8□□46-....**		1 unit	109.000
II	4000[1])	B	**3WL12 40-8□□36-....**		1 unit	113.000	B	**3WL12 40-8□□46-....**		1 unit	136.000
With guide frame, vertical main circuit connection											
II	1000	B	**3WL12 10-8□□37-....**		1 unit	91.000	B	**3WL12 10-8□□47-....**		1 unit	109.000
II	2000	B	**3WL12 20-8□□37-....**		1 unit	91.000	B	**3WL12 20-8□□47-....**		1 unit	109.000
II	4000[1])	B	**3WL12 40-8□□37-....**		1 unit	113.000	B	**3WL12 40-8□□47-....**		1 unit	136.000
With guide frame, connecting flange											
II	1000	B	**3WL12 10-8□□38-....**		1 unit	91.000	B	**3WL12 10-8□□48-....**		1 unit	109.000
II	2000	B	**3WL12 20-8□□38-....**		1 unit	91.000	B	**3WL12 20-8□□48-....**		1 unit	109.000
II	4000[1])	B	**3WL12 40-8□□38-....**		1 unit	113.000	B	**3WL12 40-8□□48-....**		1 unit	136.000
Non-automatic circuit-breakers[2])			Order No. supplements					Order No. supplements			
without electronic trip unit				**AA**					**AA**		
Standard Order No. supplements (for further Order No. supplements see Page 5/36)											
Manual operating mechanism with mechanical closing				**1AA2**					**1AA2**		

Rated voltage DC 1000 V: order with "–Z" and order code "A05".

All other accessory parts must be ordered with "–Z" and order codes, see "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", "Options", Page 5/36 onwards.

1) Provisons to dissipate heat must be made on the line side.

2) For permissible short-time current rating I_{cw} and short-circuit switching capacity I_{cc} for non-automatic circuit-breakers, see Page 5/77.

5

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

Selection and ordering data

Guide frames for DC non-automatic circuit-breakers

Size	Max. rated circuit-breaker current $I_{n\,max}$		Guide frame for 3-pole non-automatic circuit-breakers Order No. (Order No. supplements required according to table below)	PS*	Weight per PU approx.		Guide frame for 4-pole non-automatic circuit-breakers Order No. (Order No. supplements required according to table below)	PS*	Weight per PU approx.
	A	DT			kg	DT			kg
Front main circuit connection, single hole									
II	2000	B	**3WL9 212-3DA□□-□□A 1**	1 unit	31.000	B	**3WL9 212–3EA□□-□□A 1**	1 unit	37.000
Front main circuit connection, double hole									
II	2000	B	**3WL9 212-3DB□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3EB□□-□□A 1**	1 unit	37.000
Horizontal main circuit connection									
II	2000	B	**3WL9 212-3DC□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3EC□□-□□A 1**	1 unit	37.000
II	4000	B	**3WL9 212-6DC□□-□□A 1**	1 unit	60.000	B	**3WL9 212-6EC□□-□□A 1**	1 unit	84.000
Vertical main circuit connection									
II	2000	B	**3WL9 212-3DD□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3ED□□-□□A 1**	1 unit	37.000
II	4000	B	**3WL9 212-6DD□□-□□A 1**	1 unit	60.000	B	**3WL9 212-6ED□□-□□A 1**	1 unit	84.000
Main circuit connection connecting flange									
II	2000	B	**3WL9 212-3DE□□-□□A 1**	1 unit	31.000	B	**3WL9 212-3EE□□-□□A 1**	1 unit	37.000
II	4000	B	**3WL9 212-6DE□□-□□A 1**	1 unit	60.000	B	**3WL9 212-6EE□□-□□A 1**	1 unit	84.000

Number of auxiliary supply connectors		
none	**0**	**0**
1 connector	**1**	**1**
2 connectors	**2**	**2**
3 connectors	**3**	**3**
4 connectors	**4**	**4**
For required number of auxiliary supply connectors, see table on Page 5/44		
Type of auxiliary circuit connections		
without	**0**	**0**
with SIGUT screw-type terminals	**1**	**1**
with tension spring connection	**2**	**2**
Position indicator switches		
without	**0**	**0**
Option 1 operation 1 changeover, test 1 changeover, disconnected 1 changeover	**1**	**1**
Option 2 operation 3 changeover, test 2 changeover, disconnected 1 changeover	**2**	**2**
Shutters		
without	**A**	**A**
with shutter, 2 parts, lockable	**B**	**B**

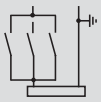
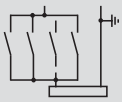
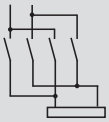
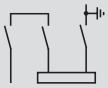
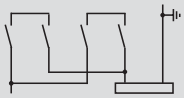
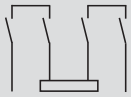
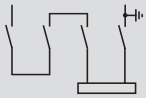
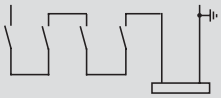
Rated voltage DC 1000 V: order with "–Z" and order code "A05".

All other accessory parts must be ordered with "–Z" and order codes, see "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", "Options", Page 5/39 onwards.

*** This quantity or a multiple thereof can be ordered.**

Circuit diagrams

Examples of application

Rated operating voltage	Required series breaks at rated voltage	for 3-pole non-automatic circuit-breakers Operating currents up to 4000 A/ conducting path		for 4-pole non-automatic circuit-breakers Operating currents up to 4000 A/conducting path	
up to 300 V + 10 %		 1-pole, 2 parallel conducting paths, only with grounded neutral system	 2-pole	 1-pole, 4 parallel conducting paths, only with grounded-neutral system	 2-pole 2 parallel conducting paths
over 300 V + 10 % up to 600 V + 10 %		 2-pole, only with grounded-neutral system		 1-pole, 2 parallel conducting paths, only with grounded-neutral system	 2-pole
over 600 V + 10 % up to 1000 V + 10 %		 1-pole, only with grounded-neutral system		 2-pole, only with grounded-neutral system	 1-pole, only with grounded-neutral system

The connection to the circuit-breakers is not dependent on direction and polarity; the circuit diagrams can be adapted accordingly.

If the parallel or series connections are made directly to the connecting bars, for thermal reasons the continuous load on the circuit-breakers must only be 80 % of the permissible operating current. If the parallel or series connection is made at a distance of 1 m from the connecting bars, the circuit-breaker can be used at full operating current load.

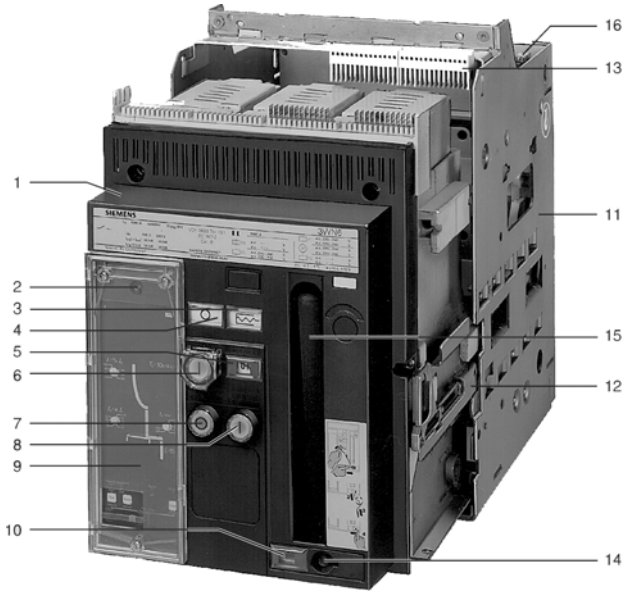
⊣⫴ grounded neutral system

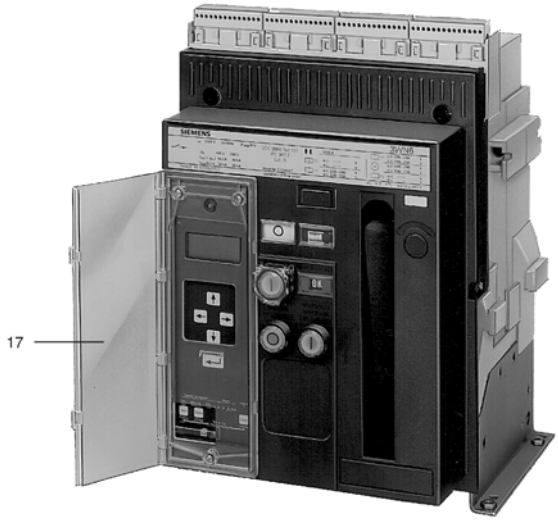
▭ load

Dimensions as for "Circuit-breakers/non-automatic circuit-breakers up to 6300 A, SENTRON WL", Pages 5/60 to 5/67.

General data

Overview

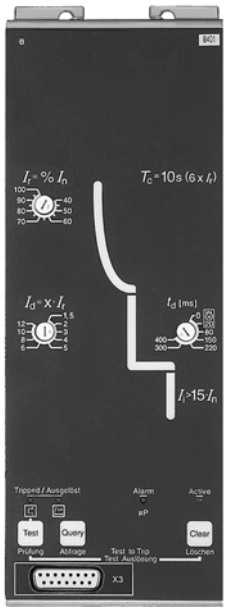




1 Withdrawable circuit-breaker
2 Indication and reset button after tripping for
– tripped signaling switch and
– mechanical closing lockout
3 Spring charge indicator
4 Contact position indicator
5 Ready-to-close indicator
6 ON button, mechanical with sealing cap
7 OFF button, mechanical
8 ON button, electrical
9 Electronic trip unit
10 Indication of switch position
11 Guide frame
12 Guide rails
13 Auxiliary circuit plug-in system
14 Crank hole
15 Hand lever
16 Position indicator switch
17 Transparent cover

Left: 3WN6 circuit-breaker, withdrawable version, size I, 3-pole
Right: 3WN6 circuit-breaker, fixed-mounted version, size I, 3-pole

Motorized operating mechanism



Electronic trip unit

Benefits

Safety and reliability

- High degree of protection with door sealing frame in the case of exclusively local operation of the circuit-breaker
- Incoming supply from above or below, as required
- Locking of the withdrawable circuit-breaker against moving, as standard
- Locking of the guide frame with the circuit-breaker removed, as standard
- Alarm switch for overload and short-circuit tripping with mechanical closing lockout

Easy to operate

- Unambiguous ON-OFF indicator with auxiliary switch for signal
- Ready-to-close indicator with alarm switch as safety standard.

Modular

Many components, such as auxiliary releases, motorized operating mechanisms, electronic trip units and current transformers can be replaced or retrofitted to adapt the circuit-breaker to changing requirements.

Communication-capable (see illustration "Communication via PROFIBUS DP")

The international standard PROFIBUS DP can be used to transmit data such as current values, switching states, reasons for tripping etc. to central computers. This makes it possible not only to monitor the circuit-breakers but also to operate them remotely.
This supports energy management and significant savings in energy costs.
For further information see also section "Communication-capable circuit-breakers".

Minimal power loss and therefore low energy consumption

The low power consumption of the electrical components also saves money when it comes to purchasing the control-power transformers. Where space is at a premium or ventilation is limited.

Area of application

Specifications

IEC 60947-2, DIN VDE 0660 Part 101,
climate-proof to IEC 68 Part 2-30
Approval according to maritime classification
see "Annex".

Operating conditions

The 3WN6 circuit-breakers are climate-proof in accordance with DIN IEC 68 Part 2-30.

They are intended for use in enclosed areas where no severe operating conditions (e.g. dust, corrosive vapors, damaging gases) are present.

When installed in dusty or damp areas, suitable enclosures must be provided. If damaging gases (e.g. hydrogen sulfide) are present in the surrounding air, sufficient incoming fresh air must be supplied.

The permissible ambient temperatures and the associated rated currents are listed in the technical specifications.

Design

Versions

Breaking capacity: 65/80 kA
Rated current: 630 to 3200 A
Rated operating voltage: AC 690 V

The 3WN6 circuit-breakers are supplied complete with an operating mechanism, electronic trip unit and auxiliary switches and are fitted with auxiliary releases.

The non-automatic circuit-breakers are supplied without electronic trip unit

Basic configuration

- Electronic trip unit for overload protection and short-circuit protection, short-circuit releases also delayed for time-based discrimination, with LEDs for the cause of tripping, LED status indicator, query and test button
- Mechanical closing lockout
- "Tripped" switch
- Ready-to-close indicator with alarm switch
- Auxiliary supply connector: The circuit-breaker is equipped with the required number of connectors
- Rear horizontal connection of the main conductors

Operating mechanisms (see illustration "Motorized operating mechanism")

The circuit-breakers are available with various optional operating mechanisms:

- Manual operating mechanism with memory, with mechanical closing
- Manual operating mechanism with mechanical and electrical closing
- Motorized operating mechanism that can also be operated manually, with mechanical and electrical closing.

The operating mechanisms with electrical closing can be used for synchronization tasks.

Electronic trip units (see illustration "Electronic trip unit")

The electronic trip unit is controlled by a microprocessor and operates independently of an external voltage. It enables systems to be adapted to the different protection requirements of distribution systems, motors, transformers and generators.

When the circuit-breakers are used in IT networks that are not grounded with converters connected in parallel to a common DC link rail, suitable filter measures must be taken. Please address any questions to your regional Siemens contact. For more information on electronic trip units see "Electronic trip units" and "Functions", "Electronic trip units – General description".

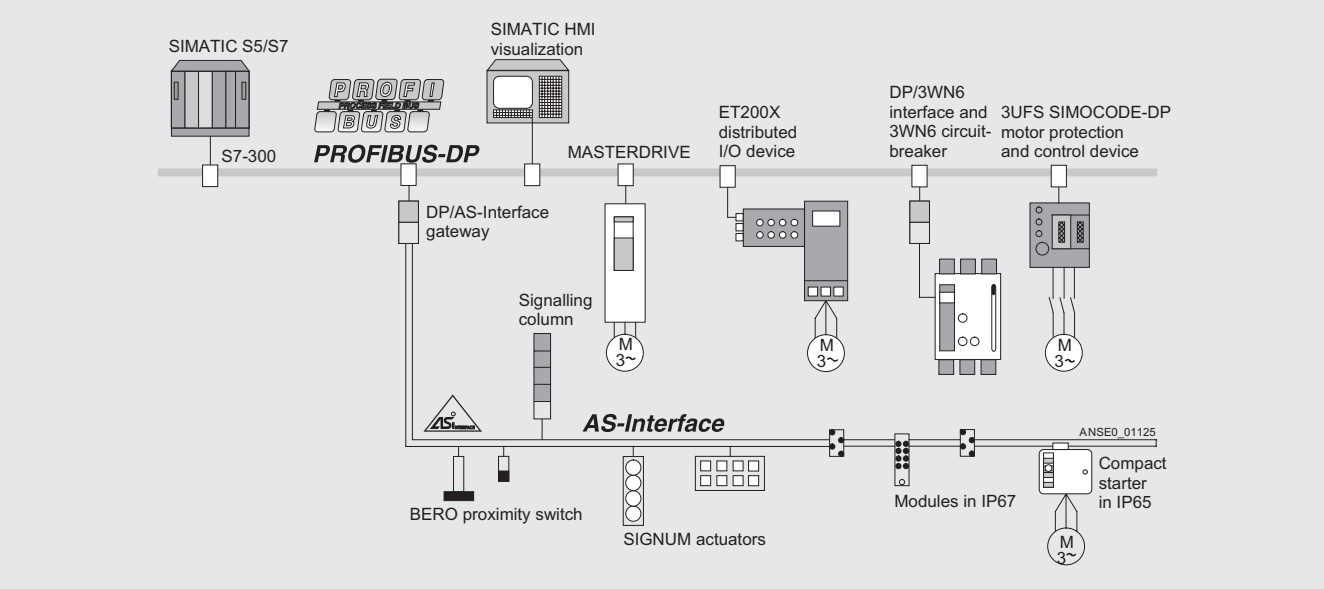
EMERGENCY-STOP facility

The 3WN6 circuit-breakers can be used as an EMERGENCY-STOP facility to DIN VDE 0113 if the circuit-breaker is equipped with an undervoltage release and is used in conjunction with an EMERGENCY-STOP control device.

Auxiliary and alarm switches

- Ready-to-close
  If all the conditions are fulfilled, so that the circuit-breaker is ready to close, this is indicated visually on the operator panel as well as by means of an indicator switch (S7).
- Contact position-independent auxiliary switches
  The circuit-breakers are supplied with 2 NO and 2 NC contacts or with 2 NO and 2 NC and 2 CO contacts according to order.

General data



Communication via PROFIBUS DP

- "Tripped" switch and mechanical closing lockout
  As standard, the circuit-breaker is equipped with an S11 alarm switch and a mechanical closing lockout for the common overload and short-circuit signal and, depending on the setting and version of the electronic trip unit, the ground-fault signal.
  The tripped signal and the standard mechanical mechanism to prevent closing remain active until the reset button is operated on the circuit-breaker. When the circuit-breaker has tripped, this is indicated by the protruding reset button.
  If the circuit-breaker has to be ready to close immediately after tripping, an automatic mechanical reset mechanism is available, but this does not reset the electrical signal from the "tripped" switch S11. The "tripped" signal then has to be reset by operating the Reset button.
  The electronic trip unit offers a further option to display the cause for tripping (see trip unit, under "Functions", "Electronic trip unit – General description").

Fixed-mounted and withdrawable version

Fixed-mounted and withdrawable circuit-breakers

- Protective measures against arcing gases
  For 3WN6 circuit-breakers with voltages up to AC 415 V, screening from vertical busbars is not necessary.
  In the case of voltages up to AC 690 V, the arc chute cover (accessory) can be used to protect against flashover.
  Electrical add-on devices on the side of the circuit-breaker must be separately covered. Also see notes under "Project planning aids", "Dimension drawings".
- Operator panel
  The operator panel is designed to protrude from a cutout in the door providing access to all operator controls and displays with the door closed.
- Door sealing frame
  The door sealing frame seals the cabinet door with the operator panel. With the cabinet door closed, the IP degree of protection is achieved for the circuit-breaker.

Withdrawable circuit-breaker

The withdrawable version comprises a withdrawable circuit-breaker, a guide frame and a hand crank for moving the withdrawable circuit-breaker. The guide frames are fitted with guide rails as standard for easy handling of the withdrawable circuit-breaker.

- Auxiliary supply connections
  The auxiliary supply connections make contact automatically when the circuit-breaker slides into the guide frame (test position, connected position).
- Switch positions in the guide frame
  The withdrawable version has three switch positions in the switchgear cabinet behind the cabinet door:
  - Connected position
    (main circuit and auxiliary circuit ready)
  - Test position
    (main circuit disconnected, auxiliary circuit ready)
  - Disconnected position
    (main circuit and auxiliary circuit disconnected)

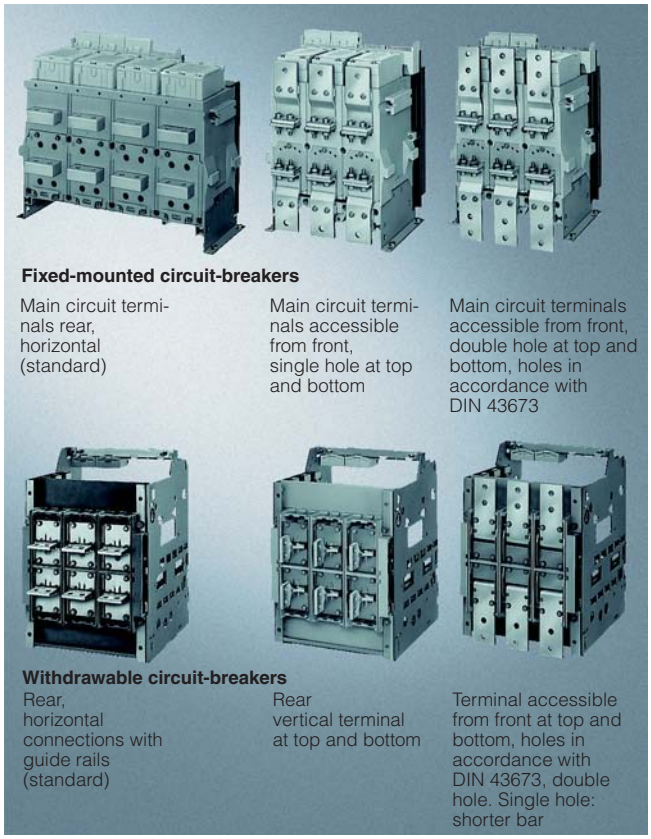
In the disconnected position, the withdrawable circuit-breaker complies with the "isolation condition" with a visible isolating distance in the main circuit and auxiliary circuit.
The circuit-breaker must always be switched off before it is moved. The "OFF" button must be held down when the slide in the crank hole is opened.

Guide frames

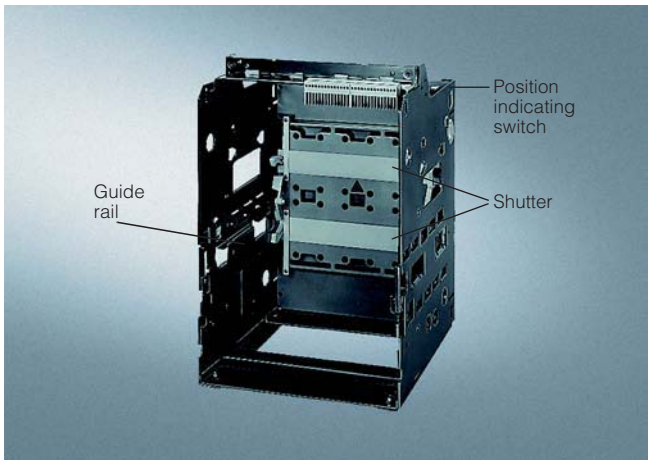
Closing of the crank hole is only possible in the circuit-breaker positions (connected, test or disconnected position). The circuit-breaker position is shown on a display on the circuit-breaker.

The circuit-breaker is moved with the help of a hand crank. The connected position as well as the disconnected position is achieved by moving the circuit-breaker to the end stop.

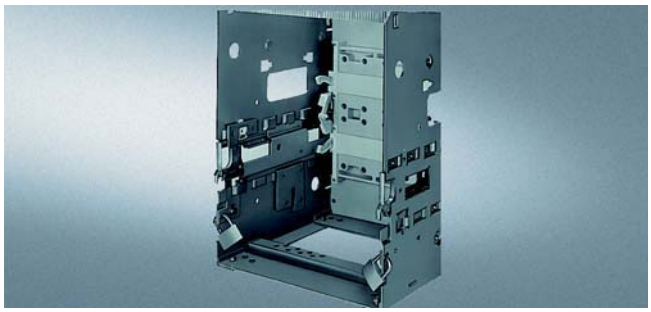
- Position indicator switches
  The position indicator switches are operated by the withdrawable circuit-breaker via an additional mechanical device. Apart from indicating the position, they also indicate that the circuit-breaker is present in the guide frame. This version is suitable for interlock circuits including other protective devices.
- Shutters
  Inadvertent touching of live main contacts or busbars is prevented by covering with a shutter. The shutter is constructed in two parts and allows the upper or lower connection areas to be opened separately for the purpose of checking that they are not live. The divided shutter can be interlocked in the open or closed position and two padlocks can be fitted.
- Coding unit
  To prevent circuit-breakers of the same size but of different designs being mixed up in a switchgear cabinet, the withdrawable circuit-breakers and guide frames can be equipped with a coding device. The coding device provides coding protection for up to 35 circuit-breakers.
  The circuit-breakers in the withdrawable version are factory-fitted with a rated current coding as standard.
  This prevents a withdrawable circuit-breaker being used in a guide frame that has a different rated current.
- Blocking mechanisms
  Fixed-mounted circuit-breakers:
  To protect the operating personnel and the switchgear, the fixed-mounted circuit-breakers can be fitted with a locking mechanism that prevents the switchgear cabinet door being opened when the circuit-breaker is closed.
  Withdrawable version:
  For the protection of the operating personnel and the switchgear, the withdrawable versions can be equipped with the following locking devices:
  - Blocking device to prevent opening of the cabinet door, active in the connected position.
  - Blocking device to prevent closing with the cabinet door open, active in the connected position.
  - Blocking mechanism against movement with the cabinet door open
    If the cabinet door is opened, the manual crank used to move the circuit-breaker cannot be positioned.
- Blocking mechanism against insertion of the withdrawable circuit-breaker
  The guide rails can be interlocked with one slide each and locked with two padlocks.
- Blocking mechanism against moving the withdrawable circuit-breaker
  A padlock prevents access to the crank hole and application of the crank (max. shackle diameter: 8 mm; possible with all versions) or the same can be achieved with an additionally available safety lock (see "Functions", "Opening, closing and locking devices").



Main circuit connections



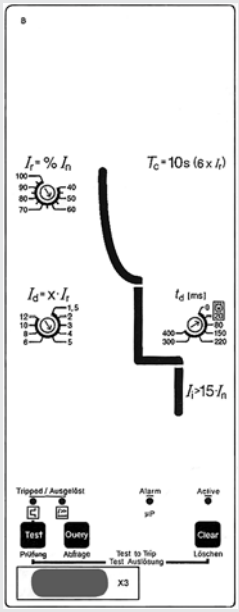
Guide frame



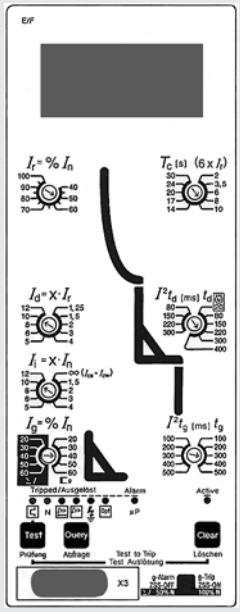
Locking device to prevent insertion of the withdrawable circuit-breaker

General data

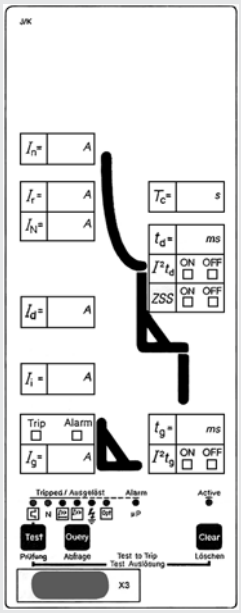
Electronic trip units



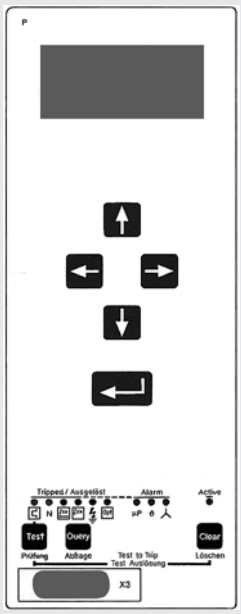
Electronic trip unit version B "azn"



Electronic trip unit version E/F "aznNg"



Electronic trip unit version J/K "aznNg"



Electronic trip unit version P "aznNg";
Electronic trip unit version N "aznN" without ground-fault release

Functions

Electronic trip units - General description

The new generation of solid-state microprocessor-based electronic trip units

Overload protection ("a")
Inverse-time delayed overload release for overload protection of load feeders and cables.


NSE0_01126

Selective short-circuit delayed short-circuit protection ("z")

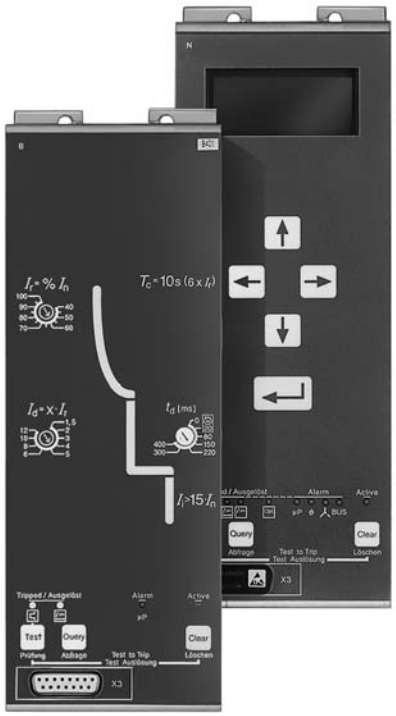

NSE0_01127

Instantaneous short-circuit protection ("n")


NSE0_01128

Ground-fault protection ("g")
For sensing of fault currents that flow to ground and that can cause fire in the plant.


NSE0_01129



Electronic trip units - versions B and N

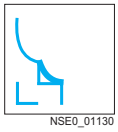
In all electronic trip units, the following functions are included as standard:

- Integrated function test
  The test button can be used to test the electronic trip unit using an integrated test function with or without tripping of the circuit-breaker (the solid-state trip unit, trip solenoid and breaker mechanism are tested).
- Active LED
  Correct operation of the electronic trip unit is indicated by the "heartbeat" of a green flashing LED.
  When the operating current exceeds the response threshold of the overload protection, this is indicated by rapid flashing.
- Cause of tripping
  The cause of tripping can be queried locally and displayed (by pressing the "Query" button).
- µP faults
  A microprocessor fault is signaled by a warning indicator (also optionally via an optocoupler as well).
- Overtemperature
  If the temperature in the electronic trip unit exceeds 85 °C, this is indicated by an LED (also optionally via an optocoupler).

Indication on electronic trip unit version N

General data

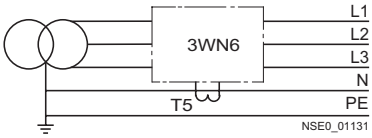
Comprehensive additional functions – in accordance with the design of the electronic trip unit, e.g.:



- Short time-delay short-circuit release with I^2t-dependent delay for improved discrimination to the downstream fuses
- Short-circuit protection with "Zone Selective Interlocking" for significant reduction of the stress and damage in a distribution system thanks to short delay times.
- Load shedding/load receiving
- Communication via PROFIBUS DP
- LCD operating current display

Ground-fault protection

- Description
  Ground-fault releases "g" sense fault currents that flow to ground and that can cause fire in the plant. Multiple circuit-breakers connected in series can have their delay times adjusted so as to provide graduated discrimination.
  When setting the parameters for the electronic trip unit it is possible to choose between "Alarm on detection" and "Trip circuit-breaker on detection".
  The reason for tripping is indicated by means of an LED when the query button is activated.
- Measurement methods
  - Vectorial summation formation with current transformer in neutral conductor
    The neutral conductor current is measured directly and is evaluated for neutral conductor overload protection.
    The electronic trip unit determines the ground-fault current by means of vectorial summation current formation for the three phase currents and the N-conductor current.



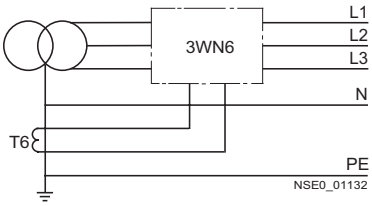
Three-pole circuit-breakers, current transformers in the neutral conductor

Electronic trip unit version	Current transformer T5 must be connected to auxiliary current connection
• C, D, E, H, J	400.13 400.14
• N, P	300.1 300.2

For 4-pole circuit-breakers, the fourth current transformer for the N-conductor is installed internally, for the electronic trip unit version E and J it must be mounted externally to the incoming or outgoing feeder side.

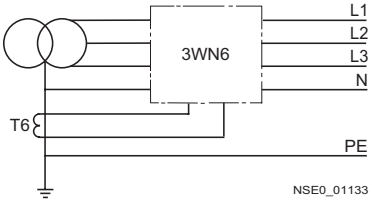
Electronic trip unit version	Current transformer T5 must be connected to auxiliary current connection
• E, J	400.13 400.14

- Direct acquisition of the ground-fault current by means of a current transformer in the grounded neutral point of the transformer. The current transformer is installed directly into the grounded neutral point of the transformer.



Three-pole circuit-breakers, current transformers in the grounded neutral point of the transformer.

Electronic trip unit version	Current transformer T6 must be connected to auxiliary current connection
• C, E, J, P	400.13 400.14



Four-pole circuit-breakers, current transformers in the grounded neutral point of the transformer (connection as for three-pole circuit-breakers)

Additional functions 1

- External DC 24 V supply
  e.g. for parameterization (i.e. setting the protection parameters and additional functions), activation of operating current indication (version D, E/F, H, J/K, N/P) if no load current is flowing in the main circuits.
- µP-fault
  The alarm LED is activated for all versions if the microprocessor is faulty. For the additional functions 1 and 2, a signal can also be issued via the optical coupler. The circuit-breaker is not tripped in this case. However, the protection function is secured by means of a redundant bypass.
- Temperature alarm
  If the temperature in the electronic trip unit exceeds the limit value of 85 °C, this is indicated by means of an LED. For the additional functions 1 and 2, a signal can also be issued via the optical coupler.

Additional functions 2

- External DC 24 V power supply
  (see additional functions 1)
- µP fault
  (see additional functions 1)
- Temperature alarm
  (see additional functions 1)
- Leading signal "a" trip
  The leading signal (via optical coupler) for the overload trip is used to deactivate the downstream thyristor control devices. The overload tripping operation is then performed after 200 ms.

- Load monitoring
  Load monitoring is adjustable via two selectable operating values for load receiving and load shedding (IAW1, IAW2) and a common delay time (td, AW).
- "g" alarm
  Signal via optical coupler on ground fault
- Zone Selective Interlocking
  (see short-circuit protection with Zone Selective Interlocking "ZSI").

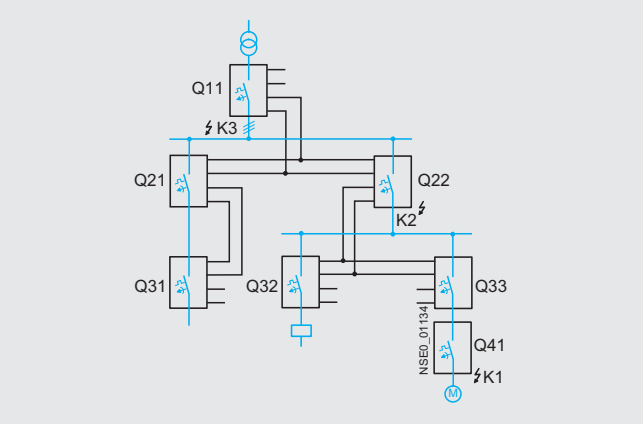
Hand-held device

- Description
  The hand-held device is connected to the electronic trip unit by means of a connecting lead and a snap-on power supply adapter. A DC 24 V power supply can be connected to the adapter to activate the trip unit. This hand-held device can also be used for the communication-capable motor protection and control device 3UF5 (SIMOCODE-DP) for configuration and operation.
- Functions
  Reading and writing the protection parameters for electronic trip unit versions H, J/K, N, and P.
  Connecting and setting operating values for the additional functions of the electronic trip unit versions D, E/F, H, J/K, N, and P.
  The settings read out from the trip unit can be temporarily stored in the hand-held device and written to a different electronic trip unit.

Hand-held device

Short-circuit protection with Zone Selective Interlocking

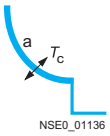
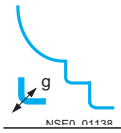
The Zone Selective Interlocking function permits full discrimination for the very short delay time of t_{zsi} = 50 ms regardless of the number of staggered levels and location of the short-circuit in the distribution system.
Reduction of the break time reduces the stress and damage that can occur in a distribution system considerably.
If the Zone Selective Interlocking function is set and a short-circuit occurs, every circuit-breaker through which the short-circuit flows interrogates the next circuit-breaker immediately downstream for presence of the short-circuit current in the next lower staggered level.



5

General data

Functional overview of the electronic trip unit system

		Function	
Basic functions			
Overload protection 		**Inverse-time delayed overload release "a" for the phases**	Adjustment of the current setting I_r from 40 % to 100 % I_n Graduation 5 % Graduation freely programmable
			Time-lag class T_c = opening time at 6 × I_r, setting T_c
			Thermal image
			"Phase-failure sensitivity" (reversible)
		for the neutral conductor[1])	Adjustment of the current setting I_n Time-lag class T_c of the neutral conductor as for the phases
Short-circuit protection 		**Short-time delayed short-circuit release "z"**	Setting the operating current I_d
			Setting the delay time t_d
			With I^2t_d-dependent delay, delay time t_d
		**Instantaneous short-circuit release "n"**	Setting the operating current I_i
Ground-fault protection 		**Ground-fault release "g"**[1])	Setting the operating current I_g
			Setting the delay time t_g
			With I^2t_g-dependent delay, delay time t_g
LCD display		**Operating current indication**	
LED display		**Status indication**	Flashing LED when electronic trip unit activated
		"Tripped" indication	"a" release 
			"z/n" release 
			"z" release 
			"n" release 
			"N" release N
			"g" release/alarm
		Alarm indication	µP fault
			θ, temperature > 85 °C
			 phase unbalance
			Opt freely assignable indication
Test		**Internal self-test and display via LED**	
		Connection of the test device to test connector X3	
Basic configuration			
Signal by signaling switch (1 NO)		**Ready-to-close**	Circuit-breaker can be safely closed
		"Tripped" switch	Latching; active after "a", "z", "n", "g"[2]) release with/without mechanical closing lockout
Additional function			
Signal via optocoupler outputs		**Additional functions 1**	External DC 24 V supply (e.g. for parameterization), current input 250 mA
			µP fault
			θ, temperature > 85 °C linked with phase unbalance
		Additional functions 2	External DC 24 V supply (e.g. for parameterization), current input 250 mA
			µP fault
			θ, temperature > 85 °C linked with phase unbalance
			Leading signal "a" release (200 ms to release)/load shedding
			Load monitoring; operating value 50 to 150 %, 1 to 15 s
			"g" alarm
			Zone Selective Interlocking between 3WN and 3WS
Communication via PROFIBUS DP			
Data transmission		**Communication module**	in conjunction with additional functions 2 and interface DP/3WN6
Data transmission and measured-value acquisition		**Measurement module**	in conjunction with additional functions 2 and interface DP/3WN6

All specified delay times are minimum non-release times (circuit-breaker opening time approx. 20 ms).

1) With 3-pole circuit-breakers a current transformer is required in addition if there is asymmetrical loading of the phases. In the case of 4-pole circuit-breakers a current transformer in the neutral conductor is fitted internally in the circuit-breaker (exception: electronic trip units E and J). For current transformers to be ordered separately see Page 5/108.

Electronic trip unit version (≙ 10th pos. of Order No.)	**V** "zn"	**B** "azn"	**C/G** "aznNg"	**D** "aznN"	**E/F** "aznNg"	**H** "aznN" 7	**J/K** "aznNg" 7	**N** "aznN"	**P** "aznNg"
		●	●	●	●	●	●	●	●
		10 s[3])	10 s[3])	2–30 s	2–30 s	2–30 s	2–30 s	2–30 s	2–30 s
				●	●	●	●q	●	●
		×	▲	▲	▲	●	●	●	●
			50 or 100 %	50 or 100 %	50 or 100 %	20–100 %	20–100 %	20–100 %	20–100 %
	1.25–12×I_r I_r=40–100 %I_n	1.5–12×I_r	1.25–12×I_r	1.25–12×I_r	1.25–12×I_r	0.5–12×I_n	0.5–12×I_n	1.25×I_r–40 kA	1.25×I_r–40 kA
	0; 20–500 ms	0; 20–400 ms	0; 20–400 ms	20–400 ms	20–400 ms	20–4000 ms[4])	20–4000 ms[4])	20–400 ms	20–400 ms
				80–300 ms	80–300 ms	80–300 ms	80–300 ms	80–300 ms	80–300 ms
	>15×I_n	>15×I_n	>15×I_n	>1.5–12×I_n and I_i=∞ with setting I_i=∞ then I_{cu}=I_{cs}=I_{cw} (lowest value decisive)	>1.5–12×I_n with I_i=∞ with setting I_i=∞ then I_{cu}=I_{cs}=I_{cw} (lowest value decisive)	>1.5–12×I_n with I_i=∞ with setting I_i=∞ then I_{cu}=I_{cs}=I_{cw} (lowest value decisive)	>1.5–12×I_n with I_i=∞ with setting I_i=∞ then I_{cu}=I_{cs}=I_{cw} (lowest value decisive)	Size I: up to 50 kA Size II: up to 65 kA	Size I: up to 50 kA Size II: up to 65 kA
			0.2–0.6×I_n		0.2–0.6×I_n		20 % I_n up to 1200 A		20 % I_n up to 1200 A
			100–500 ms		100–500 ms		100–500 ms		100–500 ms
					100–500 ms		100–500 ms		100–500 ms
				●	●			●	●
	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●
	●	●	●						
				●	●	●	●	●	●
				●	●	●	●	●	●
			●	●	●	●	●	●	●
			●		●		●	●	
	●	●	●	●	●	●	●	●	●
								●	●
								●	●
				●■	●■	●■	●■	●	●
	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●
				▲	▲	▲	▲	●	●
				▲	▲	▲	▲	▲	▲
				▲ ▲■	▲ ▲■	▲ ▲■	▲ ▲■	▲ ▲	▲ ▲
				▲	▲	▲	▲	●	●
				▲	▲	▲	▲	▲	▲
				▲ ▲■	× ▲■	× ▲■	× ▲■	× ×	▲ ▲
				▲■	×■	▲■	▲■	▲	▲
				▲■	▲■	▲■	▲■	▲	▲
					▲		▲		▲
				▲	▲	▲	▲	▲	▲
				▲	▲	▲	▲	▲	▲
								▲	▲

2) "g" release occurs with "Trip" setting on the electronic trip unit.

3) Where there is heavy starting of motors, the time setting T_c = 10 s may not be sufficient: use version D, E/F, H, J/K or P.

4) For t_d > 500 ms: I_{cu} = I_{cw} = I_{cs} (lowest value decisive) and I_d automatically limited to 15 kA.

● Function available as standard

▲ Function optional (additional cost)

■ Deselect/set function with hand-held device
Function active when t_d is set to 20 ms

× Available with electronic trip unit B only from date of manufacture 02.96

General data

Communication module (Z = F01)

- The electronic trip units are internally equipped with an additional communication module for communication via PROFIBUS DP (in this case please use the prefix Z with the Order Number i.e. Z=F01). The data are transferred over a 3 m plug-in connection (included in scope of supply) to an external DP/3WN6 interface. This converts the data for PROFIBUS DP. The following useful data are available depending on the version and accessories of the circuit-breaker:
  - Analog measured values:
    Phase currents I_{L1}, I_{L2}, I_{L3}, I_{max} and I_{min},
    N-conductor current I_N
    Ground-fault current I_g
  - Event signals:
    Type of previous tripping operation (a, z, n, g, N),
    µP fault,
    temperature alarm,
    phase symmetry,
    load shedding, load receiving, overload
  - Operating states:
    Switch on/off,
    ready indication,
    status of the voltage/undercurrent release,
    storage spring loaded,
    position (test and connected position)
    of the withdrawable circuit-breaker,
    test of the electronic trip unit
  - Remote configuration
  - Read out configuration data:
    Settings for the protection functions
  - Rated current for the circuit-breaker,
    number of poles,
    identification code for circuit-breaker
  - Diagnostics data:
    Average current for previous fifteen minutes
  - Remote control:
    To open and close the circuit-breaker provided that it is equipped with electrical querying and a shunt release.
- Remote configuration
  The additional functions and protection functions can be set via the bus. The electronic trip unit checks whether the values for the protection parameters are valid and within range.

Measurement module (Z = F05)

The electronic trip unit versions N and P can be also be equipped with a measurement module (please quote the following Order No. when ordering: Z=F05 instead of Z=F01). The measurement module consists of the communication module with additional measurement functions and external voltage transformers. In this way, the voltage and frequency are acquired in addition to the current values, which makes the following additional operating values available:

- Voltage U_{actL}, U_{maxL}, U_{minL}
  (15-minute value for max. and min.)
  U_{LL1}, U_{LL2}, U_{LL3} (conductor/conductor voltage)
- Frequency f_{act}, f_{max}, f_{min}
  (15-minute value for max. and min.)
- Power factor
- Active power P
- Reactive power Q
- Apparent power S
- Active work W
- Direction of phase rotation.

These values can be used for energy management by switching loads on/off to avoid expensive load peaks.

The following signal and protection functions for tripping are available:

- Asymmetrical phase for voltage and current
- Undercurrent/overcurrent
- Underfrequency/overfrequency
- Reversed flow of energy

The data can also be displayed locally by the electronic trip unit. The voltage transformers for the measurement module must be mounted externally. They are mounted on a 35 mm mounting rail. The voltage transformers are included in the scope of supply of the measurement module.

The measurement module cannot be retrofitted.

Opening, closing and locking devices

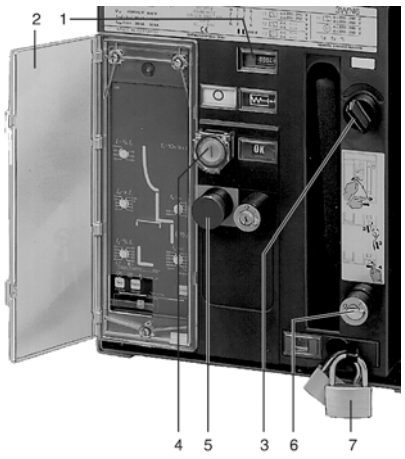
- ON and OFF buttons
  - Mechanical ON button
    In the standard version, the mechanical ON button is a pushbutton. In operating mechanisms with electrical closing, the mechanical ON button is fitted with a sealing cap. As an alternative to a pushbutton, a safety lock (CES, BKS, IKON) can also be supplied.
    If the key is removed in the "0" position, it is no longer possible to close the circuit-breaker mechanically.
  - "Electrical ON" button
    The "electrical ON" button is intended for normal activation during service. External electrical interlocks can be implemented easily using the "electrical ON" button. A sealing cap is available for the "electrical ON" button.
  - Mechanical OFF button
    In the standard version, the mechanical OFF button is a pushbutton. An additional sealing cap secures the button against unauthorized operation.

    As an alternative to the OFF button, the following are available:
  - Safety lock
    The key can be removed in the OFF position to ensure that the circuit-breaker cannot be closed mechanically. The same key can then be used to unlock another circuit-breaker.
  - EMERGENCY-STOP button
    This mushroom button latches in the OFF position when it is pressed and prevents the circuit-breaker closing until the latching is reset by rotating the mushroom button.
  - Locking device against closing
    A flap of the locking device covers the "electrical ON" button and continuously depresses the "mechanical OFF" button. The locking device can be secured with up to 4 padlocks.

- CASTELL, FORTRESS or KIRK-KEY lock
  These locking devices are supplied with a mounting set. The lock must be ordered from the manufacturer of the locks. When the lock is activated, the circuit-breaker is locked against closing.
  The disconnection condition is fulfilled in the OFF position. An additional access block with a flap for CASTELL, FORTRESS and KIRK-KEY locks prevents insertion of the key. This device can be locked with up to four padlocks.

- Locking device against moving the withdrawable circuit-breaker
  Access to the crank hole and application of the crank is prevented by means of one or more padlocks. An additional safety lock which can be supplied on request also prevents access to the crank hole in position I (key can be removed). This also prevents movement of the withdrawable circuit-breaker in the guide frame.
- Locking device in the cabinet door
  A safety lock which is fixed to the cabinet door prevents the circuit-breaker from closing. Interlocking is only effective in the connected position in the case of withdrawable circuit-breakers. The signal is transmitted via a Bowden wire.
  For locking mechanisms please refer to "Installation", "Guide frames".
- Transparent cover over electronic trip unit
  The standard transparent cover can be sealed. The configuration sections are covered to prevent unauthorized access. Openings allow access to the query and test button. A hinged flap covers the whole operator panel of the electronic trip unit.
- Motor switch
  An additional motor switch can deactivate automatic loading of the storage spring on closing. This means that the control supply does not need to be switched off for maintenance measures to the circuit-breaker.
- Operating cycles counter
  A five-digit operating cycles counter is available for the 3WN6 circuit-breakers. The display is incremented by "1" as soon as the storage spring is fully loaded.
- Auxiliary release
  Up to two auxiliary releases can be installed at the same time.
  The following are available:
  1 shunt release
  or 1 undervoltage release
  or 2 shunt releases
  or 1 shunt release
  + 1 undervoltage release
  The shunt release "f" has been designed for permanent excitation. This means that it is also possible to block the circuit-breaker against being jogged into closing.
  An energy storage device for shunt releases allows the circuit-breaker to be opened even if the control voltage is no longer available.
  The undervoltage release "r" is available without delay as standard (jumper-selectable to 100 ms by customer).
  In addition, the undervoltage release "rc" with a delay in the range from 0.2 to 3.2 s is available.

For further information on the selection, ordering and project engineering of communication-capable circuit-breakers, refer to section 3 "Communication-capable circuit-breakers" and the manual "Communication links for 3VF, 3WN6, 3WN1/3WS1 circuit-breakers to PROFIBUS DP"
Order No. E20001-P285-A644-V1.



1 Operating cycles counter
2 Transparent cover over electronic trip unit
3 Motor switch
4 Sealing cap for mechanical ON button
5 EMERGENCY-STOP button instead of the OFF button
6 Safety lock to prevent opening of the crank hole
7 Padlock to prevent opening of the crank hole
8 Safety lock instead of the mechanical ON button
9 Locking device for mechanical OFF button and electrical ON button
10 Installation location for CASTELL, FORTRESS, or KIRK-KEY lock

Opening, closing and locking devices

Undervoltage release "rc" with delay for mounting in 3WN6 circuit-breaker

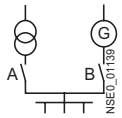
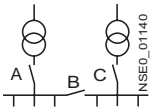
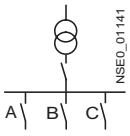
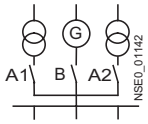
General data

Module for mutual mechanical interlocking

The module for mutual mechanical interlocking can be used for one or two 3WN6 circuit-breakers and can be adapted easily to the corresponding versions.
The fixed-mounted and withdrawable circuit-breaker versions are fully compatible and can therefore be used in a mixed configuration in an installation.
The circuit-breakers can be mounted alongside each other or one above the other, whereby the spacing of the circuit-breakers is determined solely by the length of the Bowden cable. The Bowden cables are supplied in standard lengths of 2 m. Interlock signals are looped through via the Bowden cables. Interlocking is only effective in the connected position in the case of withdrawable circuit-breakers.
The mechanical lifetime of the Bowden cables is 10,000 operating cycles.
The interlocking module is mounted on the right-hand side of the fixed-mounted circuit-breaker (see illustration) or the guide frame.

3WN6 circuit-breaker, 4-pole, with interlocking module and Bowden wire

Interlocking module with Bowden wire

Example	Version	Switch status	Description
	1	A B 0 0 1 0 0 1	2 circuit-breakers alongside each other: One circuit-breaker can only be closed when the other has been switched off. Each circuit-breaker has an interlocking module and a Bowden wire.
	2	A B C 0 0 0 1 0 0 0 1 0 0 0 1 1 1 0 0 1 1 1 0 1	3 circuit-breakers one above the other: Any two circuit-breakers can always be closed, with the third one being interlocked. Each circuit-breaker has an interlocking module and a Bowden wire. An additional Bowden wire must be ordered separately for each circuit-breaker.
	3	A B C 0 0 0 1 0 0 0 1 0 0 0 1	3 circuit-breakers one above the other: When one circuit-breaker is closed the other two circuit-breakers cannot be closed. The interlocking mechanism of each circuit-breaker consists of an interlocking module and a Bowden wire. An additional Bowden wire must be ordered separately for each circuit-breaker.
	4	A1 B A2 0 0 0 1 0 0 0 0 1 1 0 1 0 1 0	3 circuit-breakers alongside each other: Two circuit-breakers can be closed and opened independently of each other, while the third is only ready to close when the two others are open. If the third circuit-breaker is closed, the other two circuit-breakers cannot be closed. All three circuit-breakers each have an interlocking module and a Bowden wire. A Bowden wire must be ordered separately.

Transfer control device

The transfer control device allows automatic network switchovers from a standard-network supply to an emergency-network supply. Standard and emergency-network supply:
AC 380/400 V

A transformer is generally used for standard-network supplies. The emergency-network supply is usually provided by a generator or transformer.

The transfer control device monitors the infeed side of both circuit-breakers. If the standard-network supply fails, the emergency network is switched on automatically. When the standard-network returns, it is also reactivated automatically.

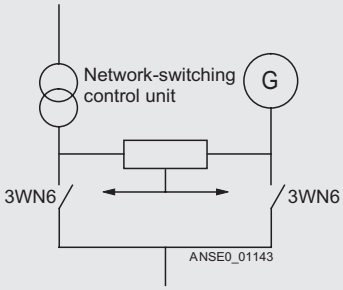
The switchover requires two circuit-breakers with the basic configuration
3WN6 _ _ _- _ _ _ 58 - 1KA _
(the blank spaces can be configured as required) and one transfer control device 3WX36 66-7JA00.

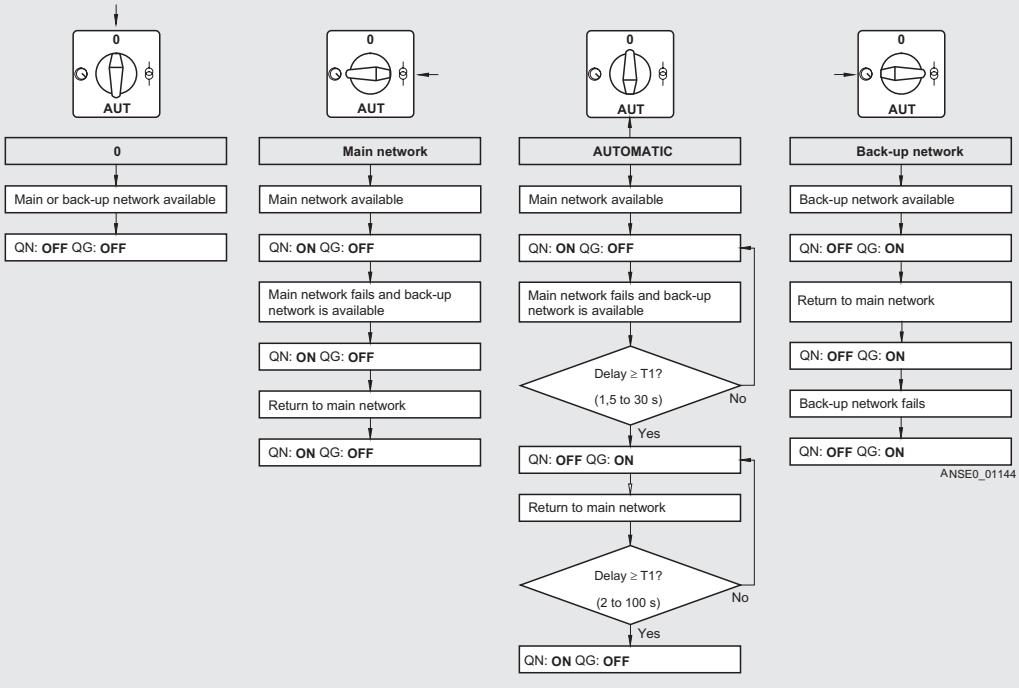
The transfer control device can be mounted to the wall or installed in the control cabinet. It can be installed in the control cabinet without an enclosure.

The transfer control device can be used to implement automatic network switchovers to IEC 60947-6-1.

The two 3WN6 circuit-breakers must be mutually interlocked for this purpose. (See "Accessories/spare parts", "For fixed-mounted and withdrawable circuit-breakers", "Mutual mechanical interlocking".)

Transfer control device

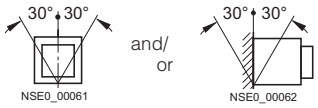




Mode of operation of the transfer control device

General data

Technical specifications

Size				I			II		
Type				**3WN6 0**	**3WN6 2**	**3WN6 4**	**3WN6 5**	**3WN6 6**	**3WN6 7**
Rated current I_n at 55 °C, at 50/60 Hz	Main conductor		A	630	1000	1600	2000	2500	3200
	Neutral conductor (only on 4-pole vers.)		A	630	1000	1600	2000	2500	3200
Rated operating voltage U_e at 50/60 Hz			AC V	up to 690					
Rated impulse withstand voltage U_{imp}	Main circuits[7])		kV	8					
	Auxiliary circuits		kV	4					
Utilization category				B					
Rated short-circuit making capacity I_{cm} (peak value)	up to AC 415 V		kA	143			176		
	up to AC 500 V		kA	143			176		
	up to AC 690 V		kA	110			110		
Rated service short-circuit breaking capacity I_{cs} (rms value)	up to AC 415 V		kA	65			80		
	up to AC 500 V		kA	65			80		
	up to AC 690 V		kA	50			50		
Rated ultimate short-circuit breaking capacity I_{cu} (rms value)	up to AC 415 V		kA	65			80		
	up to AC 500 V		kA	65			80		
	up to AC 690 V		kA	50			50		
Permissible ambient temperatures	Operation		°C	–20 ... +70					
	Storage		°C	–40 ... +80					
Rated short-time withstand current I_{cw} at 50/60 Hz	0.5 s		kA	50		50	65		
	1 s		kA	35/50[1])		50	65		
	2 s		kA	25/30[1])		30	60		
	3 s		kA	20/25[1])		25	50		
	4 s		kA	17/20[1])		20	40		
Permissible load for fixed-mounted and withdrawable circuit-breakers at cabinet interior temperature [2])[3])[4])	up to 55 °C		A	630	1000	1600	2000	2500	3200
	at 60 °C		A	630	1000	1600	2000	2350	2860
	at 70 °C		A	630	1000	1530	2000	2330	2650
Rated rotor operating voltage U_{er}			V	2000					
Power loss at I_n with 3-phase symmetr. load (without line-side busbars and metal components[2])[4])	Fixed-mounted cir.-br.		W	40	90	140	170	260	420
	Withdrawable circuit-breaker including guide frame		W	80	205	310	310	510	760
Service life									
with maintenance[5])	mechanical		Op. cycles	20000			20000		
	electrical		Op. cycles	20000			20000		
without maintenance[5])	mechanical		Op. cycles	10000			10000		
	electrical[6])		Op. cycles	6000			2000		
Operating frequency			1/min	1					
Minimum interval between tripping operation by electronic trip unit and next making operation of the circuit-breaker (only with automatic mechanical resetting of the lockout device)			ms	80					
Service position									
Degree of protection				Circuit-breaker IP20, when fitted in cabinet or frame Operator panel with door sealing frame IP54					
Main conductor minimum cross-sections	Copper bars, bare		Qty, mm^2	1 × 50 × 10	2 × 40 × 10	2 × 60 × 10	2 × 100 × 10	3 × 100 × 10	3 × 100 × 10
	Copper bars, painted black		Qty, mm^2	1 × 40 × 10	1 × 60 × 10	2 × 50 × 10	2 × 80 × 10	2 × 100 × 10	3 × 100 × 10
Auxiliary conductors (Cu)	Max. no. of aux. conductors × cross-section	solid and finely stranded with end sleeves		1 × 0.5 ... 2.5 mm^2; 1 × AWG 14 2 ×1.0 mm^2					
Weights	3-pole circuit-breakers	Fixed-mounted circuit-breaker approx. kg		34	34	36	57	59	61
		Withdrawable circuit-breaker approx. kg		36	36	38	59	61	63
		Guide frame approx. kg		22	22	23	35	37	37
	4-pole circuit-breakers	Fixed-mounted circuit-breaker approx. kg		47	47	49	70	72	74
		Withdrawable circuit-breaker approx. kg		49	49	51	72	74	76
		Guide frame approx. kg		27	27	28	46	48	48

1) Figures apply to circuit-breakers with order code "K03", see "Options".
2) For fixed-mounted circuit-breakers with horizontal connection, for withdrawable circuit-breakers with vert. conn., see manual for 3WN6 circuit-breakers.
3) The temperatures apply to the air surrounding the upper third of the circuit-breaker.
4) These values apply in the case of sinusoidal current (50/60 Hz). The heating/losses increase in the event of harmonics and higher frequencies.
5) Maintenance: replacement of the contact set.
6) Per contact set. Disconnect. of the rated current I_n and power factor = 0.8.
7) Rated insulation voltage U_i = AC 1000 V.

Operating mechanisms

Manual operating mechanism with memory, with mechanical closing

Closing Charging stored-energy feature	Max. force required to operate the hand lever Required number of strokes on the hand lever		N	210 5

Manual operating mechanism with mechanical and electrical closing

Charging stored-energy feature				see "Manual operating mechanism with stored-energy feature with mechanical closing"
Closing solenoid (Y1)	Operating range			0.7 ... 1.1 × U_s
	Extended operating range for battery operation[1])	for DC 24 V, DC 48 V, DC 60 V, DC 110 V, DC 220 V		0.7 ... 1.26 × U_s
	Power input	AC/DC	VA/W	15
	Minimum command duration at U_s for the activation solenoid		ms	60
	Total closing time at U_s after start of closing command for the activation solenoid, suitable for synchronizing tasks		ms	80
	Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/miniature circuit-breaker with C-characteristic			1 A TDz (time-lag)/1 A

Manual/motor operating mechanism with mechanical and electrical closing

Manual operating mechanism				see "Manual operating mechanism with stored-energy feature with mechanical closing"
Motor	Operating range			0.7 ... 1.1 × U_s
	Extended operating range for battery operation[1])	for DC 24 V, DC 48 V, DC 60 V, DC 110 V, DC 220 V		0.7 ... 1.26 × U_s
	Power input to motor	AC/DC	VA/W	40
	Time required to charge the stored-energy mechanism	1 × U_s	s	20
Closing solenoid				see "Manual operating mechanism with stored-energy feature with mechanical and electrical closing"
	Short-circuit protection			
	Motor and activation solenoid for the same rated control supply voltages:			
For motor and closing solenoid	Smallest permissible DIAZED fuse (operational class gL)/miniature circuit-breaker with C-characteristic	at U_s = 24 V		2 A TDz (time-lag)/2 A
		at U_s = 110–127 V		1 A TDz (time-lag)/1 A
		at U_s = 220–250 V		1 A TDz (time-lag)/1 A

Auxiliary releases

Shunt release "f" (F1, F2)		Operating value	pickup		≥ 0.7 × U_s (circuit-breaker is tripped)
		Operating range			0.7 ... 1.1 × U_s
		For continuous command (100 % duty ratio), locks out on momentary-contact commands			
		Extended operating range for battery operation[1])	for DC 24 V, DC 30 V, DC 48 V, DC 60 V, DC 110 V, DC 220 V		0.7 ... 1.26 × U_s
		Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110–127, 220–240 24,48, 60, 110–125, 220–250
		Power input	AC/DC	VA/W	15
		Minimum command duration at U_s		ms	60
		Opening time of circuit-breaker at U_s = 100 %	AC/DC	ms	≤ 80
		Short-circuit protection Smallest permissible DIAZED fuse (operational class gL)/miniature circuit-breaker with C-characteristic			1 A TDz (time-lag)/1 A
	With stored energy feature consisting of f release and 3WX31 56-1J.01 storage device	Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110–127, 220–240 110–125, 220–250
		Operating range			0.85 ... 1.1 × U_s
		Power input	AC/DC	VA/W	1
		Storage time[2]) at U_s/recharging time[3]) at U_s			max. 5 min/min. 5 s
		Opening time of circuit-breaker, short-circuit protection			as with "for continuous command"

1) The operating range is only permissible for the specified rated voltages and corresponds to the battery charging voltage.

2) Storage time = maximum time after which tripping by the shunt release is still assured after loss of the auxiliary voltage supply. The precondition for this is that the stored energy feature was fully charged.

3) Recharging time = minimum time for recharging the stored energy feature after tripping by the shunt release.

General data

Auxiliary releases

Undervoltage release "r" (F3) and "rc" (F8)	Operating values	pickup dropout		≥ 0.85 × U_s (circuit-breaker can be closed) (0.35 ... 0.7) × U_s (circuit-breaker is tripped)
	Operating range			0.85 ... 1.1 × U_s
	Extended operating range in battery operation[1])	for DC 24 V, DC 30 V, DC 48 V, DC 60 V, DC 110 V, DC 220 V		0.7 ... 1.26 × U_s
	Rated control supply voltage U_s	AC 50/60 Hz DC	V V	110–127, 220–240, 380–415 24, 48, 60, 110–125, 220–250
	Power input	AC DC	VA W	15 15
	Opening time of circuit-breaker at U_s = 0			
	Design "r" (F3)			
	Instantaneous		ms	≤ 100
	With 100 ms delay		ms	≤ 300
	Design "rc" (F8)			
	With delay, t_d = 0.2 ... 3.2 s		s	0.2 ... 3.2
	Reset via additional NC contact – direct switching-off		ms	≤ 100
	Short-circuit protection			
	Smallest permissible DIAZED fuse (operational class gL) /miniature circuit-breaker with C-characteristic			1 A TDz (time-lag)1 A

Contact position-driven auxiliary switches (S1, S2, S3, S4)

Rated insulation voltage U_i			AC/DC V	400 V			
Rated operating voltage U_e				400 V			
Switching capacity	AC, 50/60 Hz	Rated operating voltage U_e	V	up to 24	110	220/230	380/400
		Rated operating current I_e/AC-12	A	10	10	10	10
		Rated operating current I_e/AC-15	A	6	6	6	4
	DC	Rated operating voltage U_e	V	24	48	110	220
		Rated operating current I_e/DC-12	A	10	8	3.5	1
		Rated operating current I_e/DC-13	A	10	4	1.2	0.4
Short-circuit protection[2])		Largest permissible DIAZED fuse (operational class gL/gG)		10 A TDz, 16 A Dz			
		Largest permissible miniature circuit-breaker with C-characteristic		10 A			

Ready-to-close signaling switch (S7) and "tripped" signaling switch (S11), to DIN VDE 0630

Switching capacity	AC, 50/60 Hz	Rated operating voltage U_e	V	10	220
		Rated operating current I_e	A	0.14	0.1
	DC	Rated operating voltage U_e	V	24	220
		Rated operating current I_e	A	0.2	0.1
Short-circuit protection[2])		Largest permissible DIAZED fuse (operational class gL)		2 A Dz (quick)	
Tripped" signaling switch (S11)		Signal duration after tripping		continuous, until reset	

1) The operating range is only permissible for the specified rated voltages and corresponds to the battery charging voltage.

2) Without any welding of the contacts only at I_k ≤ 1 kA in accordance with DIN VDE 0660 Part 200.

Electronic trip unit signals				
Electronic trip unit signals via optocoupler		µP fault, ϑ alarm, leading tripped signaling "a", "g" alarm, Zone Selective Interlocking, load monitoring. After activation of the electronic trip unit it sends a signal (contactless) via optocoupler. Max. rated operating voltage U_e Max. rated operating current U_e	 DC V DC mA	 24 20
Measuring accuracy of the electronic trip unit				Protection functions to EN 60947; current indication and communication function (F01): ± 5 %; measurement function (F05): ± 3 %
Position indicator switch on guide frame				
Type of contact	Signal:	"Circuit-breaker in connected position" "Circuit-breaker in test position" "Circuit-breaker in disconnected position"		3 NO + 3 NC 1 NO + 1 NC 2 NO + 2 NC or 1 NO + 1 NC 1 NO + 1 NC 1 NO + 1 NC
Rated insulation voltage U_i			AC/DC V	400 (415)
Rated operating voltage U_e			V	AC 240/DC 230
Switching capacity		Rated operating current I_e I_e/AC-1 I_e/AC-15 I_e/DC-13	A A A	8 up to AC 240 V 3 up to AC 240 V 10/DC 24 V; 5/DC 48 V; 1.5/DC 115 V; 0.6/DC 230 V
Short-circuit protection[1])		Largest permissible DIAZED fuse (operational class gL) Largest permissible miniature circuit-breaker with C-characteristic		8 A TDz (slow) 8 A
Transfer control device				
		Degree of protection Weight Voltage deviation Frequency deviation Contact transfer time Switchover time Return transfer time Break-time Ambient temperature Storage temperature		IP40 approx. 10 kg 0 ... 0.55 × U_e not monitored 200 ms + T1 adjustable (1.5 s ... 30 s) 200 ms 200 ms + T2 adjustable (5 s ... 100 s) 65 ms –25 ... +55 °C –50 ... +80 °C

1) Without any welding of the contacts only at $I_k \leq 1$ kA in accordance with DIN VDE 0660 Part 200.

3-pole, fixed-mounted design

Selection and ordering data

Version				DT	Order No.																PS*	Weight per PU approx.
Rated operating voltage U_e up to AC 690 V					3 W N 6	■	■	1	–	■	■	■	■	■	–	■	■	■	■			kg
Size/ rated current I_n	Size	Rated current I_n	Adjustment range of setting current I_r																			
	I	630 A	252– 630 A	A		**0**				**D**											1 unit	47.000
		1000 A	400–1000 A	A		**2**				**F**											1 unit	34.000
		1600 A	640–1600 A	A		**4**				**H**											1 unit	36.000
	II	2000 A	800–2000 A	A		**5**				**J**											1 unit	57.000
		2500 A	1000–2500 A	A		**6**				**K**											1 unit	59.000
		3200 A	1280–3200 A	A		**7**				**M**											1 unit	61.000
Installation type	Main terminals see Page 5/85																					
Fixed mounted	Main terminals, rear, horizontal (standard)						**6**															
	Main connections accessible from front, single hole at top and bottom up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A						**3**															
	Main terminals accessible from front, double hole at top and bottom, holes in accordance with DIN 43673 up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A						**2**															
Electronic trip units (see functional overview, Page 5/90)	Version V "zn"														**0**	**V**						
	Version B "azn"														**0**	**B**						
	Version C "aznNg"[1])														**0**	**C**						
	Version D "aznN"[1])																					
	Basic functions with LCD display														**1**	**D**						
	Basic functions and additional functions 2 with LCD display														**7**	**D**						
	Version E "aznNg"[1])																					
	Basic functions with LCD display														**1**	**E**						
	Basic functions and additional functions 2 with LCD display														**7**	**E**						
	Version H "aznN"[1])[2])																					
	Basic functions and additional functions 2														**7**	**H**						
	Version J "aznNg"[1])[2])																					
	Basic functions and additional functions 2														**7**	**J**						
	Version N "aznN"[1])																					
	Basic functions and additional functions 2														**7**	**N**						
	Version P "aznNg"[1])																					
	Basic functions and additional functions 2														**7**	**P**						

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/104.

1) Current transformers for overload protection in the neutral conductor and current transformers for ground-fault protection must be ordered separately, see Page 5/108.

2) A hand-held device or the Win3WN6 software is required for operation.

*** This quantity or a multiple thereof can be ordered.**

3-pole, withdrawable design

Version				DT	Order No.														PS*	Weight per PU approx.
Rated operating voltage U_e up to AC 690 V					3WN6	■	■	1	–	■	■	■	■	■	–	■	■	■	■	kg
Size/ rated current I_n	Size	Rated current I_n	Adjustment range of setting current I_r																	
	I	630 A	252– 630 A	A		0				D									1 unit	49.000
		1000 A	400–1000 A	A		2				F									1 unit	36.000
		1600 A	640–1600 A	A		4				H									1 unit	38.000
	II	2000 A	800–2000 A	A		5				J									1 unit	59.000
		2500 A	1000–2500 A	A		6				K									1 unit	61.000
		3200 A	1280–3200 A	A		7				M									1 unit	63.000
Installation type	Main terminals see Page 5/85																		Additional weight for guide frame	
Withdrawable design	Withdrawable circuit-breaker without guide frame						7													without
	Withdrawable circuit-breaker with guide frame						8													
Other versions of the guide frame see Page 5/110.	Standard design: rear, horizontal terminals with guide rails																			
	up to 1000 A																			27.000
	1250 A, 1600 A																			23.000
	2000 A																			35.000
	2500 A																			37.000
	3200 A																			37.000
Electronic trip units (see functional overview, Page 5/90)	Version V "zn"									0	V									
	Version B "azn"									0	B									
	Version C "aznNg"[1])									0	C									
	Version D "aznN"[1])																			
	Basic functions with LCD display									1	D									
	Basic functions and additional functions 2 with LCD display									7	D									
	Version E "aznNg"[1])																			
	Basic functions with LCD display									1	E									
	Basic functions and additional functions 2 with LCD display									7	E									
	Version H "aznN"[1])[2])																			
	Basic functions and additional functions 2									7	H									
	Version J "aznNg"[1])[2])																			
	Basic functions and additional functions 2									7	J									
	Version N "aznN"[1])																			
	Basic functions and additional functions 2									7	N									
	Version P "aznNg"[1])																			
	Basic functions and additional functions 2									7	P									

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/104.

1) Transformers for overload protection in the neutral conductor and transformers for ground-fault protection must be ordered separately, see Page 5/108.

2) A hand-held device or the Win3WN6 software is required for operation.

*** This quantity or a multiple thereof can be ordered.**

4-pole, fixed-mounted design

Version				DT	Order No.														PS*	Weight per PU approx.
Rated operating voltage U_e up to AC 690 V					3WN6	■	■	3	–	■	■	■	■	■	–	■	■	■	■	kg
Size/ rated current I_n	Size	Rated current I_n	Adjustment range of setting current I_r																	
	I	630 A	252– 630 A	A		0				D									1 unit	47.000
		1000 A	400–1000 A	A		2				F									1 unit	47.000
		1600 A	640–1600 A	A		4				H									1 unit	49.000
	II	2000 A	800–2000 A	A		5				J									1 unit	70.000
		2500 A	1000–2500 A	A		6				K									1 unit	72.000
		3200 A	1280–3200 A	A		7				M									1 unit	74.000
Installation type	Main terminals see Page 5/85																			
Fixed mounted	Main terminals, rear, horizontal (standard)						6													
	Main connections accessible from front, single hole at top and bottom up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A						3													
	Main terminals accessible from front, double hole at top and bottom, holes in accordance with DIN 43673 up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A						2													
Electronic trip units (see functional overview, Page 5/90)	Version V "zn"									0	V									
	Version B "azn"									0	B									
	Version G "aznNg"[1])									0	G									
	Version D "aznN"[1])																			
	Basic functions with LCD display									1	D									
	Basic functions and additional functions 2 with LCD display									7	D									
	Version E "aznNg"[2])																			
	Basic functions with LCD display									1	E									
	Basic functions and additional functions 2 with LCD display									7	E									
	Version F "aznNg"[1])																			
	Basic functions with LCD display									1	F									
	Basic functions and additional functions 2 with LCD display									7	F									
	Version H "aznN"[1])[4])																			
	Basic functions and additional functions 2									7	H									
	Version J "aznNg"[2])[4])																			
	Basic functions and additional functions 2									7	J									
	Version K "aznNg"[1])[4])																			
	Basic functions and additional functions 2									7	K									
	Version N "aznN"[1])																			
	Basic functions and additional functions 2									7	N									
	Version P "aznNg"[1])[3])																			
	Basic functions and additional functions 2									7	P									

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/104.

1) 4th current transformer is already fitted in the neutral conductor of the circuit-breaker.

2) Current transformers for overload protection in the neutral conductor and current transformers for ground-fault protection must be ordered separately, see Page 5/108.

3) The current transformer mounted in the star point of the transformer must be ordered separately, see Page 5/108.

4) A hand-held device or the Win3WN6 software is required for operation.

*** This quantity or a multiple thereof can be ordered.**

4-pole, withdrawable design

Version				DT	Order No.														PS*	Weight per PU approx.
Rated operating voltage U_e up to AC 690 V					3 W N 6	■	■	3	–	■	■	■	■	■	–	■	■	■	■	kg
Size/ rated current I_n	Size	Rated current I_n	Adjustment range of setting current I_r																	
	I	630 A	252– 630 A	A		**0**			**D**										1 unit	49.000
		1000 A	400–1000 A	A		**2**			**F**										1 unit	49.000
		1600 A	640–1600 A	A		**4**			**H**										1 unit	51.000
	II	2000 A	800–2000 A	A		**5**			**J**										1 unit	72.000
		2500 A	1000–2500 A	A		**6**			**K**										1 unit	74.000
		3200 A	1280–3200 A	A		**7**			**M**										1 unit	76.000
Installation type	Main terminals see Page 5/85																		Additional weight for guide frame	
Withdrawable design	Withdrawable circuit-breaker without guide frame						**7**													without
Other versions of the guide frame see Page 5/110.	Withdrawable circuit-breaker with guide frame Standard design: Rear, horizontal terminals with guide rails up to 1000 A						**8**													27.000
	1250 A, 1600 A																			28.000
	2000 A																			46.000
	2500 A																			48.000
	3200 A																			48.000
Electronic trip units (see functional overview, Page 5/90)	Version V "zn"								**0**	**V**										
	Version B "azn"								**0**	**B**										
	Version G "aznNg"[*1])								**0**	**G**										
	Version D "aznN"[*1])																			
	Basic functions with LCD display								**1**	**D**										
	Basic functions and additional functions 2 with LCD display								**7**	**D**										
	Version E "aznNg"[*2])																			
	Basic functions with LCD display								**1**	**E**										
	Basic functions and additional functions 2 with LCD display								**7**	**E**										
	Version F "aznNg"[*1])																			
	Basic functions with LCD display								**1**	**F**										
	Basic functions and additional functions 2 with LCD display								**7**	**F**										
	Version H "aznN"[*1])[4])																			
	Basic functions and additional functions 2								**7**	**H**										
	Version J "aznNg"[*2])[4])																			
	Basic functions and additional functions 2								**7**	**J**										
	Version K "aznNg"[*1])[4])																			
	Basic functions and additional functions 2								**7**	**K**										
	Version N "aznN"[*1])																			
	Basic functions and additional functions 2								**7**	**N**										
	Version P "aznNg"[*1])[3])																			
	Basic functions and additional functions 2								**7**	**P**										

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/104.

1) 4th transformer is already fitted in the neutral conductor of the circuit-breaker.

2) Transformers for overload protection in the neutral conductor and transformers for ground-fault protection must be ordered separately, see Page 5/108.

3) The current transformer mounted in the star point of the transformer must be ordered separately, see Page 5/108.

4) A hand-held device or the Win3WN6 software is required for operation.

*** This quantity or a multiple thereof can be ordered.**

Options

Selection and ordering data

Version				Order No. 3WN6 ■■1 – ■■■■■ – ■■■
Operating mechanism	Manual operating mechanism with stored-energy feature, with mech. closing			05
	Manual operating mechanism with mechanical and electrical closing			
	Activation solenoid AC 50/60 Hz V	DC V		
	24	24		11
	48	48		14
	–	60		15
	110–127	110–125		16
	220–240	220–250		18
	Manual/motor-operated mechanism with stored-energy feature with mechanical and electrical closing			
	Motor AC 50/60 Hz V	DC V	Closing AC 50/60 Hz V	DC V
	–	24	24	24	51
	–	48	48	48	54
	–	60	–	60	55
	110–127	110–125	–	24	71
	110–127	110–125	–	48	74
	110–127	110–125	–	60	75
	110–127	110–125	110–127	110–125	56
	110–127	110–125	220–240	220–250	78
	220–240	220–250	–	24	81
	220–240	220–250	–	48	84
	220–240	220–250	–	60	85
	220–240	220–250	110–127	110–125	86
	220–240	220–250	220–240	220–250	58
1st auxiliary release	Without 1st auxiliary release			0A
	Shunt release "f", F1			
	AC 50/60 Hz V	DC V		
	24	24		1B
	–	30		1E
	48	48		1F
	–	60		1G
	110–127	110–125		1H
	220–240	220–250		1K
	Undervoltage release "r", F3 (instantaneous 0 ms, short-delay 200 ms)			
	AC 50/60 Hz V	DC V		
	–	24		3B
	–	30		3E
	–	48		3F
	–	60		3G
	110–127	110–125		3H
	220–240	220–250		3K
	380–415	–		3M
	Undervoltage release "rc", F8 (can be delayed 0.2 to 3.2 s)			
	AC 50/60 Hz V	DC V		
	110–127	–		4H
	220–240	–		4K
	380–415	–		4M
2nd auxiliary release	Without 2nd auxiliary release			A
	Shunt release "f", F2			
	AC 50/60 Hz V	DC V		
	24	24		B
	–	30		E
	48	48		F
	–	60		G
	110–127	110–125		H
	220–240	220–250		K
Auxiliary switch	1st auxiliary switch block 2 NO + 2 NC			1
	1st + 2nd auxiliary switch block 2 NO + 2 NC + 2 CO			3

5th to 10th positions of the Order No. see Pages 5/100 to 5/103.

When ordering circuit-breakers in the following versions:
Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WN6 . . . – . . . . . – . . . . – Z
and additional order code(s)
□□□ + . . . + . . . Code for "Further versions" **–Z**

For fixed-mounted and withdrawable circuit-breakers

			Order code
Communication module[3]	for electronic trip unit versions D, E/F, H, J/H, N and P Additionally required: additional functions 2, interface DP/3WN6 "3RK10 00" (see Page 5/109)		F01
Measurement module[3]	for electronic trip unit versions N and P. The measurement module consists of the communication module with additional measurement functions and external voltage transformers (see Page 5/123), additionally required: additional functions 2, interface DP/3WN6 "3RK10 00" (see Page 5/109)		F05
Automatic mechanical reset of the lockout device after overcurrent tripping			K01
Rated short-time withstand current I_{cw} 50 kA/1 s at AC 50/60 Hz (see Technical specifications on Page 5/96).	Rated current of the circuit-breaker 630 A, 800 A, 1000 A 3-pole circuit-breaker 4-pole circuit-breaker		K03
"Tripped" signaling switch 1 CO instead of 1 NO (1 NO = standard)			K07
With 5-digit operating cycles counter			C01
Motor switch on operator panel	only in the case of circuit-breakers with motor/manual operating mechanism with stored-energy feature (S9)		S13
With locking device for the actuating button or **EMERGENCY-STOP button**	with 3SB1 safety lock instead of the OFF button[2] (key removable in OFF position)	Made by CES Normal lock No. SSG 10	S01
		Made by IKON Normal lock No. 360012 K1	S03
Special closure see Accessories Page 5/112.	with locking device for max. 4 padlocks (shackle diameter 4 ... 8 mm)		S20
	with EMERGENCY-STOP button (self-latching) instead of the OFF button		S12
	with 3SB1 safety lock instead of the mechanically acting ON button with sealing cap (key removable in non-actuated position)	Made by CES Normal lock no. SSG 10	S05
		Made by IKON Normal lock no. 360012 K1	S07
	Mounting set for FORTRESS lock[1] Interlock to be obtained from the manufacturer of the locks FORTRESS lock (H31LH/65°/standard)		S14
	Mounting set for CASTELL lock[1] Interlock to be obtained from the manufacturer of the locks CASTELL lock (FS 2)		S15
	Mounting set for KIRK-KEY lock[1]		S16
With sealing cap over OFF button to prevent unauthorized opening	Cannot be combined with safety lock		S21
With sealing cap over "electrical ON" button to prevent unauthorized closing			S22

1) Locks must be ordered from the manufacturer.
2) This makes mechanical or electrical ON commands ineffective.
3) See also section on "Communication-capable circuit-breakers".

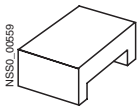
Options

When ordering circuit-breakers in the following versions:
Add **"–Z"** to the complete Order No.and indicate the appropriate order code(s).

Order code

Order No. with **"–Z"**
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WN6 . . . – . . . . . – . . . . – **Z**
and additional order code(s)
□□□ + . . . + ...
Code for "Further versions **"–Z**

For fixed-mounted circuit-breakers

			Order code	Order No.
Blocking device	to prevent opening of the cabinet door with the circuit-breaker closed		S25	□□□
	to prevent closing of the circuit-breaker with the cabinet door open		S24	
 **Mutual mechanical interlock for 3WN6[1]) circuit-breaker**	Interlock module with a Bowden wire (2 m); when interlocking three circuit-breakers an additional Bowden wire is required, see Page 5/112.		S53	□□□
 **With locking device consisting of lock in the cabinet door and interlock module with Bowden wire (1.5 m)** to prevent unauthorized closing of the circuit-breaker	with safety lock	Made by CES Normal lock no. SSG 10	S61	□□□
		Made by IKON Normal lock no. 360012 K1	S63	
	Mounting set for CASTELL lock Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2)		S65	□□□
	Mounting set for FORTRESS lock[1]) Interlock to be obtained from the lock manufacturer FORTRESS lock (H31LH/AC 65°/standard)		S64	
 **Arc chute cover[2])**	up to 1600 A	Size I	C35	□□□
	2000 ... 3200 V	Size II		

For withdrawable circuit-breaker

			Order code	Order No.
 **Locking device** to prevent movement of the withdrawable circuit-breaker (a safety lock prevents opening of the crank hole)	with safety lock	Made by CES Normal lock no. SSG 10	S71	□□□
		Made by IKON Normal lock no. 360012 K1	S73	
		Made by Profalux	S75	
		Made by Ronis	S76	

1) New technical design since 01 July 1998 (previously order code "S55").

2) Required for protection against flashover at voltages > 415 V.
Not to be used with vertical, front-accessible main circuit connections.

When ordering circuit-breakers in the following versions:

Add **"–Z"** to the complete Order No. and indicate the appropriate order code(s).

Order code

Withdrawable circuit-breaker with guide frame

Guide frame

Order No. with **"–Z"**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

3WN6 . 8 . – . . . . . – . . . . – Z

and additional order code(s)

□□□ + . . . + . . .

Order No. with **"–Z"**

1 2 3 4 5 6 7 8 9 10 11 12

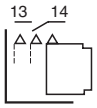
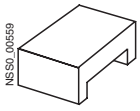
3WX3 6 8 3 – . A . . 0 – Z

and additional order code(s)

□□□ + . . . + . . . + . . .

Code for "Further versions" **–Z**

For withdrawable circuit-breakers with guide frame
For guide frames

Bus connecting lead for communication (only required if guide frame is ordered separately)	between guide frame and connecting lead to interface DP/3WN6, including circuit-breaker presence signaling switch			R39	□□□
 **Main terminal for rated current** Main terminals see Page 5/85.	Front-accessible connection at top and bottom, holes in connecting bars to DIN 43673 (double hole)		up to 1600 A up to 2000 A up to 2500 A, 3200 A	R02	□□□
	Front-accessible connection at top and bottom, single-hole connecting bars		up to 1600 A up to 2000 A up to 2500 A, 3200 A	R03	□□□
	Rear vertical terminal at top and bottom		up to 1600 A up to 2000 A up to 2500 A, 3200 A	R07	□□□
 **With position indicator** (actuated by withdrawable circuit-breaker)	Connected position 1 NO + 1 NC 3 NO + 3 NC	Test position 1 NO + 1 NC 2 NO + 2 NC	Disconnected position 1 NO + 1 NC 1 NO + 1 NC	R13 R14	□□□
 **With shutter, two-part**	up to 1600 A 2000 ... 3200 A			R20	□□□
 **Mutual mechanical interlock for 3WN6 circuit-breaker**	Interlock module with a Bowden wire (2 m); when interlocking three circuit-breakers an additional Bowden wire is required, see Page 5/112.			R53	□□□
 **Locking device consisting of lock in the cabinet door and interlock module with Bowden wire (1.5 m)** to prevent unauthorized closing of the circuit-breaker, active in connected position	with safety lock	Made by CES Normal lock No. SSG 10		R61	□□□
		Made by IKON Normal lock no. 360012 K1		R63	
	Mounting set for CASTELL lock Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2)			R65	□□□
	Mounting set for FORTRESS lock Interlock to be obtained from the lock manufacturer FORTRESS lock (H31LH/ AC 65°/standard)			R64	
Locking device to prevent movement of the withdrawable circuit-breaker out of the disconnected position	with safety lock	Made by CES Normal lock no. SSG 10		R81	□□□
		Made by IKON Normal lock no. 360012 K1		R83	
		Made by Profalux		R85	
		Made by Ronis		R86	
Blocking device	to prevent opening of the cabinet door, when circuit-breaker is in connected position			R30	□□□
	to prevent closing with the cabinet door open (only active in connected position)			R40	
	to prevent movement with the cabinet door open (active in disconnected, test and connected position)			R50	
 NSS0_00559 **Arc chute cover**[1])	up to 1600 A 2000 ... 3200 A	Size I Size II		R35	□□□

1) Required for protection against flashover.

Accessories/spare parts

Selection and ordering data

For fixed-mounted and withdrawable circuit-breakers

Current transformers for neutral conductor overload protection and ground-fault protection

Only one of the two measuring methods is permissible in conjunction with the electronic trip unit. The overload protection for the neutral conductor takes effect when the current transformer is fitted in the neutral conductor. The ground-fault current is calculated by means of summation current formation of the phases and the neutral conductor. In the case of electronic trip unit version P, overload protection in the neutral conductor is achievable with 4 transformers (in L1, L2, L3, N) and ground-fault protection by summation current formation, or with a 5th transformer in the neutral point direct measurement of the ground-fault current and overload protection in the neutral conductor (without summation current formation).

Type of detection (see Page 5/88) Designation	Electronic trip unit version	Primary rated current of the transformer	5th and 9th positions of Order No. for circuit-breaker **3WN6**☐..-.☐...-....		Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
Vectorial summation with current transformer in the neutral conductor									
Current transformers for 3-pole circuit-breakers	C, D, E, H, J	315 A	**0**	**A**	1 unit	C	**3WX36 43–1CA00**	1 unit	on req.
		400 A	**0**	**B**		C	**3WX36 43–1CB00**	1 unit	on req.
		500 A	**0**	**C**		C	**3WX36 43–1CC00**	1 unit	on req.
		630 A	**0**	**D**		C	**3WX36 43–1CD00**	1 unit	on req.
		315 A	**1**	**E**	1 unit	C	**3WX36 43–1CE00**	1 unit	on req.
		1000 A	**2**	**F**		C	**3WX36 43–1CF00**	1 unit	on req.
		1250 A	**3**	**G**		C	**3WX36 43–1CG00**	1 unit	on req.
		1600 A	**4**	**H**		C	**3WX36 43–1CH00**	1 unit	on req.
		1250 A	**5**	**G**	1 unit	C	**3WX36 43–1FG00**	1 unit	on req.
		1600 A	**5**	**H**		C	**3WX36 43–1FH00**	1 unit	on req.
		2000 A	**5**	**J**		C	**3WX36 43–1FJ00**	1 unit	on req.
		2500 A	**6**	**K**		C	**3WX36 43–1FK00**	1 unit	on req.
		3200 A	**7**	**M**		C	**3WX36 43–1FM00**	1 unit	on req.
For 4-pole circuit-breakers the fourth current transformer is fitted internally. If electronic trip unit version E is chosen for 4-pole circuit-breakers, the fourth current transformer must be mounted externally and be selected from the table opposite.	N, P	630 A	**0**	**D**	1 unit	C	**3WX36 43–2BA00**	1 unit	3.000
		800 A	**1**	**E**					
		1000 A	**2**	**F**					
		1250 A	**3**	**G**					
		1600 A	**4**	**H**					
		2000 A	**5**	**J**	1 unit	C	**3WX36 43–2FA00**	1 unit	3.000
		2500 A	**6**	**K**					
		3200 A	**7**	**M**					
Direct detection of ground-fault current by means of a current transformer in the grounded neutral point of the transformer.									
Current transformers for 3- and 4-pole circuit-breakers	C, E, P, J (3-pole); E, P, J (4-pole)	315 A	**0**	**A**	1 unit	C	**3WX36 43–1CA00**	1 unit	on req.
		400 A	**0**	**B**		C	**3WX36 43–1CB00**	1 unit	on req.
		500 A	**0**	**C**		C	**3WX36 43–1CC00**	1 unit	on req.
		630 A	**0**	**D**		C	**3WX36 43–1CD00**	1 unit	on req.
		800 A	**1**	**E**	1 unit	C	**3WX36 43–1CE00**	1 unit	on req.
		1000 A	**2**	**F**		C	**3WX36 43–1CF00**	1 unit	on req.
		1250 A	**3**	**G**		C	**3WX36 43–1CG00**	1 unit	on req.
		1600 A	**4**	**H**		C	**3WX36 43–1CH00**	1 unit	on req.
		1250 A	**5**	**G**	1 unit	C	**3WX36 43–1FG00**	1 unit	on req.
		1600 A	**5**	**H**		C	**3WX36 43–1FH00**	1 unit	on req.
		2000 A	**5**	**J**		C	**3WX36 43–1FJ00**	1 unit	on req.
		2500 A	**6**	**K**		C	**3WX36 43–1FK00**	1 unit	on req.
		3200 A	**7**	**M**		C	**3WX36 43–1FM00**	1 unit	on req.

Designation	Rated control supply voltage/ rated operational voltage		Order quantity		For 1 set or 1 unit		
	AC 50/60 Hz	DC					
 **Storage device** for shunt release Rated control supply voltage must match the rated control supply voltage of the shunt release	110–127 V	110–115 V	1 unit	D	**3WX31 56–1JG01**	1 unit	0.500
	220–240 V	220–250 V		D	**3WX31 56–1JJ01**	1 unit	0.500
 **Function tester for electronic trip unit** for version B, C, D, E, F, G, V, N, P Also suitable for electronic trip units of 3WN1 and 3WS1 circuit-breakers	110–127/220–240 V	–	1 unit	A	**3WX36 47–5JA01**	1 unit	1.300
Transfer control device for automatic switchover between two fixed-mounted or withdrawable circuit-breakers (see Page 5/95)			1 unit	D	**3WX36 66–7JA00**	1 unit	11.400
Door sealing frame			1 unit	A	**3WX36 86–0JA00**	1 unit	1.000

*** This quantity or a multiple thereof can be ordered.**

Designation		Order quantity	DT	For 1 unit Order No.	PS*	Weight per PU approx. kg
For fixed-mounted and withdrawable circuit-breakers						
 **Interface DP/3WN6**	Required once for each communication-capable circuit-breaker	1 unit	A	**3RK10 00–0JC80–0BA2**	1 unit	0.563
 **PROFIBUS connector**	For connecting the interface to PROFIBUS DP	1 unit	X	**6ES7 972–0BB41–0XA0**	1 unit	0.051
 **Power supply DC 24 V** Current input max. 800 A (including electronic trip unit of the circuit-breaker)	For interface DP/3WN6	1 unit		e.g. 4AV21 02–2EB00–0A, see Catalog LV10 "Controlgear and switchgear for industry", section 13 "SIDAC-S power supplies"		
 **System manual**	Communication interface of the 3VF, 3WN6, 3WN1/3WS1 circuit-breakers with PROFIBUS DP	1 unit	X	**E20001–P285–A644–V1**	1 unit	on req.
 **Software module**	Recommended for SIMATIC S5 and S7; programming aid for handling communication, 3.5" floppy disks	1 unit	A	**3RK18 00–0AA00–0AA0**	1 unit	0.106
 **Hand-held device**	For parameterization, operation and monitoring for 3WN6 circuit-breakers with electronic trip unit D, E/F, H, J/K, N/P	1 unit	A	**3WX36 47–6JA00**	1 unit	1.300
	**Line adapter** for 3WX36 47–6JA00 hand-held device required	1 unit	A	**3WX36 47–6JA01**	1 unit	1.300
	**Power supply unit** is required if the 3WN6 circuit-breaker does not have an additional DC 24 V supply	1 unit	A	**3WX36 47–6JA02**	1 unit	1.300

Designation	Rated current	Size	Number of poles	Order quantity		For 1 set Order No.		
For fixed-mounted circuit-breakers								
Support bracket including screws for attaching the fixed-mounted circuit-breaker				1 set	B	**3WX36 81–0JA00**	1 set	4.800
Connecting bars for vertical connection	up to 1000 A	I	3-pole	1 set[1])	A	**3WX36 21–7AA00**	1 set	2.000
			4-pole	1 set[2])	A	**3WX36 21–7AB00**	1 set	2.700
	1250 ... 1600 A	I	3-pole	1 set[1])	A	**3WX36 21–7BA00**	1 set	4.100
			4-pole	1 set[2])	A	**3WX36 21–7BB00**	1 set	5.400
	2000 A	II	3-pole	1 set[1])	A	**3WX36 21–7DA00**	1 set	5.500
			4-pole	1 set[2])	A	**3WX36 21–7DB00**	1 set	7.400
	2500 ... 3200 A	II	3-pole	1 set[1])	A	**3WX36 21–7FA00**	1 set	4.800
			4-pole	1 set[2])	A	**3WX36 21–7FB00**	1 set	6.500

1) 1 set = 3 units

2) 1 set = 4 units

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

Version		DT	Order No.	PS*	Weight per PU approx.	
Guide frame, standard design			**3WX3683–■A■■0**		kg	
					3-pole	4-pole
Rated current I_n of withdrawable circuit-breaker	1000 A, size I	B	**2**	1 unit	22.000	27.000
	1600 A, size I	B	**4**	1 unit	23.000	24.000
	2000 A, size II	B	**5**	1 unit	35.000	46.000
	2500 A, size II	B	**6**	1 unit	37.000	48.000
	3200 A, size II	B	**7**	1 unit	37.000	48.000
Auxiliary supply connectors (see table below for required quantity)	1 auxiliary supply connector		**B**			
	2 auxiliary supply connectors		**C**			
	3 auxiliary supply connectors		**D**			
	4 auxiliary supply connectors		**E**			
Number of poles	3-pole		**1**			
	4-pole		**3**			

For other versions such as front connection, position indicator switch, shutter see Page 5/107.

Designation	Required order quantity per circuit-breaker	DT	Order No.	PS*	Weight per PU approx.
					kg
Coding device to prevent mix-up of equal-sized withdrawable circuit-breakers in a switchboard	1 set	A	**3WX36 62–1JC00**	1 set	0.200

The required number of auxiliary supply connectors depends on:

- operating mechanism type
- electronic trip unit with/without additional functions with/without current transformer
- type and number of auxiliary releases
- number of auxiliary switches

a	**First auxiliary supply connector, for standard signals, always required**	**1**
b	**Operating mechanism**	
b1	Manual operating mechanism with stored-energy feature, with mechanical closing	**+0**
b2	Manual operating mechanism with mechanical and electrical closing	**+1**
b3	Manual/motor-operated mechanism with stored-energy feature with mechanical and electrical closing	**+1**
c	**Electronic trip units**	
c1	with basic functions	**+0**
c2	with additional functions 1 or 2	**+2**
	Connections for external current transformers for overload protection in the neutral conductor and ground-fault protection	
c3	Current transformer installed in the neutral conductor (required with 3-pole circuit-breakers if c2 is not selected)	**+1**
c4	Current transformer installed in the neutral point of the transformer (required if c2 is not selected)	**+1**
d	**Auxiliary releases**	
d1	without/with 1st auxiliary release (shunt release "f", F1; undervoltage release "r", F3)	**+0**
d2	1st auxiliary release (delayable undervoltage release "rc", F8) (required if b2 or b3 is not selected)	**+1**
d3	2nd auxiliary release (shunt release "f", F2, required if b2 or b3 is not selected)	**+1**
e	**Auxiliary switches**	
e1	1st auxiliary switch block 2 NO + 2 NC	**+0**
e2	1st and 2nd auxiliary switch block 2 NO + 2 NC + 2 CO (required if b2 or b3 or d3 is not selected)	**+1**
f	**Communication module or measurement module**	
f1	without communication module and without measurement module	**+0**
f2	with communication module or measurement module (required if c2 or c3 or c4 is not selected)	**+2**
g	**"Tripped" signaling switch (S22) and ready-to-close signaling switch, floating**	
g1	with "tripped" signaling switch (S22) and ready-to-close signaling switch, floating (required if c2 or c3 or c4 or f2 is not selected)	**+2**
h	**Total number of auxiliary supply connectors**	**(maximum of 4)**

*** This quantity or a multiple thereof can be ordered.**

When retrofitting, the circuit-breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit-breaker in accordance with the installation instructions.

Designation			Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
For fixed-mounted and withdrawable circuit-breakers							
Sealing cap over OFF or ON button to prevent unauthorized opening or closing			1 unit	A	**3WX36 63–1JK00**	1 unit	0.010
00035 **5-digit operating cycles counter**			1 unit	A	**3WX36 64–0CA00**	1 unit	on req.
Auxiliary release[1]	Rated control supply voltage AC 50/60 Hz V	DC V					
U Shunt release "f" for 1st and 2nd auxiliary release (F1 and F2) and closing solenoid (Y1)	–	24	1 unit	A	**3WX36 51–1JB00**	1 unit	0.800
	–	30		A	**3WX36 51–1JE00**	1 unit	0.800
	–	48		A	**3WX36 51–1JF00**	1 unit	0.800
	–	60		A	**3WX36 51–1JG00**	1 unit	0.800
	110–127	110–125		A	**3WX36 51–1JH00**	1 unit	0.800
	220–240	220–250		A	**3WX36 51–1JK00**	1 unit	0.800
U< Undervoltage release "r" (F3) instantaneous 0 ms, short-delay 200 ms	–	24	1 unit	A	**3WX36 53–1JB00**	1 unit	0.800
	–	30		A	**3WX36 53–1JE00**	1 unit	0.500
	–	48		A	**3WX36 53–1JF00**	1 unit	0.500
	–	60		A	**3WX36 53–1JG00**	1 unit	0.500
	110–127	110–125		A	**3WX36 53–1JH00**	1 unit	0.800
	220–240	220–250		A	**3WX36 53–1JK00**	1 unit	0.800
	380–415	–		A	**3WX36 53–1JM00**	1 unit	0.800
U<,t Undervoltage release "rc" (F8) can be delayed 0.2 ... 3.2 s	110–127	–	1 unit	A	**3WX36 54–1JH00**	1 unit	0.850
	220–240	–		A	**3WX36 54–1JK00**	1 unit	0.850
	380–415	–		A	**3WX36 54–1JM00**	1 unit	0.850
Auxiliary switches[1] **2 CO**			1 set	A	**3WX36 16–1CE00**	1 set	0.070
M **Motorized operating mechanism and electrical closing**[1] (possible if 11th position of Order No. for circuit-breaker is "0")	consisting of motor, closing solenoid (Y1), electrical ON button and wiring Rated control supply voltage Motor: AC 50/60 Hz V / DC V Closing solenoid: AC 50/60 Hz V / DC V						
	110–127	110–125	110–127	110–125	1 set	A	**3WX36 31–1JH00**	1 set	2.400
	220–240	220–250	220–240	220–250		A	**3WX36 31–1JK00**	1 set	2.400
M **Motorized operating mechanism**[1] (retrofit possible, for precondition see table alongside)	Precondition: 11th + 12th positions of Order No. for circuit-breaker **3WN6...-...□□-....**		consisting of motor and wiring; rated control supply voltage of motor AC 50/60 Hz V	DC V					
	1 1 **1 4** **1 5**		–	24	1 set	A	**3WX36 32–1JB00**	1 set	1.600
			–	48		A	**3WX36 32–1JF00**	1 set	1.600
			–	60		A	**3WX36 32–1JG00**	1 set	1.600
	1 1 **1 4** **1 5** **1 6**		110–127	110–125	1 set	A	**3WX36 32–1JH00**	1 set	1.600
	1 1 **1 4** **1 5** **1 6** **1 8**		220–240	220–250	1 set	A	**3WX36 32–1JK00**	1 set	1.600
Electrical closing[1] (possible if 11th position of Order No. for circuit-breaker is "0")	consisting of closing solenoid (Y1), electrical ON button and wiring; rated control supply voltage of closing solenoid (Y1) AC 50/60 Hz V / DC V						
	–		24		1 set	A	**3WX36 33–1JB00**	1 set	0.800
	–		48			A	**3WX36 33–1JF00**	1 set	0.800
	–		60			A	**3WX36 33–1JG00**	1 set	0.800
	110–127		110–125		1 set	A	**3WX36 33–1JH00**	1 set	0.800
	2290–240		220–250			A	**3WX36 33–1JK00**	1 set	0.800

1) When units are retrofitted, the number of auxiliary supply connectors (see Page 5/110) must be checked. Additionally required auxiliary supply connectors must be ordered as shown on Page 5/113 or 5/114.

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

When retrofitting, the circuit-breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit-breaker in accordance with the installation instructions.

Designation				Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
For fixed-mounted and withdrawable circuit-breakers								
 **Mutual mechanical interlock** for 3WN6 circuit-breaker	An interlock module with a Bowden wire (2 m) for one fixed-mounted circuit-breaker for one withdrawable circuit-breaker[4])			1 unit 1 unit	A A	**3WX36 66–3JA00** **3WX36 66–4JA00**	1 unit 1 unit	3.000 1.000
	Interlocking of three circuit-breakers additional Bowden wire required for each circuit-breaker Bowden wire (2 m)			1 unit	A	**3WX36 66–8JA00**	1 unit	0.200
	Bowden wire (3 m) Bowden wire (4.5 m) Bowden wire (6 m)			1 unit	A A A	**3WX36 66–8JA01** **3WX36 66–8JA02** **3WX36 66–8JA03**	1 unit 1 unit 1 unit	0.500 on req. on req.
 **Locking device consisting of safety locks or padlocks** to prevent unauthorized closing of the circuit-breaker	either	Safety lock (3SB1) instead of the OFF button[2])	Made by CES Normal lock no. SSG 10	1 unit	A	**3WX36 63–1JA00**	1 unit	0.120
			Made by BKS Normal lock no. S1		A	**3WX36 63–1JB00**	1 unit	0.120
			Made by IKON Normal lock no. 360012 K1		A	**3WX36 63–1JC00**	1 unit	0.120
	or	Locking device for max. 4 padlocks (shackle diameter 4 ... 8 mm)[3])		1 unit	A	**3WX36 63–1JG00**	1 unit	0.200
		with EMERGENCY-STOP button (self-latching) instead of the OFF button		1 unit	A	**3WX36 61–0JA00**	1 unit	0.100
		Safety lock (3SB1) instead of the mechanical ON button[2])	Made by CES Normal lock no. SSG 1	1 unit	A	**3WX36 63–2JA00**	1 unit	0.120
			Made by BKS Normal lock no. S1		A	**3WX36 63–2JB00**	1 unit	0.120
			Made by IKON Normal lock no. 360012 K1		A	**3WX36 63–2JC00**	1 unit	0.120
		Mounting set[5]) for CASTELL or FORTRESS lock[1]) Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2) or FORTRESS lock (H31LH/65°/standard)		1 set	A	**3WX36 63–6JE00**	1 set	0.100
		Mounting set[5]) for KIRK-KEY lock[1])		1 unit	A	**3WX36 63–6JE30**	1 unit	0.700
		Access lock to CASTELL, FORTRESS or KIRK-KEY lock[1]) when the key is removed the key opening is covered; lockable with up to 4 padlocks		1 unit	A	**3WX36 63–6JE10**	1 unit	on req.

1) Locks must be ordered from the manufacturer.

2) Locks with special closure must be ordered according to Catalog LV10 "Controlgear for industry", section 9 "Control and signaling devices".

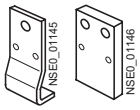
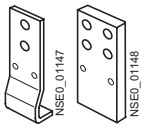
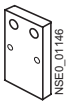
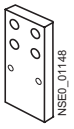
3) The locking device for padlocks cannot be used together with a safety lock instead of an OFF button.

4) Can be retrofitted to circuit-breakers supplied after 01 July 1998.

5) The 3WX36 63–6JE locking system meets the isolation conditions to IEC 60947-1 and IEC 60947-1/A1.

*** This quantity or a multiple thereof can be ordered.**

When retrofitting, the circuit-breaker Order No. must be added to the name plate on the operator panel and to the side wall of the circuit-breaker in accordance with the installation instructions.

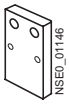
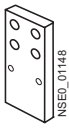
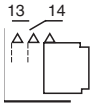
Designation	Rated current I_n	Size	Number of poles	Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
For fixed-mounted circuit-breakers								
 NSE0_01145 NSE0_01146 **Connecting bars for front-accessible connection** Vertical single-hole bar	up to 1000 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 21–1AA00**	1 unit	on req.
	1250 and 1600 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 21–1BA00**	1 unit	on req.
	2000 A	II	3- and 4-pole	1 unit[1])	A	**3WX36 21–1DA00**	1 unit	on req.
	2500 and 3200 A	II	3- and 4-pole	1 unit[1])	A	**3WX36 21–1FA00**	1 unit	on req.
Vertical double-hole bar (holes to DIN 43673)	up to 1000 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 21–1AA01**	1 unit	on req.
 NSE0_01147 NSE0_01148	1250 and 1600 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 21–1BA01**	1 unit	on req.
	2000 A	II	3- and 4-pole	1 unit[1])	A	**3WX36 21–1DA01**	1 unit	on req.
	2500 and 3200 A	II	3- and 4-pole	1 unit[1])	A	**3WX36 21–1FA01**	1 unit	on req.
 **Locking device consisting of lock in the cabinet door and interlock module with Bowden wire (1.5 m)** to prevent unauthorized closing of the circuit-breaker	with safety lock	Made by CES Normal lock no. SSG 10		1 set	A	**3WX36 68–1JA00**	1 set	on req.
		Made by BKS Normal lock no. S1			A	**3WX36 68–1JB00**	1 set	on req.
		Made by IKON Normal lock no. 360012 K1			A	**3WX36 68–1JC00**	1 set	on req.
		Made by O. M. R. Normal lock no. 73034			A	**3WX36 68–1JD00**	1 set	on req.
	Mounting set for CASTELL or FORTRESS lock. Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2) or FORTRESS lock (H31LH/65°/standard)			1 set	A	**3WX36 68–1JE00**	1 set	on req.
 **Auxiliary supply connectors**				1 unit	A	**3WX36 25–1JC00**	1 unit	0.080
Blocking device	to prevent opening of the cabinet door with the fixed-mounted circuit-breaker closed			1 unit	A	**3WX36 67–2JA00**	1 unit	0.700
	to prevent closing of the circuit-breaker with the cabinet door open			1 unit	A	**3WX36 67–1JA00**	1 unit	0.700
Arc chute cover[2])	up to 1600 A	I	3-pole 4-pole	1 unit 1 unit	B B	**3WX36 14–0GA00** **3WX36 14–0HA00**	1 unit 1 unit	on req. on req.
	2000 and 3200 A	II	3-pole 4-pole	1 unit 1 unit	B B	**3WX36 14–0KA00** **3WX36 14–0LA00**	1 unit 1 unit	on req. on req.
For guide frames								
 NSE0_01146 **Connecting bar for additional terminal accessible from the front** Vertical single-hole bar	up to 1000 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–1AA00**	1 unit	on req.
	1250 and 1600 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–1BA00**	1 unit	on req.
Vertical double-hole bar (holes to DIN 43673)	up to 1000 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–1AA01**	1 unit	on req.
 NSE0_01148	1250 and 1600 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–1BA01**	1 unit	on req.
Connecting bar for rear vertical connection	up to 1000 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–3AA00**	1 unit	on req.
	1250 and 1600 A	I	3- and 4-pole	1 unit[1])	A	**3WX36 23–3BA00**	1 unit	on req.
	2000 A	II	3-pole 4-pole	1 set = 3 units 1 set = 4 units	A A	**3WX36 23–4AB00** **3WX36 23–4AC00**	1 set 1 set	2.600 3.500
	2500 and 3200 A	II	3-pole 4-pole	1 set = 3 units 1 set = 4 units	A A	**3WX36 23–4BB00** **3WX36 23–4BC00**	1 set 1 set	5.400 7.100

1) Please determine the number of connecting bars required yourself.

2) Required for protection against flashover at voltages > AC 415 V.

*** This quantity or a multiple thereof can be ordered.**

Accessories/spare parts

	Designation	Rated current I_n	Size	Number of poles	Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
	For guide frames								
	**Connecting bars for front-accessible connection** vertical single-hole bar	2000 A	II	3- and 4-pole	1 unit[2])	A	**3WX36 23–1DA00**	1 unit	on req.
		2500 and 3200 A	II	3- and 4-pole	1 unit[2])	A	**3WX36 23–1EA00**	1 unit	on req.
	Vertical double-hole bar (holes to DIN 43673)	2000 A	II	3- and 4-pole	1 unit[2])	A	**3WX36 23–1DA01**	1 unit	on req.
		2500 and 3200 A	II	3- and 4-pole	1 unit[2])	A	**3WX36 23–1EA01**	1 unit	on req.
	**Position indicator switch** (actuated by withdrawable circuit-breaker)	Connected position / Test position	Disconnected position	Precondition					
		1 NO + 1 NC / 1 NO + 1 NC	1 NO + 1 NC	possible if no pos. switch mounted yet	1 set = 1 unit	A	**3WX36 84–1JA10**	1 set	on req.
		3 NO + 3 NC / 2 NO + 2 NC	1 NO + 1 NC	possible if no pos. switch mounted yet	1 set = 1 unit	A	**3WX36 84–1JC10**	1 set	on req.
		2 NO + 2 NC / 1 NO + 1 NC	—	possible if position switch with 1 NO + 1 NC mounted for each position with guide frame (order code "R13")	1 set = 1 unit	A	**3WX36 84–1JB10**	1 set	on req.
	**Shutters**	Protection against touching the main contacts							
		For 3-pole guide frames		for rated current up to 1600 A	1 unit	A	**3WX36 84–3CA00**	1 unit	0.500
				2000 A ... 3200 A	1 unit	A	**3WX36 84–3DA00**	1 unit	on req.
		For 3-pole guide frames		for rated current up to 1600 A	1 unit	A	**3WX36 84–3CB00**	1 unit	on req.
				2000 A ... 3200 A	1 unit	A	**3WX36 84–3DB00**	1 unit	on req.
	**Arc chute cover[1])**	up to 1600 A	I	3-pole	1 unit	B	**3WX36 14–0GB00**	1 unit	on req.
				4-pole	1 unit	B	**3WX36 14–0HB00**	1 unit	on req.
		2000 ... 3200 A	II	3-pole	1 unit	B	**3WX36 14–0KB00**	1 unit	on req.
				4-pole	1 unit	B	**3WX36 14–0LB00**	1 unit	on req.
	Auxiliary supply connectors	For guide frames – for spare parts and retrofitting			1 unit	A	**3WX36 27–1JA00**	1 unit	0.160
	For withdrawable circuit-breakers								
	Blocking device	to prevent opening of the cabinet door, when circuit-breaker is in connected position			1 unit	A	**3WX36 67–1JC00**	1 unit	on req.
		to prevent closing with the door open (only in connected pos.)				A	**3WX36 67–1JB00**	1 unit	on req.
		to prevent movement with the cabinet door open				A	**3WX36 67–3JA00**	1 unit	on req.
	**Locking device** to prevent unauthorized closing of the circuit-breaker (lock in the cabinet door and interlock module)	with safety lock	Made by CES Normal lock no. SSG 10		1 unit	A	**3WX36 68–2JA00**	1 unit	on req.
		Locking device active in connected position	Made by BKS Normal lock no. S1			A	**3WX36 68–2JB00**	1 unit	on req.
			Made by IKON Normal lock no. 360012 K1			A	**3WX36 68–2JC00**	1 unit	on req.
			Made by O. M. R. Normal lock no. 73034			C	**3WX36 68–2JD00**	1 unit	on req.
		Mounting set for CASTELL or FORTRESS lock. Interlock to be obtained from the lock manufacturer CASTELL lock (FS 2) or FORTRESS lock (H31LH/65°/standard)			1 set	C	**3WX36 68–2JE00**	1 set	on req.
	**Locking device** to prevent movement of the withdrawable circuit-breaker out of the disconnected position	with safety lock	Made by CES		1 unit	A	**3WX36 67–4JA10**	1 unit	on req.
			Made by BKS			A	**3WX36 67–4JB10**	1 unit	on req.
			Made by IKON			A	**3WX36 67–4JC10**	1 unit	on req.
			Made by O. M. R.			C	**3WX36 67–4JD10**	1 unit	on req.
			Made by Profalux			C	**3WX36 67–4JF10**	1 unit	on req.
			Made by Ronis			C	**3WX36 67–4JG10**	1 unit	on req.
	**Locking device** to prevent movement of the withdrawable circuit-breaker (the safety lock prevents opening of the crank hole)	with safety lock	Made by CES Normal lock no. SSG 10		1 unit	A	**3WX36 67–4JA00**	1 unit	on req.
			Made by BKS Normal lock no. S1			A	**3WX36 67–4JB00**	1 unit	0.200
			Made by IKON Normal lock no. 360012 K1			A	**3WX36 67–4JC00**	1 unit	on req.
			Made by O. M. R. Normal lock no. 73034			C	**3WX36 67–4JD00**	1 unit	on req.
			Made by Profalux			C	**3WX36 67–4JF00**	1 unit	on req.
			Made by Ronis			C	**3WX36 67–4JG00**	1 unit	on req.

1) Required for protection against flashover at voltages > AC 415 V.

2) Please determine the number of connecting bars required yourself.

*** This quantity or a multiple thereof can be ordered.**

Designation	Size	Number of poles	Required order quantity per circuit-breaker	DT	For 1 unit Order No.	PS*	Weight per PU approx. kg
Conversion set from fixed-mounted to withdrawable variant = single operating mechanism	I	3-pole	1 unit	A	**3WX36 88–0GA00**	1 unit	on req.
		4-pole		A	**3WX36 88–0HA00**	1 unit	on req.
	II	3-pole	1 unit	A	**3WX36 88–0KA00**	1 unit	on req.
		4-pole		A	**3WX36 88–0LA00**	1 unit	on req.

Designation	For circuit-breaker Type	Rated current	Size	Number of poles	Required order quantity per circuit-breaker	DT	For 1 set or 1 unit Order No.	PS*	Weight per PU approx. kg
For fixed-mounted and withdrawable circuit-breakers									
Main contact elements, complete	3WN6 0.1 to 3WN6 2.1	up to 1000 A	I	3-pole	3 units	B	**3WY36 21–0AA00**	1 unit	2.000
	3WN6 0.1-.....-....-Z K03 to 3WN6 2.1-.....-....-Z K03	up to 1000 A	I	3-pole	3 units	B	**3WY36 21–0AA10**	1 unit	on req.
	3WN6 0.3 to 3WN6 2.3	up to 1000 A	I	4-pole	4 units	B	**3WY36 21–0AA00**	1 unit	2.000
	3WN6 0.3-.....-....-Z K03 to 3WN6 2.3-.....-....-Z K03	up to 1000 A	I	4-pole	4 units	B	**3WY36 21–0AA10**	1 unit	on req.
	3WN6 3.1 to 3WN6 4.1	1250 ... 1600 A	I	3-pole	3 units	B	**3WY36 21–0BA00**	1 unit	3.000
	3WN6 3.3 to 3WN6 4.3	1250 ... 1600 A	I	4-pole	4 units	B	**3WY36 21–0BA00**	1 unit	3.000
	3WN6 5.1	2000 A	II	3-pole	3 units	B	**3WY36 21–0DA00**	1 unit	5.300
	3WN6 5.3	2000 A	II	4-pole	4 units	B	**3WY36 21–0DA00**	1 unit	5.300
	3WN6 6.1	2500 A	II	3-pole	3 units	B	**3WY36 21–0EA00**	1 unit	7.000
	3WN6 6.3	2500 A	II	4-pole	4 units	B	**3WY36 21–0EA00**	1 unit	7.000
	3WN6 7.1	3200 A	II	3-pole	3 units	B	**3WY36 21–0FA00**	1 unit	7.300
	3WN6 7.3	3200 A	II	4-pole	4 units	B	**3WY36 21–0FA00**	1 unit	7.300
Arc chute	3WN6 0.1 to 3WN6 4.1	up to 1600 A	I	3-pole	3 units	B	**3WY36 11–0CA00**	1 unit	1.800
	3WN6 0.3 to 3WN6 4.3	up to 1600 A	I	4-pole	4 units	B	**3WY36 11–0CA00**	1 unit	1.800
	3WN6 5.1 to 3WN6 7.1	2000 ... 3200 A	II	3-pole	3 units	B	**3WY36 11–0FA00**	1 unit	2.500
	3WN6 5.3 to 3WN6 7.3	2000 ... 3200 A	II	4-pole	4 units	B	**3WY36 11–0FA00**	1 unit	2.500
Crank handle	For withdrawable circuit-breaker				1 set	A	**3WX36 84–0JA00**	1 set	on req.

Main contact elements

*** This quantity or a multiple thereof can be ordered.**

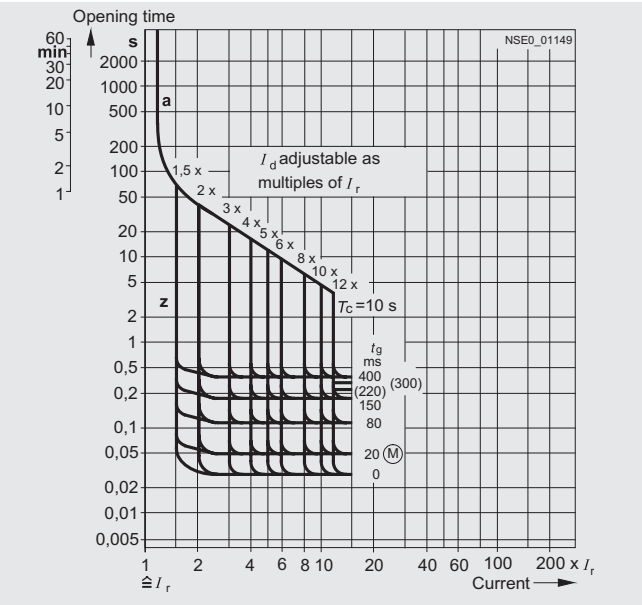
Project planning aids

Characteristics

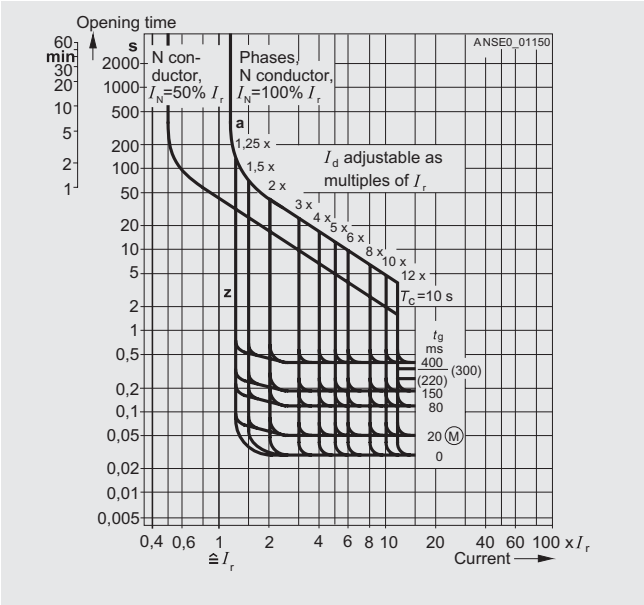
The characteristics show the behavior of the electronic trip unit when it is activated by a current that is already flowing before the tripping operation. If the overcurrent tripping occurs immediately after switch on and the electronic trip unit is therefore not yet enabled, the opening time is extended, depending on the level of the overcurrent by approximately 3 to 10 ms. In order to determine the total break-times of the circuit-breakers, approximately 15 ms must be added to the opening times shown for the arcing time.

Tolerances according to IEC 60947.

Tripping characteristics "a" and "z": "z" = definite-time delayed



Tripping characteristics of electronic trip units – version B



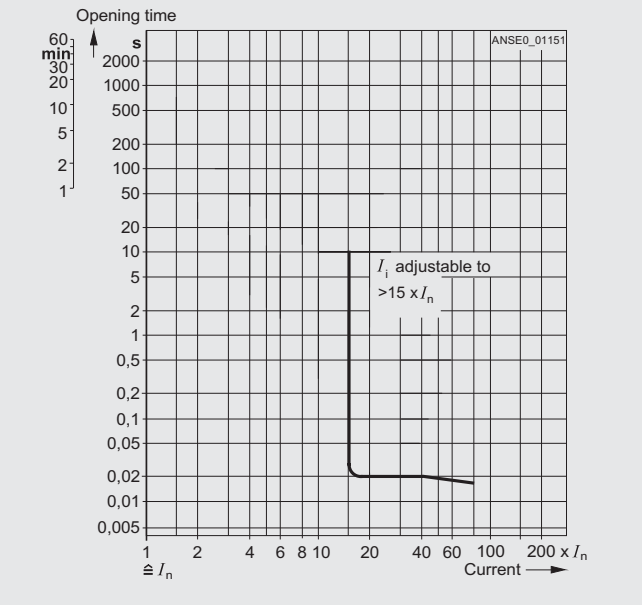
Tripping characteristics of electronic trip units – version C/G

Key to illustrations above:

Inverse-time delayed electronic trip unit "a"
I_r Current setting (adjustable)
I_N Current setting (50 or 100 % I_r) for den N conductor
T_c Time-lag class (permanently set to 10 s)

Short-time delayed short-circuit release "z"
I_d Operating current (adjustable)
t_d Delay time (adjustable)

Tripping characteristic "n"

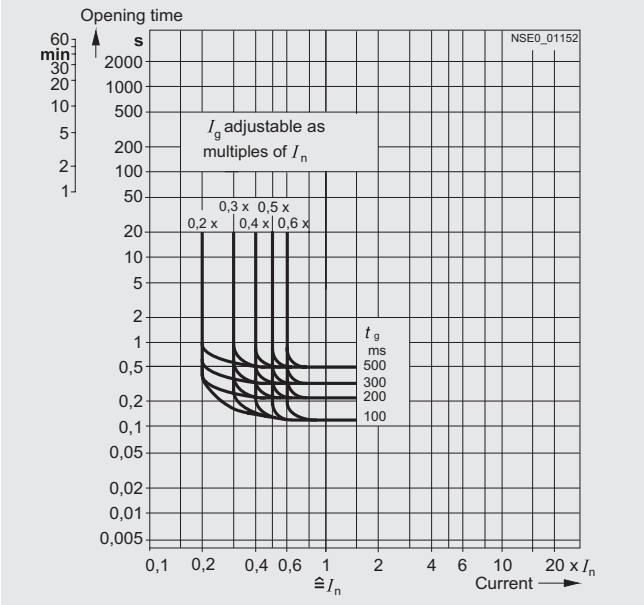


Tripping characteristics of electronic trip units – versions B and C/G

I_n Transformer primary rated current

Instantaneous short-circuit release "n"
I_i Operating current (permanently set)

Tripping characteristic "g": definite-time delayed



Tripping characteristics of electronic trip units – version C/G

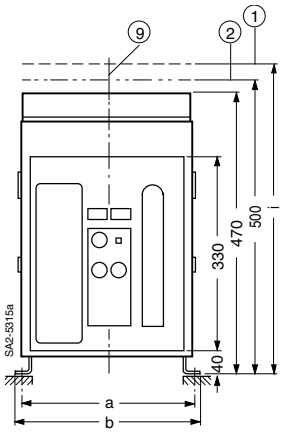
I_n Transformer primary rated current

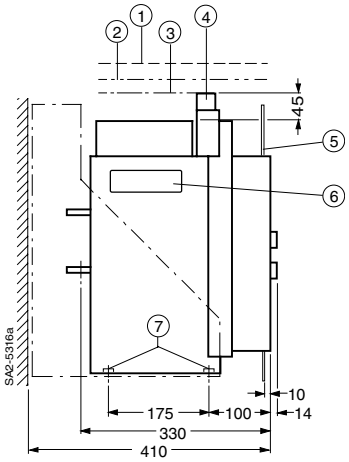
Ground-fault release "g"
I_g Operating current (adjustable)
t_g Delay time (adjustable)

Dimension drawings

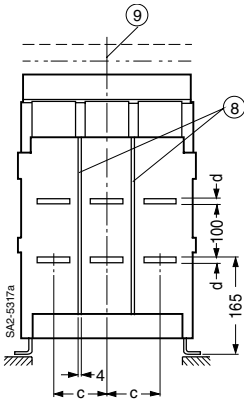
3WN6 fixed-mounted circuit-breakers, 3-pole

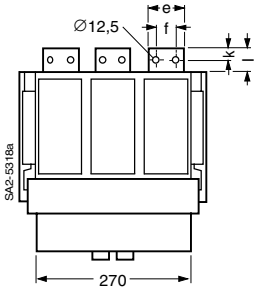
Horizontal connection

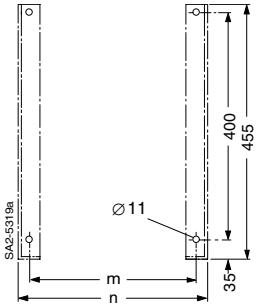




Fixing holes for support bracket







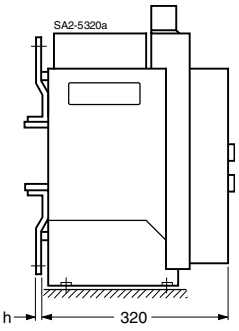
① Clearance for lifting out the arc chute
② Space for auxiliary supply connectors
③ Space above arc chute
④ Auxiliary supply connectors
⑤ Switchboard door
⑥ Recessed grip
⑦ M8 nut
⑧ Slots (4 mm deep) for line-side phase barriers
⑨ Center line of circuit-breaker

Safety clearances

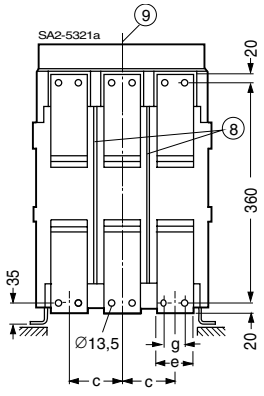
No additional safety clearance is required to adjacent grounded parts above the circuit-breaker (on fixed-mounted circuit-breakers identified with 3).

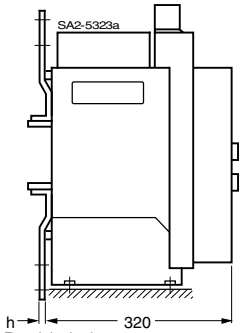
The clearance between the connection point and the support for the busbars must not exceed 250 mm.

Front connection

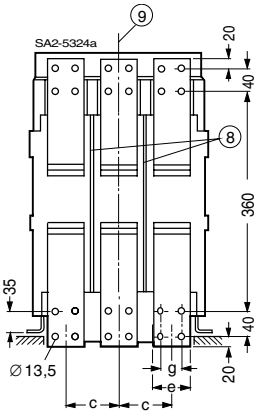


Single hole





Double hole
Holes in bars to DIN 43673



Rated current A	a	b	c	d	e	f	g	h	i	k	l	m	n
630 ... 1000	300	320	90	8	60	30	–	8	530	18	40	300	338
1250 ... 1600	300	320	90	15	60	30	–	20	530	18	40	300	338
2000	400	420	120	15	80	40	40	20	560	22	44	400	438
2500 ... 3200	400	420	120	30	80	40	40	20	560	22	44	400	438

Main conductor connection

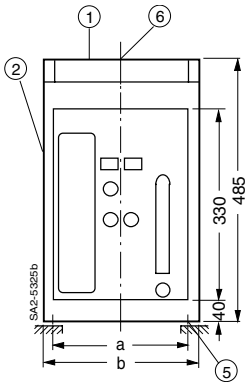
Terminal screws with strain washers (inside diameter = 12 mm to DIN 6769-Fst)		M12
Recommended tightening torque	Nm	70
Required strength of screws		8.8 to DIN 267

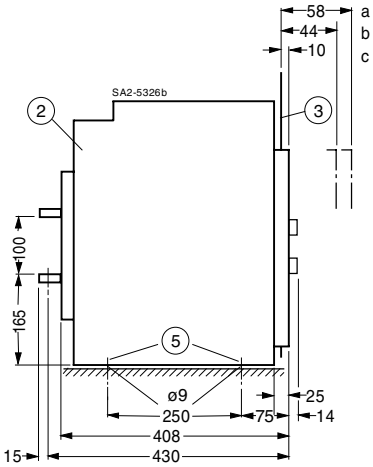
Up to a rated operating voltage of AC 415 V the busbars running vertically (such as in the case of front-accessible connection) do not have to be screened if the busbar system is not arranged above the circuit-breaker. In contrast, live bare conductors and busbars at voltages above AC 415 V that are arranged above the circuit-breaker and when power is supplied from above must be insulated against flashover by interphase barriers or by a busbar cover or by an arc chute cover (use accessory for horizontal or vertical connection only). Optional electrical equipment directly above (if no arc chute cover is used) or to the side of the circuit-breaker should be protected by a cover . Also after the attachment of additional barriers or covers it must be ensured that the dissipation of heat from the circuit-breaker is not impeded.

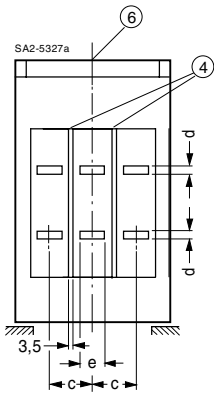
Project planning aids

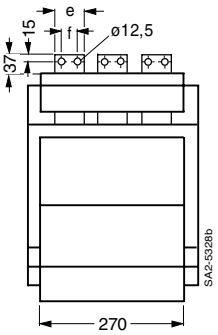
3WN6 circuit-breakers, withdrawable version, 3-pole

Horizontal connection







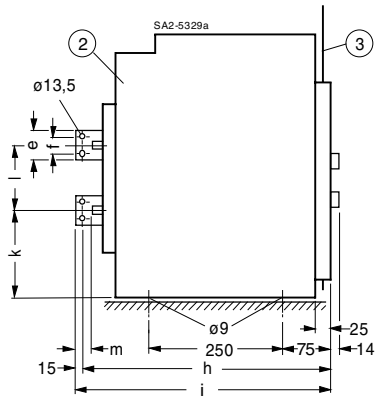


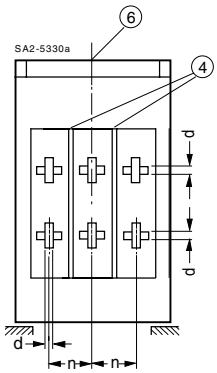
a Disconnected position
b Test position
c Connected position

① Auxiliary conductor plug-in system
② Guide frame
③ Switchboard door
④ Slots (6 mm deep) for line-side interphase barriers
⑤ Holes for attaching the guide frame
⑥ Center line of circuit-breaker

For safety clearances see Page 5/117.

Vertical connection

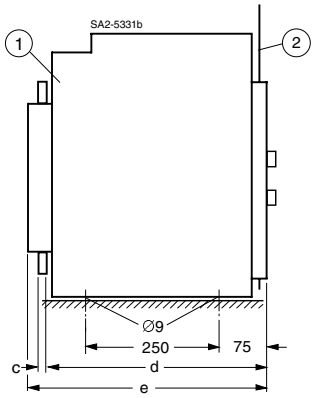


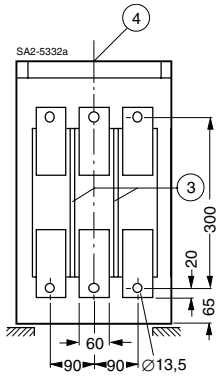


Rated current A	a	b	c	d	e	f	h	i	k	l	m	n
630 up to 1000	280	320	90	8	60	30	455	470	157.5	115	37	90
1250 up to 1600	280	320	90	15	60	30	455	470	157.5	115	37	90
2000	380	420	120	15	80	40	465	480	157.5	115	40	140
2500 up to 3200	380	420	120	30	100	50	465	480	150	130	40	140

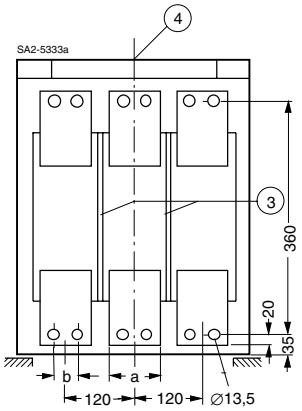
3WN6 circuit-breakers, withdrawable version, 3-pole

Front connection





Single hole, 630 to 1600 A

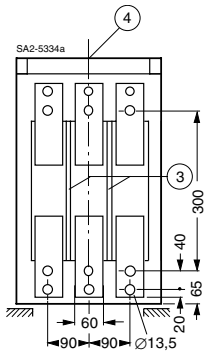


Single hole, 2000 to 3200 A

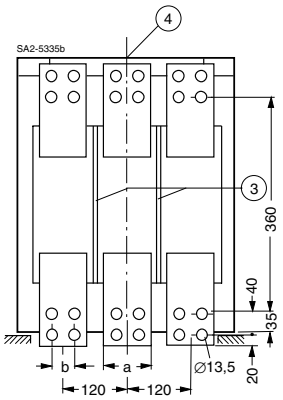
Rated current A	a	b	c	d	e
630 ... 1000	60	–	8	390	408
1250 ... 1600	60	–	15	390	408
2000	80	40	20	420	445
2500 ... 3200	100	50	20	420	445

① Guide frame
② Switchboard door
③ Slots (6 mm deep, 3.5 mm wide) for line-side phase barriers
④ Center line of circuit-breaker

For safety clearances see Page 5/117.



Double hole, 630 to 1600 A
Holes in bars to DIN 43673

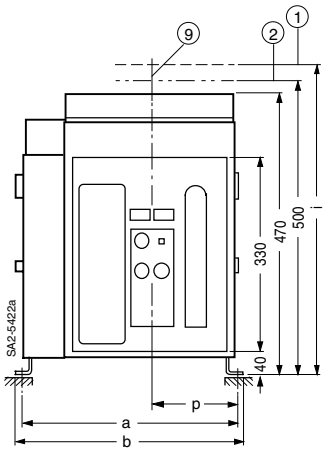


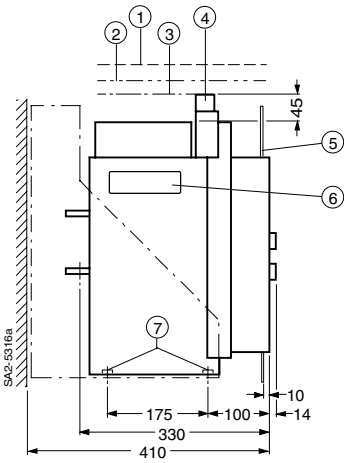
Double hole, 2000 to 3200 A
Holes in bars to DIN 43673

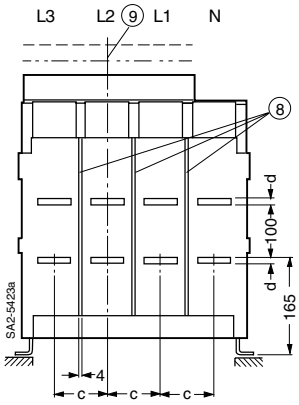
Project planning aids

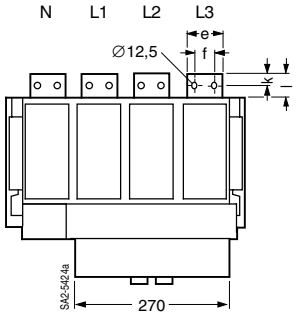
3WN6 fixed-mounted circuit-breakers, 4-pole

Horizontal connection

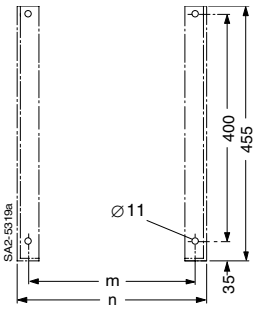








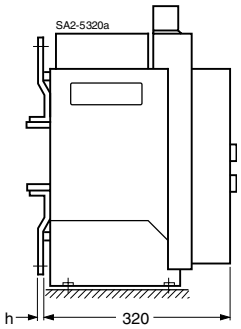
Fixing holes for support bracket



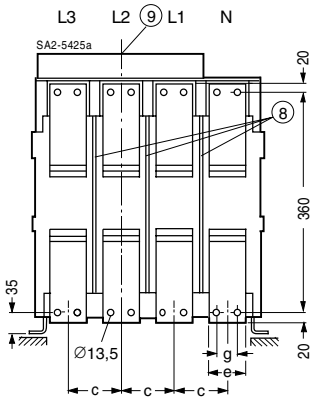
① Clearance for lifting out the arc chute
② Space for auxiliary supply connectors
③ Space above arc chute
④ Auxiliary supply connectors
⑤ Switchboard door
⑥ Recessed grip
⑦ Nut M 8
⑧ Slots (4 mm deep) for line-side phase barriers
⑨ Center line of operator panel

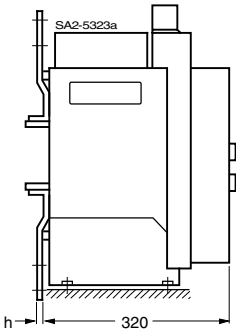
For safety clearances see Page 5/117.

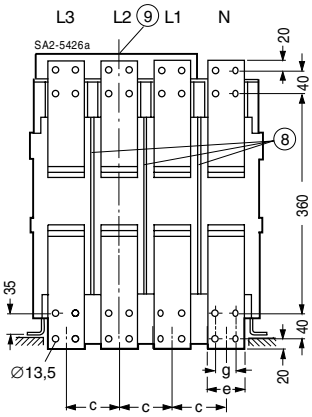
Front connection



Single hole





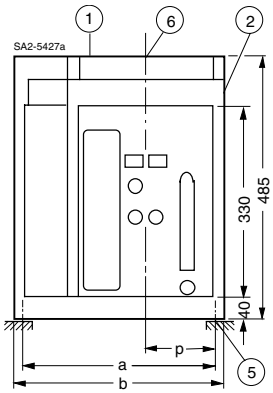


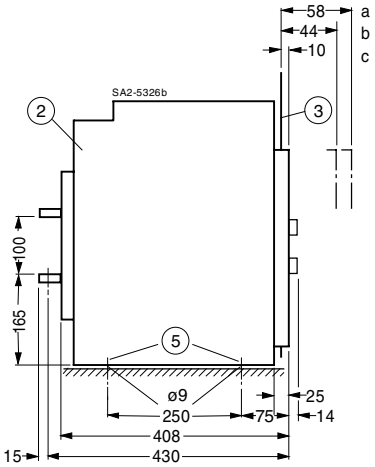
Double hole
Holes in bars to DIN 43673

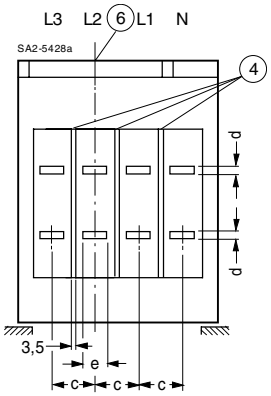
Rated current A	a	b	c	d	e	f	g	h	i	k	l	m	n	p
630 ... 1000	390	410	90	8	60	30	–	8	530	18	40	390	428	150
1250 ... 1600	390	410	90	15	60	30	–	15	530	18	40	390	428	150
2000	520	540	120	15	80	40	40	20	560	22	44	520	558	200
2500 ... 3200	520	540	120	30	80	40	40	20	560	22	44	520	558	200

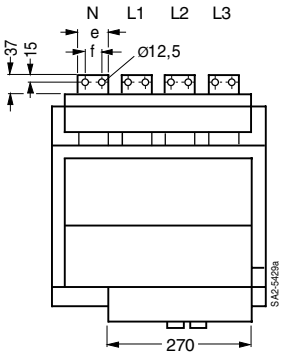
3WN6 circuit-breakers, withdrawable version, 4-pole

Horizontal connection







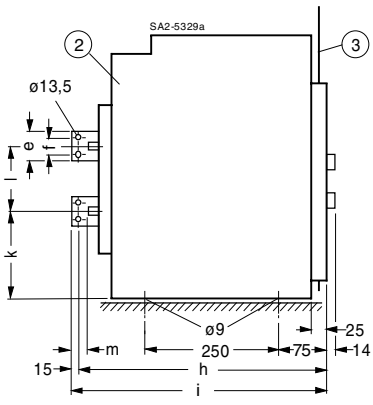


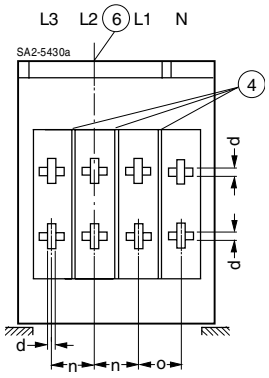
a Disconnected position
b Test position
c Connected position

① Auxiliary conductor plug-in system
② Guide frame
③ Switchboard door
④ Slots (6 mm deep) for line-side phase barriers
⑤ Holes for attaching the guide frame
⑥ Center line of operator panel

For safety clearances see Page 5/117.

Vertical connection



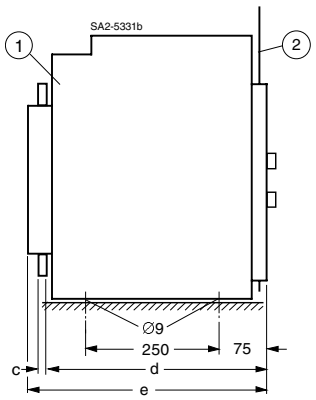


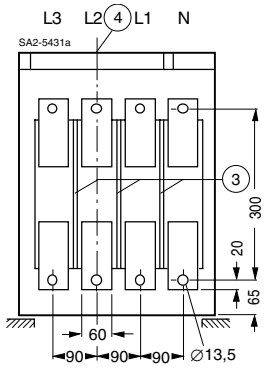
Rated current A	a	b	c	d	e	f	h	i	k	l	m	n	o	p
630 ... 1000	370	410	90	8	60	30	455	470	157.5	115	37	90	90	140
1250 ... 1600	370	410	90	15	60	30	455	470	157.5	115	37	90	90	140
2000	500	540	120	15	80	40	465	480	157.5	115	40	140	120	190
2500 ... 3200	500	540	120	30	100	50	465	480	150	130	40	140	120	190

Project planning aids

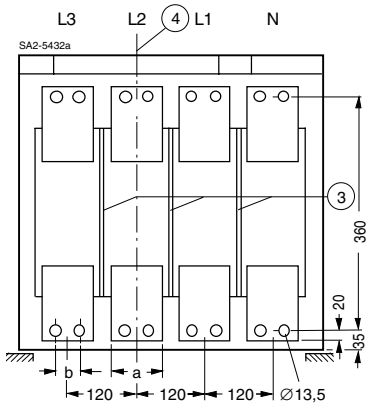
3WN6 circuit-breakers, withdrawable version, 4-pole

Front connection





Single hole, 630 to 1600 A

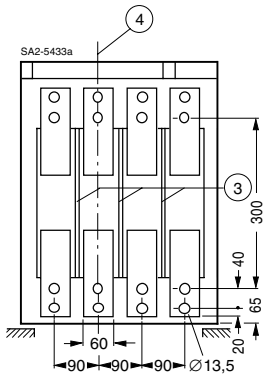


Single hole, 2000 to 3200 A

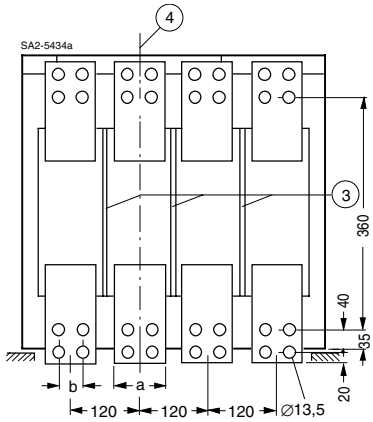
Rated current A	a	b	c	d	e
630 ... 1000	60	–	8	390	408
1250 ... 1600	60	–	15	390	408
2000	80	40	20	420	445
2500 ... 3200	100	50	20	420	445

① Guide frame
② Switchboard door
③ Slots (6 mm deep, 3.5 mm wide) for line-side phase barriers
④ Center line of operator panel

For safety clearances see Page 5/117.



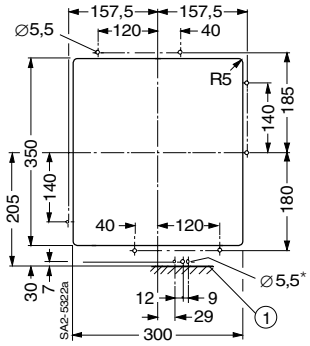
Double hole, 630 to 1600 A
Holes in bars to DIN 43673



Double hole, 2000 to 3200 A
Holes in bars to DIN 43673

3WN6 circuit-breakers, 3- and 4-pole

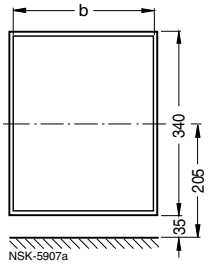
Door cut-out for operator panel using the door sealing frame



① Mounting surface

* 3 holes, dia. Ø 5.5 mm; only drill when using door interlocking.

Door cut-out with edge protector
Cut-out after mounting the edge protector



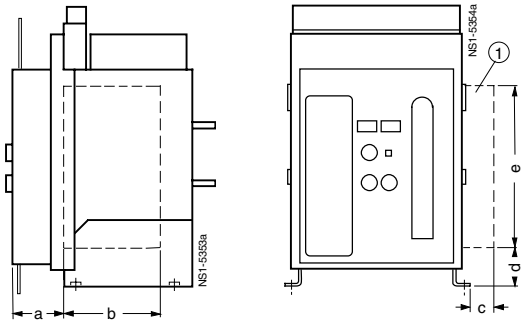
Cut-out when the circuit-breaker is installed in a switchgear cabinet and with the door arranged centrally.

Section width	Fixed-mounted b	Withdrawable b
400	275	292
500	275	290
600	275	288

Accessories for 3WN6 circuit-breakers, 3- and 4-pole

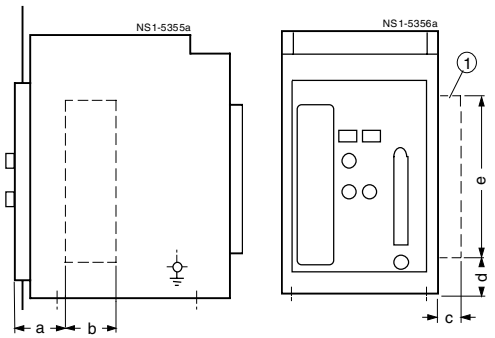
Mutual mechanical interlocking (1)/locking device to prevent closing (2), consisting of lock in the control cabinet door and interlock module with Bowden wire

For fixed-mounted circuit-breakers



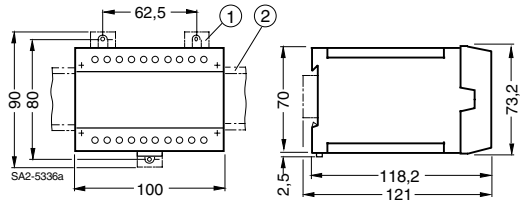
① Clearance for interlock module (without Bowden wire)

For withdrawable circuit-breakers



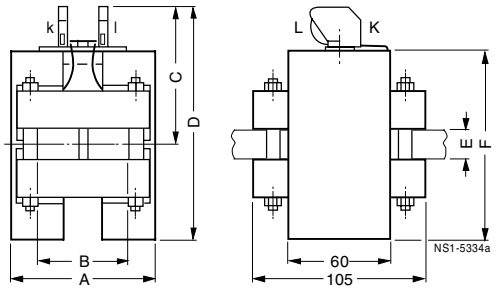
Clearance for	a	b	c	d	e
(1)	90	90	50	65	270
(2)	58	215	10	250	115

3WX31 56–1J.01 storage device for shunt release and enclosure for voltage transformer for measurement module



① Mounting feet
② Standard mounting rail to EN 50022-35

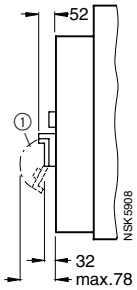
Current transformer for neutral conductor overload protection and ground-fault protection for sizes I and II



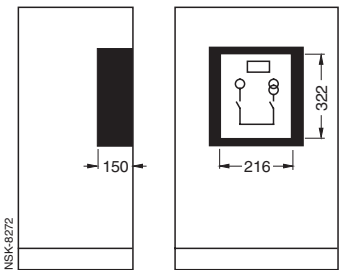
3WX36 43–1..00

Current transformer 3WX36 43–1. .00	Current transformer primary rated current I_n A	Size	A approx.	B	C	D	E	F
CA	315	I	92	60	86.5	140	5…15	107
CB	400							
CC	500							
CD	630							
CE	800							
CF	1000							
CG	1250							
CH	1600							
FJ	3200	II	128	80	99	167	5…35	136
FK	2500							
FM	3200							

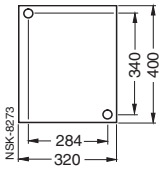
Locking device for "electrical ON" and "mechanical OFF" buttons ①



Transfer control device



Installation in cabinet, side view and front view



Dimensions for holes, outer dimensions

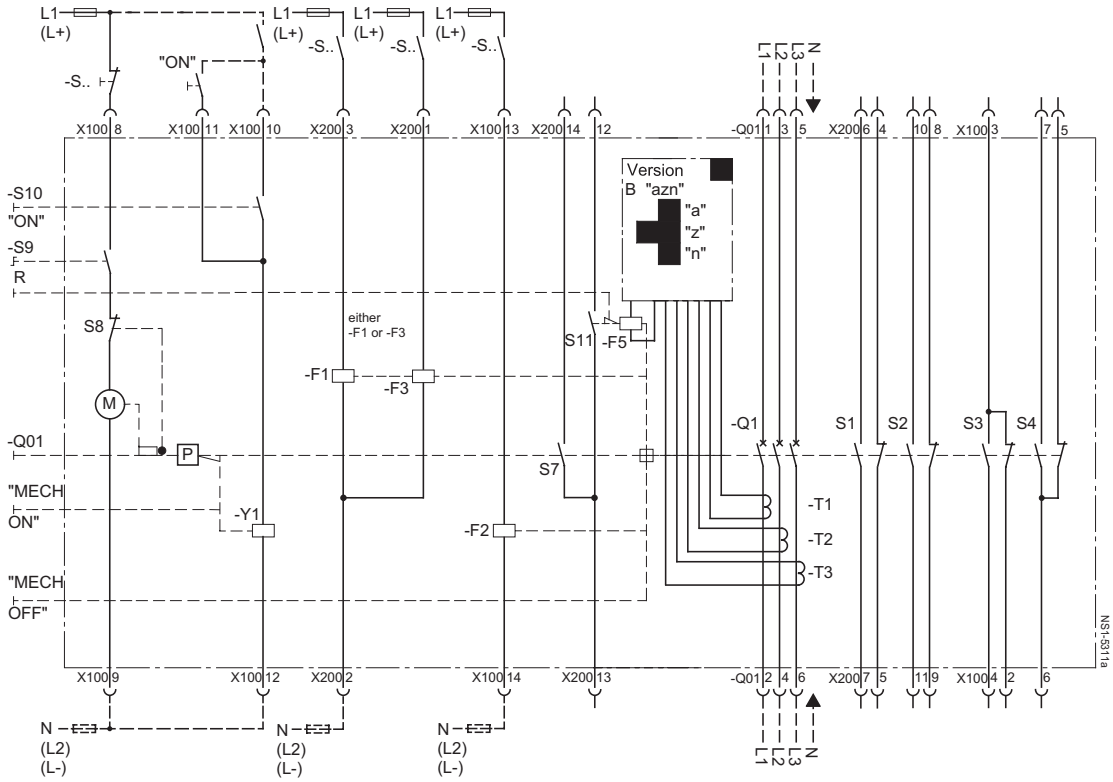
5

Project planning aids

Circuit diagrams

Example of an overall circuit diagram

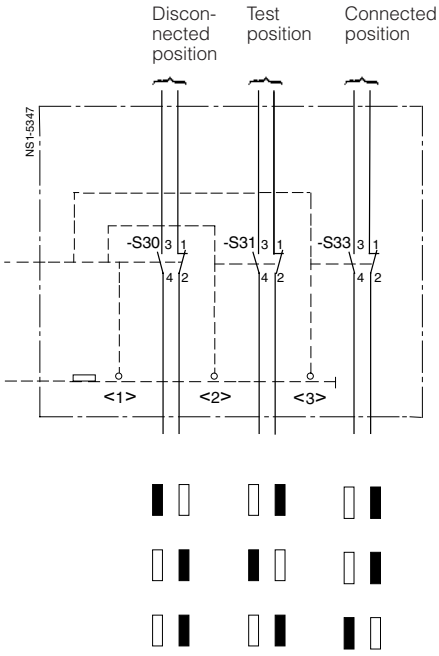
Motor/manual operating mechanism with stored-energy feature, with ready-to-close signaling switch, with electronic trip unit version b "azn", with overvoltage release "r" (F3) or shunt release "f" (F1), with shunt release "f" (F2), with "tripped" signaling switch, with auxiliary switch 2 NO + 2 NC + 2 CO, with motor switch



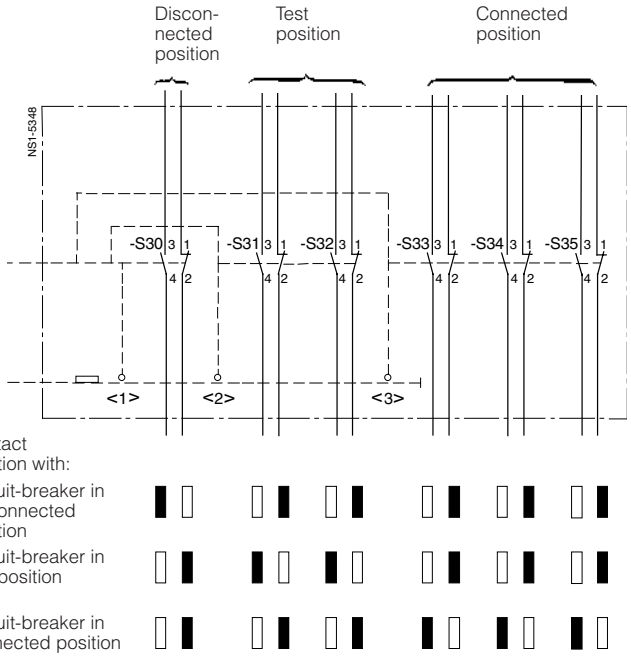
A1	Electronic trip unit
S1/S2	1st auxiliary switch block
S3/S4	2nd auxiliary switch block
S7	Ready-to-close signaling switch
S8	Storage spring contact
S9	Motor switch
S10	"Electrical ON" button
S11	"Tripped" switch
F1	1st shunt release "f"
F2	2nd shunt release "f"
F3	Undervoltage release "r"
F5	Trip solenoid
M1	Motor for "charging store"
P	Storage spring
Q01	Hand-operated lever for "charging store"
Q1	Main contacts
T1/T2/T3	Current transformer
X100/X200	Terminals
Y1	Closing solenoid
R	Indication and reset button for overcurrent tripping

Indicator switches for the switch positions in the guide frame

Order code "R13"
3WX36 84–1JA10



Order code "R14"
3WX36 84–1JC10



Contact position with:

Circuit-breaker in disconnected position

Circuit-breaker in test position

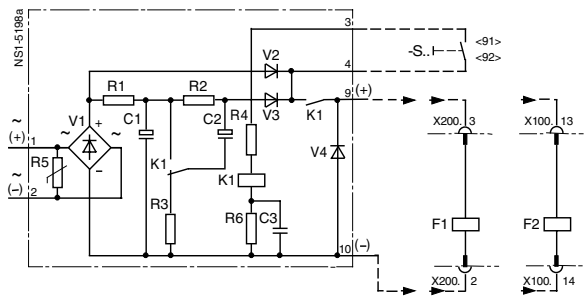
Circuit-breaker in connected position

Contact closed

Contact open

Circuit diagram for optional equipment

–F1A
Storage device for 1st or 2nd shunt release
(–F1 or –F2)



3WX31 56-1JG01 and 3WX31 56-1JJ01 storage devices for shunt release with stored energy feature

<21> 1st shunt release –F1
<22> Auxiliary switch for <21>
<27> 2nd shunt release –F2
<28> Auxiliary switch for <27>
<91> or <92> External "electrical <OFF>" by –F1 or –F2 button only

Further information

For planning guides with further descriptions relating to design, operating principle, installation and retrofitting see manual "3WN6 circuit-breakers for low voltage"
Order No.: E20001-P285-A571-V2 (in German)

For further information on the selection, ordering and project planning of communication-capable circuit-breakers, refer to the section "Communication-capable circuit-breakers" and the manual "Communication links for 3VF, 3WN6, 3WN1/3WS1 circuit-breakers to PROFIBUS DP"
Order No. E20001-P285-A644-V1 (in German only).

3-pole, fixed-mounted design

Version Rated operating voltage U_e up to AC 690 V without electronic trip unit system			DT	Order No. 3WN6 ■■ 1 – 0WA ■■ – ■■■■		PS*	Weight per PU approx. kg
Size/ rated current I_n	Size	Rated current I_n					
	I	1000 A		2		1 unit	34.000
		1600 A		4		1 unit	36.000
	II	2000 A		5		1 unit	57.000
		2500 A		6		1 unit	59.000
		3200 A		7		1 unit	61.000
Installation type	Main circuit connections see Page 5/85						
Fixed-mounted	Main circuit connections, rear, horizontal (standard)				6		
	Main circuit connections accessible from front, single hole at top and bottom up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A				3		
	Main circuit connections accessible from front, double hole at top and bottom, holes in accordance with DIN 43673 up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A				2		

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/130.

*** This quantity or a multiple thereof can be ordered.**

3-pole, withdrawable design

Version Rated operating voltage U_e up to AC 690 V without electronic trip unit system			DT	Order No. 3WN6 ■■1–0WA■■–■■■■	PS*	Weight per PU approx. kg
Size/ rated current I_n	Size	Rated current I_n				
	I	1000 A		2	1 unit	36.000
		1600 A		4	1 unit	38.000
	II	2000 A		5	1 unit	59.000
		2500 A		6	1 unit	61.000
		3200 A		7	1 unit	63.000
Installation type	Main circuit connections see Page 5/85					
Withdrawable design	Withdrawable circuit-breaker without guide frame			7		
	Withdrawable circuit-breaker with guide frame			8		
Other versions of the guide frame see Page 5/110.	Standard version: Rear, horizontal terminals with guide rails	up to 1000 A				27.000
		1250 A, 1600 A				23.000
		2000 A				35.000
		2500 A				37.000
		3200 A				37.000

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/130.

5

*** This quantity or a multiple thereof can be ordered.**

4-pole, fixed-mounted design

Version Rated operating voltage U_e up to AC 690 V without electronic trip unit system			DT	Order No. 3WN6 ■■3 – 0WA■■ – ■■■■		PS*	Weight per PU approx. kg
Size/ rated current I_n	Size	Rated current I_n					
	I	1000 A		2		1 unit	47.000
		1600 A		4		1 unit	49.000
	II	2000 A		5		1 unit	70.000
		2500 A		6		1 unit	72.000
		3200 A		7		1 unit	74.000
Installation type	Main circuit connections see Page 5/85						
Fixed mounted	Main circuit connections, rear, horizontal (standard)				6		
	Main circuit connections accessible from front, single hole at top and bottom up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A				3		
	Main circuit connections accessible from front, double hole at top and bottom, holes in accordance with DIN 43673 up to 1000 A 1250 A, 1600 A 2000 A 2500 A, 3200 A				2		

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/130.

* This quantity or a multiple thereof can be ordered.

4-pole, withdrawable design

Version Rated operating voltage U_e up to AC 690 V without electronic trip unit system			DT	Order No. 3WN6 ■■3 – 0WA■■ – ■■■■	PS*	Weight per PU approx. kg
Size/ rated current I_n	Size	Rated current I_n				
	I	1000 A		2	1 unit	49.000
		1600 A		4	1 unit	51.000
	II	2000 A		5	1 unit	72.000
		2500 A		6	1 unit	74.000
		3200 A		7	1 unit	76.000
Installation type	Main circuit connections see Page 5/85					
Withdrawable design	Withdrawable circuit-breaker without guide frame			7		
	Withdrawable circuit-breaker with guide frame			8		
Other versions of the guide frame see Page 5/110.	Standard version: Rear, horizontal circuit connections with guide rails	up to 1000 A				27.000
		1250 A, 1600 A				28.000
		2000 A				46.000
		2500 A				48.000
		3200 A				48.000

Circuit-breakers also available with rated short-time withstand current I_{cw} = 50 kA/1 s, see Page 5/105.

11th to 16th positions of the Order No. see Page 5/130.

5

*** This quantity or a multiple thereof can be ordered.**

Options

Selection and ordering data

Version				Order No. 3WN6 ■■1–0WA■■–■■■■
Operating mechanism	Manual operating mechanism with stored-energy feature, with mech. closing			05
	Manual operating mechanism with stored-energy feature, with mechanical and electr. closing			
	Closing solenoid AC 50/60 Hz V	DC V		
	24	24		11
	48	48		14
	–	60		15
	110–127	110–125		16
	220–240	220–250		18
M	Manual/motor-operated mechanism with stored-energy feature with mechanical and electrical closing			
	Motor AC 50/60 Hz V	DC V	Closing AC 50/60 Hz V	DC V
	–	24	24	24	51
	–	48	48	48	54
	–	60	–	60	55
	110–127	110–125	–	24	71
	110–127	110–125	–	48	74
	110–127	110–125	–	60	75
	110–127	110–125	110–127	110–125	56
	110–127	110–125	220–240	220–250	78
	220–240	220–250	–	24	81
	220–240	220–250	–	48	84
	220–240	220–250	–	60	85
	220–240	220–250	110–127	110–125	86
	220–240	220–250	220–240	220–250	58
1st auxiliary release	Without 1st auxiliary releases			0A
U	Shunt release "f", F1			
	AC 50/60 Hz V	DC V		
	24	24		1B
	–	30		1E
	48	48		1F
	–	60		1G
	110–127	110–125		1H
	220–240	220–250		1K
U<	Undervoltage release "r", F3 (instantaneous 0 ms, short-delay 200 ms)			
	AC 50/60 Hz V	DC V		
	–	24		3B
	–	30		3E
	–	48		3F
	–	60		3G
	110–127	110–125		3H
	220–240	220–250		3K
	380–415	–		3M
U<,t	Undervoltage release "rc", F8 (delayable 0.2 ... 3.2 s)			
	AC 50/60 Hz V	DC V		
	110–127	–		4H
	220–240	–		4K
	380–415	–		4M
2nd auxiliary release	Without 2nd auxiliary release			A
	Shunt release "f", F2			
	AC 50/60 Hz V	DC V		
	24	24		B
	–	30		E
	48	48		F
	–	60		G
	110–127	110–125		H
	220–240	220–250		K
Auxiliary switches	1st auxiliary switch block 2 NO + 2 NC			1
	1st + 2nd auxiliary switch block 2 NO + 2 NC + 2 CO			3

For technical specifications, options, accessories/spare parts and project planning aids see "Circuit-breakers, up to 3200 A, discontinued series".

5th and 6th positions of the Order No. see Pages 5/126 to 5/129.