OEZ

Modern technology
and personal approach. Of course. OEZ

Air circuit breakers 3WA

OEZ

A

B

Introduction

OEZ

A

B

Initial information

A

INITIAL INFORMATION

All power distribution systems depend on a secure power supply.
The air circuit breaker 3WA combines all the functions required of power distribution equipment
in today's modern age:

- Reliable protection of persons from injury and devices from damage or fire due to short circuit, overload or ground connection.
- Flexible applications and retrofit options.
- Long service life and low maintenance.
- Innovative functions.
- Reliable energy data recording and seamless integration into the digital environment.

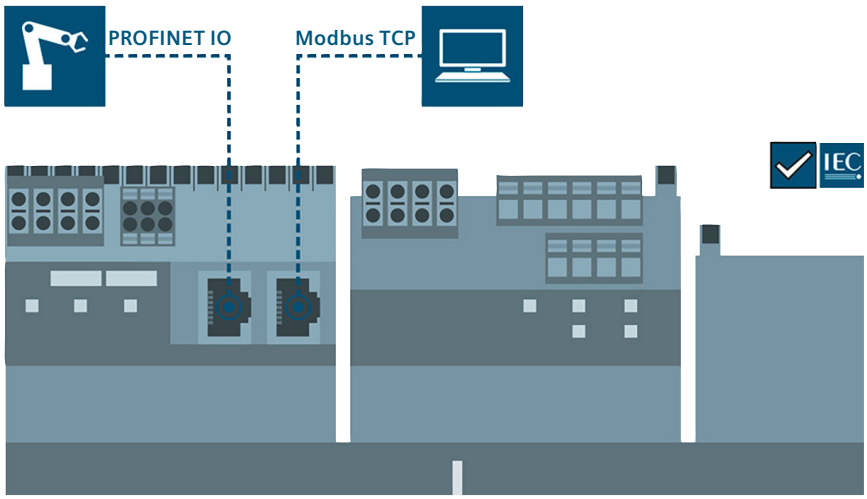
A

As a central component of the power distribution system, the air circuit breaker 3WA provides the basis for a complete power system in a digital world.

CONSISTENT

- Consistent, coherent portfolio since 2001 by keeping the same dimensions and inlets of the 3WA, 3WL and Arion WL air circuit breakers.
- Comprehensive portfolio of circuit breakers up to AC 1,150 V.
- Three sizes with rated currents from AC 630 A to 6,300 A.
- One size up to DC 4,000 A.
- High breaking capacity I_{cu} from 55 kA to 150 kA at AC 500 V.
- Easy expansion of functions thanks to uniform accessories for all sizes.
- Only two electronic overcurrent releases.

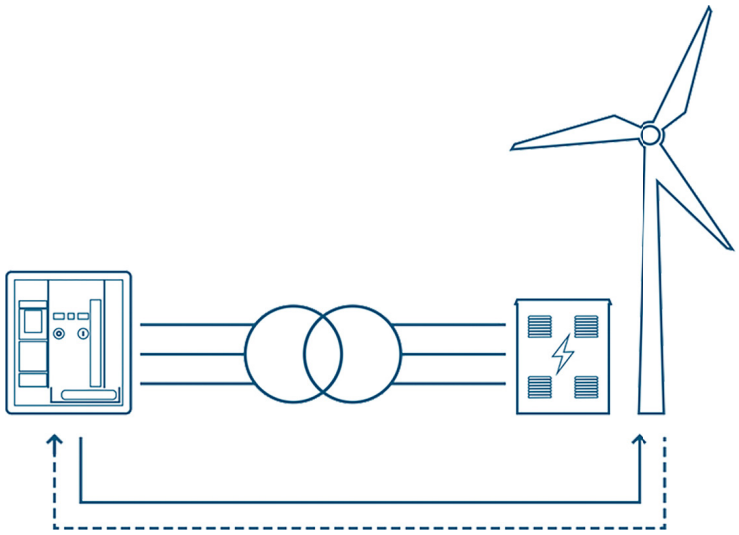
EASY EXTENSION OF FUNCTIONS



- Accessories can also be retrofitted at any time.
- The functionality of overcurrent releases can be extended with upgrades.
- MCOM190 PROFINET-IO/Modbus TCP module for connection to higher-level control systems designed to use multiple protocols simultaneously (Modbus TCP and PROFINET).
- Switched Ethernet features for optimized architecture and redundancy while maintaining the highest performance.

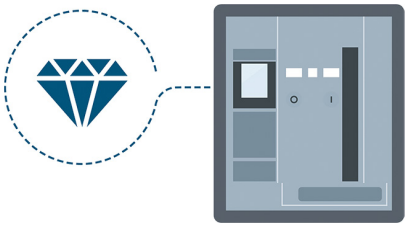
Air circuit breakers 3WA provide enhanced protection features and increased selectivity to ensure maximum system availability. Robust mechanisms and excellent quality make them highly effective in demanding applications. With the air circuit breaker 3WA you can easily replace the 3WL or Arion WL air circuit breaker in your switchboard and save time and money.

OPTIMUM SELECTIVITY



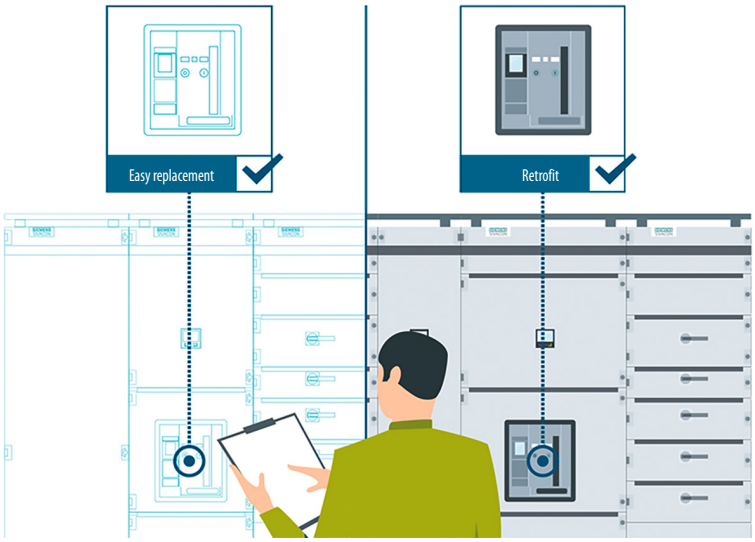
- Perfectly coordinated selectivity values and protection functions of air circuit breakers with associated circuit breakers, such as 3VA compact circuit breakers, ensure complete selectivity in the event of overload and short circuit (the directly affected part of the system is safely switched off).
- Directional protective function: better protection of equipment (e.g. transformer) by detecting short circuits when the direction of power flow changes.
- Dangerous discharge currents are detected thanks to optimized ground short-circuit protection.

TOP QUALITY



- A further development of the proven, extremely robust design of the previous 3WL and Arion WL air circuit breaker models.
- New special versions (high short-circuit breaking capacity at high voltage): up to 125 kA at AC 1000 V.
- Maximum permissible load even with prolonged short circuits - short-time withstand current I_{cw} (3 s).
- Accessories designed for maximum life of the air circuit breaker.
- The air circuit breaker 3WA is developed and manufactured in accordance with a certified quality management system in accordance with DIN EN ISO 9001:2008.
- User-friendly control of protection electronic trip units via rotary change-over switches, display or remote parameterization.

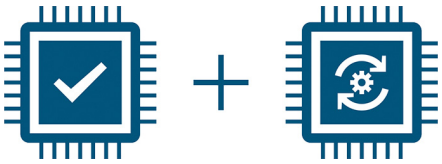
SAVING TIME AND COSTS



- Easy replacement in existing switchboard: the 3WL or Arion WL air circuit breaker can be replaced by an air circuit breaker 3WA without additional testing according to IEC 61439, as long as this circuit breaker is operated under the same supply/load conditions.
- The type test according to IEC 61439 is only required if new technical features of the air circuit breaker 3WA are used (e.g. higher breaking capacity).
- The air circuit breaker 3WA can be installed in the existing 3WL withdrawable device.

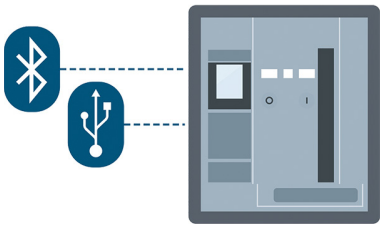
Air circuit breakers 3WA offer optional and expandable features that give you flexibility, now and in the future.
The power output data guarantees maximum transparency in operation. Sophisticated and powerful communication features ensure secure data transmission, a necessity in the digital age. And because they are easy to select, plan and order, you can enjoy efficient workflows.

LONG-TERM FLEXIBILITY



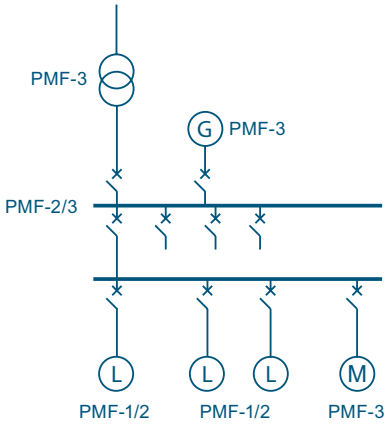
- Intelligent dual-processor solution provides future-proofing and a high level of flexibility along with strong security: non-modifiable protection processor for basic protective functions and an expandable application processor for measurement and extended protection functions.
- Easy installation of features and upgrades using the Powerconfig configuration software.
- Optimal transparency for energy efficiency according to IEC 60364-8-1 thanks to a predefined metering function level (PMF level).
- Adaptation to new standards or changes is possible at any time through updates.

COMMUNICATION SOLUTIONS



- PROFINET-IO, for example for very demanding industrial communication, and Modbus TCP, for example for power supply monitoring.
- PROFINET-IO redundancy and compliance with the highest PROFINET-IO standards (ability to work in real-time).
- Modbus RTU for system expansion.
- Standard interfaces like USB-C and Bluetooth are available in every air breaker.
- Possibility of simultaneous use of two communication modules.

HIGH TRANSPARENCY OF THE SYSTEM



- Easy integration into ISO 50001 energy management systems with selection of metering function based on IEC 60364-8-1 energy efficiency guidelines.
- ETU600 protection electronic trip unit with advanced monitoring and reporting concept.
- Remote monitoring of air circuit breakers 3WA with the Powerconfig mobile app.

SECURE COMMUNICATION

Bluetooth communication: deactivated by default
and protected by secure pairing using a one-time PIN code.

- Comprehensive cybersecurity solutions, such as:
  – lockable communication module,
  – lockable USB-C interface.
- Communication via USB: parameter setting, testing and control via configuration software Powerconfig.

SELECTION, PLANNING AND ORDERING

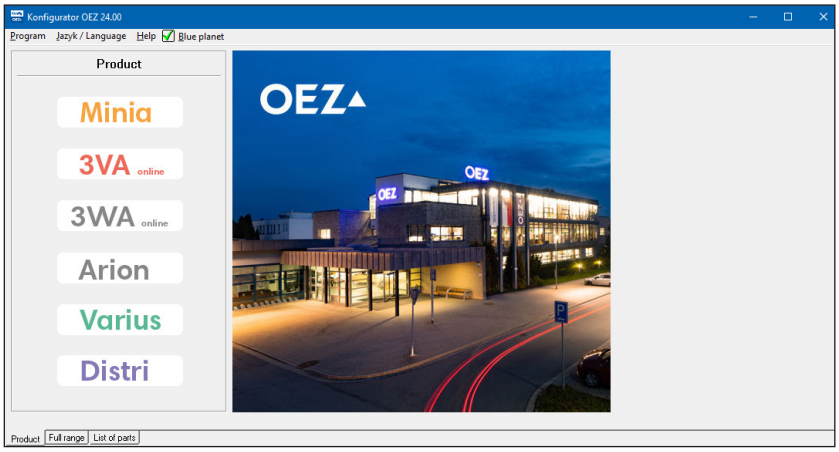
- Visual and interactive online configurator with interface for comprehensive CAx data support.
- Direct conversion of 3WL air circuit breaker type designations to 3WA available (Arion WL circuit breakers must first be converted to 3WL).
- Quick and easy documentation for switchgear thanks to the specific EPLAN maker system.
- Once configured, the air circuit breaker 3WA and withdrawable device can be ordered separately.

Air circuit breakers 3WA

B

ONLINE CONFIGURATOR

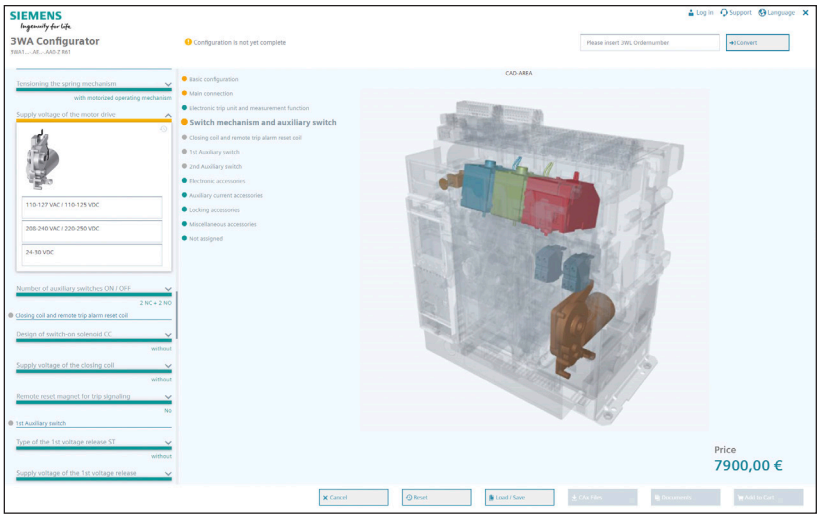
For a complete and valid configuration, use the online configurator found in the OEZ Configurator or at www.oez.com/air-circuit-breakers-3wa



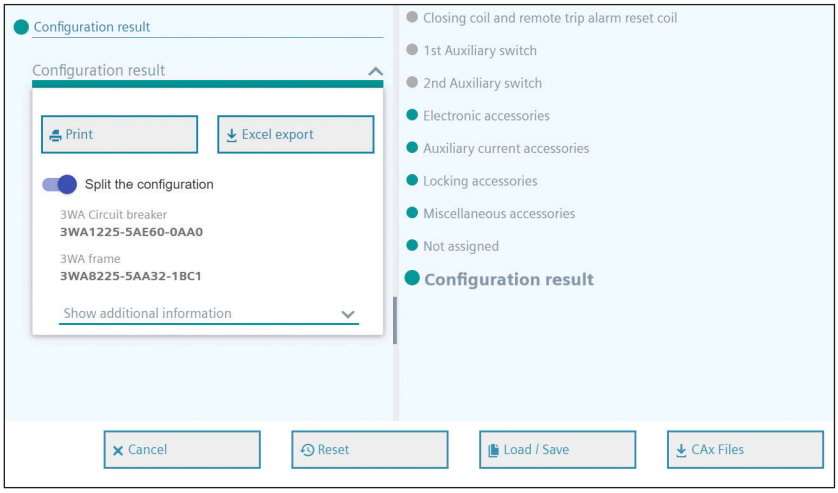
B

Graphical representation

- Colour differentiation of the selection:
  – Orange: to be selected,
  – Petroleum: already selected,
  – Grey: preselected (default).
- Graphical representation of the individual configuration steps:
  "what you see is what you get".

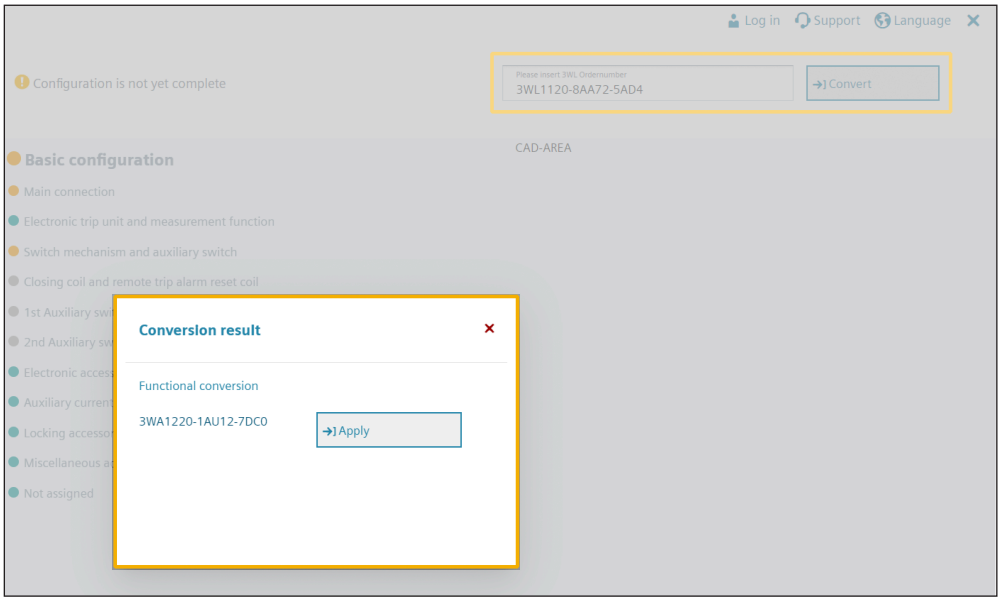


Withdrawable device and circuit breaker can be ordered separately



Conversion of the old 3WL device type to the new 3WA type directly in the configurator

(Arion WL circuit breakers must first be converted to 3WL).



Adaptive display for different device types

ORDER CODE STRUCTURE

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 690 V

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

						5	6	7		8	9	10	11	12		13	14	15	16
					3WA1	…	…	…	–	…	…	…	…	…	–	…	…	…	…
Size	I					**1**													
	II					**2**													
	III					**3**													
			I	II	III														
Rated current $I_{n\,max}$	630 A		■	–	–		**0**	**6**											
	800 A		■	–	–		**0**	**8**											
	1000 A		■	–	–		**1**	**0**											
	1250 A		■	–	–		**1**	**2**											
	1600 A		■	–	–		**1**	**6**											
	2000 A		■	■	–		**2**	**0**											
	2500 A		■	■	–		**2**	**5**											
	3200 A		–	■	–		**3**	**2**											
	4000 A		–	■ [1]	■		**4**	**0**											
	5000 A		–	–	■		**5**	**0**											
	6300 A		–	–	■		**6**	**3**											
Rated short-circuit ultimate breaking capacity I_{cu} at 500/690 V	N	55/42 kA	■	–	–					**2**									
	S	66/50 kA	■	■	–					**3**									
	M	85/66 kA	■	■	–					**4**									
	H	100/85 kA	–	■	■					**5**									
	C	130/100 kA	–	■	–					**6**									
		3-pole: 150/150 kA 4-pole: 130/130 kA	–	–	■					**6**									
Switch-disconnectors											**A**	**A**							
Switch-disconnectors, ready4COM [3] function											**C**	**A**							
Circuit breakers, protective and measuring functions	Overcurrent release ETU300	Protective functions				LSI					**A**	**B**							
						LSIG					**A**	**C**							
	Overcurrent release ETU600	Current measurement									**A**								
		Current measurement, ready4COM [3] function									**C**								
	ETU600 overcurrent release with measuring function, voltage measurement in circuit breaker by VTM680 module, ready4COM [3] function.	PMF-I Measurement of active energy				Measurement up					**L**								
						Measurement down					**E**								
		PMF-II Basic power output measurement				Measurement up					**M**								
						Measurement down					**F**								
		PMF-III Advanced power output measurement				Measurement up					**N**								
						Measurement down					**G**								
			I	II	III														
	Protective functions		■	■	■	LSI						**E**							
			■	■	■	LSIG						**F**							
			–	■	■	LSIG Hi-Z						**G**							
Number of poles	Fixed design					3-pole							**0**						
						4-pole, N-pole left							**1**						
	Withdrawable design	Without position signalling				3-pole							**3**						
						4-pole, N-pole left							**4**						
		With position signalling [2]				3-pole							**6**						
						4-pole, N-pole left							**7**						

[1] Not applicable for breaking capability C.
[2] Position signalling contacts for circuit breakers/switch-disconnectors without ready4COM function: 3× working position, 2× inspection position, 1× disconnected position;
Position signalling contacts for circuit breakers/switch-disconnectors with ready4COM function: 1× working position, 1× inspection position, 1× disconnected position + message via communication interface for the disconnected position and for the "not available" status.
[3] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS^2.

– Not available
■ Available

B

						5	6	7		8	9	10	11	12		13	14	15	16
					3WA1	…	…	…	–	…	…	…	…	…	–	…	…	…	…
		I	II	III															
Type of connection	Fixed design	■	■ [1]	■	Rear vertical									**1**					
		■	■ [3]	■ [4]	Rear horizontal									**2**					
		■ [2]	■ [5]	■ [6]	Front two series of holes									**3**					
		■	■ [3]	■ [4]	Rear vertical up/rear horizontal down									**5**					
		■	■ [3]	■ [4]	Rear horizontal up/rear vertical down									**6**					
	Withdrawable design	■	■	■	Without withdrawable device									**0**					
		■	■ [1]	■	Rear vertical									**1**					
		■ [2]	■ [3]	■ [4]	Rear horizontal									**2**					
		■ [2]	■ [5]	■ [6]	Front two series of holes									**3**					
		■ [2]	■ [5]	■ [6]	Rear flanged									**4**					
		■ [2]	■ [3]	■ [4]	Rear vertical up/rear horizontal down									**5**					
		■ [2]	■ [3]	■ [4]	Rear horizontal up/rear vertical down									**6**					
		■ [2]	■ [5]	■ [6]	Rear flanged up/rear horizontal down									**7**					
		■ [2]	■ [5]	■ [6]	Rear horizontal up/rear flanged down									**8**					

[1] Rear vertical connections for 3WA1 4000 A have different dimensions than for Arion and 3WL1. Dimensionally compatible connections can be ordered with the additional code D01.
[2] Not applicable for 2500 A.
[3] Not applicable for 4000 A.
[4] Not applicable for 6300 A.
[5] Not applicable for 4000 A and breaking capacity C.
[6] Not applicable for 5000 A and 6300 A and for breaking capacity C.

■ Available

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 690 V

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

				5	6	7	8		9	10	11	12		13	14	15	16
			3WA1	…	…	…	…	–	…	…	…	…	–	…	…	…	…
														Auxiliary switches			
Drives and auxiliary switches	Hand drive	Without motor operator												2 NO, 2 NC			**0**
														4 NO, 4 NC			**1**
	Motor drive	DC 24 ÷ 30 V												2 NO, 2 NC			**2**
														4 NO, 4 NC			**5**
		DC 48 ÷ 60 V												4 NO, 4 NC			**6**
		AC 110 ÷ 127 V/DC 110 ÷ 125 V												2 NO, 2 NC			**3**
														4 NO, 4 NC			**7**
		AC 208 ÷ 240 V/DC 220 ÷ 250 V												2 NO, 2 NC			**4**
														4 NO, 4 NC			**8**
Closing release and remote reset [1)2)]	Without closing release	Without remote reset													**A**		
	With closing release (CC/CC-COM) [3)] load factor 100%	Without remote reset												DC 24 ÷ 30 V	**B**		
														DC 48 ÷ 60 V	**C**		
														AC 110 ÷ 127 V/DC 110 ÷ 125 V	**D**		
														AC 208 ÷ 240 V/DC 220 ÷ 250 V	**E**		
		With remote reset (RR), load factor 1%												DC 24 ÷ 30 V	**F**		
														DC 48 ÷ 60 V	**G**		
														AC 110 ÷ 127 V/DC 110 ÷ 125 V	**H**		
														AC 208 ÷ 240 V/DC 220 ÷ 250 V	**J**		
	With closing release (CC) load factor 5%	Without remote reset												DC 24 ÷ 30 V	**K**		
														DC 48 ÷ 60 V	**L**		
														AC 110 ÷ 127 V/DC 110 ÷ 125 V	**M**		
														AC 208 ÷ 240 V/DC 220 ÷ 250 V	**N**		
		With remote reset (RR), load factor 1%												DC 24 ÷ 30 V	**P**		
														DC 48 ÷ 60 V	**Q**		
														AC 110 ÷ 127 V/DC 110 ÷ 125 V	**R**		
														AC 208 ÷ 240 V/DC 220 ÷ 250 V	**S**		
2nd auxiliary release	Without 2nd auxiliary release															**A**	
	With shunt trip (ST), load factor 100%													DC 24 ÷ 30 V		**B**	
														DC 48 ÷ 60 V		**C**	
														AC 110 ÷ 127 V/DC 110 ÷ 125 V		**D**	
														AC 208 ÷ 240 V/DC 220 ÷ 250 V		**E**	
	With shunt trip (ST), load factor 5%													DC 24 ÷ 30 V		**F**	
														DC 48 ÷ 60 V		**G**	
														AC 110 ÷ 127 V/DC 110 ÷ 125 V		**H**	
														AC 208 ÷ 240 V/DC 220 ÷ 250 V		**J**	
	With undervoltage release (UVR) [4)], instantaneous (≤0.08 s), short delayed (≤0.2 s)													DC 24 V		**L**	
														DC 48 V		**N**	
														AC 110 ÷ 127 V/DC 110 ÷ 125 V		**P**	
														AC 208 ÷ 240 V/DC 220 ÷ 250 V		**Q**	
														AC 380 ÷ 415 V		**R**	
	With undervoltage release (UVR-t), adjustable delay 0.2 ÷ 3.2 s													DC 48 V		**S**	
														DC 60 V		**T**	
														AC 110 ÷ 127 V/DC 110 ÷ 125 V		**U**	
														AC 208 ÷ 240 V/DC 220 ÷ 250 V		**V**	
														AC 380 ÷ 415 V		**W**	

1) Remote reset is not applicable for switch-disconnectors.
2) When using remote reset, the circuit breaker reclosing blocking is deactivated. The circuit breaker can be switched on again immediately if all the conditions for switching it on are met.
3) If the ready4COM function is available, communication-capable closing releases (CC-COM) and communication-capable shunt trips (ST-COM) are installed at the factory.
4) UVR undervoltage shunt trips for 30 V DC and 60 V DC can only be supplied separately as accessories. For 30 V DC 3WL9111-0AE02-0AA0; for 60 V DC 3WL9111-0AE07-0AA0.

			5	6	7	8		9	10	11	12		13	14	15	16
3WA1			…	…	…	…	–	…	…	…	…	–	…	…	…	…
1st auxiliary release	Without 1st auxiliary release															**0**
	With shunt trip (ST/ST-COM) [1], load factor 100% OP	DC 24 ÷ 30 V														**1**
		DC 48 ÷ 60 V														**2**
		AC 110 ÷ 127 V/DC 110 ÷ 125 V														**3**
		AC 208 ÷ 240 V/DC 220 ÷ 250 V														**4**
	With shunt trip (ST), load factor 5% OP	DC 24 ÷ 30 V														**5**
		DC 48 ÷ 60 V														**6**
		AC 110 ÷ 127 V/DC 110 ÷ 125 V														**7**
		AC 208 ÷ 240 V/DC 220 ÷ 250 V														**8**

[1] If the ready4COM function is available, shunt trips with communication capability (ST-COM) are installed at the factory.

The following components are included as standard in air circuit breakers 3WA (if the conditions are met) and do not need to be configured:

Components	Installed as standard in the production plant
Signal switch ready-to-close (S20)	for all 3WA versions
Signal switch disabled by overcurrent release (S24)	for all circuit breakers 3WA (including ETU)
Signal switch of storage device state (S21)	for all 3WA types with motor drive
Insulating cover	for all withdrawable circuit breakers 3WA

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 1000 V AND UP TO 690 V FOR IT NETWORKS

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

						5	6	7		8	9	10	11	12		13	14	15	16
					3WA1	…	…	…	–	…	…	…	…	…	–	…	…	…	…
Size	I					1													
	II					2													
	III					3													
			I	II	III														
Rated current $I_{n\,max}$	630 A		■	–	–		0	6											
	800 A		■	–	–		0	8											
	1000 A		■	–	–		1	0											
	1250 A		■	–	–		1	2											
	1600 A		■	–	–		1	6											
	2000 A		■	■	–		2	0											
	2500 A		■	■	–		2	5											
	3200 A		–	■	–		3	2											
	4000 A		–	■	■		4	0											
	5000 A		–	–	■		5	0											
	6300 A		–	–	■		6	3											
Rated short-circuit ultimate breaking capacity I_{cu} at 690 V/1000 V	E	85/50 kA/–	■	–	–					8									
		85/85/50 kA	–	■	–					8									
		3-pole: 150/125/70 kA 4-pole: 130/125/70 kA	–	–	■					8									
Switch-disconnectors											A	A							
Switch-disconnectors, ready4COM [2] function											C	A							
Circuit breakers, protective and measuring functions	Overcurrent release ETU300 [1]	Protective functions	LSI								A	B							
			LSIG								A	C							
	Overcurrent release ETU600	Current measurement									A								
		Current measurement, ready4COM [2] function									C								
	Overcurrent release ETU600 with measurement function, measuring the voltage in the circuit breaker with the VTM640 module, ready4COM [2] function.	PMF-I Measurement of active energy	Measurement up								U								
			Measurement down								Q								
		PMF-II Basic power output measurement	Measurement up								V								
			Measurement down								R								
		PMF-III Advanced power output measurement	Measurement up								W								
			Measurement down								S								
			I	II	III														
	Protective functions		■	■	■	LSI						E							
			■	■	■	LSIG						F							
			–	■	■	LSIG Hi-Z						G							
Number of poles	Fixed design												3-pole						0
													4-pole, N-pole left						1
	Withdrawable design	Without position signalling											3-pole						3
													4-pole, N-pole left						4
		With position signalling [1]											3-pole						6
													4-pole, N-pole left						7

[1] Position signalling contacts for circuit breakers/switch-disconnectors without ready4COM function: 3× working position, 2× inspection position, 1× disconnected position;
Position signalling contacts for circuit breakers/switch-disconnectors with ready4COM function: 1× working position, 1× inspection position, 1× disconnected position + message via communication interface for the disconnected position and for the "not available" status.

[2] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS^2.

– Not available
■ Available

						5	6	7		8	9	10	11	12		13	14	15	16
					3WA1	…	…	…	–	…	…	…	…	…	–	…	…	…	…
		I	II	III															
Type of connection	Fixed design	■	■ 3)	■	Rear vertical									1					
		■	■ 2)	■ 4)	Rear horizontal									2					
		■ 1)	■ 2)	■ 5)	Front two series of holes									3					
		■	■ 2)	■ 4)	Rear vertical up/rear horizontal down									5					
		■	■ 2)	■ 4)	Rear horizontal up/rear vertical down									6					
	Withdrawable design	■	■	■	Without withdrawable device									0					
		■	■ 3)	■	Rear vertical									1					
		■ 1)	■ 2)	■ 4)	Rear horizontal									2					
		■ 1)	■ 2)	■ 5)	Front two series of holes									3					
		■ 1)	■ 2)	■ 5)	Rear flanged									4					
		■ 1)	■ 2)	■ 4)	Rear vertical up/rear horizontal down									5					
		■ 1)	■ 2)	■ 4)	Rear horizontal up/rear vertical down									6					
		■ 1)	■ 2)	■ 5)	Rear flanged up/rear horizontal down									7					
		■ 1)	■ 2)	■ 5)	Rear horizontal up/ rear flanged down									8					

1) For size 1, only ≤ 2000 A can be used
2) For size 2, only ≤ 3200 A can be used
3) Rear vertical connections for 3WA1 4000 A have different dimensions than for Arion and 3WL1. Dimensionally compatible connections can be ordered with the additional code D01.
4) For size 3, only for ≤ 5000 A is possible
5) For size 3, only for 4000 A is possible, breaking capacity H.

■ Available

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 1000 V AND UP TO 690 V FOR IT NETWORKS

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

			5	6	7	8		9	10	11	12		13	14	15	16
		3WA1	…	…	…	…	–	…	…	…	…	–	…	…	…	…
													Auxiliary switches			
Drives and auxiliary switches	Hand drive	Without motor operator											2 NO, 2 NC			0
													4 NO, 4 NC			1
	Motor drive	DC 24 ÷ 30 V											2 NO, 2 NC			2
													4 NO, 4 NC			5
		DC 48 ÷ 60 V											4 NO, 4 NC			6
		AC 110 ÷ 127 V/DC 110 ÷ 125 V											2 NO, 2 NC			3
													4 NO, 4 NC			7
		AC 208 ÷ 240 V/DC 220 ÷ 250 V											2 NO, 2 NC			4
													4 NO, 4 NC			8
Closing release and remote reset [1]	Without closing release	Without remote reset												A		
	With closing release (CC/CC-COM) [2] load factor 100% OP	Without remote reset											DC 24 ÷ 30 V	B		
													DC 48 ÷ 60 V	C		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	D		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	E		
		With remote reset (RR), load factor 1% OP											DC 24 ÷ 30 V	F		
													DC 48 ÷ 60 V	G		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	H		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	J		
	With closing release (CC) load factor 5% OP	Without remote reset											DC 24 ÷ 30 V	K		
													DC 48 ÷ 60 V	L		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	M		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	N		
		With remote reset (RR), load factor 1% OP											DC 24 ÷ 30 V	P		
													DC 48 ÷ 60 V	Q		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	R		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	S		
2nd auxiliary release	Without 2nd auxiliary release														A	
	With shunt trip (ST), load factor 100% OP												DC 24 ÷ 30 V		B	
													DC 48 ÷ 60 V		C	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		D	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		E	
	With shunt trip (ST), load factor 5% OP												DC 24 ÷ 30 V		F	
													DC 48 ÷ 60 V		G	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		H	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		J	
	With undervoltage release (UVR) [3], instantaneous (≤0.08 s), short delayed (≤0.2 s)												DC 24 V		L	
													DC 48 V		N	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		P	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		Q	
													AC 380 ÷ 415 V		R	
	With undervoltage release (UVR-t), adjustable delay 0.2 ÷ 3.2 s												DC 48 V		S	
													DC 60 V		T	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		U	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		V	
													AC 380 ÷ 415 V		W	

[1] Remote reset is not applicable for switch-disconnectors.
[2] When using remote reset, the circuit breaker reclosing blocking is deactivated. The circuit breaker can be switched on again immediately if all the conditions for switching it on are met.
[3] If the ready4COM function is available, communication-capable closing releases (CC-COM) and communication-capable shunt trips (ST-COM) are installed at the factory. Undervoltage releases UVR for 30 V DC and 60 V DC can only be supplied separately as accessories. For 30 V DC 3WL9111-0AE02-0AA0; for 60 V DC 3WL9111-0AE07-0AA0.

		5	6	7	8		9	10	11	12		13	14	15	16
3WA1		…	…	…	…	–	…	…	…	…	–	…	…	…	…
1st auxiliary release	Without 1st auxiliary release														0
	With shunt trip (ST/ST-COM) [1], load factor 100% OP	DC 24 ÷ 30 V													1
		DC 48 ÷ 60 V													2
		AC 110 ÷ 127 V/DC 110 ÷ 125 V													3
		AC 208 ÷ 240 V/DC 220 ÷ 250 V													4
	With shunt trip (ST), load factor 5% OP	DC 24 ÷ 30 V													5
		DC 48 ÷ 60 V													6
		AC 110 ÷ 127 V/DC 110 ÷ 125 V													7
		AC 208 ÷ 240 V/DC 220 ÷ 250 V													8

[1] If the ready4COM function is available, shunt trips with communication capability (ST-COM) are installed at the factory.

The following components are included as standard in air circuit breakers 3WA (if the conditions are met) and do not need to be configured:

Components	Installed as standard in the production plant
Signal switch ready-to-close (S20)	for all 3WA versions
Signal switch disabled by overcurrent release (S24)	for all circuit breakers 3WA (including ETU)
Signal switch of storage device state (S21)	for all 3WA types with motor drive
Insulating cover	for all withdrawable circuit breakers 3WA

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 1150 V

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

				3WA1	5 …	6 …	7 …	–	8 …	9 …	10 …	11 …	12 …	–	13 …	14 …	15 …	16 …
Size	II				2														
	III				3														
						II	III												
Rated current $I_{n\,max}$	2000 A					■	–		2	0									
	2500 A					■	–		2	5									
	3200 A					■	–		3	2									
	4000 A					■	■		4	0									
	5000 A					–	■		5	0									
	6300 A					–	■		6	3									
Rated short-circuit ultimate breaking capacity I_{cu} at 690 V/1000 V/ 1150 V	E	85/85/50 kA				■	–				8								
		3-pole: 150/125/70 kA 4-pole: 130/125/70 kA				–	■				8								
Switch-disconnectors										A	A								
Switch-disconnectors, ready4COM [2] function										C	A								
Circuit breakers, protective and measuring functions	Overcurrent release ETU300		Protective functions	LSI						A	B								
				LSIG						A	C								
	Overcurrent release ETU600		Current measurement							A									
			Current measurement, ready4COM [2] function							C									
						II	III												
	Protective functions					■	■	LSI			E								
						■	■	LSIG			F								
						■	■	LSIG Hi-Z			G								
Number of poles	Fixed designs								3-pole			0							
									4-pole, N-pole left			1							
	Withdrawable designs		Without position signalling						3-pole			3							
									4-pole, N-pole left			4							
			With position signalling [1]						3-pole			6							
									4-pole, N-pole left			7							

[1] Position signalling contacts for circuit breakers/switch-disconnectors without ready4COM function: 3× working position, 2× inspection position, 1× disconnected position;
Position signalling contacts for circuit breakers/switch-disconnectors with ready4COM function: 1× working position, 1× inspection position, 1× disconnected position + message via communication interface for the disconnected position and for the "not available" status.

[2] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS^2.

– Not available
■ Available

		3WA1	5 …	6 …	7 …	–	8 …	9 …	10 …	11 …	12 …	–	13 …	14 …	15 …	16 …

		II	III		
Type of connection	Fixed design	■ [2]	■	Rear vertical	1
		■ [1]	■ [3]	Rear horizontal	2
		■ [1]	■ [4]	Front two series of holes	3
		■ [1]	■ [3]	Rear vertical up/rear horizontal down	5
		■ [1]	■ [3]	Rear horizontal up/rear vertical down	6
	Withdrawable design	■	■	Without withdrawable device	0
		■ [2]	■	Rear vertical	1
		■ [1]	■ [3]	Rear horizontal	2
		■ [1]	■ [4]	Front two series of holes	3
		■ [1]	■ [4]	Rear flanged	4
		■ [1]	■ [3]	Rear vertical up/rear horizontal down	5
		■ [1]	■ [3]	Rear horizontal up/rear vertical down	6
		■ [1]	■ [4]	Rear flanged up/rear horizontal down	7
		■ [1]	■ [4]	Rear horizontal up/ rear flanged down	8

[1] For size 2, only for ≤ 3200 A is possible.
[2] The rear vertical connections for 3WA1 4000 A have different dimensions than for Arion and 3WL1.Dimensionally compatible connections can be ordered with additional code D01.
[3] For size 3, only for ≤ 5000 A is possible.
[4] For size 3, only for 4000 A is possible, breaking capacity H.

■ Available

B

BASIC CONFIGURATION FOR AC CIRCUIT BREAKERS AND SWITCH-DISCONNECTORS UP TO 1150 V

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

			5	6	7	8		9	10	11	12		13	14	15	16
		3WA1	…	…	…	…	–	…	…	…	…	–	…	…	…	…
													Auxiliary switches			
Drives and auxiliary switches	Hand drive	Without motor operator											2 NO, 2 NC			**0**
													4 NO, 4 NC			**1**
	Motor drive	DC 24 ÷ 30 V											2 NO, 2 NC			**2**
													4 NO, 4 NC			**5**
		DC 48 ÷ 60 V											4 NO, 4 NC			**6**
		AC 110 ÷ 127 V/ DC 110 ÷ 125 V											2 NO, 2 NC			**3**
													4 NO, 4 NC			**7**
		AC 208 ÷ 240 V/ DC 220 ÷ 250 V											2 NO, 2 NC			**4**
													4 NO, 4 NC			**8**
Closing release and remote reset [1]	Without closing release	Without remote reset												**A**		
	With shunt trip (CC/CC-COM) [2] load factor 100% OP	Without remote reset											DC 24 ÷ 30 V	**B**		
													DC 48 ÷ 60 V	**C**		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	**D**		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	**E**		
		With remote reset (RR), load factor 1% OP											DC 24 ÷ 30 V	**F**		
													DC 48 ÷ 60 V	**G**		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	**H**		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	**J**		
	With shunt trip (CC) load factor 5% OP	Without remote reset											DC 24 ÷ 30 V	**K**		
													DC 48 ÷ 60 V	**L**		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	**M**		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	**N**		
		With remote reset (RR), load factor 1% OP											DC 24 ÷ 30 V	**P**		
													DC 48 ÷ 60 V	**Q**		
													AC 110 ÷ 127 V/DC 110 ÷ 125 V	**R**		
													AC 208 ÷ 240 V/DC 220 ÷ 250 V	**S**		
2nd auxiliary release	Without 2nd auxiliary release														**A**	
	With shunt trip (ST), load factor 100% OP												DC 24 ÷ 30 V		**B**	
													DC 48 ÷ 60 V		**C**	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		**D**	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		**E**	
	With shunt trip (ST), load factor 5% OP												DC 24 ÷ 30 V		**F**	
													DC 48 ÷ 60 V		**G**	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		**H**	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		**J**	
	With undervoltage release (UVR) [3], instantaneous (≤0.08 s), short delayed (≤0.2 s)												DC 24 V		**L**	
													DC 48 V		**N**	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		**P**	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		**Q**	
													AC 380 ÷ 415 V		**R**	
	With undervoltage release (UVR-t), adjustable delay 0.2 ÷ 3.2 s												DC 48 V		**S**	
													DC 60 V		**T**	
													AC 110 ÷ 127 V/DC 110 ÷ 125 V		**U**	
													AC 208 ÷ 240 V/DC 220 ÷ 250 V		**V**	
													AC 380 ÷ 415 V		**W**	

[1] Remote reset is not applicable for switch-disconnectors.
[2] When using remote reset, the circuit breaker reclosing blocking is deactivated. The circuit breaker can be switched on again immediately if all the conditions for switching it on are met.
[3] If the ready4COM function is available, communication-capable closing releases (CC-COM) and communication-capable shunt trips (ST-COM) are installed at the factory. Undervoltage releases UVR for 30 V DC and 60 V DC can only be supplied separately as accessories. For 30 V DC 3WL9111-0AE02-0AA0; for 60 V DC 3WL9111-0AE07-0AA0.

		5	6	7	8		9	10	11	12		13	14	15	16
3WA1		…	…	…	…	–	…	…	…	…	–	…	…	…	…
1st auxiliary release	Without 1st auxiliary release														0
	With shunt trip (ST/ST-COM) [1], load factor 100% OP	DC 24 ÷ 30 V													1
		DC 48 ÷ 60 V													2
		AC 110 ÷ 127 V/DC 110 ÷ 125 V													3
		AC 208 ÷ 240 V/DC 220 ÷ 250 V													4
	With shunt trip (ST), load factor 5% OP	DC 24 ÷ 30 V													5
		DC 48 ÷ 60 V													6
		AC 110 ÷ 127 V/DC 110 ÷ 125 V													7
		AC 208 ÷ 240 V/DC 220 ÷ 250 V													8

[1] If the ready4COM function is available, shunt trips with communication capability (ST-COM) are installed at the factory.

The following components are included as standard in air circuit breakers 3WA (if the conditions are met) and do not need to be configured:

Components	Installed as standard in the production plant
Signal switch ready-to-close (S20)	for all 3WA versions
Signal switch disabled by overcurrent release (S24)	for all circuit breakers 3WA (including ETU)
Signal switch of storage device state (S21)	for all 3WA types with motor drive
Insulating cover	for all withdrawable circuit breakers 3WA

BASIC CONFIGURATION FOR DC SWITCH-DISCONNECTORS

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

				5	6	7		8	9	10	11	12		13	14	15	16
				3WA1	…	…	…	–	…	…	…	…	…	–	…	…	…	…
Size	II			2													
			II														
Rated current $I_{n\,max}$	1000 A		■		1	0											
	2000 A		■		2	0											
	4000 A		■		4	0											
Rated conditional short-circuit current I_{nc}	D	25 kA, DC 600 V	■					1									
	E	20 kA, DC 1000 V 20 kA, DC 1500 V [2]	■					8									
Switch-disconnectors									A	U							
Switch-disconnectors, ready4COM [4]									C	U							
Number of poles [1]	Fixed design						3-pole				0						
							4-pole				1						
	Withdrawable design	Without position signalling					3-pole				3						
							4-pole				4						
		With position signalling [1]					3-pole				6						
							4-pole				7						
			II														
Type of connection	Fixed design		■	Rear vertical								1					
			■	Rear horizontal								2					
			■	Front two series of holes								3					
			■	Rear vertical up/rear horizontal down								5					
			■	Rear horizontal up/rear vertical down								6					
	Withdrawable design		■	Without withdrawable device								0					
			■	Rear vertical [3]								1					
			■	Rear horizontal								2					
			■	Front two series of holes								3					
			■	Rear flanged								4					
			■	Rear vertical up/rear horizontal down								5					
			■	Rear horizontal up/rear vertical down								6					
			■	Rear flanged up/rear horizontal down								7					
			■	Rear horizontal up/ rear flanged down								8					
							Auxiliary switches										
Drives and auxiliary switches	Hand drive			Without motor operator			2 NO, 2 NC							0			
							4 NO, 4 NC							1			
	Motor drive			DC 24 ÷ 30 V			2 NO, 2 NC							2			
							4 NO, 4 NC							5			
				DC 48 ÷ 60 V			4 NO, 4 NC							6			
				AC 110 ÷ 127 V/DC 110 ÷ 125 V			2 NO, 2 NC							3			
							4 NO, 4 NC							7			
				AC 208 ÷ 240 V/DC 220 ÷ 250 V			2 NO, 2 NC							4			
							4 NO, 4 NC							8			

[1] Position signalling contacts for circuit breakers/switch-disconnectors without ready4COM function: 3× working position, 2× inspection position, 1× disconnected position;
Position signalling contacts for circuit breakers/switch-disconnectors with ready4COM function: 1× working position, 1× inspection position, 1× disconnected position + message via communication interface for the disconnected position and for the "not available" status.
[2] 1500 V DC applications are only possible with 4-pole circuit breakers and breaking capability E.
[3] Rear vertical connections for 3WA1 4000 A have different dimensions than for Arion and 3WL1. Dimensionally compatible connections can be ordered with the additional code D01.
[4] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS[2].

■ Available

3WA1	5 …	6 …	7 …	8 …	–	9 …	10 …	11 …	12 …	–	13 …	14 …	15 …	16 …

Closing release	Without closing release		A
	With closing release (CC/CC-COM) [1], load factor 100% OP	DC 24 ÷ 30 V	B
		DC 48 ÷ 60 V	C
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	D
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	E
	With closing release (CC), load factor 5% OP	DC 24 ÷ 30 V	K
		DC 48 ÷ 60 V	L
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	M
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	N

2nd auxiliary release	Without 2nd auxiliary release		A
	With shunt trip (ST), load factor 100% OP [1]	DC 24 ÷ 30 V	B
		DC 48 ÷ 60 V	C
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	D
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	E
	With shunt trip (ST), load factor 5% OP	DC 24 ÷ 30 V	F
		DC 48 ÷ 60 V	G
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	H
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	J
	With undervoltage release (UVR) [2], instantaneous (≤0.08 s), short delayed (≤0.2 s)	DC 24 V	L
		DC 48 V	N
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	P
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	Q
		AC 380 ÷ 415 V	R
	With undervoltage release (UVR-t), adjustable delay 0.2 ÷ 3.2 s	DC 48 V	S
		DC 60 V	T
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	U
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	V
		AC 380 ÷ 415 V	W

1st auxiliary release	Without 1st auxiliary release		0
	With shunt trip (ST/ST-COM) [1], load factor 100% OP	DC 24 ÷ 30 V	1
		DC 48 ÷ 60 V	2
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	3
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	4
	With shunt trip (ST), load factor 5% OP	DC 24 ÷ 30 V	5
		DC 48 ÷ 60 V	6
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	7
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	8

[1] If the ready4COM function is available, communication-capable closing releases (CC-COM) and communication-capable shunt trips (ST-COM) are installed at the factory.
[2] UVR undervoltage shunt trips for 30 V DC and 60 V DC can only be supplied separately as accessories. For 30 V DC 3WL9111-0AE02-0AA0; for 60 V DC 3WL9111-0AE07-0AA0.

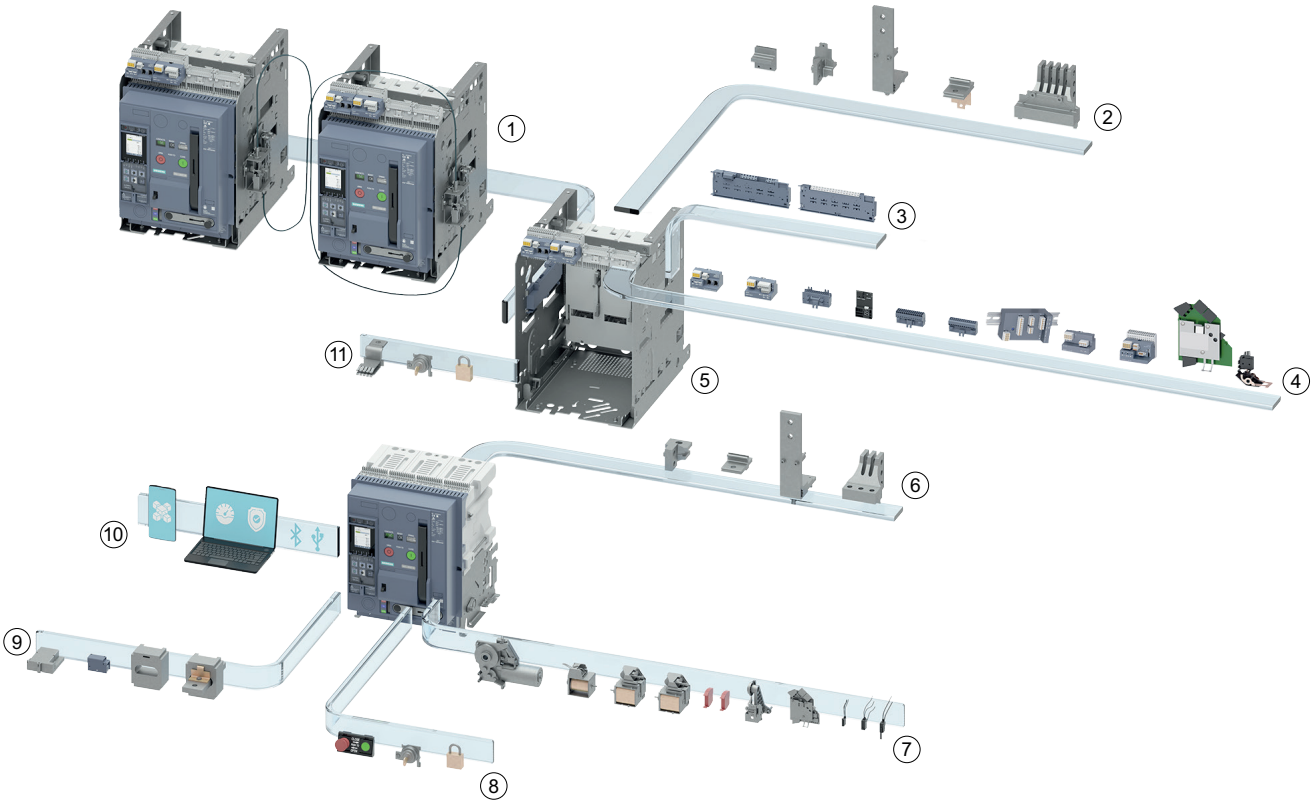
The following components are included as standard in air circuit breakers 3WA (if the conditions are met) and do not need to be configured:

Components	Installed as standard in the production plant
Signal switch ready-to-close (S20)	for all 3WA versions
Signal switch of storage device state (S21)	for all 3WA types with motor drive
Insulating cover	for all withdrawable circuit breakers 3WA

B

ACCESSORIES

OVERVIEW OF ACCESSORIES FOR 3WA11 – 3WA13



1. Mechanical interlockings using bowden cables
2. Connecting sets for withdrawable devices
3. Position signal switches (PSS) for withdrawable devices
4. Interface / communication modules COM / terminal board
5. Withdrawable devices with insulating covers
6. Connecting sets for fixed designs
7. Internal electrical accessories: auxiliary releases, motor drives, auxiliary switches
8. Locking mechanisms for fixed designs
9. Electrical accessories for measuring
10. Digital function packages can be activated for overcurrent releases
11. Locking mechanisms for withdrawable designs

ADDITIONAL ACCESSORIES

For a complete and valid air circuit breaker configuration use the online configurator.

To specify additional accessories, add "-Z" to the basic device type and add the appropriate order code

						Order code
					3WA....-.....-.... -Z	...
Rated current module for overcurrent release						
■ Reducing the rated current of the circuit breaker.						
■ Only one module can be used per circuit breaker. As standard, the overcurrent release is equipped with a module with a rated current equal to the maximum rated current of the circuit breaker ($I_{n\,max}$). The rated current of the selected module must be less than $I_{n\,max}$.						
Rated current module	Rated current I_n	I	II	III		
	250 A	■	■	–		B02
	315 A	■	■	–		B03
	400 A	■	■	–		B04
	500 A	■	■	–		B05
	630 A	■	■	–		B06
	800 A	■	■	■		B08
	1000 A	■	■	■		B10
	1250 A	■	■	■		B12
	1600 A	■	■	■		B16
	2000 A	■	■	■		B20
	2500 A	–	■	■		B25
	3200 A	–	■	■		B32
	4000 A	–	–	■		B40
	5000 A	–	–	■		B50
Digital input/output module IOM230 [1]						
Module with 2 inputs and 3 outputs	Module including adapter for mounting on the terminal block of auxiliary circuits, jumper cables and CubicleBUS² termination resistor. Five modules can be operated simultaneously. Additional modules must be ordered separately as 3WA9111-0EC11, which include an adapter for mounting on the auxiliary circuit terminal block and an adapter for DIN rail mounting.					F23
Module for zone selectivity ZSI200 [1]						
ETU600 with zone selectivity	Module including adapter for mounting on the terminal block of auxiliary circuits, jumper cables and CubicleBUS² termination resistor.					F20
Communication module COM190 [1] [2]						
■ A circuit breaker or switch-disconnector with "ready4COM" function is a prerequisite for connection.						
PROFINET IO/Modbus TCP [2]	Module containing 2 switchable Ethernet ports. Module including adapter for mounting on the terminal block of auxiliary circuits, jumper cables and CubicleBUS² termination resistor. Two communication modules can be operated simultaneously. The second communication module must be ordered separately as 3WA9111-0EC13.					F19
Communication module COM150 [1]						
■ A circuit breaker or switch-disconnector with "ready4COM" function is a prerequisite for connection.						
Modbus RTU	Module including adapter for mounting on the terminal block of auxiliary circuits, jumper cables and CubicleBUS² termination resistor. Two communication modules can be operated simultaneously. The second communication module must be ordered separately as 3WA9111-0EC15.					F15

[1] When ordering this accessory for a circuit breaker or switch-disconnector in a withdrawable design without a withdrawable device, this accessory must also be used when ordering a withdrawable device.

[2] Connectors bent 90° to the right are recommended for connecting the Ethernet cable, e.g. PROFINET connector 6GK1901-1BB20-2AA0.

ADDITIONAL ACCESSORIES

For a complete and valid air circuit breaker configuration use the online configurator.

To specify additional accessories, add "-Z" to the basic device type and add the appropriate order code			Order code
		3WA....-.....-.... -Z	**...**

– Not available
■ Available

B

Automatic reset device

Only possible for circuit breakers.

Automatic reset	Automatic reset to block the circuit breaker from resetting after ETU tripping operation; this option is not required when ordering a circuit breaker with a remote reset device RR.		**K01**

Tin-plated main current connections on withdrawable device

- Only for withdrawable circuit breakers with rear horizontal or flanged connections.
- Cannot be ordered for circuit breakers without withdrawable device.
- The delivery time is extended by 15 working days.

Tin-plated connections	Size I	3-pole	**D08**
		4-pole	
	Size II	3-pole	
		4-pole	
	Size III	3-pole	
		4-pole	

Extended rear vertical connections

- Only available when ordering a complete withdrawable version of the circuit breaker or when ordering a withdrawable device.

Extended vertical connections	For 3WA1, 4000 A Size II	Retrofit for 3WL1240 (Arion WL1240)	**D01**

Circuit breakers without Bluetooth function

Circuit breakers without Bluetooth function	Bluetooth is not available in this version of the circuit breaker. Bluetooth cannot be retrofitted by replacing the overcurrent release.		**D80**

Auxiliary circuit terminal block

- Can be ordered for circuit breakers in withdrawable design and for withdrawable devices.

Terminal blocks with screw terminals	With screw terminals instead of standard spring terminals.		**N03**

Operating cycle counters

Operating cycle counter, 5-digit	Can be used with all circuit breakers and switch-disconnectors, including those without motor drives.		**C01**

Signal switches

Switch for tripping operation by overcurrent release	2nd signal switch for tripping operation ETU (S25), 1NO The 1st ETU signal switch for tripping operation is part of the standard equipment of the circuit breakers. Can only be used with circuit breakers with overcurrent releases without ready4COM function.		**K06**

To specify additional accessories, add "-Z" to the basic device type and add the appropriate order code				Order code
			3WA....-.....-.... -Z	**...**
Push-buttons/switches/locks/special packaging/arc chute covers				
Emergency OFF button	A mushroom push-button instead of a mechanical shut-off button.			**C25**
Electrical ON push-button on the front panel of the circuit breaker (S10)	Prevents unauthorized electrical energization at the front control panel of the circuit breaker. Mechanical switching and remote switching are possible. Can only be used in combination with closing release (CC).		With sealable cover	**C11**
			With CES lock	**C12**
Motor disconnect switch on the circuit breaker front panel (S12)	Prevents automatic stacking of the stored energy mechanism by the spring charging motor.			**C24**
Special packaging for transport (moisture protection)				**P61**
Arc chute cover mounted on the guide frame	Size I	3-pole		**R10**
		4-pole		
Not for: ■ Fixed designs ■ Breaking capacity C, E and D ■ 4000 A Size II.	Size II	3-pole		
		4-pole		
	Size III	3-pole		
		4-pole		
Sealable and lockable cover	For overcurrent release.			**F40**
Coreless internal current sensors for frequency converter applications ■ It is used in applications with converters containing higher harmonic components of current and voltage; can only be used for circuit breakers with overcurrent release ETU600. – Requires an external 24 V DC power supply. – Requires an undervoltage release. – In addition, it includes a relay for 24 V DC monitoring and warning labels. – If the Z=K60 option is selected, the metering function PMF-I to PMF-III according to IEC 61557-12 is not technically feasible.				
Internal current sensor	Sizes II, III			**K60**
Mechanical interlockings ■ Blocking module with 2 m bowden cable.				
Mechanical interlockings	For fixed design			**S55**
	For withdrawable design			**R55**

ADDITIONAL ACCESSORIES

For a complete and valid air circuit breaker configuration use the online configurator.

B

To specify additional accessories, add "-Z" to the basic device type and add the appropriate order code			Order code
		3WA....-.....-.... -Z	**...**
Locking devices (for fixed and withdrawable circuit breakers)			
Locking devices	Against unauthorised switching on of the circuit breaker from the front control panel. Meets the requirements for main circuit breakers according to EN 60204-1.	CES	**S01**
		IKON	**S03**
		Set for FORTRESS or CASTELL [1]	**S05**
		Set for padlocks [2]	**S07**
		RONIS	**S08**
		PROFALUX	**S09**
Locking devices	For storage device lever, set for padlocks [2]		**S33**
Locking device (for withdrawable circuit breaker)			
Locking against shifting	Safety lock for mounting on circuit breaker	CES	**S71**
		PROFALUX	**S75**
		RONIS	**S76**
Locking device against unauthorized ON, for withdrawable circuit breakers ■ It meets the requirements of EN 60204-1 for main circuit breakers and consists of a lock in the withdrawable device that is active in the connected position, the function is maintained even when the circuit breaker is changed. ■ Cannot be combined with order code "R81", "R82", "R85" or "R86". ■ Only available when ordering a complete withdrawable version of the circuit breaker or when ordering a withdrawable device.			
CES			**R61**
RONIS			**R68**
PROFALUX			**R60**
Blocking devices ■ R30 and R50 cannot be combined with the order code "R81", "R82", "R85" or "R86". ■ R30 and R50 are only available when ordering a complete withdrawable version of the circuit breaker or when ordering a withdrawable device. ■ R40 can only be ordered with a circuit breaker.			
For fixed design	Against switchboard door opening in the on state		**S30**
For withdrawable circuit breakers	Against switchboard door opening in working position		**R30**
	To prevent switching on of the circuit breaker with switchboard door open [3]		**R40**
	To prevent shifting of the circuit breaker with switchboard door open [4]		**R50**
Locking device against shifting of the withdrawable circuit breaker in the disconnected position ■ It consists of a bowden cable and a lock in the switchboard door. ■ Cannot be combined with order code "R30", "R50", "R61", "R68" or "R60". ■ Only available when ordering a complete withdrawable version of the circuit breaker or when ordering a withdrawable device.			
CES			**R81**
IKON			**R82**
MPROFALUX			**R85**
RONIS			**R86**
Increased degree of protection when installed in a switchboard			
Door sealing frame for degree of protection IP41			**T40**

[1] Locks must be ordered from the manufacturer.
[2] Padlock is not included.
[3] Cannot be combined with R50.
[4] Cannot be combined with R40.

3WA9111-0EB02

Separately delivered accessories

Rated current modules

Basic configuration	Rated current I_n	I	II	III	Order code	Packaging [pcs]
Protective functions LSI: LT, ST, INST					**3WA9111-0EB..**	
Protective functions LSIG: LT, ST, INST, GF [1]					**3WA9111-0EX..**	
	250 A	■	■	–	**02**	1
	315 A	■	■	–	**03**	1
	400 A	■	■	–	**04**	1
	500 A	■	■	–	**05**	1
	630 A	■	■	–	**06**	1
	800 A	■	■	–	**08**	1
	1000 A	■	■	–	**10**	1
	1250 A	■	■	■	**12**	1
	1600 A	■	■	■	**16**	1
	2000 A	■	■	■	**20**	1
	2500 A	■	■	■	**25**	1
	3200 A	–	■	■	**32**	1
	4000 A	–	■	■	**40**	1
	5000 A	–	–	■	**50**	1
	6300 A	–	–	■	**63**	1

[1] Ground short-circuit protection with extended setting range.
– Not available
■ Available

Extended functions for ETU600

Protective and signalling functions

Function	Order code	Packaging [pcs]
Ground protection signalling GF	**3WA9111-0ES01**	1
Selective dST flow direction protection and RP reverse flow protection (requires voltage measuring module)	**3WA9111-0ES05**	1

Enhanced protective functions (EPF)

Function	Order code	Packaging [pcs]
Complete - asymmetry, voltage, active power output, frequency, THD and phase sequence	**3WA9111-0ES11**	1
Current and voltage asymmetries	**3WA9111-0ES12**	1
Undervoltage and overvoltage	**3WA9111-0ES13**	1
Active power output, consumed and delivered	**3WA9111-0ES14**	1
Lower and upper frequency limits	**3WA9111-0ES15**	1
Total harmonic distortion of current and voltage	**3WA9111-0ES16**	1
Phase sequence detection	**3WA9111-0ES17**	1

Advanced options

Function	Order code	Packaging [pcs]
Second set of protection parameters	**3WA9111-0ES21**	1
Waveform memory	**3WA9111-0ES24**	1

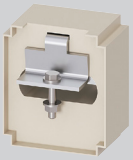
Advanced measuring functions

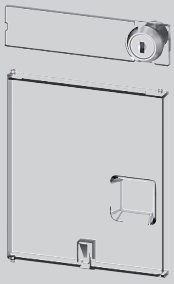
Function	Order code	Packaging [pcs]
Upgrade to measuring function PMF-II Basic output power measurement (measured values, see catalogue page B48)	**3WA9111-0ES52**	1
Upgrade to measuring function PMF-III Advanced output power measurement (measured values, see catalogue page B48)	**3WA9111-0ES53**	1

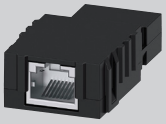
Standard license for activating the testing function in Powerconfig software

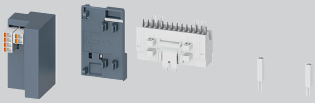
Function	Order code	Packaging [pcs]
For testing the protective functions of circuit breakers	**7KN2720-0CE00-1YC1**	1

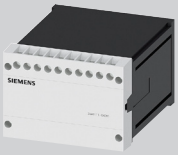
B


3WA9111-0AA21


3WA9111-0EM22

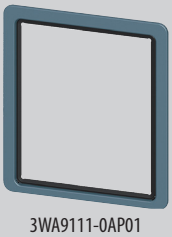

3VW9011-0AT43


3WA9111-0EM62



3WA9111-0AD81


3WA9111-0BB41


3WA9111-0AP01

External measuring current transformers for N conductor

Size	Type	Order code	Packaging [pcs]
I	Without copper busbars	**3WA9111-0AA21**	1
II		**3WA9111-0AA22**	1
III		**3WA9111-0AA23**	1
I	With copper busbars	**3WA9111-0AA31**	1
II		**3WA9111-0AA32**	1
III		**3WA9111-0AA33**	1

Sealable and lockable covers

Accessories for	Order code	Packaging [pcs]
ETU300	**3WA9111-0EM21**	1
ETU600	**3WA9111-0EM22**	1

Adapters for connecting ETU300 to TD400

- Through an adapter, the ETU300 can be connected to the TD400 and powered by an external power supply.
- However, there is no possibility of parameterization using the Powerconfig program.

For size	Order code	Packaging [pcs]
I, II, III	**3VW9011-0AT43**	1

External control modules ETC600

- Includes adapter for mounting on the auxiliary circuit breaker terminal block and DIN rail mounting adapter.

For size	Order code	Packaging [set]
I, II, III	**3VW9011-0AT43**	1

Additional power sources

- For shunt trips.
- Power supply time 5 min.
- Also suitable for circuit breakers 3VA, Arion, 3WL.
- The rated voltage of the U_s control circuit source must be the same as the shunt trip.

	Rated voltage of the control circuit power supply			
For size	50/60 Hz AC	DC	Order code	Packaging [pcs]
I, II, III	220 ÷ 240 V	220 ÷ 250 V	**3WA9111-0AD81**	1

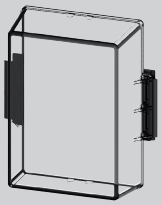
Bowden cables for mechanical blocking

Length	Order code	Packaging [set]
2000 mm	**3WA9111-0BB41**	1
3000 mm	**3WA9111-0BB42**	1
4500 mm	**3WA9111-0BB43**	1

Sealing door frames

- Spare part for variant T40.
- IP41 protection.

For size	Order code	Packaging [pcs]
I, II, III	**3WA9111-0AP01**	1

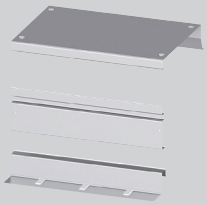


3WA9111-0AP03

Transparent covers

- IP55 protection.
- Cannot be used in combination with sealing door frames.
- The cover can be removed or opened on both sides.

For size	Order code	Packaging [pcs]
I, II, III	**3WA9111-0AP03**	1



3WA9111-0AS31

Arc chute covers

- Set of parts for withdrawable device.
- Spare part for variant R10.
- Not for:
  - Breaking capacity C, D and E
  - 4000 A, size II.

Number of poles	Size	Order code	Packaging [set]
3-pole	I	**3WA9111-0AS31**	1
	II	**3WA9111-0AS32**	1
	III	**3WA9111-0AS33**	1
4-pole	I	**3WA9111-0AS41**	1
	II	**3WA9111-0AS42**	1
	III	**3WA9111-0AS43**	1

3WA9111-0BB50

Mounting supports

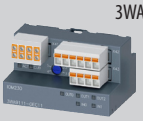
- For mounting circuit breakers in the fixed design on a mounting plate.

For size	Order code	Packaging [set]
I, II	**3WA9111-0BB50**	1

3WA9111-0BB50

3WA9111-0EC15

3WA9111-0EC12



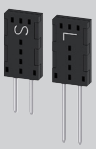
3WA9111-0EC11

3WA9111-0EC10

CubicleBUS² modules

Modules	Type	Order code	Packaging [pcs]
Communication [1]	COM190 PROFINET IO/Modbus TCP	**3WA9111-0EC13**	1
Communication	COM150 Modbus RTU	**3WA9111-0EC15**	1
Digital inputs/outputs	IOM230 (2 inputs and 3 outputs)	**3WA9111-0EC11**	1
Digital inputs/outputs [2]	IOM350 (3 inputs and 5 outputs)	**3WA9111-0EC12**	1
Zone selectivity	ZSI200	**3WA9111-0EC10**	1

[1] Module including adapters for mounting on auxiliary circuit terminal block or DIN rail, jumper cables and CubicleBUS² termination resistor.
[2] Module including adapter for DIN rail mounting, including interconnecting cables and CubicleBUS² termination resistor.

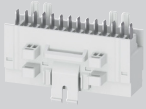


3WA9111-0EC50

Termination resistors

- For CubicleBUS² on the last module.

For size	Order code	Packaging [set]
I, II, III	**3WA9111-0EC50**	1



3WA9111-0EC60

Adapters

For size	Type	Order code	Packaging [pcs]
I, II, III	on the terminal block of auxiliary circuits	**3WA9111-0EC60**	1
I, II, III	on DIN rail	**3WA9111-0EC61**	1

[1] Connectors bent 90° to the right are recommended for connecting the Ethernet cable, e.g. PROFINET connector 6GK1901-1BB20-2AA0.

B


3WA9111-0AL11

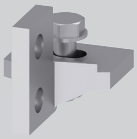
Front connections, two series of holes, upper terminal, fixed designs

Size	Breaking capacity	Rated current I_n	Order code	Packaging [pcs]
I	N, S	≤ AC 1000 A	**3WA9111-0AL11**	1
	N, S	AC 1250 ÷ 2000 A	**3WA9111-0AL12**	1
	M, E	≤ AC 2000 A		
II	S, M, H, E	AC 2000 A	**3WA9111-0AL21**	1
	D, E	≤ DC 2000 A		
	S, M, H, E	AC 2500 A	**3WA9111-0AL22**	1
	S, M, H, E	AC 3200 A	**3WA9111-0AL23**	1
	D, E	DC 4000 A		
III	H	AC 4000 A	**3WA9111-0AL31**	1


3WA9111-0AL13

Front connections, two series of holes, lower terminal, fixed designs

Size	Breaking capacity	Rated current I_n	Order code	Packaging [pcs]
I	N, S	≤ AC 1000 A	**3WA9111-0AL13**	1
	N, S	AC 1250 ÷ 2000 A	**3WA9111-0AL14**	1
	M, E	≤ AC 2000 A		
II	S, M, H, E	AC 2000 A	**3WA9111-0AL24**	1
	D, E	≤ DC 2000 A		
	S, M, H, E	AC 2500 A	**3WA9111-0AL25**	1
	S, M, H, E	AC 3200 A	**3WA9111-0AL26**	1
	D, E	DC 4000 A		
III	H	AC 4000 A	**3WA9111-0AL32**	1


3WA9111-0AM11

Rear vertical connections, upper or lower terminal, fixed design

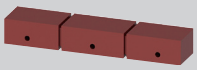
Size	Breaking capacity	Rated current I_n	Order code	Packaging [pcs]
I	N, S, M, E	≤ AC 2000 A [1]	**3WA9111-0AM11**	1
	N, S, M, E	AC 2500 A	**3WA9111-0AM12**	1
II	S, M, H, C, E	≤ AC 3200 A [2]	**3WA9111-0AM21**	1
III	H, C, E	≤ AC 6300 A	**3WA9111-0AM33**	1

[1] For size I up to 1000 A (inclusive) and for breaking capacity N and S, one terminal per pole is required, from 1250 A to 2000 A (inclusive), or for M and E breaking capacity, two terminals per pole are required.
[2] For sizes II up to 2500 A and for breaking capacity S, M, H, E, D one terminal per pole is required, for 3200 A and always for breaking capacity C, two terminals per pole are required.


3WA9111-0AL13

Front connections two series of holes, upper or lower terminal, withdrawable design

Size	Breaking capacity	Rated current I_n	Order code	Packaging [pcs]
I	N, S	≤ AC 1000 A	**3WA9111-0AN11**	1
	N, S	AC 1250 ÷ 2000 A	**3WA9111-0AN12**	1
	M, E	≤ AC 2000 A		
II	N, S	AC 1250 ÷ 2000 A	**3WA9111-0AN21**	1
	M, E	≤ AC 2000 A		
	S, M, H, E	AC 2500 A	**3WA9111-0AN22**	1
	S, M, H, E	AC 3200 A	**3WA9111-0AN23**	1
	D, E	DC 4000 A		
III	H	AC 4000 A	**3WA9111-0AN31**	1


3WA9111-0AN81

Supports for front connections, two series of holes, withdrawable design

Number of poles	Size	Order code	Packaging [set]
3-pole, set for 3 terminals, upper or lower	I	**3WA9111-0AN81**	1
	II	**3WA9111-0AN82**	1
	III	**3WA9111-0AN83**	1
4-pole, set for 4 terminals, upper or lower	I	**3WA9111-0AN84**	1
	II	**3WA9111-0AN85**	1
	III	**3WA9111-0AN86**	1

[1] Supports must be used on both the upper and lower sides, see "Supports for front connections with one or two series of holes".
[2] Not applicable for breaking capacity C.

6MF2802-1AA00

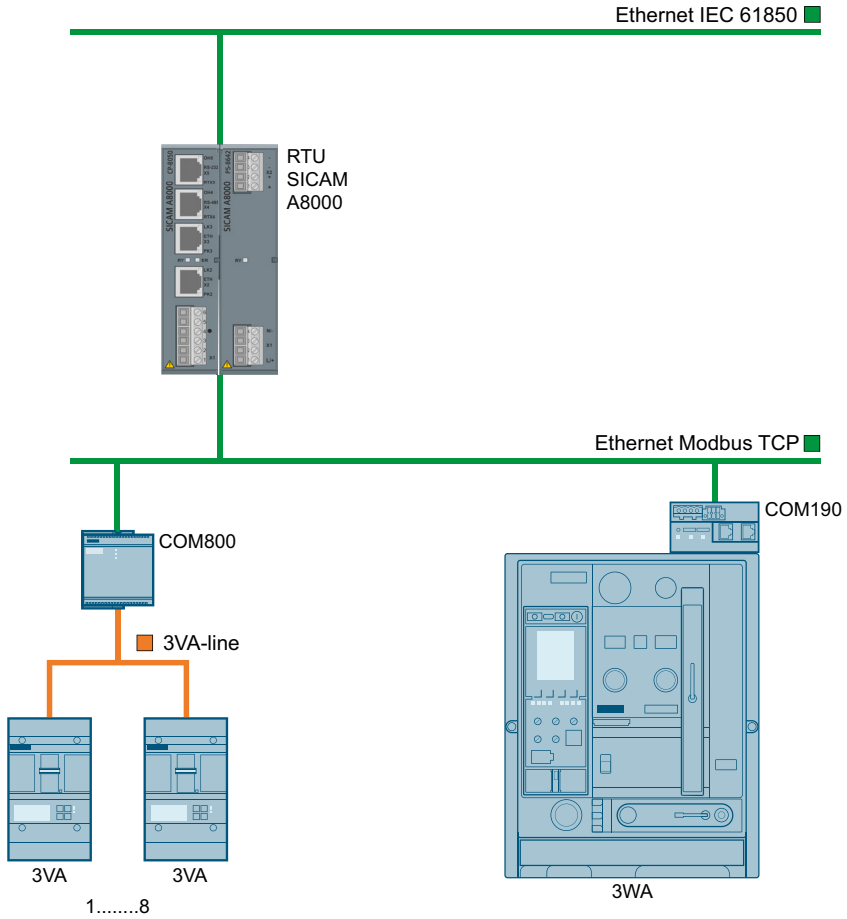
6MF2862-0AA00

Communication interface with IEC 61850

- The smart communication interface SICAM A8000 connects 3WA and 3VA circuit breakers via Modbus TCP/IP and transmits data via communication protocols (e.g.: IEC 61850, IEC 60870-5-104, IEC 60870-5-101, Modbus and DNP) to higher-level systems.

Type	Operating voltage	Order code
SICAM CP-8021 [1]	–	**6MF2802-1AA00**
SICAM CP-8031 [2]	–	**6MF2803-1AA00**
SICAM CP-8050 [3]	–	**6MF2805-0AA00**
SICAM PS-8620	DC 24 ÷ 60 V (12 W)	**6MF2862-0AA00**
SICAM PS-8622	DC 110 ÷ 220 V (12 W)	**6MF2862-2AA00**

[1] Designed for 1 device 3WA and 1 device 3VA.
[2] Designed for 1 device 3WA and 8 devices 3VA.
[3] Designed for 3 devices 3WA and 8 devices 3VA.



SEPARATELY DELIVERED ACCESSORIES

The structure below provides an overview and the meaning of each position.
For a complete and valid configuration, use the online configurator.

B

Withdrawable devices for AC 3WA8			I	II	IIII		5	6	7	–	8	9	10	11	12	–	13	14	15	16
							…	…	…		…	A	A	…	…		…	…	…	…
Size	I						1													
	II						2													
	III						3													
Rated operating current $I_{n\,max}$	630 ÷ 1000 A		■	–	–			1	0											
	1250 ÷ 1600 A		■	–	–			1	6											
	2000 A		■	■	–			2	0											
	2500 A		■	■	–			2	5											
	2000 ÷ 3200 A		–	■	–			3	2											
	4000 A		–	■	■			4	0											
	4000 ÷ 5000 A		–	–	■			5	0											
	6300 A		–	–	■			6	3											
Rated short-circuit ultimate breaking capacity I_{cu}	At 500/690 V	N	■	–	–	55/42 kA					2									
		S	■	■	–	66/50 kA					3									
		M	■	■	–	85/66 kA					4									
		H	–	■	■	100/85 kA					5									
		C	–	■	–	130/100 kA					6									
			–	–	■	3-pole: 150/150 kA 4-pole: 130/130 kA					6									
	At 690/1000/1150 V	E	■	–	–	80/50 kA/–					8									
			–	■	–	85/85/50 kA					8									
			–	–	■	3-pole: 150/125/70 kA 4-pole: 130/125/70 kA					8									
Number of poles	3-pole													3						
	4-pole, N-pole left													4						
			I	II	IIII															
Type of connection			■	■ [5]	■	Rear vertical									1					
			■ [1]	■ [2]	■ [3]	Rear horizontal									2					
			■ [1]	■ [2]	■ [4]	Front 2 series of holes									3					
			■ [1]	■ [2]	■ [4]	Rear flanged									4					
			■ [1]	■ [2]	■ [3]	Rear vertical up/rear horizontal down									5					
			■ [1]	■ [2]	■ [3]	Rear horizontal up/rear vertical down									6					
			■ [1]	■ [2]	■ [4]	Rear flanged up/rear horizontal down									7					
			■ [1]	■ [2]	■ [4]	Rear horizontal up/ rear flanged down									8					

[1] Only ≤2000 A is available for size I.
[2] The vertical connection for 3WA size II for 4000 A has different dimensions than for 3WL. Using the Z D01 option, the vertical connection can be changed to a 3WL compatible connection.
[3] Only ≤3200 A is available for size II.
[4] Only ≤3200 A is available for size II, not available for breaking capacity C.
[5] Only ≤5000 A is available for size III.
[6] Only 4000 A is available for size III, breaking capacity H is available.

Possible combinations of positions 6,7,8 of the order code

Size	Breaking capacity	Position	1	2	3	4	5	630 A 6	7	–	8	800 A 6	7	–	8	1000 A 6	7	–	8	1250 A 6	7	–	8	1600 A 6	7	–	8	2000 A 6	7	–	8	2500 A 6	7	–	8	3200 A 6	7	–	8	4000 A 6	7	–	8	5000 A 6	7	–	8	6300 A 6	7	–	8
I	N		3	W	A	8	1	1	0	–	2	1	0	–	2	1	0	–	2	1	6	–	2	1	6	–	2	2	0	–	3	2	5	–	3			–				–				–				–				–
	S		3	W	A	8	1	1	0	–	3	1	0	–	3	1	0	–	3	1	6	–	3	1	6	–	3	2	0	–	3	2	5	–	3			–				–				–				–				–
	M		3	W	A	8	1	2	0	–	4	2	0	–	4	2	0	–	4	2	0	–	4	2	0	–	4	2	0	–	4	2	0	–	4	2	5	–	4			–				–				–				–
	E		3	W	A	8	1	2	0	–	8	2	0	–	8	2	0	–	8	2	0	–	8	2	0	–	8	2	0	–	8	2	0	–	8	2	5	–	8			–				–				–				–
II	S		3	W	A	8	2	–				–				–				–				–				2	0	–	5	2	5	–	5	3	2	–	5	4	0	–	5			–				–				–
	M		3	W	A	8	2	–				–				–				–				–				2	0	–	5	2	5	–	5	3	2	–	5	4	0	–	5			–				–				–
	H		3	W	A	8	2	–				–				–				–				–				2	0	–	5	2	5	–	5	3	2	–	5	4	0	–	5			–				–				–
	E		3	W	A	8	2	–				–				–				–				–				2	0	–	8	2	5	–	8	3	2	–	8	4	0	–	8			–				–				–
	C		3	W	A	8	2	–				–				–				–				–				3	2	–	6	3	2	–	6	3	2	–	6			–				–				–				–
III	H		3	W	A	8	3	–				–				–				–				–				–				–				–				4	0	–	5	5	0	–	5	6	3	–	5
	E		3	W	A	8	3	–				–				–				–				–				–				–				–				5	0	–	8	5	0	–	8	6	3	–	8
	C		3	W	A	8	3	–				–				–				–				–				–				–				–				5	0	–	8	5	0	–	8	6	3	–	8

– Not available
■ Available

		5	6	7	8		9	10	11	12		13	14	15	16
3WA8		…	…	…	…	–	…	…	…	…	–	1	…	…	1
Terminal block for auxiliary circuits - spring terminals [1]	Sizes I, II, III	X7, X6, X5	Switch-disconnectors without ready4COM [2] function										A		
		X8, X7, X6, X5	Circuit breakers/switch-disconnectors s with ready4COM [2] function										B		
	Sizes II, III	X9, X8, X7, X6, X5	Including external trigger control unit ETC600 for circuit breakers with ETU600 LSIG Hi-Z										K		
Position signal switches	Without position signal switches													A	
	Position signal switches PSS (3x working position, 2x inspection position, 1x disconnected position)													C	
	Position signal switches PSS-COM (1x working position, 1x inspection position, 1x disconnected position) plus connection to the communication module													G	

[1] The change to screw terminals can be made with the additional code -Z N03.
[2] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS[2].

Withdrawable devices for DC

				5	6	7		8	9	10	11	12		13	14	15	16
3WA8				…	…	…	–	…	A	U	…	…	–	1	…	…	1
Size	II			2													
Rated current $I_{n\,max}$	2000 A				2	0											
	4000 A				4	0											
Breaking capacity	D	≤ DC 600 V	25 kA at DC 600 V					1									
	E	≤ DC 1000 V	20 kA at DC 1000 V					8									
		≤ DC 1500 V	20 kA at DC 1500 V [1]					8									
Number of poles	3-pole										3						
	4-pole										4						
Type of connection	Rear vertical											1					
	Rear horizontal											2					
	Front dual hole											3					
	Rear flanged											4					
	Rear vertical up/rear horizontal down											5					
	Rear horizontal up/rear vertical down											6					
	Rear flanged up/rear horizontal down											7					
	Rear horizontal up/rear flanged down											8					
Auxiliary circuit terminal block	Spring terminals	X7, X6, X5	Switch-disconnectors												A		
		X8, X7, X6, X5	Switch-disconnectors with ready4COM [2] function												B		
Position signal switch	Without position signal switches															A	
	Position signal switches PSS (3x working position, 2x inspection position, 1x disconnected position)															C	
	Position signal switches PSS-COM (1x working position, 1x inspection position, 1x disconnected position) plus connection to the communication module															G	

[1] DC 1500 V only for 4-pole circuit breakers and for breaking capacity E.
[2] It collects information about circuit breaker states via the BSS200 circuit breaker state sensor and transmits it to the CubicleBUS[2].

ACCESSORIES - INSTALLATION AND DELIVERY OF SERVIS OEZ

Contact Servis OEZ for installation of a shunt trip, undervoltage release, etc:

- Email: servis.cz@oez.com
- Telephone: +420 465 672 313

TECHNICAL SPECIFICATIONS

CIRCUIT BREAKERS FOR AC AND SWITCH-DISCONNECTORS FOR AC/DC

		AC				AC				
										
		3WA11				3WA12				
Certification marks										
Marine certification		ABS, DNV, GL, LRS, BV, PRS, CCS, RMRS				ABS, DNV, GL, LRS, BV, PRS, CCS, RMRS				
Rated operating voltage	U_e	≤1000 V				≤1150 V				
Rated current	I_n	630 ÷ 2500 A				2000 ÷ 4000 A				
Size		I				II				
Type		Withdrawable | Fixed				Withdrawable | Fixed				
Number of poles		3 | 4				3 | 4				
Rated short-circuit breaking capacity	$I_{cu} = I_{cs}$	**N**	**S**	**M**	**E**	**S**	**M**	**H**	**C**	**E**
$I_{cu} \| I_{cs}$ at U_e up to AC 415/440 V		55 kA	66 kA	85 kA	–	66 kA	85 kA	100 kA	130 kA	–
$I_{cu} \| I_{cs}$ at U_e up to AC 500 V		55 kA	66 kA	85 kA	–	66 kA	85 kA	100 kA	130 kA	–
$I_{cu} \| I_{cs}$ at U_e up to AC 690 V		42 kA	50 kA	66 kA	85 kA	50 kA	66 kA	85 kA	100 kA	85 kA
$I_{cu} \| I_{cs}$ at U_e up to AC 1000 V		–	–	–	50 kA	–	–	–	–	85 kA
$I_{cu} \| I_{cs}$ at U_e up to AC 1150 V		–	–	–	–	–	–	–	–	50 kA
Rated short-circuit making capacity	I_{cm}	**N**	**S**	**M**	**E**	**S**	**M**	**H**	**C**	**E**
I_{cm} at U_e up to AC 415 V		121 kA	145 kA	187 kA	–	145 kA	187 kA	220 kA	286 kA	–
I_{cm} at U_e up to AC 500 V		121 kA	145 kA	187 kA	–	145 kA	187 kA	220 kA	286 kA	–
I_{cm} at U_e up to AC 690 V		88 kA	105 kA	145 kA	187 kA	105 kA	145 kA	187 kA	220 kA	187 kA
I_{cm} at U_e up to AC 1000 V		–	–	–	105 kA	–	–	–	–	187 kA
I_{cm} at U_e up to AC 1150 V		–	–	–	–	–	–	–	–	105 kA
Dimensions		Withdrawable design		Fixed design		Withdrawable design		Fixed design		
Width (3-pole | 4-pole)		320 mm | 410 mm		320 mm | 410 mm		460 mm | 590 mm		460 mm | 590 mm		
Height (for breaking capacities N, S, M, H, D | C, E)		466 mm | 516 mm		437 mm | 462 mm		466 mm | 516 mm		437 mm | 462 mm	
Depth		471 mm		357 mm		471 mm		357 mm		

– Not available

	AC			DC	
					
	3WA13			**3WA12**	
	CE EAC VDE cULus			CE EAC VDE cULus	
	ABS, DNV, GL, LRS, BV, PRS, CCS, RMRS			ABS, DNV, GL, LRS, BV, PRS, CCS, RMRS	
	≤1150 V			≤1000 V (≤1500 V for 4-pole, breaking capacity E)	
	4000 ÷ 6300 A			1000 ÷ 4000 A	
	III			II	
	Withdrawable | Fixed			Withdrawable | Fixed	
	3 | 4			3 | 4	
	H	**C**	**E**	**D**	**E**
	–	–	–	–	–
	100 kA	150 kA (3-pole) | 130 kA (4-pole)	–	–	–
	85 kA	150 kA (3-pole) | 130 kA (4-pole)	150 kA (3-pole) | 130 kA (4-pole)	–	–
	–	–	125 kA	–	–
	–	–	70 kA	–	–
	H	**C**	**E**	**D**	**E**
	220 kA	330 kA (3-pole) | 286 kA (4-pole)	–	–	–
	220 kA	330 kA (3-pole) | 286 kA (4-pole)	–	–	–
	187 kA	330 kA (3-pole) | 286 kA (4-pole)	330 kA (3-pole) | 286 kA (4-pole)	–	–
	–	–	275 kA	–	–
	–	–	154 kA	–	–
	Withdrawable design	Fixed design		Withdrawable design	Fixed design
	704 mm | 914 mm	704 mm | 914 mm		460 mm | 590 mm	460 mm | 590 mm
	466 mm | 516 mm	437 mm | 462 mm		466 mm | 516 mm	437 mm | 462 mm
	471 mm	357 mm		471 mm	357 mm

CIRCUIT BREAKERS FOR AC AND SWITCH-DISCONNECTORS FOR AC/DC

AC

AC

			3WA11				3WA12				
Rated short-time withstand current [1]		I_{cw}	N	S	M	E	S	M	H	C	E
I_{cw} at U_e up to AC 500 V	0.5 s		55 kA	66 kA	85 kA	–	66 kA	85 kA	100 kA	100 kA	–
	1 s		50 kA	66 kA	85 kA	–	66 kA	85 kA	85 kA	100 kA	–
	2 s		35 kA [2] | 45 kA [3]	45 kA	70 kA	–	66 kA	66 kA [4] | 85 kA [5]	66 kA [4] | 85 kA [5]	85 kA	–
	3 s		30 kA [2] | 35 kA [3]	35 kA	60 kA	–	55 kA [4] | 66 kA [5]	55 kA [4] | 75 kA [5]	55 kA [4] | 75 kA [5]	75 kA	–
I_{cw} at U_e up to AC 690 V	0.5 s		42 kA	50 kA	66 kA	85 kA	50 kA	66 kA	85 kA	100 kA	85 kA
	1 s		42 kA	50 kA	66 kA	85 kA	50 kA	66 kA	85 kA	100 kA	85 kA
	2 s		35 kA [2] | 42 kA [3]	45 kA	66 kA	70 kA	50 kA	66 kA	66 kA [4] | 85 kA [5]	85 kA	66 kA [4] | 85 kA [5]
	3 s		30 kA [2] | 35 kA [3]	35 kA	60 kA	60 kA	50 kA	55 kA [4] | 66 kA [5]	55 kA [4] | 75 kA [5]	75 kA	55 kA [4] | 75 kA [5]
I_{cw} at U_e up to AC 1000 V	0.5 s		–	–	–	50 kA	–	–	–	–	85 kA
	1 s		–	–	–	50 kA	–	–	–	–	85 kA
	2 s		–	–	–	50 kA	–	–	–	–	66 kA [4] | 85 kA [5]
	3 s		–	–	–	50 kA	–	–	–	–	55 kA [4] | 75 kA [5]
I_{cw} at U_e up to AC 1150 V	0.5 s		–	–	–	–	–	–	–	–	50 kA
	1 s		–	–	–	–	–	–	–	–	50 kA
	2 s		–	–	–	–	–	–	–	–	50 kA
	3 s		–	–	–	–	–	–	–	–	50 kA
I_{cw} at U_e up to DC 220 V	1 s		–	–	–	–	–	–	–	–	–
I_{cw} at U_e up to DC 300 V	1 s		–	–	–	–	–	–	–	–	–
I_{cw} at U_e up to DC 600 V	1 s		–	–	–	–	–	–	–	–	–
I_{cw} at U_e up to DC 1000 V	1 s		–	–	–	–	–	–	–	–	–
I_{cw} at U_e up to DC 1500 V	1 s		–	–	–	–	–	–	–	–	–
Rated conditional short-circuit current of switch-disconnectors		I_{cc}	N	S	M	E	S	M	H	C	E
Up to AC 500 V			55 kA	66 kA	85 kA	–	66 kA	85 kA	100 kA	100 kA	–
Up to AC 690 V			42 kA	50 kA	66 kA	85 kA	50 kA	66 kA	85 kA	100 kA	85 kA
Up to AC 1000 V			–	–	–	50 kA	–	–	–	–	85 kA
Up to AC 1150 V			–	–	–	–	–	–	–	–	50 kA
Up to DC 220 V			–	–	–	–	–	–	–	–	–
Up to DC 300 V			–	–	–	–	–	–	–	–	–
Up to DC 600 V			–	–	–	–	–	–	–	–	–
Up to DC 1000 V			–	–	–	–	–	–	–	–	–
Up to DC 1500 V			–	–	–	–	–	–	–	–	–
IT networks		I_{IT}									
1-pole short-circuit breaking capacity I_{IT} according to IEC 60947-2, Annex H	≤500 V		50 kA	50 kA	50 kA	–	50 kA	50 kA	50 kA	50 kA	–
	≤690 V		–	–	–	50 kA	–	–	–	–	50 kA
	1,000 V		–	–	–	–	–	–	–	–	–

[1] At rated operating voltage $U_e \geq 690$ V, the I_{cw} value of the circuit breaker corresponds to I_{cu} or Ic_{cs}.
[2] Magnitude of I with $I_{n\,max} \leq 1250$ A.
[3] Magnitude of I with $I_{n\,max} \geq 1600$ A.
[4] $I_{n\,max} \leq 2500$ A.
[5] $I_{n\,max} \geq 3200$ A.
– Not available

AC

DC

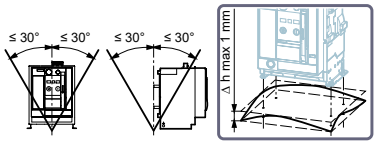
	3WA13			3WA12	
	H	C	E	D	E
	100 kA	130 kA (3-pole) | 120 kA (4-pole)	–	–	–
	100 kA	130 kA (3-pole) | 120 kA (4-pole)	–	–	–
	100 kA	130 kA (3-pole) | 120 kA (4-pole)	–	–	–
	100 kA	130 kA (3-pole) | 120 kA (4-pole)	–	–	–
	85 kA	130 kA (3-pole) | 120 kA (4-pole)	130 kA (3-pole) | 120 kA (4-pole)	–	–
	85 kA	130 kA (3-pole) | 120 kA (4-pole)	130 kA (3-pole) | 120 kA (4-pole)	–	–
	85 kA	130 kA (3-pole) | 120 kA (4-pole)	130 kA (3-pole) | 120 kA (4-pole)	–	–
	85 kA	130 kA (3-pole) | 120 kA (4-pole)	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	70 kA	–	–
	–	–	70 kA	–	–
	–	–	70 kA	–	–
	–	–	70 kA	–	–
	–	–	–	35 kA	–
	–	–	–	30 kA	–
	–	–	–	25 kA	–
	–	–	–	–	20 kA
	–	–	–	–	– kA (3-pole) | 20 kA (4-pole)
	H	C	E	D	E
	100 kA	130 kA (3-pole) | 120 kA (4-pole)	–	–	–
	85 kA	130 kA (3-pole) | 120 kA (4-pole)	130 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	125 kA (3-pole) | 120 kA (4-pole)	–	–
	–	–	70	–	–
	–	–	–	35 kA	–
	–	–	–	30 kA	–
	–	–	–	25 kA	–
	–	–	–	–	20 kA
	–	–	–	–	– kA (3-pole) | 20 kA (4-pole)
	50 kA	50 kA	–	–	–
	–	–	50 kA	–	–
	–	–	–	–	–

CIRCUIT BREAKERS FOR AC AND SWITCH-DISCONNECTORS FOR AC

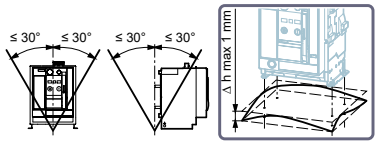
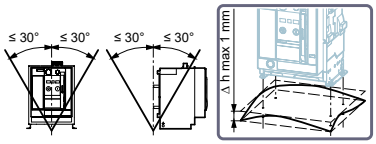
B

AC

			3WA11						
			630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
Isolation function according to EN 60947-2			Yes						
Utilization category			B						
Permissible ambient temperature	Operation		-40 ÷ +70°C						
	Storage		-40 ÷ +80°C						
Degree of protection			IP20 without switchboard door, IP41 with sealing door frame, IP55 with cover						
Voltage									
Rated operating voltage at 50/60 Hz	1000 V design	U_e	≤ AC 1000 V						
Rated insulation voltage		U_i	AC 1000 V						
Rated impulse withstand voltage	Main current paths	U_{imp}	12 kV						
	Auxiliary circuits		4 kV						
	Control circuits		2.5 kV						
Permissible load for withdrawable designs									
For all connection types (except rear vertical connections)	Up to 55°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	–
	Up to 60°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	1930 A	–
	Up to 70°C (Cu busbars, bare)		630 A	800 A	1000 A	1210 A	1490 A	1780 A	–
With rear vertical connections	Up to 55°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
	Up to 60°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2370 A
	Up to 70°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1545 A	1855 A	2060 A
Permissible load for fixed designs									
For all connection types (except rear vertical connections)	Up to 55°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	–
	Up to 60°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	–
	Up to 70°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	–
With rear vertical connections	Up to 55°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
	Up to 60°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
	Up to 70°C (Cu busbars, bare)		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
Power loss at I_n									
With 3-phase symmetrical load with maximum rated current, whole device (3/4p)	Fixed design		30 W	45 W	70 W	105 W	135 W	240 W	360 W
	Withdrawable design		55 W	85 W	130 W	205 W	310 W	440 W	600 W
Working position									



– Not available

	AC				AC		
							
	3WA12				**3WA13**		
	2000 A	**2500 A**	**3200 A**	**4000 A**	**4000 A**	**5000 A**	**6300 A**
	Yes				Yes		
	B				B		
	-40 ÷ +70°C				-40 ÷ +70°C		
	-40 ÷ +80°C				-40 ÷ +80°C		
	IP20 without switchboard door, IP41 with sealing door frame, IP55 with cover				IP20 without switchboard door, IP41 with sealing door frame, IP55 with cover		
	≤ AC 1150 V				≤ AC 1150 V		
	≤ AC 1150 V				≤ AC 1150 V		
	12 kV				12 kV		
	4 kV				4 kV		
	2.5 kV				2.5 kV		
	2000 A	2500 A	3200 A	–	4000 A	5000 A	–
	2000 A	2500 A	3020 A	–	4000 A	5000 A	–
	2000 A	2280 A	2870 A	–	4000 A	5000 A	–
	2000 A	2500 A	3200 A	4000 A	4000 A	5000 A	5920 A
	2000 A	2500 A	3200 A	3910 A	4000 A	5000 A	5810 A
	2000 A	2390 A	2945 A	3645 A	4000 A	5000 A	5500 A
	2000 A	2500 A	3200 A	–	4000 A	5000 A	–
	2000 A	2500 A	3200 A	–	4000 A	5000 A	–
	2000 A	2500 A	3200 A	–	4000 A	5000 A	–
	2000 A	2500 A	3200 A	4000 A	4000 A	5000 A	6300 A
	2000 A	2500 A	3200 A	4000 A	4000 A	5000 A	6300 A
	2000 A	2500 A	3200 A	4000 A	4000 A	5000 A	5920 A
	180 W	270 W	410 W	750 W	520 W	630 W	900 W
	320 W	520 W	710 W	1040 W	810 W	1050 W	1600 W
							

CIRCUIT BREAKERS FOR AC AND SWITCH-DISCONNECTORS FOR AC

AC

		3WA11						
		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
Switching On/Off time								
Switching On time, mechanical					35 ms			
Switching Off time, mechanical					38 ms			
Switching On time, electrical (through closing release) [1]					80 ms			
Switching Off time, electrical (through shunt trip)					73 ms			
Switching Off time, electrical (through instantaneous undervoltage release)					≤80 ms			
Switching Off time of ETU at I_{cu} (through instantaneous short-circuit release)					50 ms			
Service life								
Breaking capacity N, 3-/4-pole								
Mechanical	Without maintenance				15000 cycles			
	With maintenance [2]				30000 cycles			
Electrical	Without maintenance 690 V			10000 cycles			7500 cycles	5000 cycles
	With maintenance [2]				30000 cycles			
Breaking capacity S, 3-/4-pole								
Mechanical	Without maintenance				15000 cycles			
	With maintenance [2]				30000 cycles			
Electrical	Without maintenance 690 V			10000 cycles			7500 cycles	5000 cycles
	With maintenance [2]				30000 cycles			
Breaking capacity M, 3-/4-pole								
Mechanical	Without maintenance				10000 cycles			
	With maintenance [2]				15000 cycles			
Electrical	Without maintenance 690 V			10000 cycles			7500 cycles	5000 cycles
	With maintenance [2]				15000 cycles			
Breaking capacity E, 3/4-pole								
Mechanical	Without maintenance				10000 cycles			
	With maintenance [2]				15000 cycles			
Electrical	Without maintenance 690 V			10000 cycles			7500 cycles	5000 cycles
	Without maintenance 1000 V				1000 cycles			
	Without maintenance 1150 V				–			
	With maintenance [2]				15000 cycles			
Breaking capacity H, 3/4-pole								
Mechanical	Without maintenance				–			
	With maintenance [2]				–			
Electrical	Without maintenance 690 V				–			
	With maintenance [2]				–			
Breaking capacity C, 3-/4-pole								
Mechanical	Without maintenance				–			
	With maintenance [2]				–			
Electrical	Without maintenance 690 V				–			
	With maintenance 690 V [2]				–			
Switching frequency								
Breaking capacity N and S								
Electrical	3-pole				45/h			
	4-pole				45/h			
Breaking capacity M, H and C								
Electrical	3-/4-pole				60/h ≤ 690 V			
Breaking capacity E								
Electrical	3-/4-pole				20/h at 1000 V, 60/h ≤ 690 V			

[1] Switching on time through closing release with 5% load factor for synchronisation purposes = 50 ms.
[2] When replacing the main contact and arc chutes.
– Not available

	AC				AC		
							
	3WA12				**3WA13**		
	2000 A	**2500 A**	**3200 A**	**4000 A**	**4000 A**	**5000 A**	**6300 A**
			35 ms			35 ms	
			34 ms			34 ms	
			100 ms			100 ms	
			73 ms			73 ms	
			≤80 ms			≤80 ms	
			50 ms			50 ms	
			–			–	
			–			–	
			–			–	
			–			–	
			10000 cycles			–	
			20000 cycles			–	
	7500 cycles	7500 cycles	4000 cycles	2000 cycles		–	
			20000 cycles			–	
			10000 cycles			–	
			20000 cycles			–	
	7500 cycles	7500 cycles	4000 cycles	2000 cycles		–	
			20000 cycles			–	
			10000 cycles			5000 cycles	
			20000 cycles			10000 cycles	
	7500 cycles	7500 cycles	4000 cycles	2000 cycles		2000 cycles	
			1000 cycles			1000 cycles	
			500 cycles			500 cycles	
			20000 cycles			10000 cycles	
			10000 cycles			7500 cycles	
			20000 cycles			15000 cycles	
	7500 cycles	7500 cycles	4000 cycles	2000 cycles		2000 cycles	
	20000 cycles	20000 cycles	20000 cycles	20000 cycles		15000 cycles	
			5000 cycles			5000 cycles	
			10000 cycles			10000 cycles	
	5000 cycles	5000 cycles	4000 cycles	1000 cycles		1000 cycles	
	10000 cycles	10000 cycles	10000 cycles	10000 cycles		10000 cycles	
			45/h			–	
			60/h			–	
			60/h ≤ 690 V			60/h ≤ 690 V	
			20/h at 1000/1150 V, 60/h ≤ 690 V			20/h at 1000/1150 V, 60/h ≤ 690 V	

CIRCUIT BREAKERS FOR AC AND SWITCH-DISCONNECTORS FOR AC

AC

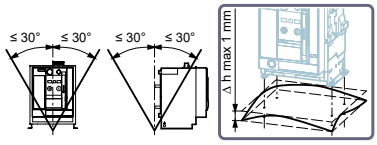
		3WA11						
		630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A
Connection								
Minimum number and dimensions of main connections		[pcs]×[mm]×[mm]						
Cu busbars, bare		1× 40 × 10	1× 50 × 10	1× 60 × 10	2× 40 × 10	2× 50 × 10	3× 50 × 10	4× 50 × 10
Cu bars, black painted		1× 40 × 10	1× 50 × 10	1× 60 × 10	2× 40 × 10	2× 50 × 10	3× 50 × 10	4× 50 × 10
Auxiliary conductor (Cu) - max. number of auxiliary conductors × cross-section (solid/stranded)								
Spring terminals – standard connection	Without socket	2× 0.5 ÷ 2.5 mm²						
	With socket according to DIN 46228 Part 2	2× 0.5 ÷ 2.5 mm²						
	With dual socket	2× 0.5 ÷ 1.5 mm²						
	Stripped length	10 ÷ 12 mm						
Screw terminals – optional connection	Without socket	2× 0.5 ÷ 2.5 mm²						
	With socket according to DIN 46228 Part 2	1× 0.5 ÷ 1.5 mm²						
	With dual socket	1× 0.5 ÷ 1.5 mm²						
	Stripped length	7 ÷ 8 mm						
Position signal switch								
Spring terminals – standard signal contacts	Without socket	0.08 ÷ 2.5 mm²						
	With socket according to DIN 46228 Part 2	0.25 ÷ 1.5 mm²						
	Stripped length	5 ÷ 6 mm						
Spring terminals – communication signal contacts	Without socket	0.14 ÷ 1.5 mm²						
	With socket according to DIN 46228 Part 2	0.25 ÷ 1.5 mm²						
	Stripped length	9 mm						
Weight								
3-pole	Fixed design	32 kg	32 kg	32 kg	33 kg	33 kg	33 kg	33 kg
	Withdrawable design without withdrawable device	35 kg	35 kg	35 kg	36 kg	36 kg	36 kg	36 kg
	Withdrawable device	26 kg	26 kg	26 kg	27 kg	27 kg	27 kg	28 kg
4pól	Fixed design	39 kg	39 kg	39 kg	39 kg	39 kg	40 kg	40 kg
	Withdrawable design without withdrawable device	42 kg	42 kg	42 kg	42 kg	42 kg	43 kg	43 kg
	Withdrawable device	31 kg	31 kg	31 kg	31 kg	31 kg	31 kg	33 kg

	AC				AC		
							
	3WA12				**3WA13**		
	2000 A	**2500 A**	**3200 A**	**4000 A**	**4000 A**	**5000 A**	**6300 A**
	[pcs]×[mm]×[mm]				[pcs]×[mm]×[mm]		
	3× 50 × 10	2× 100 × 10	3× 100 × 10	4× 120 × 10	4× 100 × 10	6× 100 × 10	6× 120 × 10
	3× 50 × 10	2× 100 × 10	3× 100 × 10	4× 120 × 10	4× 100 × 10	6× 100 × 10	6× 120 × 10
	2× 0.5 ÷ 2.5 mm²				2× 0.5 ÷ 2.5 mm²		
	2× 0.5 ÷ 2.5 mm²				2× 0.5 ÷ 2.5 mm²		
	2× 0.5 ÷ 1.5 mm²				2× 0.5 ÷ 1.5 mm²		
	10 ÷ 12 mm				10 ÷ 12 mm		
	2× 0.5 ÷ 2.5 mm²				2× 0.5 ÷ 2.5 mm²		
	1× 0.5 ÷ 1.5 mm²				1× 0.5 ÷ 1.5 mm²		
	1× 0.5 ÷ 1.5 mm²				1× 0.5 ÷ 1.5 mm²		
	7 ÷ 8 mm				7 ÷ 8 mm		
	0.08 ÷ 2.5 mm²				0.08 ÷ 2.5 mm²		
	0.25 ÷ 1.5 mm²				0.25 ÷ 1.5 mm²		
	5 ÷ 6 mm				5 ÷ 6 mm		
	0.14 ÷ 1.5 mm²				0.14 ÷ 1.5 mm²		
	0.25 ÷ 1.5 mm²				0.25 ÷ 1.5 mm²		
	9 mm				9 mm		
	43 kg	45 kg	50 kg	52 kg	79 kg	80 kg	111 kg
	47 kg	48 kg	54 kg	53 kg	84 kg	86 kg	86 kg
	33 kg	34 kg	41 kg	40 kg	70 kg	87 kg	86 kg
	54 kg	56 kg	63 kg	64 kg	100 kg	102 kg	144 kg
	57 kg	60 kg	67 kg	88 kg	107 kg	108 kg	108 kg
	40 kg	42 kg	50 kg	71 kg	71 kg	89 kg	110 kg

SWITCH-DISCONNECTORS FOR DC

DC

			3WA12		
			1000 A	2000 A	4000 A
Technical specifications					
Isolation function according to EN 60947-2			Yes		
Utilization category			B		
Permissible ambient temperature	Operation (in operation with LCD display max. 55°C)		-40 ÷ +70°C		
	Storage		-40 ÷ +80°C		
Degree of protection			IP20 without switchboard door, IP41 with sealing door frame, IP55 with cover		
Voltage					
Rated operating voltage	Breaking capacity D/E	U_e	DC 600 V/ DC 1000 V (3-pole) | DC 1500 V (4-pole)		
Rated insulation voltage	Breaking capacity D/E	U_i	DC 600 V/ DC 1000 V (3-pole) | DC 1500 V (4-pole)		
Rated impulse withstand voltage	Main current path	U_{imp}	12 kV		
	Auxiliary circuits		4 kV		
	Control circuits		2.5 kV		
Permissible load for withdrawable designs					
For all connection types (except rear vertical connections)	Up to 40°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 55°C (Cu busbars, bare)		1000 A	2000 A	3640 A
	Up to 60°C (Cu busbars, bare)		1000 A	2000 A	3500 A
	Up to 70°C (Cu busbars, bare)		1000 A	1950 A	3250 A
With rear vertical connections	Up to 40°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 55°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 60°C (Cu busbars, bare)		1000 A	2000 A	3640 A
	Up to 70°C (Cu busbars, bare)		1000 A	2000 A	3400 A
Permissible load for fixed designs					
For all connection types (except rear vertical connections)	Up to 40°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 55°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 60°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 70°C (Cu busbars, bare)		1000 A	2000 A	3900 A
With rear vertical connections	Up to 40°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 55°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 60°C (Cu busbars, bare)		1000 A	2000 A	4000 A
	Up to 70°C (Cu busbars, bare)		1000 A	2000 A	4000 A
Power loss at I_n					
At 3-phase symmetrical load, the whole unit (3/4p)	Withdrawable design		280 W	770 W	1640 W
	Fixed design		140 W	390 W	820 W
Switching On/Off time					
Switching On time, mechanical			35 ms	35 ms	35 ms
Switching Off time, mechanical			34 ms	34 ms	34 ms
Switching On time, electrical (through closing release)			100 ms	100 ms	100 ms
Switching Off time, electrical (through shunt trip)			73 ms	73 ms	73 ms
Switching Off time, electrical (through instantaneous undervoltage release)			≤80 ms	≤80 ms	≤80 ms
Working position					



DC

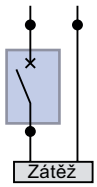
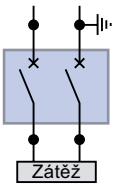
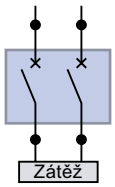
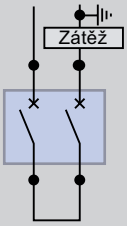
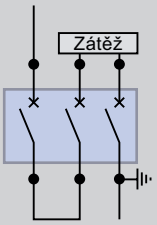
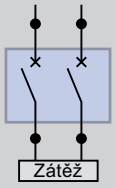
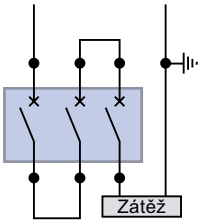
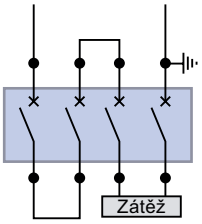
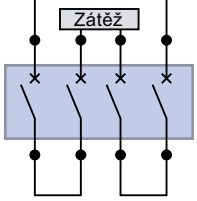
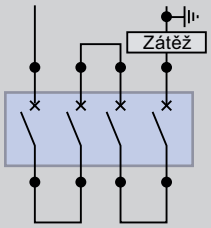
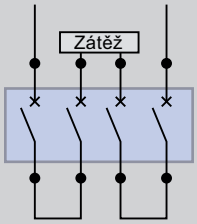
		3WA12		
		1000 A	2000 A	4000 A
Lifetime				
Breaking capacity D, 3-/4-pole				
Mechanical	Without maintenance	10000 cycles	10000 cycles	10000 cycles
	With maintenance [1]	20000 cycles	20000 cycles	20000 cycles
Electrical	Without maintenance 600 V	6000 cycles	6000 cycles	4000 cycles
	With maintenance [1]	20000 cycles	20000 cycles	20000 cycles
Breaking capacity E, 3/4-pole				
Mechanical	Without maintenance	10000 cycles	10000 cycles	10000 cycles
	With maintenance [1]	20000 cycles	20000 cycles	20000 cycles
Electrical	Without maintenance 1000 V	1000 cycles	1000 cycles	1000 cycles
	With maintenance [1]	20000 cycles	20000 cycles	20000 cycles
Breaking capacity E, 4-pole				
Electrical	Without maintenance 1500 V [2]	1000 cycles	1000 cycles	1000 cycles
	With maintenance [1]	20000 cycles	20000 cycles	20000 cycles
Switching frequency				
Breaking capacity D				
Electrical	3-/4-pole	60/h	60/h	60/h
Breaking capacity E				
Electrical	3-/4-pole	20/h	20/h	20/h
Connection				
Minimum number and dimensions of main connections		[pcs]×[mm]×[mm]		
Cu busbars, bare		1× 50 × 10	2× 50 × 10	3×100 × 10 for leads and outlets; 6 × 250 × 5 for jumpers
Cu bars, black painted		1× 50 × 10	2× 50 × 10	3×100 × 10 for leads and outlets; 6 × 250 × 5 for jumpers
Auxiliary conductor (Cu) - max. number of auxiliary conductors × cross-section (solid/stranded)				
Spring terminals - standard connection	Without socket	2× 0.5 ÷ 2.5 mm²		
	With socket according to DIN 46228 Part 2	2× 0.5 ÷ 2.5 mm²		
	With dual socket	2× 0.5 ÷ 1.5 mm²		
	Stripped length	10 ÷ 12 mm		
Screw terminals - optional connection	Without socket	2× 0.5 ÷ 2.5 mm²		
	With socket according to DIN 46228 Part 2	1× 0.5 ÷ 1.5 mm²		
	With dual socket	1× 0.5 ÷ 1.5 mm²		
	Stripped length	7 ÷ 8 mm		
Position signal switch				
Spring terminals - standard signal contacts	Without socket	0.08 ÷ 2.5 mm²		
	With socket according to DIN 46228 Part 2	0.25 ÷ 1.5 mm²		
	Stripped length	5 ÷ 6 mm		
Spring terminals - communication signal contacts	Without socket	0.14 ÷ 1.5 mm²		
	With socket according to DIN 46228 Part 2	0.25 ÷ 1.5 mm²		
	Stripped length	9 mm		
Weight				
3-pole	Fixed design	56 kg	56 kg	64 kg
	Withdrawable design without withdrawable device	60 kg	60 kg	68 kg
	Withdrawable device	31 kg	31 kg	45 kg
4-pole	Fixed design	67 kg	67 kg	77 kg
	Withdrawable design without withdrawable device	72 kg	72 kg	82 kg
	Withdrawable device	37 kg	37 kg	54 kg

[1] When replacing the main contact and arc chutes.
[2] DC 1500 V only for 4-pole circuit breakers and for breaking capacity E.

SWITCH-DISCONNECTORS FOR DC

Examples of use

The connection of the 3WA12 switch-disconnectors is independent of direction and polarity. Wiring diagrams can be modified accordingly.
If the connections are made directly to the main leads, the permanent load on the circuit breakers must be limited to only 80% of the permitted rated current for thermal reasons.
If the connection is made at a distance of 1 m from the main leads, the switch-disconnector can be used at the rated current.

Rated operating voltage	Minimum number of open contacts at rated operating voltage	DC 1-pole disconnection	DC 2-pole disconnection (all poles)	
		Grounded system	Grounded system	Ungrounded system
DC 300 V				
DC 600 V				
DC 1000 V				
DC 1500 V				

Note:
DC two-pole disconnection (all poles); grounded system.
The grounded pole of the power supply must always be disconnected by a separate pole of the switch-disconnector, so that in the case of a ground connection the 2nd pole of the power supply is disconnected by 2 poles in series for a 3-pole switch-disconnector and 3 poles in series for a 4-pole switch-disconnector.
The connections between the poles must be resistant to short circuit and ground connection.

ELECTRONIC OVERCURRENT RELEASES ETU

Type

Function	ETU300	ETU600
Protective function LSI	■	■
Protective function LSIG	■	■
Protective function LSIG Hi-Z	–	■
N conductor protection	■	■
Metering function	–	■
Advanced protection functions	–	■
CubicleBUS[2]	–	■
Display	–	■
DAS+ input/output	■	■
LED display of the reason for switching off	■	■
Bluetooth and USB	–	■
FW update	–	■
Internal self-test with and without tripping operation	■	■
Extended test option (tripping characteristic)	–	■
Activation of ETU via powerbank	–	■
Activation of ETU for self-test via TD400	■	–

– Not available
■ Available according to ETU selection

Note:
By replacing the overcurrent release it is possible to upgrade from ETU300 to ETU600.

ETU300

Protective functions

ETU300 LSI, ETU300 LSIG

Protective functions	Setting range	Values
L: Thermal release LT		
Circuit breaker tripping operation	On	
Rated reduced current I_r	$0.4 \div 1.0 \times I_n$	$0.4/0.5/0.6/0.7/0.75/0.8/0.85/0.9/0.95/1.0 \times I_n$
Delay time t_r at 6 x I_r	0.75 ÷ 25 s	0.75/1/2/5/8/10/14/17/21/25 s
Characteristics	I^2t	
Thermal memory	On	
Cooling time constant	$18 \times t_r$	
Phase failure detection	On	
L: Protection of N conductor		
Circuit breaker tripping operation	On	
Operating current I_N	$1.0 \times I_n$	
S: Selective release ST		
Circuit breaker tripping operation	Can be switched on/off	
Operating current I_{sd}	$1.5 \div 10 \times I_n$ max. $0.8 \times I_{cw}$ [1]	OFF/$1.5/2/2.5/3/4/5/6/8/10 \times I_r$ max. $0.8 \times I_{cw}$ [1]
Delay time t_{sd}	0.08 ÷ 0.4 s	0.08/0.15/0.22/0.3/0.4 s
Characteristics	I^0t and I^2t	
Reference point $I_{ST\,ref}$	$8 \times I_r$	
I: Short-circuit release INST		
Circuit breaker tripping operation	On	
Operating current I_i	$1.5 \div 15 \times I_n$ max, $0.8 \times I_{cs}$ [1]	$1.5/2/3/4/5/6/8/10/12/15 \times I_n$ max. $0.8 \times I_{cs}$ [1]
Electric arc attenuation DAS+ (Maintenance mode)		
Operating current $I_{i\,DAS+}$	$1.5 \times I_n$	Activation through ETU input

[1] The setting value is limited by the breaking capacity at the rated operating voltage U_e.

ETU300 LSIG

Protective functions	Setting range	
G: Ground protection GF		
Circuit breaker tripping operation	On	
Ground fault detection method	Residual	(Ground current detection using vector sum of currents of all phases and N conductor)
Characteristics	I^0t	
Operating current I_g	$0.2 \times I_n$ (min. 100 A, max. 1200 A)	
Delay time t_g	0.2 s	

ETU600

Protective functions

ETU600 LSI, ETU600 LSIG, ETU600 LSIG Hi-Z

Protective functions	Setting range	Setting values with rotary change-over switches	Current measurement	Function ready4COM	PMF-I Measuring active energy	PMF-II Basic power output measurement	PMF-III Advanced power output measurement
L: Thermal release LT							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Rated reduced current I_r	0.4 ÷ 1.0 I_n	0.5/0.6/0.7/0.75/0.8/0.85/0.9/ 0.95/1.0 x I_n	■	■	■	■	■
Delay time t_r at 6 × I_r	For I^2t: 0.5 ÷ 30 s and for I^4t: 0.5 ÷ 5 s	1/2/5/8/10/14/17/21/25 s	■	■	■	■	■
Characteristics	I^2t or I^4t		■	■	■	■	■
Thermal memory	Switching On/Off option		■	■	■	■	■
Cooling time constant	10 or 18 × t_r		■	■	■	■	■
Phase failure detection	Switching On/Off option		■	■	■	■	■
Signalling of PAL current limits	Switching On/Off option		■	■	■	■	■
Limit current $I_{r\,PAL}$	0.7 ÷ 1.0 × I_r		■	■	■	■	■
Delay time $t_{r\,PAL}$	0.5 ÷ 1.0 × t_r		■	■	■	■	■
L: Protection of N conductor							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Operating current I_N	0.2 ÷ 2.0 × I_n for 4-pole circuit breakers max. I_n max.		■	■	■	■	■
Operating current $I_{N\,PAL}$	0.7 ÷ 1.0 × I_N		■	■	■	■	■
S: Selective release ST							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Operating current I_{sd}	0.6 × I_n … 0.8 × I_{cw} max. 0.8 × I_{cw} [1]	1.5/2/2.5/3/4/5/6/8/10 × I_r max. 0.8 x I_{cw} [1]	■	■	■	■	■
Delay time t_{sd}	0.02 ÷ 0.4 s	At I^0t: 0.08/0.15/0.22/0.3/0.4 s At I^2t: 0.1/0.2/0.3/0.4 s	■	■	■	■	■
Characteristics	I^0t or I^2t		■	■	■	■	■
Reference point $I_{ST\,ref}$	6 ÷ 12 × I_r		■	■	■	■	■
Detection interruption	Switching On/Off option		■	■	■	■	■
S: Selective protection of dST flow direction							
Circuit breaker tripping operation	Can be switched on/off		□	□	□	■	■
Direction	Forward (FW): ↓ or reverse (REV) ↑		□	□	□	■	■
Operating current $I_{sd\,FW}$	0.6 × I_n … 0.8 × I_{cw}		□	□	□	■	■
Operating current $I_{sd\,REV}$	0.6 × I_n … 0.8 × I_{cw}		□	□	□	■	■
Delay time $t_{sd\,FW}$	0.05 ÷ 0.4 s		□	□	□	■	■
Delay time $t_{sd\,REV}$	0.05 ÷ 0.4 s		□	□	□	■	■
I: Short-circuit release INST							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Operating current I_i	1.5 × I_n … 0.8 × I_{cs} max. 0.8 × I_{cs} [1]	1.5/2/3/4/6/8/10/12/15 × I_n max. 0.8 × I_{cs} [1]	■	■	■	■	■
Protection against backward flow of energy RP							
Circuit breaker tripping operation	Can be switched on/off		□	□	□	■	■
Setting P_{RP} value	0.05 ÷ 0.5 × P_n		□	□	□	■	■
Delay time t_{RP}	0.01 ÷ 25 s		□	□	□	■	■
Enhanced protection functions EPF							
Current and voltage asymmetries			□	□	□	■	■
Undervoltage and overvoltage			□	□	□	■	■
Active power output, consumed and delivered			□	□	□	■	■
Lower and upper frequency limits			□	□	□	■	■
Total harmonic distortion of current and voltage			□	□	□	■	■
Phase sequence detection			□	□	□	■	■
Electric arc attenuation DAS+ (Maintenance mode)							
Operating current $I_{i\,DAS+}$	1.5 ÷ 10 × I_n		■	■	■	■	■
Operating current $I_{g\,DAS+}$	With rated current module LSIG GFx Residual detection: sizes I and II - 100 ÷ 2000 A and size III - 400 ÷ 2000 A Direct detection: 15 ÷ 2000 A		■	■	■	■	■
Delay time $t_{g\,DAS+}$	0 ÷ 5 s		■	■	■	■	■
Options							
Changing parameter settings	Switching between sets of parameters A and B		□	□	□	■	■
Limit values	Overrun monitoring		■	■	■	■	■
Waveform memory			□	□	□	□	■

[1] The setting value is limited by the breaking capacity at the rated operating voltage U_e.

■ Available according to ETU selection

□ Possibility of supplementing

ETU600

Protective functions

ETU600 LSI

Protective functions	Setting range		Current measurement	Function ready4COM	PMF-I Measuring active energy	PMF-II Basic power output measurement	PMF-III Advanced power output measurement
G: Ground protection signalling GF							
Signalling	Can be switched on/off		□	□	□	■	■
Operating current $I_{g\ alarm}$ with rated current module LSIG GFx	Detection method Residual	Sizes I and II: 100 ÷ 5000 A Size III: 400 ÷ 5000 A	□	□	□	■	■
	Detection method Direct	15 ÷ 5000 A	□	□	□	■	■
Delay time $t_{g\ alarm}$		0 ÷ 0.5 s	□	□	□	■	■

■ Available, application package features
□ Possibility of retrofitting

ETU600 LSIG

Protective functions	Setting range		Current measurement	Function ready4COM	PMF-I Measuring active energy	PMF-II Basic power output measurement	PMF-III Advanced power output measurement
G: Ground protection GF							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Ground fault detection method	Residual	Ground current detection using vector sum of currents in all phases and N conductor	■	■	■	■	■
	Direct	Direct measurement of ground current using a current transformer	■	■	■	■	■
	Dual	Protective zone UREF: ground current detection using vector sum of currents Protective zone REF: ground current measurement using an external current transformer	■	■	■	■	■
GF characteristics	With rated current module LSIG GFx	$(I^0t)/I^2t/I^4t/I^6t$	■	■	■	■	■
Operating current I_g with rated current module LSIG GFx	Detection method Residual	Sizes I and II: 100 ÷ 2000 A Size III: 400 ÷ 2000 A	■	■	■	■	■
	Detection method Direct	15 ÷ 2000 A	■	■	■	■	■
Delay time t_g	For (I^0t)	0 ÷ 5 s	■	■	■	■	■
	For I^xt at $3 \times I_g$	0 ÷ 30 s	■	■	■	■	■
	$t_{g\ def}$ at I^xt	0.05 ÷ 0.5 s	■	■	■	■	■
Detection interruption	Can be switched on/off		■	■	■	■	■
G: Ground protection signalling GF							
Signalling	Can be switched on/off		■	■	■	■	■
Operating current $I_{g\ alarm}$ with rated current module LSIG GFx	Detection method Residual	Sizes I and II: 100 ÷ 5000 A Size III: 400 ÷ 5000 A	■	■	■	■	■
	Detection method Direct	15 ÷ 5000 A	■	■	■	■	■
Delay time $t_{g\ alarm}$		0 ÷ 0.5 s	■	■	■	■	■

■ Available according to ETU selection
□ Possibility of supplementing

ETU600 LSIG Hi-Z

Protective functions	Setting range		Current measurement	Function ready4COM	PMF-I Measuring active energy	PMF-II Basic power output measurement	PMF-III Advanced power output measurement
G: Ground fault GF Hi-Z							
Circuit breaker tripping operation	Can be switched on/off		■	■	■	■	■
Ground fault detection method	Residual	Ground current detection using vector sum of currents in all phases and N conductor	■	■	■	■	■
	Dual Hi-Z for high-impedance connection of an external current transformer	Protective zone UREF: ground current detection using vector sum of currents Protective zone REF: ground current measurement using an external current transformer	■	■	■	■	■
GF characteristics	With rated current module LSIG GFx	$(I^0t)/I^2t/I^4t/I^6t$	■	■	■	■	■
Operating current I_g with rated current module LSIG GFx	Protective zone UREF	Size II: 100 ÷ 2000 A Size III: 400 ÷ 2000 A	■	■	■	■	■
	Protective zone REF	15 ÷ 2000 A	■	■	■	■	■
Delay time t_g	For (I^0t)	0 ÷ 5 s	■	■	■	■	■
	For I^xt at $3 \times I_g$ in protective zone UREF	0 ÷ 30 s	■	■	■	■	■
	$t_{g\ def}$ at I^xt	0.05 ÷ 0.5 s	■	■	■	■	■
Detection interruption	Can be switched on/off		■	■	■	■	■
G: Ground protection signalling GF							
Signalling	Can be switched on/off		■	■	■	■	■
Operating current $I_{g\ alarm}$ with rated current module LSIG GFx	Protective zone UREF	Size II: 100 ÷ 5000 A Size III: 400 ÷ 5000 A	■	■	■	■	■
Delay time $t_{g\ alarm}$		0 ÷ 0.5 s	■	■	■	■	■

■ Available according to ETU selection

ETU600

Control, interface and metering function

ETU600

Control and interface			Current measurement	Function ready4COM	PMF-I Measuring active energy	PMF-II Basic power output measurement	PMF-III Advanced power output measurement	Switch-disconnectors
Rotary change-over switches			■	■	■	■	■	–
Display and control push-buttons			■	■	■	■	■	–
Configuration software Powerconfig			■	■	■	■	■	–
Communication over the bus			■	■	■	■	■	–
Colour display			■	■	■	■	■	–
Bluetooth [1] and USB interface			■	■	■	■	■	–
Communication								
Ready to connect communication modules (ready4COM function)	Circuit breaker/switch-disconnector status messages		□	□	■	■	■	□
	Overcurrent release status messages ETU600		□	□	■	■	■	–
	Remote control, requires communication module, closing release, shunt trip		□	□	■	■	■	□
Communication module			□	□	□	□	□	□
Digital input and output of the overcurrent release ETU600								
Parameterizable input	To activate the DAS+ maintenance mode or to change the settings of parameter sets		■	■	■	■	■	–
Parameterizable output	Usable as "error-free ETU status", early contact, "parameter set B active", "maintenance mode DAS+ active"		■	■	■	■	■	–
Metering function								
Integrated voltage measurement at upper/lower terminals			–	–	■	■	■	–
Voltage measuring module VTM			–	–	■	■	■	–
Type according to IEC 61557-12		PMF-I	–	–	■	■	■	–
		PMF-II	–	–	–	■	■	–
		PMF-III	–	–	–	–	■	–
Measured values								
Temperature			–	■	■	■	■	–
Measurement accuracy according to IEC 61557-12								
Phase current I_{L1}, I_{L2}, I_{L3}		Class 1	■	■	■	■	■	–
Current through N conductor I_N		Class 1	■	■	■	■	■	–
Phase voltage U_{LN}		Class 0.5	–	–	■	■	■	–
Line-to-line voltage U_{LL}		Class 0.5	–	–	■	■	■	–
Active energy E_a		Class 2	–	–	■	■	■	–
Active output power P		Class 2	–	–	–	■	■	–
Measurement accuracy according to manufacturer's specification								
Ground current I_g with ETU600 LSI		2%	–	–	–	■	■	–
Ground current I_g with ETU600 LSIG, ETU600 LSIG Hi-Z		2%	■	■	■	■	■	–
Reactive energy E_r		2%	–	–	–	■	■	–
Apparent energy E_{ap}		2%	–	–	–	■	■	–
Reactive power Q		2%	–	–	–	■	■	–
Apparent power S		2%	–	–	–	■	■	–
Power factor PF		6%	–	–	–	■	■	–
cos φ		6%	–	–	–	■	■	–
Frequency f		0.5%	–	–	–	■	■	–
Current asymmetry		2.5%	–	–	–	■	■	–
Voltage asymmetry		1.5%	–	–	–	■	■	–
Total harmonic distortion THD-I [2]		2%	–	–	–	–	■	–
Total harmonic distortion THD-U [2]		2%	–	–	–	–	■	–
Harmonic I, U [2]		2%	–	–	–	–	■	–

[1] A country-specific licence is required for Bluetooth operation.
Before activating the Bluetooth function, make sure the licence is available.
[2] For 2nd to 15th harmonics ±2% and for 16th to 31st harmonics ±5%.
– Not available
■ Available by selection of ETU
□ Possibility of supplementing

ACCESSORIES

Technical specifications

Hand drives	3WA11 – 3WA13
Storage latch	
Control force	≤230 N
Number of lever presses to fully tension the storage latch	9

Closing releases (CC/CC-COM)		3WA11 – 3WA13	
Rated voltage			
Rated voltage of the control circuit power supply U_s		DC 24 ÷ 30 V	
		DC 48 ÷ 60 V	
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	
Operating range			
Basic operating range (according to IEC 60947-2)		85 ÷ 110% U_s	
Extended operating range for battery operation		85 ÷ 126% U_s	
Integrated protective diode		Yes	
Controls	Load factor	100%	5%
Starting input power	AC/DC	40 W/40 VA	200 VA/200 W ≤60 V 250 VA/250 W ≥110 V
Holding input power	AC/DC	8 W/8 VA	–
Minimum length of control pulse at 100% U_s		60 ms	60 ms
Maximum length of control pulse at 100% U_s		–	2000 ms
Time to switching on the circuit breaker at 100% U_s		80 ms	50 ms
Control circuit protection at U_s for closing release	Load factor	100%	5 %
Fuse	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (PVA10 2A gG)	10 A (PVA10 10A gG)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	1 A (PVA10 2A gG)	4 A (PVA10 4A gG)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	1 A (PVA10 2A gG)	2 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (LTN-UC-2C-1)	10 A (LTN-UC-10C-1)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	1 A (LTN-UC-1C-1)	4 A (LTN-UC-4C-1)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	1 A (LTN-UC-1C-1)	2 A (LTN-UC-2C-1)
Control circuit protection at U_s for motor drive + closing release [1]	Load factor	100 %	5 %
Fuse	DC 24 ÷ 30 V, DC 48 ÷ 60 V	6 A (PVA10 6A gG)	10 A (PVA10 10A gG)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	2 A (PVA10 2A gG)	4 A (PVA10 4A gG)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	2 A (PVA10 2A gG)	2 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 ÷ 30 V, DC 48 ÷ 60 V	6 A (LTN-UC-6C-1)	10 A (LTN-UC-10C-1)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	2 A (LTN-UC-2C-1)	4 A (LTN-UC-4C-1)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	2 A (LTN-UC-2C-1)	2 A (LTN-UC-2C-1)

[1] With the same control circuit for the closing release and motor drive.

ACCESSORIES

Technical specifications

Motor drives		3WA11 – 3WA13
Rated voltage		
Rated voltage of the control circuit power supply U_s		DC 24 ÷ 30 V
		DC 48 ÷ 60 V
		AC 110 ÷ 127 V/DC 110 ÷ 125 V
		AC 208 ÷ 240 V/DC 220 ÷ 250 V
Operating range		
Basic operating range (according to IEC 60947-2)		85 ÷ 110% U_s
Extended operating range for battery operation		85 ÷ 126% U_s
Controls		
Starting input power	AC/DC	135 VA/135 W
Holding input power	AC/DC	135 VA/135 W
Time to pull the storage latch U_s		≤10 s
Control circuit protection at U_s		
Fuse	DC 24 ÷ 30 V, DC 48 ÷ 60 V	6 A (PVA10 6A gG)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V AC 208 ÷ 240 V/DC 220 ÷ 250 V	2 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 ÷ 30 V, DC 48 ÷ 60 V	6 A (LTN-UC-6C-1)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V AC 208 ÷ 240 V/DC 220 ÷ 250 V	2 A (LTN-UC-2C-1)

Undervoltage releases (UVR and UVR-t)		3WA11 – 3WA13
Rated voltage		
Rated voltage of the control circuit power supply U_s		DC 24 V
		DC 30 V
		DC 48 V
		DC 60 V
		AC 110 ÷ 127 V/DC 110 ÷ 125 V
		AC 208 ÷ 240 V/DC 220 ÷ 250 V
		AC 380 ÷ 415 V
Operating range		
Characteristics		≥0.85 × U_s (circuit breaker can be switched on)
		0.35 ÷ 0.7 × U_s (circuit breaker must switch off)
Basic operating range		0.85 ÷ 1.1 × U_s
Extended operating range for battery operation	At DC 24 V, DC 30 V, DC 48 V, DC 110 V, DC 220 V	0.85 ÷ 1.26 × U_s
Integrated protective diode		Yes
Controls		
Starting input power	AC/DC	50 VA / 50 W
Holding input power	AC/DC	5 VA / 5 W
Time to switching off		
U_s = 0 UVR instantaneous		≤80 ms
U_s = 0 UVR short-delayed		≤200 ms
U_s = 0 UVR-t with delay		0.2 ÷ 3.2 s
UVR-t with stop push-buttons on terminals X5.13 and X5.14		≤100 ms
Control circuit protection		
Fuse	DC 24 V, 30 V, 48 V, 60 V	2 A (PVA10 2A gG)
	AC 110 ÷ 127 V /DC 110 ÷ 125 V AC 208 ÷ 240 V /DC 220 ÷ 250 V AC 380 ÷ 415 V	1 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 V, 30 V, 48 V, 60 V	2 A (LTN-UC-2C-1)
	AC 110 ÷ 127 V /DC 110 ÷ 125 V AC 208 ÷ 240 V /DC 220 ÷ 250 V AC 380 ÷ 415 V	1 A (LTN-UC-1C-1)

Shunt trips (ST/ST-COM/ST2)		3WA11 – 3WA13	
Rated voltage			
Rated voltage of the control circuit power supply U_s		DC 24 ÷ 30 V	
		DC 48 ÷ 60 V	
		AC 110 ÷ 127 V/DC 110 ÷ 125 V	
		AC 208 ÷ 240 V/DC 220 ÷ 250 V	
Operating range			
Basic operating range		85 ÷ 110% U_s	
Extended operating range for battery operation		85 ÷ 126% U_s	
Integrated protective diode		Yes	
Controls	**Load factor**	**100%**	**5%**
Maximum permissible load		100% OP	5% OP
Starting input power	AC/DC	40 VA/40 W	200 VA/200 W ≤60 V 250 VA/250 W ≥110 V
Holding input power	AC/DC	8 VA/8 W	–
Minimum length of control pulse at 100% U_s		60 ms	60 ms
Maximum length of control pulse at 100% U_s		–	2000 ms
Time to tripping operation of the circuit breaker at 100% U_s		80 ms	50 ms
Control circuit protection	**Load factor**	**100%**	**5%**
Fuse	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (PVA10 2A gG)	10 A (PVA10 10A gG)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	1 A (PVA10 2A gG)	4 A (PVA10 4A gG)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	1 A (PVA10 2A gG)	2 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (LTN-UC-2C-1)	10 A (LTN-UC-10C-1)
	AC 110 ÷ 127 V/DC 110 ÷ 125 V	1 A (LTN-UC-1C-1)	4 A (LTN-UC-4C-1)
	AC 208 ÷ 240 V/DC 220 ÷ 250 V	1 A (LTN-UC-1C-1)	2 A (LTN-UC-2C-1)

Remote reset device (F7)		3WA11 – 3WA13
Rated operating voltage		
Rated voltage of the control circuit power supply U_s		DC 24 ÷ 30 V
		DC 48 ÷ 60 V
		AC 110 ÷ 127 V/DC 110 ÷ 125 V
		AC 208 ÷ 240 V/DC 220 ÷ 250 V
Operating range		
Primary operating range (according to IEC 60947-2)		85 ÷ 110% U_s
Extended operating range for battery operation		70 ÷ 126% U_s
Integrated protective diode		Yes
Controls		
Input power	AC/DC	60 VA/60 W
Minimum length of control pulse at 100% U_s	60 ms	60 ms
Control circuit protection		
Fuse	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (PVA10 2A gG)
	AC 110 ÷ 127 V /DC 110 ÷ 125 V	1 A (PVA10 2A gG)
	AC 208 ÷ 240 V/ DC 220 ÷ 250 V	1 A (PVA10 2A gG)
Circuit breaker with C characteristic	DC 24 ÷ 30 V, DC 48 ÷ 60 V	2 A (LTN-UC-2C-1)
	AC 110 ÷ 127 V /DC 110 ÷ 125 V	1 A (LTN-UC-1C-1)
	AC 208 ÷ 240 V/ DC 220 ÷ 250 V	1 A (LTN-UC-1C-1)

ACCESSORIES

Technical specifications

Auxiliary switches (S1 to S8)		3WA11 – 3WA13	
Type of contact		NO or NC	
Minimum load		From 1 mA at DC 5 V	
Rated insulation voltage U_i		DC 500 V/AC 500 V 50/60 Hz	
Rated impulse withstand voltage U_{imp}		4 kV	
Control circuit protection			
Fuse		8 A (PVA10 8A gG)	
Circuit breaker with C characteristic		8 A (LTN-UC-8C-1)	
Maximum permissible load of contacts		Rated voltage of the control circuit power supply U_s	Rated operating current I_e
Utilization category	DC12	24 V	10 A
		30 V	4 A
		48 V	2.5 A
		60 V	1 A
		110 V	0.4 A
		220/240 V	0.2 A
	DC13	24 V	3 A
		30 V	2.5 A
		48 V	1 A
		60 V	0.4 A
		110 V	0.2 A
		220/240 V	0.1 A
	AC12	≤ 440 V	10 A
	AC13	< 220 V	8 A
		220 ÷ 240 V	4 A
		320 ÷ 440 V	3 A

Signal switches ready-to-close (S20) (according to DIN VDE 0630)		3WA11 – 3WA13	
Type of contact		NO contact	
Minimum load		From 1 mA at DC 5 V	
Rated insulation voltage U_i		DC 250 V/AC 250 V	
Control circuit protection			
Fuse		2 A (PVA10 2A gG)	
Maximum permissible load of contacts		Rated voltage of the control circuit power supply U_s	Rated operating current I_e
Utilization category	DC12	24 V	5 A
		30 V	2.5 A
		48 V	2.5 A
		60 V	0.4 A
		110/127 V	0.4 A
		220/240 V	0.2 A
	DC13	24 V	2.5 A
		30 V	1 A
		48 V	1 A
		60 V	0.22 A
		110/127 V	0.22 A
		220/240 V	0.1 A
	AC12	≤ 240 V	6 A
	AC13	110 ÷ 127 V	5 A
		220 ÷ 240 V	4 A

Signal switches tripped by overcurrent release (S24, S25)		**3WA11 – 3WA12**	
1st signal switch tripped by overcurrent release S24		Type of contact CO	
2nd signal switch tripped by overcurrent release S25		Type of contact NO	
Minimum load		From 1 mA at DC 5 V	
Rated insulation voltage U_i		DC 250 V/AC 250 V 50/60 Hz	
Control circuit protection			
Fuse		6 A (PVA10 6A gG)	
Maximum permissible load of contacts		Rated voltage of the control circuit power supply U_s	Rated operating current I_e
Utilization category	DC12	24 V	5 A
		30 V	2.5 A
		48 V	2.5 A
		60 V	0.4 A
		110/127 V	0.4 A
		220/240 V	0.2 A
	DC13	24 V	2.5 A
		30 V	1 A
		48 V	1 A
		60 V	0.2 A
		110/127 V	0.2 A
		220/240 V	0.1 A
	AC12	≤240 V	6 A
	AC13	110 ÷ 127 V	5 A
		220 ÷ 240 V	4 A

3VA9988-0BR10 ACCESSORIES

Technical specifications

Position signal switches in the withdrawable device		3WA11 – 3WA13	
Type of contact		CO [1]	
Minimum load		From 1 mA at DC 5 V	
Rated insulation voltage U_i		DC 250 V/AC 250 V 50/60 Hz	
Rated impulse withstand voltage U_{imp}		4 kV	
Connection type		Spring terminals	
Conductor cross section:		1× 0.5 mm² ÷ 1× 2.5 mm²	
Control circuit protection			
Fuse		6 A (PVA10 6A gG)	
Maximum permissible load of contacts		**Rated voltage of the control circuit power supply U_s**	**Rated operating current I_e**
Utilization category	DC12	24 V	5 A
		30 V	2.5 A
		48 V	2.5 A
		60 V	0.4 A
		110/127 V	0.4 A
		220/240 V	0.2 A
	DC13	24 V	2.5 A
		30 V	1 A
		48 V	1 A
		60 V	0.22 A
		125 V	0.22 A
		250 V	0.1 A
	R300 DC	24 V	3 A
		30 V	2.5 A
		48 V	1 A
		60 V	0.4 A
		110 V	0.22 A
		220/240 V	0.11 A
	AC12	≤440 V	6 A
	AC13	<220 V	5 A
		220 ÷ 240 V	4 A
		320 ÷ 440 V	3 A
	A300 AC	120 V	6 A
		240 V	3 A

COM contacts (X89) can only be connected to the communication module.

[1] Position signalling contacts for circuit breakers/switch-disconnectors without ready4COM function: 3× working position, 2× inspection position, 1× disconnected position.

ETU600	3WA11 – 3WA13
Power supply	
Power supply method	DC power supply
DC power supply	IEC 61558 SELV/PELV
Rated voltage of the control circuit power supply U_s	DC 24 V
Basic operating range	U_s ±20%
Input power	2.9 W
Maximum current consumption	0.12 A
Maximum inrush current	0.35 A
Overvoltage category	CAT I
Integrated short-circuit protection	Yes
Polarity reversal protection	Yes

OEZ s.r.o.
Šedivská 339
561 51 Letohrad
Czech Republic

E oeztrade.cz@oez.com
T +420 465 672 111
W www.oez.com

Release: April 2024

Up-to-date information and other data of strong-current low-voltage wiring and electrical installations are available on our website www.oez.com.

www.oez.com

OEZ Modern technology
and personal approach. Of course. OEZ

AR01-2024-EN