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SELECTION & APPLICATION GUIDE

3WA Power Circuit Breakers

usa.siemens.com/3WA





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MADE FOR MAKERS. SIMPLY RELIABLE.

Siemens 3WA Breakers

The Siemens 3WA circuit breaker is a cutting-edge solution designed to meet the challenges of modern electrical distribution systems, both now and in the future. We understand the importance of electrical apparatus in safeguarding personnel, optimizing resource usage, and minimizing downtime. That’s why the 3WA has been crafted specifically with you in mind.

Built on the foundation of the Siemens WL circuit breaker, we reimagined the 3WA design through a lens of quality, ensuring our product delivers exceptional performance for years to come. We tested beyond industry standards and established a robust reliability program to guarantee performance. We vetted suppliers for material

quality and supply chain resilience, partnering based on value rather than the lowest bid. Finally, we modernized the electronics of the 3WA, enhancing its capabilities to better serve you. The result of these efforts is a circuit breaker manufactured by makers, for makers – embodying the essence of simplicity and reliability.



3WA Overview

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3WA Overview



Reliable Mechanisms

Built upon the foundation of the Siemens WL, 3WA improves upon the proven quality to ensure years of operability. Tested beyond UL standards the 3WA is rated for 10,000 operations. This is accomplished through exacting tolerances, elimination of plastic parts and fasteners and attention to quality. Starting with vendors and ending at delivery, no corners are cut so that the 3WA is the most reliable breaker in low voltage distribution.



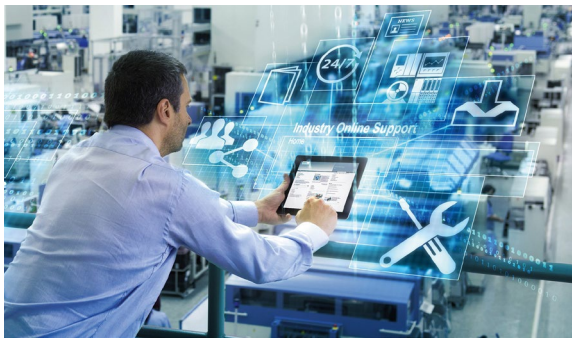
Ease of Integration

Interacting with and integrating the Siemens 3WA is simple and intuitive. Configure the 3WA physically on the ETU, through USB-C or optional Bluetooth connection. With the SENTRON powerconfig software, make adjustments to the advanced protective and setpoint functions with unbeatable granularity. Worry less about modules and accessories as many have been integrated with the breaker or ETU.



Electrical Enhancement

The new electronic platform includes the ETU300 and ETU600. The ETU300 is a cost-effective trip unit providing LSIG protection at a low price point. The ETU600 has the capability and flexibility to offer metering and protection in any system. Coupled with software packages the ETU600 is updateable and upgradeable to monitor and protect even the most advanced applications. In addition, both ETUs include enhanced Dynamic Arc-Flash Sentry - DAS+ - as a standard feature.



Tools and Support

The value of 3WA extends beyond the breaker. From quoting and configuration to installation and operation Siemens is here to support. With a new configurator that is intuitive and builds a 3D model of the breaker as you add and remove features, quoting has never been simpler. Siemens also offers experts engineering support and places information at your fingertips. Use QR codes placed on the breaker to access breaker data and cut sheets.

UL489 – 3WA2

3WA low voltage insulated case circuit breakers are generally intended to provide service entrance, feeder, and branch circuit protection in accordance with UL 489 Standard for Safety for Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures. These circuit breakers are also certified for UL 489 Supplement SB, for use in Naval applications, and for ambient environments up to

50°C without derating. This versatile family of insulated case circuit breakers is acceptable for use within low-voltage switchboards (i.e. UL 891), low-voltage motor control centers (i.e. UL 845), and other types of industrial control equipment (i.e. UL 508 series). Certain options and maintenance capability may be limited in comparison to the UL1066 Listed circuit breakers.



Basic Data	UL489 Rated	3WA21				3WA22				3WA23			
		1				2				3			
Frame Size													
Rated Current In	[A]	800	1200	1600	2000	800	1200	1600	2000	2500	3000	4000	5000
Rated Operational Voltage	[V AC]	< 600				< 600				< 600			
Type of Mounting		Withdrawable or Fixed				Withdrawable or Fixed				Withdrawable or Fixed			
Number of Poles		3 Pole				3/4 Pole				3/4 Pole			
3-Pole Min. Encl. Dim.	[in]	22.5 H / 14 W / 19.5 D				22.5 H / 22 W / 19.5 D				22.5 H / 32 W / 19.5 D			
Amb. Oper. Temp.	[C]	-25 to 40				-25 to 40				-25 to 40			
Interrupt Rating at 240 V AC, 480 V AC	[kA]												
N Class		50				—				—			
S Class		65				65				—			
H Class		100				100				100			
C Class		—				150				150			
Interrupt Rating at 600 V AC	[kA]												
N Class		50				—				—			
S Class		65				65				—			
H Class		65				85				100			
C Class		—				100				100			
Interrupt Rating at 1000/577 V AC	[kA]												
E Class		50				85				85			
Weights 3-Pole	[lb/kg]												
Fixed Mount Breaker		88 / 40	88 / 40	99 / 45	101 / 46	123 / 56	123 / 56	123 / 56	134 / 61	163 / 74	163 / 78	301 / 137	350 / 159
Withdrawable Breaker		107 / 48.5	107 / 48.5	120 / 51.5	122 / 59	151 / 68.5	151 / 68.5	151 / 68.5	160 / 72.5	179 / 81.5	179 / 81.5	256 / 116.5	305 / 138.5
Cradle		111 / 50	111 / 50	113 / 51.5	129 / 58.5	122 / 55.5	122 / 55.5	122 / 55.5	140 / 63.5	153 / 69.5	153 / 69.5	250 / 113.5	267 / 121.5

UL 1066 3WA3

3WA low voltage power circuit breakers are generally intended to provide main and feeder circuit protection in accordance with UL1066 Standard for Safety for Low-Voltage AC and DC Power Circuit Breakers Used in enclosures. Presently, there is not an equivalent CSA standard to UL 1066, and therefore these circuit breakers do not carry a CSA listing mark. These circuit breakers are constructed in compliance with ANSI/IEEE C37.13, and performance tested in accordance with ANSI

C37.50. Throughout this document any reference to UL1066 will also mean ANSI C37 Certified. This versatile family of power circuit breakers is acceptable for use within low voltage switchgear (i.e. ANSI/IEEE C37.20.1, ANSI/IEEE C37.20.7, and UL 1558), low voltage switchboards (i.e. UL 891), low voltage motor control centers (i.e. UL 845), and other types of industrial control equipment (i.e. UL 508 series). Certain options and ratings may be limited may be limited in comparison to the UL 489 Listed circuit breakers.



Basic Data	UL1066 rated	3WA31						3WA32						3WA33		
		1						2						3		
Frame Size																
Rated Current In	[A]	800	1000	1200	1600	2000	800	1200	1600	2000	2500	3200	3200	4000	5000	
Rated Operational Voltage	[V]	< 730 Vac						< 730 Vac						< 730 Vac		
Type of Mounting		Withdrawable or Fixed						Withdrawable or Fixed						Withdrawable or Fixed		
Number of Poles		3/4 Pole						3/4 Pole						3/4 Pole		
3-Pole Min. Encl. Dim.	[in]	22.5 H / 14 W / 19.5 D						22.5 H / 22 W / 19.5 D						22.5 H / 32 W / 19.5 D		
Amb. Oper. Temp.	[C]	-25 to 40						-25 to 40						-25 to 40		
Interrupt Rating at 254 V AC, 508 V AC	[kA]															
N Class		50						50						—		
S Class		65						65						—		
M Class		—						85						—		
H Class		—						100						100		
E Class		85						100						—		
C Class		—						—						150		
Interrupt Rating at 635 V AC	[kA]															
N Class		—						50						—		
S Class		65						65						—		
M Class		—						65						65		
H Class		—						85						85		
C Class		—						—						100		
Interrupt Rating at 730 V AC	[kA]															
E Class		65						85						100		
Weights 3-Pole	[lb/kg]															
Fixed Mount Breaker		88 / 40	88 / 40	88 / 40	99 / 45	101 / 46	123 / 56	123 / 56	123 / 56	134 / 61	163 / 74	163 / 74	350 / 159	350 / 159	350 / 159	
Withdrawable Breaker		107 / 48.5	107 / 48.5	107 / 48.5	120 / 55.5	122 / 55.5	151 / 68.5	151 / 68.5	151 / 68.5	160 / 72.5	179 / 81.5	179 / 81.5	305 / 139	306 / 139	307 / 139	
Cradle		111 / 50.5	111 / 50.5	111 / 50.5	113 / 51.5	129 / 58.5	122 / 55.5	122 / 55.5	122 / 55.5	140 / 63.5	153 / 69.5	153 / 69.5	267 / 121	267 / 121	267 / 121	

General Features

- **3 Frame Sizes:** Three frame sizes that cover a wide range of continuous current ratings allow for flexible exchange of breakers to other compartments and reducing the footprint of the breaker enclosures
- **Consistent Footprint:** the 3WA frame size 2 and 3, are the same footprint as the WL breakers, making retrofit simpler
- **3 Standards:** The 3WA breaker is UL certified for either UL489 (3WA2) or UL 1066/ IEC60947-2 (3WA3) to meet the needs of any application
- **Ready-to-close Indication:** Built in check points of the mechanical operator provide an additional layer of safety and external controls by inhibiting the breaker from closing until certain conditions are satisfied
- **100% Rating:** All model breakers are designed for continuous operation at their maximum current ratings without de-rating the frame
- **Bi-directional protections:** Top or bottom supply feed without any hardware configuration changes
- **DAS+ Standard Supply:** All ETU offerings come with DAS+ integrated and ready to use as a separate parameter set

Other Key Features:

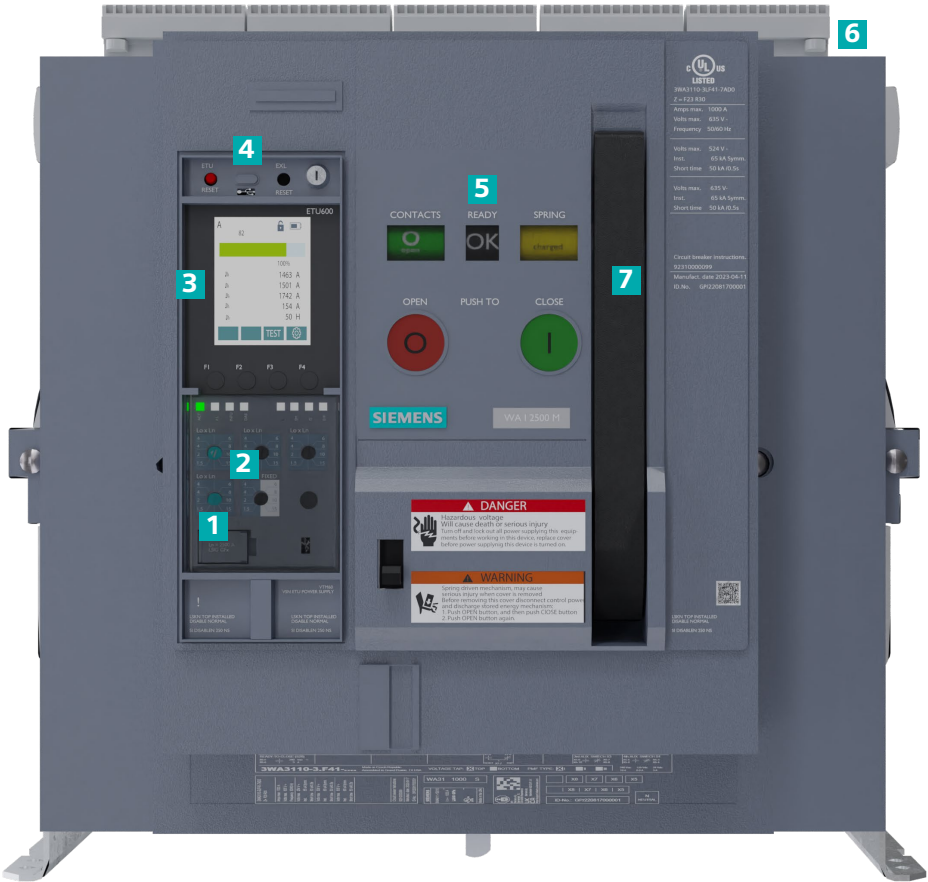
Our 3WA breakers undergo rigorous testing, resulting in an impressive mean time between failure (MTBF) of approximately 350 years, with no maintenance required on internal parts. Tested at extreme temperatures of -50 degrees Celsius, the lubrication ensures minimal wear and tear, extending the breaker's lifespan. We also exceed standard testing for breaker coils, ensuring they last the entire lifetime without maintenance.

This robust testing significantly reduces waste and lowers the carbon footprint, making the 3WA breaker an environmentally friendly choice. Additionally, the integrated racking handle makes it easy for users to rack the breaker in and out of the cradle. This combination of durability, environmental benefits, and user-friendly design makes the 3WA breaker an excellent choice for those seeking to reduce downtime on critical applications and reduce maintenance costs.

Assembled View

Breaker Features

1. Option Plug
2. DAS+ LED indicator
3. ETU with backlit display
4. USB-C interface for power and data
5. Ready to Close Indicator
6. Secondary Disconnects
7. Charging Handle



3WA Standards and Certifications

Product Standard		UL 489	UL 1066	IEC 60947-2
IEC60947-2		no	yes	yes
IEC61557-12		no	yes	yes
UL489		yes	no	no
UL1066		no	yes	no
CE		no	yes	yes
UKCA		no	yes	yes
EAC		no	yes	yes
RCM		no	yes	yes
3rd party approval marks				
CB Reports		no	no	yes
CCC		no	no	yes
CSA		no	no	no
cULus		yes	yes	no
VDE		no	no	no
marine approval				
LRS		no	no	yes
DNV GL		no	no	yes
BV		no	no	yes
RMRS		no	no	yes
ABS		no	yes	yes
CCS		no	no	yes
PRS		no	no	yes
UL489 supl. SB		yes	no	no
UL1066 supl. SA		no	no	no

Tools and Support

3WA Website

The Siemens 3WA website is the one stop shop for all information on the 3WA breakers. Be sure to explore the link to find additional resources and supplemental information. The website includes links to the configurator, other breaker families like 3VA, and technical whitepapers that provide more insights on the 3WA breaker.

Stay up to date with all the latest 3WA developments through the website which we continuously update with new information.

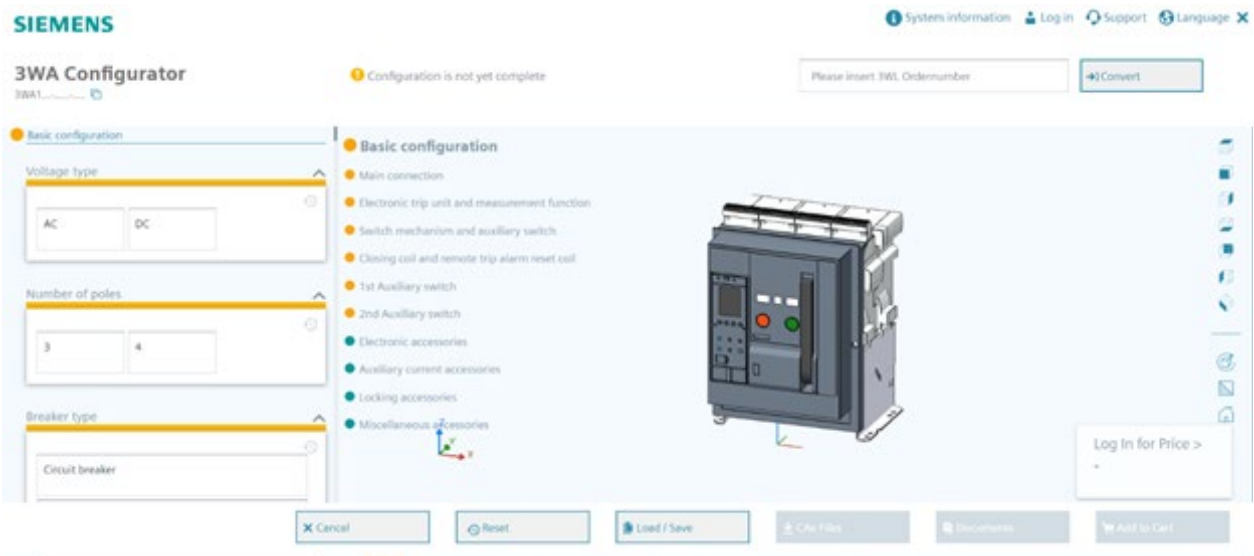
usa.siemens.com/3WA

Configuration and Catalog Numbering

Throughout this document are basic configurations for the 3WA circuit breakers. The document will help construct the catalog number that meets your needs. Beyond the document, click on the online configurator link to access our one stop shop for configuration, conversion and pricing.

To configure and order your 3WA breaker visit www.siemens.com/lowvoltage/3wa2-3wa3-configurator here you will be able to:

- Walk through all the options needed to configure your 3WA breaker
- View a 3D model of your breaker as you select options, and download when you complete the configuration
- See pricing as options are added
- Ensure the catalog number and option combinations are valid
- Save configurations for reference later
- Convert WL catalog number to new 3WA catalog number



Basic Catalog Number Structure for 3WA AC Circuit Breaker

The Structure shown below is to help as a reference of the catalog number structure. For a comprehensive list of all the options and valid combinations, visit www.siemens.com/lowvoltage/3wa2-3wa3-configurator.

3WA ...		4	5	6	7	8	9	10	11	12	13	14	15	16
Standard														
IEC 60947-2 Breaker		1												
UL489		2												
UL1066 / IEC 60947-2		3												
Frame Size														
Frame Size 1			1											
Frame Size 2			2											
Frame Size 3			3											
Frame Amp Rating														
800 A				0	8									
1000 A				1	0									
1200 A				1	2									
1600 A				1	6									
2000 A				2	0									
2500 A				2	5									
3000 A				3	0									
3200 A				3	2									
4000 A				4	0									
5000 A				5	0									
6000 A				6	0									
Interrupt Rating														
N - 50ka						2								
S - 65ka						3								
M - 85ka						4								
H - 100ka						5								
C - 150ka						6								
E - High Voltage KA						8								
Non-Automatic														
Non-Automatic							A	A						
Non-Automatic, ready4COM							C	A						
ETU300														
ETU300: LSI							A	B						
ETU300: LSIG Standard GF							A	D						
ETU600, Metering Packages														
ETU600, Current Metering							A							
ETU600, Current Metering, ready4COM feature							C							
PMF - I, Energy Efficiency, ready4COM	Voltage Tap on Top						L							
	Voltage Tap on Bottom						E							
PMF - II, Basic Power Monitoring, ready4COM	Voltage Tap on Top						M							
	Voltage Tap on Bottom						F							
PMF - III, Advanced Power Monitoring, ready4COM	Voltage Tap on Top						N							
	Voltage Tap on Bottom						G							

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Basic Catalog Number Structure for 3WA AC Circuit Breaker (cont'd)

3WA ...				4	5	6	7	8	9	10	11	12	13	14	15	16	
Protective Functions																	
LSI										E							
LSIG Extended GF (UL 1066)										F							
LSIG Hi-Z Extended GF (UL 1066)										G							
LSIG Standard GF										K							
LSIG Hi-Z standard GF										L							
Number of Poles																	
Fixed Mount					3-Pole					0							
					4-Pole, Neutral Left					1							
Withdrawable	Without Position Signaling Switch				3-Pole					3							
					4-Pole, Neutral Left					4							
	With Position Signaling Switch				3-Pole					6							
					4-Pole, Neutral Left					7							
Type of Mounting																	
Fixed Mount	Vertical											1					
	Horizontal											2					
	Front											3					
	Vertical/Horizontal											4					
	Horizontal/Vertical											5					
Draw-out	Without Cradle											0					
Operating Mechanism and Auxiliary Switch																	
Manual Recharging, No Spring Motor					2 a Contacts, 2 b Contacts						0						
					4 a Contacts, 4 b Contacts						1						
With Spring Motor	24-30 V DC				2 a Contacts, 2 b Contacts						2						
					4 a Contacts, 4 b Contacts						5						
	48-60 V DC				4 a contacts, 4 b Contacts						6						
					2 a Contacts, 2 b Contacts						3						
	110-127 V DA/110-125 V DC				4 a Contacts, 4 b Contacts						7						
					2 a Contacts, 2 b Contacts						4						
208-240 V AC/220-250 V DC				2 a Contacts, 2 b Contacts						4							
				4 a Contacts, 4 b Contacts						8							

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Basic Catalog Number Structure for 3WA AC Circuit Breaker (cont'd)

3WA ...				4	5	6	7	8	9	10	11	12	13	14	15	16			
Closing Coil and Remote Trip Alarm																			
Without Closing Coil	Without remote trip alarm reset coil														A				
With 100%-Duty Closing Coil	Without remote trip alarm reset coil	24-30 V DC												B					
		48-60 V DC												C					
		110-127 V AC / 110-125 V DC												D					
		208-240 V AC / 220-250 V DC												E					
	With remote trip alarm reset coil	24-30 V DC												F					
		48-60 V DC												G					
		110-127 V AC / 110-125 V DC												H					
		208-240 V AC / 220-250 V DC												J					
With 5%-Duty Closing Coil	Without remote trip alarm reset coil	24-30 V DC												K					
		48-60 V DC												L					
		110-127 V AC / 110-125 V DC												M					
		208-240 V AC / 220-250 V DC												N					
	With remote trip alarm reset coil	24-30 V DC												P					
		48-60 V DC												Q					
		110-127 V AC / 110-125 V DC												R					
		208-240 V AC / 220-250 V DC												S					
2nd Auxiliary Release																			
Without 2nd auxiliary release																	A		
With shunt trip, continuous duty 100%	24-30 V DC												B						
	48-60 V DC												C						
	110-127 V AC / 110-125 V DC												D						
	208-240 V AC / 220-250 V DC												E						
With shunt trip, momentary duty 5%	24-30 V DC												F						
	48-60 V DC												G						
	110-127 V AC / 110-125 V DC												H						
	208-240 V AC / 220-250 V DC												J						
With undervoltage release (UVR), instantaneous (<0.08s) and short time delayed (<0.2 s)	24-30 V DC												L						
	48-60 V DC												N						
	110-127 V AC / 110-125 V DC												P						
	208-240 V AC / 220-250 V DC												Q						
	308-415 V AC												R						
With undervoltage release (UVR-t), adjustable delay 0.2 - 3.2 s	24-30 V DC												S						
	48-60 V DC												T						
	110-127 V AC / 110-125 V DC												U						
	208-240 V AC / 220-250 V DC												V						
	308-415 V AC												W						

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Basic Catalog Number Structure for 3WA AC Circuit Breaker (cont'd)

3WA ...		4	5	6	7	8	9	10	11	12	13	14	15	16
1st Auxiliary Release														
Without 1st auxiliary release														0
With shunt trip, continuous duty 100%				24-30 V DC										1
				48-60 V DC										2
				110-127 V AC / 110-125 V DC										3
				208-240 V AC / 220-250 V DC										4
With shunt trip, momentary duty 5%				24-30 V DC										5
				48-60 V DC										6
				110-127 V AC / 110-125 V DC										7
				208-240 V AC / 220-250 V DC										8

Basic Catalog Number Structure for 3WA Cradles

The Structure shown below is to help as a reference of the catalog number structure. For a comprehensive list of all the options and valid combinations,visit www.siemens.com/lowvoltage/3wa2-3wa3-configurator.

3WA8 ...	5	6	7	8	9	10	11	12	13	14	15	16
Guide Frame Size												
Frame Size 1	1											
Frame Size 2	2											
Frame Size 3	3											
Maxed Rated Current												
800 A		0	8									
1000 A		1	0									
1200 A		1	2									
1600 A		1	6									
2000 A		2	0									
2500 A		2	5									
3000 A		3	0									
3200 A		3	2									
4000 A		4	0									
5000 A		5	0									
Short Circuit Breaking Class												
N - Class				2								
S - Class				3								
M - Class				4								
H - Class				5								
C - Class				6								
E - Class				8								
Standard												
IEC 60947-2					A							
UL489					B							
ANSI-UL1066 / IEC 60947-2					C							
Distribution Network												
AC						A						
Number of Poles												
3-Pole							3					
4-Pole, Neutral Left							4					
Main Connection												
Vertical								1				
Horizontal								2				
Front Double Hole								3				
Digit 13									1			

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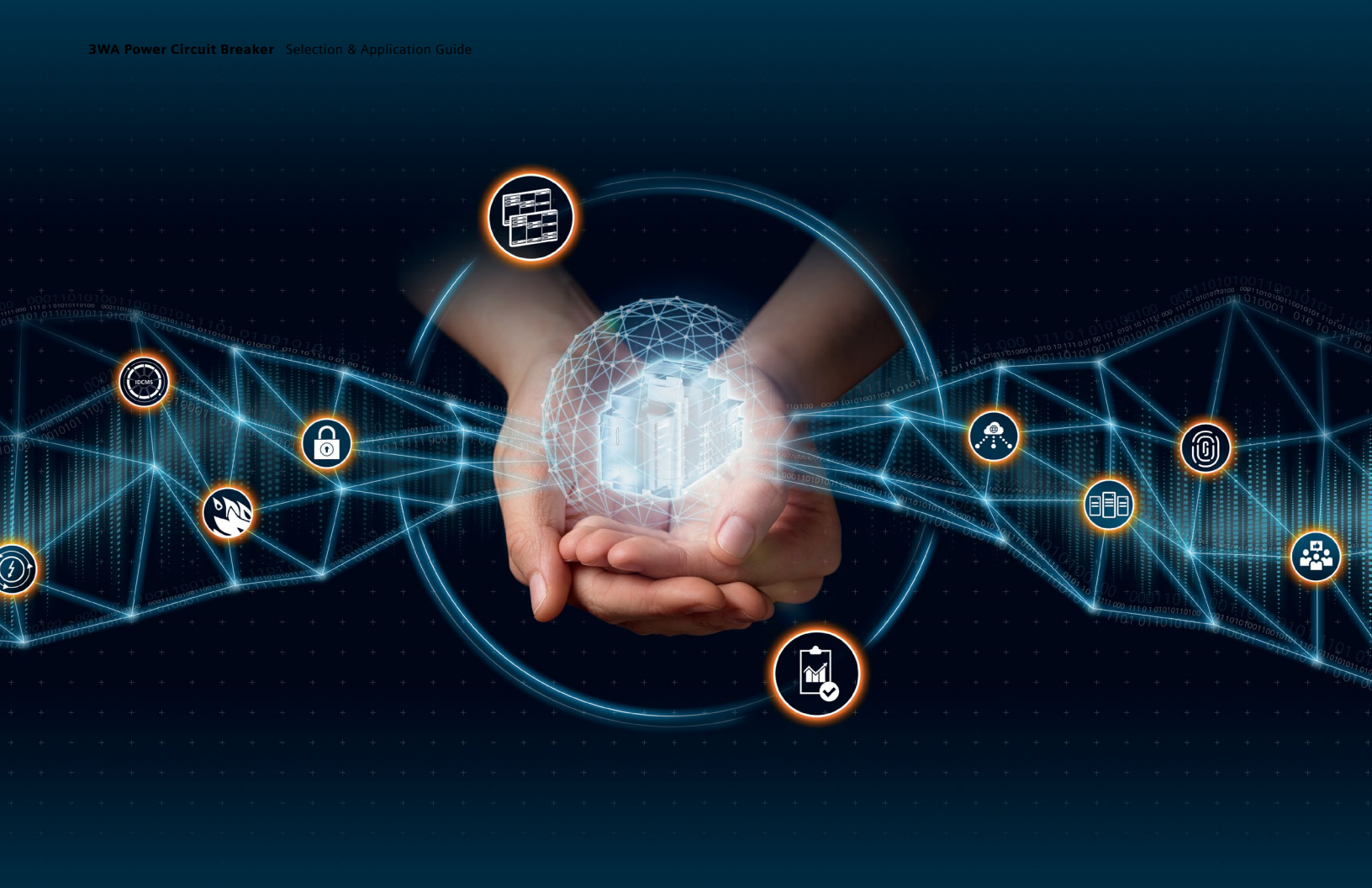
Basic Catalog Number Structure for 3WA Cradles (cont'd.)

3WA8 ...				5	6	7	8	9	10	11	12	13	14	15	16
Push-in Connection															
SZ 1, SZ 2, SZ 3	X7, X6, X5		Non-automatic breaker, without ready4COM										A		
	X8, X7, X6, X5		With ready4COM										B		
SZ 2 / SZ 3	X9, X8, X7, X5		Includes ETC600										K		
Position Signaling Switch (PSS)															
Without PSS													A		
PSS (3x connected position, 2x test position, 1x disconnected position)													C		
PSS (6x connected; 0x, 0x)													D		
PSS-COM (1x connected, 1X test position, 1x disconnect position)													G		
PSS-COM (4x connected, 0x, 0x)													H		
Digit 16															1

Accessories and Replacement Parts

For accessories and replacement parts visit the accessories section. Here you will find the Z-Option code and catalog numbers for all parts which are available. There are many accessories which are not installed at the factory and those are ordered separately using their 3WA911- catalog number.





Electronic Trip Unit

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Electronic Trip Unit

Overview

Trusted Electronic Platform

Siemens ETU300 and ETU600 electronic trip units are both built on a trusted electronic platform that provides reliable and customizable protection for low voltage electrical systems. These trip units are designed to meet the needs of a wide range of applications and provide a high level of protection against overcurrent and other electrical faults.

The ETU300 and ETU600 trip units feature advanced microprocessor technology and a range of enhanced protection functions that help to ensure the safety and reliability of electrical systems. Additionally, both trip units come equipped with DAS+ as a standard feature, which allows the trip settings to be reduced when personnel are present inside the arc flash boundary.

Basic to Advanced

With a range of hardware and software options the ETU300 and ETU600 offer market leading flexibility and performance. The ETU300 offers basic protection functions in a cost effective, easy to use format. For more complex applications the ETU600 offers adaptability and customization through additional firmware packages. The ETU600 also can continuously improve through updates as the state of energy continues to change.

Standard DAS+

An important feature of both the ETU300 and ETU600 electronic trip units is that they come equipped with DAS+ as a standard feature. DAS+ stands for "Dynamic Arc-Flash Sentry" which allows users to automatically toggle between nominal trip settings and a predefined set of lower trip settings, also known as "Maintenance Mode."

The DAS+ feature provides an additional layer of protection to keep facility personnel safe when they are within the arc flash boundary.

DAS+ has a dedicated parameter set giving even more flexibility to keep your electrical system and

personnel safe. DAS+ can be activated via switch, remotely or directly on the ETU, DAS has never been as accessible as it is with the Siemens 3WA breaker.

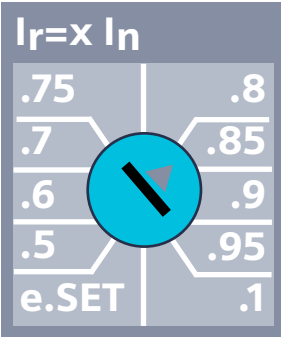
User Oriented Design

From commissioning to monitoring to minimizing downtime, the Siemens ETU platform makes navigation and customization simple.

In the case where there is a need to physically interact with the ETU, the interface is intuitive and simple to navigate. Using rotary switches for settings and visible LEDs to monitor, the ETU300 makes commissioning and operation easy. The ETU600 however offers a large color display that readily provides all information about the breaker settings and status.

The ETU600 gives you the ability to configure and monitor the breaker remotely. With a wide variety of communication options, setting the ETU and monitoring the power system has never been simpler. Even without remote communications, you can connect to the ETU600 via a built-in USB C port or the optional Bluetooth. With these interfaces, access to the breaker is seamless and intuitive using the program SENTRON powerconfig.

The ETU600 allows you to have both fixed- and remotely-settable settings. Each knob on the front has a selection of pickup or delay settings plus one additional position labeled "e.SET". With the dial pointer set to the e.SET position, that setting becomes remotely programmable. This provides additional flexibility and another way to either allow or prevent remote setting changes.



Improved Metering and Monitoring

To monitor your electrical system, the 3WA provides +/- 1% metering accuracy for currents and voltages. From voltages to total harmonic distortion the 3WA gives more information about your system than ever before.

By selecting the right PMF Metering-Function package, you can completely tailor the 3WA metering and protective capabilities to your needs and application. Available in packages or as single licenses you only pay for what you need and are confident you will use.

Models Overview

With a range of hardware and software options the ETU300 and ETU600 offer market leading flexibility and performance at the level you need.

ETU600

The Siemens ETU600 electronic trip unit is an upgradeable device designed for comprehensive protection of low voltage electrical systems. This trip unit is built on an electronic platform that provides reliable and customizable protection against a wide variety of electrical faults.

The ETU600 features two high-speed microprocessors that offer security, unparalleled ability to meet any demanding application, The Protective Processor is isolated and handles all core functions of the ETU. This processor handles the basic protection functions of the ETU including LSIG and DAS+. The Application Processor is what gives the ETU600 its ability to handle any challenge. This processor is responsible for communications and all enhanced protection functions. With the rate of change in today's electrical systems, the Application Processor will meet today's needs and can be updated to meet tomorrow's needs.

Whether in industrial, commercial, or utility systems, the ETU600 is designed to meet the specific needs of each application and ensure the safety and reliability of low voltage electrical systems. Overall, the Siemens ETU600 electronic trip unit is a trusted and effective protection device for demanding electrical systems.

ETU300

Siemens ETU300 is an electronic trip unit that offers cost-effective protection for low voltage circuit breakers. It provides reliable and accurate protection against overloads, short circuits, and ground faults, making it suitable for a wide range of applications in industrial, commercial, and multi-family settings.

The ETU300 is particularly well-suited for applications that require only the basic protective functions LSIG (Long-Time, Short-Time, Instantaneous, Ground) and DAS+ (Dynamic Arc Sensing). Despite its cost-effectiveness, the ETU300 offers a high level of customization, allowing users to configure the trip unit to meet their specific protection requirements. It also features a user-friendly interface and basic diagnostic capabilities, giving reliable protection in a simple package.



Selecting an ETU

Features	ETU300	ETU600
LSI protection	●	●
LSIG protection	●	●
LSIG Hi-Z protection	–	●
N protection	●	●
Metering function	–	●
Enhanced protection functions	–	●
CubicleBUS²	–	●
Display	–	●
DAS+ input and output	●	●
LED trip indication via LED	●	●
Bluetooth and USB-C	–	●
FW updates	–	●
Internal self-testing with without trip	●	●
Extended test functionality	–	●
Powering up via powerbank	–	●
Powering up for testing via TD400	●	–
Second protection parameter set	–	●
● Available – Not available		

Protection and Metering Packages

To take advantage of its high-speed microprocessors and versatile design, the ETU600 electronic trip unit can be equipped with several enhanced protection-metering packages to adapt it to any demanding application.

The protection-metering packages are referred to as PMF levels in reference to the standard IEC 60364-8-1. That standard defines what is included in each of the three levels¹.

The PMF packages give ultimate control over which 3WA trip unit features are available. The different levels of protection-metering functionality can be specified when the breaker is ordered or as separate upgrade licenses at a later time. The ETU600 with protection-metering packages is easily customizable and updateable.

¹ Please contact Siemens for the availability of PMF-level calibration per IEC 61557-12

Protective Functions	Standard	PMF-I	PMF-II	PMF-III
Overload (LT)	●	●	●	●
Short-Time (ST)	●	●	●	●
Instantaneous (INST)	●	●	●	●
Ground Fault (GF)	●	●	●	●
Directed Short-time (dST)	–	–	●	●
Reverse Power (RP)	–	–	●	●
Unbalance (voltage, current)	–	–	●	●
Voltage (over-/under voltage)	–	–	●	●
Power (forward, reverse)	–	–	●	●
Frequency (over-/under frequency)	–	–	●	●
Phase Rotation	–	–	●	●
Total Harmonic Distortion (THD)	–	–	–	●

Metering Packages	Standard	PMF-I	PMF-II	PMF-III
Phase current I_{L1}, I_{L2}, I_{L3}	●	●	●	●
Neutral Current I_N	●	●	●	●
Line to Neutral Voltage V_{LN}	–	●	●	●
Line to Line Voltage V_{LL}	–	●	●	●
Active Energy E_a	–	●	●	●
Reactive Energy E_r	–	–	●	●
Apparent Energy E_{ap}	–	–	●	●
Active Power P	–	–	●	●
Reactive Power Q	–	–	●	●
Apparent Power S	–	–	●	●
Power Factor PF	–	–	●	●
Cos phi	–	–	●	●
Frequency	–	–	●	●
Unbalance % V, % A	–	–	●	●
Total Harmonic Distortion THD-I, THD-V	–	–	–	●
Second protection parameter set	–	–	●	●

Note: Power Factor = P/S (Active Power/Apparent Power), cos-phi = the angle between current and voltage of the fundamental.

Software Licenses

The protection and metering functions previously available exclusively through PMF packages are now offered as individual software licenses. These licenses can be purchased and installed separately, based on specific application needs.

Please note that these protection and metering functions require current and voltage monitoring capabilities and are therefore compatible only with the ETU600 electronic trip unit.

Available Software Licenses

Sr. No.	Function	Description	Catalog No.
1.	Ground fault alarm (GF-alarm)	License enabling ground-fault alarm	3WA9111-OES01
2.	Protection function: Add dST and reverse power	License providing enhanced protection function- dST and reverse power measurement	3WA9111-OES05
3.	License for set of only all protection functions	License providing enhanced protection functions of PMF 2 and PMF 3	3WA9111-OES11
4.	Protection function: Phase current and voltage unbalance	License providing enhanced protection function of phase current and voltage unbalance	3WA9111-OES12
5.	Protection function: Under and over-voltage	License providing enhanced protection function of under and over-voltage	3WA9111-OES13
6.	Protection function: Forward and reverse power	License providing enhanced protection function of forward and reverse power	3WA9111-OES14
7.	Protection function: Under and over frequency	License providing enhanced protection function of under and over frequency	3WA9111-OES15
8.	Protection function: THD current and voltage	License providing enhanced protection function of THD current and voltage	3WA9111-OES16
9.	Protection function: Phase rotation	License providing enhanced protection function of phase rotation	3WA9111-OES17
10.	2nd protective parameter set	License enabling 2nd protective parameter set	3WA9111-OES21
11.	Waveform capture	License providing enhanced protection function of waveform capture	3WA9111-OES24
12.	Upgrade metering to PMF 2 (just metering functions)	License providing all metering functions of PMF 2	3WA9111-OES52
13.	Upgrade metering to PMF 3 (just metering functions)	License providing all metering functions of PMF 3	3WA9111-OES53

Key Benefits of Software Licenses

1. Field Upgrade Capability – Easily upgrade breakers on-site without hardware changes.
2. Cost Efficiency – Pay only for the specific functions required, avoiding the cost of full package bundles.
3. Retrofit Compatibility – Ideal for upgrading breakers in retrofit applications.

Ordering and Installation

Software licenses can be ordered via Imall. A valid delivery email address is required at the time of order. The installation link will be sent to this email address, which must belong to the person responsible for implementing the upgrade on the ETU600.

For installation guidance, please refer to the official documentation available on the 3WA product website.

Metering Packages	Standard	PMF-I	PMF-II	PMF-III
Phase current I_{L1}, I_{L2}, I_{L3}	●	●	●	●
Neutral Current I_N	●	●	●	●
Line to Neutral Voltage V_{LN}	–	●	●	●
Line to Line Voltage V_{LL}	–	●	●	●
Active Energy E_a	–	●	●	●
Reactive Energy E_r	–	–	●	●
Apparent Energy E_{ap}	–	–	●	●
Active Power P	–	–	●	●
Reactive Power Q	–	–	●	●
Apparent Power S	–	–	●	●
Power Factor PF	–	–	●	●
Cos phi	–	–	●	●
Frequency	–	–	●	●
Unbalance % V, % A	–	–	●	●
Total Harmonic Distortion THD-I, THD-V	–	–	–	●
Second protection parameter set	–	–	●	●

Note: Power Factor = P/S (Active Power/Apparent Power), cos-phi = the angle between current and voltage of the fundamental.

ETU Accessories

Option Plugs

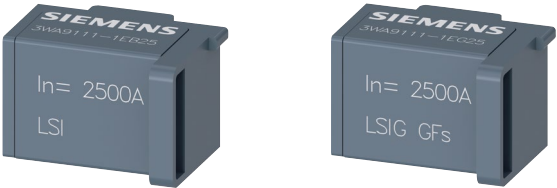
Both the ETU300 and ETU600 utilize Option Plugs to set both the 100% rating of the circuit breaker and enable different ground fault protection solutions. The ETU continuously monitors for the presence and validity of the option plug. If there is no option plug or the plug rating exceeds the breaker frame rating, the breaker will trip and display an error upon boot-up.

There are three kinds of Option Plugs: LSI, LSI GFs and LSI GFx. GF alarm is available in ETUs with LSIgx or LSIg option plug. GF Alarm is also available with PMF-II and PMF-III packages or can be purchased as a license key and installed using Powerconfig software. LSI GFs (standard) provides GF protection settable up to 1200A and can be used with both UL489 and UL1066 breakers. LSI GFx (extended) provides GF protection settable up to 2000A and can only be used in UL1066 breakers.

For overall rating options based on breaker size see the table below.

Option Plugs				
Description	Catalog No.	No Ground Fault - UL489 or UL1066 Ground Fault Max: 1200A - UL489 or UL1066 Ground Fault Max: 2000A - UL1066 only		
	3WA9111-1EB ...			
	3WA9111-1EG ...			
	3WA9111-1EX ...			
Ratings				
Rated current	Frame size I	Frame size II	Frame size III	Catalog Number No. Ext.
200 A	●	●	—	72
225 A	●	●		71
250 A	●	●		02
300 A	●	●		73
315 A	●	●		03
350 A	●	●		74
400 A	●	●		04
450 A	●	●		75
500 A	●	●		05
600 A	●	●		76
630 A	●	●		06
700 A	●	●		07
800 A	●	●	●	08
1000 A	●	●	●	10
1200 A	●	●	●	11
1250 A	●	●	●	12
1600 A	●	●	●	16
2000 A	●	●	●	20
2500 A	—	●	●	25
3000 A		●	●	30
3200 A		● *	●	32
4000 A		—	●	40
5000 A			●	50
	Example GF Standard:	3WA9111-1EBO8	800A - FS I, II, & III	
	Example GF Extended:	3WA9111-1EX32	3200A - FS III only	
	Example LSI - only:	3WA9111-1EB25	2500A - FS II & III only	

* Frame Size 2, 3200A option plugs are only available for 3WA3 breaker frames





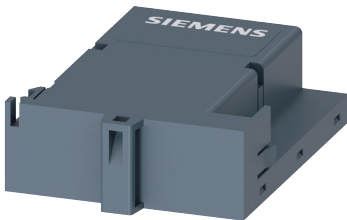
Voltage Tap Modules

The 3WA circuit breaker with an ETU600 has the capability to measure primary voltages on the top or bottom primary stabs. Available factory-installed or as a field-installable retrofit, the Voltage Tap Modules eliminate the need for external Voltage Transformers required for metering and protection.

There are two types available:

- VTM680 is for applications up to 690V and supplies control power to the ETU in which it is installed if permanently supplied with line side voltage.
- VTM640 is for applications between 690V and 1000V but does not supply control power to the ETU.

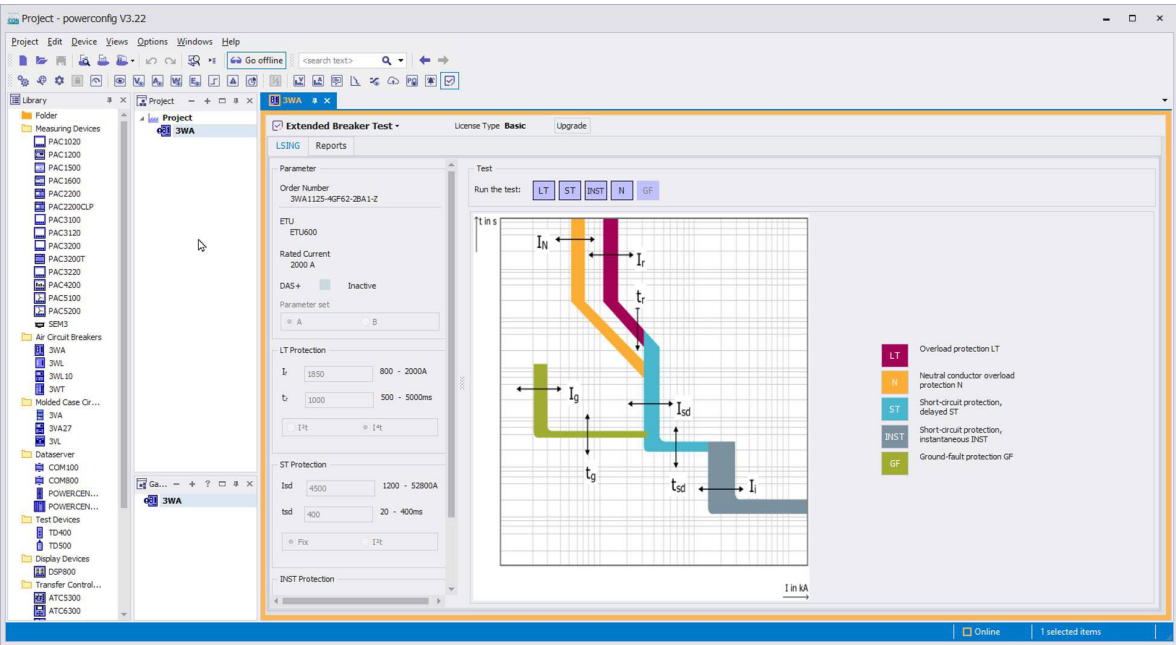
The V-tap option is configurable for either upper or lower primary terminal connections and can be changed in the field if necessary. The wiring between the bus taps and the ETU is fused for protection.



Digital Tools

SENTRON powerconfig

SENTRON powerconfig is a multifunctional software tool to help with anything from commissioning to monitoring to testing. Available as either a desktop application or mobile app, SENTRON powerconfig gives you access to all details of the 3WA breaker. Connect to the ETU600 either through a communications module, USB-C or optional Bluetooth, and SENTRON powerconfig will show all details associated with the protection parameters and status.

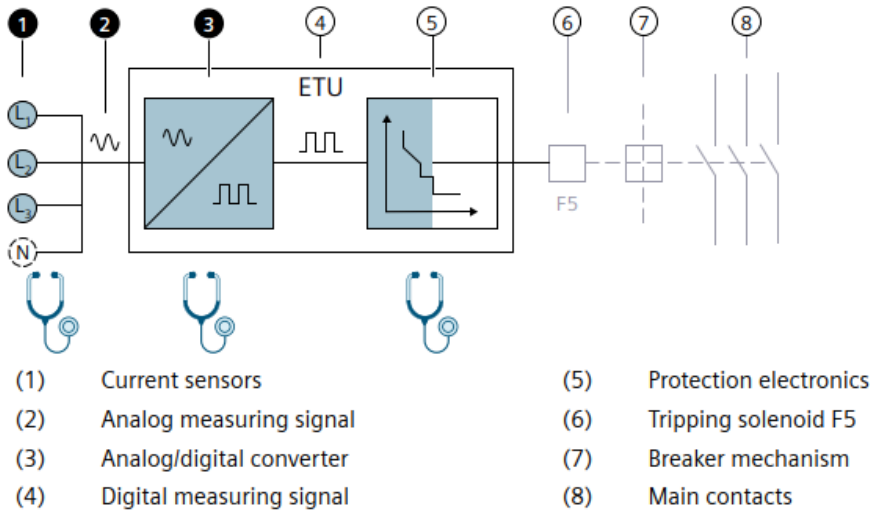


The Basic SENTRON powerconfig software is available for free download online. There is also an Advanced option which provides more complex testing options and the ability to export and print test reports as PDF files. Regardless, the SENTRON powerconfig is a great tool to utilize throughout the lifecycle of the 3WA breaker and the application.

Testing

The 3WA is built with testing and verification in mind. Using a combination of the ETU as well as the SENTRON powerconfig software the entire functionality of the breaker can be tested and verified. When the testing is complete, a copy of the test report is generated and can be printed as a PDF through the SENTRON powerconfig software. A local copy is also saved on the ETU so that information on the last inspection is always available.

The 3WA ETUs are continuously monitoring all aspects of the performance of the breaker electronics as indicated in points 1 through 5. This self-monitoring checks the current sensors, the analog to digital converter, and the ETU. Any problem detected is immediately reported to ensure fault-free performance.



To demonstrate that all aspects of the circuit breaker are operating at peak performance, software assistance is required. SENTRON powerconfig provides a complete solution to accomplish this.

With powerconfig, the components indicated in the graphic above can be tested and verified. The software mimics the signals the ETU would see during a fault on the power system. Many different types of faults can be simulated to demonstrate that the ETU will behave as expected: phase overcurrent, phase unbalance, short circuits. The ETU will treat the signal as an actual event and behave as it is programmed. Because the ETU is not in a special test mode, no expected ETU behavior will be affected. When the ETU determines it is time to trip, the trip solenoid, breaker mechanism and contacts will all be exercised (trip/open). For this reason, a Digital Test which could result in a trip should only be done when a trip will not interrupt facility operations. This gives a complete picture of the functionality of the breaker and gives far more detailed testing options.

Due to its lack of an application processor, Digital Testing with powerconfig cannot be used with the ETU300.



Communications

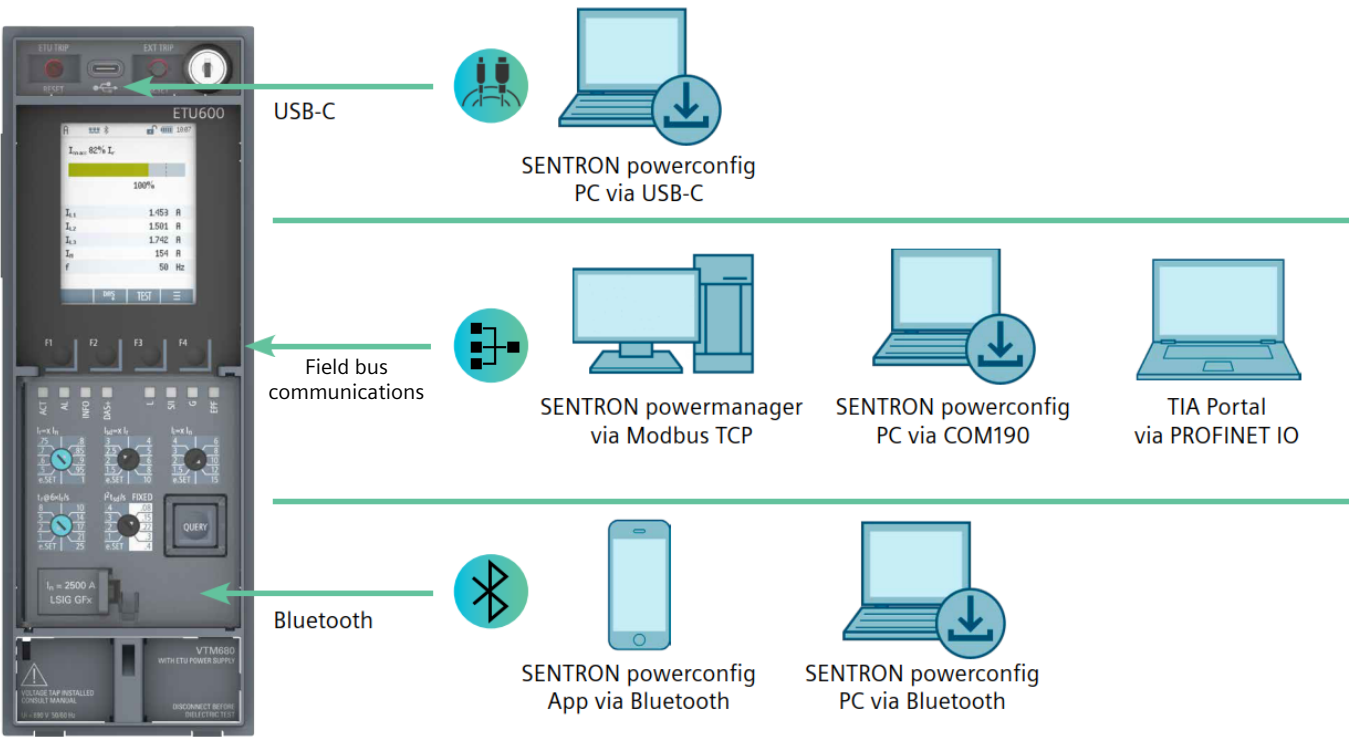
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Communications

3WA Circuit Breakers are essential components of electrical systems that require protection from overloads and other electrical faults. They play a crucial role in ensuring the safety and reliability of electrical equipment and systems. However, simply having circuit breakers installed is not enough - proper communication and control are necessary to effectively manage and monitor these devices.

This is where 3WA communication modules and abilities come into play. Communications modules as well as other accessories such as remote operators and status indicators, enable operators to monitor and control circuit breakers from a safe distance, minimizing the risk of injury or damage to equipment and providing valuable information on loads. The addition of a communications interface, such as for PROFINET, PROFIBUS, Modbus TCP or Modbus, allows real-time monitoring and data transfer as well as remote access to circuit breaker information, all of which are critical for efficient maintenance and troubleshooting.

These interfaces provide flexible options for connecting the circuit breaker to external devices and systems, enabling remote monitoring and control capabilities.



The USB-C interface allows the connection of a laptop running powerconfig for the purpose of testing or setting of the ETU parameters. It also allows the connection of a power bank to power the ETU to set parameters manually.

CubicleBUS² is the Siemens internal communication bus that connects all the devices that make up a 3WA breaker. External CubicleBUS2 devices currently include the following:

- COM190 – Modbus TCP / PROFINET IO communications module
- COM150 – Modbus RTU communications module
- IOM240 – input/output module
- IOM350 – high-power I/O module
- ZSI200 – Zone Selective Interlocking module

The CubicleBUS² system is continuously monitored, and the status of connected devices can be checked on the screen of the ETU600.

The optional Bluetooth interface allows users to connect to the ETU with Sentron powerconfig using either a laptop computer or the mobile app. This allows operators to operate at a safe distance while changing parameters, testing, and monitoring the breaker. This would allow an operator to stay outside of the arc flash boundary while interacting with the breaker over Bluetooth. The Bluetooth function can be disabled temporarily or permanently if desired.

The USB-C and Bluetooth interfaces allow easy and secure access to Siemens 3WA circuit breakers, making them simpler to manage and maintain. Utilizing one of these interfaces, technicians can quickly and easily configure and monitor the circuit breaker from a variety of devices, enhancing its functionality and flexibility.

Utilizing a communications module connected to the breaker via CubicleBUS allows breakers to be networked and integrated into plant SCADA or EPMS systems utilizing PLCs and/or host computers from Siemens and many other vendors.

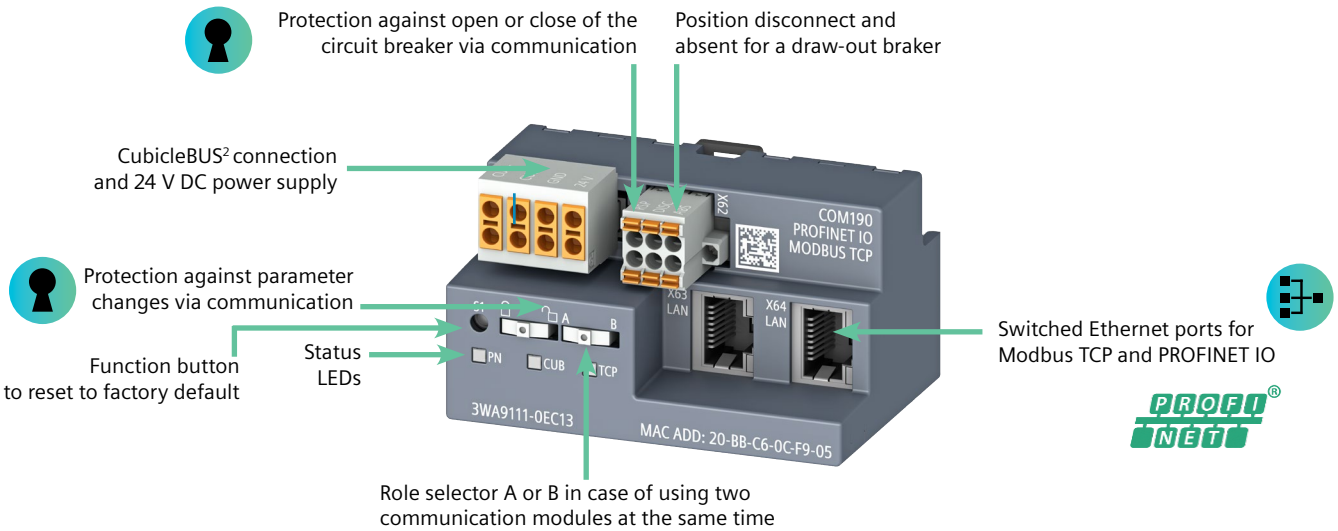
Communication Modules

COM150, Modbus RTU Module

Implementing the widely-used Modbus RTU protocol over an RS485 interface, the COM150 can be easily integrated into a power monitoring system. The module implements a physical switch which sets the device to read-only mode ensuring that remote parameter changes cannot be made. It includes a switchable bus terminating resistor, simplifying integration. With easily understood status LEDs and a communication that is continuously monitored, using a COM150 is straightforward and intuitive.

COM190, PROFINET IO – Modbus TCP module

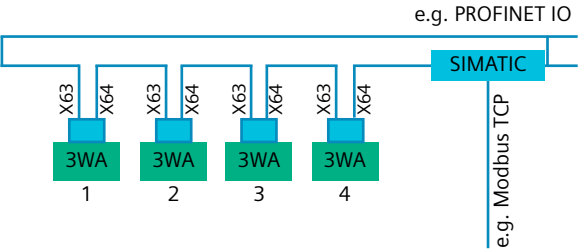
The COM190 module implements two industry-standard protocols: PROFINET I/O and Modbus TCP and allows both to be used simultaneously. Equipped with two switched Ethernet ports, the COM190 offers the flexibility to connect in multi-master, hub-and-spoke, daisy-chain and ring configurations. It is also possible to connect two communications modules (2x COM190s or 1xCOM190 and 1x other) to give redundant communications. The modules allow specifying primary and secondary roles to ensure the system always stays connected. Like all other 3WA communications modules, it has a physical switch to put the device into read-only mode.



The COM190 security features include the ability to whitelist IP addresses, change the Modbus TCP port number and be configured for either read-only or read-write access. It can also maintain system time using an NTP server. When using PROFINET IO, the COM190 maintains the highest conformance class (Conformance Class C) and the highest netload class (Netload Class III) and supports ring redundancy (MRP) by virtue of the two switched Ethernet ports. It supports a data rate of 100Mbps/sec on both RJ45 interfaces.

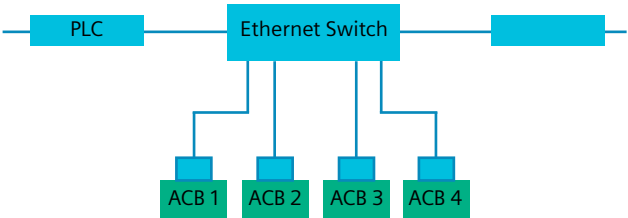
The COM190 provides market leading communications ability for even the most demanding applications.

Advantage in architecture solution with COM190



- Advantage**
- 2 Ethernet connection, works in a ring = always available (even after a fault/disconnection (**redundant**))
 - No separate switch required
 - No separate installation slot required
 - Isochrone real-time-capable (CC = Class C)
 - Ring topology is supported
 - Highest performance of any PROFINET module on the market
 - Small wiring outlay

Standard market solution



- Disadvantage**
- Separate switch required
 - Separate installation slot required
 - Only real-time-capable with PLC (Not Class C)
 - Ring topology is not supported
 - Increased wiring outlay
 - Increased susceptibility to faults

IO Modules

Siemens 3WA circuit breakers can be equipped with two different I/O (Input/Output) modules: IOM230 & IOM350. These modules allow the trip unit or communications module to monitor the operation of external status contacts and control external devices.

The outputs of the modules can be controlled by setpoints or alarms in the trip unit or to open/close based on communicated commands. The inputs can be configured to activate DAS+, change the active parameter set or to simply pass the status of that input to the communications module. For example, utilizing an I/O module to communicate the status of a transformer overtemperature contact and control a fan thus eliminating the need for additional PLC I/O ports or wiring. It can also monitor the status of a generator breaker and if it is closed – indicating a transfer to a backup power source – it can switch to Parameter Set B, an alternate set of parameters appropriate to protecting with the backup source feeding the load.

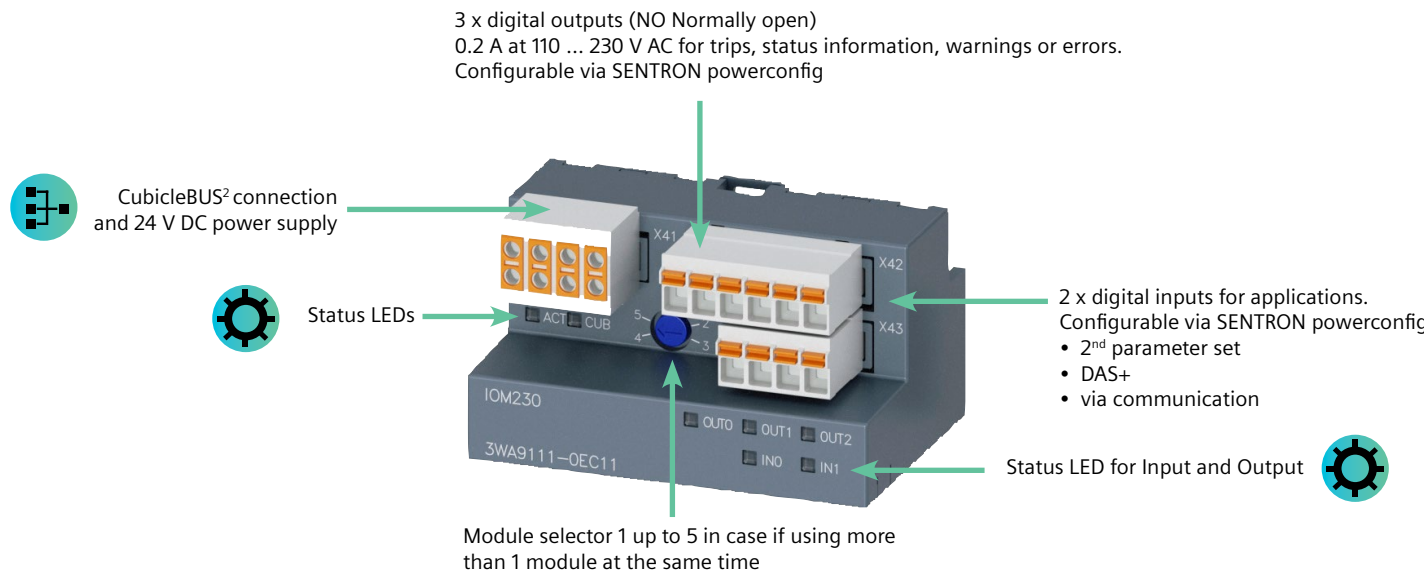
Although the ETU600 features I/O for DAS+ activation and indication, the inputs and outputs of the I/O modules can be programmed to do the same thing if the application requires it.

Overall, the I/O modules for Siemens 3WA circuit breakers provide an efficient and reliable way to enhance the performance and functionality of the 3WA breakers, making them a popular choice for a variety of applications in industries such as power generation, distribution, and automation.

IOM230

The IOM230 has 2 inputs and 3 outputs. The outputs are solid state Form A contacts capable of handling up to 230V ac. The inputs are likewise solid state and designed to interface directly with 24V dc signal levels. If there is a need for additional monitoring, up to 5 IOM230s modules can be used at the same time. The module selector dial makes designating modules intuitive and simple. Wire to any external device such as a switch or PLC or configure through SENTRON powerconfig to monitor parameters within the ETU. The IOM230 can be mounted on the breaker or cradle as well as on a DIN rail in an auxiliary compartment.

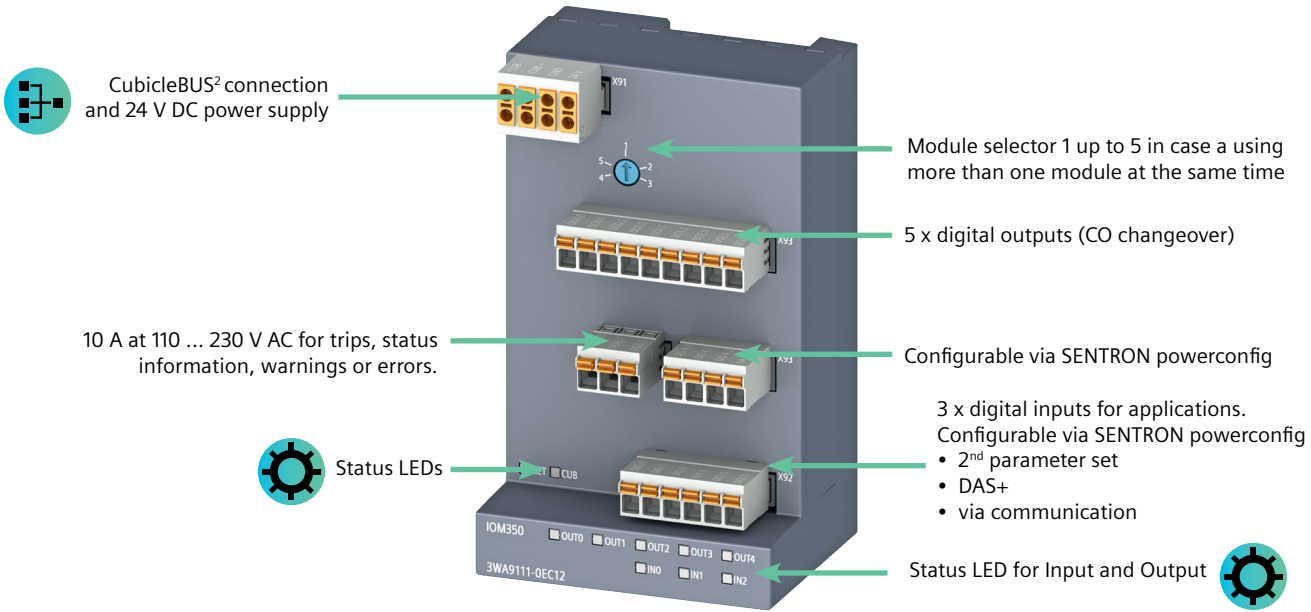
CubicleBUS² Module



IOM350

The IOM350 has 3 inputs, and 5 dry-contact Form C relay outputs for additional flexibility. The outputs are capable of switching AC loads up to 230V ac, and like the IOM230, the inputs are solid state. Also like the IOM230, up to 5 IOM350 modules can be connected to one breaker. Unlike the IOM230, the IOM350 can only be mounted on a DIN rail.

CubicleBUS² Module



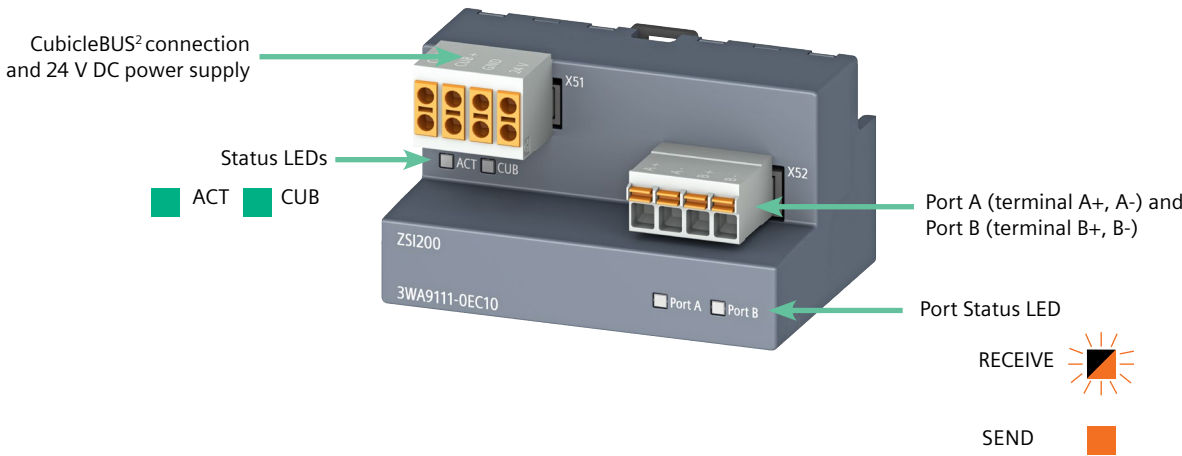
	IOM230	IOM350
Number of inputs	2	3
Number of outputs	3	5
Type of output contact	Normally Open (Form-A)	Changeover (Form-C)
Maximum continuous current of an output at 110 ... 230 V AC	0.2 A	10 A
Mounting on the circuit breaker?	yes	no
Maximum number of I/O modules	5	5

Zone Selective Interlocking

Zone Selective Interlocking (ZSI) is a system used in low voltage electrical distribution systems to enhance selectivity, improve system reliability and reduce damage caused by faults. ZSI is a method of coordinating between circuit breakers located at different levels of a power system.

The purpose of ZSI is to detect and isolate faults within a specific area or zone of the power distribution system while minimizing the impact on the rest of the system. The ZSI scheme operates by linking protective devices located at different levels of the power system to minimize fault clearing time and therefore equipment damage. If a fault occurs, the circuit breaker closest to the fault detects the fault and communicates to upstream devices that it has done so. The upstream devices will then wait their normal delay times while the breaker closest to the fault clears it with a minimum delay known as “ZSI Time”. This communication, referred to as a “blocking signal” is the key. If a device sees a fault but does not see a blocking signal, it knows it must trip as quickly as possible to clear the fault. If it sees a fault and does get a blocking signal, it waits for the downstream breaker to do its job. ZSI allows for shorter fault clearing times and minimal system disruption.

CubicleBUS² Module

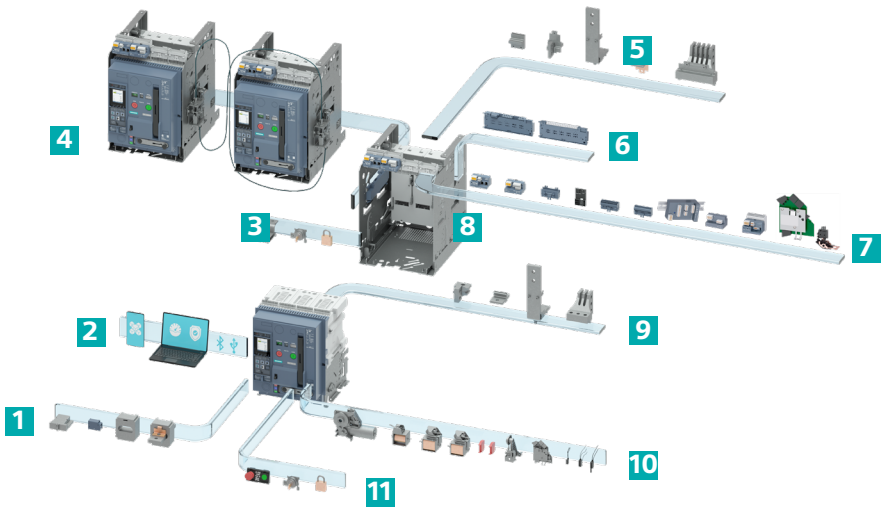


The Siemens ZSI200 module is required for the 3WA ETU600 trip unit to communicate with other devices in the system. The method of communicating between ZSI devices is common across the entire family of Siemens protective devices so integrating 3WA into existing apparatus with WL, 3VA and 3VL breakers is simple and straightforward. Take coordination and protection to the next level with Siemens 3WA ZSI.

3WA Accessory Guide

Accessories Overview

Siemens circuit breakers are designed to provide reliable protection for electric power systems. In addition to the circuit breakers themselves, Siemens offers a range of accessories that can be used to enhance the functionality and performance of the breakers. The 3WA accessories provide a range of features, including auxiliary switches, alarm switches, shunt trips, undervoltage releases, and lockout devices. These accessories can be used to remotely monitor, effectively control, and enhance access to the circuit breaker. Overall, the 3WA Siemens circuit breaker accessories are a valuable addition to any electrical system, providing enhanced protection and control capabilities.



- 1. Electronic trip unit (ETU)
- 2. Enhanced protective functions can be activated for the ETU
- 3. Interlocking solutions for draw out design
- 4. Interlocking solutions with Bowden cable
- 5. Main connection variants for guide frame
- 6. Position signaling switch (PSS) for the guide frame
- 7. Interface/COM-module/Aux. terminals
- 8. Cradle with shutter
- 9. Main connection variants for fixed mounted design
- 10. Internal accessories: aux. release, motor operator, aux. contacts
- 11. Locking solutions for fixed-mounted design

Configurable Accessories and Spare Parts

For many of the accessories in this section there is an option to have the accessory installed as part of the breaker or ordered as a loose accessory. To configure the accessory with the breaker, look for the Z-option code and incorporate at the end of the catalog number. This will ensure the breaker is delivered with the accessory already installed. In an instance where a spare accessory is needed, use the catalog number to order the accessory and it will be supplied loose.

Standard Installed Accessories

To simplify the planning, configuration, and ordering process the 3WA comes with a number of standard accessories. These commonly used components are included with each breaker, independent of configuration.

Item No.	Description
1	Shutter
2	Automatic reset of reclosing lockout standard with every breaker
3	2NO + 2NC auxiliary switches
4	Ready-to-close signaling contact
5	1st trip alarm contact
6	Spring charged signaling contact

Cradles and Cradle Accessories

Cradles

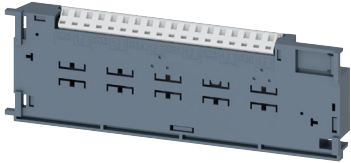
The Siemens 3WA cradle is designed and built to help safely rack in and out the 3WA breaker. Using high quality materials and minimal fasteners, this market leading cradle will withstand the test of time. Keep all connections the same while servicing or swapping breakers, with no need to open the cabinet door to rack in or out. The 3WA cradle also offers numerous locking solutions for withdrawable breakers that can be integrated into the cradle, the cabinet door or the racking handle.



To configure a cradle, either reference the MLFB structure or visit the online configurator.

Position Signaling Switch (PSS)

A PSS device is offered for draw-out breakers to provide remote indication of the circuit breakers primary and secondary contact connections (racking positions). The PSS contacts are activated when the breaker is racked into the connected, test, or disconnected positions. These are also referred to as truck operated contacts (TOC).

	Description	Catalog No.
	PSS321: 3× connected position, 2× test position, 1× disconnected position	3WA9111-0AH11
	PSS111-COM: 1x connected position, 1x test position, 1x disconnected position and option for connection to a communications module	3WA9111-0AH12
	PSS400-COM: 4X Connected Position and option for connection to a communication module	3WA9111-0AH13
	PSS600: 600 connected	3WA9111-0AH14

Mechanism Operated Contacts

Mecahnism Operated Contacts (MOC) are cradle mounted accessories which indicated the state of the breakers internal contacts (open or closed). MOCs are typically utilized when additional auxiliary contacts are necessary – above and beyond the number configurable in the circuit breaker.

	Description	Catalog No.
	Frame Size 1 and 2, 4x connected	3WA9111-1AG81
	Frame Size 3, 4x connected	3WA9111-1AG82
	Frame Size 1 and 2, 4x connected, 1x test	3WA9111-1AG83
	Frame Size 3, 4x connected, 1 x test	3WA9111-1AG84
	Frame Size 1-3, Fixed mount, 4x connected	3WA9111-1AG85

Trip Units and Communications

Option Plugs

The option plug sets the 100% rating of the circuit breaker and therefore the value off of which the protective functions are based. Use of an option plug that exceeds the labeled frame rating of the breaker will result in the ETU displaying an error and automatically tripping the breaker. Option plugs can be changed in the field. The difference between an option plug and a rating plug is the ability to specify the protective functions of the ETU. Option plugs are available with LSI and LSIG functions, to select the correct option plug, add the last two digits that correspond to the rated amperage to the desired protective function.

Option Plugs				
Description	Catalog No.			
LSI	3WA9111-1EB ...	No Ground Fault - UL489 or UL1066		
LSIG GFs - Standard	3WA9111-1EG ...	Ground Fault Max: 1200A - UL489 or UL1066		
LSIG GFx - GF Extended	3WA9111-1EX ...	Ground Fault Max: 2000A - UL1066 only		

Ratings				
Rated current	Frame size I	Frame size II	Frame size III	Catalog Number No. Ext.
200 A	●	●		72
225 A	●	●		71
250 A	●	●		02
300 A	●	●		73
315 A	●	●		03
350 A	●	●		74
400 A	●	●		04
450 A	●	●		75
500 A	●	●		05
600 A	●	●		76
630 A	●	●		06
700 A	●	●		07
800 A	●	●	●	08
1000 A	●	●	●	10
1200 A	●	●	●	11
1250 A	●	●	●	12
1600 A	●	●	●	16
2000 A	●	●	●	20
2500 A		●	●	25
3000 A		●	●	30
3200 A	–	● *	●	32
4000 A			●	40
5000 A		–	●	50
	Example GF Standard:	3WA9111-1EB08	800A - FS I, II, & III	
	Example GF Extended (3WA3 and ETU600 only):	3WA9111-1EX32	3200A - FS III only	
	Example LSI - only:	3WA9111-1EB25	2500A - FS II & III only	

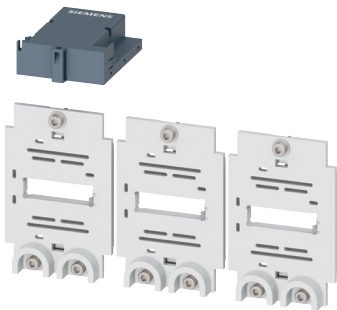
* Frame Size 2, 3200A option plugs are only available for 3WA3 breaker frames

Voltage Taps

Ideally, a voltage tap is specified during the initial configuration of a breaker. However, if it is desired to add voltage sensing to breakers not so equipped at the factory, there are a number of kits which provide the necessary parts. In addition, if it becomes necessary to switch the voltage sensing points from top to bottom or bottom to top, kits are available for that as well.

If it becomes necessary to adapt a 3WA breaker to use existing external voltage transformers, there is a kit for installing the necessary wiring as well.

External voltage transformer kits allow the 3WA breaker to connect to external voltage transformers, including those that may already be present with legacy breakers such as the WL breaker, for maintaining existing functionality.

	Ordering Info		
	Description	Frame Size and Poles	Catalog No.
	Move voltage tap from lower stab to upper stab	1, 3-pole	3WA9111-OEK11
		2, 3-pole	3WA9111-OEK12
		3, 3-pole	3WA9111-OEK13
		1, 4-pole	3WA9111-OEK21
		2, 4-pole	3WA9111-OEK22
		3, 4-pole	3WA9111-OEK23
	Move voltage tap from upper stab to lower stab	1, 3-pole	3WA9111-OEK31
		2, 3-pole	3WA9111-OEK32
		3, 3-pole	3WA9111-OEK33
		1, 4-pole	3WA9111-OEK41
		2, 4-pole	3WA9111-OEK42
		3, 4-pole	3WA9111-OEK43
	V-tap for Upper Stab Contact Only	1, 3-pole, S, M, H, C	3WA9111-OEK51
		2, 3-pole, S, M, H, C	3WA9111-OEK52
		3, 3-pole, S, M, H, C	3WA9111-OEK53
		1, 3-pole, E	3WA9111-OEK55
		2, 3-pole, E	3WA9111-OEK56
		3, 3-pole, E	3WA9111-OEK57
		1, 3-pole, S, M, H, C	3WA9111-OEK61
		2, 3-pole, S, M, H, C	3WA9111-OEK62
		3, 3-pole, S, M, H, C	3WA9111-OEK63
		1, 4-pole, E	3WA9111-OEK65
		2, 4-pole, E	3WA9111-OEK66
		3, 4-pole, E	3WA9111-OEK67
	Connect to external voltage transformer	Only FSII, FSIII	3WA9111-OEK81

Sealable and Lockable ETU Cover

The ETU cover prevents unauthorized interaction with the electronic unit. Each breaker is delivered with the lower cover for the rotary switches. To receive a cover for the trip indicator on the upper portion of the ETU, include F40 in the breaker configuration.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Replacement cover for ETU300	–	3WA9111-OEM21
	Replacement cover for ETU600	–	3WA9111-OEM22
	Cover for reset indicator	F40	–

Remote Trip Alarm Reset Coil

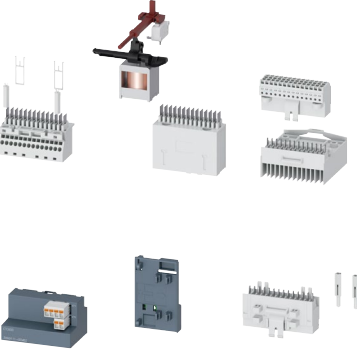
The Remote Trip Alarm Reset coil is used to reset the bell alarm and tripped indicator above the ETU. Unless a breaker is ordered with the K02 option, it will be immediately ready to close again after a trip. This functionality is provided by a reset spring which resets the tripping solenoid but not the Bell Alarm or tripped indicator. The K02 option removes the reset spring so that the breaker must be manually reset after a trip in order to be closed. Reset is accomplished by depressing the tripped indicator over the ETU. The remote reset solenoid cannot be used with breakers ordered with the K02 option or where the trip solenoid reset spring has been removed in the field. The remote reset solenoid comes with a clearing contact to prevent damage if power remains applied after the reset is complete.

	Technical Information	
	Voltage	240VAC 50/60Hz
Remote Reset Coil AC Operation	Instantaneous Current	8A
	Breaking Current	5A
Remote Reset Coil DC Operation	Voltage	24, 48, 125 or 250VDC
	Instantaneous Current	.4A @ 24, 48, 125VDC, .2A @ 250VDC
	Ordering Information	
	Voltage	Catalog No.
	24V ac	3WA9111-OEM42
	48V ac	3WA9111-OEM44
	120V ac / 125V dc	3WA9111-OEM45
	208V ac, 240V ac, 240V dc	3WA9111-OEM46

Secondary Trip Solenoid and External Trip Controller ETC600

The 3WA breaker can be equipped with a second trip solenoid. This second solenoid is identical to the one actuated by the trip unit but is accessible external to the breaker. It has the added feature of requiring manual intervention to reset and allow the breaker to be closed after a remote tripping event. This second trip solenoid is controlled through the ETC600 external trip adapter. Any application requiring remote tripping and lockout can use the ETC600 and secondary trip solenoid. It operates at a speed faster than the ETU due to no processing time.

Ordering Info		
Description	Catalog No.	
Secondary tripping solenoid	3WA9111-0EM61	
ETC600	3WA9111-0EM62	

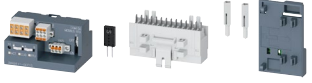


Communication Modules

COM150

The COM150 communications module provides data, control and parameter transfer via Modbus RTU over RS485. The COM150 can be mounted on the breaker (fixed mount or draw-out) as well as on a DIN rail in a control compartment.

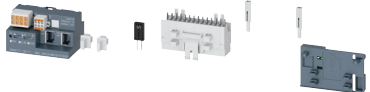
Ordering Information		
Description	Z-Option	Catalog No.
COM150	F15	3WA9111-0EC15



COM190

The COM190 communications module supports PROFINET and Modbus TCP to transfer data, set parameters and control the circuit breaker. Both protocols can be used simultaneously and independently and support energy management and automation systems. The COM190 can be mounted on the breaker (fixed mount or draw-out) as well as on a DIN rail in a control compartment.

Ordering Information		
Description	Z-Option	Catalog No.
COM190	F19	3WA9111-0EC13



COM150

The COM150 communications module provides data, control and parameter transfer via Modbus RTU over RS485. The COM150 can be mounted on the breaker (fixed mount or draw-out) as well as on a DIN rail in a control compartment.

ZSI Module

The ZSI200 module adds Zone selective Interlocking capability to a 3WA breaker. It allows breakers at different levels of the power system to communicate whether they have seen a fault and change trip times accordingly, allowing for faster fault clearance. The ZSI200 module interfaces seamlessly with WL & 3VA and other members of the Siemens family of circuit protection products. It can be mounted either on the breaker or on a DIN rail in a control compartment.

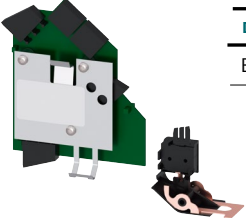
Ordering Information		
Description	Z-Option	Catalog No.
ZSI200 Module	F20	3WA9111-0EC10



Breaker Status Sensor

The Breaker Status Sensor is an integrated circuit device that measures the internal breaker temperature, monitors breaker main contact position (open or closed), bell alarm status, shunt trip status, breaker ready-to-close and closing spring charged status. All status conditions and information is transmitted through the CubicleBus network as real-time data. Used in conjunction with a COM190 or COM150 the status can be exported to a computer or monitoring equipment.

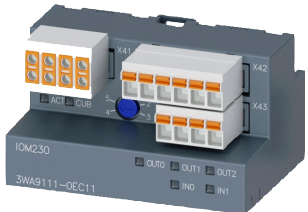
Ordering Information		
Description	Z-Option	Catalog No.
Breaker Status Sensor BSS200	—	3WA9111-0EC40



Digital Input / Output Modules

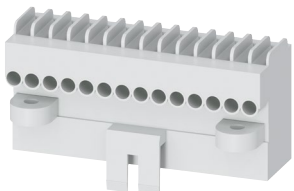
Digital Input and Output modules make it possible for the breaker to communicate with secondary devices. Typically a digital input/output is used to switch parameter sets or activate DAS. They can also be used to output alarms and events. There are two options for digital IO modules the IOM230 and IOM350.

	IOM230	IOM350
Number of inputs	2	3
Number of outputs	3	5
Type of output contact	Normally Open (Form-A)	Changeover (Form-C)
Maximum continuous current of an output at 110 ... 230 V AC	0.2 A	10 A
Mounting on the circuit breaker?	yes	no
Maximum number of I/O modules	5	5

	Ordering Information		
	Description	Z-Option	Catalog No.
	IOM230	F23	3WA9111-OEC11
	IOM350	–	3WA9111-OEC12

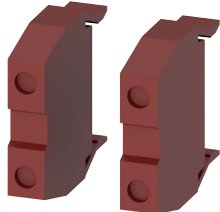
Secondary Disconnects

Secondary disconnects are used to connect external breaker controls to the internal signaling circuitry of the breaker. The disconnects come ins 3 different types of connection including screw, push-in and ring lug connection. Push-in connections are standard and allow for quick wiring with push and stick technology. These secondary disconnects are also vibration resistant and don't require maintenance. The compression screw type is favored because it doesn't require terminals and the head of the screw connection is front accessible and can be used as a testing point for continuity. Finally ring lug connections are established technology proven to work over time. The disconnects can be supplied as standard or partially via Z-option.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Base part	-	3WA9111-OAB01
	1000 V extension	-	3WA9111-OAB02
	Manual connector: Screw connection	N03	3WA9111-OAB03
	Manual connector: Push-in connection	-	3WA9111-OAB04
	Manual connector: Ring lug connection	N05	3WA9111-OAB05
	Coding kit: For fixed-mounted X5 to X8	-	3WA9111-OAB07
	Sliding contact module: For guide frames	-	3WA9111-OAB08
	Blanking block	-	3WA9111-OAB12

Auxiliary Contacts

Auxiliary contacts are typically used to provide interlocking control or remote indication of the breakers contact position. Normally Open (NO) contacts are open when the breaker is open. Normally Closed Contacts (NC) are closed when the breakers contacts are open.

	Ordering Info	
	Description	Catalog No.
	2 a + 2 b	3WA9111-OAG01
	2 a	3WA9111-OAG02
	1 a + 1 b	3WA9111-OAG03

2nd Bell Alarm

The 1st bell alarm is installed and supplied as a standard accessory with every circuit breaker. A 2nd bell alarm can be installed, only on those breakers with electronic trip units.

	Ordering Information		
	Description	Z-Option	Catalog No.
	2nd Bell Alarm	S25	3WA9111-OAH03

Spring Charge Signaling Contact

The spring charge signaling contact gives an indicator that the internal spring is charged. This items is standard when a spring charging motor is installed. If a circuit breaker with a spring charging motor is retrofit, the spring charge signaling contact can also be retrofit.

	Ordering Information		
	Description	Z-Option	Catalog No.
	1 NO Contact	S21	3WA9111-OAH06

Locking Solutions

General Solutions

Spring Charging Handle Lock

The Spring charge handle lock is used to prevent the manual charging of the closing springs. The lock is installed on the breaker front cover and can be used with a padlock with latch up to 3/8 in diameter.

Ordering Information		
Description	Z-Option	Catalog No.
Without padlock	S33	3WA9111-0BA71



Locking Provision against the Unauthorized closing, in operator panel

The locking provision against unauthorized closing prohibits the breaker from being closed unintentionally. All 3WA2/3 breakers include a padlock hasp lockout/tagout provision. In addition to this, a lock cylinder can be installed.

Ordering Information		
Description	Z-Option	Catalog No.
Assembly kit FORTRESS or CASTELL	S05	3WA9111-0BA31
Made by RONIS	S08	3WA9111-0BA32
Provision for Kirk/Superior	S06	3WA9111-0BA33
Made by PROFALUX	S09	3WA9111-0BA34
Made by CES	S01	3WA9111-0BA35
Made by IKON	S03	3WA9111-0BA36
Assembly kit for padlocks *	S07	3WA9111-0BA37



* The Kirk/Superior provision accepts a Kirk or Superior/Yale lock cylinder.
The cylinder itself must be ordered separately.

Automatic Reset of Reclosing Lockout

All 3WA2/3 breakers are able to be reset after a trip. To require a manual reset prior to reclosing, the K01 option must be ordered. The factory will remove the reset spring prior to shipment. The reset spring can also be removed easily in the field.

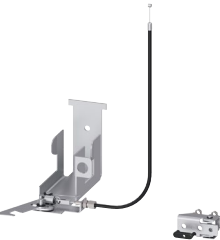
Ordering Information		
Description	Z-Option	Catalog No.
for use with ETU300 or ETU600	K01	3WA9111-0EM31



Mechanical Interlock for Cabinet Door if Breaker is Closed

This accessory is designed to prevent the opening of the cabinet door when the breaker is in the closed position. There are optional defeat instruction included if that feature is desired. In addition the mounting template for modification of the circuit breaker door is included with the accessory.

Ordering Information		
Description	Z-Option	Catalog No.
Fixed-mounted circuit breaker	S30	3WA9111-0BB12
Guide frames	R30	3WA9111-0BB13



Interlocking Systems

Key interlocking system to prevent paralleling unsynchronized sources for 3 circuit breakers. Includes CES lock cylinders and two identical keys so at most two breakers can be closed simultaneously.

Ordering Information		
Description	Z-Option	Catalog No.
3-Breaker Interlock	–	3WA9111-0BA43



Drawout Specific Locking Provisions

Cradle Mounted Keylock

This keylock is mounted within the cradle, and keeps the breaker locked in the OPEN position. Available with several keylock cylinder options, the provision can be used with up to two key cylinders.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Made by CES Locks, cylinders and keys included	R61	3WA9111-0BA51
	Made by IKON Locks, cylinders and keys included	–	3WA9111-0BA53
	Made by KIRK-Key Lock cylinders must be ordered separately	–	3WA9111-0BA57
	Made by RONIS Locks, cylinders and keys included	R68	3WA9111-0BA58
	Made by PROFALUX Locks, cylinders and keys included	R60	3WA9111-0BA50

Keylock Open / Close Buttons

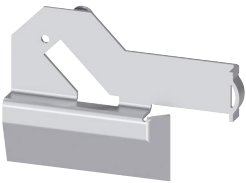
Every 3WA circuit breaker includes manual CLOSE and OPEN buttons in the front. The optional button keylock accessory restricts the ability to operate one of these buttons to a key operation. When the keylock is installed over the CLOSE button, key operation is required to close the circuit breaker. Likewise, when the keylock is installed over the OPEN button, key operation is required to open the circuit breaker.

Note that this accessory only impedes access to the pushbutton controls. Other means may be used to close and open the circuit breaker, such as electrically operated accessories including shunt trip devices, undervoltage trip devices, and remote close coils.

Ordering Information		
Description	Z-Option	Catalog No.
Keylock Open/ Close buttons made by CES	N/A	3WA9111-0BA22

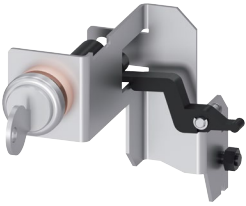
Open Door Racking Lock

Accessory to prevent racking of a draw-out breaker when the cubicle door is open.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Racking lock	R50	3WA9111-0BB15

Racking Handle Key Lock

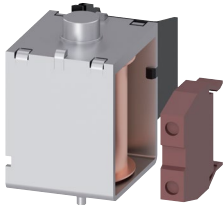
For draw-out breakers, the racking handle key lock provides control over the racking position of the breaker. With the option for an assortment of different lock cylinders, the breaker can be locked in three separate positions, connect, test or disconnect. These locks are available in Kirk or Superior types and are uniquely keyed.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Made by CES	S71	3WA9111-0BA73
	Made by IKON	–	3WA9111-0BA75
	Made by PROFALUX	S75	3WA9111-0BA76
	Made by RONIS	S76	3WA9111-0BA77
	Provision for Kirk/Superior cylinders*	–	3WA9111-0BA80
* Lock cylinders must be ordered separately.			

Internal Accessories

Shunt Trip and Closing Coils (intermittent duty)

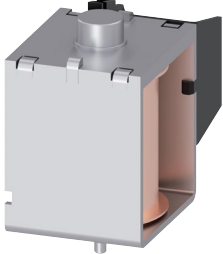
The intermittent duty (5%) shunt trips are standard for use in North America. A shunt trip gives the ability to remotely open the circuit breaker in an instant when energized by a control power source. The Closing Coil gives the opposite result which is closing the breaker when receiving the signal to do so. A clearing contact is also provided to be wired in series to clear the circuit of the control voltage after the breaker is opened. If dual supply sources or control circuits are being used in an application, two shunt trips can be installed. For information on the activation of the shunt trip an optional status contact can be used to provide a signaling condition that the shunt trip has been activated.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Shunt trip 5% duty opening time 50ms	CC 24V ac	3WA9111-0AD12
		CC 48V ac	3WA9111-0AD14
		CC 120V ac / 125V dc	3WA9111-0AD15
		CC 208V ac / 240V ac / 240V dc	3WA9111-0AD16
		ST 24V ac	3WA9111-0AD22
		ST 48V ac	3WA9111-0AD24
		ST 120V ac / 125V dc	3WA9111-0AD25
		ST 208V ac / 240V ac / 240V dc	3WA9111-0AD26

Shunt Trip and Closing Coils (continuous duty)

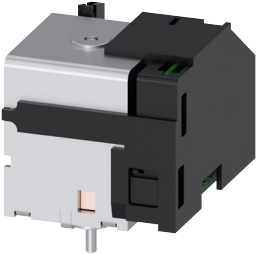
The continuous duty shunt trip is intended to be used for 100% duty cycle applications and can hold the breaker in the open position during an electrical or manual “close breaker” attempt (i.e. lock-out). The continuous duty shunt can be used in conjunction with a standard shunt trip device for dual control of the breaker.

Shunt trips and close coils come in two varieties: standard magnets and “Ready4COM”. The latter are standard when the breaker is ordered as Ready4COM and are internally wired to the BSS200 so that they can be actuated via communication.

	Ordering Information		
	Description	Voltage	Catalog No.
	Shunt trip 100% duty opening time 80ms	CC/ST 24V ac	3WA9111-0AD02
		CC/ST 48V ac	3WA9111-0AD04
		CC/ST 120V ac / 125V dc	3WA9111-0AD05
		CC/ST 208V ac / 240V ac / 240V dc	3WA9111-0AD06
	For circuit breakers and non-automatic circuit breakers with the "ready4com" feature 100% duty switching time via direct control 80ms switching time via communication 120ms	CC/ST 24V ac	3WA9111-0AD32
		CC/ST 48V ac	3WA9111-0AD34
		CC/ST 120V ac / 125V dc	3WA9111-0AD35
		CC/ST 208V ac / 240V ac / 240V dc	3WA9111-0AD36

Undervoltage Release (UVR)

An Undervoltage Release automatically opens the breaker if there is a loss or low level of control circuit voltage. The UVR is guaranteed to keep or allow the breaker to be closed at voltages ≥ 85% of the UVR rating and is guaranteed to open or prevent the breaker from closing if control power is < 70% of UVR rating. To avoid nuisance tripping a UVR is also available with adjustable time delay before the UVR drops out and opens the breaker. For breakers with communications, a status contact, connected to the BSS200, can be installed to monitor the status of the UVR.

	Ordering Information		
	Description	Voltage	Catalog No.
	Instantaneous ≤0.08 s (UVR) and short-time delayed ≤0.2 s	24V ac	3WA9111-0AE02
		48V ac	3WA9111-0AE04
		120V ac / 125V dc	3WA9111-0AE05
		240V ac / 250V dc	3WA9111-0AE06
	Delayed (UVR-t), adjustable delay 0.2 - 3.2 sec.	48V dc	3WA9111-0AE13
		120V ac / 125V dc	3WA9111-0AE15
		240V ac / 250V dc	3WA9111-0AE16

Spring-Charging Motors

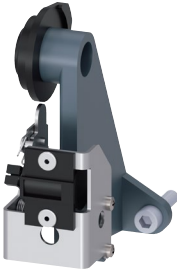
The spring charging motor charges the closing springs so that the breaker will be ready to close on command. The motor includes a built-in cutoff switch that stops the motor when the breaker is completely charged. This gives the ability to remotely operate the breaker or give an alternative to manually charging the breaker. The motor can be very easily installed in the field.

Technical Information	
120 - 240 VAC range	85 - 110% of nominal
24 - 250VDC range	70 - 126% or nominal
Power Consumption	110W
Max Charging Time	10 sec.
Fuse Protection Rating	24-60V 6A, 120-240V 3A (slow-blow)
1 NO + 1 NC	3WA9111-0AG03
Ordering Information	
Voltage	Catalog No.
24V dc	3WA9111-0AF02
48V dc	3WA9111-0AF04
120V ac / 125V dc	3WA9111-0AF05
240V ac / 250V dc	3WA9111-0AF06

Operation Counter

The operation counter is intended to log the number of open-close cycles the breaker experiences. This accessory is available in versions for breakers both with and without the spring-charging motor option. The counter is mounted adjacent to the charging motor and registers both manual and electrical breaker operations. The limit for the counter is 100,000 operations and is non-resettable.

When the C01 option is specified at configuration, the correct counter will always be installed. If a counter is needed for replacement or as an accessory, the correct catalog number must be selected.

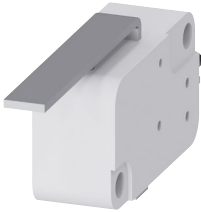
	Ordering Information		
	Description	Z-Option	Catalog No.
	Mechanical operations counter for manually operated breakers	C01	3WA9111-0AH04
	Mechanical operations counter for motor operated breakers	C01	3WA9111-0AH05

Ready-to-Close Contact

The ready-to-close contact allows users to electrically communicate that the breaker is ready-to-close. The breaker is ready to close if all of the following conditions are met:

- closing spring is charged
 - breaker main contacts are open
 - all mechanical lock-outs are disabled
- racking handle seated in stored position
 - all electrical lock-outs are disabled

They are included as standard with all 3WA breakers.

	Technical Information	
	Voltage	125-240VAC, 125-250VDC
	Continuous Current	3A
	Making Current	.4A @ 24-125VDC, 5A @ 120-240VAC
	Breaking Current	.2A @ 24-125VDC, 3A@12-240VAC
Ordering Information		
Description	Standard Delivery	Catalog No.
Ready-to-Close Contact	•	3WA9111-0AH01

Motor Disconnect Switch

Motor disconnect switches are used to disconnect control power from the spring charging motor inside the breaker. The motor disconnect switch is only available in combination with the charging motor and is not available in combination with the local electric close option.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Operator Panel Mount	C24	3WA9111-0AH24

Local Electric Close

To prevent closing unintentionally the local close button can be secured either with a cover or with a lock and key combination.



Ordering Information		
Description	Z-Option	Catalog No.
With sealing cover	C11	3WA9111-0AH21
With CES lock	C12	3WA9111-0AH22
With IKON lock	–	3WA9111-0AH23

External Accessories

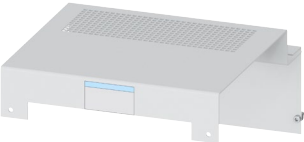
Modified Differential CT

A modified differential ground fault Current Transformer (CT) is used to provide enhanced ground fault protection in electrical systems with complex configurations, such as those with multiple sources or solidly grounded common neutral conductors. Traditional ground fault protection methods may struggle to isolate and identify ground fault currents in these setups. A typical application for modified differential ground fault is ‘Main-Tie-Main’ where all breakers require 3 Phase CTs and a neutral CT.

	Catalog Number		
	Modified differential ground fault for source ground return		
	WLGMDGFCT2	FS2	1200:1, 3 phase cradle mount
	WLGMDGFCT3	FS3	1200:1, 3 phase cradle mount
	WLGNMDGCT23	Iron core neutral sensor	1200:1, 1 phase bus mount

Arc Chute Cover

An arc chute cover is used to isolate enclosure components or materials that are above the circuit breaker where heat and exhaust fumes may escape from the breakers arc chutes. Arc Chute covers are limited to a select draw-out breaker types and not available for fixed mount breakers.

 	Arc Chute Cover, 3WA2				
	Frame Size	Poles	Breaking Class	Rated Current	Catalog No.
	1	3-Poles	N, S, H	800-2000A	3WA9111-1AS30
	1		E	800-2000A	3WA9111-1AS31
	2		S, H	800-3000A	3WA9111-1AS40
	2		S, H	800-3000A	3WA9111-1AS41
	2		E, C	800-3000A	3WA9111-1AS42
	3		H	4000-5000A	3WA9111-1AS50
	3		E	4000-5000A	3WA9111-1AS51
	1		N, S	800-2000A	3WA9111-1AS30
	1		E	800-2000A	3WA9111-1AS31
	2		N, S, M	800-3200A	3WA9111-1AS40
	2		H, E	800-3200A	3WA9111-1AS42
	3		M. H	4000-5000A	3WA9111-1AS50
	3		E	4000-5000A	3WA9111-1AS51
	1		N, S	800-2000A	3WA9111-1AS60
	1		E	800-2000A	3WA9111-1AS61
	2		N, S, M	800-3200A	3WA9111-1AS70
	2		H, E	800-3200A	3WA9111-1AS71
	3		M. H	4000-5000A	3WA9111-1AS80
	3		E	4000-5000A	3WA9111-1AS81

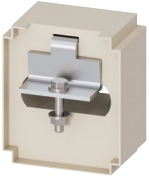
Door Sealing Frame

The door sealing frame is intended to eliminate any gaps between the breaker and the cabinet door cutout. The door trim is available for all frame sizes.

	Ordering Info	
	Description	Catalog No.
	for IP40	3WA9111-OAP01

External Neutral Current Sensors

For 4-wire residual ground fault protection we offer current sensors that mount with or without a bus bar coupling. The sensor must be wired to the ETU through the secondary disconnect terminals X8-9 & X8-10 on the breaker.

	Ordering Information		
	Description	Frame Size	Catalog No.
	Mount on busbar	1	3WA9111-OAA21
		2	3WA9111-OAA22
		3	3WA9111-OAA23

Emergency Open Button

The emergency open button gives a larger mushroom push button to use on the operator panel rather than the local mechanical open button.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Mushroom button	C25	3WA9111-OAH25

Packaging for Moisture Proofing

The packaging for moisture proofing includes a waterproof covering and silicone package to absorb excess moisture. This protects against damage that could be caused by long storage times in humid locations.

	Ordering Information		
	Description	Z-Option	Catalog No.
	Moisture-proof packaging	P61	–

Breaker Lifting Yolks

The breaker lifting yolk is designed to transport the 3WA breaker when using a hoist or other lifting equipment. The device is expandable to conform to frame size 2 and 3 of 3WA breakers and easily attaches to specified lift points on the breaker.

	Ordering Info	
	Description	Catalog No.
	3 pole 3WA breaker FS 2,3	WLLFT
	4 pole 3WA breaker FS 2,3	WLLFT4

Connection Variants

Fixed Mounted Breaker Rear Bus Connector Kits

The Fixed Mounted Breaker Rear Bus Connector Kit convert the 3WA primary mounting stabs to a standard NEMA bussing and bolt-hole pattern. The kit rotates the connections by 90° and can also be used for vertical bus arrangements. Kit includes all bussing and hardware required for mounting one 3-pole set of adapters.

3WA2				
Rear vertical connection, fix-mounted breaker 3WA2				
Frame Size	Breaking Class	Rated Current	Catalog No.	Note
1	N	800-1200	3WA9111-1AJ10	1 piece, top/bottom mounting
1	N	1600-2000	3WA9111-1AJ11	1 piece, top/bottom mounting
1	S, H, E	800-2000	3WA9111-1AJ11	1 piece, top/bottom mounting
2	S, H, E	800-1600	3WA9111-1AB20	3 piece, top mounting
2	S, H, E	800-1600	3WA9111-1AC20	3 piece, bottom mounting incl. supporting bracket
2	S, H, E	2000	3WA9111-1AB21	3 piece, top mounting
2	S, H, E	2000	3WA9111-1AC21	3 piece, bottom mounting incl. supporting bracket
2	S, H, E	2500-3000	3WA9111-1AB22	3 piece, top mounting
2	S, H, E	2500-3000	3WA9111-1AC22	3 piece, bottom mounting incl. supporting bracket
2	C	800-3000	3WA9111-1AB23	3 piece, top mounting
2	C	800-3000	3WA9111-1AC23	3 piece, bottom mounting incl. supporting bracket
3	H, E	4000	3WA9111-1AJ31	1 piece, top/bottom mounting
3	H, E	5000	3WA9111-1AB32	1 piece, top mounting
3	H, E	5000	3WA9111-1AC32	1 piece, bottom mounting incl. supporting bracket
3	C	4000-5000	3WA9111-1AB32	1 piece, top mounting
3	C	4000-5000	3WA9111-1AC32	1 piece, bottom mounting incl. supporting bracket

3WA3				
Rear Vertical Connection, fix-mount breaker 3WA3				
Frame Size	Breaking Class	Rated Current	Catalog No.	Note
1	N	800-1200	3WA9111-1AJ10	1 piece, top/bottom mounting
1	N	1600-2000	3WA9111-1AJ11	1 piece, top/bottom mounting
1	S, E	800-2000	3WA9111-1AJ11	1 piece, top/bottom mounting
2	N, S, M, H, E	800-1600	3WA9111-1AB20	3 piece, top mounting
2	N, S, M, H, E	800-1600	3WA9111-1AC20	3 piece, bottom mounting incl. supporting bracket
2	N, S, M, H, E	800-1600	3WA9111-1AB24	4 piece, top mounting
2	N, S, M, H, E	800-1600	3WA9111-1AC24	4 piece, bottom mounting incl. supporting bracket
2	N, S, M, H, E	2000	3WA9111-1AB21	3 piece, top mounting
2	N, S, M, H, E	2000	3WA9111-1AC21	3 piece, bottom mounting incl. supporting bracket
2	N, S, M, H, E	2000	3WA9111-1AB25	4 piece, top mounting
2	N, S, M, H, E	2000	3WA9111-1AC25	4 piece, bottom mounting incl. supporting bracket
2	N, S, M, H, E	2500-3200	3WA9111-1AB22	3 piece, top mounting
2	N, S, M, H, E	2500-3200	3WA9111-1AC22	3 piece, bottom mounting incl. supporting bracket
2	N, S, M, H, E	2500-3200	3WA9111-1AB26	4 piece, top mounting
2	N, S, M, H, E	2500-3200	3WA9111-1AC26	4 piece, bottom mounting incl. supporting bracket
3	M, H, E	4000	3WA9111-1AJ31	1 piece, top/bottom mounting
3	M, H, E	5000	3WA9111-1AB32	1 piece, top mounting
3	M, H, E	5000	3WA9111-1AC32	1 piece, bottom mounting
3	C	3200-5000	3WA9111-1AB32	1 piece, top mounting
3	C	3200-5000	3WA9111-1AC32	1 piece, bottom mounting

Fixed-Mount Breaker Front Bus Connectors

To convert the 3WA breakers primary connections to comply with standard NEMA bussing and bolt hole patterns, use the Front Buss connectors. The kit includes the required bus connections and hardware for mounting one 3-pole set of adapters to a breaker.

Caution:

Front connectors cannot be used with top mounted internal voltage taps.

3WA2				
Front Connection, fixed-mount breaker 3WA2				
Frame Size	Breaking Class	Rated Current	Catalog No.	Note
1	N, S	800-1200	3WA9111-1AF10	1 piece, top mounting
1	N, S	800-1200	3WA9111-1AG10	1 piece, bottom mounting
1	N, S	1600	3WA9111-1AF11	1 piece, top mounting
1	N, S	1600	3WA9111-1AG11	1 piece, bottom mounting
2	S, H, E	800-1600	3WA9111-1AF20	1 piece, top mounting
2	S, H, E	800-1600	3WA9111-1AG20	1 piece, bottom mounting
2	S, H, E	2000	3WA9111-1AF21	1 piece, top mounting
2	S, H, E	2000	3WA9111-1AG21	1 piece, bottom mounting
2	S, H, E	2500	3WA9111-1AF22	1 piece, top mounting
2	S, H, E	2500	3WA9111-1AG22	1 piece, bottom mounting
2	S, H, E	3000	3WA9111-1AF23	1 piece, top mounting
2	S, H, E	3000	3WA9111-1AG23	1 piece, bottom mounting
3	H, E	4000-5000 ¹⁾	3WA9111-1AF31	1 piece, top mounting
3	H, E	4000-5000 ¹⁾	3WA9111-1AG1	1 piece, bottom mounting incl. supporting bracket

Caution:

Front connectors cannot be used with top mounted internal voltage taps.

3WA3				
Front Connection, fixed-mount breaker 3WA3				
Frame Size	Breaking Class	Rated Current	Catalog No.	Note
1	N, S	800-1200	3WA9111-1AF10	1 piece, top mounting
1	N, S	800-1200	3WA9111-1AG10	1 piece, bottom mounting
1	N, S	1600	3WA9111-1AF11	1 piece, top mounting
1	N, S	1600	3WA9111-1AG11	1 piece, bottom mounting
2	N, S, M, H, E	800-1600	3WA9111-1AF20	1 piece, top mounting
2	N, S, M, H, E	800-1600	3WA9111-1AG20	1 piece, bottom mounting
2	N, S, M, H, E	2000	3WA9111-1AF21	1 piece, top mounting
2	N, S, M, H, E	2000	3WA9111-1AG21	1 piece, bottom mounting
2	N, S, M, H, E	2500	3WA9111-1AF23	1 piece, top mounting
2	N, S, M, H, E	2500	3WA9111-1AG23	1 piece, bottom mounting
3	M, H, E	4000-5000 ¹⁾	3WA9111-1AF31	1 piece, top mounting
3	M, H, E	4000-5000 ¹⁾	3WA9111-1AG31	1 piece, bottom mounting

1) Only mountable on 5000A breakers

Cradle Rear Wall T-Connectors

3WA2					
Cradle Rear Wall T-Connector 3WA2					
Description	Frame Size	Poles	Breaking Class	Rated Current	Catalog No.
	1	3-Pole	N, S	800-1200A	3WA9111-1AM40
	1		N, S	1600A	3WA9111-1AM41
	1		N,S	2000A	3WA9111-1AM42
	2		S	800-1600A	3WA9111-1AM50
	2		S	2000A	3WA9111-1AM51

3WA3					
Cradle Rear Wall T-Connector 3WA3					
Description	Frame Size	Poles	Breaking Class	Rated Current	Catalog No.
	1	3-Pole	N, S	800-1200A	3WA9111-1AM40
	1		N, S	1600A	3WA9111-1AM41
	2		N, S, M	2000A	3WA9111-1AM51
	2		N, S	800-1200A	3WA9111-1AM40
	1	4-Pole	N, S	800-1200A	3WA9111-1AN20
	1		N, S	1600A	3WA9111-1AN21
	2		N, S, M	800-1600A	3WA9111-1AN50
	2		N, S, M	2000A	3WA9111-1AN51

Spare Parts

Replacement Electronic Trip Units

The brains of the circuit breaker, the electronic trip units govern the available protective functions for the system. Choose the ETU which best suits your specifications. For more information, please see the trip unit section or for a deep dive be sure to read our Smart Circuit Breaker Guide. All ETUs can be replaced/installed in the field.

	Ordering Info	
	Description	Catalog No.
	Electronic Trip Unit ETU300 LSI / LSIG	3WA9111-OEE32
	Electronic Trip Unit ETU600 LSI / LSIG	3WA9111-OEE62
	Electronic Trip Unit ETU600 LSIG Hi-Z	3WA9111-OEE63

Replacement Battery

The replacement battery offers a simple field installation to ensure that the real-time clock in the ETU600 remains powered in the absence of control power.

	Ordering Info	
	Description	Catalog No.
	For use with ETU600	3WA9111-OEE81

Isolation Shutters

Shutters are included as standard with all 3WA cradles, unless otherwise specified. For the safety of operators, isolation shutters reduce accessibility to the primary terminals in the guide frame by automatically closing when the breaker is disconnected or withdrawn. To increase the level of control, the shutters can also be padlocked to eliminate the opening of the shutter when the breaker is not in the compartment.

3WA2

Shutters, 3WA2					
Description	Frame Size	Poles	Breaking Class	Rated Current	Catalog No.
Shutter	1	3-pole	N, S, H, E	800-2000A	3WA9111-1AP10
Shutter	2		S, H, E	800-3000A	3WA9111-1AP20
Shutter	2		C	800-3000A	3WA9111-1AP22
Shutter	3		H, E	4000-5000A	3WA9111-1AP30
Shutter	3		C	4000-5000A	3WA9111-1AP32

3WA3

Shutters 3WA3					
Description	Frame Size	Poles	Breaking Class	Rated Current	Catalog No.
Shutter	1	3-Pole	N, S, E	800-2000A	3WA9111-1AP10
Shutter	2		N, S, M, H, E	800-3200A	3WA9111-1AP20
Shutter	3		M, H, E	4000-5000A	3WA9111-1AP30
Shutter	3		C	3200-5000A	3WA9111-1AP32
Shutter	1	4-Pole	N, S, E	800-2000A	3WA9111-1AP11
Shutter	2		N, S, M, H, E	800-3200A	3WA9111-1AP21
Shutter	3		M, H, E	4000-5000A	3WA9111-1AP31

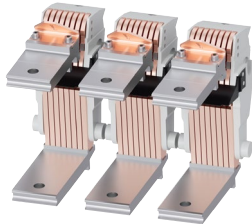
Internal Current Sensors

If the need arises to replace the internal CTs for the 3WA, please see below for direct replacements containing all hardware needed.

Ordering Information			
Description	Frame Size	Catalog No.	
All parts, 3-pole	1	3WA9111-0AA42	
	2	3WA9111-0AA43	
	3	3WA9111-0AA44	
All parts, 4-pole	1	3WA9111-0AA45	
	2	3WA9111-0AA46	
	3	3WA9111-0AA47	

Contact Systems

For UL1066 breakers it is possible to replace the contacts if they have seen significant wear.



Ordering Info				
Breaker	Frame Size	Breaking Class	Rated Current	Catalog No.
3WA2	1	N	800-1200A	3WA9111-1AQ30
	1	N	1600A	3WA9111-1AQ31
	1	S	800-1600A	3WA9111-1AQ31
	1	N, S	2000A	3WA9111-1AQ32
	1	H, E	800-2000A	3WA9111-1AQ33
	2	S, H, E	800 - 1600A	3WA9111-1AQ40
	2	S, H, E	2000A	3WA9111-1AQ41
	2	S, H, E	2500-3000A	3WA9111-1AQ43
	2	C	800-3000A	3WA9111-1AQ44
	3	H, E	4000A	3WA9111-1AQ50
	3	H, E	5000A	3WA9111-1AQ51
	3	C	4000-5000A	3WA9111-1AQ52
	1	N	800-1200A	3WA9111-1AQ30
	1	N	1600A	3WA9111-1AQ31
	1	S	800-1600A	3WA9111-1AQ31
3WA3 3-pole	1	N, S	2000A	3WA9111-1AQ32
	2	N, S, M, H, E	800-1600A	3WA9111-1AQ40
	2	N, S, M, H, E	2000A	3WA9111-1AQ41
	2	N, S, M, H, E	2500 - 3200A	3WA9111-1AQ43
	3	M, H, E	4000A	3WA9111-1AQ50
	3	M, H, E	5000A	3WA9111-1AQ51
	1	N	800-1200A	3WA9111-1AQ60
	1	N	1600A	3WA9111-1AQ61
	1	S	800-1600A	3WA9111-1AQ61
	1	N, S	2000A	3WA9111-1AQ62
3WA3 4-pole	2	N, S, M, H, E	800-1600A	3WA9111-1AQ70
	2	N, S, M, H, E	2000A	3WA9111-1AQ71
	2	N, S, M, H, E	2500 - 3200A	3WA9111-1AQ72
	3	M, H, E	4000A	3WA9111-1AQ80
	3	M, H, E	5000A	3WA9111-1AQ81

Arc Chutes

The Arc Chutes of a UL1066 breaker are field replaceable.

	Arc Chute, 3WA2			
	Frame Size	Breaking Class	Rated Current	Catalog No.
	1	N, S, H	800 - 2000A	3WA9111-1AS00
	1	E	800 - 2000A	3WA9111-1AS01*
	1	E	800 - 2000A	3WA9111-1AS02**
	2	S, H	800-3000A	3WA9111-1AS10
	2	E, C	800-3000A	3WA9111-1AS11
	3	H	4000-5000A	3WA9111-1AS20
	3	E, C	4000-5000A	3WA9111-1AS21
	Arc Chute, 3WA3			
	Frame Size	Breaking Class	Rated Current	Catalog No.
	1	N, S	800-2000A	3WA9111-1AS00
	1	E	800-2000A	3WA9111-1AS01*
	1	E	800-2000A	3WA9111-1AS02**
	2	N, S, M	800-3200A	3WA9111-1AS10
	2	H, E	800-3200A	3WA9111-1AS11
	3	M, H	4000-5000A	3WA9111-1AS20
	3	E, C	4000-5000A	3WA9111-1AS21

WL to WA Accessories Cross-Reference Table

3WL Catalog Number	3WL9 Description	3WA Catalog Number	3WA9 description
Secondary disconnected terminal			
3WL9111-0AB01-0AA0	Male connector for circuit breakers	3WA9111-0AB01	Base Part
3WL9111-0AB02-0AA0	1000V Extention	3WA9111-0AB02	1000V Extension
3WL9111-0AB10-0AA0	1000V Male connector extention	3WA9111-0AB01	Base Part
		3WA9111-0AB02	1000V Extension
3WL9111-0AB03-0AA0	Screw connection	3WA9111-0AB03	Screw connection
3WL9111-0AB04-0AA0	Screwless connection	3WA9111-0AB04	Push-in connection
3WL9111-0AB05-0AA0	Ring lug adapter	3WA9111-0AB05	Ring lug adapter
3WL9111-0AB07-0AA0	Coding Kit	3WA9111-0AB07	Coding Kit
3WL9111-0AB08-0AA0	sliding contact module	3WA9111-0AB08	sliding contact module
3WL9111-0AB12-0AA0	Blanking block	3WA9111-0AB12	Blanking block
Operating mechanism (motor operator)			
3WL9111-0AF01-0AA0	24 - 30Vdc motorized operating mechanism	3WA9111-0AF02	24 - 30Vdc motorized operating mechanism
3WL9111-0AF02-0AA0	48 - 60Vdc motorized operating mechanism	3WA9111-0AF04	48 - 60Vdc motorized operating mechanism
3WL9111-0AF03-0AA0	110 - 125Vdc / 110 - 127Vac motorized operating mechanism	3WA9111-0AF05	110 - 125Vdc / 110 - 127Vac motorized operating mechanism
			220 - 250Vdc / 208 - 240Vac motorized operating mechanism
3WL9111-0AF04-0AA0	220 - 240Vdc / 208 - 240Vac motorized operating mechanism	3WA9111-0AF06	220 - 250Vdc / 208 - 240Vac motorized operating mechanism
Undervoltage release instantaneous			
3WL9111-0AE01-0AA0	24Vdc Undervoltage release instantaneous	3WA9111-0AE02	24 - 30Vdc Undervoltage release instantaneous
3WL9111-0AE02-0AA0	30Vdc Undervoltage release instantaneous		
3WL9111-0AE03-0AA0	48Vdc Undervoltage release instantaneous	3WA9111-0AE04	48 - 60Vdc Undervoltage release instantaneous
3WL9111-0AE07-0AA0	60Vdc Undervoltage release instantaneous		
3WL9111-0AE04-0AA0	110 - 125Vdc /110 - 127Vac Undervoltage release instantaneous	3WA9111-0AE05	110 - 125Vdc /110 - 127Vac Undervoltage release instantaneous
			220 - 250Vdc /208 - 240Vac Undervoltage release instantaneous
3WL9111-0AE05-0AA0	220 - 250Vdc /208 - 240Vac Undervoltage release instantaneous	3WA9111-0AE06	380 - 415Vac Undervoltage release instantaneous
3WL9111-0AE06-0AA0	380 - 415Vac Undervoltage release instantaneous	3WA9111-0AE07	Undervoltage release instantaneous
Undervoltage release delayed			
3WL9111-0AE11-0AA0	48Vdc Undervoltage release delayed	3WA9111-0AE13	48Vdc Undervoltage release delayed
3WL9111-0AE12-0AA0	110 - 125Vdc /110 - 127Vac Undervoltage release delayed	3WA9111-0AE15	110 - 125Vdc /110 - 127Vac Undervoltage release delayed
			220 - 250Vdc /208 - 240Vac Undervoltage release delayed
3WL9111-0AE13-0AA0	220 - 250Vdc /208 - 240Vac Undervoltage release delayed	3WA9111-0AE16	380 - 415Vac Undervoltage release delayed
3WL9111-0AE14-0AA0	380 - 415Vac Undervoltage release delayed	3WA9111-0AE17	Undervoltage release delayed
Remote trip alarm reset coils			
3WL9111-0AK03-0AA0	24Vdc Remote trip alarm reset coil	3WA9111-0EM42	24 - 30Vdc Remote trip alarm reset coil
3WL9111-0AK04-0AA0	48Vdc Remote trip alarm reset coil	3WA9111-0EM44	48 - 60Vdc Remote trip alarm reset coil
3WL9111-0AK05-0AA0	125Vdc/120Vac Remote trip alarm reset coil	3WA9111-0EM45	110 - 125Vdc/120 - 127Vac Remote trip alarm reset coil
			220V-250Vdc / 208 - 240Vac Remote trip alarm reset coil
3WL9111-0AK06-0AA0	220V-250Vdc / 208 - 240Vac Remote trip alarm reset coil	3WA9111-0EM46	Remote trip alarm reset coil

(continued)

WL to WA Accessories Cross-Reference Table (continued)

3WL Catalog Number	3WL9 Description	3WA Catalog Number	3WA9 description
Closing coils / shunt trips 100% OP			
3WL9111-0AD01-0AA0	24Vdc Closing coil / shunt trip 100% OP	3WA9111-0AD02	24 - 30Vdc Closing coil / shunt trip 100% OP
3WL9111-0AD02-0AA0	30Vdc Closing coil / shunt trip 100% OP		
3WL9111-0AD03-0AA0	48Vdc Closing coil / shunt trip 100% OP	3WA9111-0AD04	48 - 60Vdc Closing coil / shunt trip 100% OP
3WL9111-0AD04-0AA0	60Vdc Closing coil / shunt trip 100% OP		
3WL9111-0AD05-0AA0	110 - 125Vdc /100 - 127Vac Closing coil / shunt trip 100% OP	3WA9111-0AD05	110 - 125Vdc /100 - 127Vac Closing coil / shunt trip 100% OP
3WL9111-0AD06-0AA0	220 - 250Vdc /208 - 240Vac Closing coil / shunt trip 100% OP	3WA9111-0AD06	220 - 250Vdc /208 - 240Vac Closing coil / shunt trip 100% OP
Closing coil 5% OP			
3WL9111-0AD11-0AA0	24Vdc Closing coil 5% OP	3WA9111-0AD12	24 - 30Vdc Closing coil 5% OP + S15 cut-off switch
3WL9111-0AD12-0AA0	48Vdc Closing coil 5% OP	3WA9111-0AD14	48 - 60Vdc Closing coil 5% OP + S15 cut-off switch
3WL9111-0AD13-0AA0	110 - 125Vdc /100 - 127Vac 5% Closing coil 5% OP	3WA9111-0AD15	110 - 125Vdc /100 - 127Vac 5% Closing coil 5% OP + S15 cut-off switch
3WL9111-0AD14-0AA0	220 - 250Vdc /208 - 240Vac 5% Closing coil 5% OP	3WA9111-0AD16	220 - 250Vdc /208 - 240Vac 5% Closing coil / shunt trip 5% OP + S15 cut-off switch
Shunt trips 5% OP			
3WL9111-1AD11-0AA0	24Vdc Shunt trip 5% OP	3WA9111-0AD22	24 - 30Vdc shunt trip 5% OP + S14 cut-off switch
3WL9111-1AD12-0AA0	48Vdc Shunt trip 5% OP	3WA9111-0AD24	48 - 60Vdc shunt trip 5% OP + S14 cut-off switch
3WL9111-1AD13-0AA0	110 - 125Vdc /100 - 127Vac 5% Shunt trip 5% OP	3WA9111-0AD25	110 - 125Vdc /100 - 127Vac 5% shunt trip 5% OP + S14 cut-off switch
3WL9111-1AD14-0AA0	220 - 250Vdc /208 - 240Vac 5% Shunt trip 5% OP	3WA9111-0AD26	220 - 250Vdc /208 - 240Vac 5% shunt trip 5% OP + S14 cut-off switch

Z Options

Z Option	Description	Spare Part MLFB
B02	Option Plug with Rated Current 250 A	
B03	Option Plug with Rated Current 315 A	
B04	Option Plug with Rated Current 400 A	
B05	Option Plug with Rated Current 500 A	
B06	Option Plug with Rated Current 630 A	
B07	Option Plug with Rated Current 700 A	
B08	Option Plug with Rated Current 800 A	
B10	Option Plug with Rated Current 1000 A	
B11	Option Plug with Rated Current 1200 A	
B12	Option Plug with Rated Current 1250 A	
B16	Option Plug with Rated Current 1600 A	
B20	Option Plug with Rated Current 2000 A	
B25	Option Plug with Rated Current 2500 A	
B30	Option Plug with Rated Current 3000 A	
B32	Option Plug with Rated Current 3200 A	
B40	Option Plug with Rated Current 4000 A	
B50	Option Plug with Rated Current 5000 A	
B60	Option Plug with Rated Current 6000 A	
B71	Option Plug with Rated Current 225 A	
B72	Option Plug with Rated Current 200 A	
B73	Option Plug with Rated Current 300 A	
B74	Option Plug with Rated Current 350 A	
B75	Option Plug with Rated Current 450 A	
B76	Option Plug with Rated Current 600 A	
C01	Operations counter	
C11	Local electric close, with sealing cover	3WA9111-0AH21
C12	Local electric close, with CES lock	3WA9111-0AH22
C24	Motor disconnect switch	3WA9111-0AH24
C25	Emergency OPEN button, mushroom pushbutton	3WA9111-0AH25
D03	3WA3 Breaker with IEC main connections	
D05	3WA circuit breaker without push-in-aux.-plugs	
D08	Tin surface for main connections for guide frame, only for horizontal or flange connection	
D09	4000A 3WA with connections that match 4000A WL breaker	
D24	Circuit breaker frame size 3 in fixed mounted design with glued screws for breaker feet and lateral front covers	
D80	Circuit breaker without bluetooth functionality	
F15	Modbus-RTU module COM150	3WA9111-2EC15
F17	PROFIBUS-DP module COM170	3WA9111-0EC14
F19	PROFINET-IO/Modbus-TCP module COM190	3WA9111-2EC13
F20	Zone Selective Interlocking module ZSI200	3WA9111-0EC10
F23	Digital Input/Output module IOM230	3WA9111-2EC11
F40	Cover for Electronic Trip Unit	
F41	EMC Filter for Electronic Trip Unit	3WA9111-0EM51

(continued)

Z Options (continued)

Z Option	Description	Spare Part MLFB
K01	Automatic reset of the reclosing lockout	3WA9111-0EM31
K02	Non-Automatic reset of the reclosing lockout	
K06	2nd Trip alarm switch	3WA9111-0AH03
K60	Current sensor without energy core, Requires power supply 24V DC and additional undervoltage release (UVR), no power supply of the ETU via current sensors	
N03	Secondary disconnect terminals - SIGUT compressions screw terminals	3WA9111-0AB03
N05	Secondary disconnect terminals - Ring lug connection terminals	3WA9111-0AB05
P61	Special packaging for increased requirements for transportation (Moisture proofed)	
P81	Certified Test Reports (Routine Test) as paper version	
R10	Arc chute cover	
R22	"Shutter, UL/ANSI, FS1, 3-pole N/S/H/E, 800-2000A"	3WA9111-1AP14
R22	"Shutter, ANSI, FS1, 4-pole N/S/E, 800-2000A "	3WA9111-1AP15
R22	"Shutter, UL/ANSI, FS2, 3-pole N/S/M/H/E, 800-3200A"	3WA9111-1AP24
R22	"Shutter, ANSI, FS2, 4-pole N/S/M/H/E, 800-3200A"	3WA9111-1AP25
R22	"Shutter, UL, FS2, 3-pole C, 800-3000A"	3WA9111-1AP26
R22	"Shutter, ANSI, FS2, 3-pole F, 800-2000A"	3WA9111-1AP27
R22	"Shutter, UL/ANSI, FS3, 3-pole M/H/E, 4000-5000A"	3WA9111-1AP34
R22	"Shutter, ANSI, FS3, 4-pole M/H/E, 4000-5000A"	3WA9111-1AP35
R22	"Shutter, UL/ANSI, FS3, 3-pole C, 4000-5000A"	3WA9111-1AP36
R22	"Shutter, ANSI, FS3, 3-pole F, 4000-5000A"	3WA9111-1AP37
R30	Mechanical interlock to prevent opening of the circuit breaker compartment door when the circuit beraker is closed, for withdrawable design only, can be defeated, for withdrawable design only, can be defeated	3WA9111-0BB13
R40	Mechanical interlock to prevent closing of the circuit breaker when the circuit breaker compartment door is open, Combination with R81, R85 and R86 on request, not possible in combination with R50	
R50	Mechanical interlock to prevent the racking of the circuit breaker when the circuit breaker compartment door is open, not possible in combination with R81, R85 and R86	3WA9111-0BB15
R55	Mutual mechanical interlocking with 2m Bowden cable for withdrawable circuit breakers., necessary once for each circuit breaker	3WA9111-0BB22
R56	Mutual mechanical interlocking with 2m Bowden cable for guide frame, necessary once for each circuit breaker, only usable at separat ordered guide frame	3WA9111-0BB23
R57	Mutual mechanical interlocking with 2m Bowden cable for withdrawable circuit breakers without guide frame, necessary once for each circuit breaker, only usable at separat ordered circuit breaker without guide frame	3WA9111-0BB24
R60	Locking provision against unauthorized closing for withdrawable circuit breakers, with PROFALUX lock	3WA9111-0BA50
R61	Locking provision against unauthorized closing for withdrawable circuit breakers, with CES lock	3WA9111-0BA51
R62	Locking provision against unauthorized closing for withdrawable circuit breakers, for KIRK-Key lock. The lock must be ordered at the manufacturer	3WA9111-0BA57
R68	Locking provision against unauthorized closing for withdrawable circuit breakers, with RONIS lock	3WA9111-0BA58

(continued)

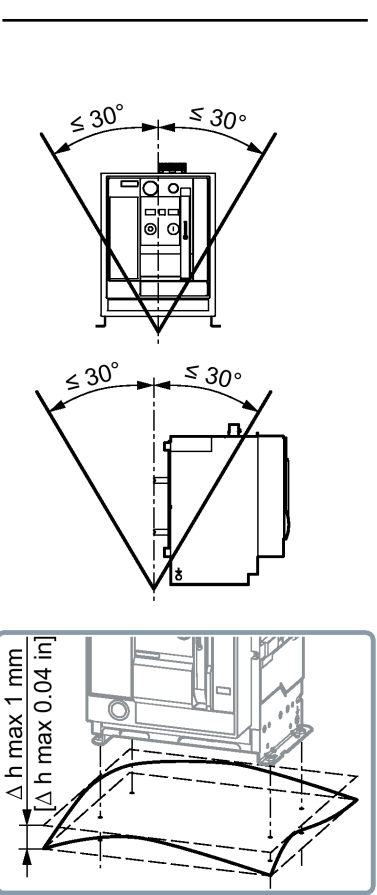
Z Options (continued)

Z Option	Description	Spare Part MLFB
R71	Locking against switching on - withdrawable design (FS1) - provision only - (for 3-pole and 4-pole breakers), Double KIRK (delivery without lock. Must be ordered from manufacturer)	3WA9111-1BA56
R71	Locking against switching on - withdrawable design (FS2 und FS3) - 3-pole only, Double KIRK (delivery without lock. Must be ordered from manufacturer by customer)	3WA9111-1BA57
R71	Locking against switching on - withdrawable design (FS2) - 4-pole, Double KIRK (delivery without lock. Must be ordered from manufacturer by customer)	3WA9111-1BA58
R71	Locking against switching on - withdrawable design (FS3) - 4-pole, Double KIRK (delivery without lock. Must be ordered from manufacturer by customer)	3WA9111-1BA60
R81	Locking provision to prevent movement of the withdrawable circuit breaker in disconnected position, Consisting of bowden wire and lock in the cabinet door on the circuit breaker, with CES lock	3WA9111-0BA81
R82	Locking provision to prevent movement of the withdrawable circuit breaker in disconnected position, Consisting of bowden wire and lock in the cabinet door on the circuit breaker, with IKON lock	3WA9111-0BA82
R85	Locking provision to prevent movement of the withdrawable circuit breaker in disconnected position, Consisting of bowden wire and lock in the cabinet door on the circuit breaker, with PROFALUX lock	3WA9111-0BA83
R86	Locking provision to prevent movement of the withdrawable circuit breaker in disconnected position, Consisting of bowden wire and lock in the cabinet door on the circuit breaker, with RONIS lock	3WA9111-0BA84
S01	Locking provision against unauthorized closing - Secured Open, with CES lock	3WA9111-0BA35
S02	Locking provision against unauthorized closing - Secured Open, with KIRK Key Lock, lock is included	3WA9111-0BA38
S03	Locking provision against unauthorized closing - Secured Open, with IKON lock	3WA9111-0BA36
S04	Locking provision against unauthorized closing - Secured Open, with Yale Key Lock, lock is included	3WA9111-0BA40
S05	Locking provision against unauthorized closing - Secured Open, Locking provision for FORTRESS or CASTELL locks, The lock must be ordered at the manufacturer	3WA9111-0BA31
S06	Locking provision against unauthorized closing - Secured Open - Provision only, Mounting Kit for Kirk and Yale (lock not included - to be ordered from manufacturer)	3WA9111-0BA33
S07	Locking provision against unauthorized closing - Secured Open, for padlocks, Padlocks are not included	3WA9111-0BA37
S08	Locking provision against unauthorized closing - Secured Open, with RONIS lock	3WA9111-0BA32
S09	Locking provision against unauthorized closing - Secured Open, with PROFALUX lock	3WA9111-0BA34
S30	Mechanical interlock to prevent opening of the circuit breaker compartment door when the circuit beraker is closed, for fixed-mounted design only, can be defeated	3WA9111-0BB12
S33	Padlock device for charging handle, Padlocks are not included.	3WA9111-0BA71
S40	Interlocking for mechanical Close/Open, Set each consisting of 2: • transparent covers for sealing or for attaching padlocks • Cover with 6.35 mm hole (for tool actuation) • Lock mount for safety lock for key operation (without safety lock)	3WA9111-0BA21
S55	Mutual mechanical interlocking with 2m Bowden cable for circuit breakers in fixed-mounted design, necessary once for each circuit breaker	3WA9111-0BB21
S71	Racking handle key-lock, with CES lock	3WA9111-0BA73
S72	Racking handle key-lock - Provision only, for Kik Key and Yale	3WA9111-1BA81
S73	Racking handle key-lock, for KIRK-Key lock, the lock must be ordered at the manufacturer	3WA9111-0BA80
S75	Racking handle key-lock, with PROFALUX lock	3WA9111-0BA76
S76	Racking handle key-lock, with RONIS lock	3WA9111-0BA77
T40	Door sealing frame, IP41	3WA9111-0AP01
U01	Special warning labels for IEC breaker in NEMA market	
U40	Customized NEMA Label Process	
V61	Metering function PMF-I with voltage metering via external voltage transformer, only possible at frame sizes 2 and 3	
V62	Metering function PMF-II with voltage metering via external voltage transformer, only possible at frame sizes 2 and 3	
V63	Metering function PMF-III with voltage metering via external voltage transformer, only possible at frame sizes 2 and 3	
V68	Voltage tap module VTM680	

Technical Tables

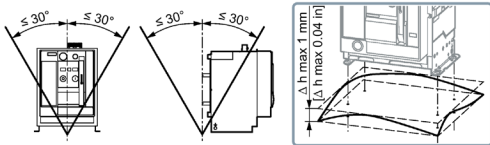
3WA2 (UL489) Frame Ratings - Frame Size 1		800A				1200A				1600A				2000A			
Rating Class		N	S	H	E	N	S	H	E	N	S	H	E	N	S	H	E
Interrupting current frame Ics (kAIR RMS) 50/60 Hz	240V AC	50	65	100	50	50	65	100	50	50	65	100	50	50	65	100	50
	480V AC	50	65	100	50	50	65	100	50	50	65	100	50	50	65	100	50
	600V AC	50	65	65	50	50	65	65	50	50	65	65	50	50	65	65	50
	1000 / 577 V AC	–	–	–	50	–	–	–	50	–	–	–	50	–	–	–	50
Short-time current Icw (kA RMS)	0.4 s / 480V	42	50	65	50	42	50	65	50	42	50	65	50	42	65	65	50
	0.4 s / 600V	42	50	65	50	42	50	65	50	42	50	65	50	42	65	65	50
	0.4 s / 1000V / 577V	–	–	–	50	–	–	–	50	–	–	–	50	–	–	–	50
Short Circuit Making Current (kA asymmetrical)	480V AC	110	143	220	110	110	143	220	110	110	143	220	110	110	143	220	110
	600V AC	110	143	143	110	110	143	143	110	110	143	143	110	110	143	143	110
	1000V / 577V AC	–	–	–	110	–	–	–	110	–	–	–	110	–	–	–	110
Endurance																	
Mechanical duty cycles (no maintenance)		15,000	15,000	10,000	10,000	15,000	15,000	10,000	10,000	15,000	15,000	10,000	10,000	10,000	10,000	10,000	10,000
Electrical duty cycles Ve ≤ 480V (no maintenance)		10,000	10,000	10,000	7,500	10,000	10,000	10,000	7,500	10,000	10,000	10,000	7,500	7,500	7,500	7,500	7,500
Electrical duty cycles Ve ≤ 600V (no maintenance)		10,000	10,000	10,000	7,500	10,000	10,000	10,000	7,500	10,000	10,000	10,000	7,500	7,500	7,500	7,500	7,500
Electrical duty cycles Ve ≤ 1000 / 577V (no maintenance)		–	–	–	1,000	–	–	–	1,000	–	–	–	7,500	–	–	–	7,500
Power losses																	
Draw-out breaker efficiency (Watts loss at In)		115	115	115	115	260	275	275	275	480	480	480	480	620	620	620	620
Fixed-mount breaker efficiency (Watts loss at In)		65	55	55	55	145	125	125	125	165	165	165	165	260	260	260	260
Vertical Bus bar connection according UL489-2019 (table 7.1.4.1.3)		1 pcs. (3" x 1/4")				2 pcs. (2.5" x 1/4")				2 pcs. (3" x 1/4")				2 pcs. (4" x 1/4")			
Ambient operating temperature (°C)		-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾			
Minimum enclosure dimension (in.)		22.5 H / 14 W / 19.5 D				22.5 H / 14 W / 19.5 D				22.5 H / 14 W / 19.5 D				22.5 H / 14 W / 19.5 D			
required ventilation openings per UL489	top (sq-in)	not required				not required				not required				24 (12" x 2")			
	bottom (sq-in)	not required				not required				not required				23.5			
Applicable option plug range		200-800A				200-1200A				200-1600A				200-2000A			
Mechanical make-time (ms)		35				35				35				35			
Mechanical break-time (ms)		38				38				38				38			
Electric close make-time (ms) by closing coil / (Intermittent duty)		80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾			
Electric Trip shunt trip break time (ms) / (Intermittent duty)		80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾			
Electric trip / UV break-time (ms)		80 ³⁾ / 200 ⁴⁾				80 ³⁾ / 200 ⁴⁾				80 ³⁾ / 200 ⁴⁾				80 ³⁾ / 200 ⁴⁾			
Electric trip by electronic trip unit (ms)		50				50				50				50			
Weights , 3-pole (with vertical main connections)																	
Circuit breaker fixed mounted	kg / lb	40 / 88				40 / 88				45 / 99				46 / 101.2			
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	48.5 / 106.7				48.5 / 106.7				54.5 / 119.9				55.5 / 122.1			
Cradle (guide frame)	kg / lb	50.5 / 111.1				50.5 / 111.1				51.5 / 113.3				58.5 / 128.7			
Rated impulse withstand voltage Vimp / kV																	
Main circuits		12															
Auxiliary circuits		4															
Control circuits ⁶⁾		2.5															
Dielectric Withstand – Primary Circuit		2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2
Dielectric Withstand – Control Circuits		1.0															
Permissible ambient temperature °C																	
Storage		-40 to +80 ⁷⁾															
Mounting Position – see diagram at right																	

- 1) electrical closing time with closing coil 5% OP
- 2) with shunt trip 5% OP
- 3) with instantaneous under voltage release
- 4) with short time delayed under voltage release
- 5) when used according UL489 Annex SB "Naval": up to +50°C
- 6) spring charging motor 1.5kV
- 7) Storage should be in a non-condensing environment

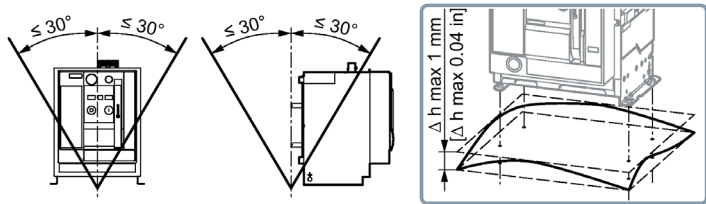


Mounting Positions

Technical Tables (cont'd.)

3WA2 (UL489) Frame Ratings - Frame Size 2		800A				1200				1600A				2000A				2500A				3000A			
Rating Class		S	H	E	C	S	H	E	C	S	H	E	C	S	H	E	C	S	H	E	C	S	H	E	C
Interrupting current frame Ics (kAIR RMS) 50 / 60 Hz	240V AC	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150
	480V AC	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150	65	100	85	150
	600V AC	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100
	1000/577 V AC	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–
Short-time current Icw (kA RMS)	0.4 s / 480V	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100
	0.4 s / 600V	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100	65	85	85	100
	0.4 s / 1000V/577V	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–	–	–	85	–
Short Circuit Making Current (kA asymmetrical)	480V AC	143	220	187	330	143	220	187	330	143	220	187	330	143	220	187	330	143	220	187	330	143	220	187	330
	600V AC	143	187	187	220	143	187	187	220	143	187	187	220	143	187	187	220	143	187	187	220	143	187	187	220
	1000V/577V AC	–	–	187	–	–	–	187	–	–	–	187	–	–	–	187	–	–	–	187	–	–	–	187	–
Endurance																									
Mechanical duty cycles (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Electrical duty cycles Ve ≤ 480V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Electrical duty cycles Ve ≤ 600V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Electrical duty cycles Ve ≤ 1000 / 577V (no maintenance)		–	–	1,000	–	–	–	1,000	–	–	–	1,000	–	–	–	1,000	–	–	–	1,000	–	–	–	1,000	–
Power losses																									
Draw-out breaker efficiency (Watts loss at In)		70	70	70	70	145	145	145	145	270	270	270	270	360	360	360	360	450	450	450	450	620	620	620	620
Fixed-mount breaker efficiency (Watts loss at In)		35	35	35	35	75	75	75	75	135	135	135	135	200	200	200	200	200	200	200	200	270	270	270	270
Applicable option plug range		200 - 800A				200 - 1200A				200 - 1600A				200 - 2000A				200 - 2500A				200 - 3000A			
Ambient operating temperature (°C)		-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾				-25 to +40 ⁵⁾			
Minimum enclosure dimension (in.)		22.5 H / 22 W / 19.5 D				22.5 H / 22 W / 19.5 D				22.5 H / 22 W / 19.5 D				22.5 H / 22 W / 19.5 D				22.5 H / 22 W / 19.5 D				22.5 H / 22 W / 19.5 D			
required ventilation openings per UL489	top (sq-in)	not required				not required				not required				not required				44 (22" x 2")				44 (22" x 2")			
	bottom (sq-in)	not required				not required				not required				not required				52				52			
Mechanical make-time (ms)		35				35				35				35				35				35			
Mechanical break-time (ms)		34				34				34				34				34				34			
Electric close make-time (ms) through Closing Coil / (Intermittent duty)		80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾				80 / 50 ¹⁾			
Electric Trip shunt trip break time (ms) / (Intermittent duty)		80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾				80 / 50 ²⁾			
Electric trip/ UV break-time (ms)		803) / 200 ⁴⁾				803) / 200 ⁴⁾				803) / 200 ⁴⁾				803) / 200 ⁴⁾				803) / 200 ⁴⁾				803) / 200 ⁴⁾			
Electric trip trough electronic trip unit (ms)		50				50				50				50				50				50			
Weights , 3-pole (with vertical main connections)																									
Circuit breaker fixed mounted	kg / lb	56 / 123.2				56 / 123.2				56 / 123.2				61 / 134.2				74 / 162.8				74 / 162.8			
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	68.5 / 150.7				68.5 / 150.7				68.5 / 150.7				72.5 / 159.5				81.5 / 179.3				81.5 / 179.3			
Cradle (guide frame)	kg / lb	55.5 / 122.1				55.5 / 122.1				55.5 / 122.1				63.5 / 139.7				69.5 / 152.9				69.5 / 152.9			
Rated impulse withstand voltage Vimp / kV																									
Main circuits														12											
Auxiliary circuits														4											
Control circuits ⁶⁾														2.5											
Dielectric Withstand – Primary Circuit		2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	3.2	2.2
Dielectric Withstand – Control Circuits														1.0											
Permissible ambient temperature °C																									
Storage														-40 to +80 ⁷⁾											
Mounting position														1) electrical closing time with closing coil 5% OP 2) with shunt trip 5% OP 3) with instantaneous under voltage release 4) with short time delayed under voltage release 5) when used according UL489 Annex SB "Naval": up to +50°C 6) spring charging motor 1.5kV 7) Storage should be in a non-condensing environment											

Technical Tables (cont'd.)

3WA2 (UL489) Frame Ratings - Frame Size 3		4000A			5000A		
Rating Class		H	E	C	H	E	C
Minimum enclosure dimension (in.)		22.5 H / 32 W / 19.5 D			22.5 H / 32 W / 19.5 D		
required ventilation openings per UL489	top (sq-in)	60 (30" x 2")			60 (30" x 2")		
	bottom (sq-in)	65			68		
Mechanical make-time (ms)		35			35		
Mechanical break-time (ms)		34			34		
Electric close make-time (ms) through closing coil / (Intermittent duty)		80 / 50 ¹⁾			80 / 50 ¹⁾		
Electric Trip shunt trip break time (ms) / (Intermittent duty)		80 / 50 ²⁾			80 / 50 ²⁾		
Electric trip/ UV break-time (ms)		803) / 200 ⁴⁾			803) / 200 ⁴⁾		
Electric trip trough electronic trip unit (ms)		50			50		
Weights , 3-pole (with vertical main connections)							
Circuit breaker fixed mounted	kg / lb	137 / 301.4			159 / 349.8		
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	116.5 / 256.3			138.5 / 304.7		
Cradle (guide frame)	kg	113.5 / 249.7			121.5 / 267.3		
Rated impulse withstand voltage Vimp / kV							
Main circuits				12			
Auxiliary circuits				4			
Control circuits ⁶⁾				2.5			
Dielectric Withstand – Primary Circuit		2.2	3.2	2.2	2.2	3.2	2.2
Dielectric Withstand – Control Circuits		1.0					
Permissible ambient temperature °C							
Storage				-40 to +80 ⁷⁾			
Mounting Position							
							

1) electrical closing time with closing coil 5% OP

2) with shunt trip 5% OP

3) with instantaneous under voltage release

4) with short time delayed under voltage release

5) when used according UL489 Annex SB "Naval": up to +50°C

6) spring charging motor 1.5kV

7) Storage should be in a non-condensing environment

Technical Tables (cont'd.)

Technical Data according to UL1066																
3WA3 (UL1066) Frame Ratings - Frame Size 1		800A			1000A			1200A			1600A			2000A		
Rating Class		N	S	E	N	S	E	N	S	E	N	S	E	N	S	E
Rated Voltage Ve		≤ 508	≤ 635	≤ 730	≤ 508	≤ 635	≤ 730	≤ 508	≤ 635	≤ 730	≤ 508	≤ 635	≤ 730	≤ 508	≤ 635	≤ 730
Interrupting current frame Ics (kAIR RMS) 50/60 Hz	254V AC	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	508V AC	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	635V AC	–	65	65	–	65	65	–	65	65	50	65	65	50	65	65
	730V AC	--	--	65	–	–	65	–	–	65	–	–	65	–	–	65
Short-time current Icw (kA RMS)	0.5 s / 508V	42	50	65	42	50	65	42	50	65	50	50	65	50	65	65
	1 s / 508V	42	50	65	42	50	65	42	50	65	50	50	65	50	65	65
	0.5 s / 635V (730V)	–	50	65	–	50	65	–	50	65	50	50	65	50	65	65
	1 s / 635V (730V)	–	50	65	–	50	65	–	50	65	50	50	65	50	65	65
Short Circuit Making Current (kA asymmetrical)	508V AC	115	150	196	115	150	196	115	150	196	115	150	196	115	150	196
	635V (730V)	115	150	150	115	150	150	115	150	150	115	150	150	115	150	150
Electrical endurance according ANSI C37.50																
Electrical duty cycles Ve ≤ 635V (no maintenance)		10,000	10,000	7,500	10,000	10,000	7,500	10,000	10,000	7,500	10,000	10,000	7,500	10,000	10,000	7,500
Electrical duty cycles Ve ≤ 730V (no maintenance)		–	–	7,500	–	–	7,500	–	–	7,500	–	–	7,500	–	–	7,500
Electrical duty cycles Ve ≤ 635V (with maintenance)		30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000
Electrical duty cycles Ve ≤ 730V (with maintenance)		–	–	15,000	–	–	15,000	–	–	15,000	–	–	15,000	–	–	15,000
Power losses																
Draw-out breaker efficiency (Watts loss at In)		120	125	125	200	200	200	270	270	270	500	500	500	650	650	650
Fixed-mount breaker efficiency (Watts loss at In)		70	55	55	105	90	90	150	150	150	175	175	175	270	270	270
vertical Bus bar connection according ANSI C37.50-2018		1 pcs. (3" x 1/4")			2 pcs. (2" x 1/4")			2 pcs. (2.5" x 1/4")			2 pcs. (3" x 1/4")			2 pcs. (4" x 1/4")		
Minimum enclosure dimension (in.)		3-pole: 22.5 H / 14 W / 19.5 D			3-pole: 22.5 H / 14 W / 19.5 D			3-pole: 22.5 H / 14 W / 19.5 D			3-pole: 22.5 H / 14 W / 19.5 D			3-pole: 22.5 H / 14 W / 19.5 D		
		4-pole: 22.5 H / 22 W / 19.5 D			4-pole: 22.5 H / 22 W / 19.5 D			4-pole: 22.5 H / 22 W / 19.5 D			4-pole: 22.5 H / 22 W / 19.5 D			4-pole: 22.5 H / 22 W / 19.5 D		
required ventilation openings per ANSI C37.51	top (sq-in)	not required			not required			not required			not required			3-pole: 24 (12" x 2") 4-pole: 36 (18" x 2")		
	bottom (sq-in)	not required			not required			not required			not required			3-pole: 23,5 4-pole: 34,8		

Technical Data according to IEC60947-2

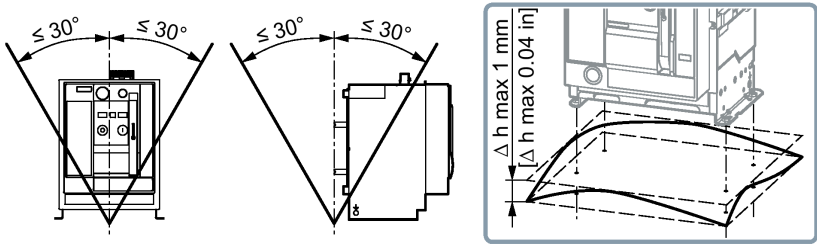
Technical Table s (cont'd.)

3WA3 (UL1066) Frame Ratings - Frame Size 1 (cont'd.)		800A			1000A			1200A			1600A			2000A		
Rating Class		N	S	E	N	S	E	N	S	E	N	S	E	N	S	E
Rated Insulation Voltage Ui / V		≤ 1000			≤ 1000			≤ 1000			≤ 1000			≤ 1000		
Rated Voltage Ve / V		≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 1000
Short circuit breaking capacity Icu/Ics (50Hz) / kA	415 V	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65
	500V	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65	50/50	65/65	65/65
	690V	42/42	50/50	65/65	42/42	50/50	65/65	42/42	50/50	65/65	42/42	50/50	65/65	42/42	50/50	65/65
	1000V	–	–	50/50	–	–	50/50	–	–	50/50	–	–	50/50	–	–	50/50
Short time withstand current Icw / kA	0.5s / 500V	50	65	65	50	65	65	50	65	65	50	65	65	50	65	65
	1s / 500V	50	65	65	50	65	65	50	65	65	50	65	65	50	65	65
	2s / 500V	35	45	65	35	45	65	35	45	65	35	45	65	35	45	65
	3s / 500V	30	35	60	30	35	60	30	35	60	30	35	60	30	35	60
	0.5s / 690V	42	50	65	42	50	65	42	50	65	42	50	65	42	50	65
	1s / 690V	42	50	65	42	50	65	42	50	65	42	50	65	42	50	65
	2s / 690V	35	45	65	35	45	65	35	45	65	35	45	65	35	45	65
	3s / 690V	30	35	60	30	35	60	30	35	60	30	35	60	30	35	60
	0.5s / 1000V	–	–	50	–	–	50	–	–	50	–	–	50	–	–	50
	1s / 1000V	–	–	50	–	–	50	–	–	50	–	–	50	–	–	50
	2s / 1000V	–	–	50	–	–	50	–	–	50	–	–	50	–	–	50
	3s / 1000V	–	–	50	–	–	50	–	–	50	–	–	50	–	–	50
	Short Circuit Making Current Icm/ kA (asymmetrical)	415 V	105	143	143	105	143	143	105	143	143	105	143	143	105	143
500V		105	143	143	105	143	143	105	143	143	105	143	143	105	143	143
690V		88	105	143	88	105	143	88	105	143	88	105	143	88	105	143
1000V		–	–	105	–	–	105	–	–	105	–	–	105	–	–	105
Rated conditional short-circuit current Icc of the non-automatic air circuit breakers / kA	500V	50	65	65	50	65	65	50	65	65	50	65	65	50	65	65
	690V	42	50	65	42	50	65	42	50	65	42	50	65	42	50	65
	1000V	–	–	50	–	–	50	–	–	50	–	–	50	–	–	50
Electrical endurance according IEC60947-2																
Electrical duty cycles Ve ≤ 690V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	7,500	7,500	7,500
Electrical duty cycles Ve ≤ 1000V (no maintenance)		–	–	1,000	–	–	1,000	–	–	1,000	–	–	1,000	–	–	1,000
Electrical duty cycles Ve ≤ 690V (with maintenance)		30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000
Electrical duty cycles Ve ≤ 1000V (with maintenance)		–	–	15,000	–	–	15,000	–	–	15,000	–	–	15,000	–	–	15,000
Power losses																
(IEC) Draw-out breaker efficiency (Watts loss at In)		115	115	115	185	195	195	260	260	260	480	480	480	620	620	620
(IEC) Fixed-mount breaker efficiency (Watts loss at In)		65	55	55	100	90	90	145	145	145	165	165	165	260	260	260
vertical Bus bar connection according IEC60947-1		2 pcs. (1.5" x 1/4")			2 pcs. (2" x 1/4")			2 pcs. (2.5" x 1/4")			2 pcs. (3" x 1/4")			3 pcs. (3" x 1/4")		
Ambient operating temperature inside IEC switchgear (°C)		-40 to +70			-40 to +70			-40 to +70			-40 to +70			-40 to +70		
Isolating function acc. to EN 60947-2		✓														
Utilisation Catagory		B														
Degree of protection when installed in power distribution																
Without any measures		IP20														
With door sealing frame		IP41														
With IPS5 protective cover		IP55														

Technical Tables (cont'd.)

General technical data

3WA3 (UL1066) Frame Ratings - Frame Size 1 (cont'd.)																
Rating Class		800A			1000A			1200A			1600A			2000A		
		N	S	E	N	S	E	N	S	E	N	S	E	N	S	E
Mechanical make-time (ms)		35			35			35			35			35		
Mechanical break-time (ms)		38			38			38			38			38		
Electric close make-time (ms) through Closing Coil / (Intermittent duty)		80 / 50 ¹⁾			80 / 50 ¹⁾			80 / 50 ¹⁾			80 / 50 ¹⁾			80 / 50 ¹⁾		
Electric Trip shunt trip break time (ms) / (Intermittent Duty)		80 / 50 ²⁾			80 / 50 ²⁾			80 / 50 ²⁾			80 / 50 ²⁾			80 / 50 ²⁾		
Electric trip/ UV break-time (ms)		80 3) / 200 ⁴⁾			80 3) / 200 ⁴⁾			80 3) / 200 ⁴⁾			80 3) / 200 ⁴⁾			80 3) / 200 ⁴⁾		
Electric trip trough electronic trip unit (ms)		50			50			50			50			50		
Weights , 3-pole (with vertical main connections)																
Circuit breaker fixed mounted	kg / lb	40 / 88			40 / 88			40 / 88			45 / 99			46 / 101.2		
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	48.5 / 106.7			48.5 / 106.7			48.5 / 106.7			54.5 / 119.9			55.5 / 122.1		
Cradle (guide frame)	kg / lb	50.5 / 111.1			50.5 / 111.1			50.5 / 111.1			51.5 / 113.3			58.5 / 128.7		
Weights , 4-pole (with vertical main connections)																
Circuit breaker fixed mounted	kg	49			49			49			54			55		
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg	59.5			59.5			59.5			75.5			76.5		
Cradle (guide frame)	kg	61.5			61.5			61.5			62.5			69.5		
Rated impulse withstand voltage Vimp / kV																
Main circuits		12														
Auxiliary circuits		4														
Control circuits ⁵⁾		2.5														
Dielectric Withstand – Primary Circuit		2.2	2.2	3.2	2.2	2.2	3.2	2.2	2.2	3.2	2.2	2.2	3.2	2.2	2.2	3.2
Dielectric Withstand – Control Circuits		1.0														
Permissible abient temperature °C																
Storage		-40 to +80 ⁶⁾														
Mounting position																



1) electrical closing time with closing coil 5% OP

2) with shunt trip 5% OP

3) with instantaneous under voltage release

4) with short time delayed under voltage release

5) spring charging motor Vimp = 1.5kV

6) Storage should be in a non-condensing environment

Technical Tables (cont'd.)

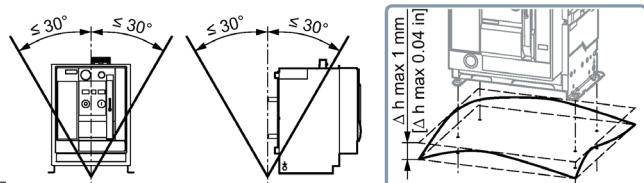
Technical Data according to UL1066		800A					1200A					1600A					2000A					2500A					3200A				
3WA3 (UL1066) Frame Ratings - Frame Size 2		N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E
Rating Class		≤ 635	≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 635	≤ 635	≤ 730
Interrupting current frame Ics (kAIR RMS) 50/60 Hz	254V AC	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100
	508V AC	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100
	635V AC	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85
	730V AC	--	--	--	--	85	--	--	--	--	85	--	--	--	--	85	--	--	--	--	85	--	--	--	--	85	--	--	--	--	85
Short-time current Icw (kA RMS)	0.5 s / 508V	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85
	1 s / 508V	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85
	0.5 s / 635V (730V)	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85
	1 s / 635V (730V)	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85	50	65	65	85	85
Short Circuit Making Current (kA asymmetrical)	508V AC	115	150	196	230	230	115	150	196	230	230	115	150	196	230	230	115	150	196	230	230	115	150	196	230	230	115	150	196	230	230
	635V (730V)	115	150	150	196	196	115	150	150	196	196	115	150	150	196	196	115	150	150	196	196	115	150	150	196	196	115	150	150	196	196
Electrical endurance according ANSI C37.50																															
Electrical duty cycles Ve ≤ 635V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Electrical duty cycles Ve ≤ 730V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Electrical duty cycles Ve ≤ 635V (with maintenance)		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Electrical duty cycles Ve ≤ 730V (with maintenance)		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Power losses																															
Draw-out breaker efficiency (Watts loss at In)		75	75	75	75	75	155	155	155	155	155	280	280	280	280	280	380	380	380	380	380	480	480	480	480	480	780	780	780	780	780
Fixed-mount breaker efficiency (Watts loss at In)		40	40	40	40	40	85	85	85	85	85	145	145	145	145	145	210	210	210	210	210	210	210	210	210	340	340	340	340	340	
vertical Bus bar connection according ANSI C37.50-2018		1 pcs. (3" x 1/4")					2 pcs. (2" x 1/4")					2 pcs. (3" x 1/4")					2 pcs. (4" x 1/4")					3 pcs. (4" x 1/4")					3 pcs. (5" x 1/4")				
Minimum enclosure dimension (in.)		"3-pole: 22.5 H / 22 W / 19.5 D					"3-pole: 22.5 H / 22 W / 19.5 D					"3-pole: 22.5 H / 22 W / 19.5 D					"3-pole: 22.5 H / 22 W / 19.5 D					"3-pole: 22.5 H / 22 W / 19.5 D					"3-pole: 22.5 H / 22 W / 19.5 D				
		4-pole: 22.5 H / 32 W / 19.5 D"					4-pole: 22.5 H / 32 W / 19.5 D"					4-pole: 22.5 H / 32 W / 19.5 D"					4-pole: 22.5 H / 32 W / 19.5 D"					4-pole: 22.5 H / 32 W / 19.5 D"					4-pole: 22.5 H / 32 W / 19.5 D"				
"required ventilation openings per ANSI C37.51"	"top (sq-in)"	not required					not required					not required					not required					"3-pole: 44 (22"" x 2"") 4-pole: 60 (30"" x 2"")"					"3-pole: 44 (22"" x 2"") 4-pole: 60 (30"" x 2"")"				
	"bottom (sq-in)"	not required					not required					not required					not required					"3-pole: 41,8 4-pole: 56,2"					"3-pole: 41,8 4-pole: 56,2"				

Technical Tables (cont'd.)

Technical Data according to IEC60947-2																															
3WA3 (UL1066) Frame Ratings - Frame Size 2 (cont'd.)		800A					1200A					1600A					2000A					2500A					3200A				
Rating Class		N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E
Rated insulation Voltage Vi		≤ 1000					≤ 1000					≤ 1000					≤ 1000					≤ 1000					≤ 1000				
Rated Voltage Ve / V		≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 690	≤ 690	≤ 1000
Short circuit breaking capacity Icu/Ics (50Hz) / kA	415 V	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85
	500V	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85
	690V	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85
	1000V	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85
Short time withstand current Icw / kA	0.5s / 500V	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100	50	65	85	100	100
	1s / 500V	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85	50	65	85	85	85
	2s / 500V	50	50	65	65	65	50	50	65	65	65	50	50	65	65	65	50	50	65	65	65	50	50	65	65	65	50	50	85	85	85
	3s / 500V	50	55	55	55	55	50	55	55	55	55	50	55	55	55	55	50	55	55	55	55	50	55	55	55	55	50	65	75	75	75
	0.5s / 690V	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85
	1s / 690V	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85
	2s / 690V	42	50	65	65	65	42	50	65	65	65	42	50	65	65	65	42	50	65	65	65	42	50	65	65	65	42	50	65	85	85
	3s / 690V	42	50	55	55	55	42	50	55	55	55	42	50	55	55	55	42	50	55	55	55	42	50	55	55	55	42	50	65	75	75
	0.5s / 1000V	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85
	1s / 1000V	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85
	2s / 1000V	-	-	-	-	66	-	-	-	-	66	-	-	-	-	66	-	-	-	-	66	-	-	-	-	66	-	-	-	-	85
	3s / 1000V	-	-	-	-	55	-	-	-	-	55	-	-	-	-	55	-	-	-	-	55	-	-	-	-	55	-	-	-	-	74
	"Short Circuit Making Current Icm/ kA (ansymmetrical)"	415 V	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220
500V		105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187	105	143	187	220	187
690V		88	105	143	187	187	88	105	143	187	187	88	105	143	187	187	88	105	143	187	187	88	105	143	187	187	88	105	143	187	187
1000V		-	-	-	-	105	-	-	-	-	105	-	-	-	-	105	-	-	-	-	105	-	-	-	-	105	-	-	-	-	105
"Rated conditional short-circuit current Icc of the non-automatic air circuit breakers / kA "	500V	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85	50	65	85	100	85
	690V	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85	42	50	65	85	85
	1000V	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85	-	-	-	-	85
Electrical Endurance																															
Electrical duty cycles Ue ≤ 690V (no maintenance)		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Electrical duty cycles Ue ≤ 1000V (no maintenance)		-	-	-	-	1,000	-	-	-	-	1,000	-	-	-	-	1,000	-	-	-	-	1,000	-	-	-	-	1,000	-	-	-	-	1,000
Electrical duty cycles Ue ≤ 690V (with maintenance)		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Electrical duty cycles Ue ≤ 1000V (with maintenance)		-	-	-	-	20,000	-	-	-	-	20,000	-	-	-	-	20,000	-	-	-	-	20,000	-	-	-	-	20,000	-	-	-	-	20,000
Power losses																															
(IEC) Draw-out breaker efficiency (Watts loss at In)		70	70	70	70	70	145	145	145	145	145	270	270	270	270	270	360	360	360	360	360	450	450	450	450	450	710	710	710	710	710
(IEC) Fixed-mount breaker efficiency (Watts loss at In)		35	35	35	35	35	75	75	75	75	75	135	135	135	135	135	200	200	200	200	200	200	200	200	200	325	325	325	325	325	
vertical Bus bar connection according IEC60947-1		2 pcs. (1.5" x 1/4")					2 pcs. (2.5" x 1/4")					2 pcs. (3" x 1/4")					3 pcs. (3" x 1/4")					4 pcs. (3" x 1/4")					3 pcs. (6" x 1/4")				
Ambient operating temperature inside IEC switchgear (°C)		-40 to +70					-40 to +70					-40 to +70					-40 to +70					-40 to +70					-40 to +70				
Isolating function acc. to EN 60947-2		✓																													
Utilisation Catagory		B																													
Degree of protection when installed in power distribution equipment																															
Without any measures		IP20																													
With door sealing frame		IP41																													
With IP55 protective cover		IP55																													

Technical Tables (cont'd.)

General technical data

3WA3 (UL1066) Frame Ratings - Frame Size 2 (cont'd.)		800A					1200A					1600A					2000A					2500A					3200A					
Rating Class		N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	N	S	M	H	E	
Applicable option plug range		200-800A					200-1200A					200-1600A					200-2000A					200-2500A					200-3200A					
Mechanical make-time (ms)		35					35					35					35					35					35					
Mechanical break-time (ms)		34					34					34					34					34					34					
Electric close make-time (ms) by Closing Coil / (Intermittent Duty)		80 / 50 ¹⁾					80 / 50 ¹⁾					80 / 50 ¹⁾					80 / 50 ¹⁾					80 / 50 ¹⁾					80 / 50 ¹⁾					
Electric Trip shunt trip break time (ms) / (Intermittent Duty)		80 / 50 ²⁾					80 / 50 ²⁾					80 / 50 ²⁾					80 / 50 ²⁾					80 / 50 ²⁾					80 / 50 ²⁾					
Electric trip/ UV break-time (ms)		803) / 200 ⁴⁾					803) / 200 ⁴⁾					803) / 200 ⁴⁾					803) / 200 ⁴⁾					803) / 200 ⁴⁾					803) / 200 ⁴⁾					
Electric trip by electronic trip unit (ms)		50					50					50					50					50					50					
Weights , 3-pole (with vertical main connections)																																
Circuit breaker fixed mounted	kg / lb	56 / 123.2					56 / 123.2					56 / 123.2					61 / 134.2					74 / 162.8					74 / 162.8					
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	68.5 / 150.7					68.5 / 150.7					68.5 / 150.7					72.5 / 159.5					81.5 / 179.3					81.5 / 179.3					
Cradle (guide frame)	kg / lb	55.5 / 122.1					55.5 / 122.1					55.5 / 122.1					63.5 / 139.7					69.5 / 152.9					69.5 / 152.9					
Weights , 4-pole (with vertical main connections)																																
Circuit breaker fixed mounted	kg / lb	74 / 162.8					74 / 162.8					74 / 162.8					79 / 173.8					92 / 202.4					92 / 202.4					
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	87.5 / 192.5					87.5 / 192.5					87.5 / 192.5					91.5 / 201.3					115.5 / 254.1					115.5 / 254.1					
Cradle (guide frame)	kg / lb	76.5 / 168.3					76.5 / 168.3					76.5 / 168.3					84.5 / 185.9					97.5 / 214.5					97.5 / 214.5					
Rated impulse withstand voltage Vimp / kV																																
Main circuits		12																														
Auxiliary circuits		4																														
Control circuits 5)		2.5																														
Dielectric Withstand - Primary Circuit		2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	2.2	3.2	2.2	2.2	2.2	2.2	3.2	
Dielectric Withstand - Control Circuits		1.0																														
Permissible abient temperature °C																																
Storage		-40 to +80 6)																														
Mounting position																																
																																

1) electrical closing time with closing coil 5% OP

2) with shunt trip 5% OP

3) with instantaneous under voltage release

4) with short time delayed under voltage release

6) spring charging motor Vimp =1.5kV

7) Storage should be in a non-condensing environment

Technical Tables (cont'd.)

Technical Data according to UL1066

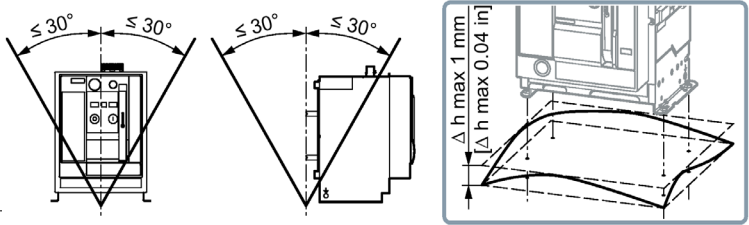
3WA3 (UL1066) Frame Ratings - Frame Size 3		3200A		4000A		5000A				
Rating Class		C	M	H	E	C	M	H	E	C
Rated Voltage Ve / V		≤ 635	≤ 635	≤ 635	≤ 730	≤ 635	≤ 635	≤ 35	≤ 730	≤ 635
Interrupting current frame Ics (kAIR RMS) 50/60 Hz	254V AC	150	85	100	100	150	85	100	100	150
	508V AC	150	85	100	100	150	85	100	100	150
	635V AC	100	65	85	100	100	65	85	100	100
	730V AC	–	–	–	100	–	–	–	100	–
Short-time current Icw (kA RMS)	0.5 s / 508V	100	85	100	100	100	85	100	100	100
	1 s / 508V	100	85	100	100	100	85	100	100	100
	0.5 s / 635V (730V)	100	65	85	100	100	65	85	100	100
	1 s / 635V (730V)	100	65	85	100	100	65	85	100	100
Short Circuit Making Current (kA asymmetrical)	508V AC	345	196	230	230	345	196	230	230	345
	635V (730V)	230	196	196	230	230	196	196	230	230
Electrical endurance according ANSI C37.50										
Electrical duty cycles Ve ≤ 635V (no maintenance)		2000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Electrical duty cycles Ve ≤ 730V (no maintenance)		2000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Electrical duty cycles Ve ≤ 635V (with maintenance)		10,000	15,000	15,000	15,000	10,000	15,000	15,000	15,000	10,000
Electrical duty cycles Ve ≤ 730V (with maintenance)		10,000	15,000	15,000	15,000	10,000	15,000	15,000	15,000	10,000
Power losses										
(IEC) Draw-out breaker efficiency (Watts loss at In)			900	900	900	1140	1140	1140	1260	1260
(IEC) Fixed-mount breaker efficiency (Watts loss at In)			520	520	520	620	620	620	700	700
vertical Bus bar connection according ANSI C37.50-2018		4 pcs. (5" x 1/4")	4 pcs. (5" x 1/4")				6 pcs. (5" x 1/4")			
Minimum enclosure dimension (in.)		3-pole: 22.5 H / 32 W / 19.5 D	3-pole: 22.5 H / 32 W / 19.5 D				3-pole: 22.5 H / 32 W / 19.5 D			
			4-pole (M; H; E-class): 22.5 H / 42 W / 19.5 D				4-pole (M; H; E-class): 22.5 H / 42 W / 19.5 D			
required ventilation openings per ANSI C37.51	top (sq-in)		3-pole: 60 (30" x 2") 4-pole: 76 (38" x 2")				3-pole: 60 (30" x 2") 4-pole: 76 (38" x 2")			
	bottom (sq-in)		3-pole: 65 4-pole: 90				3-pole: 68.2 4-pole: 96.8			

Technical Tables (cont'd.)

Technical Data according to IEC60947-2							
3WA3 (UL1066) Frame Ratings - Frame Size 3 (cont'd.)		4000A			5000A		
Rating Class		M	H	E	M	H	E
Rated Voltage Ve / V		≤ 690	≤ 690	≤ 1000	≤ 690	≤ 690	≤ 1000
Short circuit breaking capacity Icu/Ics (50Hz) / kA	415 V	85	100	100	85	100	100
	500V	85	100	100	85	100	100
	690V	65	85	85	65	85	100
	1000V	–	–	85	–	–	85
Short time withstand current Icw / kA	0s / 500V	85	100	100	85	100	100
	1s / 500V	85	100	100	85	100	100
	2s / 500V	70	70	70	85	100	100
	3s / 500V	57	57	57	85	100	100
	0.5s / 690V	65	85	85	65	85	100
	1s / 690V	65	85	85	65	85	100
	2s / 690V	65	70	70	65	85	100
	3s / 690V	57	57	57	65	85	100
	0.5s / 1000V	–	–	85	–	–	85
	1s / 1000V	–	–	85	–	–	85
	2s / 1000V	–	–	70	–	–	85
	3s / 1000V	–	–	57	–	–	85
	Short Circuit Making Current Icm / kA (asymmetrical)	415 V	187	220	220	187	220
500V		187	220	220	187	220	220
690V		143	187	187	143	187	220
1000V		–	–	187	–	–	187
Rated conditional short-circuit current Icc of the non-automatic air circuit breakers / kA	500V	85	100	100	85	100	100
	690V	65	85	85	65	85	100
	1000V	–	–	85	–	–	85
Electrical endurance according IEC60947-2							
Electrical duty cycles Ve ≤ 690V (no maintenance)		2,000	2,000	2,000	2,000	2,000	2,000
Electrical duty cycles Ve ≤ 1000V (no maintenance)		–	–	1,000	–	–	1,000
Electrical duty cycles Ve ≤ 690V (with maintenance)		15,000	15,000	15,000	15,000	15,000	15,000
Electrical duty cycles Ve ≤ 1000V (with maintenance)		–	–	15,000	–	–	15,000
Power losses							
(IEC) Draw-out breaker efficiency (Watts loss at In)		900	900	900	900	1140	1140
(IEC) Fixed-mount breaker efficiency (Watts loss at In)		520	520	520	520	620	620
vertical Bus bar connection according IEC60947-1		4 pcs. (5" x 1/4")			6 pcs. (5" x 1/4")		
Ambient operating temperature inside IEC switchgear (°C)		-40 to +70			-40 to +70		
Isolating function acc. to EN 60947-2		✓					
Utilisation Catagory		B					
Degree of protection when installed in power distribution equipment							
Without any measures		IP20					
With door sealing frame		IP41					
With IP55 protective cover		IP55					

Technical Tables (cont'd.)

General technical data									
3WA3 (UL1066) Frame Ratings - Frame Size 3 (cont'd.)									
Applicable option plug range	800-3200A		800-4000A		800-5000A				
Minimum enclosure dimension (in.)	3-pole: 22.5 H / 32 W / 19.5 D		3-pole: 22.5 H / 32 W / 19.5 D		3-pole: 22.5 H / 32 W / 19.5 D				
			4-pole (M; H; E-class): 22.5 H / 42 W / 19.5 D		4-pole (M; H; E-class): 22.5 H / 42 W / 19.5 D				
Mechanical make-time (ms)	35		35		35				
Mechanical break-time (ms)	34		34		34				
Electric close make-time (ms) through Closing Coil / (Intermittent Duty)	80 / 50 ¹⁾		80 / 50 ¹⁾		80 / 50 ¹⁾				
Electric Trip shunt trip break time (ms) / (Intermittent Duty)	80 / 50 ²⁾		80 / 50 ²⁾		80 / 50 ²⁾				
Electric trip/ UV break-time (ms)	803) / 200 ⁴⁾		803) / 200 ⁴⁾		803) / 200 ⁴⁾				
Electric trip trough electronic trip unit (ms)	50		50		50				
Weights , 3-pole (with vertical main connections)									
Circuit breaker fixed mounted	kg / lb	159 / 349.8	137 / 301.4	159 / 349.8	159 / 349.8				
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	138.5 / 304.7	116.5 / 256.3	138.5 / 304.7	138.5 / 304.7				
Cradle (guide frame)	kg / lb	121.5 / 267.3	113.5 / 249.7	121.5 / 267.3	121.5 / 267.3				
Weights , 4-pole (with vertical main connections)									
Circuit breaker fixed mounted	kg / lb	–	174 / 382.8	204 / 448.8					
Circuit breaker fixed withdrawable w/o cradle (guide frame)	kg / lb	–	146.5 / 322.3	176.5 / 388.3					
Cradle (guide frame)	kg / lb	–	152.5 / 335.5	160.5 / 353.1					
Rated impulse withstand voltage Vimp / kV									
Main circuits				12					
Auxiliary circuits				4					
Control circuits ⁵⁾				2.5					
Dielectric Withstand – Primary Circuit	2.2	2.2	2.2	3.2	2.2	2.2	3.2	2.2	
Dielectric Withstand – Control Circuits				10					
Permissible abient temperature °C									
Storage				-40 to + 80 ⁶⁾					
Mounting position									



1) electrical closing time with closing coil 5% OP

2) with shunt trip 5% OP

3) with instantaneous under voltage release

4) with short time delayed under voltage release

5) spring charging motor Vimp = 1.5kV

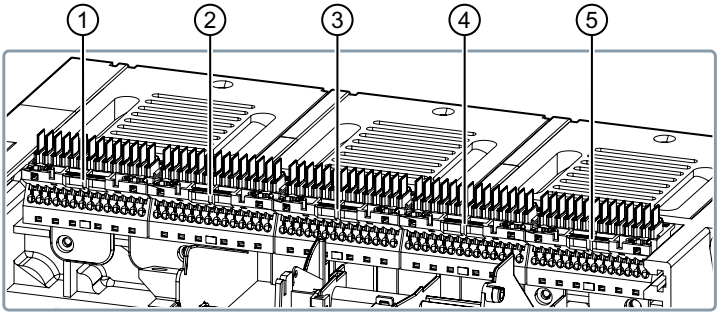
6) Storage should be in a non-condensing environment

Wiring Diagrams

Circuit Diagrams

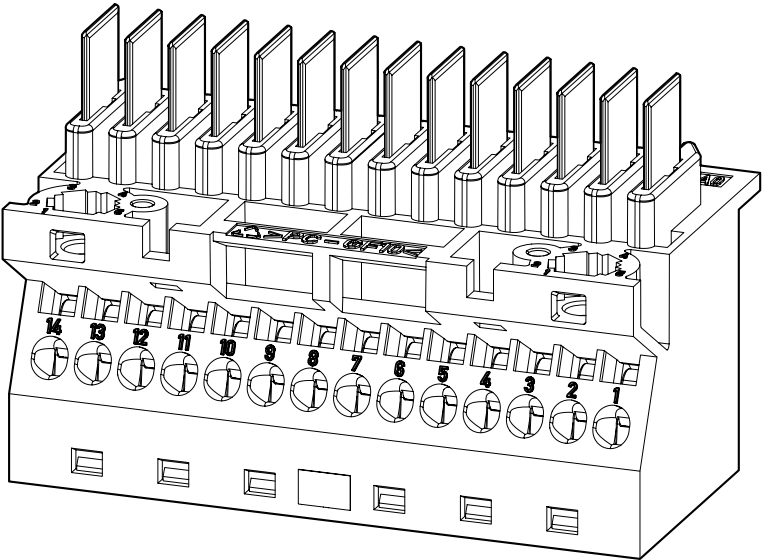
Secondary disconnect terminal blocks X5 to X9 and their terminal markings

The secondary disconnect terminal blocks are mounted above the operator panel.



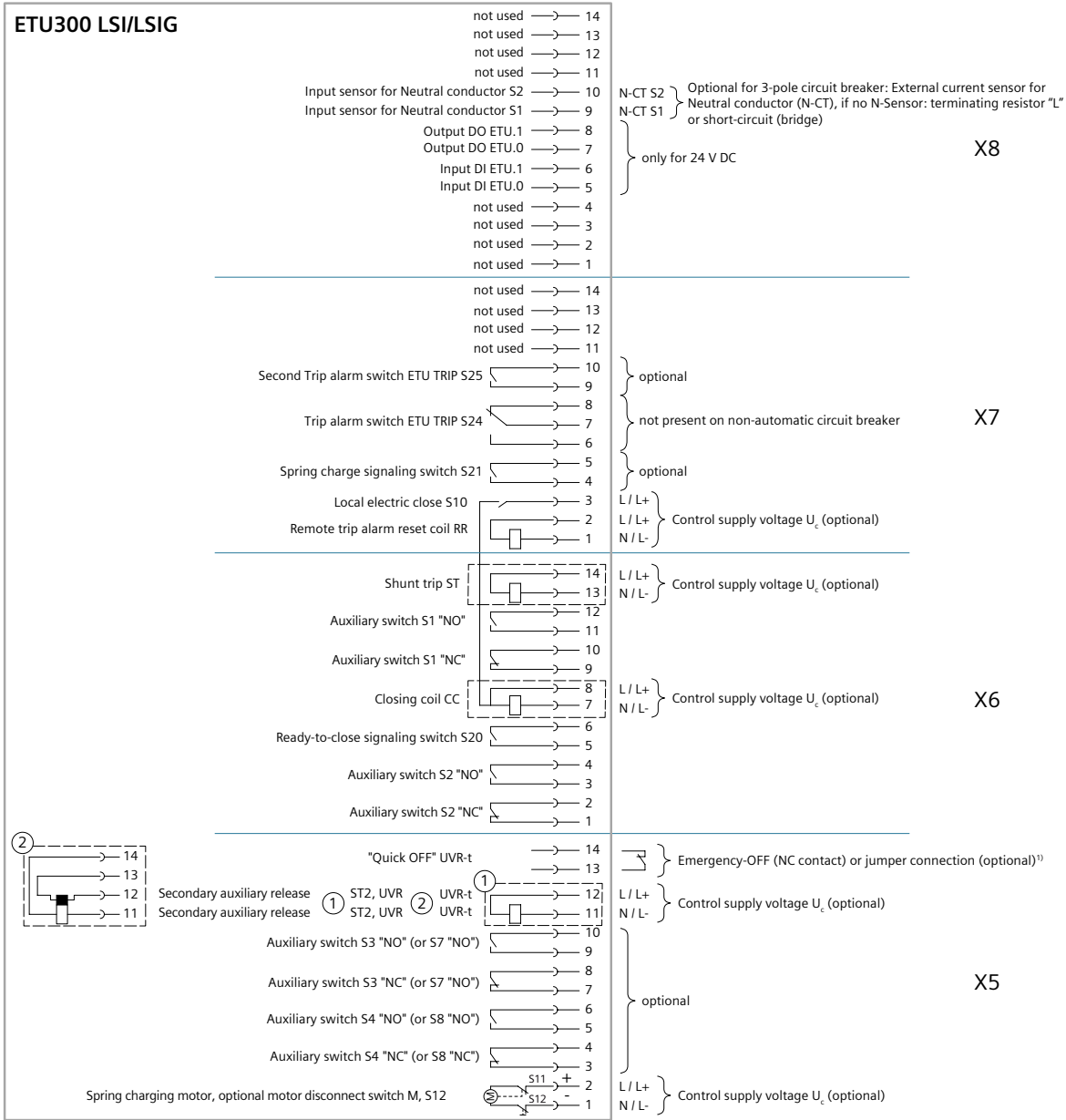
- (1) Secondary disconnect terminal block X9 (sizes 2 and 3 only)
- (2) Secondary disconnect terminal block X8
- (3) Secondary disconnect terminal block X7
- (4) Secondary disconnect terminal block X6
- (5) Secondary disconnect terminal block X5

The terminals of each of the secondary disconnect terminal blocks are numbered in descending order from left to right.



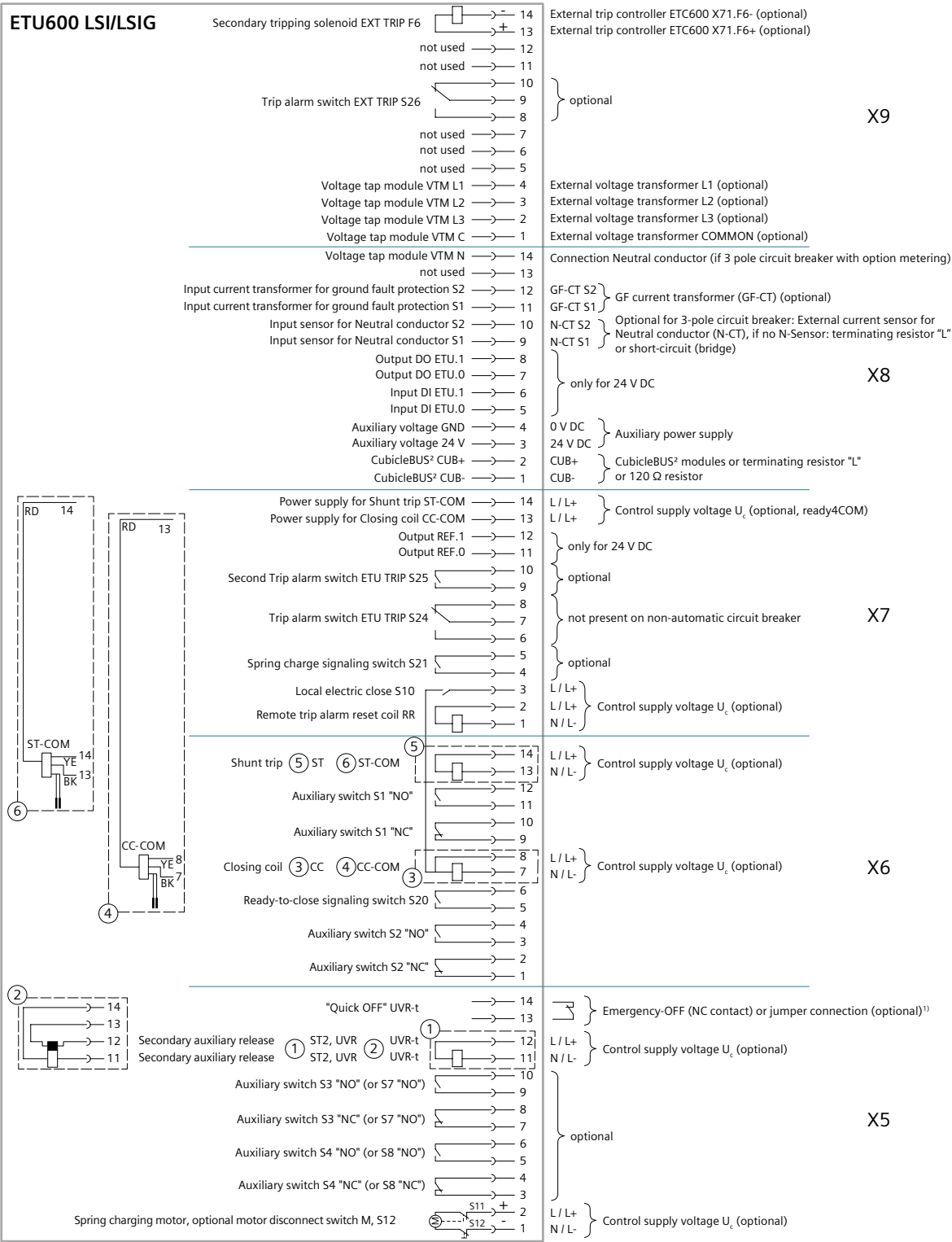
Terminal connection diagrams of secondary disconnect terminal

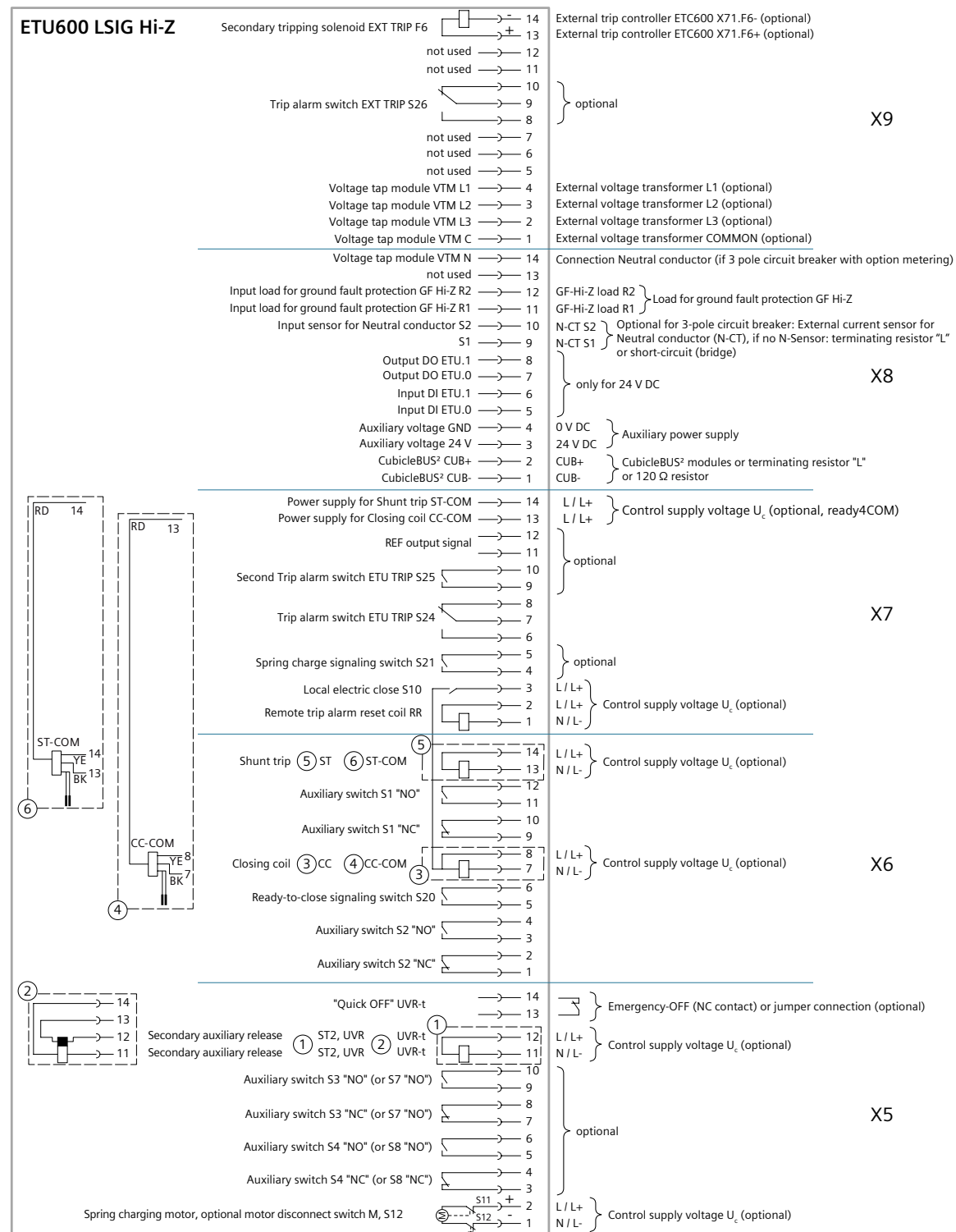
ETU300 terminal assignment diagram



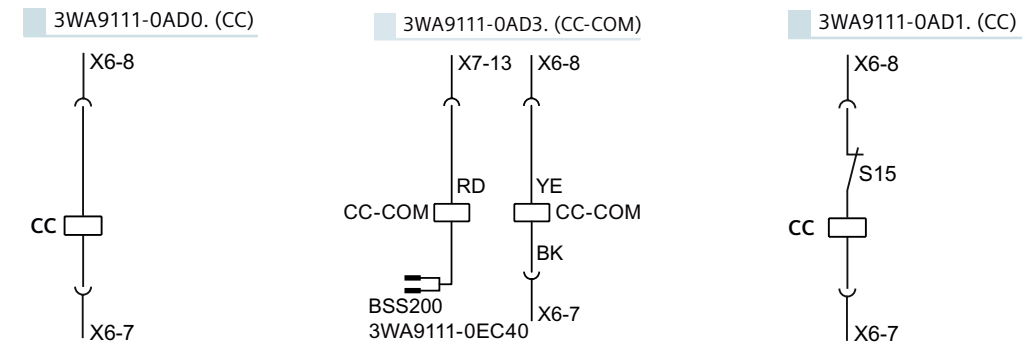
ETU600 terminal assignment diagram

ETU600 terminal assignment diagram

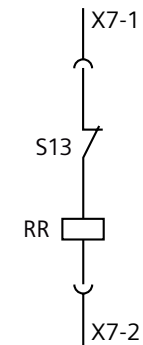




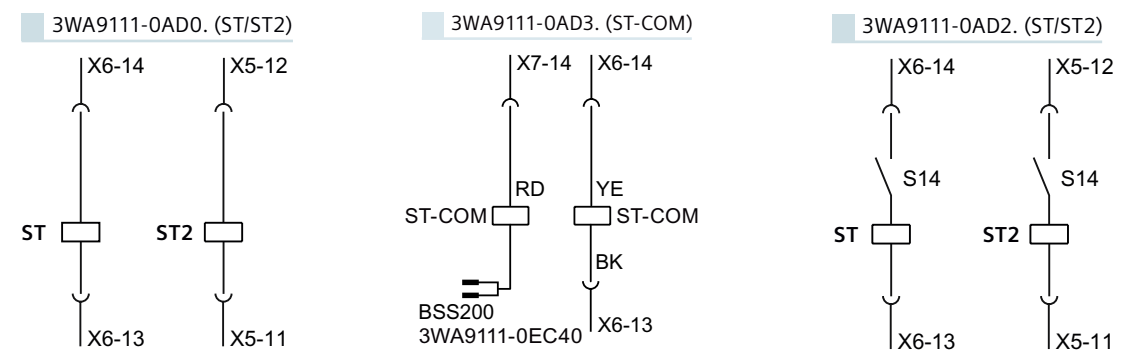
Closing coil CC / CC-COM



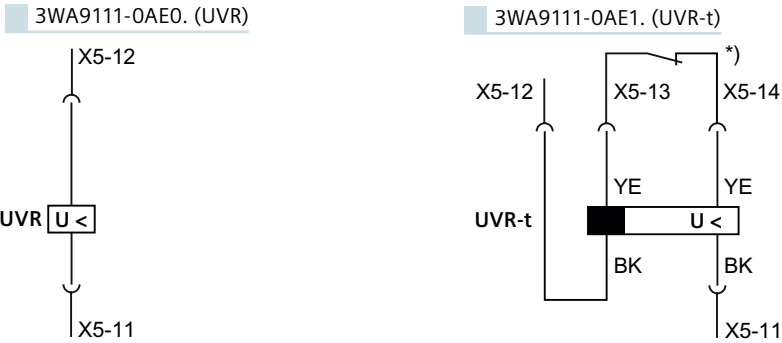
Remote trip alarm reset coil RR



Shunt trip ST / ST-COM / ST2

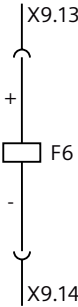


Undervoltage release UVR / UVR-t

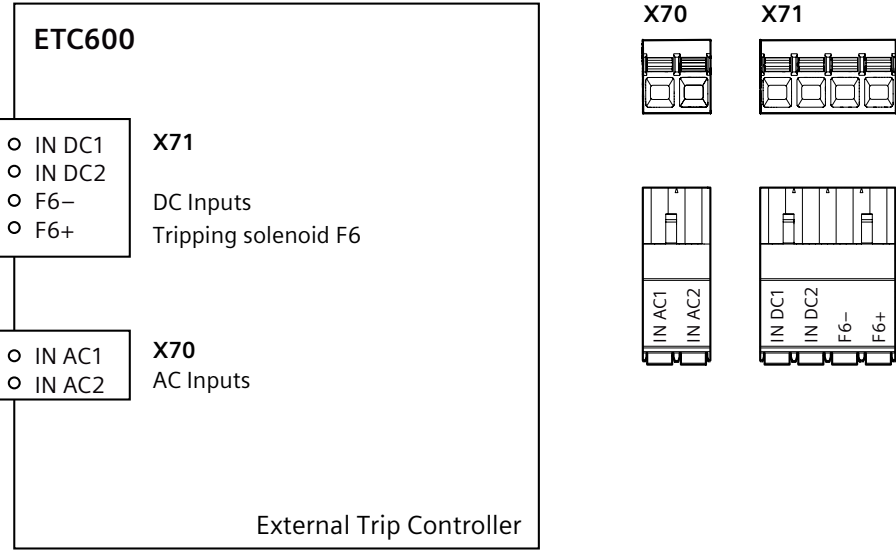


*) EMERGENCY OFF or jumper. Shunt trip with 100% ON period can be used as an electrical closing lockout.

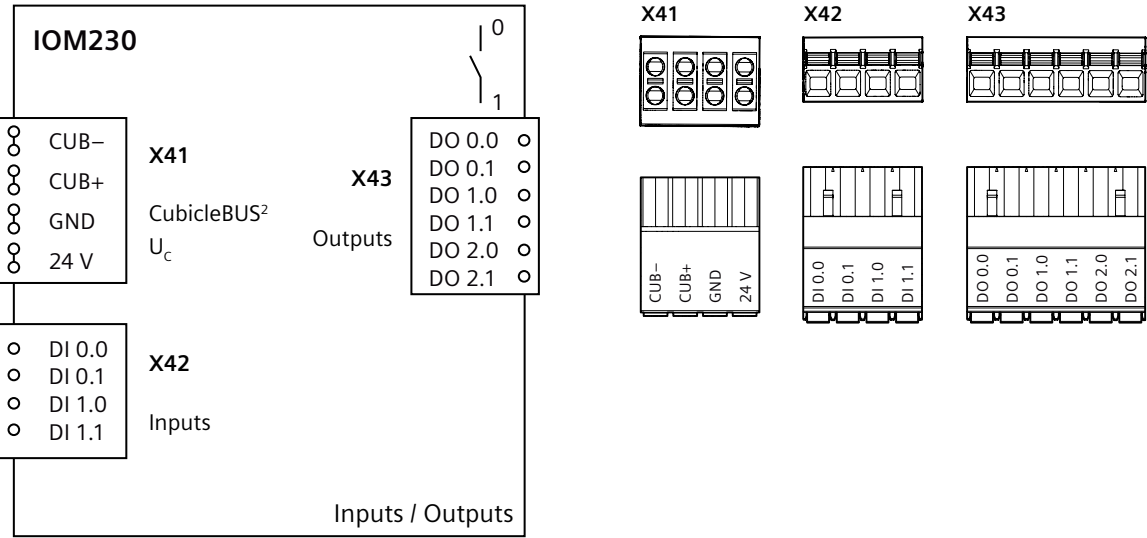
Second tripping solenoid F6 with reclosing lockout



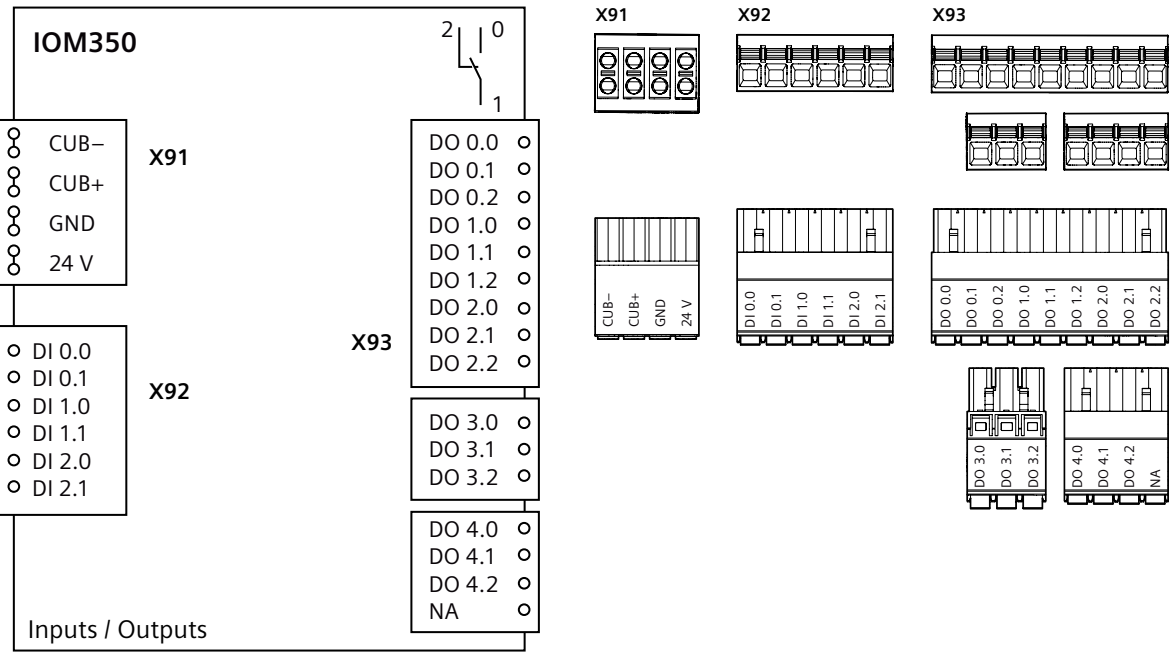
External Trip Controller ETC600



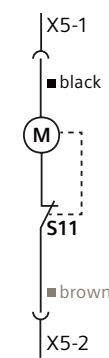
Digital input / output module IOM230



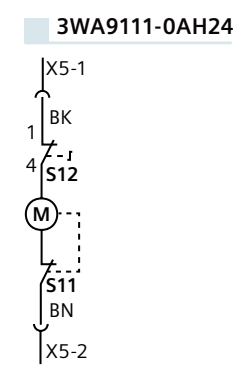
Digital input/output module IOM350



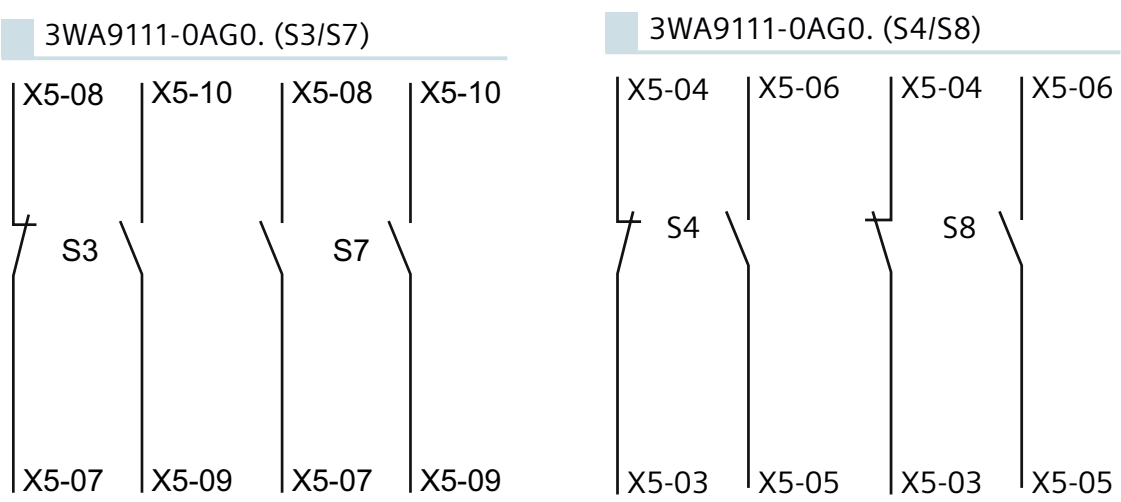
Spring charging motor



Motor disconnect switch

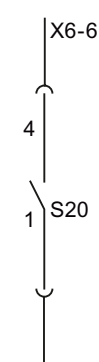


Auxiliary switch*

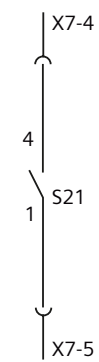


* All auxiliary, signaling, and status contacts are shown in the breaker open, uncharged, and untripped position.

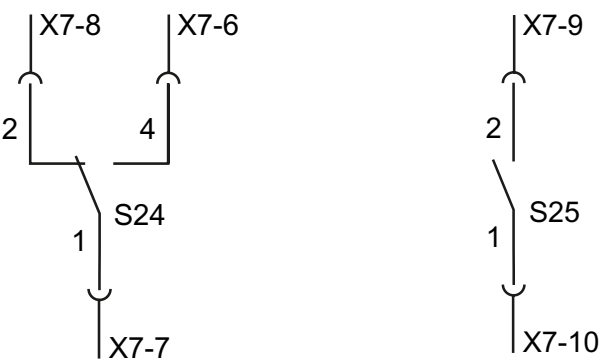
Ready-to-close signaling contact S20



Spring charge signaling contact S21

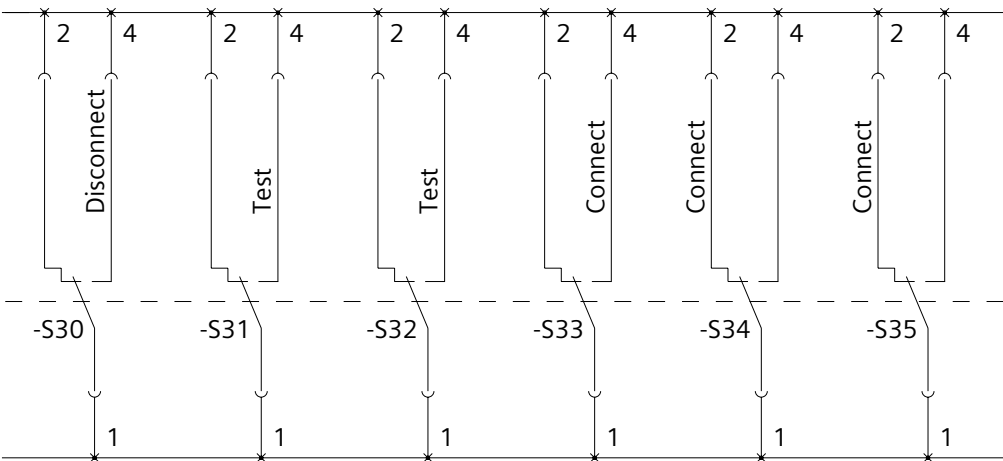


Trip alarm switches S24 and S25

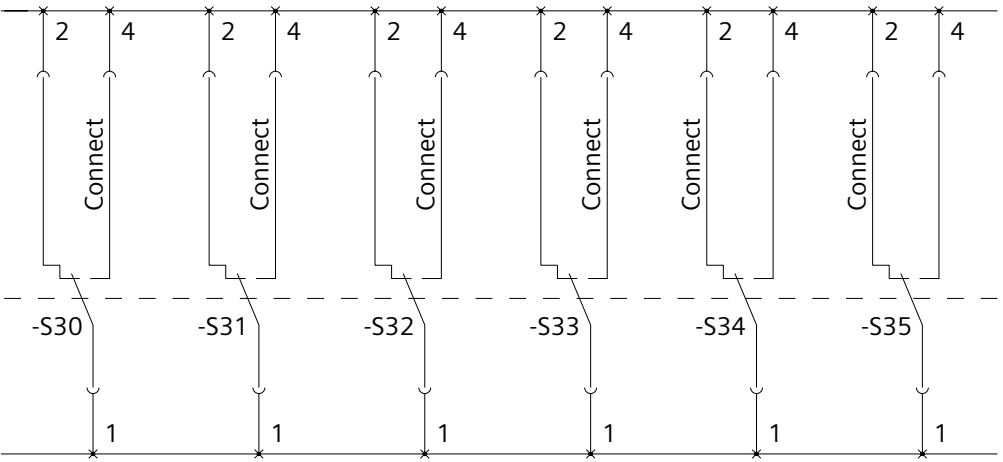


Position signaling switch terminal assignments

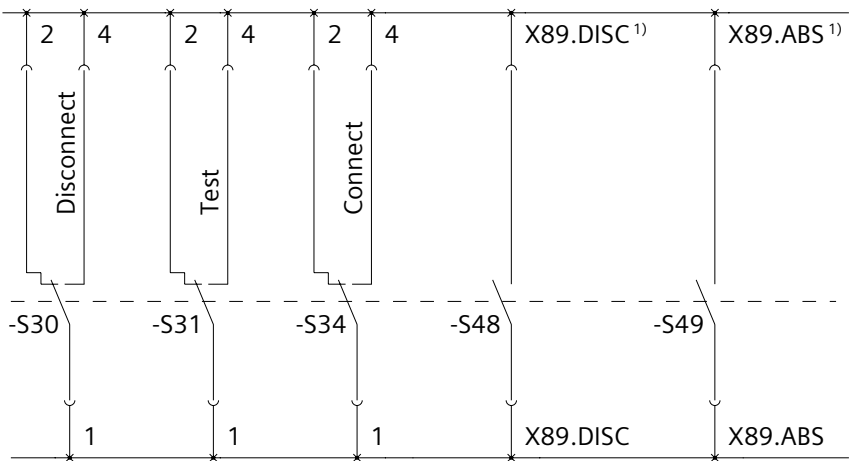
PSS123 position signaling module



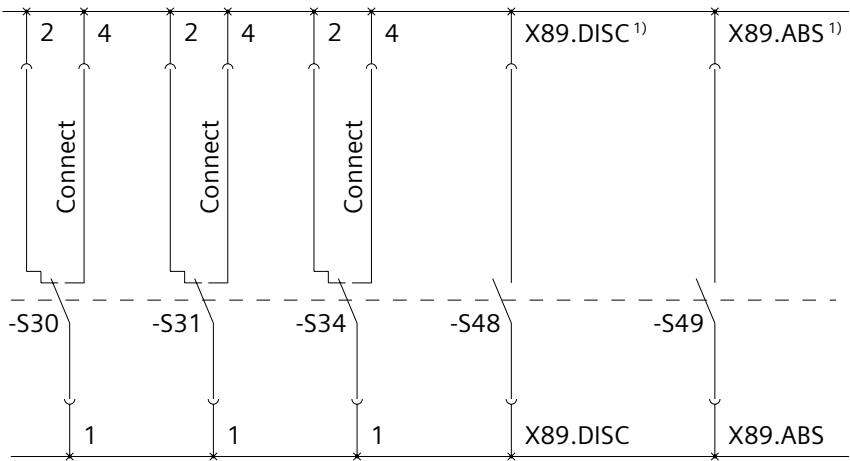
PSS600 position signaling switch module



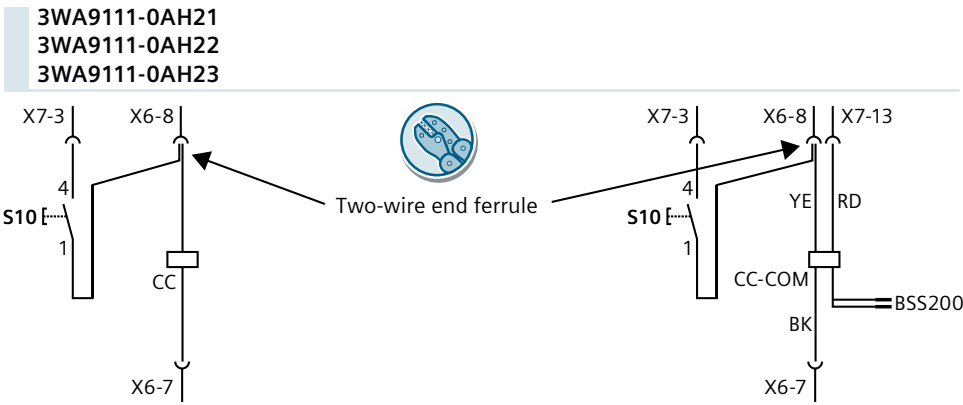
PSS111 COM position signaling switch module



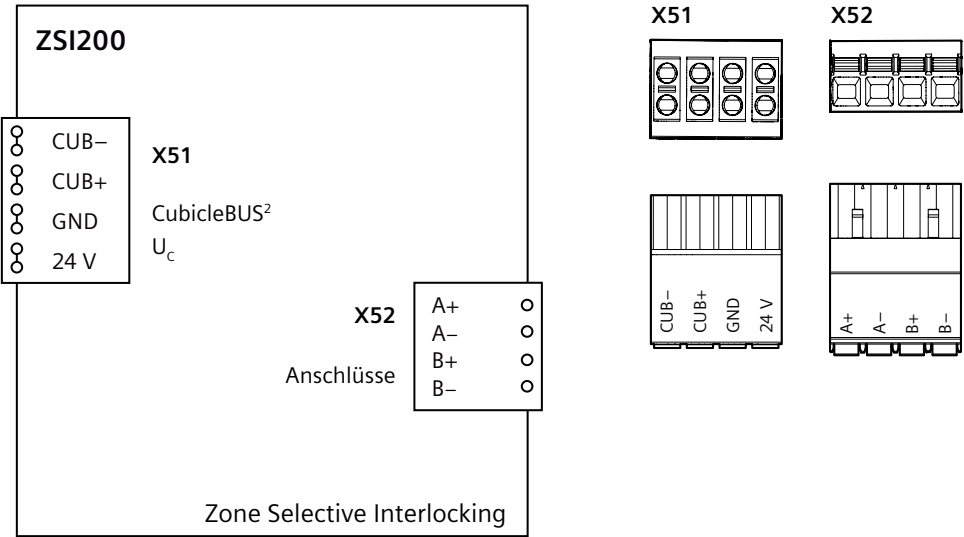
PSS400 COM position signaling switch module



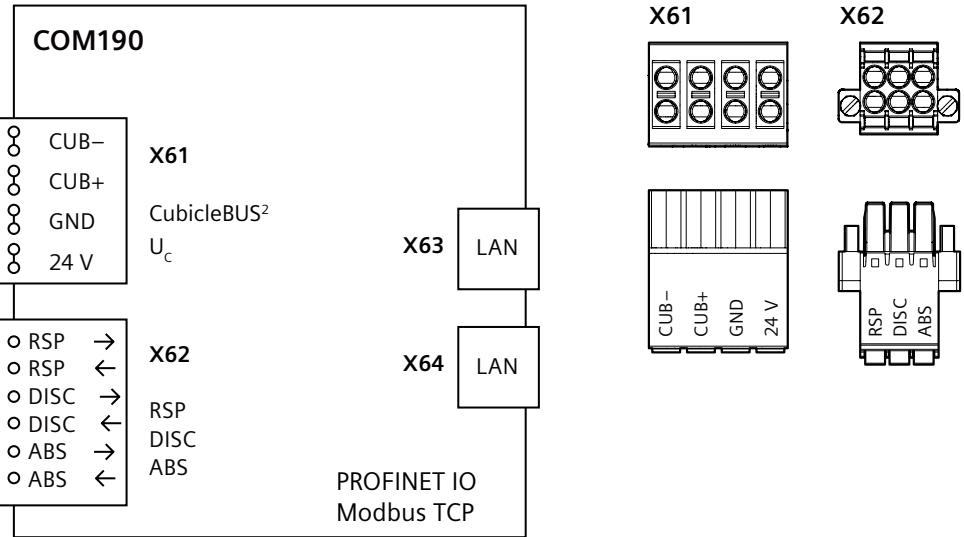
PSS123 position signaling module



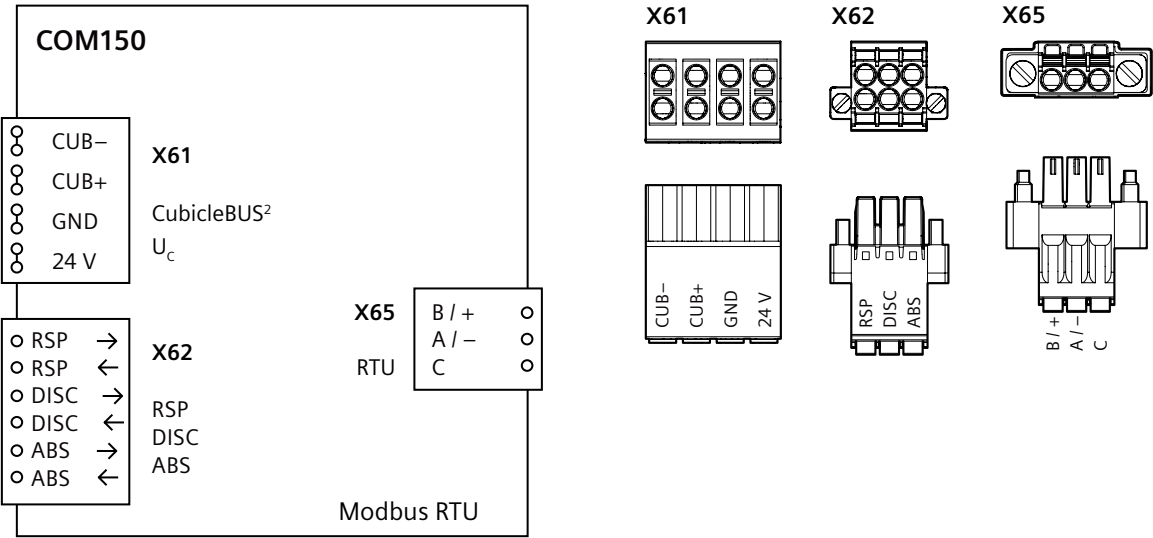
ZSI200 zone selective interlocking module



COM190 communications module



COM150 communications module



Breaker Status Sensor BSS200

