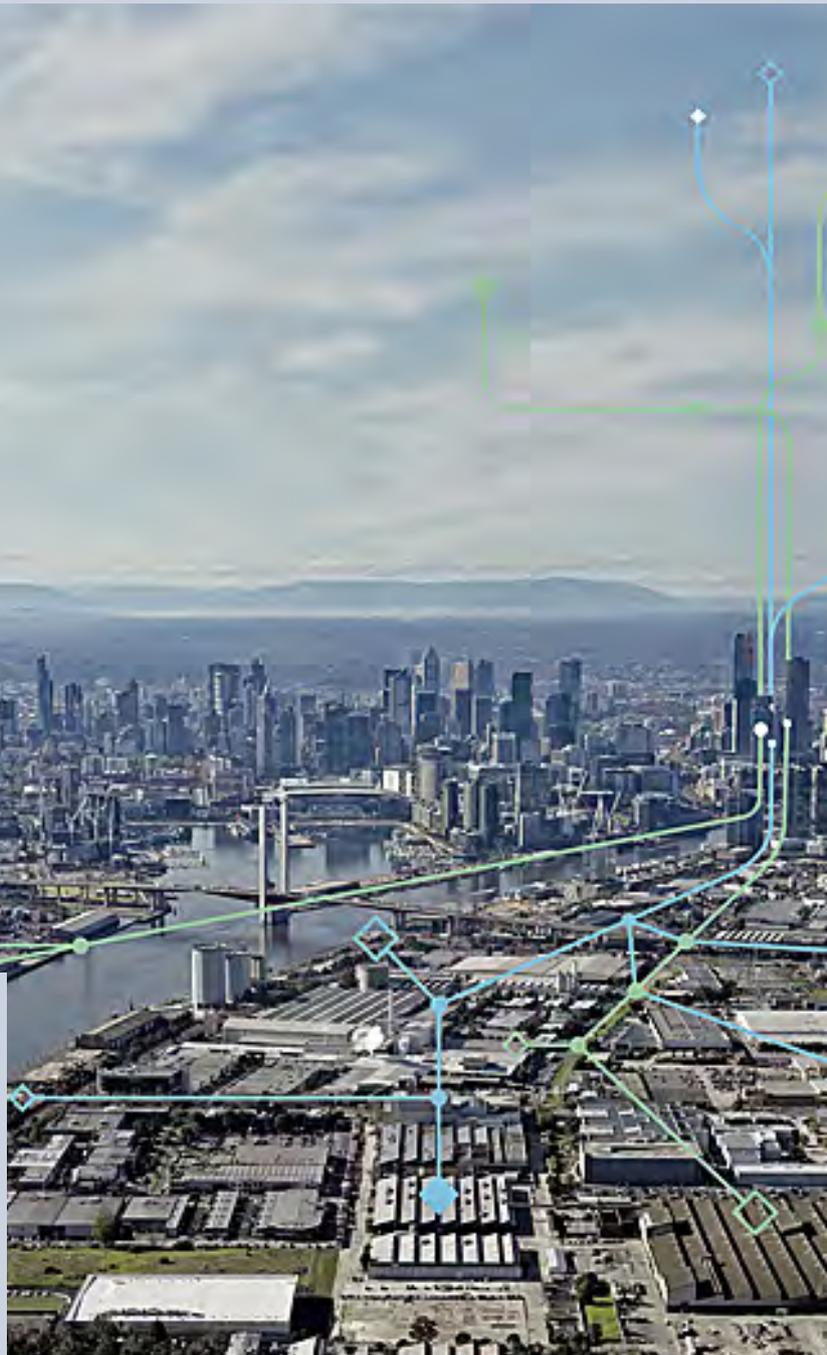


## Well-monitored – well-protected

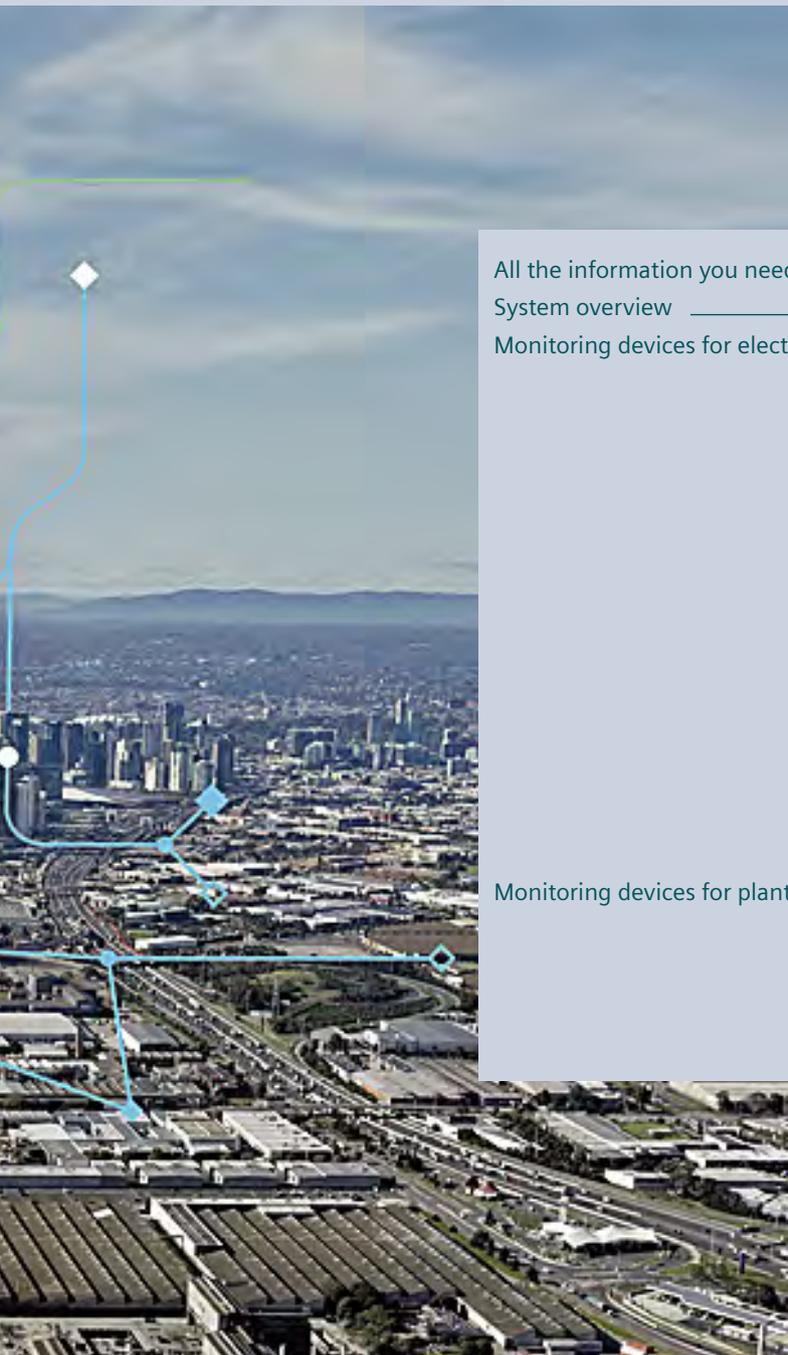
Monitoring devices perform numerous functions to protect people and machinery: At dusk, they switch on automatically, control the temperature or signal the location where a fuse has tripped.

They also ensure reliable switchover to emergency power supply, monitor the emergency lighting, ensure overload-free operation of motors and neutral monitoring for breakage and overvoltages.

Monitoring devices can do even more, e.g., underload monitoring of asynchronous motors in no-load operation.



# Monitoring Devices



All the information you need	11/2
System overview	11/4
Monitoring devices for electrical values	11/6
5SV8 residual current monitors	11/6
5SV8 COM residual current monitors with communication and measuring function <b>new</b>	11/8
5SV8 modular residual current device	11/14
5SV8 COM modular residual current device with communication and measuring function <b>new</b>	11/16
5TT3 undervoltage relays	11/22
5TT3 short-time voltage relay	11/24
5TT3 undervoltage and overvoltage relays	11/25
5TT6 current relays	11/26
5TT3 fuse monitors	11/27
5TT3 phase monitors	11/28
5TT3 phase sequence monitors	11/29
5TT3 insulation monitors for industrial applications	11/30
Monitoring devices for plants and equipment	11/31
5TT5 EMERGENCY STOP modules	11/31
5TT3 level relays	11/32
5TT3 line circuit relays	11/33
7LQ2 twilight switches	11/34

# A multitude of additional information ...

## Information + ordering

### All the important things at a glance

For information about monitoring devices, please visit our website [www.siemens.com/lowvoltage](http://www.siemens.com/lowvoltage)

### Your product in detail

The relevant tender specifications can be found at [www.siemens.com/tenderspecifications](http://www.siemens.com/tenderspecifications)

Use our conversion tool for quick and easy conversion to Siemens products [www.siemens.com/conversion-tool](http://www.siemens.com/conversion-tool)

### Everything you need for your order

Refer to SiePortal to find an overview of your products (product catalog)

- Monitoring devices [sie.ag/2m3no4A](http://sie.ag/2m3no4A)

Direct forwarding to the individual products in SiePortal by clicking on the article number in the catalog or entering this web address incl. article number [www.siemens.com/product\\_catalog\\_SIEP?Article No.](http://www.siemens.com/product_catalog_SIEP?Article No.)

## The fast track to the experts

### Contact persons in your region

We offer a comprehensive portfolio of services. You can find your local contacts at [www.siemens.com/lowvoltage/components/contact](http://www.siemens.com/lowvoltage/components/contact)

You will find further information on services at [www.siemens.com/service-offers](http://www.siemens.com/service-offers)

Competent expert advice on technical questions with a wide range of demand-optimized services for all our products and systems.

Assistance with technical queries is provided at [www.siemens.com/support-request](http://www.siemens.com/support-request)

# ... can be found in our online services

## Commissioning + operation

### Your product in detail

The SiePortal platform (knowledge base) provides detailed technical information

[www.siemens.com/lowvoltage/product-support](http://www.siemens.com/lowvoltage/product-support)

- Operating instructions
- Characteristic curves
- Certificates

Online Support app available for download from the [App Store](#) and [Play Store](#)

You will find further information at [www.siemens.com/support-app](http://www.siemens.com/support-app)

Provision of 3D data (step and u3d data formats)

- SiePortal (product catalog)  
[www.siemens.com/lowvoltage/product-catalog](http://www.siemens.com/lowvoltage/product-catalog)
- Image database  
[www.siemens.com/lowvoltage/picturedb](http://www.siemens.com/lowvoltage/picturedb)

Engineering data for CAD or CAE systems are available in the CAX Download Manager at [www.siemens.com/cax](http://www.siemens.com/cax)

### Manuals

Manuals can be found in SiePortal at

[www.siemens.com/lowvoltage/manuals](http://www.siemens.com/lowvoltage/manuals)

- Configuration Manual
  - Monitoring devices ([45316099](#))

### Technical overview – Monitoring devices



#### The fast way to get you to our online services

This page provides you with comprehensive information and links on monitoring devices

[www.siemens.com/lowvoltage/product-support](http://www.siemens.com/lowvoltage/product-support) (109769086)

# System overview

## Monitoring devices for electrical values



5SV8/5SV8 COM **new**  
residual current monitor



5SV8/5SV8 COM **new**  
modular residual current device



5TT3 and 5TT6 relay



5TT3 monitors

## Accessories



Summation current transformer



Holders for DIN rails



Magnetic field centering sleeves

## Monitoring devices for plants and equipment



5TT5 EMERGENCY STOP modules



5TT3 relay



7LQ2 twilight switches

## Accessories



Immersion electrodes

### Note:

You will find a detailed range of accessories with the basic units.



# 5SV8 residual current monitors

## Type A and type AC

Mounting width	RCM analog		RCM digital			
	2 MW	3 MW	3 MW	3 MW		
						
Rated operational voltage $U_e$	Rated residual current $I_{\Delta n}$		Response time $\Delta t$	1 channel	4 channels	
230 V AC	Type A	Type AC	0.02 ... 5 s	5SV8000-6KK	–	–
	0.03 ... 5 A	> 3 A	0.02 ... 5 s	–	5SV8001-6KK	–
	0.03 ... 3 A	5 ... 30 A	0.02 ... 10 s, INS, SEL <sup>1)</sup>	–	5SV8001-6KK	5SV8200-6KK

### Further technical specifications

	5SV8000-6KK	5SV8001-6KK	5SV8200-6KK
<b>Standards</b>			
Standards	EN 62020, IEC 62020		
Approvals	–	UL	
<b>Supply</b>			
Rated operational voltage $U_e$	230 V AC		
Frequency	50/60 Hz		
Rated residual current $I_{\Delta n}$	Type A	0.03 ... 3 A	
	Type AC	> 3 A	
Response time $\Delta t$	0.02 ... 5 s		0.02 ... 10 s, INS, SEL <sup>1)</sup>
<b>Relay contacts</b>			
Relay contacts	1 × alarm	1 × pre-alarm, 1 × alarm	1 × pre-alarm, 4 × alarm
Rated voltage	230 V AC		
Rated current	6 A		
<b>Summation current transformer</b>			
Diameter	20 ... 210 mm		
<b>Equipment</b>			
Maximum cable length RCM/CT	10 m (shielded cable)		
Conductor cross-section	1.5 mm <sup>2</sup>		
Test/reset	Yes/Yes		
External tripping operation/external reset	–/Yes	Yes/Yes	
<b>Safety</b>			
Degree of protection	Contacts	IP20	
	Front	IP41	
<b>Ambient conditions</b>			
Operating temperature	–10 ... +50 °C		

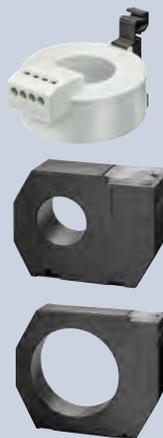
<sup>1)</sup> INS: Instantaneous,  
SEL: Selective

## Accessories

### Summation current transformers

- Including holder for DIN rail or wall mounting
- Standard ☉

Mounting options	Lowest measurable residual current $I_{\Delta n \text{ min}}$	Rated current $I_n$	Maximum current <sup>2)</sup> $I_{\text{max}}$	Internal diameter	Article No.
DIN rail	30 mA	$\leq 40 \text{ A}$	240 A	20 mm	5SV8700-0KK
		$\leq 63 \text{ A}$	380 A	30 mm	5SV8701-0KK
Wall mounting, DIN rail <sup>1)</sup>	30 mA	$\leq 80 \text{ A}$	480 A	35 mm	5SV8702-0KK
		$\leq 200 \text{ A}$	1200 A	70 mm	5SV8703-0KK
Wall mounting	100 mA	$\leq 250 \text{ A}$	1500 A	105 mm	5SV8704-0KK
		$\leq 500 \text{ A}$	3000 A	140 mm	5SV8705-0KK
		$\leq 600 \text{ A}$	3600 A	210 mm	5SV8706-0KK



### Holders for DIN rails

- Suitable for summation current transformers with internal diameter of 20 mm, 30 mm, 35 mm, 70 mm
- Cannot be used together with magnetic field centering sleeves

Article No.
5SV8900-1KK



### Magnetic field centering sleeves

Internal diameter	Article No.
35 mm	5SV8902-1KK
70 mm	5SV8903-1KK
105 mm	5SV8904-1KK
140 mm	5SV8905-1KK
210 mm	5SV8906-1KK



<sup>1)</sup> The holder for DIN rails is additionally required for mounting onto the DIN rail.

<sup>2)</sup> Short-time starting current, up to 2 s

# 5SV8 COM residual current monitors with communication and measuring function **new**

## Type A

Mounting width	RCM analog		RCM analog with COM	RCM digital with COM
	1 MW	1 MW	1 MW	2 MW
				
Rated operational voltage $U_e$	1 channel		1 channel	4 channels, display
Rated residual current $I_{\Delta n}$	Typ A	Typ A/F		
100 ... 240 V AC/DC	0.01 ... 30 A	0.006 ... 30 A	5SV8020-6KK	5SV8022-6MP
			5SV8223-6MP	

### Further technical specifications

	5SV8020-6KK	5SV8022-6MP	5SV8223-6MP
<b>Standards</b>			
Standards	DIN EN 62020-1, IEC 62020-1		
Approvals	UL 508, UL 1053		UL 508
<b>Supply</b>			
Rated operational voltage $U_e$	100 ... 240 V AC/DC, 24 V DC		
Frequency	47 ... 63 Hz		47 ... 460 Hz
Rated residual current $I_{\Delta n}$	Type A	0.01 ... 30 A	
	Type A/F	–	
Response time $t_{ae}$	$1 \times I_{\Delta n}$	$\leq 250$ ms	
	$5 \times I_{\Delta n}$	$\leq 100$ ms	
Response delay $t_{on}$ (adjustable)	0 ... 10 s		
<b>Relay contacts</b>			
Relay contacts	1 × pre-alarm/alarm		1 × pre-alarm, 1 × alarm
Rated voltage	230 V AC		
Rated current	5 A		
<b>Summation current transformer</b>			
Diameter	20 ... 210 mm		
<b>Equipment</b>			
Maximum cable length RCM/CT	40 m (shielded cable)	40 m (shielded cable)	40 m (shielded cable)
Test/reset	Yes/Yes		
External tripping operation/external reset	No/No		No/Yes
Communication	No	Radio link to SENTRON Powercenter 1100/2000	
<b>Safety</b>			
Degree of protection	Contacts	IP20	
	Front	IP30	
<b>Ambient conditions</b>			
Operating temperature	–25 ... +60 °C		–25 ... +55 °C

## Accessories

### Summation current transformers



Mounting options	Lowest measurable residual current $I_{\Delta n \min}$	Lowest adjustable response value	Rated current $I_n$	Internal diameter	Article No.
Screw fixing/rail DIN	1 mA	10 mA	63 A	20 mm	5SV8710-0KK <sup>1)</sup>
		30 mA	125 A	35 mm	5SV8711-0KK <sup>1)</sup>
			200 A	60 mm	5SV8712-0KK <sup>1)</sup>
Screw fixing	4 mA	100 mA	400 A	120 mm	5SV8713-0KK
	8 mA	300 mA	630 A	210 mm	5SV8714-0KK

<sup>1)</sup> DIN-rail mounting clip included in the scope of supply

# 5SV8 COM residual current monitors with communication and measuring function **new**

## Type B

		RCM COM	
Mounting width		2 MW	2 MW
			
Rated operational voltage $U_e$	Rated residual current $I_{\Delta n}$ Type B	1 channel	4 channels, display
100 ... 240 V AC/DC	0.01 ... 8 A	5SV8022-4MR	5SV8223-4MR

### Further technical specifications

		5SV8022-4MR	5SV8223-4MR
<b>Standards</b>			
Standards		DIN EN 62020-1, IEC 62020-1	
Approvals		UL 508	
<b>Supply</b>			
Rated operational voltage $U_e$		100 ... 240 V AC/DC, 24 V DC	
Frequency		47 ... 63 Hz	
Rated residual current $I_{\Delta n}$		0.01 ... 8 A	
Response time $t_{ae}$		$1 \times I_{\Delta n}$ $5 \times I_{\Delta n}$	
		$\leq 250$ ms $\leq 100$ ms	
Response delay $t_{on}$ (adjustable)		0 ... 10 s	
<b>Relay contacts</b>			
Relay contacts		1 × pre-alarm, 1 × alarm	
Rated voltage		230 V AC	
Rated current		5 A	
<b>Summation current transformer</b>			
Diameter		35 ... 210 mm	
<b>Equipment</b>			
Maximum cable length RCM/CT		10 m	
Test/reset		Yes/Yes	
External tripping operation/external reset		No/Yes	
Communication		Radio link to SENTRON Powercenter 1100/2000	
<b>Safety</b>			
Degree of protection		Contacts	IP20
		Front	IP30
<b>Ambient conditions</b>			
Operating temperature		-25 ... +60 °C	-25 ... +55 °C

## Accessories

### Summation current transformers

- Operational voltage 24 V DC



Shielded	Lowest measurable residual current $I_{\Delta n \text{ min}}$	Lowest adjustable response value	Rated current $I_n$	Internal diameter	Article No.
No	1 mA	30 mA	125 A	35 mm	5SV8711-2KK <sup>1)</sup>
Yes	1 mA	30 mA	160 A	35 mm	5SV8711-2KP <sup>1)</sup>
No	1 mA	30 mA	200 A	60 mm	5SV8712-2KK <sup>1)</sup>
Yes	1 mA	30 mA	400 A	60 mm	5SV8712-2KP <sup>1)</sup>
No	4 mA	100 mA	400 A	120 mm	5SV8713-2KK
No	8 mA	300 mA	630 A	210 mm	5SV8714-2KK

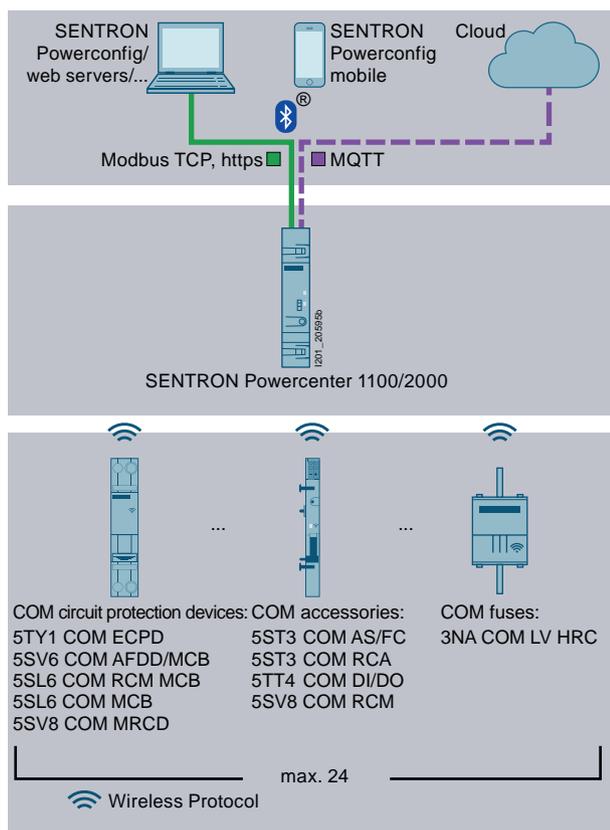
<sup>1)</sup> DIN-rail mounting clip included in the scope of supply

# 5SV8 COM residual current monitors with communication and measuring function **new**

Type A and B



## SENTRON Powercenter 1100/2000 data transceiver



- Wireless radio transmission of measured values to the SENTRON Powercenter 1000/1100/2000 data transceiver
- Commissioning, parameter assignment, firmware updates and further processing of the data via the SENTRON Powercenter 1000/1100/2000 data transceiver



SENTRON Powercenter	Article No.
SENTRON Powercenter 1000	7KN1110-0MC00
SENTRON Powercenter 1100	7KN1111-0MC00
SENTRON Powercenter 2000	7KN1210-0MC00

### See page 10/28

You will find further information at [www.siemens.com/lowvoltage/manuals](http://www.siemens.com/lowvoltage/manuals)

Installation Manual – Circuit protection devices with communication and measuring function (**109791805**)



System Manual – Circuit protection devices with communication and measuring function (**109791806**)





# 5SV8 modular residual current device

## Type B

Mounting width 2 MW

MRCD digital



Rated operational voltage $U_e$	Rated residual current $I_{\Delta n}$ Type B	Response time $\Delta t$	
230 V AC	0.03 ... 1 A	0 ... 10 s	5SV8101-4KK
24 V DC	0.03 ... 1 A	0 ... 10 s	5SV8111-4KK

### Further technical specifications

5SV8101-4KK

5SV8111-4KK

Standards		
Standards		EN 60947-2 (Annex M), IEC 60947-2 (Annex M)
Supply		
Supply voltage $U_s$		230 V AC (70 ... 300 V AC) / 24 V DC (9.6 ... 94 V DC)
Frequency		50/60 Hz / -
Power consumption		< 6.5 VA
Relay contacts		
Relay contacts		1 × alarm, 1 × tripping operation
Rated voltage		250 V AC
Rated current		5 A
External summation current transformer		
Internal diameter		35 ... 210 mm (5SV8701-2KK, 5SV8701-2KP, 5SV8702-2KK, 5SV8702-2KP, 5SV8703-2KK, 5SV8704-2KK)
Rated voltage (Summation current transformers)		690 V
Response characteristic		Acc. to IEC 60947-2 (M) / Type B
Rated frequency		0 ... 2 kHz
Response residual current		$I_{\Delta n1}$ (AL1 alarm) 50 ... 100% of $I_{\Delta n2}$ (factory setting: 50%) $I_{\Delta n2}$ (TP2 tripping) 30 mA ... 1 A (factory setting: 30 mA)
Response delay		$t_{on1}$ (alarm) 0 ... 10 s (factory setting: 1 s) $t_{on2}$ (tripping) 0 ... 10 s (factory setting: 0 s)
Equipment		
Maximum cable length MRCD/converter		10 m (6 × 0.75 mm <sup>2</sup> )
Password		Off/0 ... 999 (factory setting: 0)
Safety		
Degree of protection		Components (IEC 60529) IP30 Terminals (IEC 60529) IP20
EMC		IEC 60947-2 (M)
Overvoltage category		III
Pollution degree		3
Mechanical data		
Width		36 mm (2 MW)
Depth		64 mm
Height		85 mm
Weight		150 g
Mounting		DIN rail
Enclosure material		Polycarbonate
Electrical connection		Screw terminals
Conductor cross-section		Rigid 0.2 ... 4 mm <sup>2</sup> Flexible, with end sleeve 0.2 ... 2.5 mm <sup>2</sup> (AWG 24 ... 12)
Stripped length		8 ... 9 mm
Tightening torque		0.5 ... 0.6 Nm
Ambient conditions		
Operating temperature		-25 ... +55 °C

## Accessories

### Summation current transformers



Lowest measurable residual current $I_{\Delta n \min}$	Rated current $I_n$	Maximum current <sup>1)</sup> $I_{max}$	Internal diameter	Version	Article No.
10 mA	$\leq 80$ A	500 A	35 mm	Standard	5SV8701-2KK
				With shield	5SV8701-2KP
	$\leq 160$ A	1000 A	60 mm	Standard	5SV8702-2KK
				With shield	5SV8702-2KP
100 mA	$\leq 330$ A	2000 A	120 mm	Standard	5SV8703-2KK
300 mA	$\leq 630$ A	3800 A	210 mm	Standard	5SV8704-2KK

### Holders for DIN rails



#### Suitable for summation current transformers

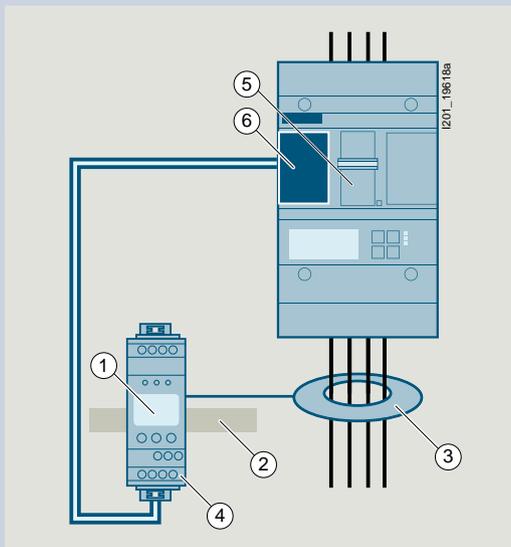
5SV8701-2KK,  
5SV8701-2KP  
5SV8702-2KK,  
5SV8702-2KP

#### Article No.

5SV8900-2KK  
5SV8900-3KK

<sup>1)</sup> Short-time starting current, up to 2 s

## Tested combination options



### 5SV8101-4KK/5SV8111-4KK (tested combinations)

#### ① Modular residual current device

5SV8101-4KK/5SV8111-4KK

#### ② DIN rail

EN 60715 – TH35 – 7,5 35 – 15

#### ③ Summation current transformers

Ø 35 mm 5SV8701-2KK/5SV8701-2KP

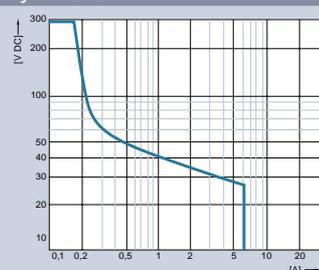
Ø 60 mm 5SV8702-2KK/5SV8702-2KP

Ø 120 mm 5SV8703-2KK

Ø 210 mm 5SV8704-2KK

#### ④ Relay contacts

DC:



AC: max. 230 V, 5 A

#### ⑤ Molded case circuit breakers

3VA1..

3VA20..

3VA21..

3VA22..

3VA23..

3VA24..

#### ⑥ Trip unit

3VA9908-0BB11

3VA9908-0BB24

3VA9908-0BB25

3VA9908-0BB11

3VA9908-0BB25

# 5SV8 COM modular residual current device with communication and measuring function **new**

Type A

Mounting width 1 MW

MRCD COM



Rated operational voltage $U_e$	Rated residual current $I_{\Delta n}$ Type A	
100 ... 240 V AC/DC	0.01 ... 30 A	5SV8122-6MP

## Further technical specifications

5SV8122-6MP

Standards			
Standards		IEC 60947-2 (Annex M)	
Approvals		UL 508	
Supply			
Rated operational voltage $U_e$		100 ... 240 V AC/DC, 24 V DC	
Frequency		47 ... 63 Hz	
Rated residual current $I_{\Delta n}$		Type A 0.01 ... 30 A	
Response time $t_{ae}$	$I_{\Delta n} = 30 \text{ mA}$ ( $t_{on} = 0 \text{ s}$ )	$1 \times I_{\Delta n}$	$\leq 250 \text{ ms}$
		$2 \times I_{\Delta n}$	$\leq 130 \text{ ms}$
		$5 \times I_{\Delta n}$	$\leq 20 \text{ ms}$
	$I_{\Delta n} > 30 \text{ mA}$	$1 \times I_{\Delta n}$	$\leq 250 \text{ ms} + t_{on}$
		$2 \times I_{\Delta n}$	$\leq 130 \text{ ms} + t_{on}$
$5 \times I_{\Delta n}$		$\leq 40 \text{ ms} + t_{on}$	
Response delay $t_{on}$ (adjustable)		0 ... 10 s	
Relay contacts			
Relay contacts		1 × alarm	
Rated voltage		230 V AC	
Rated current		5 A	
Summation current transformer			
Diameter		20 ... 210 mm	
Equipment			
Maximum cable length RCM/CT		40 m (shielded cable)	
Test/reset		Yes/Yes	
External tripping operation/external reset		No/No	
Communication		Radio link to SENTRON Powercenter 1100/2000	
Safety			
Degree of protection	Contacts	IP20	
	Front	IP30	
Ambient conditions			
Operating temperature		-25 ... +60 °C	

## Accessories

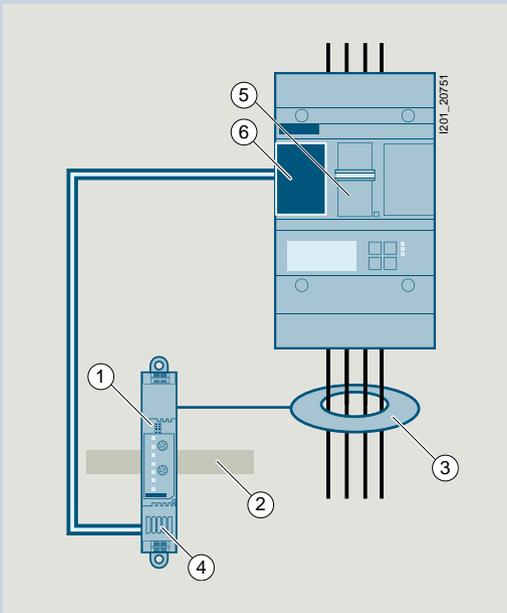
### Summation current transformers



Mounting options	Lowest measurable residual current $I_{\Delta n \text{ min}}$	Lowest adjustable response value	Rated current $I_n$	Maximum current $I_{\text{max}}$	Internal diameter	Article No.
Screw fixing/DIN rail	1 mA	10 mA	63 A	125 A	20 mm	5SV8710-0KK <sup>1)</sup>
		30 mA	125 A	125 A	35 mm	5SV8711-0KK <sup>1)</sup>
			200 A	125 A	60 mm	5SV8712-0KK <sup>1)</sup>
Screw fixing	4 mA	100 mA	400 A	125 A	120 mm	5SV8713-0KK
		8 mA	300 mA	630 A	125 A	210 mm

<sup>1)</sup> DIN-rail mounting clip included in the scope of supply

### Tested combination options



#### 5SV8122-6MP (tested combinations)

##### 1 Modular residual current device

5SV8122-6MP

##### 2 DIN rail

DIN EN 60715

##### 3 Summation current transformers

Ø 20 mm	5SV8710-0KK
Ø 35 mm	5SV8711-0KK
Ø 60 mm	5SV8712-0KK
Ø 120 mm	5SV8713-0KK
Ø 210 mm	5SV8714-0KK

##### 4 Relay contacts

AC: max. 230 V, 5 A

##### 5 Molded case circuit breakers

3VA10..  
3VA11..  
3VA12..  
3VA13..  
3VA14..  
3VA20..  
3VA21..  
3VA22..  
3VA23..  
3VA24..

##### 6 Trip unit

3VA9908-0BB11  
3VA9908-0BB23  
3VA9908-0BB25

# 5SV8 COM modular residual current device with communication and measuring function **new**

Type B

Mounting width 2 MW

MRCR digital with COM



Rated operational voltage $U_e$	Rated residual current $I_{\Delta n}$ Type B	
100 ... 240 V AC/DC	0.03 ... 3 A	5SV8122-4MR

## Further technical specifications

5SV8122-4MR

Standards			
Standards			IEC 60947-2 (Annex M)
Approvals			UL 508
Supply			
Rated operational voltage $U_e$			100 ... 240 V AC/DC, 24 V DC
Frequency			47 ... 63 Hz
Rated residual current $I_{\Delta n}$ Type B			0.03 ... 3 A
Response time $t_{ae}$	$I_{\Delta n} = 30 \text{ mA}$ ( $t_{on} = 0 \text{ s}$ )	$1 \times I_{\Delta n}$	$\leq 250 \text{ ms}$
		$2 \times I_{\Delta n}$	$\leq 130 \text{ ms}$
		$5 \times I_{\Delta n}$	$\leq 20 \text{ ms}$
	$I_{\Delta n} > 30 \text{ mA}$	$1 \times I_{\Delta n}$	$\leq 250 \text{ ms} + t_{on}$
		$2 \times I_{\Delta n}$	$\leq 130 \text{ ms} + t_{on}$
	$5 \times I_{\Delta n}$	$\leq 40 \text{ ms} + t_{on}$	
Response delay $t_{on}$ (adjustable)			0 ... 10 s
Relay contacts			
Relay contacts			1 × pre-alarm, 1 × alarm
Rated voltage			230 V AC
Rated current			5 A
External summation current transformer			
Diameter			35 ... 210 mm
Equipment			
Maximum cable length MRCM/CT			10 m
Communication			Radio link to SENTRON Powercenter 1100/2000
Safety			
Degree of protection	Contacts		IP20
	Front		IP30
Overvoltage protection			III
Pollution degree			2
Ambient conditions			
Operating temperature			-25 ... +60 °C

## Accessories

### Summation current transformers

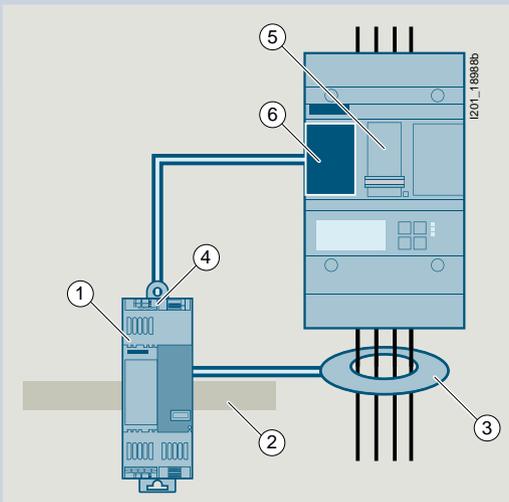
- Operational voltage 24 V DC



Shielded	Lowest measurable residual current $I_{\Delta n \text{ min}}$	Lowest adjustable response value	Rated current $I_n$	Maximum current $I_{\text{max}}$	Internal diameter	Article No.
No	1 mA	30 mA	125 A	2400 A	35 mm	5SV8711-2KK <sup>1)</sup>
Yes	1 mA	30 mA	160 A	2400 A	35 mm	5SV8711-2KP <sup>1)</sup>
No	1 mA	30 mA	200 A	2400 A	60 mm	5SV8712-2KK <sup>1)</sup>
Yes	1 mA	30 mA	400 A	2400 A	60 mm	5SV8712-2KP <sup>1)</sup>
No	4 mA	100 mA	400 A	2400 A	120 mm	5SV8713-2KK
No	8 mA	300 mA	630 A	2400 A	210 mm	5SV8714-2KK

<sup>1)</sup> DIN-rail mounting clip included in the scope of supply

## Tested combination options



### 5SV8122-4MR (tested combinations)

#### 1 Modular residual current device

5SV8122-4MR

#### 2 DIN rail

DIN EN 60715

#### 3 Summation current transformers

Ø 35 mm

5SV8711-2KK

5SV8711-2KP

Ø 60 mm

5SV8712-2KK

5SV8712-2KP

Ø 120 mm

5SV8713-2KK

Ø 210 mm

5SV8714-2KK

#### 4 Relay contacts

AC: max. 230 V, 5 A

#### 5 Molded case circuit breakers

3VA10..

3VA11..

3VA12..

3VA13..

3VA14..

3VA20..

3VA21..

3VA22..

3VA23..

3VA24..

#### 6 Trip unit

3VA9908-0BB11

3VA9908-0BB23

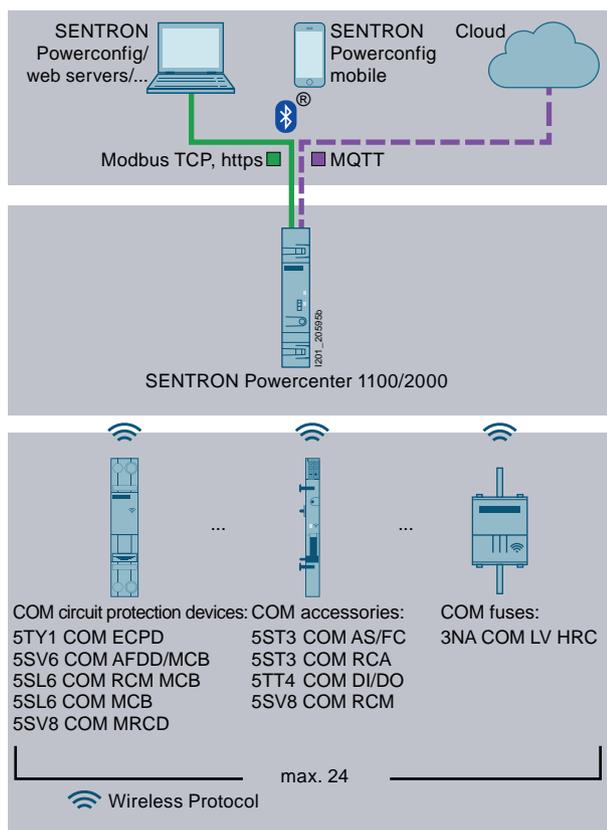
3VA9908-0BB25

# 5SV8 COM modular residual current device with communication and measuring function **new**

Type A and B



## SENTRON Powercenter 1100/2000 data transceiver



- Wireless radio transmission of measured values to the SENTRON Powercenter 1000/1100/2000 data transceiver
- Commissioning, parameter assignment, firmware updates and further processing of the data via the SENTRON Powercenter 1000/1100/2000 data transceiver



SENTRON Powercenter	Article No.
SENTRON Powercenter 1000	7KN1110-0MC00
SENTRON Powercenter 1100	7KN1111-0MC00
SENTRON Powercenter 2000	7KN1210-0MC00

### See page 10/28

You will find further information at [www.siemens.com/lowvoltage/manuals](http://www.siemens.com/lowvoltage/manuals)

Installation Manual – Circuit protection devices with communication and measuring function (**109791805**)

System Manual – Circuit protection devices with communication and measuring function (**109791806**)





# 5TT3 undervoltage relays

Without response delay

	For the monitoring of		
	1, 2 or 3 phases against N	2 CO	3 phases against N
Contacts	1 CO	2 CO	2 CO
Mounting width	1 MW	2 MW	2 MW
			

Rated operational voltage $U_e$	Rated operational current $I_e$	Switching thresholds	Hysteresis			
<b>Not adjustable</b>						
230 V AC	4 A	0.7 and 0.9 × $U_c$	–	5TT3400	5TT3402	5TT3404
		0.85 and 0.95 × $U_c$	–	5TT3401	–	5TT3405
<b>Adjustable</b>						
230 V AC	4 A	0.7 ... 0.95 × $U_c$	5%	–	–	5TT3406
		0.9 ... 0.95 × $U_c$	–	–	5TT3403	–

## Further technical specifications

<b>Standards</b>			
Standards	IEC 60255, DIN VDE 0435-110, DIN VDE 0435-303		
<b>Supply</b>			
Rated control circuit voltage $U_c$	230/400 V AC		
Primary operating range (overload capability)	1.1 × $U_c$		
Rated frequency	50/60 Hz		
<b>Contacts</b>			
μ contact	AC-11	4 A	
Response values	ON-switching	0.9/0.95 × $U_c$	4% hysteresis
	OFF-switching	0.7/0.85 × $U_c$	0.7 ... 0.95 × $U_c$
Minimum contact load	10 V/100 mA		
<b>Safety</b>			
Rated insulation voltage $U_i$	Between coil/contact	4 kV	
Electrical isolation, creepage distances and clearances	Actuator/contact	3 mm	5.5 mm
Rated impulse withstand voltage $U_{imp}$	Actuator/contact	> 2.5 kV	> 4 kV
<b>Functions</b>			
Phase asymmetry	Setting accuracy	–	Approx. 5 ... 10%
	Repeat accuracy	–	1
Phase failure detection	At L1 or L2 or L3	100 ms	
Functions	Monitoring of 1/2 phases against N	Yes	–
	Monitoring of 3 phases against N	Yes	–
	Asymmetry (failure) detection	–	Yes
	Reverse (failure) detection	–	Yes
	Phase failure detection	Yes	–
	N-conductor monitoring	–	Yes
<b>Connection</b>			
Terminals	± Screw (Pozidriv)	PZ 1	
Conductor cross-sections	Rigid	Max. 2 × 2.5 mm <sup>2</sup>	
	Flexible, with end sleeve	Min. 1 × 0.5 mm <sup>2</sup>	
<b>Ambient conditions</b>			
Permissible ambient temperature	–20 ... +60 °C		
Resistance to climate	Acc. to EN 60068-1	20/60/4	

5TT3400

5TT3401

5TT3402

5TT3403

5TT3404

5TT3405

5TT3406

# 5TT3 undervoltage relays

With response delay

		For the monitoring of 1, 2 or 3 phases against N	
Contacts		1 CO	2 CO
Mounting width		1 MW	1 MW
			

Rated operational voltage $U_e$	Rated operational current $I_e$	Switching thresholds	Hysteresis	Standard	With TEST pushbutton
Not adjustable					
230 V AC	4 A	$0.85 \times U_c$	5%	5TT3414	5TT3415

## Further technical specifications

		5TT3414	5TT3415
<b>Supply</b>			
Rated control circuit voltage $U_c$		230/400 V AC	
Primary operating range (overload capability)		$1.15 \times U_c$	
Rated frequency		50/60 Hz	
<b>Contacts</b>			
Contacts	AC-15	1 CO	2 CO
Response values	ON-switching	5% hysteresis	
	OFF-switching	$0.85 \times U_c$	
Response delay		0.5 s	
Return transfer delay		60 s	
Minimum contact load		10 V/100 mA	
Electrical endurance in operating cycles	AC-15 (1 A, 230 V AC)	$1 \times 10^5$	
<b>Safety</b>			
Rated insulation voltage $U_i$	Between coil/contact	–	
Rated impulse withstand voltage	Acc. to IEC 60664-1	6 kV	
Pollution degree		2	
<b>Functions</b>			
Phase failure detection	At L1 or L2 or L3	500 ms	
Functions	Monitoring of 1 or 2 phases against N	Yes	
	Monitoring of 3 phases against N	Yes	
	Phase failure detection	Yes	
<b>Connection</b>			
Terminals	– Screw (slot)	3.5 mm	
Conductor cross-sections	Rigid	$1 \times 4 \text{ mm}^2$	
	Flexible, with end sleeve	$1 \times 2.5 \text{ mm}^2$	
<b>Ambient conditions</b>			
Permissible ambient temperature		–25 ... +60 °C	
Resistance to climate	Acc. to EN 60068-1	20/060/04	

# 5TT3 short-time voltage relay

Without response delay

For the monitoring of  
1, 2 or 3 phases against N

Contacts 2 CO  
Mounting width 2 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Switching thresholds	
Not adjustable			
230 V AC	4 A	0.8 ... 0.85 × $U_c$	5TT3407

## Further technical specifications

5TT3407

<b>Standards</b>			
Standards	IEC 60255, DIN VDE 0435-303		
<b>Supply</b>			
Rated control circuit voltage $U_c$	230/400 V AC		
Primary operating range (overload capability)	1.1 × $U_c$		
Rated frequency	50/60 Hz		
Rated operational power $P_s$	AC operation:	230 V and p.f. = 1	2000 VA
		230 V and p.f. = 0.4	1250 VA
	DC operation:	$U_e = 24$ V and $I_e = 6$ A	Max. 100 W
		$U_e = 60$ V and $I_e = 1$ A	Max. 100 W
		$U_e = 110$ V and $I_e = 0.6$ A	Max. 100 W
$U_e = 220$ V and $I_e = 0.5$ A	Max. 100 W		
Back-up fuse	Terminals L1/L2/L3	2 A	
<b>Contacts</b>			
$\mu$ contact	AC-11	3 A	
Response values	ON-switching	0.85 × $U_c$	
	OFF-switching	0.8 × $U_c$	
Automatic reclosing delay (return transfer delay)	0.2 ... 2 s		
Minimum contact load	10 V/100 mA		
<b>Safety</b>			
Rated insulation voltage $U_i$	Between coil/contact	4 kV	
Electrical isolation, creepage distances and clearances	Actuator/contact	4 mm	
Rated impulse withstand voltage $U_{imp}$	Actuator/contact	> 4 kV	
<b>Functions</b>			
Phase failure detection	At L1 or L2 or L3	≥ 20 ms	
Phase asymmetry	Setting accuracy	Approx. 5 ... 10%	
	Repeat accuracy	1	
Functions	Monitoring of 1 or 2 phases against N	Yes	
	Monitoring of 3 phases against N	Yes	
	Phase failure detection	Yes	
	N-conductor monitoring	Yes	
<b>Connection</b>			
Terminals	± Screw (Pozidriv)	PZ 1	
Conductor cross-sections	Rigid	Max. 2 × 2.5 mm <sup>2</sup>	
	Flexible, with end sleeve	Min. 1 × 0.5 mm <sup>2</sup>	
<b>Ambient conditions</b>			
Permissible ambient temperature	-20 ... +60 °C		
Humidity class	Acc. to IEC 60068-2-30	F	

# 5TT3 undervoltage and overvoltage relays

With adjustable response delay

For the monitoring of  
3 phases against N

Contacts 2 CO  
Mounting width 2 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Switching thresholds	Hysteresis	
Adjustable				
230 V AC	4 A	0.7 and $1.1 \times U_c$ 0.9 and $1.3 \times U_c$	4% 4%	5TT3408

## Further technical specifications

5TT3408

Standards			
Standards		IEC 60255, DIN VDE 0435-303	
Supply			
Rated control circuit voltage $U_c$		230/400 V AC	
Primary operating range (overload capability)		$1.35 \times U_c$	
Rated frequency		50/60 Hz	
Back-up fuse	Terminals L1/L2/L3	2 A	
Contacts			
$\mu$ contact	AC-11	1 A	
Response values	Overvoltage:	ON-switching	4% hysteresis
		OFF-switching	$0.9 \dots 1.3 \times U_c$
	Undervoltage:	ON-switching	4% hysteresis
		OFF-switching	$0.7 \dots 1.1 \times U_c$
OFF-delay (response delay)		0.1 ... 20 s	
Automatic reclosing delay (return transfer delay)		–	
Minimum contact load		10 V/100 mA	
Safety			
Rated insulation voltage $U_i$	Between coil/contact	4 kV	
Electrical isolation, creepage distances and clearances	Contact/contact	4 mm	
	Actuator/contact	4 mm	
Rated impulse withstand voltage $U_{imp}$	Actuator/contact	> 4 kV	
Functions			
Phase failure detection	At L1 or L2 or L3	100 ms	
Phase asymmetry	Setting accuracy	Approx. 5 ... 10%	
	Repeat accuracy	1	
Functions	Monitoring of 1 or 2 phases against N	–	
	Monitoring of 3 phases against N	Yes	
	Asymmetry detection	Yes	
	Reverse voltage detection	Yes	
	Phase failure detection	Yes	
	N-conductor monitoring	Yes	
Connection			
Terminals	$\pm$ Screw (Pozidriv)	PZ 1	
Conductor cross-sections	Rigid	Max. $2 \times 2.5 \text{ mm}^2$	
	Flexible, with end sleeve	Min. $1 \times 0.5 \text{ mm}^2$	
Ambient conditions			
Permissible ambient temperature		$-20 \dots +60 \text{ }^\circ\text{C}$	
Humidity class	Acc. to IEC 60068-2-30	F	

# 5TT6 current relays

For 1-phase loads up to 230 V AC

Rated operational voltage $U_e$	Rated operational current $I_e$	Contacts	Rated control current $I_c$	Auxiliary voltage and load voltage				
				Not isolated		Electrically isolated		
				Mounting width		1 MW	2 MW	2 MW
230 V AC	5 A	1 CO	1 ... 10 A	5TT6111	5TT6112	–	–	–
		2 CO	0.1 ... 1 A, 0.5 ... 5 A, 1 ... 10 A, 1.5 ... 15 A	–	–	5TT6113	5TT6114	5TT6115

## Further technical specifications

<b>Standards</b>			
Standards			IEC 60255 IEC 60255 DIN VDE 0435-303
<b>Supply</b>			
Rated control current $I_c$			1 ... 10 A 0.1 ... 1 A, 0.5 ... 5 A, 1 ... 10 A, 1.5 ... 15 A
Rated control circuit voltage $U_c$			230 V AC
Primary operating range			0.9 ... 1.1 × $U_c$
Overload capability		Continuous	15 A 20 A
		At 50 °C ambient temperature max. 3 s	–
		Independent of measuring range, max. 3 s	30 A
Rated frequency			50/60 Hz
<b>Contacts</b>			
μ contact (AC-15)		NO	3 A 5 A
		NC	1 A
Response values		ON-switching	Infinitely variable
		OFF-switching	Permanent, 4% hysteresis
Switching delay $t_v$			0.1 ... 20 s, continuously adjustable
Response time		Non-adjustable	Current corresponds to the rated operational power of the continuous-flow heater
			See Siemens Service and Support Portal, search term "Article No.", e.g. "5TT6113"
Minimum contact load			10 V/100 mA
<b>Safety</b>			
Rated insulation voltage $U_i$		Between coil/contact	2.5 kV
Electrical isolation, creepage distances and clearances		Actuator/contact	3 mm
Rated impulse withstand voltage $U_{imp}$		Actuator/contact	> 4 kV
<b>Connection</b>			
Terminals		± Screw (Pozidriv)	PZ 1
Conductor cross-sections		Rigid	Max. 2 × 2.5 mm <sup>2</sup>
		Flexible, with end sleeve	Min. 1 × 0.5 mm <sup>2</sup>
<b>Ambient conditions</b>			
Permissible ambient temperature			–20 ... +60 °C
Resistance to climate		Acc. to EN 60068-1	20/60/4

# 5TT3 fuse monitors

For all low-voltage fuse systems

Mounting width 2 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Rated control circuit voltage $U_c$	
Adjustable			
250 V AC	4 A	380 ... 415 V AC	5TT3170

## Further technical specifications

5TT3170

<b>Standards</b>		
Standards	IEC 60255, DIN VDE 0435-110	
<b>Supply</b>		
Rated operational voltage $U_e$	250 V AC	
Rated operational current $I_e$	AC-1	4 A
Rated control circuit voltage $U_c$	3 AC	380 ... 415 V
Primary operating range	0.8 ... 1.1 × $U_c$	
Rated frequency	50 ... 400 Hz	
<b>Contacts</b>		
Internal resistance of measuring paths	> 1000 Ω/V	
Max. permissible rear feed	90%	
Response/release time	< 50 ms	
Electrical endurance AC-11	In switching cycles at 1 A	$1.5 \times 10^5$
<b>Safety</b>		
Rated impulse withstand voltage $U_{imp}$	Input/output	> 4 kV
<b>Application</b>		
Area of application	Asymmetric, systems afflicted with harmonics, regenerative motors	
Message	Also for disconnected loads	
<b>Connection</b>		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-sections	Rigid	Max. 2 × 2.5 mm <sup>2</sup>
	Flexible, with end sleeve	Min. 1 × 0.5 mm <sup>2</sup>
<b>Ambient conditions</b>		
Permissible ambient temperature	-20 ... +45 °C	
Resistance to climate	Acc. to EN 60068-1	20/45/4

11

# 5TT3 phase monitors

For monitoring of voltages in a three-phase system

Mounting width 1 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Contacts	Rated control circuit voltage $U_c$	With 3 green LEDs for 3 phases
250 V AC	4 A	1 CO	230/400 V	5TT3421

## Further technical specifications

5TT3421

Standards			Standards
Standards			IEC 60255, DIN VDE 0435
Supply			
Rated operational voltage $U_e$			250 V AC
Rated operational current $I_e$			4 A
Rated control circuit voltage $U_c$			230/400 V AC
Primary operating range			0.8 ... 1.1 × $U_c$
Rated frequency			50/60 Hz
Rated power dissipation $P_v$			
			Electronics
			Contacts
			9 VA
			0.2 VA
Contacts			
$\mu$ contact			AC-11
Minimum contact load			3 A
			10 V/100 mA
Safety			
Rated insulation voltage $U_i$			Between coil/contact
			4 kV
Electrical isolation, creepage distances and clearances			Actuator/contact
			4 mm
Rated impulse withstand voltage $U_{imp}$			Actuator/contact
			> 2.5 kV
Degree of protection			Acc. to EN 60529
			IP20, with connected conductors
Protection class			Acc. to EN 61140/VDE 0140-1
			II
Connection			
Terminals			± Screw (Pozidriv)
			PZ 1
Conductor cross-sections			Rigid
			Max. 2 × 2.5 mm <sup>2</sup>
			Flexible, with end sleeve
			–
Ambient conditions			
Permissible ambient temperature			–20 ... +60 °C
Resistance to climate			Acc. to EN 60068-1
			20/60/4

# 5TT3 phase sequence monitors

For monitoring of phase sequence in a three-phase system

Mounting width 1 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Contacts	Rated control circuit voltage $U_c$	With one green LED, which lights up for right-rotating field
250 V AC	4 A	1 CO	400 V	5TT3423

## Further technical specifications

5TT3423

Standards			IEC 60255, DIN VDE 0435
Supply			
Rated operational voltage $U_e$			250 V AC
Rated operational current $I_e$			4 A
Rated control circuit voltage $U_c$			400 V AC
Primary operating range			0.8 ... 1.1 × $U_c$
Rated frequency			50/60 Hz
Rated power dissipation $P_v$	Electronics		9 VA
	Contacts		0.2 VA
Contacts			
μ contact	AC-11		3 A
Minimum contact load			10 V/100 mA
Safety			
Rated insulation voltage $U_i$	Between coil/contact		4 kV
Electrical isolation, creepage distances and clearances	Actuator/contact		4 mm
Rated impulse withstand voltage $U_{imp}$	Actuator/contact		> 2.5 kV
Degree of protection	Acc. to EN 60529		IP20, with connected conductors
Protection class	Acc. to EN 61140/VDE 0140-1		II
Connection			
Terminals	± Screw (Pozidriv)		PZ 1
Conductor cross-sections	Rigid		Max. 2 × 2.5 mm <sup>2</sup>
	Flexible, with end sleeve		–
Ambient conditions			
Permissible ambient temperature			–20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1		20/60/4

11

# 5TT3 insulation monitors for industrial applications

Are used for protection of persons and against fire in non-grounded systems (IT systems)

Mounting width 2 MW



Measurement voltage range $U_{meas}$	Measuring range	Contacts	Rated control circuit voltage $U_c$	
0 ... 500 V AC	5 ... 100 k $\Omega$	2 CO	230 V AC	5TT3470
12 ... 280 V DC	5 ... 200 k $\Omega$	2 CO	–	5TT3471

## Further technical specifications

		5TT3470	5TT3471
<b>Supply</b>			
Rated operational voltage $U_e$		230 V AC	12 ... 280 V DC
Rated operational current $I_s$	Thermal current $I_{th}$	4 A	
	DC-13 at 24 V DC	–	2 A
	DC-13 at 250 V DC	–	0.2 A
	AC-15	–	3 A
	AC-15 NO	5 A	–
	AC-15 NC	2 A	–
Supply voltage $U_c$	For AC supply	220 ... 240 V AC	–
Primary operating range	For AC supply	0.8 ... 1.1 $\times U_c$	–
Frequency range for $U_c$		45 ... 400 Hz	–
Rated power dissipation $P_v$	For AC supply	Approx. 2 VA	–
	For DC supply	–	Approx. 1 W
<b>Contacts</b>			
$\mu$ contact		2 CO	
Switching hysteresis	At $R_{meas}$ 50 k $\Omega$	15%	10 ... 15%
<b>Measuring circuit</b>			
Measuring circuit		For 3-phase and AC systems	For direct voltage systems
Measurement voltage range $U_{meas}$		0 ... 500 V AC	12 ... 280 V DC
Measurement voltage $U_{meas}$	Internal	Approx. 15 V DC	–
Primary operating range		0 ... 1.1 $\times U_{meas}$	0.9 ... 1.1 $\times U_{meas}$
Frequency range for $U_{meas}$		10 ... 10000 Hz	–
Alarm values	Measuring shunt $R_{AL}$	5 ... 100 k $\Omega$	5 ... 200 k $\Omega$
Setting of alarm value	On absolute scale	Infinitely variable	Infinitely variable
Alternating current internal resistance	Internal testing resistance	> 250 k $\Omega$	–
Direct current internal resistance	Internal testing resistance	> 250 k $\Omega$	–
	L+ and L- to PE	–	75 k $\Omega$ each
Max. measurement current $I_{meas}$	Short circuit	< 0.1 mA	0.2 ... 4 mA, depending on the voltage
Direct interference voltage	Max. permissible	500 V DC	–
Response delay at $R_{AL}$ 50 k $\Omega$ and 1 $\mu$ F	$\infty$ to 0.9 $\times R_{meas}$	< 1.3 s	0.8 s
	$R_{meas}$ from $\infty$ to 0 $\Omega$	< 0.7 s	0.4 s
<b>Safety</b>			
Rated impulse withstand voltage $U_{imp}$	Terminals A1 to A2	< 4 kV	
	Terminals L to PE	< 4 kV	
	Terminals A1, A2 to L, PE	< 4 kV	< 3 kV
	Terminals against contacts	< 6 kV	
Degree of protection	Terminals (according to EN 60529)	IP20	
	Enclosure (according to EN 60529)	IP40	
<b>Connection</b>			
Terminals	$\pm$ Screw (Pozidriv)	PZ 2	
Conductor cross-sections	Rigid	Max. 2 $\times$ 2.5 mm <sup>2</sup>	
	Flexible, with end sleeve	Min. 1 $\times$ 0.50 mm <sup>2</sup>	
<b>Ambient conditions</b>			
Permissible ambient temperature		–20 ... +60 °C	
Resistance to climate	Acc. to EN 60068-1	20/060/04	

# 5TT5 EMERGENCY STOP modules

Efficient personal and machine protection in small units

Mounting width 4 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Rated control circuit voltage $U_c$	5TT5200
400 V AC	5 A	230 V AC	

## Further technical specifications

5TT5200

Standards		
Standards		
ISO 13849-1: 2015; EN 62061: 2005 + AC: 2010 + A1: 2013 + A2: 2015; ISO 13850: 2015; EN 60204-1: 2006 + A1: 2009 + AC: 2010 (in extracts); EN 60947-5: 2004 + A1: 2009; EN 50178: 1997; EN 61508 Parts 1-7: 2010; EN 50156-1: 2005 (in extracts)		
Certification		
German Technical Inspectorate Rheinland		
Supply		
Primary operating range		
$0.8 \dots 1.1 \times U_c$		
Rated frequency $f_n$		
50 Hz		
Rated power dissipation $P_v$		
Coil/drive		3.5 VA
Contact per pole		0.8 VA
Control voltage		
Terminal Y1		24 V AC/DC
Control current		
Terminal Y1		45 mA
Contacts		
Contacts		
NO AC-15		3 A
NC AC-15		2 A
NO/NC AC-1		5 A
Contact gap		
> 1 mm		
Electrical endurance		
AC-15 (2 A, 230 V AC)		$10^5$ operating cycles
Reliable switching frequency		
600 operating cycles/h		
Recovery time		
500 ms		
Safety		
Rated impulse withstand voltage $U_{imp}$		
Actuator/contact		> 4 kV
Electrical isolation, creepage distances and clearances		
Actuator/contact		3 mm
Vibration resistance		
Amplitude acc. to EN 60068-2-610 (up to 55 Hz)		0.35 mm
Connection		
Terminals		
$\pm$ Screw (Pozidriv)		PZ 1
Conductor cross-sections of main current paths		
Rigid		Max. $2 \times 2.5 \text{ mm}^2$
Flexible, with end sleeve		Min. $1 \times 0.50 \text{ mm}^2$
Ambient conditions		
Permissible ambient temperature		
0 ... +50 °C		
Resistance to climate		
Acc. to EN 60068-1		0/55/04

11

# 5TT3 level relays

For level monitoring and control

Mounting width 2 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Rated control circuit voltage $U_c$	
250 V AC	5 A	230 V AC	5TT3435

## Further technical specifications

5TT3435

Standards		
Standards		IEC 60255; DIN VDE 0435-110
Supply		
Rated operational voltage $U_e$		250 V AC
Rated operational current $I_e$		5 A
Rated control circuit voltage $U_c$		230 V AC
Primary operating range		0.8 ... 1.1 × $U_c$
Rated frequency $f_n$		50/60 Hz
Measuring circuit		
Setting range of the liquid level		2 ... 450 kΩ
Switching point hysteresis of setting value	At 450 kΩ	3%
	At 2 kΩ	6%
Electrode voltage		Max. approx. 10 V AC
Electrode current		Max. approx. 1.5 mA AC
Response delay		Adjustable 0.2 ... 20 s
OFF-delay		Adjustable 0.2 ... 20 s
Test voltage	Input/auxiliary circuit	4 kV
	Input/output circuit	4 kV
	Auxiliary/output circuit	4 kV
Voltage temperature influence		From setting value < 2%
Max. cable length to the electrodes at 100 μF/km	Setting value 450 kΩ	50 m
	Setting value 100 kΩ	200 m
	Setting value 35 kΩ	500 m
	Setting value 10 kΩ	1500 m
	Setting value 5 kΩ	3000 m
Connection		
Terminals		± Screw (Pozidriv) PZ 2
Conductor cross-sections	Rigid, max.	Max. 2 × 2.5 mm <sup>2</sup>
	Flexible, with end sleeve	Min. 1 × 0.50 mm <sup>2</sup>
Ambient conditions		
Permissible ambient temperature		-20 ... +60 °C
Resistance to climate		Acc. to EN 60068-1 20/60/4

## Accessories

### Immersion electrodes



- Made of stainless steel, with PG13 sealing cap
- Suitable for pure water in open containers

Temperature range	Connection	Article No.
0 ... 60 °C	Terminal connection	5TG8223

# 5TT3 line circuit relays

To interrupt circuits where there are no active loads

Mounting width 1 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Contacts	Rated control circuit voltage $U_c$	5TT3171
250 V AC	16 A	1 NC	230 V AC	

## Further technical specifications

5TT3171

Standards			Standards
Standards			IEC 60255; DIN VDE 0435-110
Supply			
Rated operational voltage $U_e$			250 V AC
Rated operational current $I_e$	AC-1		16 A
Rated control circuit voltage $U_c$			230 V AC
Primary operating range			0.85 ... 1.15 × $U_c$
Rated frequency			50/60 Hz
Rated power dissipation $P_v$	Electronics		5 VA
	Contacts		2.6 VA
Contacts			
Response value	Adjustable		2 ... 20 VA
Release value	% of the response value		70%
Electrical endurance	In switching cycles at 3 A (AC-11)		5 × 10 <sup>5</sup>
Safety			
Rated impulse withstand voltage $U_{imp}$	Input/output		> 4 V
Degree of protection	Acc. to IEC/EN 60529		IP20, with connected conductors
Protection class	Acc. to EN 61140/VDE 0140-1		II
Monitoring voltage			3 V
Connection			
Terminals	± Screw (Pozidriv)		PZ 1
Conductor cross-sections	Rigid		Max. 2 × 2.5 mm <sup>2</sup>
	Flexible, with end sleeve		Min. 1 × 0.50 mm <sup>2</sup>
Ambient conditions			
Permissible ambient temperature			-20 ... +45 °C
Humidity class	Acc. to IEC 60068-2-30		F

11

## Accessories

### Base load resistors for electronic devices

- With 15 cm connection wires, end sleeves and shrink sleeving

Article No.

5TG8222

# 7LQ2 twilight switches

For lighting system monitoring and control

Mounting width 1 MW



Rated operational voltage $U_e$	Rated operational current $I_e$	Contacts	Rated control circuit voltage $U_c$	
230 V AC	16 A	1 NO	250 V AC	7LQ2300

## Further technical specifications

7LQ2300

Standards			
Standards			EN 60669-1
Supply			
Rated operational voltage $U_e$			230 V AC
Rated frequency $f_n$			50/60 Hz
Safety			
Degree of protection			IP30
Contacts			
Incandescent lamp/halogen lamp load			2000 W
Energy-saving lamp load			1000 W
Fluorescent lamp load		Series corrected	2000 W
		Parallel corrected (at max. 70 $\mu$ F)	1000 W
LV halogen lamp load ECG			2000 W
Luminosity setting			1 ... 100000 Lux
Measuring circuit			
ON/OFF-delay			Approx. 90 s
Connection			
Terminals		$\pm$ Screw (Pozidriv)	PZ1
Conductor cross-sections		Rigid	Max. 2 $\times$ 1.5 mm <sup>2</sup>
Mechanical data			
Width			17.5 mm (1 MW)
Mounting			DIN rail
Ambient conditions			
Permissible ambient temperature			-20 ... +55 °C

## Spare part

### Light sensor



- Included in the 7LQ2300 package
- Degree of protection IP65

Temperature range	Mounting	Article No.
-20 ... +70 °C	Surface mounting	7LQ2920

