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Low-Voltage Power Distribution and Electrical Installation Technology

Residual Current Protective Devices /
Arc Fault Detection Devices (AFDDs)

Catalog
Extract
LV 10

Edition
04/2019

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Related catalogs

Low-Voltage Power Distribution and Electrical Installation Technology LV 10
 SENTRON • SIVACON • ALPHA
 Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems

PDF (E86060-K8280-A101-A9-7600)
 Print (E86060-K8280-A101-A6-7600)



Air Circuit Breakers and Molded Case Circuit Breakers with UL Certification LV 18
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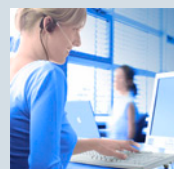


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Technical Support



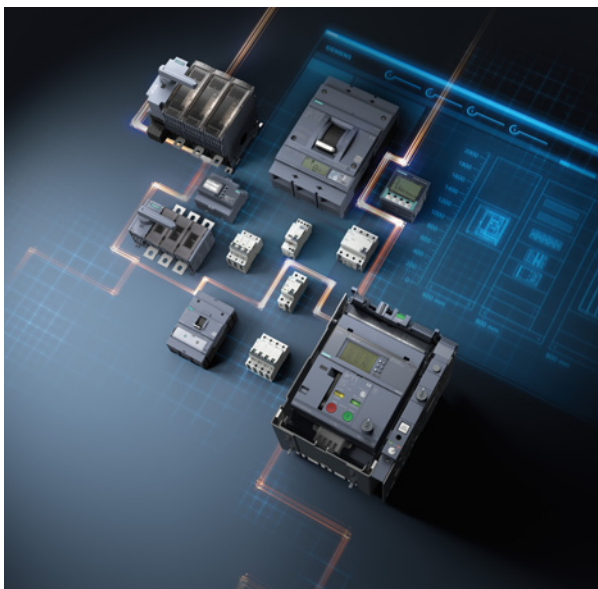
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Low-Voltage Power Distribution and Electrical Installation Technology

Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems

SENTRON · SIVACON · ALPHA



Catalog LV 10 · 04/2019

You can find the updated catalog valid from October 2019 in the Siemens Industry Online Support under www.siemens.com/lowvoltage/catalogs

Supersedes:
Catalog LV 10 · 10/2018

Refer to the Industry Mall for current prices:
www.siemens.com/industrymall

The products in this catalog can also be found in the Interactive Catalog CA 01:
www.siemens.com/ca01/download

Please contact your local Siemens branch.

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The products and systems listed in this catalog are developed and manufactured using a certified quality management system in accordance with EN ISO 9001:2008.

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Switchboards and Distribution Systems

Opening Information

Ordering notes

Overview

Ordering special versions

When ordering products that differ from the standard versions listed in the catalog, "-Z" must be added to the Article No. indicated and the required features must be specified using alphanumeric order codes or plain text.

Ordering very small quantities

When very small orders are placed, the costs associated with order processing are greater than the order value. We therefore recommend that you combine several small orders. Where this is not possible, we regret that we are obliged to make a small processing charge: for orders with a net goods value of less than € 250 we charge a € 20 supplement to cover our order processing and invoicing costs.

Explanations of Selection and ordering data

Standard delivery time (SD)

- ▶ Preferred type Preferred types are device types that can be delivered immediately ex works, i.e. they are dispatched within 24 hours.

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price applies.

Packaging size (PS)

The packaging size defines the number of units, sets or meters, for example, for outer packaging. Only the quantity defined by the packaging size or a multiple thereof can be ordered.

Price group (PG)

Each product is allocated to a price group.

Example

5TT3400
SD: Preferred type
PG: 13C
Ordering quantity 1 unit or a multiple thereof

8US1923-5CA02
PG: 14O
Ordering quantity 10 units or a multiple thereof

8WH9000-1GA00
PG: 12X
Ordering quantity 50 units or a multiple thereof

SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d					
▶	5TT3400		1	1 unit	1BK
	8US1923-5CA02		1	10 units	1CU
	8WH9000-1GA00		100	50 units	1BT

Note:

The article numbers shown here and the specifications regarding selection and ordering data are examples only. When ordering, always use the selection and ordering data in the product chapters.

Metal surcharges/export markings

To compensate fluctuating prices of raw materials (for example silver, copper, aluminum, lead, gold, dysprosium and neodymium), surcharges are calculated on a daily basis for products containing these raw materials using the metal factor. A surcharge for the particular raw material is added to the price of a product if the basic quotations for this raw material are exceeded.

Each product's metal factor dictates for which raw materials the metal surcharges are calculated, from which quotation and with which calculation method (weight or percentage method).

An exact explanation of the metal factor can be found at: www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

A product's export markings/metal surcharges are updated daily at www.siemens.com/industryml.

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)



4/2	Introduction
4/4	5SV RCCBs
4/19	5SM3 RCCBs
4/20	SIQUENCE 5SV3, universal current-sensitive RCCBs, type B and type B+ NEW
4/24	5SM2 RC units
4/32	5SU1 RCBOs
4/41	5SV1 compact RCBOs NEW
4/45	Additional components NEW
4/56	5SM6 / 5SV6 arc fault detection devices (AFDDs) NEW
4/60	Pin busbars for 5SV1 / 5SV6 / 5S..0 compact devices NEW
4/63	Busbars
4/66	5SZ9 RCCB socket outlets
4/67	Accessories
4/68	Configuration

For further technical product information:

[Configuration Manual](#)

[Residual Current Protective Devices / Arc Fault Detection Devices \(AFDDs\)](#)
Article No.: 3ZW1012-5SM33-0AC1

Siemens Industry Online Support:














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Characteristic
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Technical data

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Introduction

Overview

Devices	Page	Application	Standards	Used in		
				Non-residential buildings	Residential buildings	Industry
 5SV RCCBs	4/4	Personnel, material and fire protection, as well as protection against direct contact. SIGRES with active condensation protection for use in harsh environments. Super resistant and selective versions	IEC/EN 61008 ÖVE EN 61008 ÖVE/ÖNORM E 8601 IEC/EN 62423	✓	✓	✓
 5SM3 RCCBs	4/19	Personnel, material and fire protection, as well as protection against direct contact	IEC/EN 61008 ÖVE EN 61008 ÖVE/ÖNORM E 8601 IEC/EN 62423	✓	✓	✓
 SIQUENCE 5SV3 universal current-sensitive RCCBs, type B and type B+	4/20	SIQUENCE, the technology of universal current-sensitive residual current protective devices	VDE 0664-100 VDE 0664-200 VDE V 0664-110	✓	--	✓
 Additional components	4/45	Remote controlled mechanisms, auxiliary switches for all residual current operated circuit breakers Leakage current measurement device for fault locating and optimum selection of RCCBs	IEC/EN 62019	✓	--	✓
 5SM2 RC units	4/24	The freely selectable combination of RC units with miniature circuit breakers permits the flexible configuration of RCBO combinations	IEC/EN 61009	✓	--	✓
 5SU1 RCBOs	4/32	The ideal protection combination for all electrical circuits due to the compact device versions of RCCBs and miniature circuit breakers in a single device	IEC/EN 61009	✓	✓	✓
 5SV1 compact RCBOs NEW	4/41					
 5SM6 / 5SV6 arc fault detection devices (AFDDs) NEW	4/56	Enhanced fire protection through the detection and isolation of arcing faults	IEC/EN 62606	✓	✓	--
 Busbars	4/63	Busbars in 10 mm ² and 16 mm ² save space in the distribution board and time during mounting	--	✓	✓	✓
 Compact busbars NEW	4/60					
 5SZ9 RCCB socket outlets	4/66	For retrofitting in existing installations	VDE 0664	✓	✓	✓
 Accessories	4/67	Locking devices, covers – everything you need for mounting	--	✓	✓	✓
 5SV8 residual current monitors	Ch. 13	For monitoring of residual currents in electrical plants with indication if a specified limit value is exceeded, see chapter "Monitoring Devices" —> Monitoring devices for electrical values — > Residual current monitors"	IEC 62020 EN 62020	✓	--	✓

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Introduction

SIGRES

SIGRES RCCBs were developed for use in harsh ambient conditions, such as swimming baths as protection against chlorine and ozone, in the agricultural sector (ammonia), on building sites and in the chemical industry (nitrogen oxide, sulfur dioxide, solvents), in the food processing industry (hydrogen sulfide) and in unheated rooms (dampness). The patented active condensation protection requires a continuous power supply and bottom infeed if the RCCB is switched off.

When used in ambient conditions as defined in product standard EN 61008-1, the operation interval for pressing the test button can be extended to two years.

Super resistant **K** **G**

Super resistant (short-time delayed) RCCBs meet the maximum permissible break times for instantaneous devices. However, by implementing a short-time delay they prevent unnecessary tripping operations, and thus plant faults, when pulse-shaped leakage currents occur – as is the case when capacitors are switched on.

Selective **S**

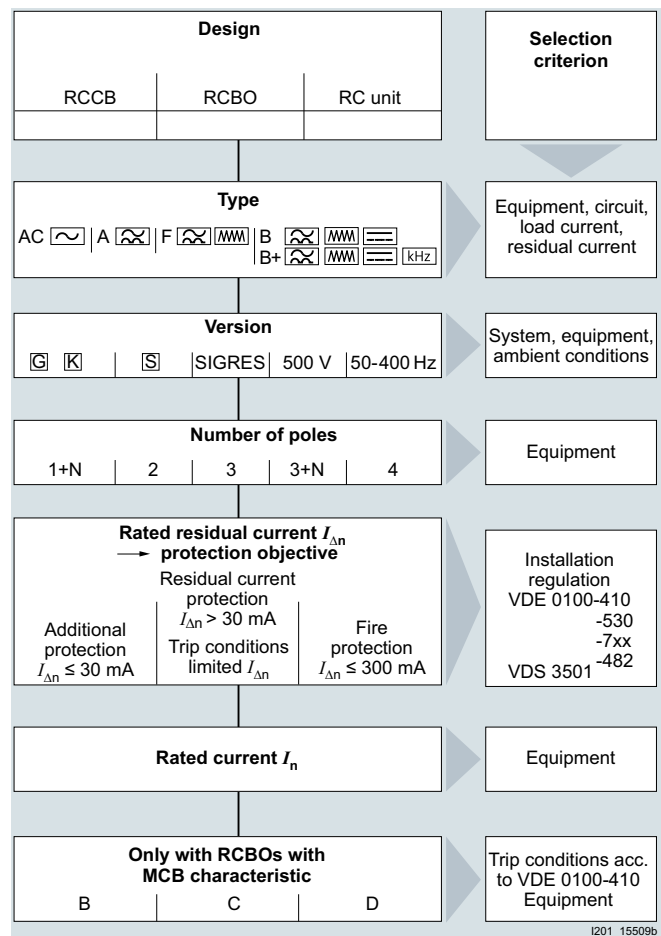
Can be used as upstream group switch for selective tripping contrary to downstream, instantaneous or short-time delayed RCCBs.

Short-time delayed **G**

If installations/equipment whose inadvertent tripping could lead to personal injury or material damage (such as freezers, computers) are protected by residual current protective devices, the tripping time of these devices must be at least 10 ms as defined according to ÖVE/ÖNORM E 8001-1.

Note:

You will find further information on the subject of residual current protective devices in the technology primer "Residual Current Protective Devices", Article No.: EMLP-T10158-00-7600 and in the Configuration Manual Residual Current Protective Devices/ Arc Fault Detection Devices (AFDDs) (www.siemens.com/lowvoltage/manuals).



Selection aid for finding the appropriate residual current protective device

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

Overview

RCCBs are used in all systems up to 240/415 V AC. Devices of type AC trip in the event of sinusoidal AC residual currents, type A also trips in the event of pulsating DC residual currents.

In addition, RCCBs type F also detect residual currents with mixed frequencies up to 1 kHz.

RCCBs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact. RCCBs with a rated residual current of 10 mA are primarily used in areas that represent an increased risk for personnel.

Since the introduction of DIN VDE 0100-410, all socket outlet current circuits up to 20 A must also be fitted with residual current protective devices with a rated residual current of max. 30 mA. This also applies to outdoor electrical circuits up to 32 A for the connection of portable equipment.

Devices with a rated residual current of maximum 300 mA are used as preventive fire protection in case of insulation faults. RCCBs with a rated residual current of 100 mA are primarily used in European countries outside Germany.


Benefits

- Instantaneous residual current operated circuit breakers with the N connection on the left or right-hand side enable simple bus mounting with standard pin busbars with miniature circuit breakers installed on the right-hand side.
- Instantaneous type A devices have a surge current withstand capability with current waveform 8/20 μ s of more than 1 kA, super resistant devices of more than 3 kA and selective devices of more than 5 kA. This ensures safe operation.
- SIGRES has an extremely long service life due to patented active condensation protection, and identical dimensions enable the quick and easy replacement of existing instantaneous RCCBs.
- Super resistant devices increase system availability, as unnecessary tripping is prevented in power supply systems with short-time glitches.
- Selective RCCBs increase system availability as a staggered tripping time enables the selective tripping of RCCBs connected in series in the event of a fault.
- Auxiliary switches, fault signal contacts, undervoltage releases and shunt trips are also available as additional components.
- By means of internal contacts, effective touch protection is provided when grasping and manually operating the latching slide.
- To facilitate entry of pin busbars with connection cables up to 35 mm², the devices are equipped with rectangular terminals for the accommodation of funnel-shaped cable entries.
- By means of standardized clearances of the terminals in modular width dimensions, the RCCBs and MCBs can be optionally connected to busbars on the top or on the bottom.

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

Technical specifications

	Instantaneous	SIGRES	Super resistant / G types	Selective
Standards	IEC/EN 61008-1 (VDE 0664-10); IEC/EN 61008-2-1 (VDE 0664-11); IEC/EN 61543 (VDE 0664-30); IEC/EN 62423 (VDE 0664-40)			
Surge current withstand capability				
• Type A with current waveform 8/20 μ s	Acc. to EN 60060-2 (VDE 0432-2)	kA	> 1	> 3
• Type F with current waveform 8/20 μ s	Acc. to EN 60060-2 (VDE 0432-2)	kA	--	> 3
Minimum operational voltage for test function operation				
• 30-mA devices	V AC	195		
• Non-30-mA devices	V AC	100		
• 24-V devices	V AC	20		
Test cycles			1/2 year	1 year
Insulation coordination				
• Overvoltage category			III	
Pollution degree			2	
Terminal conductor cross-sections				
• 1-wire				
- Solid ($\leq 10 \text{ mm}^2$) / stranded ($\geq 16 \text{ mm}^2$)	mm ²	0.75 ... 35		
- Finely stranded with non-insulated end sleeve	mm ²	0.75 ... 25		
- Finely stranded with insulated end sleeve	mm ²	0.75 ... 25		
- Finely stranded without end sleeve	mm ²	1 ... 35		
• 2-wire, same cross-section, same conductor type				
- Solid ($\leq 10 \text{ mm}^2$) / stranded ($\geq 16 \text{ mm}^2$)	mm ²	0.75 ... 10		
- Finely stranded with non-insulated end sleeve	mm ²	0.75 ... 4		
- Finely stranded with insulated end sleeve	mm ²	0.75 ... 4		
- Finely stranded without end sleeve	mm ²	1 ... 4		
• 1-wire + busbar (pin thickness 1.5 mm)				
- Solid ($\leq 10 \text{ mm}^2$) / stranded ($\geq 16 \text{ mm}^2$)	mm ²	10 ... 25		
- Finely stranded with non-insulated end sleeve	mm ²	6 ... 25		
- Finely stranded with insulated end sleeve	mm ²	6 ... 16		
Terminal tightening torque				
• Up to $I_n = 80 \text{ A}$	Nm	2.5		
• At $I_n = 100 \text{ A}, 125 \text{ A}$	Nm	3.0 ... 3.5		
Mains connection			Optionally top or bottom (top for the SIGRES function to also be effective in the deactivated state)	
Rated frequency	Hz	50/50 ... 400		
Operating frequency	Hz	50/50 ... 400	50	50/60
Mounting position (on a standard mounting rail)			Any	
Degree of protection	Acc. to EN 60529 (VDE 0470-1)		IP20, if the distribution board is installed, with connected conductors	
Touch protection	Acc. to EN 50274 (VDE 0660-514)		Finger and back-of-hand safe	
Service life	Average number of operating cycles Test cycle acc. to IEC/EN 61008		> 10000	
Storage temperature	°C		-40 ... +75	
Ambient temperature	°C		-25 ... +45, marked with 	
Resistance to climate	Acc. to IEC 60068-2-30		28 cycles (55 °C; 95% rel. air humidity)	
CFC and silicone-free			Yes	

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Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

Thermal overload protection

According to ÖVE/ÖNORM E 8001-1 § 12.1.4, RCCBs must be protected against thermal overload.

Rated current I_n of residual current protective device	Minimum wiring cross-section mm ²	Maximum rated current I_n of back-up fuse for overload protection	
		Miniature circuit breakers	Melting fuses
A		A	A
5SV standard types			
16	1.5	10	10
	2.5	16	16
25	2.5	16	16
	4.0	25	25
40	6.0	25	25
	10.0	32	35
63	10.0	40	40
	16.0	50	50
80	16.0	63	63
	25.0	63	63
5SV.....LA special types, can be protected against overload with rated current			
40	6.0	32	35
	10.0	40	40
63	10.0	50	50
	16.0	63	63

System dimensioning (e.g. taking into account rated load factors) must be such that the rated current of the RCCB is not exceeded by a continuous load.

The specified protective devices for thermal overload protection are designed to protect the RCCB against damage in unforeseen and non-permissible plant states.

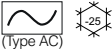





Application

- Personnel, material and fire protection
 - $I_{\Delta n} \leq 30$ mA: additional protection in case of direct contact
 - $I_{\Delta n} \leq 300$ mA: preventive fire protection in the case of ground fault currents
- Product standards: ÖVE/ÖNORM EN 61008; ÖVE/ÖNORM E 8601
- U_n 230/400 V; 50 Hz; for use in systems up to: 240/415 V AC
- **G** type: at least 10 ms trip delay.
High surge current withstand capability: > 3 kA.

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

Selection and ordering data

 (Type AC)	Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	$I_{\Delta n}$ mA	I_n A		MW	d					
RCCBs, type AC, instantaneous										
	1P+N; 230 V AC									
	N connection, right									
	10	16	63		2	5SV4111-0		1	1 unit	1A1
	30	16	63		2	5SV4311-0		1	1 unit	1A1
		25				5SV4312-0		1	1 unit	1A1
		40	Bulk packaging 36 units			5SV4312-0GV01		1	36 units	1A1
			63			5SV4314-0		1	1 unit	1A1
		63	Bulk packaging 36 units			5SV4314-0GV01		1	36 units	1A1
			80	80		5SV4316-0		1	1 unit	1A1
	100	80			2	5SV4317-0		1	1 unit	1A1
		25	63			5SV4412-0		1	1 unit	1A1
		40	80			5SV4414-0		1	1 unit	1A1
		63	80			5SV4416-0		1	1 unit	1A1
	300	80			2	5SV4417-0		1	1 unit	1A1
		25	63			5SV4612-0		1	1 unit	1A1
40		80		5SV4614-0			1	1 unit	1A1	
63		80		5SV4616-0			1	1 unit	1A1	
	80				5SV4617-0		1	1 unit	1A1	
	3P+N; 400 V AC									
	N connection, right									
	30	25	80		4	5SV4342-0		1	1 unit	1A1
			Bulk packaging 18 units				5SV4342-0GV01		1	18 units
		40	80			5SV4344-0		1	1 unit	1A1
			Bulk packaging 18 units				5SV4344-0GV01		1	18 units
		63	100			5SV4346-0		1	1 unit	1A1
			80			5SV4347-0		1	1 unit	1A1
	100	25	80		4	5SV4442-0		1	1 unit	1A1
		40				5SV4444-0		1	1 unit	1A1
		63	100			5SV4446-0		1	1 unit	1A1
		80				5SV4447-0		1	1 unit	1A1
	300	25	80		4	5SV4642-0		1	1 unit	1A1
		40				5SV4644-0		1	1 unit	1A1
		63	100			5SV4646-0		1	1 unit	1A1
80				5SV4647-0			1	1 unit	1A1	
500	25	80		4	5SV4742-0		1	1 unit	1A1	
	40				5SV4744-0		1	1 unit	1A1	
	63	100			5SV4746-0		1	1 unit	1A1	
	80				5SV4747-0		1	1 unit	1A1	
	1P+N; 230 V AC									
	N connection, left									
	10	16	63		2	5SV4111-OKL		1	1 unit	1A1
	30	16	63		2	5SV4311-OKL		1	1 unit	1A1
		25				5SV4312-OKL		1	1 unit	1A1
		40	Bulk packaging 36 units			5SV4314-OKL		1	1 unit	1A1
			63	80		5SV4314-0GV02		1	36 units	1A1
		80				5SV4316-OKL		1	1 unit	1A1
			80			5SV4317-OKL		1	1 unit	1A1
	100	40	63		2	5SV4414-OKL		1	1 unit	1A1
		63	80			5SV4416-OKL		1	1 unit	1A1
	300	25	63		2	5SV4612-OKL		1	1 unit	1A1
		40	80			5SV4614-OKL		1	1 unit	1A1
		63	80			5SV4616-OKL		1	1 unit	1A1
		80				5SV4617-OKL		1	1 unit	1A1
	3P+N; 400 V AC									
	N connection, left									
	30	25	80		4	5SV4342-OKL		1	1 unit	1A1
			40			5SV4344-OKL		1	1 unit	1A1
		63	80			5SV4346-OKL		1	1 unit	1A1
			80			5SV4347-OKL		1	1 unit	1A1
	300	25	80		4	5SV4642-OKL		1	1 unit	1A1
		40				5SV4644-OKL		1	1 unit	1A1
		63				5SV4646-OKL		1	1 unit	1A1
		80				5SV4647-OKL		1	1 unit	1A1

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs






Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
$I_{\Delta n}$ mA	I_n A	10000 A	MW	d					
1P+N; 24 ... 125 V AC									
N wire connection, right									
30	16	63	2		5SV4311-0KK13		1	1 unit	1AI
	25				5SV4312-0KK13		1	1 unit	1AI
	40				5SV4314-0KK13		1	1 unit	1AI
	63	80			5SV4316-0KK13		1	1 unit	1AI

4



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs



Selection and ordering data

 (Type AC)		Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		$I_{\Delta n}$ mA	I_n A	 10000	MW	d					

RCCBs, type AC, instantaneous
Surge current withstand capability > 1 kA ¹⁾

1P+N; 230 V AC											
	N connection, right										
	30	40	63	2	5SV4314-0LA					1	1 unit 1AI
3P+N; 400 V AC											
	N connection, right										
	30	40	80	4	5SV4344-0LA 5SV4346-0LA					1	1 unit 1AI
		63	100					1	1 unit 1AI		
	100	40	80		5SV4444-0LA 5SV4446-0LA					1	1 unit 1AI
	63	100				1	1 unit 1AI				

RCCBs, type AC, short-time delayed 





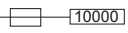



1P+N; 230 V AC											
	N connection, right										
	30	40	63	2	5SV4314-0LA01					1	1 unit 1AI
3P+N; 400 V AC											
	N connection, right										
	30	40	100	4	5SV4344-0LA01 5SV4346-0LA01					1	1 unit 1AI
		63						1	1 unit 1AI		
	100	40			5SV4444-0LA01 5SV4446-0LA01					1	1 unit 1AI
	63					1	1 unit 1AI				

¹⁾ Thermal overload protection according to ÖVE/ÖNORM E 8001 possible up to rated current of the RCCB (40 A, 63 A).

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs





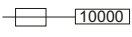

Selection and ordering data

 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/ product?Article.No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	$I_{\Delta n}$	I_n			 10000	MW	d					
	mA	A		A								
RCCBs, type A, instantaneous												
1P+N; 230 V AC												
N connection, right												
	10	16	63	2				5SV3111-6		1	1 unit	1AH
	30	16	63	2				5SV3311-6		1	1 unit	1AH
								5SV3311-6GV01		1	36 units	1AH
								5SV3312-6		1	1 unit	1AH
								5SV3312-6GV01		1	36 units	1AH
								5SV3314-6		1	1 unit	1AH
								5SV3314-6GV01		1	36 units	1AH
		40 ¹⁾	63	80				5SV3314-6LA		1	1 unit	1AH
		63	80					5SV3316-6		1	1 unit	1AH
		80						5SV3317-6		1	1 unit	1AH
		100	25	63	2			5SV3412-6		1	1 unit	1AH
			40					5SV3414-6		1	1 unit	1AH
		63	80				5SV3416-6		1	1 unit	1AH	
		80					5SV3417-6		1	1 unit	1AH	
	300	25	63	2			5SV3612-6		1	1 unit	1AH	
		40					5SV3614-6		1	1 unit	1AH	
		63	80				5SV3616-6		1	1 unit	1AH	
		80					5SV3617-6		1	1 unit	1AH	
3P+N; 400 V AC												
N connection, right												
	30	25	80	4				5SV3342-6		1	1 unit	1AH
								5SV3342-6GV01		1	18 units	1AH
								5SV3344-6		1	1 unit	1AH
								5SV3344-6GV01		1	18 units	1AH
		40 ¹⁾	80	100				5SV3344-6LA		1	1 unit	1AH
		63	100					5SV3346-6		1	1 unit	1AH
								5SV3346-6GV01		1	18 units	1AH
		63 ¹⁾	80	100				5SV3346-6LA		1	1 unit	1AH
		80	100					5SV3347-6		1	1 unit	1AH
		100	25	80	4			5SV3442-6		1	1 unit	1AH
			40					5SV3444-6		1	1 unit	1AH
			40 ¹⁾	80				5SV3444-6LA		1	1 unit	1AH
		63	100				5SV3446-6		1	1 unit	1AH	
		63 ¹⁾	100				5SV3446-6LA		1	1 unit	1AH	
		80					5SV3447-6		1	1 unit	1AH	
	300	25	80	4			5SV3642-6		1	1 unit	1AH	
		40					5SV3644-6		1	1 unit	1AH	
		63	100				5SV3646-6		1	1 unit	1AH	
		80					5SV3647-6		1	1 unit	1AH	
	500	25	80	4			5SV3742-6		1	1 unit	1AH	
		40					5SV3744-6		1	1 unit	1AH	
		63	100				5SV3746-6		1	1 unit	1AH	
							5SV3746-6GV01		1	18 units	1AH	
		80					5SV3747-6		1	1 unit	1AH	
1P+N; 230 V AC												
N connection, left												
	10	16	63	2				5SV3111-6KL		1	1 unit	1AH
	30	16	63	2				5SV3311-6KL		1	1 unit	1AH
		25						5SV3312-6KL		1	1 unit	1AH
		40						5SV3314-6KL		1	1 unit	1AH
		63	80					5SV3316-6KL		1	1 unit	1AH
		80						5SV3317-6KL		1	1 unit	1AH
		100	25	63	2			5SV3412-6KL		1	1 unit	1AH
			40					5SV3414-6KL		1	1 unit	1AH
			63	80				5SV3416-6KL		1	1 unit	1AH
			80					5SV3417-6KL		1	1 unit	1AH
		300	25	63	2			5SV3612-6KL		1	1 unit	1AH
			40					5SV3614-6KL		1	1 unit	1AH
		63	80				5SV3616-6KL		1	1 unit	1AH	
		80					5SV3617-6KL		1	1 unit	1AH	

¹⁾ Thermal overload protection according to ÖVE/ÖNORM E 8001 possible up to rated current of the RCCB (40 A, 63 A).

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs





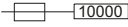


 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG															
			$I_{\Delta n}$ mA	I_n A		MW	d																				
3P+N; 400 V AC																											
N connection, left																											
	30		25	80		4						5SV3342-6KL	1	1 unit	1AH												
			40									5SV3344-6KL	1	1 unit	1AH												
			Bulk packaging 18 units									80	5SV3344-6GV02	1	18 units	1AH											
			63									5SV3346-6KL	1	1 unit	1AH												
			80									5SV3347-6KL	1	1 unit	1AH												
			300										25	80		4							5SV3642-6KL	1	1 unit	1AH	
	40	5SV3644-6KL		1	1 unit	1AH																					
	63	5SV3646-6KL		1	1 unit	1AH																					
	80	5SV3647-6KL		1	1 unit	1AH																					
	500			63	80		4																	5SV3746-6KL	1	1 unit	1AH

¹⁾ Thermal overload protection according to ÖVE/ÖNORM E 8001 possible up to rated current of the RCCB (40 A, 63 A).

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

Selection and ordering data





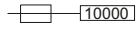
 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$ mA	I_n A		MW	d					
RCCBs, type A, instantaneous (only available in Belgium)¹⁾												
	1P+N; 230 V AC											
	N connection, right											
	30	25	63	2	5SV3312-6BA	1	1 unit	1AH				
		40			5SV3314-6BA	1	1 unit	1AH				
		63	80		5SV3316-6BA	1	1 unit	1AH				
	300	25	63	2	5SV3612-6BA	1	1 unit	1AH				
	40			5SV3614-6BA	1	1 unit	1AH					
	63	80		5SV3616-6BA	1	1 unit	1AH					
	3P+N, 400 V AC											
	N connection, right											
	30	25	80	4	5SV3342-6BA	1	1 unit	1AH				
		40			5SV3344-6BA	1	1 unit	1AH				
		63	100		5SV3346-6BA	1	1 unit	1AH				
	300	25	80	4	5SV3642-6BA	1	1 unit	1AH				
	40			5SV3644-6BA	1	1 unit	1AH					
	63	100		5SV3646-6BA	1	1 unit	1AH					

¹⁾ These products cannot be used in France according to NF C 15-100. Product complies with the specifications of the Belgian market only. (Simultaneous tripping of the 3 poles and the N conductor.) Available for the export market only.



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs



Selection and ordering data

 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$	I_n		MW	d					
			mA	A	A							


RCCBs, type A, short-time delayed 

	1+N, 230 V											
	N connection, right											
	30	40 ¹⁾	63	2			5SV3314-6LA01			1	1 unit	1AH
	3P+N, 400 V AC											
	N connection, right											
	30	40	100	4			5SV3344-6LB01			1	1 unit	1AH
		40 ¹⁾					5SV3344-6LA01			1	1 unit	1AH
		63					5SV3346-6LB01			1	1 unit	1AH
		63 ¹⁾					5SV3346-6LA01			1	1 unit	1AH
		80					5SV3347-6LB01			1	1 unit	1AH
	100	40	100	4			5SV3444-6LB01			1	1 unit	1AH
	40 ¹⁾					5SV3444-6LA01			1	1 unit	1AH	
	63					5SV3446-6LB01			1	1 unit	1AH	
	63 ¹⁾					5SV3446-6LA01			1	1 unit	1AH	

RCCBs, type A, super resistant 

	1P+N; 230 V AC											
	N connection, right											
	30	25	63	2			5SV3312-6KK01			1	1 unit	1AH
		40					5SV3314-6KK01			1	1 unit	1AH
		63	80				5SV3316-6KK01			1	1 unit	1AH
	80					5SV3317-6KK01			1	1 unit	1AH	
300	25	63	2			5SV3612-6KK01			1	1 unit	1AH	
	40					5SV3614-6KK01			1	1 unit	1AH	
	63	80				5SV3616-6KK01			1	1 unit	1AH	
	80					5SV3617-6KK01			1	1 unit	1AH	
	3P+N; 400 V AC											
	N connection, right											
	30	25	100	4			5SV3342-6KK01			1	1 unit	1AH
		40					5SV3344-6KK01			1	1 unit	1AH
		63					5SV3346-6KK01			1	1 unit	1AH
		80					5SV3347-6KK01			1	1 unit	1AH
	300	25	100	4			5SV3642-6KK01			1	1 unit	1AH
		40					5SV3644-6KK01			1	1 unit	1AH
	63					5SV3646-6KK01			1	1 unit	1AH	
	80					5SV3647-6KK01			1	1 unit	1AH	




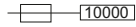






RCCBs, type A, selective 

	1P+N; 230 V AC											
	N connection, right											
	100	63	80	2			5SV3416-8			1	1 unit	1AH
	300	25	63	2			5SV3612-8			1	1 unit	1AH
		40					5SV3614-8			1	1 unit	1AH
	63	80				5SV3616-8			1	1 unit	1AH	
	80					5SV3617-8			1	1 unit	1AH	

¹⁾ Thermal overload protection according to ÖVE/ÖNORM E 8001 possible up to rated current of the RCCB (40 A, 63 A).

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs





 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$ mA	I_n A	 A	MW	d					
	3P+N; 400 V AC											
	N connection, right											
	100	40	100	4			5SV3444-8		1	1 unit	1AH	
		40 ¹⁾					5SV3444-8LA		1	1 unit	1AH	
		63					5SV3446-8		1	1 unit	1AH	
		63 ¹⁾					5SV3446-8LA		1	1 unit	1AH	
	300	25	100	4			5SV3642-8		1	1 unit	1AH	
		40					5SV3644-8		1	1 unit	1AH	
		40 ¹⁾					5SV3644-8LA		1	1 unit	1AH	
		63					5SV3646-8		1	1 unit	1AH	
	63 ¹⁾					5SV3646-8LA		1	1 unit	1AH		
	80					5SV3647-8		1	1 unit	1AH		
	1000	63	100	4		5SV3846-8		1	1 unit	1AH		
	1P+N; 230 V AC											
	N connection, left											
	300	40	63	2			5SV3614-8KL		1	1 unit	1AH	
	63	80				5SV3616-8KL		1	1 unit	1AH		
	3P+N; 400 V AC											
	N connection, left											
300	63	80	4			5SV3646-8KL		1	1 unit	1AH		
RCCBs, type A, SIGRES, instantaneous												
	1P+N; 230 V AC											
	N connection, right											
	30	16	63	2			5SV3311-6KK12		1	1 unit	1AH	
		25					5SV3312-6KK12		1	1 unit	1AH	
		40					5SV3314-6KK12		1	1 unit	1AH	
	63	80				5SV3316-6KK12		1	1 unit	1AH		
	3P+N; 400 V AC											
	N connection, right											
	30	25	100	4			5SV3342-6KK12		1	1 unit	1AH	
		40					5SV3344-6KK12		1	1 unit	1AH	
		63					5SV3346-6KK12		1	1 unit	1AH	
		80					5SV3347-6KK12		1	1 unit	1AH	
	300	25	100	4			5SV3642-6KK12		1	1 unit	1AH	
		40					5SV3644-6KK12		1	1 unit	1AH	
		63					5SV3646-6KK12		1	1 unit	1AH	
		80					5SV3647-6KK12		1	1 unit	1AH	
RCCBs, type A, SIGRES, selective S												
	3P+N; 400 V AC											
	N connection, right											
300	63	100	4			5SV3646-8KK12		1	1 unit	1AH		

¹⁾ Thermal overload protection according to ÖVE/ÖNORM E 8001 possible up to rated current of the RCCB (40 A, 63 A).



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs



Selection and ordering data

 (Type F)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
$I_{\Delta n}$			mA	I_n		MW	d					

RCCBs, type F, super resistant **K**




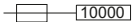
	1P+N; 230 V AC											
	N connection, right											
	30	25	63	2				5SV3312-3		1	1 unit	1AH
		40	80					5SV3314-3		1	1 unit	1AH
		63						5SV3316-3		1	1 unit	1AH
		80						5SV3317-3		1	1 unit	1AH
	3P+N; 400 V AC											
	N connection, right											
	30	25	100	4				5SV3342-3		1	1 unit	1AH
		40						5SV3344-3		1	1 unit	1AH
		63						5SV3346-3		1	1 unit	1AH
		80						5SV3347-3		1	1 unit	1AH
300	25	100	4				5SV3642-3		1	1 unit	1AH	
	40						5SV3644-3		1	1 unit	1AH	
	63						5SV3646-3		1	1 unit	1AH	
	80						5SV3647-3		1	1 unit	1AH	

RCCBs, type F, selective **S**




	1P+N; 230 V AC											
	N connection, right											
	300	40	63	2				5SV3614-7		1	1 unit	1AH
	80	80						5SV3617-7		1	1 unit	1AH
	3P+N; 400 V AC											
	N connection, right											
	300	40	100	4				5SV3644-7		1	1 unit	1AH
	80							5SV3647-7		1	1 unit	1AH

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV RCCBs

 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$	I_n		MW	d					
			mA	A	A							

RCCBs, type A, instantaneous

	1P+N; 24 ... 125 V AC											
	N connection, right											
	30	16	63	2	5SV3311-6KK13					1	1 unit	1AH
	30	25			5SV3312-6KK13					1	1 unit	1AH
	30	40			5SV3314-6KK13					1	1 unit	1AH
	30	63	80		5SV3316-6KK13					1	1 unit	1AH
	3P+N; 500 V AC											
	N connection, right											
	30	25	63	4	5SV3352-6					1	1 unit	1AH
	30	40			5SV3354-6					1	1 unit	1AH
	30	63			5SV3356-6					1	1 unit	1AH
	30	80	80		5SV3357-6					1	1 unit	1AH
	300	25	63		5SV3652-6					1	1 unit	1AH
	300	40			5SV3654-6					1	1 unit	1AH
	300	63		5SV3656-6					1	1 unit	1AH	
	300	80	80		5SV3657-6					1	1 unit	1AH
	3P+N; 400 V AC; 400 Hz											
	N connection, right											
	30	25	80	4	5SV3342-6KK03					1	1 unit	1AH
	30	40		5SV3344-6KK03						1	1 unit	1AH

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM3 RCCBs

Overview

RCCBs are used in all systems up to 240/415 V AC. Devices of type AC trip in the event of sinusoidal AC residual currents, type A also trips in the event of pulsating DC residual currents.

In addition, RCCBs type F also detect residual currents with mixed frequencies up to 1 kHz.

RCCBs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact. RCCBs with a rated residual current of 10 mA are primarily used in areas that represent an increased risk for personnel.

Since the introduction of DIN VDE 0100-410, all socket outlet current circuits up to 20 A must also be fitted with residual current protective devices with a rated residual current of max. 30 mA. This also applies to outdoor electrical circuits up to 32 A for the connection of portable equipment.


Devices with a rated residual current of maximum 300 mA are used as preventive fire protection in case of insulation faults. RCCBs with a rated residual current of 100 mA are primarily used in European countries outside Germany.

Benefits

- Instantaneous RCCBs with the N connection on the left-hand side enable simple bus mounting with standard pin busbars with miniature circuit breakers installed on the right-hand side.
- Instantaneous RCCBs with the N connection on the right-hand side can be bus-mounted with miniature circuit breakers using a special pin busbar.
- Instantaneous type A devices have a surge current withstand capability with current waveform 8/20 μ s of more than 1 kA, super resistant devices of more than 3 kA and selective devices of more than 5 kA. This ensures safe operation.
- Super resistant devices increase system availability, as unnecessary tripping is prevented in power supply systems with short-time glitches.
- Selective RCCBs increase system availability as a staggered tripping time enables the selective tripping of RCCBs connected in series in the event of a fault.

4

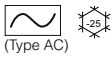
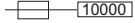



Technical specifications

		Instantaneous	Selective
Standards		IEC/EN 61008-1 (VDE 0664-10); IEC/EN 61008-2-1 (VDE 0664-11); IEC/EN 61543 (VDE 0664-30); IEC/EN 62423 (VDE 0664-40)	
Surge current withstand capability			
• Type A with current waveform 8/20 μ s	Acc. to EN 60060-2 (VDE 0432-2)	kA	> 1
Minimum operational voltage for test function operation		V AC	> 5
Test cycles			195
Insulation coordination			1/2 year
• Overvoltage category			III
Pollution degree			2
Terminal conductor cross-sections			
• 2 MW	$I_n = 100$ A, 125 A	mm ²	1.5 ... 50
• 4 MW	$I_n = 100$ A, 125 A	mm ²	2.5 ... 50
Terminal tightening torque			
• $I_n = 100$ A, 125 A		Nm	3.0 ... 3.5
Mains connection			Top or bottom
Mounting position (on a standard mounting rail)			Any
Degree of protection		Acc. to EN 60529 (VDE 0470-1)	IP20, if the distribution board is installed, with connected conductors
Touch protection		Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe
Service life		Average number of switching cycles	> 10000
Storage temperature		°C	-40 ... +75
Ambient temperature		°C	-25 ... +45, marked with 
Resistance to climate		Acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)
CFC and silicone-free			Yes

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM3 RCCBs




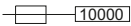




Selection and ordering data

 (Type AC)	Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	$I_{\Delta n}$ mA	I_n A	 10000	MW	d					
RCCBs, type AC, instantaneous										
1P+N; 230 V AC										
	N connection, right									
	30	100	125	125	2	5SM3318-0KK 5SM3315-0KK 5SM3418-0KK 5SM3415-0KK 5SM3618-0KK 5SM3615-0KK		1	1 unit	1Al
		125					1	1 unit	1Al	
	100	100	125	125			1	1 unit	1Al	
		125					1	1 unit	1Al	
300	100	125	125		1		1 unit	1Al		
	125					1	1 unit	1Al		
3P+N; 400 V AC										
	N connection, right									
	30	100	125	100	4	5SM3348-0 5SM3345-0 5SM3448-0 5SM3445-0		1	1 unit	1Al
		125		125			1	1 unit	1Al	
	100	100	125	100			1	1 unit	1Al	
		125		125		5SM3648-0 5SM3645-0 5SM3748-0 5SM3745-0		1	1 unit	1Al
	300	100	125	100			1	1 unit	1Al	
		125		125			1	1 unit	1Al	
500	100	125	100		1		1 unit	1Al		
	125		125			1	1 unit	1Al		
RCCBs, type AC, selective S										
3P+N, 400 V AC										
	N connection, right									
	300	100	100	100	4	5SM3648-2		1	1 unit	1Al

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM3 RCCBs

Selection and ordering data

 (Type A)			Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$ mA	I_n A	 A	MW	d					
RCCBs, type A, instantaneous												
	1P+N; 230 V AC; 50 Hz											
	N connection, right											
	30	100	125	2		5SM3318-6KK	1	1 unit	1AH			
		125	125			5SM3315-6KK	1	1 unit	1AH			
	100	100	125	2		5SM3418-6KK	1	1 unit	1AH			
	125	125			5SM3415-6KK	1	1 unit	1AH				
300	100	125	2		5SM3618-6KK	1	1 unit	1AH				
	125	125			5SM3615-6KK	1	1 unit	1AH				
	3P+N; 400 V AC; 50 Hz											
	N connection, right											
	30	100	125	4	▶	5SM3348-6	1	1 unit	1AH			
		125	125			5SM3345-6	1	1 unit	1AH			
	100	100	125	4	▶	5SM3448-6	1	1 unit	1AH			
		125	125			5SM3445-6	1	1 unit	1AH			
	300	100	125	4	▶	5SM3648-6	1	1 unit	1AH			
	125	125			5SM3645-6	1	1 unit	1AH				
500	100	125	4	▶	5SM3748-6	1	1 unit	1AH				
	125	125			5SM3745-6	1	1 unit	1AH				
RCCBs, type A, selective 												
	3P+N; 400 V AC; 50 Hz											
	N connection, right											
	300	100	125	4		5SM3648-8	1	1 unit	1AH			
	125	125			5SM3645-8	1	1 unit	1AH				
500	125	125	4		5SM3745-8	1	1 unit	1AH				

4

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

SIQUENCE 5SV3 universal current-sensitive RCCBs, type B and type B+

Overview

Frequency converters, medical devices and UPS systems are seeing increasing use in industry. Smooth DC residual currents or currents with low residual ripple may occur in the event of faults on these devices.

Type A residual current protective devices are unable to detect these smooth DC residual currents. Furthermore, such smooth DC residual currents make type A devices increasingly insensitive to AC residual currents and pulsating DC residual currents. If a fault occurs, there is therefore no tripping and the desired protective function is no longer assured.

UC-sensitive residual current protective devices of types B and B+ have an additional transformer which is supplied with a control signal. This enables an evaluation of the change of the transformer's operating range caused by smooth DC residual currents, thus ensuring the desired protective function.

The residual current protective devices of type B are suitable for use in three-phase current systems before input circuits with rectifiers. They are not intended for use in DC systems and in networks with operating frequencies other than 50 Hz or 60 Hz.

The devices in this series are designed as residual current operated circuit breakers (RCCBs) up to 80 A and as residual current circuit breakers with integral overcurrent protection (RCBOs) for 100 A or 125 A in characteristics C or D.

Type B+ residual current protective devices also offer enhanced, preventive fire protection. In these versions, the tripping value is limited to a maximum of 420 mA up to 20 kHz.

All universal current-sensitive RCCBs, type B or B+ are now also available in a SIGRES version, meaning they are also ideal for use in harsh ambient conditions.

When used in ambient conditions as defined in product standard EN 61008-1, the operation interval for pressing the test button can be extended to two years.


Benefits

- Universal current-sensitive residual current protective devices detect not only AC residual currents and pulsating DC residual currents, but also smooth DC residual currents, thus ensuring the desired protective function with all types of residual current
- With type B, the tripping characteristic is adapted to suit the increase of leakage currents at higher frequencies in systems with capacitive impedances, thus ensuring greater operating safety
- Type B+ versions offer enhanced preventative fire protection and correspond to the prestandards DIN V VDE V 0664-110 and/or DIN V VDE V 0664-210 and VdS Directive 3501
- The RCBO is a compact device for up to 125 A. It provides not only personnel, material and fire protection but also overload and short-circuit protection for cables. This reduces wiring and mounting outlay
- The RCBOs offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

SIQUENCE 5SV3 universal current-sensitive RCCBs, type B and type B+

Technical specifications

		SIQUENCE, RCCBs, type B/B+ 5SV3	
Standards	IEC/EN 62423 (VDE 0664-40); IEC/EN 61543 (VDE 0664-30); additionally applicable for type B+ DIN VDE 0664-400		
Versions	1P+N/3P+N		
Tripping characteristic	--		
Surge current withstand capability With current waveform 8/20 μ s acc. to EN 60060-2 (VDE 0432-2)			
• Super resistant	kA	> 3	
• Selective	kA	> 5	
Minimum operational voltage for test function operation	V AC	195	
Rated voltages U_n	V AC	230/400	
Rated frequency f_n	Hz	50 ... 60	
Rated currents I_n	A	16, 25, 40, 63, 80	
Rated residual currents $I_{\Delta n}$	mA	30, 300, 500	
Rated breaking capacity			
• I_m	A	800	
• I_{cn}	kA	--	
Insulation coordination			
• Overvoltage category	III		
Conductor cross-sections			
• Solid and stranded	mm ²	0.75 ... 35	
• Finely stranded, with end sleeve	mm ²	0.75 ... 25	
Terminal tightening torque For all devices	Nm	2.5 ... 3.0	
Mains connection	Either top or bottom		
For the effectiveness of the SIGRES function even when switched off	Top		
Mounting position (on a standard mounting rail)	Any		
Degree of protection according to EN 60529 (VDE 0470-1)	IP20, if the distribution board is installed, with connected conductors		
Touch protection Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe		
Service life Average number of switching cycles	> 10000 switching cycles		
Storage temperature	°C	-40 ... +75	
Ambient temperature	°C	-25 ... +45, marked with 	
Resistance to climate acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)		
CFC and silicone-free	Yes		

For details of I^2t characteristics, see Configuration Manual Residual Current Protective Devices/ Arc Fault Detection Devices (AFDDs) (www.siemens.com/lowvoltage/manuals).

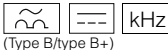











Thermal protection

Rated current	Rated breaking capacity I_m	Maximum short-circuit back-up fuse SCPD	Maximum thermal back-up fuse – rated current	With minimum conductor cross-section mm ²
A	A	A	A	
25	800	100	25	4
40	800	100	40	10
63	800	100	63	16
80	800	100	80	25

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

SIQUENCE 5SV3 universal current-sensitive RCCBs, type B and type B+

Selection and ordering data

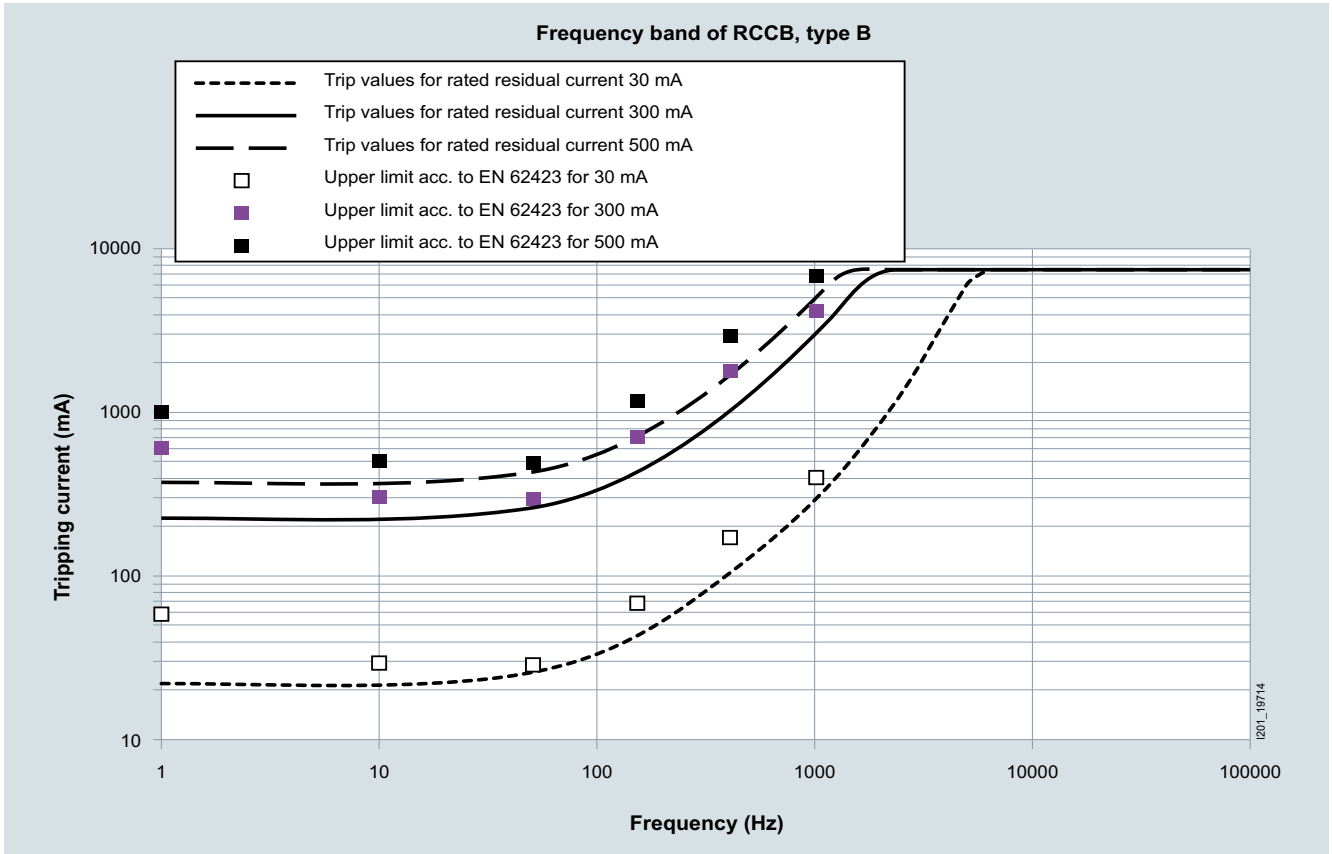
 (Type B/type B+)	Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG							
	$I_{\Delta n}$ mA	I_n A	 A	MW	d												
SIQUENCE RCCBs, type B super resistant  NEW																	
	1P+N; 230 V AC; 50 ... 60 Hz																
	30	16	100	4			5SV3321-4		1	1 unit	1AJ						
		25					5SV3322-4		1	1 unit	1AJ						
		40					5SV3324-4		1	1 unit	1AJ						
		63					5SV3326-4		1	1 unit	1AJ						
	300	16	100	4			5SV3621-4		1	1 unit	1AJ						
		25					5SV3622-4		1	1 unit	1AJ						
		40					5SV3624-4		1	1 unit	1AJ						
		63					5SV3626-4		1	1 unit	1AJ						
		SIQUENCE RCCBs, type B super resistant  NEW															
		3P+N; 230 ... 400 V AC; 50 ... 60 Hz															
	30	25	100	4			5SV3342-4		1	1 unit	1AJ						
		40					5SV3344-4		1	1 unit	1AJ						
		63					5SV3346-4		1	1 unit	1AJ						
		80					5SV3347-4		1	1 unit	1AJ						
	300	25	100	4			5SV3642-4		1	1 unit	1AJ						
		40					5SV3644-4		1	1 unit	1AJ						
		63					5SV3646-4		1	1 unit	1AJ						
		80					5SV3647-4		1	1 unit	1AJ						
		500					25		100	4			5SV3742-4		1	1 unit	1AJ
							40						5SV3744-4		1	1 unit	1AJ
	63		5SV3746-4	1	1 unit	1AJ											
	80		5SV3747-4	1	1 unit	1AJ											
	SIQUENCE RCCBs, type B, selective  NEW																
			3P+N; 230 ... 400 V AC; 50 ... 60 Hz														
		300	63	100	4			5SV3646-5		1	1 unit	1AJ					
80			5SV3647-5					1		1 unit	1AJ						
500		63	100	4			5SV3746-5		1	1 unit	1AJ						
		80					5SV3747-5		1	1 unit	1AJ						
		SIQUENCE RCCBs, type B+, super resistant  NEW															
		3P+N; 230 ... 400 V AC; 50 ... 60 Hz															
30		25	100	4			5SV3342-4KK14		1	1 unit	1AJ						
		40					5SV3344-4KK14		1	1 unit	1AJ						
		63					5SV3346-4KK14		1	1 unit	1AJ						
		80					5SV3347-4KK14		1	1 unit	1AJ						
300		25	100	4			5SV3642-4KK14		1	1 unit	1AJ						
		40					5SV3644-4KK14		1	1 unit	1AJ						
		63					5SV3646-4KK14		1	1 unit	1AJ						
		80					5SV3647-4KK14		1	1 unit	1AJ						
		SIQUENCE RCCBs, type B+, selective  NEW															
							3P+N; 230 ... 400 V AC; 50 ... 60 Hz										
							300		63	100	4			5SV3646-5KK14		1	1 unit
	80								5SV3647-5KK14					1		1 unit	1AJ

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

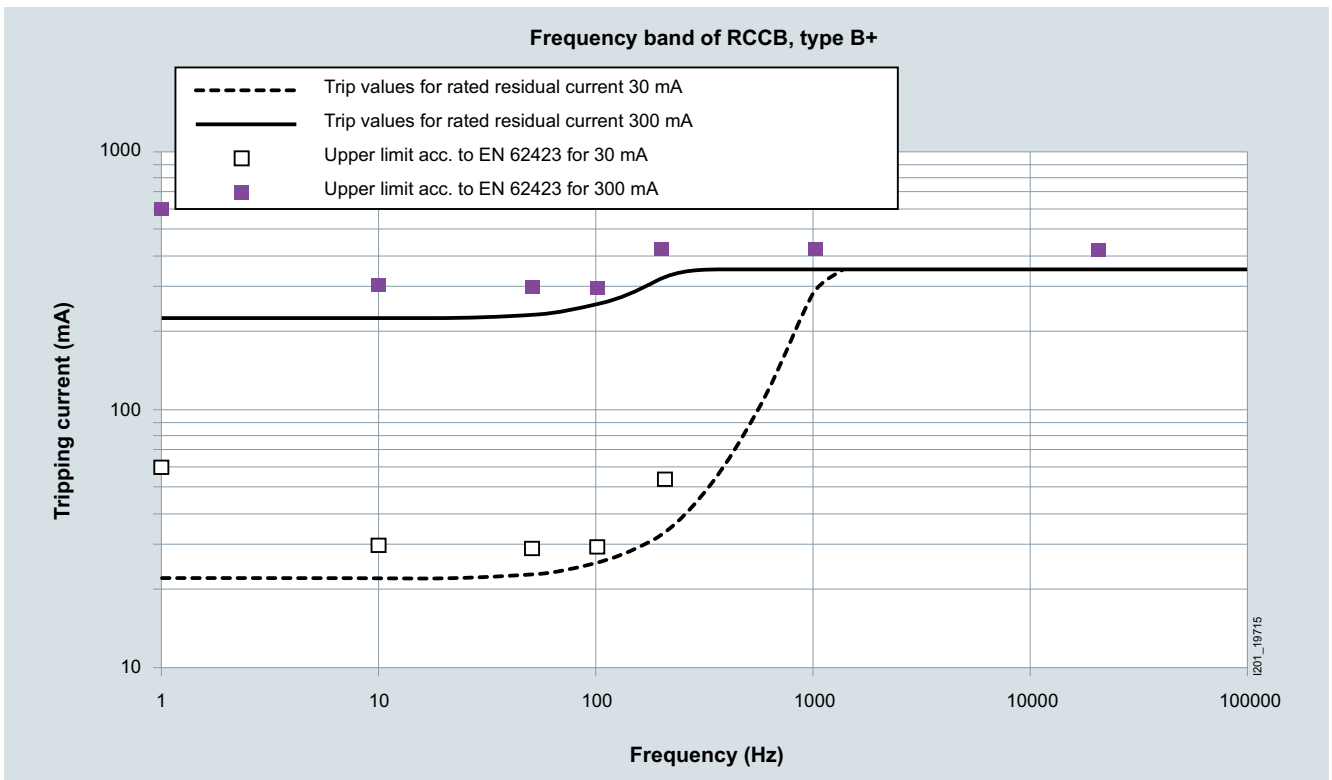
SIQUENCE 5SV3 universal current-sensitive RCCBs, type B and type B+

Characteristic curves

4



Tripping current as a function of frequency for type B



Tripping current as a function of frequency for type B+

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units

Overview

RC units are used in all supply systems up to 240/415 V AC. Devices of type AC trip in the event of sinusoidal AC residual currents, type A also trips in the event of pulsating DC residual currents.

In addition, RC units type F also detect residual currents with mixed frequencies up to 1 kHz.

RCCBs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.

Devices with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.

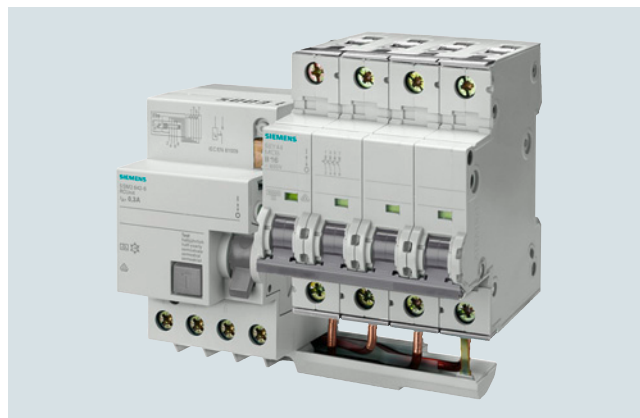
RC units are combined with miniature circuit breakers with A, B, C and D characteristics, provided that these are available in the MCB range. The two components are simply plugged together without the need for any tools.

They then form a combination of RCCB and miniature circuit breaker for personnel, fire and line protection.

The dimensioning of the rated residual current depends on the size of the plant.

Benefits


- Our wide variety of RC unit types and comprehensive range of miniature circuit breakers offer a huge spectrum of combinations for all applications.
- Instantaneous type A devices have a surge current withstand capability with current waveform 8/20 μ s of more than 1 kA, super resistant devices of more than 3 kA and selective devices of more than 5 kA. This ensures safe operation.
- All additional components for miniature circuit breakers can be retrofitted on the right-hand side.
- All 100 A and 125 A RC units offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits.
- Both components can be simply plugged into each other and secured with captive metal brackets – no tools required. This saves considerable time when mounting.



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units

Technical specifications

		5SM2
Standards		IEC/EN 61009-1 (VDE 0664-20), IEC/EN 61009-2-1 (VDE 0664-21), IEC/EN 61543 (VDE 0664-30), IEC/EN 62423 (VDE 0664-40)
Surge current withstand capability	Acc. to EN 60060-2 (VDE 0432-2)	
• Type A with current waveform 8/20 μ s		
- Instantaneous	kA	> 1
- Super resistant	kA	> 3
- Selective	kA	> 5
• Type F with current waveform 8/20 μ s	Acc. to EN 60060-2 (VDE 0432-2)	kA > 3
Minimum operational voltage for test function operation	V AC	195
Rated voltage U_n	V AC	230 ... 400
Rated currents I_n	A	0.3 ... 16; 0.3 ... 40; 0.3 ... 63; 80 ... 100
Rated residual currents $I_{\Delta n}$	mA	10, 30, 100, 300, 500, 1000
Insulation coordination		
• Overvoltage category		III
Pollution degree		2
Terminal conductor cross-sections		
• Up to $I_n = 63$ A	mm ²	1.0 ... 25
• At $I_n = 80 ... 100$ A	mm ²	6.0 ... 50
Terminal tightening torque	Nm	2.5 ... 3.0
Mains connection		Either top or bottom
Mounting position (on a standard mounting rail)		Any
Degree of protection	Acc. to EN 60529 (VDE 0470-1)	IP20, if the distribution board is installed, with connected conductors
Touch protection	Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe
Service life	Average number of switching cycles	> 10000 switching cycles
Storage temperature	°C	-40 ... +75
Ambient temperature	°C	-25 ... +45, marked with 
Resistance to climate	Acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)
CFC and silicone-free		Yes






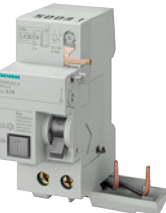
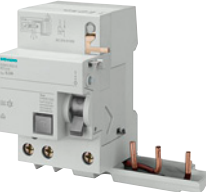

Power losses per conducting path under rated current load

Number of poles	Rated current	Rated residual current $I_{\Delta n}$ [A]	Power losses per conducting path P_v [W]
2	16	0.01	2.5
2/3/4	40	0.03	3.6
	63	0.03	4.6
	40	0.3/0.5/1	1.9
	63	0.1/0.3/0.5/1	3.0
2/4	80	0.3	4.8
	80	0.3/1	4.0
	100	0.3	6.0
	100	0.3/1	5.0

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units


Selection and ordering data

 (Type AC)		Rated residual current	Rated current	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		$I_{\Delta n}$ mA	I_n A	MW	d					
RC units, type AC, instantaneous										
For 5SY miniature circuit breakers, not suitable for use with 5SY5, 5SL30 and 5SY60..										
2P; 230 ... 400 V AC										
		10 ¹⁾	0.3 ... 40	2		5SM2121-0		1	1 unit	1Al
		30				5SM2322-0		1	1 unit	1Al
		300				5SM2622-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2325-0		1	1 unit	1Al
		300				5SM2625-0		1	1 unit	1Al
		500				5SM2725-0		1	1 unit	1Al
3P; 230 ... 400 V AC										
		30	0.3 ... 40	3		5SM2332-0		1	1 unit	1Al
		300				5SM2632-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2335-0		1	1 unit	1Al
		300				5SM2635-0		1	1 unit	1Al
		500				5SM2735-0		1	1 unit	1Al
4P; 230 ... 400 V AC										
		30	0.3 ... 40	3	▶	5SM2342-0		1	1 unit	1Al
		300			▶	5SM2642-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2345-0		1	1 unit	1Al
		300				5SM2645-0		1	1 unit	1Al
		500				5SM2745-0		1	1 unit	1Al
For 5SL4 miniature circuit breakers										
2P; 230 ... 400 V AC										
		30	0.3 ... 40	2		5SM2323-0		1	1 unit	1Al
		300				5SM2623-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2326-0		1	1 unit	1Al
		300				5SM2626-0		1	1 unit	1Al
3P; 230 ... 400 V AC										
		30	0.3 ... 40	3		5SM2333-0		1	1 unit	1Al
		300				5SM2633-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2336-0		1	1 unit	1Al
		300				5SM2636-0		1	1 unit	1Al
4P; 230 ... 400 V AC										
		30	0.3 ... 40	3		5SM2343-0		1	1 unit	1Al
		300				5SM2643-0		1	1 unit	1Al
		30	0.3 ... 63			5SM2346-0		1	1 unit	1Al
		300				5SM2646-0		1	1 unit	1Al



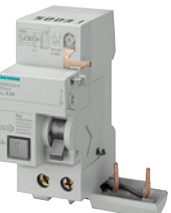

1) 5SM2 RC units with $I_{\Delta n} = 10$ mA can be combined with switches $I_n = 16$ A

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)



5SM2 RC units

 (Type AC)	Rated residual current	Rated current	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	$I_{\Delta n}$ mA	I_n A	MW	d					

RC units, type AC, selective 

	For 5SY miniature circuit breakers, not suitable for use with 5SY5, 5SL30 and 5SY60..								
	2P; 230 ... 400 V AC								
	300	0.3 ... 40	2		5SM2622-2		1	1 unit	1Al
	300	0.3 ... 63			5SM2625-2		1	1 unit	1Al
	4P; 230 ... 400 V AC								
	300	0.3 ... 63	3		5SM2645-2		1	1 unit	1Al
	1000				5SM2845-2		1	1 unit	1Al
	For 5SL4 miniature circuit breakers								
	2P; 230 ... 400 V AC								
	300	0.3 ... 40	2		5SM2623-2		1	1 unit	1Al
		0.3 ... 63			5SM2626-2		1	1 unit	1Al
	4P; 230 ... 400 V AC								
	300	0.3 ... 63	4		5SM2646-2		1	1 unit	1Al




RC units, type AC, instantaneous

	For 5SP4 miniature circuit breakers (B and C characteristics)								
	2P; 230 ... 400 V AC								
	30	80 ... 100	3.5		5SM2327-0		1	1 unit	1Al
	300				5SM2627-0		1	1 unit	1Al
	4P; 230 ... 400 V AC								
	30	80 ... 100	5		5SM2347-0		1	1 unit	1Al
	300				5SM2647-0		1	1 unit	1Al

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units

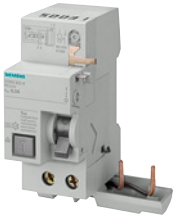
Selection and ordering data

 (Type A)			Rated residual current	Rated current	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$ mA	I_n A	MW	d					


RC units, type A, instantaneous

For 5SY miniature circuit breakers,
not suitable for use with 5SY5, 5SY8 and 5SY60...


2P; 230 V AC

	10	0.3 ... 16	2	▶	5SM2121-6	1	1 unit	1AH
	30	0.3 ... 40			5SM2322-6	1	1 unit	1AH
	300				5SM2622-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2325-6	1	1 unit	1AH
	100				5SM2425-6	1	1 unit	1AH
	300				5SM2625-6	1	1 unit	1AH
	500				5SM2725-6	1	1 unit	1AH

3P, 400 V AC

	30	0.3 ... 40	3		5SM2332-6	1	1 unit	1AH
	300				5SM2632-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2335-6	1	1 unit	1AH
	100				5SM2435-6	1	1 unit	1AH
	300				5SM2635-6	1	1 unit	1AH
	500				5SM2735-6	1	1 unit	1AH

4P; 400 V AC


	30	0.3 ... 40	3	▶	5SM2342-6	1	1 unit	1AH
	300			▶	5SM2642-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2345-6	1	1 unit	1AH
	100				5SM2445-6	1	1 unit	1AH
	300				5SM2645-6	1	1 unit	1AH
	500				5SM2745-6	1	1 unit	1AH

For 5SL4 miniature circuit breakers


2P; 230 V AC

	30	0.3 ... 40	2		5SM2323-6	1	1 unit	1AH
	300				5SM2623-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2326-6	1	1 unit	1AH
	300				5SM2626-6	1	1 unit	1AH

3P, 400 V AC





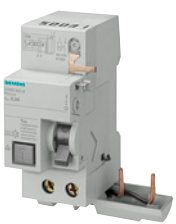


	30	0.3 ... 40	3		5SM2333-6	1	1 unit	1AH
	300				5SM2633-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2336-6	1	1 unit	1AH
	300				5SM2636-6	1	1 unit	1AH

4P; 400 V AC

	30	0.3 ... 40	3		5SM2343-6	1	1 unit	1AH
	300				5SM2643-6	1	1 unit	1AH
	30	0.3 ... 63			5SM2346-6	1	1 unit	1AH
	300				5SM2646-6	1	1 unit	1AH

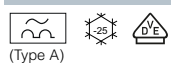
Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units

 (Type A)	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Mounting width MW	SD d	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
For 5SP4 miniature circuit breakers (B and C characteristics)									
	2P; 230 V AC		3.5		5SM2327-6 5SM2627-6		1 1	1 unit 1 unit	1AH 1AH
	30	80 ... 100							
300									
	4P; 400 V AC		5		5SM2347-6 5SM2647-6		1 1	1 unit 1 unit	1AH 1AH
	30	80 ... 100							
300									
RC units, type A, super resistant 									
For 5SY miniature circuit breakers, not suitable for use with 5SY5, 5SY8 and 5SY60...									
	2P; 230 V AC		2		5SM2322-6KK01 5SM2325-6KK01		1 1	1 unit 1 unit	1AH 1AH
	30	0.3 ... 40							
30	0.3 ... 63								
	3P, 400 V AC		3		5SM2332-6KK01 5SM2335-6KK01		1 1	1 unit 1 unit	1AH 1AH
	30	0.3 ... 40							
30	0.3 ... 63								
	4P; 400 V AC		3		5SM2342-6KK01 5SM2345-6KK01		1 1	1 unit 1 unit	1AH 1AH
	30	0.3 ... 40							
30	0.3 ... 63								

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units



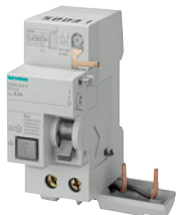
Rated residual current	Rated current	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
$I_{\Delta n}$ mA	I_n A	MW	d					

RC units, type A, selective **S**

For 5SY miniature circuit breakers,
not suitable for use with 5SY5, 5SY8 and 5SY60...

2P; 230 ... 400 V AC

300	0.3 ... 40	2		5SM2622-8		1	1 unit	1AH
1000				5SM2822-8		1	1 unit	1AH
300	0.3 ... 63			5SM2625-8		1	1 unit	1AH
1000				5SM2825-8		1	1 unit	1AH

**3P; 230 ... 400 V AC**

1000	0.3 ... 40	3		5SM2832-8		1	1 unit	1AH
300	0.3 ... 63	3		5SM2635-8		1	1 unit	1AH
500				5SM2735-8		1	1 unit	1AH
1000				5SM2835-8		1	1 unit	1AH

**4P; 230 ... 400 V AC**

1000	0.3 ... 40	3		5SM2842-8		1	1 unit	1AH
300	0.3 ... 63			5SM2645-8		1	1 unit	1AH
500				5SM2745-8		1	1 unit	1AH
1000				5SM2845-8		1	1 unit	1AH



For 5SL4 miniature circuit breakers

2P; 230 ... 400 V AC

300	0.3 ... 40	2		5SM2623-8		1	1 unit	1AH
300	0.3 ... 63			5SM2626-8		1	1 unit	1AH

**3P; 230 ... 400 V AC**

300	0.3 ... 63	3		5SM2636-8		1	1 unit	1AH
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




**4P; 230 ... 400 V AC**

300	0.3 ... 63	3		5SM2646-8		1	1 unit	1AH
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Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM2 RC units

 (Type A)			Rated residual current	Rated current	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			$I_{\Delta n}$ mA	I_n A	MW	d					
For 5SP4 miniature circuit breakers (B and C characteristics)											
2P; 125 ... 230 V AC											
			300	80 ... 100	3.5		5SM2627-8		1	1 unit	1AH
			1000	80 ... 100	3.5		5SM2827-8		1	1 unit	1AH
4P; 230 ... 400 V AC											
			300	80 ... 100	5		5SM2647-8		1	1 unit	1AH
			1000				5SM2847-8		1	1 unit	1AH

RC units, type F, super resistant

For 5SY miniature circuit breakers, not suitable for use with 5SY5, 5SY8 and 5SY60...											
2P; 230 V AC											
			30	0.3 ... 40	2		5SM2322-3		1	1 unit	1AH
			30	0.3 ... 63	2		5SM2325-3		1	1 unit	1AH

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Overview

RCBOs are a combination of an RCCB and a miniature circuit breaker in a compact design for personnel, fire and line protection. For personnel protection and fire protection, the residual current part of the type AC trips in the event of sinusoidal AC residual currents; type A also trips in the event of pulsating DC residual currents.

In addition, RCBOs type F also detect residual currents with mixed frequencies up to 1 kHz.

RCBOs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact. RCBOs with a rated residual current of 10 mA are primarily used in areas that represent an increased risk for personnel and in the outdoor installations of residential buildings.

Devices with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.

The MCB part of the RCBO protects lines against overload and short circuits and is available in characteristics B and C.

Since DIN VDE 0100-410 came into effect in June 2007, all socket outlet current circuits up to 20 A must now also be fitted with residual current protective devices with a rated residual

current of max. 30 mA. This also applies to outdoor electrical circuits up to 32 A for the connection of portable equipment.

In order to implement this protection, we recommend the use of RCBOs with 30 mA on a country-specific basis.

Assignment to each individual branch circuit helps prevent the undesired tripping of fault-free circuits induced by the accumulation of operation-related leakage currents or by transient current pulses during switching operations.

Additional components of the 5SY miniature circuit breakers can be mounted at the side and carry out additional functions.

For further details on additional components, see chapter "Miniature Circuit Breakers".

RCBOs comprise one part for fault-current detection and one part for overcurrent detection. They are equipped with a delayed overload/time-dependent thermal release (thermal bimetal) for low overcurrents and with an instantaneous electromagnetic release for higher overload and short-circuit currents.

The special contact materials used guarantee a long service life and offer a high degree of protection against contact welding.

Benefits



For all versions

- Clear and visible conductor connection in front of the rear busbar facilitates controls
- Large and easily accessible wiring space enables easy insertion of conductors in the terminals
- The surge current withstand capability of over 1 kA ensures safe and reliable operation
- All additional components for miniature circuit breakers can be retrofitted on the right-hand side

For all 10 kA versions up to 40 A

- Integrated movable terminal covers located at the cable entries ensure the terminals are fully insulated when the screws are tightened. The effective touch protection when grasping the device considerably exceeds the requirements of BGV A3
- The RCBOs can be quickly and easily removed from the assembly by hand if connections need to be changed. Time-saving replacement of parts as busbars no longer need to be freed from adjacent miniature circuit breakers




For all 125 A versions

- The RCBOs offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits.

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Technical specifications

		Up to 40 A	125 A
Standards		IEC/EN 61009-1 (VDE 0664-20); IEC/EN 61009-2-1 (VDE 0664-21) IEC/EN 61543 (VDE 0664-30); IEC/EN 62423 (VDE 0664-40)	
Rated voltages U_n	V AC	230	400
Rated currents I_n	A	6, 8, 10, 13, 16, 20, 25, 32, 40	125
Rated residual currents $I_{\Delta n}$	mA	10, 30, 100, 300	30, 300, 1000
Rated breaking capacity	kA	4.5 / 6 / 10	10
Energy limitation class		3	--
Surge current withstand capability type A			
• With current waveform 8/20 μ s Acc. to EN 60060-2 (VDE 0432-2)			
- Instantaneous	kA	> 1	
- Super resistant	kA	> 3	--
- Selective	kA	> 5	
• Type F with current waveform 8/20 μ s	kA	> 3	--
Minimum voltage for operation of the test equipment	V AC	195	
Insulation coordination			
• Overvoltage category		III	
Pollution degree		2	
Terminal conductor cross-sections			
• Solid and stranded	mm ²	0.75 ... 35	6 ... 50
• Finely stranded with end sleeve	mm ²	0.75 ... 25	6 ... 35
Terminal tightening torque	Nm	2.5 ... 3.0	3.0 ... 3.5
Mains connection		Top or bottom	
Mounting position (on a standard mounting rail)		Any	
Degree of protection	Acc. to EN 60529 (VDE 0470-1)	IP20, if the distribution board is installed, with connected conductors	
Touch protection	Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe	
Service life	Average number of switching cycles	> 10000	
Storage temperature	°C	-40 ... +75	
Ambient temperature	°C	-25 ... +45, marked with 	
Resistance to climate	Acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)	
CFC and silicone-free		Yes	

Power losses

Note:




All data under loading with rated current I_n .

Rated current I_n [A]	Rated residual current $I_{\Delta n}$ [mA]	Power losses per conducting path P_v [W]	
		Characteristic B	Characteristic C
6	10	2.8	2.2
	30 ... 300	2.7	1.9
8	30 ... 300	--	1.2
	10	2.4	2.2
10	30 ... 300	1.8	1.6
	13	3.5	3.3
13	30 ... 300	2.4	2.2
	16	4.7	4.5
16	30 ... 300	3.0	2.8
	20	3.7	3.3
20	30 ... 300	5.1	5.1
	25	5.1	5.1
25	30 ... 300	5.7	5.7
	32	5.7	5.7
32	30 ... 300	7.8	7.8
	40	7.8	7.8

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Selection and ordering data

 (Type AC)			Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B		PU	PS	PG	SD	Tripping characteristic C		PU	PS	PG
			$I_{\Delta n}$ mA	I_n A	MW	d	Article No.	Price per PU	(UNIT, SET, M)	Article No.	Price per PU	(UNIT, SET, M)	d	Article No.	Price per PU	(UNIT, SET, M)	d

RCBOs, type AC, instantaneous

1P + N; 230 V AC

4 500
3



N connection, right

30	6	2	--
	8		--
	10		--

Bulk packaging 36 units

	13		--
	16		--

Bulk packaging 36 units

	20		--
	25		--
	32		--
	40		--

300

	6	2	--
	10		--
	13		--

Bulk packaging 36 units

	16		--
	20		--
	25		--
	32		--
	40		--

N connection, left

30	6	2	--
	10		--
	13		--

	16		--
	20		--
	25		--
	32		--
	40		--

300

	6	2	--
	10		--
	16		--
	20		--

	25		--
	32		--
	40		--





5SU1353-1KK06	1	1 unit	1BB
5SU1353-1KK08	1	1 unit	1BB
5SU1353-1KK10	1	1 unit	1BB
5SU1353-1GV10	1	36 units	1BB
5SU1353-1KK13	1	1 unit	1BB
5SU1353-1KK16	1	1 unit	1BB
5SU1353-1GV16	1	36 units	1BB
5SU1353-1KK20	1	1 unit	1BB
5SU1353-1KK25	1	1 unit	1BB
5SU1353-1KK32	1	1 unit	1BB
5SU1353-1KK40	1	1 unit	1BB
5SU1653-1KK06	1	1 unit	1BB
5SU1653-1KK10	1	1 unit	1BB
5SU1653-1KK13	1	1 unit	1BB
5SU1653-1KK16	1	1 unit	1BB
5SU1653-1GV16	1	36 units	1BB
5SU1653-1KK20	1	1 unit	1BB
5SU1653-1KK25	1	1 unit	1BB
5SU1653-1KK32	1	1 unit	1BB
5SU1653-1KK40	1	1 unit	1BB

5SU1353-1KL06	1	1 unit	1BB
5SU1353-1KL10	1	1 unit	1BB
5SU1353-1KL13	1	1 unit	1BB
5SU1353-1KL16	1	1 unit	1BB
5SU1353-1KL20	1	1 unit	1BB
5SU1353-1KL25	1	1 unit	1BB
5SU1353-1KL32	1	1 unit	1BB
5SU1353-1KL40	1	1 unit	1BB
5SU1653-1KL06	1	1 unit	1BB
5SU1653-1KL10	1	1 unit	1BB
5SU1653-1KL16	1	1 unit	1BB
5SU1653-1KL20	1	1 unit	1BB
5SU1653-1KL25	1	1 unit	1BB
5SU1653-1KL32	1	1 unit	1BB
5SU1653-1KL40	1	1 unit	1BB

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Selection and ordering data

 (Type AC)		Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B		PU	PS	PG	SD	Tripping characteristic C		PU	PS	PG
		$I_{\Delta n}$ mA	I_n A	MW	d	Article No. www.siemens.com/product?Article No.	Price per PU	(UNIT, SET, M)				d	Article No. www.siemens.com/product?Article No.	Price per PU	(UNIT, SET, M)	

RCBOs, type AC, instantaneous

1P + N; 230 V AC

6 000
3



N connection, right

30	6	2	5SU1356-0KK06	1	1 unit	1BB	5SU1356-1KK06	1	1 unit	1BB
	8		--				5SU1356-1KK08	1	1 unit	1BB
	10		5SU1356-0KK10	1	1 unit	1BB	5SU1356-1KK10	1	1 unit	1BB
	13		5SU1356-0KK13	1	1 unit	1BB	5SU1356-1KK13	1	1 unit	1BB
	16		5SU1356-0KK16	1	1 unit	1BB	5SU1356-1KK16	1	1 unit	1BB
			--				5SU1356-1GV16	1	36 units	1BB
Bulk packaging 36 units										
	20		5SU1356-0KK20	1	1 unit	1BB	5SU1356-1KK20	1	1 unit	1BB
	25		5SU1356-0KK25	1	1 unit	1BB	5SU1356-1KK25	1	1 unit	1BB
	32		5SU1356-0KK32	1	1 unit	1BB	5SU1356-1KK32	1	1 unit	1BB
	40		5SU1356-0KK40	1	1 unit	1BB	5SU1356-1KK40	1	1 unit	1BB
300	6	2	5SU1656-0KK06	1	1 unit	1BB	5SU1656-1KK06	1	1 unit	1BB
	10		5SU1656-0KK10	1	1 unit	1BB	5SU1656-1KK10	1	1 unit	1BB
	13		5SU1656-0KK13	1	1 unit	1BB	5SU1656-1KK13	1	1 unit	1BB
	16		5SU1656-0KK16	1	1 unit	1BB	5SU1656-1KK16	1	1 unit	1BB
	20		5SU1656-0KK20	1	1 unit	1BB	5SU1656-1KK20	1	1 unit	1BB
	25		5SU1656-0KK25	1	1 unit	1BB	5SU1656-1KK25	1	1 unit	1BB
	32		5SU1656-0KK32	1	1 unit	1BB	5SU1656-1KK32	1	1 unit	1BB
	40		5SU1656-0KK40	1	1 unit	1BB	5SU1656-1KK40	1	1 unit	1BB

1P + N; 230 V AC



10 000
3



30	6	2	5SU1354-0KK06	1	1 unit	1BB	5SU1354-1KK06	1	1 unit	1BB
	8		--				5SU1354-1KK08	1	1 unit	1BB
	10		5SU1354-0KK10	1	1 unit	1BB	5SU1354-1KK10	1	1 unit	1BB
	13		5SU1354-0KK13	1	1 unit	1BB	5SU1354-1KK13	1	1 unit	1BB
	16		5SU1354-0KK16	1	1 unit	1BB	5SU1354-1KK16	1	1 unit	1BB
	20		5SU1354-0KK20	1	1 unit	1BB	5SU1354-1KK20	1	1 unit	1BB
	25		5SU1354-0KK25	1	1 unit	1BB	5SU1354-1KK25	1	1 unit	1BB
	32		5SU1354-0KK32	1	1 unit	1BB	5SU1354-1KK32	1	1 unit	1BB
	40		5SU1354-0KK40	1	1 unit	1BB	5SU1354-1KK40	1	1 unit	1BB
100	6	2	--				5SU1454-1KK06	1	1 unit	1BB
	10		--				5SU1454-1KK10	1	1 unit	1BB
	13		--				5SU1454-1KK13	1	1 unit	1BB
	16		--				5SU1454-1KK16	1	1 unit	1BB
	20		--				5SU1454-1KK20	1	1 unit	1BB
	25		--				5SU1454-1KK25	1	1 unit	1BB
	32		--				5SU1454-1KK32	1	1 unit	1BB
	40		--				5SU1454-1KK40	1	1 unit	1BB
300	6	2	5SU1654-0KK06	1	1 unit	1BB	5SU1654-1KK06	1	1 unit	1BB
	10		5SU1654-0KK10	1	1 unit	1BB	5SU1654-1KK10	1	1 unit	1BB
	13		5SU1654-0KK13	1	1 unit	1BB	5SU1654-1KK13	1	1 unit	1BB
	16		5SU1654-0KK16	1	1 unit	1BB	5SU1654-1KK16	1	1 unit	1BB
	20		5SU1654-0KK20	1	1 unit	1BB	5SU1654-1KK20	1	1 unit	1BB
	25		5SU1654-0KK25	1	1 unit	1BB	5SU1654-1KK25	1	1 unit	1BB
	32		5SU1654-0KK32	1	1 unit	1BB	5SU1654-1KK32	1	1 unit	1BB
	40		5SU1654-0KK40	1	1 unit	1BB	5SU1654-1KK40	1	1 unit	1BB

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

 (Type AC)		Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Mounting width MW	SD	Tripping characteristic B		PU (UNIT, SET, M)	PS	PG	SD	Tripping characteristic C		PU (UNIT, SET, M)	PS	PG
						Article No. www.siemens.com/product?Article No.	Price per PU					Article No. www.siemens.com/product?Article No.	Price per PU			

RCBOs, type AC, short-time delayed



1P+N; 230 V AC

10 000
3

30	10	2	5SU1354-0LB10	1	1 unit	1BB	5SU1354-1LB10	1	1 unit	1BB
	13		5SU1354-0LB13	1	1 unit	1BB	5SU1354-1LB13	1	1 unit	1BB
	16		5SU1354-0LB16	1	1 unit	1BB	5SU1354-1LB16	1	1 unit	1BB
	20		5SU1354-0LB20	1	1 unit	1BB	5SU1354-1LB20	1	1 unit	1BB
	25		5SU1354-0LB25	1	1 unit	1BB	5SU1354-1LB25	1	1 unit	1BB
	32		5SU1354-0LB32	1	1 unit	1BB	5SU1354-1LB32	1	1 unit	1BB
	40		5SU1354-0LB40	1	1 unit	1BB	5SU1354-1LB40	1	1 unit	1BB

RCBOs, type AC, instantaneous



2P; 400 V AC

10 000

30	125	6.5	5SU1324-0KK82	1	1 unit	1BB	5SU1324-1KK82	1	1 unit	1BB
300	125		5SU1624-0KK82	1	1 unit	1BB	5SU1624-1KK82	1	1 unit	1BB



4P; 400 V AC

10 000




30	125	11	5SU1344-0KK82	1	1 unit	1BB	5SU1344-1KK82	1	1 unit	1BB
300	125		5SU1644-0KK82	1	1 unit	1BB	5SU1644-1KK82	1	1 unit	1BB

4

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Selection and ordering data

 (Type A)		Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B				Tripping characteristic C										
						Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG				
		$I_{\Delta n}$ mA	I_n A	MW	d															

RCBOs, type A, instantaneous

1P+N; 230 V AC



4 500
3

N connection, right

30	6	2	--
	8		--
	10		--
	13		--
	16		--
	20		--
	25		--
	32		--
	40		--
300	6	2	--
	10		--
	13		--
	16		--
	20		--
	25		--
	32		--
	40		--

N connection, left

30	6	2	--
	10		--
	16		--
	20		--
	25		--
	32		--
	40		--




5SU1353-7KK06	1	1 unit	1BC
5SU1353-7KK08	1	1 unit	1BC
5SU1353-7KK10	1	1 unit	1BC
5SU1353-7KK13	1	1 unit	1BC
5SU1353-7KK16	1	1 unit	1BC
5SU1353-7KK20	1	1 unit	1BC
5SU1353-7KK25	1	1 unit	1BC
5SU1353-7KK32	1	1 unit	1BC
5SU1353-7KK40	1	1 unit	1BC
5SU1653-7KK06	1	1 unit	1BC
5SU1653-7KK10	1	1 unit	1BC
5SU1653-7KK13	1	1 unit	1BC
5SU1653-7KK16	1	1 unit	1BC
5SU1653-7KK20	1	1 unit	1BC
5SU1653-7KK25	1	1 unit	1BC
5SU1653-7KK32	1	1 unit	1BC
5SU1653-7KK40	1	1 unit	1BC
5SU1353-7KL06	1	1 unit	1BC
5SU1353-7KL10	1	1 unit	1BC
5SU1353-7KL16	1	1 unit	1BC
5SU1353-7KL20	1	1 unit	1BC
5SU1353-7KL25	1	1 unit	1BC
5SU1353-7KL32	1	1 unit	1BC
5SU1353-7KL40	1	1 unit	1BC

4

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

Selection and ordering data

 (Type A)			Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B				Tripping characteristic C								
							Article No. www.siemens.com/product?Article.No.	Price per PU	PU (UNIT, SET, M)	PS	PG	SD	Article No. www.siemens.com/product?Article.No.	Price per PU	PU (UNIT, SET, M)	PS	PG		
			$I_{\Delta n}$ mA	I_n A	MW	d													

RCBOs, type A, instantaneous

1P+N; 230 V AC

6 000
3

N connection, right

30	6	2																	
Bulk packaging 36 units																			
	8																		
Bulk packaging 36 units	10																		
	13																		
	16																		
Bulk packaging 36 units																			
	20																		
	25																		
	32																		
	40																		
300	6	2																	
	10																		
	13																		
	16																		
	20																		
	25																		
	32																		
	40																		

1P+N; 230 V AC

10 000
3

10	6	2																	
	10																		
	13																		
	16																		
30	6	2																	
Bulk packaging 36 units																			
	8																		
Bulk packaging 36 units	10																		
	13																		
	16																		
Bulk packaging 36 units																			
	20																		
	25																		
	32																		
	40																		
300	6	2																	
	10																		
	13																		
	16																		
	20																		
	25																		
	32																		
	40																		













2P; 230 V AC

10 000
3

30	6	3																	
	10																		
	13																		
	16																		
	20																		
	25																		
	32																		
	40																		

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU RCBOs

 (Type A)			Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Mounting width MW	SD d	Tripping characteristic B				Tripping characteristic C								
							Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	SD d	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG		
2P; 110 V AC																			
	10 000																		
	3																		
	30	6	3				5SU1324-6KX06	1	1 unit	1BC		5SU1324-7KX06	1	1 unit	1BC				
		10					5SU1324-6KX10	1	1 unit	1BC		5SU1324-7KX10	1	1 unit	1BC				
		13					5SU1324-6KX13	1	1 unit	1BC		5SU1324-7KX13	1	1 unit	1BC				
		16					5SU1324-6KX16	1	1 unit	1BC		5SU1324-7KX16	1	1 unit	1BC				
		20					5SU1324-6KX20	1	1 unit	1BC		5SU1324-7KX20	1	1 unit	1BC				
		25					5SU1324-6KX25	1	1 unit	1BC		5SU1324-7KX25	1	1 unit	1BC				
		32					5SU1324-6KX32	1	1 unit	1BC		5SU1324-7KX32	1	1 unit	1BC				
		40					5SU1324-6KX40	1	1 unit	1BC		5SU1324-7KX40	1	1 unit	1BC				
2P; 400 V AC																			
	10 000																		
	30	125	6.5				5SU1324-6KK82	1	1 unit	1BC		5SU1324-7KK82	1	1 unit	1BC				
	300	125					5SU1624-6KK82	1	1 unit	1BC		5SU1624-7KK82	1	1 unit	1BC				
4P; 400 V AC																			
	10 000																		
	30	125	11				5SU1344-6KK82	1	1 unit	1BC		5SU1344-7KK82	1	1 unit	1BC				
	300	125					5SU1644-6KK82	1	1 unit	1BC		5SU1644-7KK82	1	1 unit	1BC				
RCBOs, type A, short-time delayed , super resistant 																			
1P+N; 230 V AC																			
	10 000																		
	3																		
	30	10	2				5SU1354-6LB10	1	1 unit	1BC		5SU1354-7LB10	1	1 unit	1BC				
		13					5SU1354-6LB13	1	1 unit	1BC		5SU1354-7LB13	1	1 unit	1BC				
		16					5SU1354-6LB16	1	1 unit	1BC		5SU1354-7LB16	1	1 unit	1BC				
		20					5SU1354-6LB20	1	1 unit	1BC		5SU1354-7LB20	1	1 unit	1BC				
		25					5SU1354-6LB25	1	1 unit	1BC		5SU1354-7LB25	1	1 unit	1BC				
		32					5SU1354-6LB32	1	1 unit	1BC		5SU1354-7LB32	1	1 unit	1BC				
		40					5SU1354-6LB40	1	1 unit	1BC		5SU1354-7LB40	1	1 unit	1BC				
	RCBOs, type A, selective 																		
2P; 400 V AC																			
	10 000																		
	300	125	6.5				5SU1624-6WK82	1	1 unit	1BC		5SU1624-7WK82	1	1 unit	1BC				
4P; 400 V AC																			
	10 000																		
	300	125	11				5SU1644-6WK82	1	1 unit	1BC		5SU1644-7WK82	1	1 unit	1BC				
	1000	125					5SU1844-6WK82	1	1 unit	1BC		5SU1844-7WK82	1	1 unit	1BC				

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SU1 RCBOs

(Type A)	35	D/E	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Mounting width MW	SD d	Tripping characteristic B				Tripping characteristic C			
							Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	SD d	Article No. www.siemens.com/product?Article No.	Price per PU

RCBOs, type F, super resistant



1P+N; 230 V AC

10 000

3

30	6	2
	10	
	13	
	16	
	20	
	25	
	32	
	40	

5SU1354-3KK06	1	1 unit	1BC
5SU1354-3KK10	1	1 unit	1BC
5SU1354-3KK13	1	1 unit	1BC
5SU1354-3KK16	1	1 unit	1BC
5SU1354-3KK20	1	1 unit	1BC
5SU1354-3KK25	1	1 unit	1BC
5SU1354-3KK32	1	1 unit	1BC
5SU1354-3KK40	1	1 unit	1BC

5SU1354-4KK06	1	1 unit	1BC
5SU1354-4KK10	1	1 unit	1BC
5SU1354-4KK13	1	1 unit	1BC
5SU1354-4KK16	1	1 unit	1BC
5SU1354-4KK20	1	1 unit	1BC
5SU1354-4KK25	1	1 unit	1BC
5SU1354-4KK32	1	1 unit	1BC
5SU1354-4KK40	1	1 unit	1BC

4

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

NEW 5SV1 compact RCBOs**Overview**

RCBOs are a combination of an RCCB and a miniature circuit breaker in a compact design for personnel, fire and line protection. For personnel protection and fire protection, the residual current part of the type AC trips in the event of sinusoidal AC residual currents; type A also trips in the event of pulsating DC residual currents.

RCBOs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact.

The MCB part of the RCBO protects lines against overload and short circuits and is available in characteristics B and C.

Assignment to each individual branch circuit helps prevent the undesired tripping of fault-free circuits induced by the accumulation of operation-related leakage currents or by transient current pulses during switching operations.

RCBOs comprise one part for fault-current detection and one part for overcurrent detection. They are equipped with a delayed overload/time-dependent thermal release (thermal bimetal) for low overcurrents and with an instantaneous electromagnetic release for higher overload and short-circuit currents.

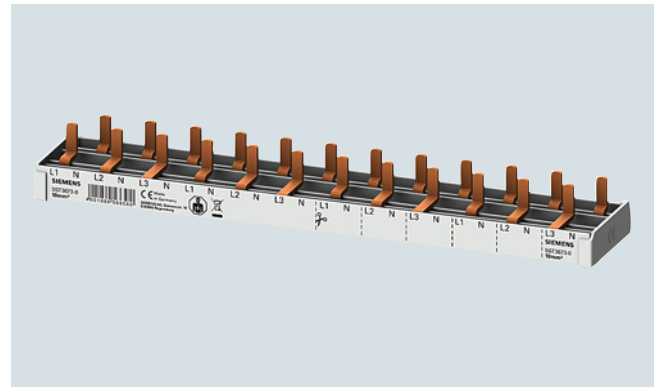
The special contact materials used guarantee a long service life and offer a high degree of protection against contact welding.

Benefits

5SV1 RCBO, only 1 MW

World's smallest electromechanical RCBO, only 1 MW:

- The narrow design only 18 mm in width makes the RCBO ideally suited for new builds as well as the retrofit market, e.g. in old installations.
- In new builds, the space saving of 50% compared to the version 2 MW in width means that more compact sub-circuit distribution boards can be implemented, and these are frequently more cost-effective as a result.
- This is particularly useful for projects in which many circuits need to be equipped with separate residual current protection, as smaller sub-circuit distribution boards can be installed, resulting in significant cost savings.
- In old installations, it is very easy to replace the existing 1-pole miniature circuit breakers with a 5SV1 RCBO which is only 1 MW wide (without needing any additional space in the sub-circuit distribution board).
- This replacement increases the protection level in the circuits by affording additional personnel safety.
- The devices can even be conveniently bus-mounted and connected in small distribution boards thanks to the new compact 5ST pin busbars.
- A wide range of accessories, such as auxiliary switches, fault signal contacts, arc fault detection devices and pin busbars, are available for the new compact 5SV1 RCBOs.
- Combining the RCBO with a 5SM6 arc fault detection device gives you a system only 2 MW in width which comprises protection against residual currents, overload/short circuit and arcing faults. This combination offers optimum protection for personnel and assets.



Pin busbar for 5SV1 / 5SV6 / 5S..0 compact devices

- Compact pin busbar system for quick connection of compact devices 1P+N in 1 MW.
- The narrow design of the busbars makes it very easy to connect up the devices, even in small distribution boards.
- The new and innovative design of the compact pin busbar system makes it possible at any point in the busbar assembly, even without the use of additional feeder terminals.
- The lengths can be flexibly adapted to requirements, as the 5ST37 pin busbars can be cut.


Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV1 compact RCBOs **NEW**

Technical specifications

		5SV1
Standards		IEC/EN 61009-1 (VDE 0664-20); IEC/EN 61009-2-1 (VDE 0664-21)
RCD working principle		Electromechanical (independent of voltage)
Rated voltages U_n	V AC	230
Rated currents I_n	A	2, 4, 6, 10, 13, 16
Rated residual currents $I_{\Delta n}$	mA	30
Rated breaking capacity	kA	6
Energy limitation class		3
Surge current withstand capability type A		
• With current waveform 8/20 μ s	Acc. to EN 60060-2 (VDE 0432-2) kA	1
Minimum voltage for operation of the test equipment	V AC	195
Insulation coordination		
• Overvoltage category		III
Pollution degree		2
Terminal conductor cross-sections		
• Solid and stranded	mm ²	0.75 ... 16
• Finely stranded with end sleeve	mm ²	0.75 ... 10
Terminal tightening torque	Nm	1.2 ... 2
Mains connection		Either top or bottom
Mounting position (on a standard mounting rail)		Any
Degree of protection	Acc. to EN 60529 (VDE 0470-1)	IP20
Touch protection	Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe
Service life	Average number of switching cycles	> 10000
Storage temperature	°C	-40 ... +75
Ambient temperature	°C	-25 ... +45
Resistance to climate	Acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)
CFC and silicone-free		Yes

Selection and ordering data

	Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B	PU (UNIT, SET, M)	PS	PG	SD	Tripping characteristic C	PU (UNIT, SET, M)	PS	PG
	$I_{\Delta n}$ mA	I_n A	MW	d	Article No. www.siemens.com/ product?Article.No.	Price per PU			d	Article No. www.siemens.com/ product?Article.No.	Price per PU		

Compact RCBOs, type AC, instantaneous



1P+N; 230 V AC, 50 Hz

6 000
3

N connection, right

30	2	1	--
	4	1	--
	6	1	▶ 5SV1316-0KK06
	10	1	▶ 5SV1316-0KK10
	13	1	▶ 5SV1316-0KK13
	16	1	▶ 5SV1316-0KK16

Compact RCBOs, type A, instantaneous



1P+N; 230 V AC, 50 Hz

6 000
3

N connection, right

30	2	1	--
	4	1	--
	6	1	▶ 5SV1316-6KK06
	10	1	▶ 5SV1316-6KK10
	13	1	▶ 5SV1316-6KK13
	16	1	▶ 5SV1316-6KK16

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SV1 compact RCBOs

Selection and ordering data

	Rated residual current	Rated current	Mounting width	SD	Tripping characteristic B			PU	PS	PG	Tripping characteristic C		
	$I_{\Delta n}$ mA	I_n A	MW	d	Article No. www.siemens.com/product?Article.No.	Price € per PU	(UNIT, SET, M)	Article No. www.siemens.com/product?Article.No.	Price € per PU	(UNIT, SET, M)	PG	Article No. www.siemens.com/product?Article.No.	Price € per PU

Compact RCBOs, type AC, instantaneous

1P + N, 230 V AC, 50 Hz

4 500
3

N connection on the right

30	2	1	--
	4	1	--
	6	1	--
	10	1	--
	13	1	--
	16	1	--

5SV1313-1KK02	1	1 unit	1BB
5SV1313-1KK04	1	1 unit	1BB
5SV1313-1KK06	1	1 unit	1BB
5SV1313-1KK10	1	1 unit	1BB
5SV1313-1KK13	1	1 unit	1BB
5SV1313-1KK16	1	1 unit	1BB

Compact RCBOs, type A, instantaneous

1P + N, 230 V AC, 50 Hz

4 500
3

N connection on the right

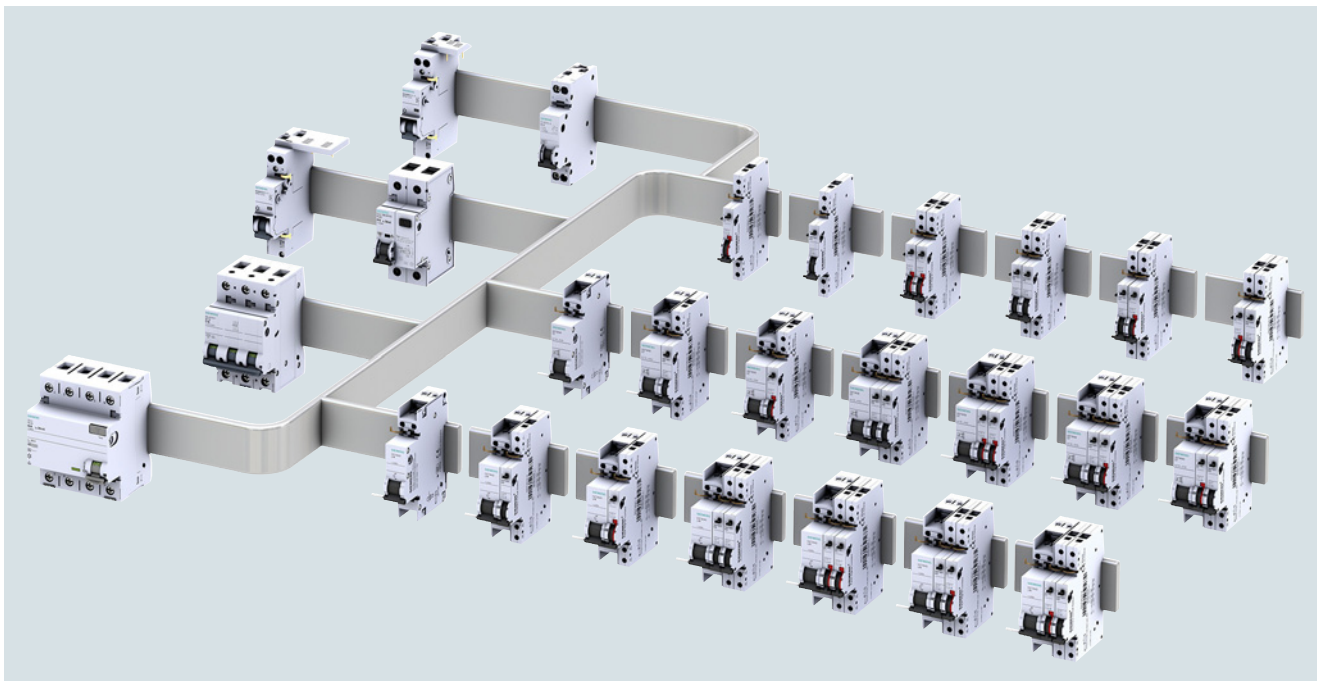
30	2	1	--
	4	1	--
	6	1	5SV1313-6KK06
	10	1	5SV1313-6KK10
	13	1	5SV1313-6KK13
	16	1	5SV1313-6KK16

1	1 unit	1BC
1	1 unit	1BC
1	1 unit	1BC
1	1 unit	1BC
1	1 unit	1BC

5SV1313-7KK02	1	1 unit	1BC
5SV1313-7KK04	1	1 unit	1BC
5SV1313-7KK06	1	1 unit	1BC
5SV1313-7KK10	1	1 unit	1BC
5SV1313-7KK13	1	1 unit	1BC
5SV1313-7KK16	1	1 unit	1BC

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

4



Overview

Auxiliary switches (AS)

The auxiliary switch (AS) always signals the contact position, regardless of whether the RCCB was tripped manually or as the result of a fault. An additional version is also available for the switching of small currents and voltages for the control of programmable control systems (PLCs) according to EN 61131-2. The auxiliary switch with test button enables the testing of control circuits without the need to switch the RCCB.

Fault signal contacts (FC)

The fault signal contact (FC) signals automatic breaking in the event of a fault. If the fault signal contact is activated, the contact position does not change if the RCCB is tripped manually. Fault signal contacts with TEST and RESET buttons enable testing of control circuits without the need to trip the RCCB. The red RESET button integrated in the handle also indicates automatic tripping of the RCCB. The signal can be acknowledged manually using the RESET button.

Shunt trips (ST)

Shunt trips are used for the remote tripping of RCCBs.

Undervoltage releases (UR)

Undervoltage releases are integrated (e.g. in EMERGENCY-STOP loops), thus ensuring tripping in the event of an emergency, which, in turn, ensures disconnection of the control circuit according to EN 60204. In the event that the voltage is interrupted or too low, it also trips, i.e. prevents activation of the RCCB.

Combined auxiliary switch (AS) and fault signal contact (FC)

The combined auxiliary switch and fault signal contact unites the properties of both switches in a width of only 0.5 MW (9 mm). The mode of operation of each function is described above.

Remote controlled mechanisms (RC)

Remote controlled mechanisms are used for the remote ON/OFF switching of miniature circuit breakers with or without RC unit, residual current operated circuit breakers, RCBOs or distribution board flush-mounting circuit breakers and also enable local manual switching of these devices.

The device combination with the automatic reclosing device (ARD) types tries up to three times to switch on again in the event of a fault. If a fault continues to exist, the combination remains switched off. The remote controlled mechanism has a mode selector switch with the functions: "OFF", "RC OFF" and "RC ON".

Explanation of selector switch positions:

- OFF (for the 177 - 270 V devices): The remote controlled mechanism Power is switched off, blocked mechanically and can be sealed and/or locked.
- RC OFF: Only manual operation is possible.
- RC ON: Both manual and remote operation are possible (except for in the case of the basic 12 - 48 V devices).

In the event that a device is tripped by a fault, the handle of the basic device and remote controlled mechanism switches to the OFF position. If, depending on the device version, the combination has switched off, an attempt can be made either via ARD or remotely to switch on again. If a fault continues to exist, the combination is switched off and can only be switched on again locally manually.

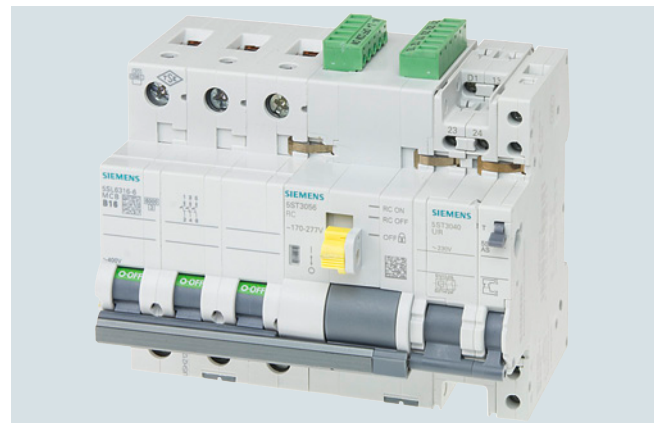
Matching adapters have to be ordered additionally to enable the remote controlled mechanisms to be combined with the residual current operated circuit breakers, miniature circuit breakers, RCBOs and ON/OFF switches.

Benefits

Can be universally retrofitted with all additional components

- Captive metal brackets on the additional components ensure the quick and easy mounting of devices without the need for tools.
- Fault signal contacts with TEST and RESET button enable simple testing of auxiliary circuits and, in the event of a fault, acknowledgement of the fault over the RESET button without the need to switch the RCCBs.
- The auxiliary switches with TEST button enable simple manual testing of control circuits during operation of the entire installation without the need to switch the RCCBs.
- Bus systems, such as *instabus* KNX, AS-Interface bus or PROFIBUS, can be integrated in the communication over binary inputs
- The leakage current measurement device enables the systematic selection of the rated residual current, thus preventing inadvertent tripping of an RCCB.

Remote controlled mechanisms



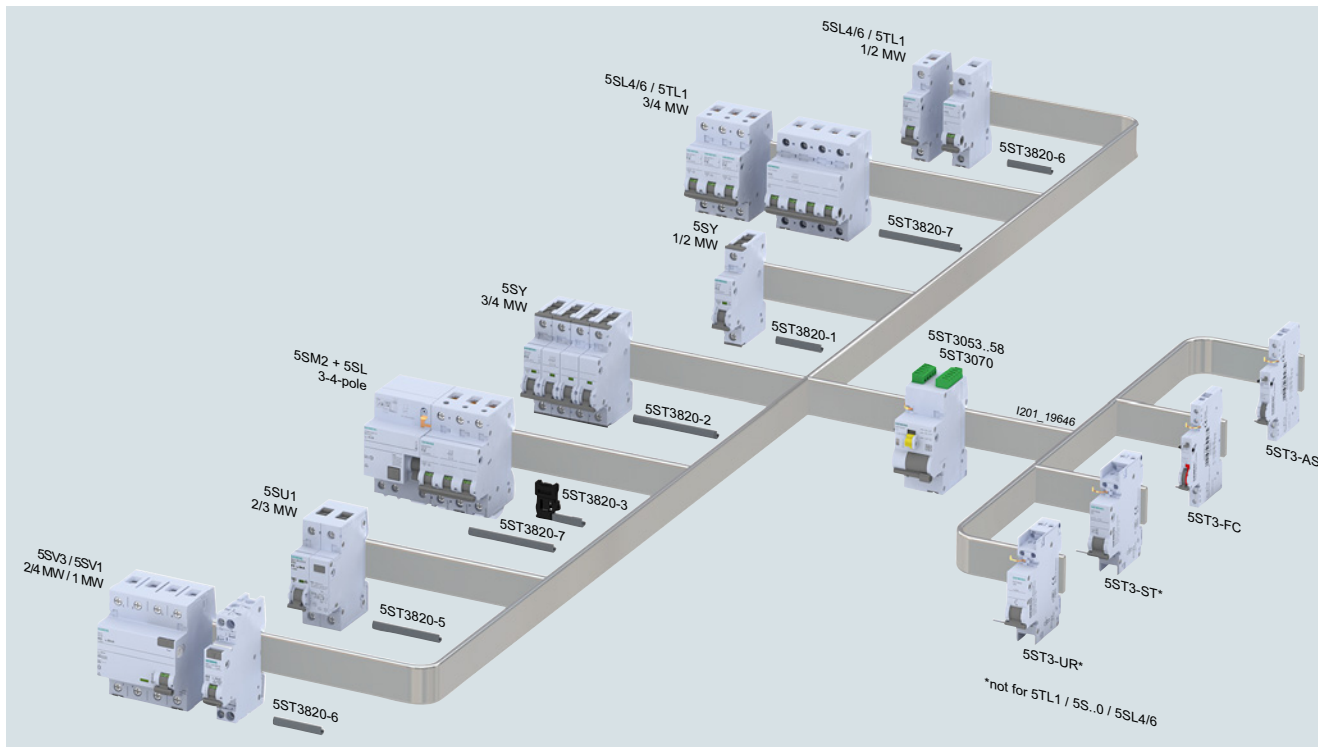
- Remote controlled mechanisms with ARD and Power have integrated auxiliary switches and fault signal contacts.
- More 5ST3... additional components, such as AS, FC, ST and UR, can be added to the right-hand side of the remote controlled mechanism in line with the Siemens mounting concept.
- The remote controlled mechanisms with ARD and Power have an LED display on the front of the device to show the switching state and for diagnostics.
- The 5ST3070 remote controlled mechanism has an extended temperature range from -40°C to +70°C

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

Portfolio overview












































4



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

**Combination options remote controlled mechanism –
adapter – mount-on device**

		5SL4/6	5TL1	5SV1	5SL4/6	5TL1	5SY4/5/6/7/8	5SY60	5SY4/5/6/7/8
		1-2 MW			3-4 MW		1-2 MW		3-4 MW
									
	RC mech. Basic (1.5 MW) – 5ST3053 12 V - 30 V AC 12 V - 48 V DC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. Basic (2 MW) – 5ST3054 230 V AC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. Power (2 MW) – 5ST3055 12 V - 30 V AC 12 V - 48 V DC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. Power (2 MW) – 5ST3056 230 V AC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. ARD* (2 MW) – 5ST3057 12 V - 30 V AC 12 V - 48 V DC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. ARD* (2 MW) – 5ST3058 230 V AC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2
	RC mech. Power (2 MW) – 5ST3070 12 V - 30 V AC 12 V - 48 V DC								
		Adapter 5ST3820-6			Adapter 5ST3820-7		Adapter 5ST3820-1		Adapter 5ST3820-2

* ARD = Auto Reclose Device










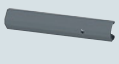











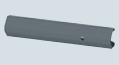
















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Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

Combination options remote controlled mechanism – adapter – mount-on device (continued)

	5SU1 2 MW, 3MW	5SV3	5SM2 + 5SL 2-pole	5SM2 + 5SL 3-4-pole	5SM2 + 5SY 2-pole	5SM2 + 5SY 3-4-pole
						
RC mech. Basic (1.5 MW) – 5ST3053 12 V - 30 V AC 12 V - 48 V DC	 Adapter 5ST3820-5	not compatible	not compatible	not compatible	not compatible	not compatible
RC mech. Basic (2 MW) – 5ST3054 230 V AC	 Adapter 5ST3820-5	not compatible	not compatible	not compatible	not compatible	not compatible
RC mech. Power (2 MW) – 5ST3055 12 V - 30 V AC 12 V - 48 V DC	 Adapter 5ST3820-5	 Adapter 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-7	 Adapter 5ST3820-3 add. 5ST3820-1	 Adapter 5ST3820-3 add. 5ST3820-2
RC mech. Power (2 MW) – 5ST3056 230 V AC	 Adapter 5ST3820-5	 Adapter 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-7	 Adapter 5ST3820-3 add. 5ST3820-1	 Adapter 5ST3820-3 add. 5ST3820-2
RC mech. ARD* (2 MW) – 5ST3057 12 V - 30 V AC 12 V - 48 V DC	 Adapter 5ST3820-5	 Adapter 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-7	 Adapter 5ST3820-3 add. 5ST3820-1	 Adapter 5ST3820-3 add. 5ST3820-2
RC mech. ARD* (2 MW) – 5ST3058 230 V AC	 Adapter 5ST3820-5	 Adapter 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-7	 Adapter 5ST3820-3 add. 5ST3820-1	 Adapter 5ST3820-3 add. 5ST3820-2
RC mech. Power (2 MW) – 5ST3070 12 V - 30 V AC 12 V - 48 V DC	 Adapter 5ST3820-5	 Adapter 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-6	 Adapter 5ST3820-3 add. 5ST3820-7	 Adapter 5ST3820-3 add. 5ST3820-1	 Adapter 5ST3820-3 add. 5ST3820-2

* ARD = Auto Reclose Device

I201_19717

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components



Technical specifications

	Remote controlled mechanisms							
	Basic		Power		ARD (with automatic restart)		Power	
	5ST3053	5ST3054	5ST3055	5ST3056	5ST3057	5ST3058	5ST3070	
Standards	EN 50557 (VDE 0640-20)							
Rated voltages U_n	V AC	12 ... 30	177 ... 270	12 ... 30	177 ... 270	12 ... 30	177 ... 270	12 ... 30
	V DC	12 ... 48		12 ... 48		12 ... 48		12 ... 48
• Rated frequency f_n	Hz	50 ... 60						
Rated power dissipation	VA	≤ 1 in standby						
Module width	mm	27 (1.5 MW)	36 (2 MW)					
Ambient temperature	°C	-25 ... +45						-40 ... +70
Storage temperature	°C	-40 ... +55						-40 ... +70
Degree of protection		IP20						
Pollution degree for overvoltage category		3/II	3/III	3/II	3/III	3/II	3/III	3/II
Service life, on average, with rated load		10 000 actuations						
Conductor cross-sections	mm ²	0.5 ... 1.5						
	AWG	14 ... 30						
Terminal tightening torque	Nm	0.2 ... 0.25						
	lb-in	2.0						
Cable length in the control circuit	m	≤ 1500						
Number of remote switching operations/min.		2						
Number of automatic reclose attempts		--				✓		--
Sliding selector with locking device		--	✓	✓	✓	✓	✓	✓
Integrated auxiliary switches		--		1W (1CO); 2 A; 250 V				
Integrated fault signal contact		--		1W (1CO); 2 A; 250 V				
Possible device combinations		MCBs up to 4 MW, RCBOs up to 3 MW		MCBs, RCCBs up to 4P, RCBOs up to 3 MW, RC unit + MCB, ON/OFF switches: 5TL1, 5TE2				
Shock and vibration requirements acc. to EN 61373 / EN 50155 "1B"		--						✓

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

Selection and ordering data

	Rated voltage	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	
		MW	d						
	Remote controlled mechanisms (RC mech.)								
	• Basic	12 ... 30 V AC 12 ... 48 V DC	1.5	5ST3053		1	1 unit	1AD	
	• Power	177 ... 270 V AC	2	5ST3054		1	1 unit	1AD	
		12 ... 30 V AC 12 ... 48 V DC	2	5ST3055		1	1 unit	1AD	
	• Power with automatic reclose function	177 ... 270 V AC		5ST3056		1	1 unit	1AD	
		12 ... 30 V AC 12 ... 48 V DC	2	5ST3057		1	1 unit	1AD	
	• With extended function NEW	177 ... 270 V AC		5ST3058		1	1 unit	1AD	
		12 ... 30 V AC 12 ... 48 V DC	2	5ST3070		1	1 unit	1AD	
	Note								
	Matching adapters must be ordered separately.								
	Accessories for remote controlled mechanisms								
	• Adapters for:			5ST3820-1		1	1 unit	1AD	
	- 5SY MCBs 1-2-pole								
	- 5SM2 RC units, with 5SY, 2-pole								
	• Adapters for:			5ST3820-2		1	1 unit	1AD	
	- 5SY MCBs 3-4 pole								
	- 5SM2 RC units, with 5SY, 3-4-pole								
• Adapters for:			5ST3820-3		1	1 unit	1AD		
- 5SM2 RC units									
• Adapters for:			5ST3820-5		1	1 unit	1AD		
- 5SU1 RCBOs									
• Adapters for:			5ST3820-6		1	1 unit	1AD		
- 5SL MCBs 1-2-pole									
- 5TL1 1-2-pole									
- 5SV3 residual current switches 2-4-pole									
- 5SM2 RC units, with 5SL, 2-pole									
- 5SV1 RCBOs									
• Adapters for:			5ST3820-7		1	1 unit	1AD		
- 5SL MCBs 3-4-pole									
- 5TL1 3-4-pole									
- 5SM2 RC units, with 5SL 3-4-pole									

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

Technical specifications

		Auxiliary switches (AS) 5SW330.	Auxiliary switches (AS) 5SW3330
Standards		EN 62019	
Terminals			
• Conductor cross-section	mm ²	0.75 ... 2.5	
• Tightening torque	Nm	0.5	
Short-circuit protection		B6 or C6 or gL/gG 6 A fuse	
Min. contact load		50 mA/24 V	
Max. contact load			
• 230 V AC, AC-12	A	6	5
• 230 V AC, AC-14	A	3.6	--
• 220 V DC, DC-12	A	1	0.5

		Auxiliary switches (AS)		Fault signal contacts (FC)	Auxiliary switches (AS) and fault signal contacts (FC)
		5ST3010, 5ST3010-2 5ST3011, 5ST3011-2 5ST3012, 5ST3012-2	5ST3013 ¹⁾ , 5ST3013-2 ²⁾ 5ST3014 ¹⁾ , 5ST3014-2 ²⁾ 5ST3015 ¹⁾ , 5ST3015-2 ²⁾ 5ST3016 ¹⁾	5ST3020, 5ST3020-2 5ST3021, 5ST3021-2 5ST3022, 5ST3022-2	5ST3062
Standards		EN 62019; IEC/EN 60947-5-1; UL 1077; CSA C22.2 No. 235			
Approvals		see chapter "Appendix"			
Short-circuit protection		Miniature circuit breakers or gG 6 A fuse			
Contact load					
• Min.		50 mA, 24 V	1) = 1 mA/5 V DC 2) = 5 mA/5 V DC	50 mA, 24 V	50 mA, 24 V
• Max.		--	1) = 100 mA/30 V DC 2) = 30 mA/30 V DC	--	--
• Acc. to IEC/EN 62019 and 60947-5-1:					
400 V AC, AC-14, NO	A	2	--	2	2
230 V AC, AC-13, NO	A	6	--	6	6
400 V AC, AC-14, NC	A	2	--	2	2
230 V AC, AC-13, NC	A	6	--	6	6
• Acc. to IEC/EN 62019 (acc. to IEC/EN 60947-5-1):					
220 V DC, DC-13, NO + NC	A	1	--	1	0.5 (0.3)
110 V DC, DC-13, NO + NC	A	1	--	1	0.5 (0.5)
60 V DC, DC-13, NO + NC	A	3	--	3	3 (1)
24 V DC, DC-13, NO + NC	A	6	--	6	3 (3)
Service life, on average, with rated load		20000 actuations			
Conductor cross-sections	mm ² AWG	0.5 ... 2.5 22 ... 14			
Terminals					
• Terminal tightening torque	Nm lb-in	0.5 4.5			
Mounting position		Any			
Ambient temperature	°C	-25 ... +55			
Storage temperature	°C	-40 ... +75			
Resistance to climate	Acc. to IEC 60068-2-30 Cycles	28			
Shock	Acc. to IEC 60068-2-27 m/s	50 at 11 ms half-sine			
Resistance to vibrations	Acc. to IEC 60068-2-6 m/s ²	50 at 10 ... 150 Hz			

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)







Additional components

		Undervoltage releases (UR)	Shunt trips (ST)	
		5ST304.	5ST3030	5ST3031
Standards		EN 60947-1		
Rated voltages U_n	V AC	230	110 ... 415	24 ... 48
	V DC	24, 110	110	24 ... 48
• Operating range U_n		0.85 ... 1.1 x U_n	0.7 ... 1.1 x U_n	
• Rated frequency f_n	Hz	--	50 ... 60	
Response limits				
• Tripping		< 0.35 ... 0.7 x U_n	--	
Short-circuit protection		Miniature circuit breakers B/C 6 A or fuse gG 6 A		
Minimum contact load		50 mA, 24 V		
Tripping operations		max. 2000		
Service life, on average, with rated load		20000 actuations		
Conductor cross-sections	mm ²	0.5 ... 2.5		
	AWG	22 ... 14		
Terminals				
• Terminal tightening torque	Nm lb-in	0.8 6.8		
Mounting position		Any		
Ambient temperature		°C -25 ... +55		
Storage temperature		°C -40 ... +75		
Resistance to climate	Acc. to IEC 60068-2-30	Cycles	28	
Shock	Acc. to IEC 60068-2-27	m/s	50 at 11 ms half-sine	
Resistance to vibrations	Acc. to IEC 60068-2-6	m/s ²	50 at 10 ... 150 Hz	
Switching frequency		--		
Switching duration		s --		
Minimum command duration		s --		
Rated power dissipation		VA --		
Behavior in the event of control voltage failure		--		

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)




Additional components

Selection and ordering data


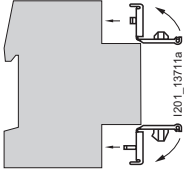
	Rated voltage	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		MW	d					
	Auxiliary switches (AS) For 5SM3 residual current protective devices up to 80 A							
	1 NO + 1 NC	0.5	▶	5SW3300		1	1 unit	1BE
	2 NC	0.5		5SW3301		1	1 unit	1BE
	2 NO	0.5		5SW3302		1	1 unit	1BE
	Auxiliary switches (AS) For 5SM3 residual current protective devices, 100 ... 125 A, 3P+N							
	1 NO + 1 NC	0.5		5SW3330		1	1 unit	1BE
	Auxiliary switches (AS) For 5SL, 5SY, 5SP miniature circuit breakers, 5SV1, 5SU1 RCBOs, 5SV RCCBs and 5TE8 switches (the 5ST3805-1 handle coupler is required for 5SU1)							
	1 NO + 1 NC For low power	0.5	▶	5ST3010		1	1 unit	1AD
	For low power (with diode) NEW			5ST3013		1	1 unit	1AD
				5ST3013-0XX01		1	1 unit	1AD
	2 NO For low power			5ST3011		1	1 unit	1AD
				5ST3014		1	1 unit	1AD
	2 NC For low power			5ST3012		1	1 unit	1AD
			5ST3015		1	1 unit	1AD	
1 W NEW			5ST3016		1	1 unit	1AD	
	Auxiliary switches (AS) with TEST button For 5SL, 5SY, 5SP miniature circuit breakers, 5SV1, 5SU1 RCBOs, 5SV RCCBs and 5TE8 switches (the 5ST3805-1 handle coupler is required for 5SU1)							
	1 NO + 1 NC For low power	0.5	▶	5ST3010-2		1	1 unit	1AD
				5ST3013-2		1	1 unit	1AD
	2 NO For low power			5ST3011-2		1	1 unit	1AD
				5ST3014-2		1	1 unit	1AD
2 NC For low power			5ST3012-2		1	1 unit	1AD	
			5ST3015-2		1	1 unit	1AD	
	Fault signal contacts (FC) For 5SL, 5SY, 5SP miniature circuit breakers, 5SV1, 5SU1 RCBOs, and for 5SV RCCBs (the 5ST3805-1 handle coupler is required for 5SU1)							
	1 NO + 1 NC	0.5	▶	5ST3020		1	1 unit	1AD
	2 NO			5ST3021		1	1 unit	1AD
2 NC	5ST3022				1	1 unit	1AD	
	Fault signal contacts (FC) with TEST and ACKNOWLEDGE button For 5SL, 5SY, 5SP miniature circuit breakers, 5SV1, 5SU1 RCBOs, and for 5SV RCCBs (the 5ST3805-1 handle coupler is required for 5SU1)							
	1 NO + 1 NC	0.5	▶	5ST3020-2		1	1 unit	1AD
	2 NO			5ST3021-2		1	1 unit	1AD
2 NC	5ST3022-2				1	1 unit	1AD	

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Additional components

	Rated voltage	Mounting width	SD	Article No. www.siemens.com/product?Article.No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		MW	d					
	Auxiliary switches (AS) and fault signal contacts (FC) NEW							
	For 5SL, 5SY, 5SP miniature circuit breakers, 5SV1, 5SU1 RCBOs, 5SV RCCBs and 5TE8 switches (the 5ST3805-1 handle coupler is required for 5SU1)							
		1 CO (of which 1 x FC)	0.5	5ST3062		1	1 unit	1AD
	Undervoltage releases (UR)							
	For 5SY, 5SP miniature circuit breakers, 5SV residual current protective devices and 5SU1 RCBOs (for 5SU1 the 5ST3805-1 handle coupler is required)							
	With integrated auxiliary switch	230 AC 110 DC 24 DC	1	▶ 5ST3040 5ST3041 5ST3042		1 1 1	1 unit 1 unit 1 unit	1AD 1AD 1AD
	Without integrated auxiliary switch	230 AC 110 DC 24 DC	1	▶ 5ST3043 5ST3044 5ST3045		1 1 1	1 unit 1 unit 1 unit	1AD 1AD 1AD
	Shunt trips (ST)							
	For 5SY, 5SP miniature circuit breakers, 5SV residual current protective devices and 5SU1 RCBOs (for 5SU1 the 5ST3805-1 handle coupler is required)							
		110 ... 415 V AC 24 ... 48 V AC/DC AC/DC 12 V NEW	1 1 1	▶ 5ST3030 5ST3031 5ST3031-0XX01		1 1 1	1 unit 1 unit 1 unit	1AD 1AD 1AD
	Locking device							
	For 5SM3 RCCBs up to 80 A, sealable and lockable 4.5 mm lock hasp diameter			5SW3303		1	10 units	1BE
	Locking device							
	For 5SU1 RCBOs, sealable and lockable			5ST3801-1		1	1 unit	1AD
	Handle locking devices							
	<ul style="list-style-type: none"> For 5SV RCCBs, 5SV1 RCBOs, 5SL MCBs For padlock with 3 ... 6 mm shackle 			5ST3806		1	5 units	1AD
	Padlocks							
	For 5ST3806 locking device, 5ST30 remote controlled mechanism (excluding 5ST3053)			5ST3802		1	1 unit	1AD
	Locking devices with padlock							
	Comprising 5SW3303 locking device and 5ST3802 padlock			5SW3312		1	1 set	1BE

Accessories

Version	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	d					
		5ST3805-1		1	1 set	1AD
		For mounting the additional components auxiliary switches, fault signal contacts, shunt trips and undervoltage releases onto 5SU1 RCBOs, you require a handle coupler (1 set = 5 units)				
		5SW3010		1	1 unit	1BE
		For 5SM3 RCCBs up to 80 A, sealable (2 units in plastic bag)				
	2	5SW3011		1	1 unit	1BE
	2.5	5SW3008		1	1 unit	1BE
	4					

Note:

The same additional components are used for RCBOs as for miniature circuit breakers, see chapter "Miniature Circuit Breakers".

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM6 / 5SV6 arc fault detection devices (AFDDs)

Overview

Characteristics

The Siemens portfolio of protective devices has been proving itself in the field for many years. This range of fuses, miniature circuit breakers and residual current protective devices has now been expanded to include AFDDs (arc fault detection devices). These AFDDs detect arcing faults caused by serial faults or loose contacts or as a result of insulation faults that enable contact between phase conductors or between phase and protective conductors. They therefore offer extremely effective protection against fires started by electrical faults.

Generally speaking, arcing faults in the circuit can result from damage to cables and other insulations and from contamination. Insulation faults result, for example, from vibrations, thermal expansion and contraction, mechanical loads and aging.

A distinction is made between 3 types of arcing faults:

Serial arcing faults

These are caused by breaks in the conductor or when a loose contact is in the circuit in series with the load. As the current flow in such cases is always lower than the operational load current, miniature circuit breakers and residual current protective devices are unable to detect such faults and initiate tripping.

The AFDD is specially designed to detect the specific characteristics of these arcing faults, and it reliably disconnects the affected circuit as soon as the limit values are exceeded.

Parallel arcing faults between phase conductor/neutral conductor or phase conductor/phase conductor

These are caused by electric arcs resulting from damage to the insulation that permits contact between the two conductors. In this case, the level of current is determined by the impedances in the circuit. Depending on the rated current of the overcurrent protection device (for instance a miniature circuit breaker), this can be disconnected. However, if the impedance in the circuit is too high to reach the trip current of the overcurrent protection device, no tripping takes place. AFDDs disconnect the currents of arcing faults upwards of 2.5 A, thus providing reliable protection in the case of such faults.

Parallel arcing faults between phase conductor/protective conductor

Arcing faults against the protective conductor are reliably detected and shut down by residual current protective devices. Residual current protective devices with rated residual currents up to max. 300 mA have already been providing effective fire protection in such cases for many years. AFDDs also detect these arcing faults and provide adequate fire protection where no residual current protective device is implemented.

Preventing undesired tripping operations

Electric arcs and high-frequency signals occur during normal operation in networks with multiple electrical loads (e.g. electric motors, light switches, dimmers). The AFDD must not break the circuit in such cases.

Thanks to the sophisticated detection logic of our AFDDs, they are able to clearly distinguish between normal operational interference signals and hazardous arcing faults.

Product versions

5SV6 arc fault detection devices with integrated MCB NEW

These devices combine line protection and arc fault detection in a single unit with a width of only 1 MW.

This version offers a space-saving alternative for retrofitting.

As it has the same width as the MCB, the AFDD with an integrated 5SV6 MCB can not only be installed in new units, but can also be easily retrofitted in existing buildings. This provides an extended protection function with requiring additional space. Standard-compliant expansion of the electrical installation to protect against electrical fires can thus be implemented easily at any time.

5SM6 arc fault detection devices, AFDDs

Siemens offers four product versions which can be used in various combinations with a range of 1MW/2MW wide miniature circuit breakers and/or RCBOs up to 16 A or 40 A rated current.

This simplifies product selection and reduces inventory, while enabling coverage of every conceivable application. It also means that our tried and tested protective devices (MCBs, RCBOs) can be combined with the new functionality provided by arc fault protection. In particular, the version with RCBOs offers a protective device that provides comprehensive personnel, short-circuit, overload and fire protection in a single device.

The 5SM6 AFDDs can be connected easily and quickly. The miniature circuit breakers or RCBOs can be mounted quickly and simply by just snapping them onto the mounting rail without the need for tools. For a fast and reliable power supply, the infeed can be implemented via a busbar assembly.

The version with a compact RCBO (5SV1) in 1 MW is a space-saving alternative that is ideal for retrofitting.

Whether auxiliary switch or fault signal contact – the AFDDs can be combined at random with the versatile range of additional components from the familiar portfolio of 5SY miniature circuit breakers and 5SU1 RCBOs.

This also enables connection to a higher-level I&C system.

Status displays and self tests

In order to facilitate fault locating in the event of tripping, the AFDD is equipped with a display that provides information on the cause of tripping (serial/parallel arcing faults, overvoltage). The sophisticated detection electronics system also automatically checks the functionality of the AFDD. If the self-monitoring process detects a fault, the AFDD switches off and displays the corresponding indication.

Integrated overvoltage protection

Depending on the load distribution in the three-phase current system, an interruption on the infeed side of the neutral conductor may cause a shift of the neutral point and thus an increase in voltage between the phase conductor and the neutral conductor. This increase in voltage can damage the loads or present a fire risk due to overloaded components.

In order to ensure all-round protection, the AFDDs are fitted with an overvoltage release that disconnects when the voltage between phase conductor and neutral conductor exceeds 275 V, thus isolating downstream loads from the hazardous line voltage.

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM6 / 5SV6 arc fault detection devices (AFDDs)

4

Technical specifications

	5SM6	5SV6
Standards	IEC/EN 62606	
Versions	2-pole	1P + N
Rated voltage U_n	V 230	
Rated current I_n	A Up to 16/40	6 ... 32
Rated frequency	Hz 50	
Mains connection	Bottom	Either top or bottom
Tripping in the event of overvoltage	V > 275	> 285
Degree of protection	Acc. to EN 60529 (VDE 0470-1)	IP20, with connected conductors
Touch protection	Acc. to EN 50274 (VDE 0660-514)	Finger and back-of-hand safe
Terminal tightening torque	Nm 2.0 ... 2.5	1.2 ... 2.0
Terminal/conductor cross-sections		
• Solid and stranded	mm ² 0.75 ... 16	
• Finely stranded with end sleeve	mm ² 0.75 ... 10	
Overvoltage category	III	
Mounting position	Any	
Service life	Average number of switching cycles	> 10000
Ambient temperature	°C -25 ... +40	
Storage temperature	°C -40 ... +75	
Resistance to climate	Acc. to IEC 60068-2-30	28 cycles (55 °C; 95% rel. air humidity)
Pollution degree	2	
CFC and silicone-free	Yes	
Power loss	W 0.6	

Selection and ordering data

I_n	Mounting width	SD	Characteristic B				Characteristic C									
			Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG			
A	MW	d														

Arc fault detection device with integrated MCB **NEW**

1P+N; 230 V AC, 50 Hz

6	1		5SV6016-6KK06	1	1 unit	1BA			5SV6016-7KK06	1	1 unit	1BA
10			5SV6016-6KK10	1	1 unit	1BA			5SV6016-7KK10	1	1 unit	1BA
13			5SV6016-6KK13	1	1 unit	1BA			5SV6016-7KK13	1	1 unit	1BA
16			5SV6016-6KK16	1	1 unit	1BA			5SV6016-7KK16	1	1 unit	1BA
20			5SV6016-6KK20	1	1 unit	1BA			5SV6016-7KK20	1	1 unit	1BA
25			5SV6016-6KK25	1	1 unit	1BA			5SV6016-7KK25	1	1 unit	1BA
32			5SV6016-6KK32	1	1 unit	1BA			5SV6016-7KK32	1	1 unit	1BA

Version	Rated current I_n	Mounting width	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	A	MW	d					

Arc fault detection devices, AFDDs





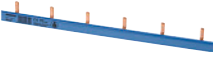
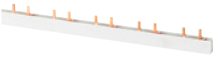
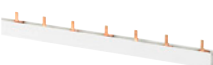
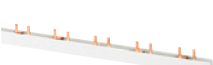


For 5SY60... MCBs (1 MW); 5SV1 RCBOs (1 MW) 2-pole; 230 V AC; 50 Hz	Up to 16 Up to 40	1		5SM6011-2 5SM6014-2		1	1 unit	1BA 1BA
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For 5SU1.5 (2 MW) RCBOs, 5SU1... FA (3 MW) RCBOs, and 5SY/SSL4 miniature circuit breakers (2 MW), but not suitable for 5SY5, 5SY8, 5SY60... 2-pole; 230 V AC; 50 Hz	Up to 16 Up to 40	1		5SM6021-2 5SM6024-2		1	1 unit	1BA 1BA
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Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM6 / 5SV6 arc fault detection devices (AFDDs)

Version	Pin spacing	Length	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	MW	mm	d					
Pin busbars for 5SM6 AFDDs (1+N)								
5ST3 busbars – 10 mm², can be cut								
Single-phase, for 5SM601.-.								
	Insulation, gray, not angled	2	962	5ST3764-1		1	10 units	1AD
	Insulation, blue, angled	2	962	5ST3765-1		1	10 units	1AD
	Insulation blue, not angled	2	962	5ST3765-2		1	10 units	1AD
Two-phase (1+N), for 5SM602.-.								
	Insulation, gray	1+2	996	5ST3735-1		1	1 unit	1AD
Three-phase, for 5SM601.-.								
	Insulation, gray	2	1032	5ST3740-1		1	1 unit	1AD
Four-phase (3+N), for 5SM602.-.								
	Insulation, gray	1+2	926	5ST3746-1		1	1 unit	1AD
5ST3 busbars – 10 mm², cannot be cut								
Three-phase, for 5SM601.-.								
	Insulation, gray	2	216	5ST3615-1		1	10 units	1AD
5ST3 busbars with RCCB – 16 mm², can be cut NEW								
Two-phase, for 5SV3 (1P+N) and 5SM601.-.								
	Insulation, gray	2	216	5ST3772		1	10 units	1AD

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

5SM6 / 5SV6 arc fault detection devices (AFDDs)

Version	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG	
Terminals							
 <p>Terminals, long</p> <ul style="list-style-type: none"> • For conductors up to 25 mm² • Infeed on side • Specially for two-, three-, four-phase busbars <p>Terminals, short</p> <ul style="list-style-type: none"> • For conductors up to 25 mm² • Infeed on side • Specially for single-phase busbars and for 5ST3615-1 three-phase busbars <p>Terminals, short, IP20</p> <ul style="list-style-type: none"> • For conductors up to 25 mm² • Infeed on side • Specially for single-phase busbars and for 5ST3615-1 three-phase busbars 	d	5ST3771-1		1	25 units	1AD	
		▶	5ST3768		1	25 units	1AD
			5ST3771-2		1	10 units	1AD
 <p>End caps for 5ST37, can be cut</p> <ul style="list-style-type: none"> • For 2-phase and 3-phase busbars • For 4-phase busbars 		▶ 5ST3750		1	10 units	1AD	
		▶	5ST3718		1	10 units	1AD

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Pin busbars for 5SV1 / 5SV6 / 5S..0 compact devices

NEW

Overview



Busbars for bus mounting 2-/4-pole 5SV3/4 RCCBs and compact devices 1P+N in 1 MW.

These compact pin busbars allow devices such as 5SV1, 5SV6 and compact miniature circuit breakers 1+N in 1 MW, or combinations of these, to be bus-mounted easily and safely in 2 or 4 phases.

- The compact busbars are also available for device combinations equipped with 5SM6 arc fault detection devices.
- RCCB N left devices can be wired with 5ST37..-0KL busbars, which increases wiring flexibility.
- Infeeds or outgoing feeders on the busbars are created by means of a bushing immediately through the compact busbar.
- The compact busbars are also available with additional space for auxiliary components. Wiring into the busbar is from below.
- Busbars are available in 10 mm² versions.

Benefits

Compact busbars:





- RCCB compact busbars can now also be cut to 12 MW
- RCCB N left can now also be bus-mounted
- The end caps can be used again after the busbar has been cut to length.
- Simple wiring of all phases/conductors with one busbar
- Auxiliary switches can also be connected when a busbar is installed
- Infeeds possible via mounted busbar
- Infeed possible without additional terminal (up to 16 mm² rigid / 10 mm² flexible with end sleeve)

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

NEW

Pin busbars for 5SV1 / 5SV6 / 5S..0 compact devices

Selection and ordering data

Version	Busbar length/MW	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	mm/MW	d					
	5ST3 busbars for infeed via RCCB						
	For 1 x RCCB 1P+N and 5 x compact devices equipped with 5SM6 arc fault detection device						
	• 2-phase, 10 mm ²	12 MW	5ST3685-0		1	1 unit	1AD
	For 1 x RCCB 3P+N and 8 x compact devices						
	• 4-phase, 10 mm ² , can be cut	12 MW	5ST3783-0		1	1 unit	1AD
	• 4-phase, 10 mm ² (only RCCB N left), can be cut	12 MW	5ST3783-OKL		1	1 unit	1AD
	For 1 x RCCB 1P+N and 10 x compact devices						
	• 2-phase, 10 mm ² , can be cut	12 MW	5ST3784-0		1	1 unit	1AD
	• 2-phase, 10 mm ² (only RCCB N left), can be cut	12 MW	5ST3784-OKL		1	1 unit	1AD
	5ST3 busbars						
	For 12 compact devices						
	• 4-phase, 10 mm ²	12 MW	5ST3673-0		1	1 unit	1AD
	For compact devices						
	• 4-phase, 10 mm ² , can be cut	1000 mm	5ST3773-0		1	1 unit	1AD
	For 12 compact devices						
	• 2-phase, 10 mm ²	12 MW	5ST3674-0		1	1 unit	1AD
	For compact devices						
	• 2-phase, 10 mm ² , can be cut	1000 mm	5ST3774-0		1	1 unit	1AD
	For 6 compact devices equipped with 5SM6 arc fault detection device						
	• 4-phase, 10 mm ²	12 MW	5ST3675-0		1	1 unit	1AD
	For compact devices equipped with 5SM6 arc fault detection device						
	• 4-phase, 10 mm ² , can be cut	1000 mm	5ST3775-0		1	1 unit	1AD
	For 6 compact devices equipped with 5SM6 arc fault detection device						
	• 2-phase, 10 mm ²	12 MW	5ST3676-0		1	1 unit	1AD
	For compact devices equipped with 5SM6 arc fault detection device						
	• 2-phase, 10 mm ² , can be cut	1000 mm	5ST3776-0		1	1 unit	1AD
	For compact devices equipped with auxiliary switch						
	• 4-phase, 10 mm ² , can be cut	1000 mm	5ST3777-0		1	1 unit	1AD
	For compact devices equipped with auxiliary switch						
	• 2-phase, 10 mm ² , can be cut	1000 mm	5ST3778-0		1	1 unit	1AD
	For compact devices equipped with 5SM6 arc fault detection device and auxiliary switch						
	• 2-phase, 10 mm ² , can be cut	1000 mm	5ST3780-0		1	1 unit	1AD
	End caps for 5ST37						
	• For 2-phase and 4-phase busbars		5ST3788-0		1	10 units	1AD
	Touch protection						
	• For free connections, for pins L1, N, yellow		5ST3655		1	10 units	1AD
	• For pins L2 / L3, yellow		5ST3655-0HG		1	10 units	1AE

4

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

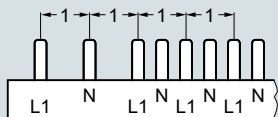
Pin busbars for 5SV1 / 5SV6 / 5S..0 compact devices

NEW

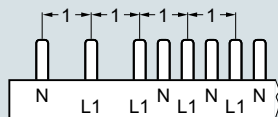
5ST36 / 5ST37

Pin spacing in MW (modular width; 1 MW = 18 mm)

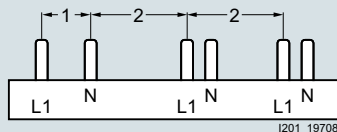
Dimensions of side view in mm (approx.)



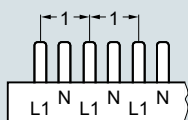
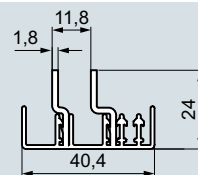
5ST3784-0



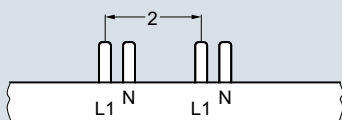
5ST3784-OKL



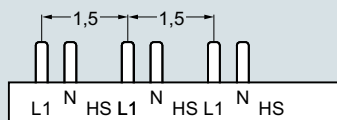
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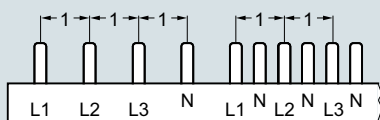
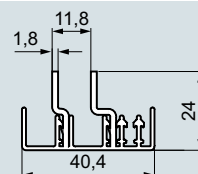
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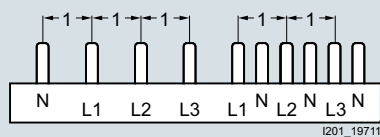
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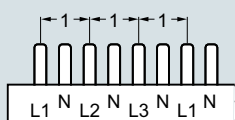
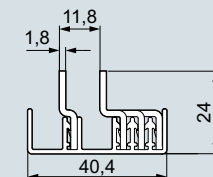
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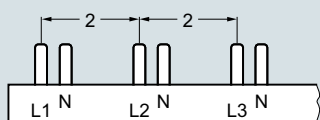
5ST3783-0



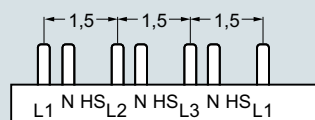
5ST3783-OKL



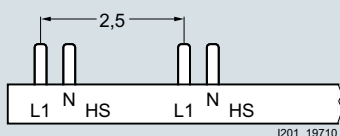
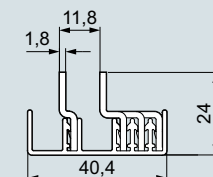
5ST3673-0



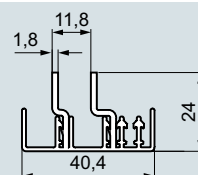
5ST3675-0



5ST3777-0



5ST3780-0



Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Busbars

Overview

4-pole 5SV RCCBs are bus mounted either together or in combination with miniature circuit breakers. RCCBs with an N wire connection on the left-hand side facilitate installation because the same type of standard busbars is used as for bus mounting miniature circuit breakers.

Busbars in 10 mm² and 16 mm² versions are available.

The extremely flexible 5ST36 busbar system with fixed lengths enables installation in any length as the busbars can be overlapped.

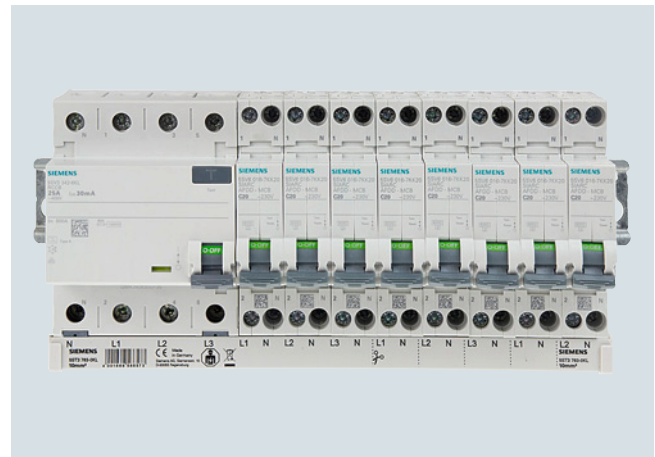
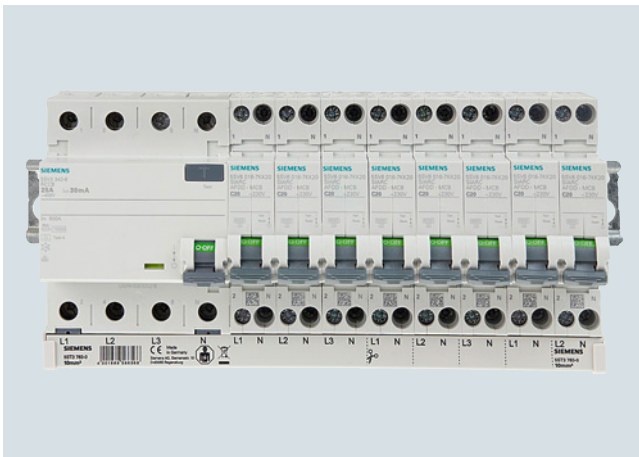
No further need for time-consuming tasks, such as cutting, cutting to length, deburring, cleaning of cut surfaces and mounting of end caps.

Any free pins on the busbars can be made safe by covering with touch protection.

If several RCBOs are bus-mounted together, this is implemented with two-phase busbars, which are used as 1+N busbars.

Benefits

- Connection of miniature circuit breakers to 4-pole RCCBs with N connection right and three-phase busbar.
- Connection of miniature circuit breakers to 4-pole RCCBs with N connection left, with three-phase busbar that can be cut. No additional items to be stored and busbars that are always available.



- For bus mounting 5SV RCCBs with compact devices. It is now also possible to cut the busbar, thus permitting the RCCB busbar to be used for less frequently needed outgoing feeders. This saves wiring costs.
- Bus-mounting of residual current protective devices on busbar (three-phase +N) that can be cut. A proven and frequently used application.

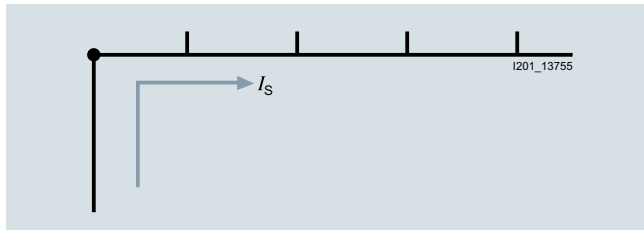
Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Busbars

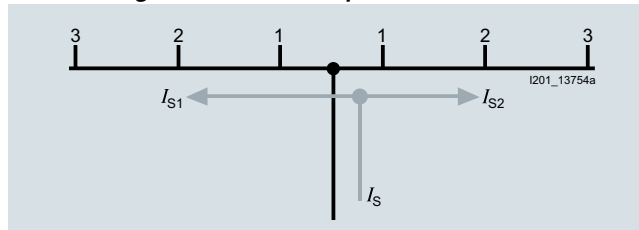
Technical specifications

		5ST3, 5ST2
Standards		EN 60439-1 (VDE 0660-500): 2005-01
Busbar material		SF-Cu F 24
Partition material		Plastic, Cycloy 3600 Heat-resistant over 90 °C Flame-retardant Self-extinguishing Dioxin and halogen-free
Rated operational voltage U_e	V AC	400
Rated current I_n		
• Cross-section 10 mm ²	A	63
• Cross-section 16 mm ²	A	80
Rated impulse withstand voltage U_{imp}	kV	4
Test pulse voltage (1.2/50)	kV	6.2
Rated conditional short-circuit current I_{cc}	kA	25
Resistance to climate		
• Constant atmosphere	Acc. to DIN 50015	23/83; 40/92; 55/20
• Humid heat	Corresponds to IEC 68-2-30	28 cycles
Insulation coordination	Acc. to IEC 60664-1 (VDE 0110-1)	
• Overvoltage category		III
• Pollution degree		2
Maximum busbar current I_S per phase		
• Infeed at the start of the busbar		
- Cross-section 10 mm ²	A	63
- Cross-section 16 mm ²	A	80
• Infeed at the center of the busbar		
- Cross-section 10 mm ²	A	100
- Cross-section 16 mm ²	A	130

Infeed at the start or end of the busbar



Infeed along the busbar or midpoint infeed



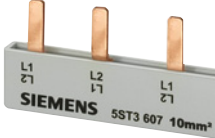




The sum of the outgoing current per branch (1, 2, 3 ... n) must not be greater than the max. busbar current I_S /phase.

Selection and ordering data

Version	Pin spacing	Length	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	MW	mm	d					
<p>5ST36 busbars, fixed lengths, cannot be cut, fully insulated For 1 RCCB 4P, N connection right, and 8 MCB 1P</p> <ul style="list-style-type: none"> • 3-phase, 10 mm² • 3-phase, 16 mm² <p>For 6 RCBOs 1P+N together</p> <ul style="list-style-type: none"> • 2-phase, 10 mm² • 2-phase, 16 mm² 	1	210		5ST3624		1	10 units	1AD
	1	210		5ST3654		1	10 units	1AD
	1	210		5ST3608		1	10 units	1AD
	1	210		5ST3638		1	10 units	1AD
<p>5ST37 busbars, 12 MW, can be cut, with end caps For 6 RCBOs 1P+N</p> <ul style="list-style-type: none"> • 2-phase, 10 mm² • 2-phase, 16 mm² 	1	216		5ST3734		1	1 unit	1AD
	1	216	▶	5ST3704		1	1 unit	1AD
<p>5ST36 busbars, 10 mm², 4-phase fixed lengths, cannot be cut, fully insulated For 6 RCBOs 1P+N</p>	1	215		5ST3623		1	10 units	1AD

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Busbars

	Version	Pin spacing	Length	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		MW	mm	d					
	5ST36 busbars, 16 mm², 4-phase fixed lengths, cannot be cut, fully insulated For 6 RCBOs 1P+N	1	215		5ST3653		1	10 units	1AD
	5ST37 busbars, with end caps, can be cut, with touch protection For RCBOs 1P+N and MCB 2P								
	• 4-phase, 10 mm ²	1	1008		5ST3770-2		1	10 units	1AD
	• 4-phase, 16 mm ²	1	1008		5ST3770-3		1	10 units	1AD
	For RCCBs 4P, N connection right and 6 MCBs 1P+N								
	• 4-phase, 10 mm ²	1	288		5ST3770-4		1	10 units	1AD
	• 4-phase, 16 mm ²	1	288		5ST3770-5		1	10 units	1AD
	End caps for 5ST37, can be cut								
	• For 2-phase and 3-phase busbars			▶	5ST3750		1	10 units	1AD
	• For 4-phase busbars			▶	5ST3718		1	10 units	1AD
	Touch protection For free connections, yellow (RAL 1004) 5 x 1 pin								
				▶	5ST3655		1	10 units	1AD
	Terminals up to 35 mm² (stranded), for direct infeed of 5ST2145 busbar Side-by-side mounting possible								
					5ST2157		1	5 units	1AD

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)



5SZ9 RCCB socket outlets

Application

RCCB protective socket outlets

- Molded-plastic enclosure equipped with RCCB and flush-mounted SCHUKO® socket outlet
- For electrical devices where there is a risk of accidental contact with live parts in the event of damage
- Rated voltage: 230 V AC, 50 Hz
- For outdoor connection of gardening equipment and socket outlets in workshops or for agricultural purposes
- Degree of protection IP54 (5SZ92.6)





Selection and ordering data

 Type A	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	SD d	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	RCCB protective socket outlets							
	• RCCB protective socket outlet according to VDE 0664 in molded-plastic enclosure, equipped with residual current operated circuit breaker and flush-mounted SCHUKO® socket outlet, degree of protection IP54							
	10	16		5SZ9206		1	1 unit	1BE
	30			5SZ9216		1	1 unit	1BE

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Accessories

Accessories

Version	SD	Article No. www.siemens.com/ product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	d					
		Terminal covers, gray For surface mounting, degree of protection IP40, sealable, with 35 mm standard mounting rail <ul style="list-style-type: none"> Up to 2.5 MW Up to 4.5 MW 				
		5SW3004		1	1 unit	1BE
		5SW3005		1	1 unit	1BE
		Wall enclosures, gray For flush mounting, degree of protection IP40, with 35 mm standard mounting rail <ul style="list-style-type: none"> Up to 2.5 MW Up to 4.5 MW 				
		5SW3006		1	1 unit	1BE
		5SW3007		1	1 unit	1BE
		Covers Can be assembled as mini distribution board, suitable for all devices, cover parts prepared for rail mounting of conventional label caps, comprising: <ul style="list-style-type: none"> End plates (for snapping onto standard mounting rail) Angled profile (approx. 1 m long) Alternative flat profiles (as a cover between the rows of devices, length approx. 1 m) 				
		5ST2134		1	10 units	1AD
		5ST2135		1	5 units	1AD
		5ST2136		1	5 units	1AD
		Device labels Adhesive, for modular installation devices, e.g. 5SY, 5SL, 5TL1, etc.				
		Versions <ul style="list-style-type: none"> 15 mm x 6 mm, white (WIN 098) 15 mm x 6 mm, yellow (WIN 099) 				
		8WH8210-0AA35		100	3740 units	1BT
		8WH8210-0AA36		100	3740 units	1BT
		Labeling system Available from:				
		Murrplastik Systemtechnik GmbH Postfach 1143 71570 Oppenweiler, Germany Telephone: +49 7191-482-0 Email: info@murrplastik.de				

Residual Current Protective Devices / Arc Fault Detection Devices (AFDDs)

Configuration

Application

Standards	Application	Required $I_{\Delta n}$ [mA]	Recommended Siemens residual current protective devices			
			Type A	Type F	SIQUENCE type B/type B+	SIGRES
DIN VDE 0100-410	Protection against electric shock	30 ... 500	✓	✓	✓	✓
	Socket outlets up to 20 A, outdoor plants	10 ... 30	✓	✓	--	--
DIN VDE 0100-482	Fire protection for particular risks or safety hazards	30, 300	✓	✓	✓	--
DIN VDE 0100-701	Rooms WITH baths or showers, socket outlets in zone 3	10 ... 30	✓	✓	--	--
DIN VDE 0100-702	Basins for swimming pools and other basins	10 ... 30	✓	--	--	✓
DIN VDE 0100-703	Rooms and cabins with sauna heating	10 ... 30	✓	--	--	✓
DIN VDE 0100-704 BGI 608	Building sites, socket outlet current circuits up to 32 A and for handheld equipment, plug-and-socket devices $I_n > 32$ A	≤ 30	✓	✓	✓	✓
		≤ 500	✓	✓	✓	✓
DIN VDE 0100-705	Agricultural and general horticultural premises, socket outlet current circuits	≤ 500	✓	✓	--	✓
		≤ 30	✓	✓	--	✓
DIN VDE 0100-706	Conductive areas with limited freedom of movement, permanently mounted equipment	10 ... 30	✓	--	--	--
DIN VDE 0100-708	Electrical installations on camping sites, fixed feeding points for every socket outlet and every final circuit	10 ... 30	✓	--	--	✓
DIN VDE 0100-710	Medical premises in TN-S system, depending on application group 1 or 2 and equipment	10 ... 30	✓	--	✓	--
		≤ 300	✓	--	✓	--
DIN VDE 0100-712	Solar PV power supply systems (without simple separation)	≤ 300	--	--	✓	--
DIN VDE 0100-723	Classrooms with experiment equipment	10 ... 30	--	--	✓	--
DIN VDE 0100-739	Additional protection against direct contact in homes	10 ... 30	✓	--	--	--
EN 50178 (VDE 0160)	Fitting of power installations with electronic equipment	General requirements for correct selection when using residual current protection	✓	✓	✓	--
EN 50293 (VDE 0832-100)	Traffic signal systems • Class T1 • Class U1	≤ 300	✓	--	--	✓
		≤ 30	✓	--	--	✓
		≤ 30 (recommended)	✓	--	--	✓

Note:

For reasons of basic fire protection, we recommend the use of residual current protective devices with maximum 300 mA rated residual current.

1. General standards

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to these conditions of sale and delivery (hereinafter: CSD). Please note: the scope, the quality and the conditions for supplies and services, including software products, by any Siemens group or Regional Company having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. These CSD apply exclusively for orders placed with Siemens AG, Germany.

1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following shall be subordinate to these CSD

- for installation, the "Standard Terms and Conditions for Installation –Germany" and
- for Plant Analytics Services the "Standard Terms and Conditions for Plant Analytics Services – for Customers in Germany"¹⁾ and
- for standalone software products and software products that are part of another product or project, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"¹⁾ and
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"¹⁾.
In the event that such other supplies and services include open-source software, the conditions of which override the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"¹⁾, the product will be supplied with a notice detailing the special conditions that apply for the relevant open-source software. This applies accordingly in the case of a reference to other third-party software components.

1.2 For customers with a seat or registered office outside of Germany

For customers with a seat or registered office outside of Germany, the following shall be subordinate to these CSD

- for Plant Analytics Services the "Standard Terms and Conditions for Plant Analytics Services"¹⁾ (only available in English) and
- for services, the "International Terms & Conditions for Services"¹⁾ supplemented by the "Software Licensing Conditions"¹⁾ and
- for the supply of other hardware and software the "International Terms & Conditions for Products"¹⁾ supplemented by the "Software Licensing Conditions"¹⁾.

1.3 For customers with framework agreements

To the extent that our products and services are covered by an existing framework agreement, the conditions there apply instead of this CSD.

2. Prices

The prices are in € (euros) ex works, excluding packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

To compensate fluctuating prices of raw materials (for example silver, copper, aluminum, lead, gold, dysprosium and neodymium), surcharges are calculated on a daily basis for products containing these raw materials using the metal factor. A surcharge for the particular raw material is added to the price of a product if the basic quotations for this raw material are exceeded.

Each product's metal factor dictates for which raw materials the metal surcharges are calculated, from which quotation and with which calculation method (weight or percentage method).

An exact explanation of the metal factor can be found at: www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

The surcharge will be calculated (except in the case of dysprosium and neodymium) on the basis of the official price on the day prior to receipt of the order or prior to the release order for calculation of the surcharge.

In the event of placement of an order, the relevant three-month average price from the quarter prior to order receipt or the release order shall be used with a one-month buffer to calculate the dysprosium and neodymium surcharge ("rare earths") (you will find details in the aforementioned explanation of the metal factor).

3. Additional terms and conditions

All dimensions are in mm. In Germany, according to the German law on units in metrology, data in inches only apply to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages of this catalog - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

¹⁾ You can download the text of the Siemens AG terms and conditions of trade at www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

Appendix

Conditions of sale and delivery

4. Export regulations

We shall not be obligated to fulfill this agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes or other sanctions.

Exporting may be subject to authorization. In delivery information, we label authorization obligations according to German, European and US export lists.

Our products are controlled by the U.S. authorities (goods labeled with "ECCN" not equal to "N") and may only be supplied to the stated country of the end user for sole use by the end user. Without U.S. government approval or other approval under U.S. law, the products may not be sold, transferred or otherwise forwarded to other countries or to other persons other than the specified end user, either in their original form or after further processing into other goods. Goods labeled with an "AL" not equal to "N" are subject European/national export authorization requirements.

Please note that you can also preview the export designations in the respective product description via our "Industry Mall" online catalog system. The deciding factors, however, are the AL or ECCN export designations indicated on order confirmations, delivery notes and invoices.

Unmarked items or items marked "AL:N" / "ECCN:N" or "AL:9X9999" / "ECCN: 9X9999" may require authorization based on their intended use or ultimate destination.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you shall comply with all applicable national and international (re-) export control regulations.

If required to conduct export control checks, you, at our request, shall promptly provide us with all information pertaining to particular end customers, destination and intended use of goods, works and services provided by us, as well as any relevant export control restrictions.

The products listed in this catalog may be subject to European/German and/or US export regulations. Therefore, any export requiring a license is subject to approval by the competent authorities.

Errors excepted and subject to change without prior notice.

Further information can be obtained from our branch offices listed at www.siemens.com/lowvoltage/contact

Interactive Catalog	<i>Catalog</i>	Process Instrumentation and Analytics	<i>Catalog</i>
Products for Automation and Drives	CA 01	<i>Digital: Field Instruments for Process Automation</i>	FI 01
Building Control		<i>Digital: Display Recorders SIREC D</i>	MP 20
GAMMA Building Control	ET G1	<i>Digital: SIPART Controllers and Software</i>	MP 31
Drive Systems		Products for Weighing Technology	WT 10
SINAMICS G130 Drive Converter Chassis Units	D 11	<i>Digital: Process Analytical Instruments</i>	AP 01
SINAMICS G150 Drive Converter Cabinet Units		<i>Digital: Process Analytics, Components for Continuous Emission Monitoring</i>	AP 11
<i>Digital: SINAMICS PERFECT HARMONY GH180 Medium-Voltage Air-Cooled Drives (Germany Edition)</i>	D 15.1	Low-Voltage Power Distribution and Electrical Installation Technology	
SINAMICS G180 Converters – Compact Units, Cabinet Systems, Cabinet Units Air-Cooled and Liquid-Cooled	D 18.1	SENTRON · SIVACON · ALPHA	LV 10
SINAMICS S120 Chassis Format Converter Units	D 21.3	Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems	
SINAMICS S120 Cabinet Modules		Electrical Components for the Railway Industry	LV 12
SINAMICS S150 Converter Cabinet Units		Power Monitoring Made Simple	LV 14
SINAMICS S120 and SIMOTICS	D 21.4	Components for Industrial Control Panels according to UL Standards	LV 16
SINAMICS DCM DC Converter, Control Module	D 23.1	<i>Digital: Air circuit breakers and molded case circuit breakers with UL certification</i>	LV 18
SINAMICS Inverters for Single-Axis Drives · Built-In Units	D 31.1	3WT Air Circuit Breakers up to 4000 A	LV 35
SINAMICS Inverters for Single-Axis Drives · Distributed Inverters	D 31.2	3VT Molded Case Circuit Breakers up to 1600 A	LV 36
<i>Digital: SINAMICS Converters for Single-Axis Drives · SINAMICS G120X</i>	D 31.5	<i>Digital: SIVACON System Cubicles, System Lighting and System Air-Conditioning</i>	LV 50
<i>Digital: SINAMICS S210 Servo Drive System</i>	D 32	<i>Digital: ALPHA Distribution Systems</i>	LV 51
<i>Digital: SINAMICS V90 Basic Servo Drive System</i>	D 33	ALPHA FIX Terminal Blocks	LV 52
<i>Digital: SINAMICS G120P and SINAMICS G120P Cabinet pump, fan, compressor converters</i>	D 35	SIVACON S4 Power Distribution Boards	LV 56
LOHER VARIO High Voltage Motors	D 83.2	SIVACON 8PS Busbar Trunking Systems	LV 70
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<i>Digital: Three-Phase Induction Motors SIMOTICS HV</i>	D 84.3	Power Supply	
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<i>Digital: Modular Industrial Generators SIGENTICS M</i>	D 85.1	Safety Technology for Factory Automation	SI 10
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PDF (Extract from E86060-K8280-A101-A9-7600)
KG 0619 1802 En
Produced in Germany

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