3 Miniature Circuit-Breakers

Product overview

Overview

Design	Tripping characteristic	Device mounting depth [mm]	Rated currents I_n	Standards	Rated short-circuit capacity Energy limitation class	Usage Non-res.	Res. bldgs.	Industry
Standard product range								
5SJ6	B	70	6 ... 32 A	EN 60898	6 000 3	•	•	•
5SY6	B		6 ... 63 A			•	•	•
	C		0.3 ... 63 A			•	•	•
	D		0.3 ... 63 A			•	•	•
High-capacity product range								
5SY4	A	70	1 ... 63 A	EN 60898	10 000 3	•		•
	B		6 ... 80 A			•		•
	C		0.3 ... 80 A			•		•
	D		0.3 ... 63 A			•		•
5SY7	B		6 ... 63 A		15 000 3	•		•
	C		0.3 ... 63 A			•		•
	D		0.3 ... 63 A			•		•
5SY8	C		0.3 ... 63 A	EN 60947-2	25 kA	•		•
	D		0.3 ... 63 A			•		•
UC product range								
5SY5	B	70	6 ... 63 A	EN 60898	10 000 3			•
	C		0.3 ... 63 A					•
High-current product range								
5SP4	B	70	80 ... 125 A	EN 60898	10 000	•		•
	C		80 ... 125 A			•		•
	D		80 ... 100 A			•		•
Power supply company product range								
5SP3	E	92	16 ... 100 A	DIN VDE 0645	25 000	•	•	

Approvals	VDE	IMQ		BV	DNV	GL	LRS	CCC
Standard product range								
5SJ6	•							
5SY6	•	•	•	•	•	•	•	•
High-capacity product range								
5SY4	•	•	•	•	•	•	•	•
5SY7	•	•	•	•	•	•	•	•
5SY8			•					
UC product range								
5SY5	•							
High-current product range								
5SP4	•		•			•		•
Power supply company product range								
5SP3	•							

Benefits

- High rated breaking capacity up to 15 000 A according to EN 60898/25 kA according to EN 60947-2
- Excellent current limiting and selectivity characteristics
- Tripping characteristic A, B, C and D
- Terminals offer protection against contact with fingers or the back of the hand acc. to the German accident prevention regulations VBG 4/BGV A2
- Combined terminals enable a simultaneous connection of busbars and feeder cables
- The handle locking device effectively prevents any unauthorized operation of the handle

Features of 5SJ

- Particularly suitable for installation in small distribution boards for building installations

Features of 5SY

- Safe and rapid connection of the feeder cables thanks to the possibility of relocating the busbars to the back
- Identical terminals at both sides for an optional infeed from the top or the bottom
- Reach-round protection exceeds requirements according to VBG 4/BGV A2
- No tool required for mounting or dismounting
- Supports a fast and comfortable removal from the assembly
- Variable designation system
- Separate switching position indicator
- Uniform additional components which can be mounted individually, fast and on-site thanks to their snap-on technique

Features of 5SP4

- Disconnection characteristics acc. to DIN VDE 0660 Part 107
- Main switch characteristics acc. to EN 60204
- Variable designation system
- Can also be screwed onto base
- Separate switching position indicator
- Uniform additional components which can be mounted individually, fast and on-site thanks to their snap-on technique

Application

Miniature circuit-breakers primarily serve to protect cables and lines against overload and short-circuit. Thus, they also serve to protect electrical equipment against excessive overheating according to DIN VDE 0100 Part 430.

Under certain conditions, miniature circuit-breakers also offer protection against dangerous leakage currents caused by excessive touch voltage due to insulation faults acc. to DIN VDE 0100 Part 410.

Thanks to their fixed rated current settings, the miniature circuit-breakers may also be used for limited motor protection applications.

Various tripping characteristics are available, depending on the respective application. These are explained in detail in the catalog ET B1 T ("Technical Information on the ET B1 Catalog"). The EN 60898, DIN VDE 0641 Part 11 and IEC 60898 standards form the basis for the miniature circuit-breakers' design and approval.

When used for industrial applications and for system and plant engineering applications, the miniature circuit-breakers can be supplemented by individually mountable add-on components such as auxiliary circuit switches, fault signal contacts, shunt trips, undervoltage releases, RCCB modules and individually mountable accessories, such as busbar systems and mounting parts.

Design

Miniature circuit-breakers 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.

Function

Thanks to the extremely fast contact separation in cases of failures and the rapid quenching of the arc consequently generated in the arcing chamber, the miniature circuit-breakers ensure safe and current-limiting disconnection.

The permissible limit-I^2t values of the energy limitation class 3 specified in DIN VDE 0641 Part 11 are generally undercut by 50 %. This guarantees an excellent selectivity towards upstream overcurrent protection devices.

Product overview

Technical specifications

			5SY4	5SY5	5SY6	5SY7	5SY8	5SP4
Tripping characteristic			A, B, C, D	B, C	B, C, D	B, C, D	C, D	B, C, D
Number of poles	1		•	•	•	•	•	•
	1 + N		•		•	•	•	
	2		•	•	•	•	•	•
	3		•		•	•	•	•
	3 + N		•		•	•	•	
	4		•		•	•	•	•
Rated voltage		V AC	230/400					
		V DC	–	220/440	–			
Operating voltage	min.	V AC/DC	24					
	max.	V DC/pole	60 [1]	220	60 [1]			
	max.	V AC	440					
Rated breaking capacity								
acc. to EN 60898		kA AC	10		6	15		10
		kA DC	–	10	–			
acc. to EN 60947-2		kA AC	–				25	–
Insulation coordination								
Rated insulation voltage		V AC	250/440					
Degree of pollution for overvoltage category III			2					3
Protection against contact acc. to EN 50274			•	•	•	•	•	•
Main switch characteristics acc. to EN 60204			•	•	•	•	•	•
Sealable in handle end position			•	•	•	•	•	•
Device depth acc. to DIN 43880		mm	70					
Degree of protection			IP00 acc. to DIN 40050, IP20 acc. to DIN 40050 for 5SY., IP40 when mounted in distribution boards					
CFC and silicone-free			yes					
Mounting technique			can be snapped onto 35 mm standard mounting rails (EN 60715); additionally with • 5SY: quick-assembly system (no tools required for assembly) • 5SP4: screw mounting also possible					
Terminals			5SY: combined terminals at both sides for a simultaneous connection of busbars (fork-type) and feeder cables 5SP4: tunnel terminals at both sides					
Terminal tightening torque								
recommended		Nm	2.5 ... 3					3 ... 3.5
Conductor cross-sections								
solid and stranded								
• upper terminal		mm^2	0.75 ... 35					0.75 ... 50
• lower terminal		mm^2	0.75 ... 35					0.75 ... 50
finely stranded with end sleeve								
• upper terminal		mm^2	0.75 ... 25					0.75 ... 35
• lower terminal		mm^2	0.75 ... 25					0.75 ... 35
differing conductor cross-sections may be clamped together simultaneously; details are available upon request.								
Supply connection			as required, the specified polarity must be observed for DC applications					
Mounting position			any					
Service life			averagely 20,000 operations at the rated load [2]					
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75					
Resistance to climate			6 cycles acc. to IEC 60068-2-30					
Resistance to vibrations		m/s^2	60 at 10 Hz ... 150 Hz acc. to IEC 60068-2-6					

1) ≙ Battery charging voltage of 72 V.

2) ≙ 10,000 operations for 5SY5, 40 A, 50 A and 63 A at the rated load.

Technical specifications

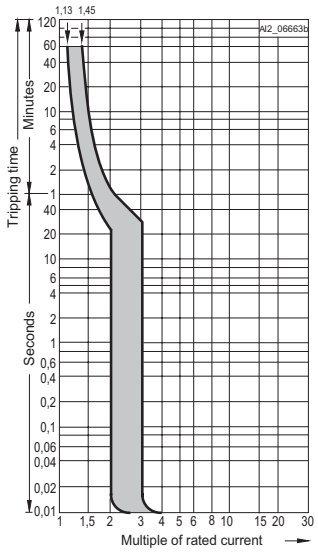
			5SJ6	5SY6 ...-.KV	5SP3
Tripping characteristic			B	B, C	E
Number of poles	1		•		•
	1 + N			•	
Rated voltage		V AC	230/400	230	230/400
Operational voltage	min.	V AC/DC	24		
	max.	V DC/pole	60		
	max.	V AC	250		440
Rated short-circuit capacity					
acc. to					
EN 60898		kA AC	6		
DIN VDE 0645		kA AC			25
Insulation coordination					
Rated insulation voltage		V AC	250		690
Degree of pollution overvoltage category			2/III		3/IV
Protection against contact			•	•	–
acc. to DIN VDE 106 Part 100					
Main switch characteristics			–	–	•
acc. to EN 60204					
Sealable in handle end position			•	•	•
Device depth		mm	70		92
acc. to DIN 43880					
Degree of protection			IP20 acc. to DIN 40050 for 5SP3, IP40 when mounted in distribution boards		
CFC and silicone-free			yes		
Mounting technique			can be snapped onto 35 mm standard mounting rails (EN 60715); additionally with 5SP3: screw mounting also possible		
Terminals			5SP3 saddle terminals at both ends, 5SJ6, 5SY6 ...-.KV tunnel terminals at both ends		
Conductor cross-sections					
solid and stranded					
• upper terminal		mm^2	0.75 ... 25	0.75 ... 16	max. 70
• lower terminal		mm^2	0.75 ... 25	0.75 ... 16	max. 70
finely stranded with end sleeve					
• upper terminal		mm^2	0.75 ... 25	0.75 ... 16	max. 50
• lower terminal		mm^2	0.75 ... 25	0.75 ... 16	max. 50
Supply connection			any		
Mounting position			any		
Service life			averagely 20,000 operations at the rated load.		
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75		
Resistance to climate			6 cycles acc. to IEC 60068-2-30		
Resistance to vibrations		m/s^2	60 at 10 Hz ... 150 Hz acc. to IEC 60068-2-6		

Product overview

Characteristic curves

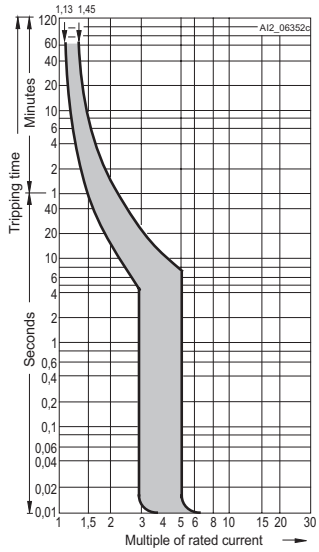
Tripping characteristic acc. to EN 60898, DIN VDE 0641 Part 11

Tripping characteristic A



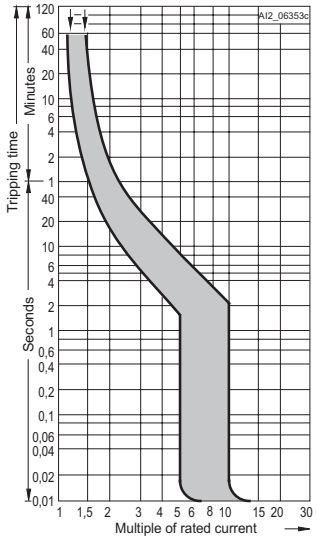
- For limited semiconductor protection
- Protection of measuring circuits with converters
- Protection of circuits with significant cable lengths and a requirement for tripping in 0.4 s acc. to DIN VDE 0100 Part 410.

Tripping characteristic B



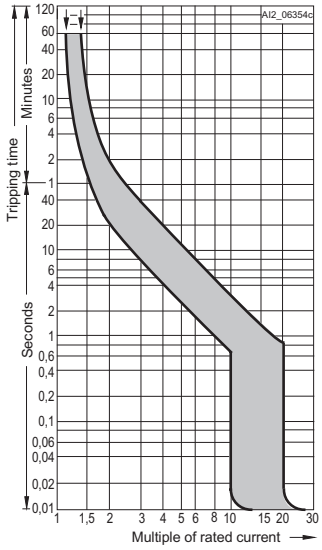
- Line protection mainly in outlet circuits; no proof required regarding personal safety

Tripping characteristic C



- General line protection, especially advantageous with higher starting currents (lamps, motors, etc.,).

Tripping characteristic D



- Tripping range adapted to operating equipment involving significant pulse generation (transformers, solenoid valves).

In the case of different ambient temperatures, the current values of the delayed tripping operation change by approx. 5 % per 10 K temperature difference -> for temperatures lower and < for temperatures higher than 30° C.
For direct voltages, the maximum current values of the instantaneous tripping operation increase by a factor of 1.2.

If more than one electrical circuit is loaded in a series of circuit-breakers the resulting increase in ambient temperature affects the characteristic curve.

In this case an additional correction factor, specific to the rated current of the circuit-breaker, must be taken into account.

Number	1	2 ... 3	4 ... 6	> 7
Correction factor K	1.00	0.90	0.88	0.85

Overview

Tripping characteristics

Tripping characteristics at an ambient temperature of 30 °C

Tripping characteristic	Standards	Thermal releases Test currents: limiting no-damage current I_1	minimum no-damage current I_2	tripping time $I_n \le 63$ A t	tripping time $I_n > 63$ A t	Electromagnetic releases Test currents: hold I_4	latest tripping instant I_5	tripping time t
A		1.13 x I_n		> 1 h	> 2 h	2 x I_n		≥ 0.1 s
			1.45 x I_n	< 1 h	< 2 h		3 x I_n	< 0.1 s
B	IEC 60898/EN 60898 DIN VDE 0641 Part 11	1.13 x I_n		> 1 h	> 2 h	3 x I_n		≥ 0.1 s
			1.45 x I_n	< 1 h	< 2 h		5 x I_n	< 0.1 s
C		1.13 x I_n		> 1 h	> 2 h	5 x I_n		≥ 0.1 s
			1.45 x I_n	< 1 h	< 2 h		10 x I_n	< 0.1 s
D		1.13 x I_n		> 1 h	> 2 h	10 x I_n		≥ 0.1 s
			1.45 x I_n	< 1 h	< 2 h		20 x I_n	< 0.1 s
							(IEC 60898: 50 x I_n)	

Breaking capacity

Particular demands are made on miniature circuit-breakers with regard to breaking capacity.

The values are standardized and are determined acc. to the test conditions of EN 60898 or DIN VDE 0641 Part 11.
The most common values are 6 000 and 10 000.

For other test conditions, different values can be specified that are higher those of EN 60898 or DIN VDE 0641 Part 11.

One such standard is EN 60947-2 or DIN VDE 0660 Part 101 for circuit-breakers.

Rated short-circuit capacity

Rated current	I_n [A]	EN 60898 (IEC 60898) 1-pole 230 V AC I_{cn} [kA]	2, 3 and 4-pole 400 V AC I_{cn} [kA]	EN 60947-2 (IEC 60947-2) 1-pole 230 V AC I_{cu} [kA]	2, 3 and 4-pole 400 V AC I_{cu} [kA]
5SY6	0.3 ... 6	6	6	30	30
	8 ... 32	6	6	15	15
	40 ... 63	6	6	10	10
5SY4	0.3 ... 6	10	10	35	35
	8 ... 32	10	10	20	20
	40 ... 63	10	10	15	15
5SY7	0.3 ... 2	15	15	50	50
	3 ... 6	15	15	40	40
	8 ... 10	15	15	30	30
	13 ... 32	15	15	25	25
	40 ... 63	15	15	20 [1]	20 [1]
5SY8	0.3 ... 2	–	–	70	70
	3 ... 6	–	–	50	50
	8 ... 10	–	–	40	40
	13 ... 32	–	–	30	30
	40 ... 63	–	–	25 [2]	25 [2]
5SP4	80 ... 125	10	10	20 [3]	20 [3]

Rated current	I_n [A]	EN 60898-2 1-pole 230 V AC I_{cn} [kA]	2-pole 400 V AC I_{cn} [kA]	EN 60898-2 1-pole 220 V DC I_{cn} [kA]	2-pole 440 V DC I_{cn} [kA]
5SY5	0.3 ... 63	10	10	15	15

1) D50 and D63: I_{cu} = 15 KA
2) D50 and D63: I_{cu} = 20 KA
3) D80 and D100: I_{cu} = 15 KA

Introduction

Overview

Selectivity miniature circuit-breakers/fuses

Distribution systems are usually set up as radial networks. An overcurrent protection device is required for each reduction of the conductor cross-section. This produces a series connection staggered according to rated currents, which should, if possible, be "selective".

Selectivity means that, in the event of a fault, only the protective device that is directly next to the fault in the current circuit is tripped. This means that current circuits in parallel can maintain a power flow.

In the case of miniature circuit-breakers with upstream fuses, the selectivity limit depends largely on the current limiting and tripping characteristics of the miniature circuit-breaker and the melting I^2t value of the fuse.

This produces different selectivity limits for miniature circuit-breakers with different characteristics and rated short-circuit capacity.

The following tables provide information on the short-circuit currents up to which selectivity exists between miniature circuit-breakers and upstream fuse acc. to DIN VDE 0636 Part 201. For the values that are specified in kA, these are limit values that were determined under unfavorable test conditions. Under normal practical conditions, you can often expect considerably better values, depending on the upstream fuses.

Limit values of selectivity miniature circuit-breakers/fuses in kA

Downstream miniature circuit-breakers		Upstream fuses							
	I_n [A]	16 A	20 A	25 A	35 A	50a	63 A	80a	100 A
5SY6									
Characteristic B	6	0.3	0.4	0.7	1.2	3.0	3.2	•	•
	10	–	0.4	0.6	1.0	2.2	3.0	5.0	•
	13	–	–	0.5	1.0	2.2	3.0	5.0	•
	16	–	–	–	1.0	2.0	2.4	4.0	•
	20	–	–	–	–	2.0	2.4	4.0	•
	25	–	–	–	–	–	2.0	3.5	•
	32	–	–	–	–	–	1.7	2.9	•
	40	–	–	–	–	–	–	2.0	4.0
	50	–	–	–	–	–	–	–	4.0
Characteristic C	≤ 2	0.3	0.5	1.2	1.7	•	•	•	•
	3	0.3	0.4	0.8	1.4	4.0	5.0	•	•
	4	0.3	0.4	0.6	1.1	3.0	4.0	•	•
	6	–	0.4	0.6	1.0	2.4	3.2	•	•
	8	–	–	0.5	0.9	1.4	2.6	3.1	•
	10	–	–	0.5	0.9	1.4	2.1	3.1	•
	13	–	–	–	0.8	1.3	2.0	3.0	•
	16	–	–	–	0.8	1.3	2.0	3.0	•
	20	–	–	–	–	1.3	2.0	2.7	•
	25	–	–	–	–	–	2.0	2.4	5.0
	32	–	–	–	–	–	–	2.2	4.0
	40	–	–	–	–	–	–	–	3.5
	50	–	–	–	–	–	–	–	3.0
	63	–	–	–	–	–	–	–	3.0

• ≙ ≥ rated short-circuit capacity 5SY6 acc. to EN 60898 6 000.

Overview

Selectivity miniature circuit-breakers/fuses

In the event of a short-circuit, there is selectivity between the 5SY4, 5SY7, 5SP4 miniature circuit-breakers and fuses acc. to DIN VDE 0636 Part 201 up to the specified values in kA.

Limit values of selectivity miniature circuit-breakers/fuses in kA

Downstream miniature circuit-breakers	I_n [A]	Upstream fuses 16 A	20 A	25 A	35 A	50a	63 A	80a	100 A	125 A
5SY4, 5SY7										
Characteristic A, B	6	0.3	0.4	0.8	1.4	3.2	4.5	9.0	•	•
	10	–	0.4	0.7	1.2	2.5	3.5	5.0	•	•
	13	–	–	0.7	1.2	2.5	3.5	5.0	•	•
	16	–	–	–	1.0	2.0	2.8	4.2	9.0	•
	20	–	–	–	1.0	2.0	2.6	4.2	9.0	•
	25	–	–	–	–	1.7	2.2	3.7	7.0	•
	32	–	–	–	–	1.7	2.2	3.7	7.0	•
	40	–	–	–	–	–	1.6	2.2	4.0	6.0
	50	–	–	–	–	–	–	2.2	4.0	6.0
	63	–	–	–	–	–	–	–	3.0	5.0
Characteristic C	≤ 2	0.3	0.5	1.5	2.0	9.0	•	•	•	•
	3	0.3	0.4	1.1	1.6	5.0	6.0	•	•	•
	4	0.3	0.4	0.9	1.4	3.5	5.0	9.0	•	•
	6	–	0.4	0.8	1.4	2.7	4.5	6.0	•	•
	8	–	–	0.6	1.2	2.2	3.5	5.0	7.0	•
	10	–	–	0.5	1.2	2.0	3.0	4.2	7.0	•
	13	–	–	–	1.0	1.6	2.4	3.4	6.0	•
	16	–	–	–	1.0	1.5	2.2	3.0	6.0	•
	20	–	–	–	–	1.3	2.2	3.0	6.0	•
	25	–	–	–	–	–	2.2	2.9	5.0	9.0
	32	–	–	–	–	–	–	2.4	4.0	7.0
	40	–	–	–	–	–	–	2.0	3.5	4.0
	50	–	–	–	–	–	–	–	3.0	4.0
	63	–	–	–	–	–	–	–	3.0	3.5
Characteristic D	≤ 2	0.3	0.4	1.0	1.8	5.0	7.0	•	•	•
	3	0.3	0.4	0.9	1.5	4.0	5.0	8.0	•	•
	4	–	0.4	0.8	1.2	3.0	3.8	5.5	•	•
	6	–	–	0.7	1.1	2.5	3.1	4.4	8.1	•
	8	–	–	–	0.9	2.1	2.5	3.5	6.2	9.3
	10	–	–	–	–	2.1	2.5	3.5	6.2	9.3
	13	–	–	–	–	–	2.5	3.5	6.2	9.3
	16	–	–	–	–	–	2.2	3.1	5.1	7.5
	20	–	–	–	–	–	–	2.7	4.3	6.3
	32	–	–	–	–	–	–	–	4.0	5.5
	40	–	–	–	–	–	–	–	3.5	4.8
	50	–	–	–	–	–	–	–	–	4.0
	63	–	–	–	–	–	–	–	–	–

• ≙ ≥ rated short-circuit capacity 5SY4 acc. to EN 60898 10 000.

Limit values of selectivity miniature circuit-breakers/fuses in kA

Downstream miniature circuit-breakers	I_n [A]	Upstream fuses 100 A	125 A	160 A	200 A	224a	250 A
5SP4							
Characteristic B	80	2.8	3.8	5.7	8.1	•	•
	100	–	3.5	5.2	7.0	•	•
	125	–	–	5.2	7.0	•	•
Characteristic C	80	2.5	3.5	5.1	7.5	9.2	•
	100	–	3.3	4.5	6.5	8.0	•
	125	–	–	4.5	6.5	8.0	•
Characteristic D	80	2.3	3.3	4.6	6.9	8.1	•
	100	–	2.8	4.3	6.2	7.5	9.2

• ≙ ≥ rated short-circuit capacity 5SP4 acc. to EN 60898 10 000.

Values for 5SY8 on request.

Introduction

Overview

Selectivity miniature circuit-breakers/circuit-breakers

Distribution systems can also be set up without fuses. In such cases, a circuit-breaker acts as an upstream protective device.

In this case, the selectivity limit depends on the level of peak current $\hat{I}$ let through by the miniature circuit-breaker and the tripping current of the circuit-breaker.

The following tables show the short-circuit current in kA up to which selectivity is guaranteed between miniature circuit-breakers and upstream circuit-breaker acc. to IEC 60947-2 or DIN VDE 0660, Part 101 at 230/400 V AC, 50 Hz.

Limit values of selectivity miniature circuit-breakers/ circuit-breakers in kA

Downstream miniature circuit-breakers				Upstream circuit-breakers								
				3RV1.1		3RV1.2						
	I_n [A]	$I >$[A]	I_{cn} [kA]	10 120 50	12 144 50	8 96 100	10 120 100	12.5 150 100	16 192 50	20 240 50	22 264 50	25 300 50
				Selectivity limits [kA] 1)								
5SY4 ...-5												
Characteristic A	2	6	10	0.2	0.2	–	–	0.2	0.2	0.6	1.2	1.5
	10	30	10	–	–	–	–	–	–	0.3	0.5	0.5
	16	48	10	–	–	–	–	–	–	0.3	0.4	0.5
	32	96	10	–	–	–	–	–	–	–	–	–
	40	120	10	–	–	–	–	–	–	–	–	–
5SY6, 5SY4, 5SY7 ...-6												
Characteristic B	6	30	6/10/15	0.2	0.2	–	–	0.2	0.2	0.3	0.5	0.5
	10	50	6/10/15	–	0.2	–	–	0.2	0.2	0.3	0.4	0.5
	13	65	6/10/15	–	–	–	–	–	0.2	0.2	0.4	0.4
	16	80	6/10/15	–	–	–	–	–	–	0.2	0.4	0.4
	20	100	6/10/15	–	–	–	–	–	–	–	–	0.4
	25	125	6/10/15	–	–	–	–	–	–	–	–	–
	32	160	6/10/15	–	–	–	–	–	–	–	–	–
	40	200	6/10/15	–	–	–	–	–	–	–	–	–
	50	250	6/10/15	–	–	–	–	–	–	–	–	–
5SY6, 5SY4, 5SY7 ...-7												
Characteristic C	0.5	5	6/10/15	0.2	0.2	0.1	0.1	0.2	0.2	0.5	0.6	0.6
	1	10	6/10/15	0.2	0.2	0.1	0.1	0.2	0.2	0.5	0.6	0.6
	1.6	16	6/10/15	0.2	0.2	0.1	0.1	0.2	0.2	0.5	0.6	0.6
	2	20	6/10/15	0.2	0.2	0.1	0.1	0.2	0.2	0.5	0.6	0.6
	3	30	6/10/15	–	0.2	–	–	0.2	0.2	0.3	0.4	0.5
	4	40	6/10/15	–	0.2	–	–	0.2	0.2	0.3	0.4	0.5
	6	60	6/10/15	–	0.2	–	–	0.2	0.2	0.3	0.4	0.5
	8	80	6/10/15	–	0.2	–	–	0.2	0.2	0.2	0.4	0.4
	10	100	6/10/15	–	0.2	–	–	0.2	0.2	0.2	0.4	0.4
	13	130	6/10/15	–	–	–	–	–	0.2	0.2	0.4	0.4
	16	160	6/10/15	–	–	–	–	–	–	0.2	0.4	0.4
	20	200	6/10/15	–	–	–	–	–	–	–	–	0.4
	25	250	6/10/15	–	–	–	–	–	–	–	–	–
	32	320	6/10/15	–	–	–	–	–	–	–	–	–
	40	400	6/10/15	–	–	–	–	–	–	–	–	–
	50	500	6/10/15	–	–	–	–	–	–	–	–	–
	63	630	6/10/15	–	–	–	–	–	–	–	–	–
5SY6, 5SY4, 5SY7 ...-8												
Characteristic D	2	40	6/10/15	–	–	–	–	0.2	0.2	0.4	0.6	0.6
	6	120	6/10/15	–	–	–	–	–	–	0.3	0.4	0.4
	10	200	6/10/15	–	–	–	–	–	–	0.2	0.4	0.4
	16	320	6/10/15	–	–	–	–	–	–	–	–	–
	32	640	6/10/15	–	–	–	–	–	–	–	–	–
	40	800	6/10/15	–	–	–	–	–	–	–	–	–
	50	1 000	6/10/15	–	–	–	–	–	–	–	–	–

Values for 5SY8 on request.

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %.
$I >$ ≙ tripping current.

Overview

Selectivity miniature circuit-breakers/circuit-breakers

In the event of a short-circuit, there is selectivity between miniature circuit-breakers and circuit-breakers acc. to IEC 60947-2 or DIN VDE 0660 Part 101 up to the specified in kA.

Limit values of selectivity miniature circuit-breakers/fuses in kA

Downstream miniature circuit-breakers	I_n [A]	$I >$[A]	I_{cn} [kA]	Upstream circuit-breakers 3RV1.3						
				16	20	25	32	40	45	50
				192	240	300	384	480	540	600
				50	50	50	50	50	50	50
				Selectivity limits [kA] 1)						
5SY4 ...-5										
Characteristic A	2	6	10	0.2	0.8	1.2	2.5	3	6	6
	10	30	10	0.2	0.4	0.5	0.6	0.8	1	1.2
	16	48	10	–	0.3	0.4	0.6	0.8	0.8	1
	32	96	10	–	–	–	–	0.6	0.8	0.8
	40	120	10	–	–	–	–	–	–	0.8
5SY4, 5SY7...-6										
Characteristic B	6	30	6/10/15	0.2	0.3	0.5	0.6	0.8	1	1.2
	10	50	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1.2
	13	65	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1
	16	80	6/10/15	–	0.3	0.4	0.6	0.8	1	1
	20	100	6/10/15	–	–	0.4	0.6	0.8	1	1
	25	125	6/10/15	–	–	–	0.5	0.6	0.8	0.8
	32	160	6/10/15	–	–	–	–	0.6	0.8	0.8
	40	200	6/10/15	–	–	–	–	–	–	0.8
	50	250	6/10/15	–	–	–	–	–	–	–
5SY6, 5SY4, 5SY7 ...-7										
Characteristic C	0.5	5	6/10/15	0.3	0.5	0.6	1	1	1.5	3
	1	10	6/10/15	0.3	0.5	0.6	1	1	1.5	3
	1.6	16	6/10/15	0.3	0.5	0.6	1	1	1.5	3
	2	20	6/10/15	0.3	0.5	0.6	1	1	1.5	3
	3	30	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1
	4	40	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1
	6	60	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1
	8	80	6/10/15	0.2	0.2	0.4	0.6	0.6	0.8	1
	10	100	6/10/15	0.2	0.2	0.4	0.6	0.6	0.8	1
	13	130	6/10/15	0.2	0.2	0.4	0.6	0.6	0.8	1
	16	160	6/10/15	–	0.2	0.4	0.6	0.6	0.8	1
	20	200	6/10/15	–	–	0.4	0.6	0.6	0.8	1
	25	250	6/10/15	–	–	–	0.5	0.6	0.8	0.8
	32	320	6/10/15	–	–	–	–	0.6	0.8	0.8
	40	400	6/10/15	–	–	–	–	–	–	0.8
	50	500	6/10/15	–	–	–	–	–	–	–
	63	630	6/10/15	–	–	–	–	–	–	–
5SY6, 5SY4, 5SY7 ...-8										
Characteristic D	2	40	6/10/15	0.3	0.5	0.6	0.8	1.2	1.5	1.5
	6	120	6/10/15	0.2	0.3	0.4	0.6	0.8	1	1
	10	200	6/10/15	–	0.3	0.4	0.5	0.6	0.8	0.8
	16	320	6/10/15	–	–	–	0.5	0.6	0.6	0.8
	32	640	6/10/15	–	–	–	–	–	0.6	0.6
	40	800	6/10/15	–	–	–	–	–	–	–
	50	1 000	6/10/15	–	–	–	–	–	–	–

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %.
$I >$ ≙ tripping current.

Introduction

Overview

Selectivity miniature circuit-breakers/circuit-breakers

In the event of a short-circuit, there is selectivity between miniature circuit-breakers and circuit-breakers acc. to IEC 60947-2 or DIN VDE 0660 Part 101 up to the specified in kA.

Limit values of selectivity miniature circuit-breakers/ circuit-breakers in kA

Downstream miniature circuit-breakers				Upstream circuit-breakers 3RV1.4									
	I_n [A]			16	20	25	32	40	50	63	75	90	100
		$I >$[A]		192	240	300	384	480	600	756	900	1 080	1 140
			I_{cn} [kA]	100	100	100	100	100	100	100	100	100	100
				Selectivity limits [kA] 1)									
5SY4 ...-5													
Characteristic A	2	6	10	0.5	0.8	1.5	2.5	3	6/7.5	6/10	6/10	6/10	6/10
	10	30	10	0.3	0.4	0.5	0.6	0.8	1.2	1.5	2.5	3	4
	16	48	10	–	0.3	0.5	0.6	0.6	1	1.5	2	3	3
	32	96	10	–	–	–	–	0.6	0.8	1.5	2	2.5	3
	40	120	10	–	–	–	–	–	0.8	1.2	1.5	2	2
5SY6, 5SY4, 5SY7 ...-6													
Characteristic B	6	30	6/10/15	0.2	0.4	0.5	0.6	0.8	1.2	2	3	6/10/15	6/10/15
	10	50	6/10/15	0.2	0.3	0.5	0.6	0.8	1	1.5	2.5	4	4
	13	65	6/10/15	0.2	0.3	0.5	0.6	0.8	1	1.5	2	3	3
	16	80	6/10/15	–	0.3	0.5	0.6	0.8	1	1.5	2	3	3
	20	100	6/10/15	–	–	0.5	0.6	0.8	1	1.5	2	3	3
	25	125	6/10/15	–	–	–	0.5	0.8	0.8	1.5	2	3	3
	32	160	6/10/15	–	–	–	–	0.6	0.8	1.5	2	3	3
	40	200	6/10/15	–	–	–	–	0.6	0.8	1.2	1.5	2.5	2.5
	50	250	6/10/15	–	–	–	–	–	–	1.2	1.5	2.5	2.5
5SY6, 5SY4, 5SY7 ...-7													
Characteristic C	0.5	5	6/10/15	0.4	0.6	0.8	0.8	1	3	6/10/15	6/10/15	6/10/15	6/10/15
	1	10	6/10/15	0.4	0.6	0.8	0.8	1	3	6/10/15	6/10/15	6/10/15	6/10/15
	1.6	16	6/10/15	0.4	0.6	0.8	0.8	1	3	6/10/15	6/10/15	6/10/15	6/10/15
	2	20	6/10/15	0.4	0.6	0.8	0.8	1	3	6/10/15	6/10/15	6/10/15	6/10/15
	3	30	6/10/15	0.2	0.3	0.5	0.6	0.8	1	2	2.5	5	5
	4	40	6/10/15	0.2	0.3	0.5	0.6	0.8	1	2	2.5	5	5
	6	60	6/10/15	0.2	0.3	0.5	0.6	0.8	1	2	2.5	5	5
	8	80	6/10/15	0.2	0.3	0.4	0.6	0.6	1	1.5	2	3	3
	10	100	6/10/15	0.2	0.3	0.4	0.6	0.6	1	1.5	2	3	3
	13	130	6/10/15	0.2	0.3	0.4	0.6	0.6	1	1.5	2	3	3
	16	160	6/10/15	–	0.3	0.4	0.6	0.6	1	1.5	2	3	3
	20	200	6/10/15	–	–	0.4	0.6	0.6	1	1.5	2	3	3
	25	250	6/10/15	–	–	–	0.5	0.6	0.8	1.2	1.5	2.5	2.5
	32	320	6/10/15	–	–	–	–	0.6	0.8	1.2	1.5	2.5	2.5
	40	400	6/10/15	–	–	–	–	–	0.6	1	1.5	2	2
	50	500	6/10/15	–	–	–	–	–	–	1	1.2	1.5	2
	63	630	6/10/15	–	–	–	–	–	–	–	–	1.5	1.5
5SY6, 5SY4, 5SY7 ...-8													
Characteristic D	2	40	6/10/15	0.4	0.5	0.6	0.8	1	1.5	3	4	6/10/15	6/10/15
	6	120	6/10/15	0.2	0.3	0.4	0.6	0.6	1	1.5	2.5	3	3
	10	200	6/10/15	–	0.3	0.4	0.5	0.6	0.8	1.5	2	3	3
	16	320	6/10/15	–	–	–	0.5	0.6	0.8	1.2	1.5	2.5	2.5
	32	640	6/10/15	–	–	–	–	–	0.6	1	1.5	2	2
	40	800	6/10/15	–	–	–	–	–	–	1	1.2	1.5	1.5
	50	1 000	6/10/15	–	–	–	–	–	–	1	1.2	1.5	1.5
5SP4...-7													
Characteristic C	80	1600	10	–	–	–	–	–	–	–	–	–	1.2
	100	2000	10	–	–	–	–	–	–	–	–	–	–
5SP4...-8													
Characteristic D	80	1600	10	–	–	–	–	–	–	–	–	–	–
	100	2000	10	–	–	–	–	–	–	–	–	–	–

Values for 5SY8 on request.

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %.
$I >$ ≙ tripping current.

Overview

Selectivity miniature circuit-breakers/circuit-breakers

In the event of a short-circuit, there is selectivity between miniature circuit-breakers and circuit-breakers acc. to IEC 60947-2 or DIN VDE 0660 Part 101 up to the specified in kA.

Limit values of selectivity miniature circuit-breakers/ circuit-breakers in kA

Downstream miniature circuit-breakers				Upstream circuit-breakers											
				3VF3 adjustable						3VF3 non-adjustable					
I_n [A]	I >[A]	I_{cn} [kA]		50	63	80	100	125	160	50	63	80	100	125	160
				500	630	800	1 000	1 250	1600	400	500	630	800	1 000	1 280
				40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100
				Selectivity limits [kA] 1)											
5SY6, 5SY4, 5SY7															
Characteristic A	2	6	10	10	10	10	10	10	10	10	10	10	10	10	10
	10	30	10	1.6	4.7	6	10	10	10	2.5	4	4	4.5	4.9	10
	16	48	10	1.4	4.7	6	10	10	10	2.3	3.7	3.7	4.4	5	10
	32	96	10	1.2	3.6	4.6	10	10	10	1.8	3	3	3.5	3.7	6
	40	120	10	1	2.5	3.1	6	10	10	1.5	2	2	2.4	2.7	3.2
Characteristic B	6	30	6/10/15	2.1	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	3.2	6/10/15	6/9.7	6/10/15	6/10/15	6/10/15
	10	50	6/10/15	1.8	6/6.6	6/10/15	6/10/15	6/10/15	6/10/15	2.5	6/6.2	4.8	6/6.2	6/6.5	6/10/15
	13	65	6/10/15	1.6	5.1	6/8.2	6/10/15	6/10/15	6/10/15	2.3	4.6	3.8	4.6	5.1	6/8.9
	16	80	6/10/15	1.6	5.1	6/8.2	6/10/15	6/10/15	6/10/15	2.3	4.6	3.8	4.6	5.1	6/8.9
	20	100	6/10/15	1.6	5.1	6/8.2	6/10/15	6/10/15	6/10/15	2.3	4.6	3.8	4.6	5.1	6/8.9
	25	125	6/10/15	1.4	3.5	4.6	5.5	6	6/10/15	2.1	3.4	3	3.4	3.7	5.2
	32	160	6/10/15	1.4	3.5	4.6	5.5	6	6/10/15	2.1	3.4	3	3.4	3.7	5.2
	40	200	6/10/15	1.3	2.4	2.8	3.3	4.5	6.7	1.8	2.3	2.2	2.4	2.7	3.6
	50	250	6/10/15	–	2.4	2.8	3.3	4.3	5.8	–	2.3	2.2	2.4	2.7	3.6
Characteristic C	0.5	5	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
	1	10	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
	1.5	15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
	2	20	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
	3	30	6/10/15	1.9	6/9.5	6/10/15	6/10/15	6/10/15	6/10/15	2.5	6/8.2	6/6.3	6/8.2	6/8.6	6/10/15
	4	40	6/10/15	1.9	6/9.5	6/10/15	6/10/15	6/10/15	6/10/15	2.5	6/8.2	6/6.3	6/8.2	6/8.6	6/10/15
	6	60	6/10/15	1.9	6/9.5	6/10/15	6/10/15	6/10/15	6/10/15	2.5	6/8.2	6/6.3	6/8.2	6/8.6	6/10/15
	8	80	6/10/15	1.7	4.2	6/7.9	6/10/15	6/10/15	6/10/15	2.3	3.7	3.8	3.8	4.6	6/9.4
	10	100	6/10/15	1.7	4.2	6/7.9	6/10/15	6/10/15	6/10/15	2.3	3.7	3.8	3.8	4.6	6/9.4
	13	130	6/10/15	1.5	4.2	5.5	6/10/15	6/10/15	6/10/15	2.1	3.7	3.8	3.8	4.4	6/7.5
	16	160	6/10/15	1.5	4.2	5.5	6/10/15	6/10/15	6/10/15	2.1	3.7	3.8	3.8	4.4	6/7.5
	20	200	6/10/15	1.5	4.2	5.5	6/10/15	6/10/15	6/10/15	2.1	3.7	3.8	3.8	4.4	6/7.5
	25	250	6/10/15	1.1	3.4	4.5	5.4	5.7	6/8.8	1.9	3	3	3	3.6	4.9
	32	320	6/10/15	1.1	3.4	4.5	5.4	5.7	6/8.8	1.9	3	3	3	3.6	4.9
	40	400	6/10/15	0.9	2.2	2.6	2.8	3.1	4.8	1.4	2.1	2.2	2.2	2.3	2.9
	50	500	6/10/15	–	2.1	2.5	2.8	3.1	4.8	–	–	2.1	2.1	2.2	2.9
Characteristic D	2	40	6/10/15	2.4	6	6	6	6	6	4.2	6	6	6	6	6
	6	120	6/10/15	1.4	4.2	4.8	6	6	6	2.3	4.1	4.2	4.2	4.3	6
	10	200	6/10/15	1.3	3.9	5.5	6	6	6	1.9	3.7	3.7	3.7	4	6
	16	320	6/10/15	1.1	3.5	4.2	4.9	6	6	1.7	3.3	3.7	3.3	3.5	4.7
	32	640	6/10/15	–	–	3.3	3.9	4.2	6	–	–	–	2.4	2.7	3.7
	40	800	6/10/15	–	–	–	3.1	3.3	4.9	–	–	–	–	1.5	3
	50	1 000	6/10/15	–	–	–	–	2.9	4.8	–	–	–	–	–	2.6
5SP4															
Characteristic C	80	800	10	–	–	–	1.5	1.5	2.5	–	–	–	–	1.2	1.5
	100	1 000	10	–	–	–	–	1.5	2	–	–	–	–	–	1.5
Characteristic D	80	1600	10	–	–	–	–	–	–	–	–	–	–	–	–
	100	1200	10	–	–	–	–	–	–	–	–	–	–	–	–

Values for 5SY8 on request.

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %.
The selectivity limits for adjustable releases apply to the maximum value,
I_n = rated current.
I > ≙ tripping current.

Introduction

Overview

Selectivity miniature circuit-breakers/circuit-breakers

In the event of a short-circuit, there is selectivity between miniature circuit-breakers and circuit-breakers acc. to IEC 60947-2 or DIN VDE 0660 Part 101 up to the specified in kA.

Limit values of selectivity miniature circuit-breakers/ circuit-breakers in kA

Downstream miniature circuit-breakers			Upstream circuit-breakers													
			3VF4				3VF5				3VF6		3VF7	3VF8	3WN1	3WN6
I_n [A]			125	160	200	250	200	250	315	400	315	400-800	400-1250	800-2500	315-6300	315-3200
$I >$[A]			1250	1600	2000	2500	2000	2500	3150	4000	3200	1575-6400	15000	20000	3780-75600	3780-48000
I_{cn} [kA]			40/70/100	40/70/100	40/70/100	40/70/100	45/70/100	45/70/100	45/70/100	45/70/100	45/70/100	45/70/100	50/70/100	70/100	65/80/100	65/75
			Selectivity limits [kA] [1]													
5SY6, 5SY4																
Characteristic A																
2	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
10	30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
16	48	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
32	96	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
40	120	10	3.9	4.6	6	6	10	10	10	10	10	10	10	10	10	10
Characteristic B																
6	30	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
10	50	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
13	65	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
16	80	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
20	100	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
25	125	6/10/15	6/9.6	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
32	160	6/10/15	6/9.6	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
40	200	6/10/15	6	6	6	6	6	6	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
50	250	6/10/15	5.1	5.9	6	6	6	6	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
Characteristic C																
0.5	5	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
1	10	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
1.5	15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
2	20	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
3	30	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
4	40	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
6	60	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
8	80	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
10	100	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
13	130	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
16	160	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
20	200	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
25	250	6/10/15	6/8	6/9.1	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
32	320	6/10/15	6/8	6/9.1	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
40	400	6/10/15	3.6	4.8	6/6.5	6/6.5	6/6.5	6/6.5	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
50	500	6/10/15	3.6	4.8	6/6.2	6/6.2	6/6.2	6/6.3	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15	6/10/15
Characteristic D																
2	40	6/10/15	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
6	120	6/10/15	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
10	200	6/10/15	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
16	320	6/10/15	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
32	640	6/10/15	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
40	800	6/10/15	4	4.9	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
50	1 000	6/10/15	4	4.8	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10	6/10
5SP4																
Characteristic C																
80	800	10	1.5	2	3	3	3	3	3	6	8	10	10	10	10	10
100	1 000	10	1.5	2	3	3	3	3	3	5	6	10	10	10	10	10
Characteristic D																
80	1 600	10	–	–	3	3	2.5	3	3	5	6	10	10	10	10	10
100	2 000	10	–	–	–	2.5	–	3	3	5	6	10	10	10	10	10

Values for 5SY8 on request.

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %. The selectivity limits for adjustable releases apply to the maximum value,
I_n = rated current.
$I >$ ≙ tripping current.

Overview

Selectivity miniature circuit-breakers/miniature circuit-breakers

Within narrow limits, miniature circuit-breakers also offer selectivity between circuit-breakers in a fuseless distribution board.
This depends on the let-through peak current $\hat{I}$ of the downstream miniature circuit-breaker and on the tripping current of the upstream miniature circuit-breaker.

The following table shows the short-circuit current in kA up to which there is selectivity between series-connected circuit-breakers at 230/400 V AC.

Limit values of selectivity miniature circuit-breakers/ miniature circuit-breakers in kA

Downstream miniature circuit-breakers				Upstream miniature circuit-breakers								
				5SY4 ...-7 Characteristic C					5SP4 ...-7 Characteristic C		5SP4 ...-8 Characteristic D	
	I_n [A]	$I >$[A]	I_{cn} [kA]	20	25	32	40	50	80	100	80	100
				200	250	320	400	500	800	1 000	1 200	1 500
				10	10	10	10	10	10	10	10	10
				Selectivity limits [kA] 1)								
5SY												
Characteristic B	6	30	6/10/15	0.2	0.2	0.3	0.5	0.5	0.8	1.5	3	5
	10	50	6/10/15	0.2	0.2	0.3	0.5	0.5	0.8	1.2	3	4
	13	65	6/10/15	0.2	0.2	0.3	0.4	0.5	0.8	1.2	2	3
	16	80	6/10/15	0.2	0.2	0.3	0.4	0.5	0.8	1.2	2	3
	20	100	6/10/15	–	0.2	0.3	0.4	0.5	0.8	1.2	2	3
	25	125	6/10/15	–	–	–	0.4	0.4	0.6	1.2	1.5	3
	32	160	6/10/15	–	–	–	0.4	0.4	0.6	1.2	1.5	3
	40	200	6/10/15	–	–	–	–	0.4	0.6	1.2	1.5	2.5
	50	250	6/10/15	–	–	–	–	–	0.6	1	1.5	2.5
Characteristic C	0.5	5	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	6/10/15	6/10/15
	1	10	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	6/10/15	6/10/15
	1.5	15	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	6/10/15	6/10/15
	2	20	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	6/10/15	6/10/15
	3	30	6/10/15	0.2	0.2	0.3	0.5	0.5	0.8	1.5	3	4
	4	40	6/10/15	0.2	0.2	0.3	0.5	0.5	0.8	1.5	3	4
	6	60	6/10/15	0.2	0.2	0.3	0.5	0.5	0.8	1.5	3	4
	8	80	6/10/15	0.2	0.2	0.3	0.4	0.4	0.6	1.2	2.5	3
	10	100	6/10/15	0.2	0.2	0.3	0.4	0.4	0.6	1.2	2.5	3
	13	130	6/10/15	0.2	0.2	0.3	0.4	0.4	0.6	1.2	2	3
	16	160	6/10/15	0.2	0.2	0.3	0.4	0.4	0.6	1.2	2	3
	20	200	6/10/15	–	0.2	0.3	0.4	0.4	0.6	1.2	2	3
	25	250	6/10/15	–	–	–	0.3	0.4	0.6	1	1.5	2.5
	32	320	6/10/15	–	–	–	0.3	0.4	0.6	1	1.5	2.5
	40	400	6/10/15	–	–	–	–	–	–	0.8	1.5	2
	50	500	6/10/15	–	–	–	–	–	–	0.8	1.5	2
	63	630	6/10/15	–	–	–	–	–	–	0.8	1.2	1.5

1) In 240/415 V, 50 Hz systems, the selectivity limits are reduced by 10 %.
The selectivity limits for adjustable releases apply to the maximum value,
I_n = rated current.
$I >$ ≙ tripping current.

Introduction

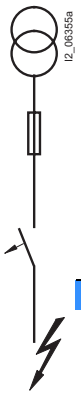
Overview

Back-up protection miniature circuit-breakers / fuses

If the maximum short-circuit current of the miniature circuit-breaker at the installation site is unknown, or if the specified rated short-circuit capacity is exceeded, an additional protective device must be connected upstream as back-up protection to prevent overloading of the miniature circuit-breaker. This is usually a fuse.

The following table shows the short-circuit currents - in kA - up to which back-up protection is guaranteed when using fuses acc. to DIN VDE 0636 Part 201.

Limit values of back-up protection miniature circuit-breakers/fuses in kA



Downstream miniature circuit-breakers	I_n [A]	Upstream fuses 50 A	63 A	80 A	100 A	125 A	160 A
5SY6							
	0.3 ... 4	no back-up protection required up to 50 kA					
	6	50	50	50	50	50	35
	8	50	50	50	50	50	35
	10	50	50	50	50	50	35
	13	50	50	50	35	35	30
	16	50	50	50	35	30	30
	20	50	50	50	35	25	25
	25	50	50	50	35	30	25
	32	50	50	50	35	30	25
	40	50	50	50	50	25	15
	50	50	50	50	50	25	15
	63	50	50	35	25	25	15
5SY4, 5SY7							
	0.3 ... 6	no back-up protection required up to 50 kA					
	8	50	50	50	50	45	45
	10	50	50	50	50	45	45
	13	50	50	50	45	40	35
	16	50	50	50	45	40	35
	20	50	50	50	40	35	30
	25	50	50	50	40	35	30
	32	50	50	50	45	40	30
	40	50	50	50	45	40	30
	50	50	50	50	40	35	25
	63	50	50	45	40	35	25

Test circuit data:

U_p = 250 V
power factor = 0.3 ... 0.5

Test cycle:

Acc. to EN 60947 - 2 (0 - C0)

Overview

Back-up protection miniature circuit-breakers / circuit-breakers

If miniature circuit-breakers are installed in fuseless distribution boards, circuit-breakers acc. to EN 60947-2 or DIN VDE 0660 Part 101 must be used as back-up protection.

The following tables show the short-circuit currents - in kA - up to which back-up protection is guaranteed when using circuit-breakers.

Limit values of back-up protection miniature circuit-breakers/circuit-breakers in kA

Downstream miniature circuit-breakers	I_n [A]	I >[A] / I_{cn} [kA]	Upstream circuit-breakers: 3VF3 adjustable						3VF3 non-adjustable					
			50	63	80	100	125	1 60	50	63	80	100	125	160
			500	630	800	1 000	1 250	1 600	400	500	630	800	1 000	1 280
			40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100	40/70/100
			Back-up protection up to kA											
5SY6														
Characteristic B, Characteristic C	0.3 ... 6	6	70	70	70	70	70	65	70	70	70	65	65	65
	8 ... 32	6	15	15	15	15	15	15	15	15	15	10	10	10
	40 ... 63	6	10	10	10	10	10	10	10	10	10	10	10	10
5SY4														
Characteristic A, Characteristic B, Characteristic C, Characteristic D	0.3 ... 6	10/15	80	80	80	80	80	80	80	80	80	80	80	80
	8 ... 32	10/15	30	30	30	30	30	20	35	35	35	35	35	35
	40 ... 63	10/15	15	15	15	15	15	15	35	35	35	35	35	35
5SY7														
Characteristic B, Characteristic C, Characteristic D	0.3 ... 6	10/15	100	100	100	100	100	100	100	100	100	100	100	100
	8 ... 10	10/15	70	70	70	70	70	65	70	70	70	65	65	65
	13 ... 32	10/15	65	60	60	65	65	45	65	50	50	45	45	45
	40 ... 63	10/15	30	30	30	30	30	20	30	30	30	20	20	20

Downstream miniature circuit-breakers	I_n [A]	I >[A] / I_{cn} [kA]	Upstream circuit-breakers: 3VF4				3VF5				3VF6	3VF7	3VF8	3WN1/ 3WS1
			125	160	200	250	200	250	315	400	315 ... 630	400 ... 1 250	1 600 ... 2 000	315 ... 6 300
			1 250	1600	2000	2 500	2000	2 500	3 150	4000	3 200 ... 6 300	15 000	20 000	3 780 ... 75 600
			40/70/100	40/70/100	40/70/100	40/70/100	45/70/100	45/70/100	45/70/100	45/70/100	45/70/100	50/70/100	70/100	65 ... 100
			Back-up protection up to kA											
5SY6														
Characteristic B, Characteristic C, Characteristic D	0.3 ... 6	6	34	34	34	34	30	30	30	30	30	30	30	30
	8 ... 32	6	15	15	15	15	15	15	15	15	15	15	15	15
	40 ... 63	6	10	10	10	10	10	10	10	10	10	10	10	10
5SY4														
Characteristic A, Characteristic B, Characteristic C, Characteristic D	0.3 ... 6	10/15	50	50	50	50	50	45	45	45	35	35	35	35
	8 ... 32	10/15	20	20	20	20	20	20	20	20	20	20	20	20
	42 ... 63	10/15	15	15	15	15	15	15	15	15	15	15	15	15
5SY7														
Characteristic B, Characteristic C, Characteristic D [1]	0.3 ... 2	10/15	100	100	100	100	100	100	100	100	65	50	50	50
	3 ... 6	10/15	70	70	70	70	65	65	65	65	40	40	40	40
	8 ... 10	10/15	34	34	34	34	30	30	30	30	30	30	30	30
	13 ... 32	10/15	25	25	25	25	25	25	25	25	25	25	25	25
	40 ... 63	10/15	20	20	20	20	20	20	20	20	20	20	20	20

1) 50 and 63 A, characteristic D: 15 kA

Introduction

Overview

Internal resistance and power dissipation		Data per pole (loaded with I_n)							
	I_n [A]	**Type A**		**Type B**		**Type C**		**Type D**	
		R_1 mΩ	P_v W	R_1 mΩ	P_v W	R_1 mΩ	P_v W	R_1 mΩ	P_v W
5SY6, 5SY4, 5SY7, 5SY8, 5SY5									
	0.3	–	–	–	–	11 000	1.0	–	–
	0.5	–	–	–	–	3 340	0.8	3 220	0.8
	1	1983	2.0	–	–	1 760	1.8	1 560	1.6
	1.6	854	2.2	–	–	710	1.8	670	1.7
	2	554	2.2	–	–	470	1.9	465	1.9
	3	218	2.0	–	–	210	1.9	205	1.8
	4	127	2.0	–	–	110	1.8	100	1.6
	6	65	2.3	70	2.5	50	1.8	50	1.8
	8	29.6	1.9	–	–	14	0.9	12	0.8
	10	20.2	2.0	13	1.3	11	1.1	8.8	0.9
	13	11.7	2.0	9.7	1.6	8.5	1.4	8.5	1.4
	16	10.1	2.6	7.2	1.8	6.3	1.6	6.3	1.6
	20	6.2	2.5	4.7	1.9	3.7	1.5	3.7	1.5
	25	5.1	3.2	3.7	2.3	3.6	2.2	3.6	2.2
	32	3.1	3.2	3.0	3.0	3.0	3.0	3.0	3.0
	40	2.5	4.0	2.3	3.7	2.3	3.7	2.3	3.7
	50	1.9	4.8	1.9	4.8	1.9	4.8	1.9	4.8
	63	1.3	5.2	1.3	5.2	1.3	5.2	1.3	5.2
5SP4									
	80	–	–	1.1	7.0	1.1	6.7	1.1	6.7
	100	–	–	0.8	8.0	0.88	8	0.8	8
	125	–	–	0.7	10.1	0.7	10.9	–	–

Correction factor for power dissipation

- Direct current and alternating current up to 60 Hz x 1.0
- Alternating current 200 Hz x 1.1
  400 Hz x 1.15
  1 100 Hz x 1.3

Overview

Personnel safety with miniature circuit-breakers

For the protection from dangerous leaking currents, according to DIN VDE 0100 Part 410, the cross-sections of the conductor, or its distance from the protective device, must be dimensioned such that if a fault with negligible impedance occurs (i.e. a short-circuit) at any point between an outer conductor and a PE conductor, or a connected exposed conductive part, automatic tripping is achieved within the specified times of 0.4 s / 5 s.

This requirement is met through the following condition:

$Z_S \times I_a \leq U_o$

Z_S ≙ Impedance of the fault loop of the entire circuit
I_a ≙ Current that trips within the specified times
U_o ≙ Voltage to ground

Maximum permissible impedance of fault loop at U_o = 230 V AC for compliance with trip conditions acc. to DIN VDE 0100 Part 410

I_n [A]	Characteristic A		Characteristic B		Characteristic C		Characteristic D	
	$t_a \leq 0.4$ s Ω	≤ 5 s Ω	$t_a \leq 0.4$ s Ω	£ 5 s Ω	$t_a \leq 0.4$ s Ω	≤ 5 s Ω	$t_a \leq 0.4$ s Ω	≤ 5 s Ω
5SY, 5SP								
0.3	–	–	–	–	76.6	153	–	–
0.5	–	–	–	–	46	92	–	92
1.0	76.6	76.6	–	–	23	46	15.3	46
1.6	47.9	47.9	–	–	14.4	28.8	9.6	28.8
2	38.3	38.3	–	–	11.5	23	7.6	23
3	25.5	25.5	–	–	7.7	15.4	5.1	15.4
4	19.1	19.1	–	–	5.8	11.6	3.8	11.6
6	12.7	12.7	7.6	7.6	3.8	7.6	2.5	7.6
8	–	–	–	–	2.8	5.7	1.9	5.7
10	7.6	7.6	4.6	4.6	2.3	4.6	1.1	4.6
13	–	–	–	3.57	1.7	3.4	0.9	3.4
16	4.7	4.7	2.9	2.9	1.4	2.8	0.7	2.8
20	3.8	3.8	2.3	2.3	1.1	2.2	0.5	2.2
25	3.0	3.0	1.8	1.8	0.9	1.8	0.4	1.8
32	2.4	2.4	1.4	1.4	0.7	1.4	0.3	1.4
40	1.9	1.9	1.1	1.1	0.6	1.2	0.28	1.2
50	–	–	0.9	0.9	0.5	1.0	0.23	1.0
63	–	–	0.7	0.7	0.4	0.8	0.2	0.8
80	–	–	–	–	0.3	0.6	0.14	0.6
100	–	–	–	–	0.2	0.4	0.1	0.4
125	–	–	–	–	0.16	0.3	0.1	0.3

At U_o = 240 V AC Z_S x 1.04 applies.
At U_o = 127 V AC Z_S x 0.55 applies.

Introduction

Overview

Fusing of luminaire circuits

Maximum permissible lamp load of a miniature circuit-breaker when operating fluorescent lamps L18 W, L 36 W, L 38 W, L 58 W.

Maximum number of fluorescent lamps

I_n [A]	Lamp	Electronic primary switching devices											
		Full switching at 230 V 1-lamp [1]			2-lamp			Group switching at 230 V 1-lamp [2]			2-lamp		
5SY4, 5SY7													
Characteristic		**B**	**C**	**D**	**B**	**C**	**D**	**B**	**C**	**D**	**B**	**C**	**D**
6	L 18 W	17	37	66	17	35	35	66	66	66	35	35	35
	L 36 W	17	37	37	17	19	19	37	37	37	19	19	19
	L 58 W	17	19	19	12	12	12	19	19	19	12	12	12
8	L 18 W	–	50	88	–	47	47	–	88	88	–	–	47
	L 36 W	–	50	50	–	25	25	–	50	50	–	25	25
	L 58 W	–	25	25	–	16	16	–	25	25	–	16	16
10	L 18 W	36	67	111	36	58	58	111	111	111	58	58	58
	L 36 W	36	62	62	32	32	32	62	62	62	32	32	32
	L 58 W	32	32	32	20	20	20	32	32	32	20	20	20
13	L 18 W	44	81	144	44	76	76	144	144	144	76	76	76
	L 36 W	44	81	81	41	41	41	81	81	81	41	41	41
	L 58 W	41	41	41	26	26	26	41	41	41	26	26	26
16	L 18 W	56	100	177	56	94	94	177	177	177	94	94	94
	L 36 W	56	100	100	51	51	51	100	100	100	51	51	51
	L 58 W	51	51	51	32	32	32	51	51	51	32	32	32
20	L 18 W	70	117	222	70	117	117	222	222	222	117	117	117
	L 36 W	70	117	125	64	64	64	125	125	125	64	64	64
	L 58 W	64	64	64	40	40	40	64	64	64	40	40	40
25	L 18 W	85	157	277	85	147	147	277	277	277	147	147	147
	L 36 W	85	156	156	80	80	80	156	156	156	80	80	80
	L 58 W	80	80	80	51	51	51	80	80	80	51	51	51
32	L 18 W	100	144	355	100	144	188	355	355	355	188	188	188
	L 36 W	100	144	200	100	103	103	200	200	200	103	103	103
	L 58 W	100	103	103	65	65	65	103	103	103	65	65	65
40	L 18 W	126	216	444	126	216	235	444	444	444	235	235	235
	L 36 W	126	216	250	126	129	129	250	250	250	129	129	129
	L 58 W	126	129	129	81	81	81	129	129	129	81	81	81
50	L 18 W	180	247	555	180	247	294	555	555	555	294	294	294
	L 36 W	180	247	312	161	161	161	312	312	312	161	161	161
	L 58 W	161	161	161	102	102	102	161	161	161	102	102	102
63	L 18 W	170	340	567	170	340	370	700	700	700	370	370	370
	L 36 W	170	340	393	170	203	203	393	393	393	203	203	203
	L 58 W	170	203	203	128	128	128	203	203	203	128	128	128

1) All ECGs are turned on simultaneously.

2) The ECGs are turned on in groups one after the other.

Circuit impedance:
The specified lamp load values apply, taking into account a line impedance of 800 mW.
At 400 mW the permissible values are reduced by 10 %.

Reduction factors for miniature circuit-breakers for the simultaneously switching on of filament lamp load taking into account the rated current of the miniature circuit-breaker and the summated operating current of the lamps

	Reduction factors	
	Switching with miniature circuit-breaker	Switching with separate switch
5SY, 5SP4		
Characteristic A	0.3	0.35
Characteristic B	0.5	0.6
Characteristic C	1	1
Characteristic D	1	1

Overview

Current carrying capacity of circuit-breakers with corrected and uncorrected HQ, HQI and NAV lamps (no.)

		Lamp power [W]							
		35	70	150	250	400	1 000	2000	3 500
Lamp current	[A]	0.5	1	1.8	3	3.5	9.5	10.3	18
Corr. lamp current	[A]	0.3	0.5	1	1.5	2	6	5.5	9.8
Inrush peak	[A]	10	18	36	60	70	120	125	220

	I_n [A]	Lamp power [W]							
		35	70	150	250	400	1 000	2000	3 500
5SY4, 5SY7									
Characteristic B	6	2	1	0	0	0	0	0	0
	10	5	3	1	1	0	0	0	0
	13	7	4	2	1	1	0	0	0
	16	8	5	2	1	1	0	0	0
	20	11	6	3	1	1	1	1	0
	25	13	7	3	2	2	1	1	0
	32	16	8	4	2	2	1	1	0
	40	20	11	5	3	3	1	1	1
	50	28	15	7	4	4	2	2	1
	63	26	14	7	4	3	2	2	1
Characteristic C	6	6	3	1	1	0	0	0	0
	8	8	4	2	1	1	0	0	0
	10	10	6	3	1	1	0	0	0
	13	13	7	3	2	1	1	1	0
	16	16	9	4	2	2	1	1	0
	20	18	10	5	3	2	1	1	0
	25	25	14	7	4	3	2	1	1
	32	22	12	6	3	3	2	1	1
	40	33	18	9	5	4	2	2	1
	50	38	21	10	6	5	3	3	1
	63	53	29	14	9	7	4	4	2
Characteristic D	6	8	4	2	1	1	0	0	0
	8	11	5	3	2	1	0	0	0
	10	14	7	4	2	2	0	0	0
	13	18	9	5	3	2	1	1	0
	16	22	11	6	3	3	1	1	0
	20	28	14	7	4	4	1	1	0
	25	35	17	9	5	5	2	1	1
	32	44	22	12	7	6	2	2	1
	40	56	28	15	9	8	3	2	1
	50	70	35	19	11	10	4	3	2
	63	88	44	24	14	12	4	4	2
5SP4									
Characteristic C	80	76	42	21	12	11	6	6/5	3
	100	98	54	27	16	14	8/7	8/6	4
	125	116	64	32	19	16	9	9/8	5
Characteristic D	80	143/112	80/56	40/31	24/18	20/16	9/6	10/5	5/3
	100	186/140	103/70	51/39	31/23	26/20	11/7	12/6	7/4
	125	186/175	103/87	51/48	31/29	26/25	14/9	15/8	8/5

Different data for corrected/uncorrected lamps.

Introduction

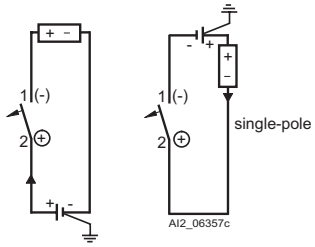
Overview

Direct current, universal current

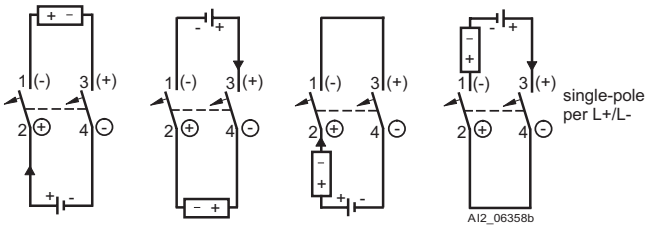
In direct current systems up to 60 V or 120 V, all 5SJ6, 5SY and 5SP4 miniature circuit-breakers (both 1-pole and 2-pole) can be used.

For higher voltages, the version 5SY5 is required. Contrary to other product ranges, the arcing chamber area of the 5SY5 is equipped with an additional permanent magnet to support the positive quenching of the arc.

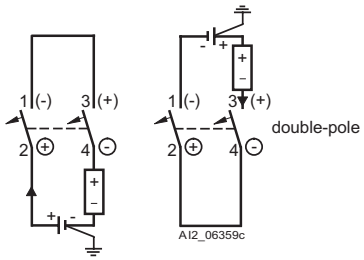
For this reason, the polarity of the switch is coded, which it is essential to observe when connecting the conductor.



Up to max. 220 V DC battery voltage



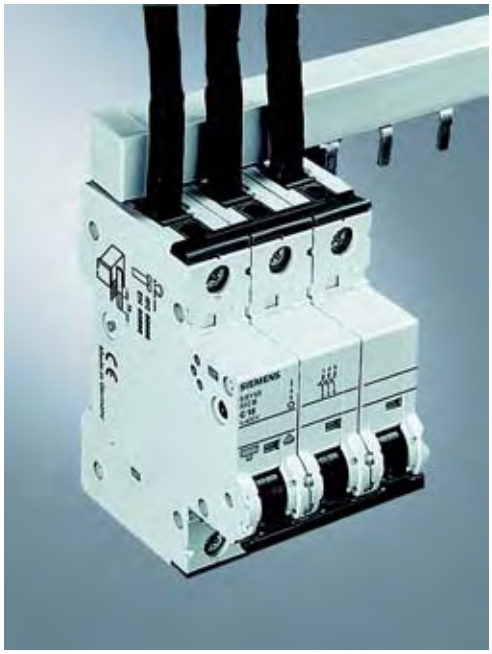
Up to max. 220 V DC battery voltage



Up to max. 440 V DC battery voltage

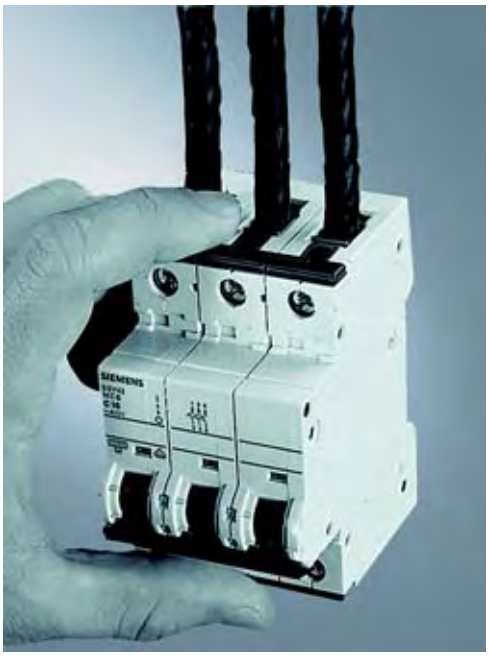
Benefits

Features of 5SY miniature circuit-breakers [1)]



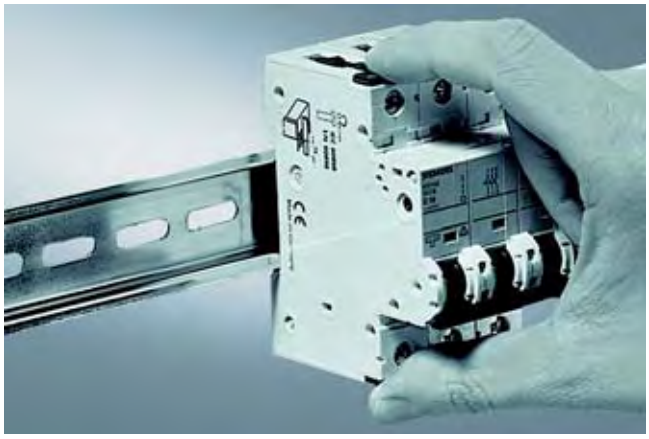
Easier and faster, more wiring space

- Identical top and bottom terminals
- Connection of feeder cables vis-à-vis of the busbar
- Larger and more easily accessible wiring space for the feeder cables
- Comfortable insertion of the feeder cables into the terminal
- Defined, visible and controllable connection of the feeder cables
- Universal infeed with top and bottom busbar mounting options.



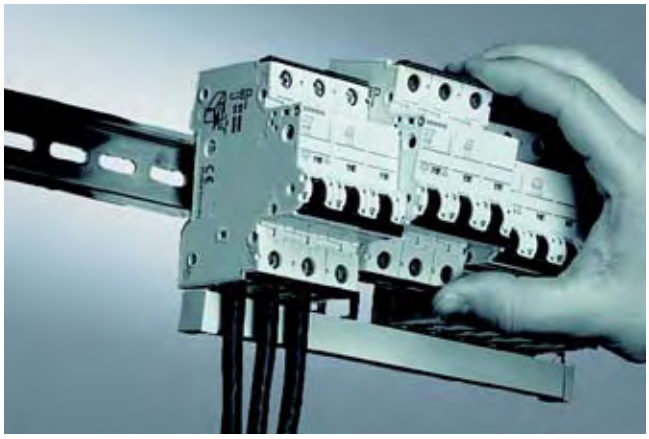
Protection against contact with clear advantages

- Integrated movable terminal covers located at the feeder cable input section
- The terminals are completely closed when screws are fully tightened
- Effective protection against contact, also when the device is fully grabbed
- Considerably exceeds the requirements of the German VBG 4/BGV A2 accident prevention regulations.



Flexible and no use of tools required

- Manual quick-assembly and disassembly systems requiring no use of tools
- Fast assembly and disassembly of the 5SY miniature circuit-breakers to and from the standard mounting rail acc. to EN 60715
- All devices can be easily and comfortably replaced at any time.



Removal from the assembly

Thanks to the combination of the various features stated above, the 5SY miniature circuit-breakers can be easily and rapidly removed from the assembly when circuits need to be changed - with these devices, a removal of the busbar is no longer necessary.

1) Not for 5SY6 ...-.KV.

5SY6 ...-.KV, 6 kA

Application

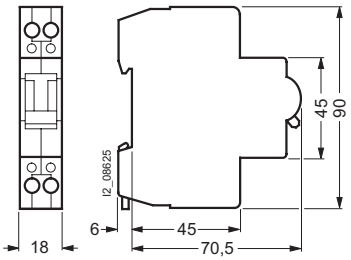
- U_n: 230 V AC, 50 to 60 Hz
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- 1+N in 1 MW for distribution applications with only little available space.

Selection and ordering data

		I_n A	MW	Characteristic B Order No.	Characteristic C Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole + N** 	2	1	-	**5SY6 002-7KV**	0.132	1/12
		4		-	**5SY6 004-7KV**	0.132	1/12
		6		**5SY6 006-6KV**	**5SY6 006-7KV**	0.132	1/12
		8		-	**5SY6 008-7KV**	0.132	1/12
		10		**5SY6 010-6KV**	**5SY6 010-7KV**	0.132	1/12
		13		**5SY6 013-6KV**	**5SY6 013-7KV**	0.132	1/12
		16		**5SY6 016-6KV**	**5SY6 016-7KV**	0.132	1/12
		20		**5SY6 020-6KV**	**5SY6 020-7KV**	0.132	1/12
		25		**5SY6 025-6KV**	**5SY6 025-7KV**	0.132	1/12
		32		**5SY6 032-6KV**	**5SY6 032-7KV**	0.132	1/12
		40		**5SY6 040-6KV**	**5SY6 040-7KV**	0.132	1/12

Dimensional drawings

5SY6 ...-.KV miniature circuit-breakers



*** You can order this quantity or a multiple thereof.**

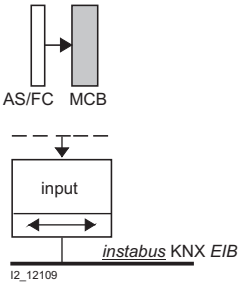
Benefits

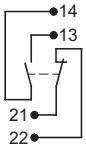
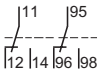
- Can be retrofitted individually
- Mounting with factory-fitted screws
- Min. contact load: 50 mA, 24 V
- Max. contact load:
  2 A, 230 V AC, AC-15
  3 A, 230 V AC, AC-13
  0.5 A, 110 V DC, DC- 12
  acc. to DIN VDE 0660 Part 200, IEC/EN 60947-5-1
- Short-circuit protection ensured by miniature circuit-breakers with characteristic B or C with
  I_n = 6 A or fuse gL 6 A
- Conductor cross-section 0.5 to 2.5 mm²

Function

Remote indication of the MCB switching state
- AS: ON/OFF
- FC: tripped

- can be connected through binary inputs to *instabus* KNX *EIB* and AS-Interface bus

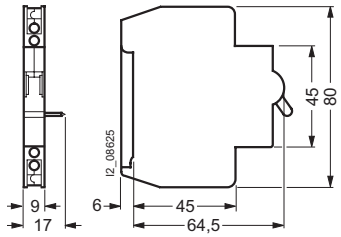


			MW		Order No.	Weight 1 item	PS*/ P. unit
						kg	Items
	**Auxiliary circuit switch (AS)** [1] 	1 NO + 1 NC	0.5		**5ST3 018-0KV**	0.037	1
	**Fault signal contact (FC)** 	2 CO	0.5	NEW	**5ST3 028-0KV**	0.045	1

1) For fault signal contacts and shunt trips, see Chapter "Residual current protective devices".

Dimensional drawings

Auxiliary circuit switch (AS)/fault signal contacts (FC),
can be mounted on 5SY6 ...-.KV miniature circuit-breakers



5ST3 018-0KV and 5ST3 028-0KV, can be retrofitted

5SJ6, 5SY6, 6 kA

Application

- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- Additional components can be retrofitted

Selection and ordering data

		I_n	MW	Characteristic B Order No.	Weight 1 item	PS*/ P. unit
		A			kg	Items
	**1-pole** [1] 	6 [1]	1	**5SJ6 106-6**	0.165	1/12
		6		**5SY6 106-6**	0.165	1/12
		10 [1]		**5SJ6 110-6**	0.165	1/12
		10		**5SY6 110-6**	0.165	1/12
		13		**5SY6 113-6**	0.165	1/12
		16 [1]		**5SJ6 116-6**	0.165	1/12
		16		**5SY6 116-6**	0.165	1/12
		20 [1]		**5SJ6 120-6**	0.165	1/12
		20		**5SY6 120-6**	0.165	1/12
		25 [1]		**5SJ6 125-6**	0.165	1/12
		25		**5SY6 125-6**	0.165	1/12
		32 [1][2]		**5SJ6 132-6**	0.165	1/12
		32 [2]		**5SY6 132-6**	0.165	1/12
		40		**5SY6 140-6**	0.165	1/12
		50		**5SY6 150-6**	0.165	1/12
		63		**5SY6 163-6**	0.165	1/12
	**1-pole + N** 	6	2	**5SY6 506-6**	0.330	1/6
		10		**5SY6 510-6**	0.330	1/6
		13		**5SY6 513-6**	0.330	1/6
		16		**5SY6 516-6**	0.330	1/6
		20		**5SY6 520-6**	0.330	1/6
		25		**5SY6 525-6**	0.330	1/6
		32		**5SY6 532-6**	0.330	1/6
		40		**5SY6 540-6**	0.330	1/6
		50		**5SY6 550-6**	0.330	1/6
		63		**5SY6 563-6**	0.330	1/6
	**2-pole** 	6	2	**5SY6 206-6**	0.330	1/6
		10		**5SY6 210-6**	0.330	1/6
		13		**5SY6 213-6**	0.330	1/6
		16		**5SY6 216-6**	0.330	1/6
		20		**5SY6 220-6**	0.330	1/6
		25		**5SY6 225-6**	0.330	1/6
		32		**5SY6 232-6**	0.330	1/6
		40		**5SY6 240-6**	0.330	1/6
		50		**5SY6 250-6**	0.330	1/6
		63		**5SY6 263-6**	0.330	1/6
	**3-pole** 	6	3	**5SY6 306-6**	0.495	1/4
		10		**5SY6 310-6**	0.495	1/4
		13		**5SY6 313-6**	0.495	1/4
		16		**5SY6 316-6**	0.495	1/4
		20		**5SY6 320-6**	0.495	1/4
		25		**5SY6 325-6**	0.495	1/4
		32 [2]		**5SY6 332-6**	0.495	1/4
		40		**5SY6 340-6**	0.495	1/4
		50		**5SY6 350-6**	0.495	1/4
		63		**5SY6 363-6**	0.495	1/4

The 5SY6 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

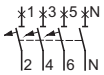
For additional components, see page 3/47; for accessories, see page 3/57.

1) Type 5SJ6 1..-6: no additional components can be mounted. For further features, please see page 3/3.

2) Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

*** You can order this quantity or a multiple thereof.**

Selection and ordering data

		I_n	MW	Characteristic B Order No.	Weight 1 item	PS*/ P. unit
		A			kg	Items
	**3-pole + N** 	6	4	**5SY6 606-6**	0.660	1/3
		10		**5SY6 610-6**	0.660	1/3
		13		**5SY6 613-6**	0.660	1/3
		16		**5SY6 616-6**	0.660	1/3
		20		**5SY6 620-6**	0.660	1/3
		25		**5SY6 625-6**	0.660	1/3
		32		**5SY6 632-6**	0.660	1/3
		40		**5SY6 640-6**	0.660	1/3
		50		**5SY6 650-6**	0.660	1/3
		63		**5SY6 663-6**	0.660	1/3
	**4-pole** 	6	4	**5SY6 406-6**	0.660	1/3
		10		**5SY6 410-6**	0.660	1/3
		13		**5SY6 413-6**	0.660	1/3
		16		**5SY6 416-6**	0.660	1/3
		20		**5SY6 420-6**	0.660	1/3
		25		**5SY6 425-6**	0.660	1/3
		32		**5SY6 432-6**	0.660	1/3
		40		**5SY6 440-6**	0.660	1/3
		50		**5SY6 450-6**	0.660	1/3
		63		**5SY6 463-6**	0.660	1/3

The 5SY6 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

*** You can order this quantity or a multiple thereof.**

5SY6, 6 kA

Application

- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- Additional components can be retrofitted

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole** 	0.3	1	**5SY6 114-7**	**5SY6 114-8**	0.165	1/12
		0.5		**5SY6 105-7**	**5SY6 105-8**	0.165	1/12
		1		**5SY6 101-7**	**5SY6 101-8**	0.165	1/12
		1.6		**5SY6 115-7**	**5SY6 115-8**	0.147	1/12
		2		**5SY6 102-7**	**5SY6 102-8**	0.165	1/12
		3		**5SY6 103-7**	**5SY6 103-8**	0.165	1/12
		4		**5SY6 104-7**	**5SY6 104-8**	0.165	1/12
		6		**5SY6 106-7**	**5SY6 106-8**	0.165	1/12
		8		**5SY6 108-7**	**5SY6 108-8**	0.165	1/12
		10		**5SY6 110-7**	**5SY6 110-8**	0.165	1/12
		13		**5SY6 113-7**	**5SY6 113-8**	0.165	1/12
		16		**5SY6 116-7**	**5SY6 116-8**	0.165	1/12
		20		**5SY6 120-7**	**5SY6 120-8**	0.165	1/12
		25		**5SY6 125-7**	**5SY6 125-8**	0.165	1/12
		32 [1]		**5SY6 132-7**	**5SY6 132-8**	0.165	1/12
		40		**5SY6 140-7**	**5SY6 140-8**	0.165	1/12
		50		**5SY6 150-7**	**5SY6 150-8**	0.165	1/12
		63		**5SY6 163-7**	**5SY6 163-8**	0.165	1/12
	**1-pole + N** 	0.3	2	**5SY6 514-7**	**5SY6 514-8**	0.330	1/6
		0.5		**5SY6 505-7**	**5SY6 505-8**	0.330	1/6
		1		**5SY6 501-7**	**5SY6 501-8**	0.330	1/6
		1.6		**5SY6 515-7**	**5SY6 515-8**	0.330	1/6
		2		**5SY6 502-7**	**5SY6 502-8**	0.330	1/6
		3		**5SY6 503-7**	**5SY6 503-8**	0.330	1/6
		4		**5SY6 504-7**	**5SY6 504-8**	0.330	1/6
		6		**5SY6 506-7**	**5SY6 506-8**	0.330	1/6
		8		**5SY6 508-7**	**5SY6 508-8**	0.330	1/6
		10		**5SY6 510-7**	**5SY6 510-8**	0.330	1/6
		13		**5SY6 513-7**	**5SY6 513-8**	0.330	1/6
		16		**5SY6 516-7**	**5SY6 516-8**	0.330	1/6
		20		**5SY6 520-7**	**5SY6 520-8**	0.330	1/6
		25		**5SY6 525-7**	**5SY6 525-8**	0.330	1/6
		32		**5SY6 532-7**	**5SY6 532-8**	0.330	1/6
		40		**5SY6 540-7**	**5SY6 540-8**	0.330	1/6
		50		**5SY6 550-7**	**5SY6 550-8**	0.330	1/6
		63		**5SY6 563-7**	**5SY6 563-8**	0.330	1/6
	**2-pole** 	0.3	2	**5SY6 214-7**	**5SY6 214-8**	0.330	1/6
		0.5		**5SY6 205-7**	**5SY6 205-8**	0.330	1/6
		1		**5SY6 201-7**	**5SY6 201-8**	0.330	1/6
		1.6		**5SY6 215-7**	**5SY6 215-8**	0.330	1/6
		2		**5SY6 202-7**	**5SY6 202-8**	0.330	1/6
		3		**5SY6 203-7**	**5SY6 203-8**	0.330	1/6
		4		**5SY6 204-7**	**5SY6 204-8**	0.330	1/6
		6		**5SY6 206-7**	**5SY6 206-8**	0.330	1/6
		8		**5SY6 208-7**	**5SY6 208-8**	0.330	1/6
		10		**5SY6 210-7**	**5SY6 210-8**	0.330	1/6
		13		**5SY6 213-7**	**5SY6 213-8**	0.330	1/6
		16		**5SY6 216-7**	**5SY6 216-8**	0.330	1/6
		20		**5SY6 220-7**	**5SY6 220-8**	0.330	1/6
		25		**5SY6 225-7**	**5SY6 225-8**	0.330	1/6
		32		**5SY6 232-7**	**5SY6 232-8**	0.330	1/6
		40		**5SY6 240-7**	**5SY6 240-8**	0.330	1/6
		50		**5SY6 250-7**	**5SY6 250-8**	0.330	1/6
		63		**5SY6 263-7**	**5SY6 263-8**	0.330	1/6

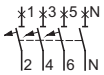
The 5SY6 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

1) Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

*** You can order this quantity or a multiple thereof.**

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**3-pole** 	0.3	3	**5SY6 314-7**	**5SY6 314-8**	0.495	1/4
		0.5		**5SY6 305-7**	**5SY6 305-8**	0.495	1/4
		1		**5SY6 301-7**	**5SY6 301-8**	0.495	1/4
		1.6		**5SY6 315-7**	**5SY6 315-8**	0.495	1/4
		2		**5SY6 302-7**	**5SY6 302-8**	0.495	1/4
		3		**5SY6 303-7**	**5SY6 303-8**	0.495	1/4
		4		**5SY6 304-7**	**5SY6 304-8**	0.495	1/4
		6		**5SY6 306-7**	**5SY6 306-8**	0.495	1/4
		8		**5SY6 308-7**	**5SY6 308-8**	0.495	1/4
		10		**5SY6 310-7**	**5SY6 310-8**	0.495	1/4
		13		**5SY6 313-7**	**5SY6 313-8**	0.495	1/4
		16		**5SY6 316-7**	**5SY6 316-8**	0.495	1/4
		20		**5SY6 320-7**	**5SY6 320-8**	0.495	1/4
		25		**5SY6 325-7**	**5SY6 325-8**	0.495	1/4
		32 [1]		**5SY6 332-7**	**5SY6 332-8**	0.495	1/4
		40		**5SY6 340-7**	**5SY6 340-8**	0.495	1/4
		50		**5SY6 350-7**	**5SY6 350-8**	0.495	1/4
		63		**5SY6 363-7**	**5SY6 363-8**	0.495	1/4
	**3-pole + N** 	0.3	4	**5SY6 614-7**	**5SY6 614-8**	0.660	1/3
		0.5		**5SY6 605-7**	**5SY6 605-8**	0.660	1/3
		1		**5SY6 601-7**	**5SY6 601-8**	0.660	1/3
		1.6		**5SY6 615-7**	**5SY6 615-8**	0.660	1/3
		2		**5SY6 602-7**	**5SY6 602-8**	0.660	1/3
		3		**5SY6 603-7**	**5SY6 603-8**	0.660	1/3
		4		**5SY6 604-7**	**5SY6 604-8**	0.660	1/3
		6		**5SY6 606-7**	**5SY6 606-8**	0.660	1/3
		8		**5SY6 608-7**	**5SY6 608-8**	0.660	1/3
		10		**5SY6 610-7**	**5SY6 610-8**	0.660	1/3
		13		**5SY6 613-7**	**5SY6 613-8**	0.660	1/3
		16		**5SY6 616-7**	**5SY6 616-8**	0.660	1/3
		20		**5SY6 620-7**	**5SY6 620-8**	0.660	1/3
		25		**5SY6 625-7**	**5SY6 625-8**	0.660	1/3
		32		**5SY6 632-7**	**5SY6 632-8**	0.660	1/3
		40		**5SY6 640-7**	**5SY6 640-8**	0.660	1/3
		50		**5SY6 650-7**	**5SY6 650-8**	0.660	1/3
		63		**5SY6 663-7**	**5SY6 663-8**	0.660	1/3
	**4-pole** 	0.3	4	**5SY6 414-7**	**5SY6 414-8**	0.660	1/3
		0.5		**5SY6 405-7**	**5SY6 405-8**	0.660	1/3
		1		**5SY6 401-7**	**5SY6 401-8**	0.660	1/3
		1.6		**5SY6 415-7**	**5SY6 415-8**	0.660	1/3
		2		**5SY6 402-7**	**5SY6 402-8**	0.660	1/3
		3		**5SY6 403-7**	**5SY6 403-8**	0.660	1/3
		4		**5SY6 404-7**	**5SY6 404-8**	0.660	1/3
		6		**5SY6 406-7**	**5SY6 406-8**	0.660	1/3
		8		**5SY6 408-7**	**5SY6 408-8**	0.660	1/3
		10		**5SY6 410-7**	**5SY6 410-8**	0.660	1/3
		13		**5SY6 413-7**	**5SY6 413-8**	0.660	1/3
		16		**5SY6 416-7**	**5SY6 416-8**	0.660	1/3
		20		**5SY6 420-7**	**5SY6 420-8**	0.660	1/3
		25		**5SY6 425-7**	**5SY6 425-8**	0.660	1/3
		32		**5SY6 432-7**	**5SY6 432-8**	0.660	1/3
		40		**5SY6 440-7**	**5SY6 440-8**	0.660	1/3
		50		**5SY6 450-7**	**5SY6 450-8**	0.660	1/3
		63		**5SY6 463-7**	**5SY6 463-8**	0.660	1/3

The 5SY6 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

1) Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

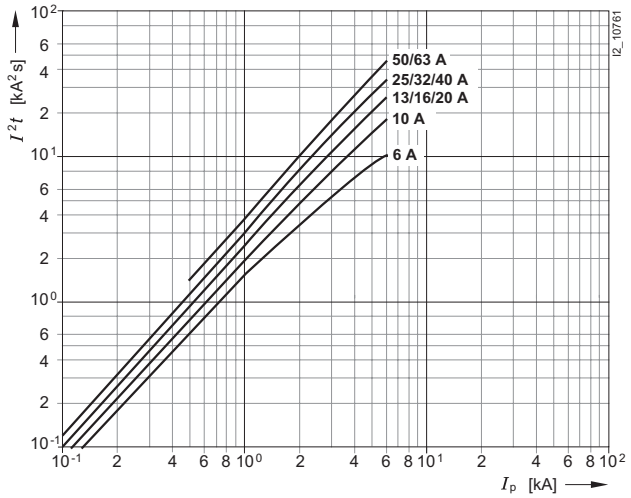
*** You can order this quantity or a multiple thereof.**

5SY6, 6 kA

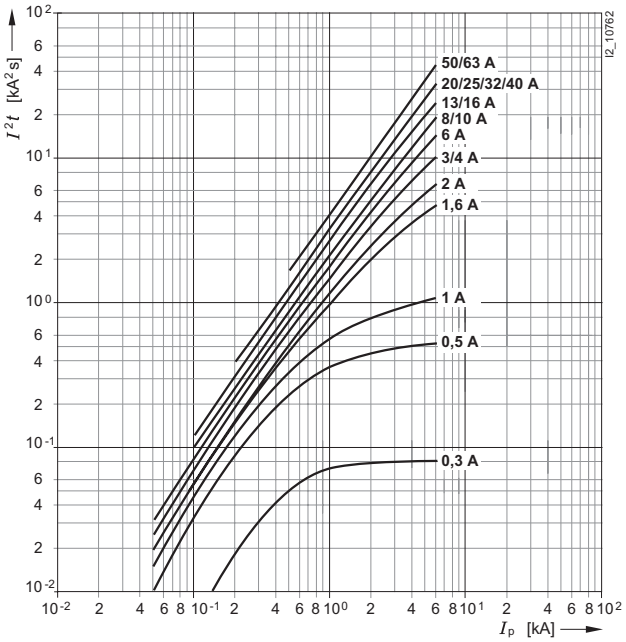
Characteristic curves

Let-through I^2t values

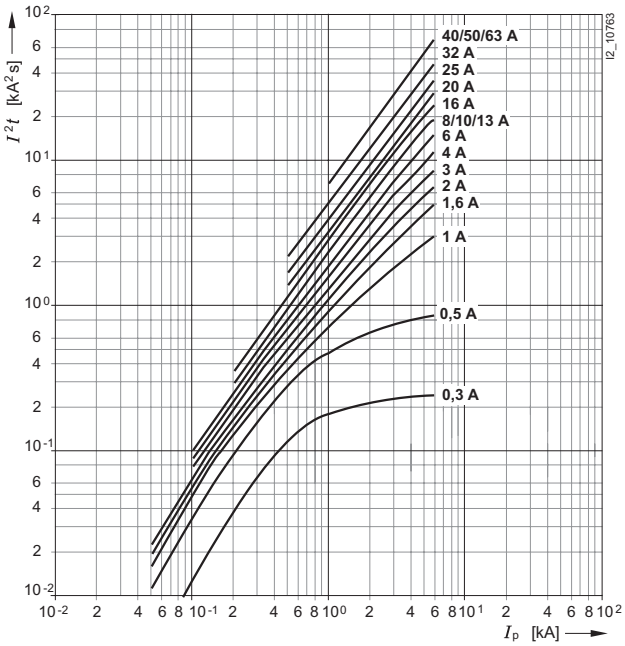
Characteristic B



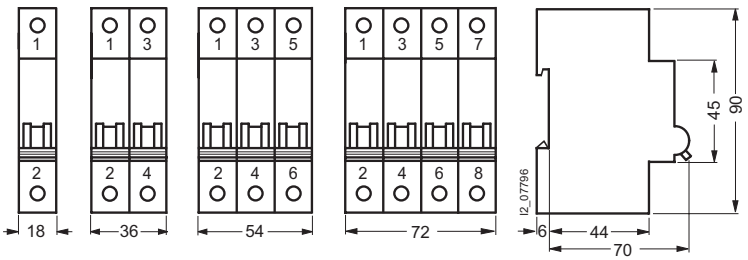
Characteristic C



Characteristic D



Dimensional drawings



Application

- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- Additional components can be retrofitted

Selection and ordering data

		I_n	MW	Characteristic A Order No.	Characteristic B Order No.	Weight 1 item	PS*/ P. unit
		A				kg	Items
	**1-pole** 	1	1	**5SY4 101-5**	–	0.165	1/12
		1.6		**5SY4 115-5**	–	0.165	1/12
		2		**5SY4 102-5**	–	0.165	1/12
		3		**5SY4 103-5**	–	0.165	1/12
		4		**5SY4 104-5**	–	0.165	1/12
		6		**5SY4 106-5**	**5SY4 106-6**	0.165	1/12
		8		**5SY4 108-5**	–	0.165	1/12
		10		**5SY4 110-5**	**5SY4 110-6**	0.165	1/12
		13		**5SY4 113-5**	**5SY4 113-6**	0.165	1/12
		16		**5SY4 116-5**	**5SY4 116-6**	0.165	1/12
		20		**5SY4 120-5**	**5SY4 120-6**	0.165	1/12
		25		**5SY4 125-5**	**5SY4 125-6**	0.165	1/12
		32 [1]		**5SY4 132-5**	**5SY4 132-6**	0.165	1/12
		40		**5SY4 140-5**	**5SY4 140-6**	0.165	1/12
		50		**5SY4 150-5**	**5SY4 150-6**	0.165	1/12
		63		**5SY4 163-5**	**5SY4 163-6**	0.165	1/12
		80 [2]		–	**5SY4 180-6**	0.175	1/12
	**1-pole + N** 	1	2	**5SY4 501-5**	–	0.330	1/6
		1.6		**5SY4 515-5**	–	0.330	1/6
		2		**5SY4 502-5**	–	0.330	1/6
		3		**5SY4 503-5**	–	0.330	1/6
		4		**5SY4 504-5**	–	0.330	1/6
		6		**5SY4 506-5**	**5SY4 506-6**	0.330	1/6
		8		**5SY4 508-5**	–	0.330	1/6
		10		**5SY4 510-5**	**5SY4 510-6**	0.330	1/6
		13		**5SY4 513-5**	**5SY4 513-6**	0.330	1/6
		16		**5SY4 516-5**	**5SY4 516-6**	0.330	1/6
		20		**5SY4 520-5**	**5SY4 520-6**	0.330	1/6
		25		**5SY4 525-5**	**5SY4 525-6**	0.330	1/6
		32		**5SY4 532-5**	**5SY4 532-6**	0.330	1/6
		40		**5SY4 540-5**	**5SY4 540-6**	0.330	1/6
		50		**5SY4 550-5**	**5SY4 550-6**	0.330	1/6
		63		**5SY4 563-5**	**5SY4 563-6**	0.330	1/6
	**2-pole** 	1	2	**5SY4 201-5**	–	0.330	1/6
		1.6		**5SY4 215-5**	–	0.330	1/6
		2		**5SY4 202-5**	–	0.330	1/6
		3		**5SY4 203-5**	–	0.330	1/6
		4		**5SY4 204-5**	–	0.330	1/6
		6		**5SY4 206-5**	**5SY4 206-6**	0.330	1/6
		8		**5SY4 208-5**	–	0.330	1/6
		10		**5SY4 210-5**	**5SY4 210-6**	0.330	1/6
		13		**5SY4 213-5**	**5SY4 213-6**	0.330	1/6
		16		**5SY4 216-5**	**5SY4 216-6**	0.330	1/6
		20		**5SY4 220-5**	**5SY4 220-6**	0.330	1/6
		25		**5SY4 225-5**	**5SY4 225-6**	0.330	1/6
		32		**5SY4 232-5**	**5SY4 232-6**	0.330	1/6
		40		**5SY4 240-5**	**5SY4 240-6**	0.330	1/6
		50		**5SY4 250-5**	**5SY4 250-6**	0.330	1/6
		63		**5SY4 263-5**	**5SY4 263-6**	0.330	1/6
		80 [2]		–	**5SY4 280-6**	0.345	1/6

The 5SY4 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

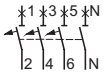
1) Only applicable for 5SY4 132-6:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

2) No

*** You can order this quantity or a multiple thereof.**

5SY4, 10 kA

Selection and ordering data

		I_n A	MW	Characteristic A Order No.	Characteristic B Order No.	Weight 1 item kg	PS*/ P. unit Items
	**3-pole** 	1	3	**5SY4 301-5**	–	0.495	1/4
		1.6		**5SY4 315-5**	–	0.495	1/4
		2		**5SY4 302-5**	–	0.495	1/4
		3		**5SY4 303-5**	–	0.495	1/4
		4		**5SY4 304-5**	–	0.495	1/4
		6		**5SY4 306-5**	**5SY4 306-6**	0.495	1/4
		8		**5SY4 308-5**	–	0.495	1/4
		10		**5SY4 310-5**	**5SY4 310-6**	0.495	1/4
		13		**5SY4 313-5**	**5SY4 313-6**	0.495	1/4
		16		**5SY4 316-5**	**5SY4 316-6**	0.495	1/4
		20		**5SY4 320-5**	**5SY4 320-6**	0.495	1/4
		25		**5SY4 325-5**	**5SY4 325-6**	0.495	1/4
		32 1)		**5SY4 332-5**	**5SY4 332-6**	0.495	1/4
		40		**5SY4 340-5**	**5SY4 340-6**	0.495	1/4
		50		**5SY4 350-5**	**5SY4 350-6**	0.495	1/4
		63		**5SY4 363-5**	**5SY4 363-6**	0.495	1/4
		80 2)		–	**5SY4 380-6**	0.520	1/4
	**3-pole + N** 	1	4	**5SY4 601-5**	–	0.660	1/3
		1.6		**5SY4 615-5**	–	0.660	1/3
		2		**5SY4 602-5**	–	0.660	1/3
		3		**5SY4 603-5**	–	0.660	1/3
		4		**5SY4 604-5**	–	0.660	1/3
		6		**5SY4 606-5**	**5SY4 606-6**	0.660	1/3
		8		**5SY4 608-5**	–	0.660	1/3
		10		**5SY4 610-5**	**5SY4 610-6**	0.660	1/3
		13		**5SY4 613-5**	**5SY4 613-6**	0.660	1/3
		16		**5SY4 616-5**	**5SY4 616-6**	0.660	1/3
		20		**5SY4 620-5**	**5SY4 620-6**	0.660	1/3
		25		**5SY4 625-5**	**5SY4 625-6**	0.660	1/3
		32		**5SY4 632-5**	**5SY4 632-6**	0.660	1/3
		40		**5SY4 640-5**	**5SY4 640-6**	0.660	1/3
		50		**5SY4 650-5**	**5SY4 650-6**	0.660	1/3
		63		**5SY4 663-5**	**5SY4 663-6**	0.660	1/3
	**4-pole** 	1	4	**5SY4 401-5**	–	0.660	1/3
		1.6		**5SY4 415-5**	–	0.660	1/3
		2		**5SY4 402-5**	–	0.660	1/3
		3		**5SY4 403-5**	–	0.660	1/3
		4		**5SY4 404-5**	–	0.660	1/3
		6		**5SY4 406-5**	**5SY4 406-6**	0.660	1/3
		8		**5SY4 408-5**	–	0.660	1/3
		10		**5SY4 410-5**	**5SY4 410-6**	0.660	1/3
		13		**5SY4 413-5**	**5SY4 413-6**	0.660	1/3
		16		**5SY4 416-5**	**5SY4 416-6**	0.660	1/3
		20		**5SY4 420-5**	**5SY4 420-6**	0.660	1/3
		25		**5SY4 425-5**	**5SY4 425-6**	0.660	1/3
		32		**5SY4 432-5**	**5SY4 432-6**	0.660	1/3
		40		**5SY4 440-5**	**5SY4 440-6**	0.660	1/3
		50		**5SY4 450-5**	**5SY4 450-6**	0.660	1/3
		63		**5SY4 463-5**	**5SY4 463-6**	0.660	1/3
		80 2)		–	**5SY4 480-6**	0.695	1/3

The 5SY4 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

1) Only applicable for 5SY4 332-6:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

2) No VDE

*** You can order this quantity or a multiple thereof.**

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole** 	0.3	1	**5SY4 114-7**	**5SY4 114-8**	0.165	1/12
		0.5		**5SY4 105-7**	**5SY4 105-8**	0.165	1/12
		1		**5SY4 101-7**	**5SY4 101-8**	0.165	1/12
		1.6		**5SY4 115-7**	**5SY4 115-8**	0.165	1/12
		2		**5SY4 102-7**	**5SY4 102-8**	0.165	1/12
		3		**5SY4 103-7**	**5SY4 103-8**	0.165	1/12
		4		**5SY4 104-7**	**5SY4 104-8**	0.165	1/12
		6		**5SY4 106-7**	**5SY4 106-8**	0.165	1/12
		8		**5SY4 108-7**	**5SY4 108-8**	0.165	1/12
		10		**5SY4 110-7**	**5SY4 110-8**	0.165	1/12
		13		**5SY4 113-7**	**5SY4 113-8**	0.165	1/12
		16		**5SY4 116-7**	**5SY4 116-8**	0.165	1/12
		20		**5SY4 120-7**	**5SY4 120-8**	0.165	1/12
		25		**5SY4 125-7**	**5SY4 125-8**	0.165	1/12
		32 [1]		**5SY4 132-7**	**5SY4 132-8**	0.165	1/12
		40		**5SY4 140-7**	**5SY4 140-8**	0.165	1/12
		50		**5SY4 150-7**	**5SY4 150-8**	0.165	1/12
		63		**5SY4 163-7**	**5SY4 163-8**	0.165	1/12
		80 [2]		**5SY4 180-7**	–	0.175	1/12
	**1-pole + N** 	0.3		**5SY4 514-7**	**5SY4 514-8**	0.330	1/6
		0.5		**5SY4 505-7**	**5SY4 505-8**	0.330	1/6
		1		**5SY4 501-7**	**5SY4 501-8**	0.330	1/6
		1.6		**5SY4 515-7**	**5SY4 515-8**	0.330	1/6
		2		**5SY4 502-7**	**5SY4 502-8**	0.330	1/6
		3		**5SY4 503-7**	**5SY4 503-8**	0.330	1/6
		4		**5SY4 504-7**	**5SY4 504-8**	0.330	1/6
		6		**5SY4 506-7**	**5SY4 506-8**	0.330	1/6
		8		**5SY4 508-7**	**5SY4 508-8**	0.330	1/6
		10		**5SY4 510-7**	**5SY4 510-8**	0.330	1/6
		13		**5SY4 513-7**	**5SY4 513-8**	0.330	1/6
		16		**5SY4 516-7**	**5SY4 516-8**	0.330	1/6
		20		**5SY4 520-7**	**5SY4 520-8**	0.330	1/6
		25		**5SY4 525-7**	**5SY4 525-8**	0.330	1/6
		32		**5SY4 532-7**	**5SY4 532-8**	0.330	1/6
		40		**5SY4 540-7**	**5SY4 540-8**	0.330	1/6
		50		**5SY4 550-7**	**5SY4 550-8**	0.330	1/6
		63		**5SY4 563-7**	**5SY4 563-8**	0.330	1/6
		80 [2]		**5SY4 580-7**	–	0.345	1/6
	**2-pole** 	0.3		**5SY4 214-7**	**5SY4 214-8**	0.330	1/6
		0.5		**5SY4 205-7**	**5SY4 205-8**	0.330	1/6
		1		**5SY4 201-7**	**5SY4 201-8**	0.330	1/6
		1.6		**5SY4 215-7**	**5SY4 215-8**	0.330	1/6
		2		**5SY4 202-7**	**5SY4 202-8**	0.330	1/6
		3		**5SY4 203-7**	**5SY4 203-8**	0.330	1/6
		4		**5SY4 204-7**	**5SY4 204-8**	0.330	1/6
		6		**5SY4 206-7**	**5SY4 206-8**	0.330	1/6
		8		**5SY4 208-7**	**5SY4 208-8**	0.330	1/6
		10		**5SY4 210-7**	**5SY4 210-8**	0.330	1/6
		13		**5SY4 213-7**	**5SY4 213-8**	0.330	1/6
		16		**5SY4 216-7**	**5SY4 216-8**	0.330	1/6
		20		**5SY4 220-7**	**5SY4 220-8**	0.330	1/6
		25		**5SY4 225-7**	**5SY4 225-8**	0.330	1/6
		32		**5SY4 232-7**	**5SY4 232-8**	0.330	1/6
		40		**5SY4 240-7**	**5SY4 240-8**	0.330	1/6
		50		**5SY4 250-7**	**5SY4 250-8**	0.330	1/6
		63		**5SY4 263-7**	**5SY4 263-8**	0.330	1/6
		80 [2]		**5SY4 280-7**	–	0.345	1/6

The 5SY4 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

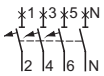
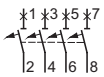
1) Only applicable for 5SY4 132-7:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

2) No VDE

*** You can order this quantity or a multiple thereof.**

5SY4, 10 kA

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**3-pole** 	0.3	3	**5SY4 314-7**	**5SY4 314-8**	0.495	1/4
		0.5		**5SY4 305-7**	**5SY4 305-8**	0.495	1/4
		1		**5SY4 301-7**	**5SY4 301-8**	0.495	1/4
		1.6		**5SY4 315-7**	**5SY4 315-8**	0.495	1/4
		2		**5SY4 302-7**	**5SY4 302-8**	0.495	1/4
		3		**5SY4 303-7**	**5SY4 303-8**	0.495	1/4
		4		**5SY4 304-7**	**5SY4 304-8**	0.495	1/4
		6		**5SY4 306-7**	**5SY4 306-8**	0.495	1/4
		8		**5SY4 308-7**	**5SY4 308-8**	0.495	1/4
		10		**5SY4 310-7**	**5SY4 310-8**	0.495	1/4
		13		**5SY4 313-7**	**5SY4 313-8**	0.495	1/4
		16		**5SY4 316-7**	**5SY4 316-8**	0.495	1/4
		20		**5SY4 320-7**	**5SY4 320-8**	0.495	1/4
		25		**5SY4 325-7**	**5SY4 325-8**	0.495	1/4
		32 [1]		**5SY4 332-7**	**5SY4 332-8**	0.495	1/4
		40		**5SY4 340-7**	**5SY4 340-8**	0.495	1/4
		50		**5SY4 350-7**	**5SY4 350-8**	0.495	1/4
		63		**5SY4 363-7**	**5SY4 363-8**	0.495	1/4
		80 [2]		**5SY4 380-7**	–	0.520	1/4
	**3-pole + N** 	0.3	4	**5SY4 614-7**	**5SY4 614-8**	0.660	1/3
		0.5		**5SY4 605-7**	**5SY4 605-8**	0.660	1/3
		1		**5SY4 601-7**	**5SY4 601-8**	0.660	1/3
		1.6		**5SY4 615-7**	**5SY4 615-8**	0.660	1/3
		2		**5SY4 602-7**	**5SY4 602-8**	0.660	1/3
		3		**5SY4 603-7**	**5SY4 603-8**	0.660	1/3
		4		**5SY4 604-7**	**5SY4 604-8**	0.660	1/3
		6		**5SY4 606-7**	**5SY4 606-8**	0.660	1/3
		8		**5SY4 608-7**	**5SY4 608-8**	0.660	1/3
		10		**5SY4 610-7**	**5SY4 610-8**	0.660	1/3
		13		**5SY4 613-7**	**5SY4 613-8**	0.660	1/3
		16		**5SY4 616-7**	**5SY4 616-8**	0.660	1/3
		20		**5SY4 620-7**	**5SY4 620-8**	0.660	1/3
		25		**5SY4 625-7**	**5SY4 625-8**	0.660	1/3
		32		**5SY4 632-7**	**5SY4 632-8**	0.660	1/3
		40		**5SY4 640-7**	**5SY4 640-8**	0.660	1/3
		50		**5SY4 650-7**	**5SY4 650-8**	0.660	1/3
		63		**5SY4 663-7**	**5SY4 663-8**	0.660	1/3
		80 [2]		**5SY4 680-7**	–	0.695	1/3
	**4-pole** 	0.3	4	**5SY4 414-7**	**5SY4 414-8**	0.660	1/3
		0.5		**5SY4 405-7**	**5SY4 405-8**	0.660	1/3
		1		**5SY4 401-7**	**5SY4 401-8**	0.660	1/3
		1.6		**5SY4 415-7**	**5SY4 415-8**	0.660	1/3
		2		**5SY4 402-7**	**5SY4 402-8**	0.660	1/3
		3		**5SY4 403-7**	**5SY4 403-8**	0.660	1/3
		4		**5SY4 404-7**	**5SY4 404-8**	0.660	1/3
		6		**5SY4 406-7**	**5SY4 406-8**	0.660	1/3
		8		**5SY4 408-7**	**5SY4 408-8**	0.660	1/3
		10		**5SY4 410-7**	**5SY4 410-8**	0.660	1/3
		13		**5SY4 413-7**	**5SY4 413-8**	0.660	1/3
		16		**5SY4 416-7**	**5SY4 416-8**	0.660	1/3
		20		**5SY4 420-7**	**5SY4 420-8**	0.660	1/3
		25		**5SY4 425-7**	**5SY4 425-8**	0.660	1/3
		32		**5SY4 432-7**	**5SY4 432-8**	0.660	1/3
		40		**5SY4 440-7**	**5SY4 440-8**	0.660	1/3
		50		**5SY4 450-7**	**5SY4 450-8**	0.660	1/3
		63		**5SY4 463-7**	**5SY4 463-8**	0.660	1/3
		80 [2]		**5SY4 480-7**	–	0.695	1/3

The 5SY4 and 5SY7 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

1) Only applicable for 5SY4 332-7 and 5SY7 132-6:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

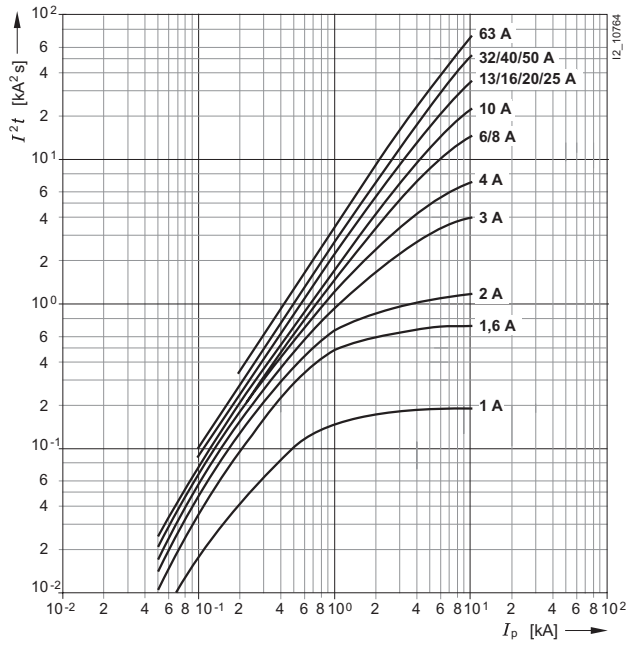
2) No VDE

*** You can order this quantity or a multiple thereof.**

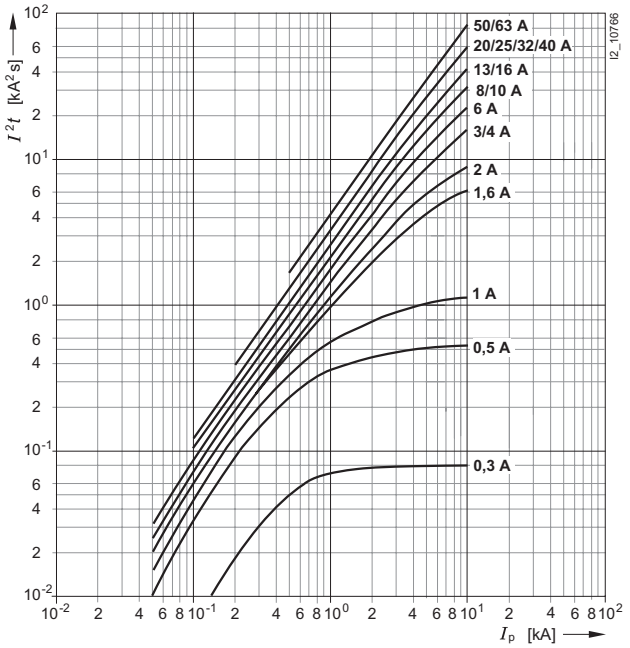
Characteristic curves

Let-through I^2t values

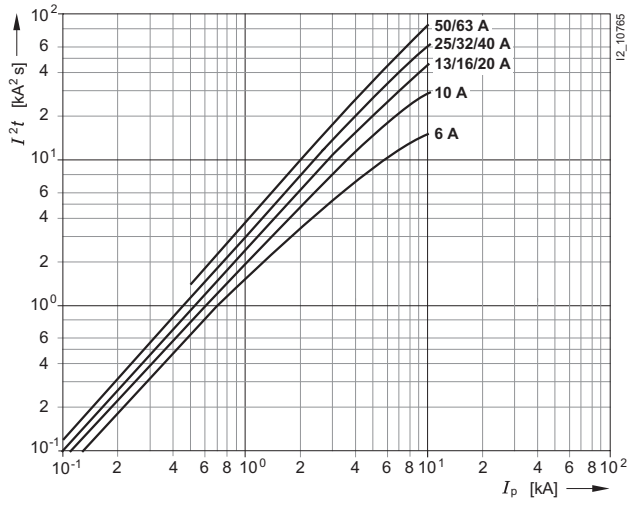
Characteristic A



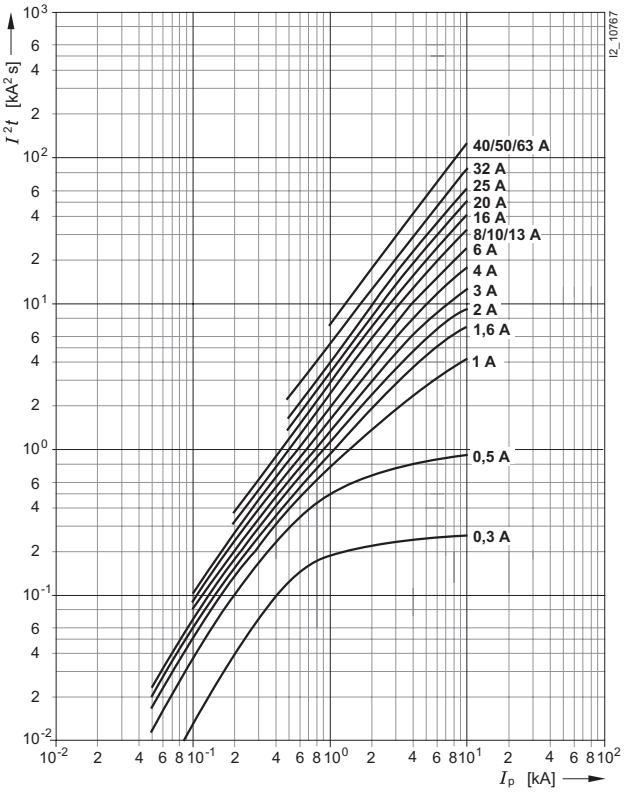
Characteristic C



Characteristic B

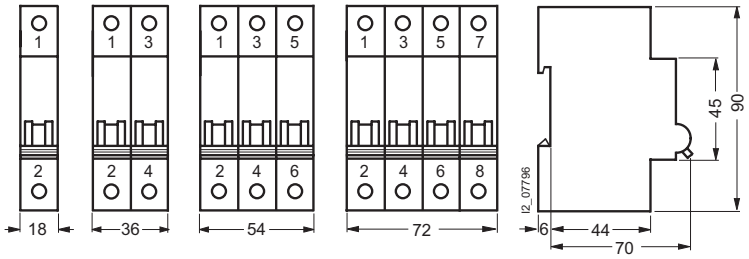


Characteristic D



5SY4, 10 kA

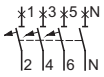
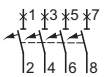
Dimensional drawings



Application

- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- Additional components can be retrofitted.

Selection and ordering data

		I_n A	MW	Characteristic B Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole** 	6	1	**5SY7 106-6**	0.165	1/12
		10		**5SY7 110-6**	0.165	1/12
		13		**5SY7 113-6**	0.165	1/12
		16		**5SY7 116-6**	0.165	1/12
		20		**5SY7 120-6**	0.165	1/12
		25		**5SY7 125-6**	0.165	1/12
		32 [1]		**5SY7 132-6**	0.165	1/12
		40		**5SY7 140-6**	0.165	1/12
		50		**5SY7 150-6**	0.165	1/12
		63		**5SY7 163-6**	0.165	1/12
	**1-pole + N** 	6	2	**5SY7 506-6**	0.330	1/6
		10		**5SY7 510-6**	0.330	1/6
		13		**5SY7 513-6**	0.330	1/6
		16		**5SY7 516-6**	0.330	1/6
		20		**5SY7 520-6**	0.330	1/6
		25		**5SY7 525-6**	0.330	1/6
		32		**5SY7 532-6**	0.330	1/6
		40		**5SY7 540-6**	0.330	1/6
		50		**5SY7 550-6**	0.330	1/6
		63		**5SY7 563-6**	0.330	1/6
	**2-pole** 	6	2	**5SY7 206-6**	0.330	1/6
		10		**5SY7 210-6**	0.330	1/6
		13		**5SY7 213-6**	0.330	1/6
		16		**5SY7 216-6**	0.330	1/6
		20		**5SY7 220-6**	0.330	1/6
		25		**5SY7 225-6**	0.330	1/6
		32		**5SY7 232-6**	0.330	1/6
		40		**5SY7 240-6**	0.330	1/6
		50		**5SY7 250-6**	0.330	1/6
		63		**5SY7 263-6**	0.330	1/6
	**3-pole** 	6	3	**5SY7 306-6**	0.495	1/4
		10		**5SY7 310-6**	0.495	1/4
		13		**5SY7 313-6**	0.495	1/4
		16		**5SY7 316-6**	0.495	1/4
		20		**5SY7 320-6**	0.495	1/4
		25		**5SY7 325-6**	0.495	1/4
		32		**5SY7 332-6**	0.495	1/4
		40		**5SY7 340-6**	0.495	1/4
		50		**5SY7 350-6**	0.495	1/4
		63		**5SY7 363-6**	0.495	1/4
	**3-pole + N** 	6	4	**5SY7 606-6**	0.660	1/3
		10		**5SY7 610-6**	0.660	1/3
		13		**5SY7 613-6**	0.660	1/3
		16		**5SY7 616-6**	0.660	1/3
		20		**5SY7 620-6**	0.660	1/3
		25		**5SY7 625-6**	0.660	1/3
		32		**5SY7 632-6**	0.660	1/3
		40		**5SY7 640-6**	0.660	1/3
		50		**5SY7 650-6**	0.660	1/3
		63		**5SY7 663-6**	0.660	1/3
	**4-pole** 	6	4	**5SY7 406-6**	0.660	1/3
		10		**5SY7 410-6**	0.660	1/3
		13		**5SY7 413-6**	0.660	1/3
		16		**5SY7 416-6**	0.660	1/3
		20		**5SY7 420-6**	0.660	1/3
		25		**5SY7 425-6**	0.660	1/3
		32		**5SY7 432-6**	0.660	1/3
		40		**5SY7 440-6**	0.660	1/3
		50		**5SY7 450-6**	0.660	1/3
		63		**5SY7 463-6**	0.660	1/3

For information and footer, see page 3/38.

5SY7, 15 kA

Selection and ordering data

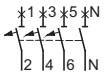
		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole** 	0.3	1	**5SY7 114-7**	**5SY7 114-8**	0.165	1/12
		0.5		**5SY7 105-7**	**5SY7 105-8**	0.165	1/12
		1		**5SY7 101-7**	**5SY7 101-8**	0.165	1/12
		1.6		**5SY7 115-7**	**5SY7 115-8**	0.165	1/12
		2		**5SY7 102-7**	**5SY7 102-8**	0.165	1/12
		3		**5SY7 103-7**	**5SY7 103-8**	0.165	1/12
		4		**5SY7 104-7**	**5SY7 104-8**	0.165	1/12
		6		**5SY7 106-7**	**5SY7 106-8**	0.165	1/12
		8		**5SY7 108-7**	**5SY7 108-8**	0.165	1/12
		10		**5SY7 110-7**	**5SY7 110-8**	0.165	1/12
		13		**5SY7 113-7**	**5SY7 113-8**	0.165	1/12
		16		**5SY7 116-7**	**5SY7 116-8**	0.165	1/12
		20		**5SY7 120-7**	**5SY7 120-8**	0.165	1/12
		25		**5SY7 125-7**	**5SY7 125-8**	0.165	1/12
		32 [1]		**5SY7 132-7**	**5SY7 132-8**	0.165	1/12
		40		**5SY7 140-7**	**5SY7 140-8**	0.165	1/12
		50		**5SY7 150-7**	**5SY7 150-8**	0.165	1/12
		63		**5SY7 163-7**	**5SY7 163-8**	0.165	1/12
	**1-pole + N** 	0.3	2	**5SY7 514-7**	**5SY7 514-8**	0.330	1/6
		0.5		**5SY7 505-7**	**5SY7 505-8**	0.330	1/6
		1		**5SY7 501-7**	**5SY7 501-8**	0.330	1/6
		1.6		**5SY7 515-7**	**5SY7 515-8**	0.330	1/6
		2		**5SY7 502-7**	**5SY7 502-8**	0.330	1/6
		3		**5SY7 503-7**	**5SY7 503-8**	0.330	1/6
		4		**5SY7 504-7**	**5SY7 504-8**	0.330	1/6
		6		**5SY7 506-7**	**5SY7 506-8**	0.330	1/6
		8		**5SY7 508-7**	**5SY7 508-8**	0.330	1/6
		10		**5SY7 510-7**	**5SY7 510-8**	0.330	1/6
		13		**5SY7 513-7**	**5SY7 513-8**	0.330	1/6
		16		**5SY7 516-7**	**5SY7 516-8**	0.330	1/6
		20		**5SY7 520-7**	**5SY7 520-8**	0.330	1/6
		25		**5SY7 525-7**	**5SY7 525-8**	0.330	1/6
		32		**5SY7 532-7**	**5SY7 532-8**	0.330	1/6
		40		**5SY7 540-7**	**5SY7 540-8**	0.330	1/6
		50		**5SY7 550-7**	**5SY7 550-8**	0.330	1/6
		63		**5SY7 563-7**	**5SY7 563-8**	0.330	1/6
	**2-pole** 	0.3	2	**5SY7 214-7**	**5SY7 214-8**	0.330	1/6
		0.5		**5SY7 205-7**	**5SY7 205-8**	0.330	1/6
		1		**5SY7 201-7**	**5SY7 201-8**	0.330	1/6
		1.6		**5SY7 215-7**	**5SY7 215-8**	0.330	1/6
		2		**5SY7 202-7**	**5SY7 202-8**	0.330	1/6
		3		**5SY7 203-7**	**5SY7 203-8**	0.330	1/6
		4		**5SY7 204-7**	**5SY7 204-8**	0.330	1/6
		6		**5SY7 206-7**	**5SY7 206-8**	0.330	1/6
		8		**5SY7 208-7**	**5SY7 208-8**	0.330	1/6
		10		**5SY7 210-7**	**5SY7 210-8**	0.330	1/6
		13		**5SY7 213-7**	**5SY7 213-8**	0.330	1/6
		16		**5SY7 216-7**	**5SY7 216-8**	0.330	1/6
		20		**5SY7 220-7**	**5SY7 220-8**	0.330	1/6
		25		**5SY7 225-7**	**5SY7 225-8**	0.330	1/6
		32		**5SY7 232-7**	**5SY7 232-8**	0.330	1/6
		40		**5SY7 240-7**	**5SY7 240-8**	0.330	1/6
		50		**5SY7 250-7**	**5SY7 250-8**	0.330	1/6
		63		**5SY7 263-7**	**5SY7 263-8**	0.330	1/6

Information and footer to pages 3/37 and 3/38:
The 5SY7 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).
For additional components, see page 3/47; for accessories, see page 3/57.

1) Only applies to 5SY7 132-6 and 5SY7 132-7:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

*** You can order this quantity or a multiple thereof.**

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**3-pole** 	0.3	3	**5SY7 314-7**	**5SY7 314-8**	0.495	1/4
		0.5		**5SY7 305-7**	**5SY7 305-8**	0.495	1/4
		1		**5SY7 301-7**	**5SY7 301-8**	0.495	1/4
		1.6		**5SY7 315-7**	**5SY7 315-8**	0.495	1/4
		2		**5SY7 302-7**	**5SY7 302-8**	0.495	1/4
		3		**5SY7 303-7**	**5SY7 303-8**	0.495	1/4
		4		**5SY7 304-7**	**5SY7 304-8**	0.495	1/4
		6		**5SY7 306-7**	**5SY7 306-8**	0.495	1/4
		8		**5SY7 308-7**	**5SY7 308-8**	0.495	1/4
		10		**5SY7 310-7**	**5SY7 310-8**	0.495	1/4
		13		**5SY7 313-7**	**5SY7 313-8**	0.495	1/4
		16		**5SY7 316-7**	**5SY7 316-8**	0.495	1/4
		20		**5SY7 320-7**	**5SY7 320-8**	0.495	1/4
		25		**5SY7 325-7**	**5SY7 325-8**	0.495	1/4
		32 [1]		**5SY7 332-7**	**5SY7 332-8**	0.495	1/4
		40		**5SY7 340-7**	**5SY7 340-8**	0.495	1/4
		50		**5SY7 350-7**	**5SY7 350-8**	0.495	1/4
		63		**5SY7 363-7**	**5SY7 363-8**	0.495	1/4
	**3-pole + N** 	0.3	4	**5SY7 614-7**	**5SY7 614-8**	0.660	1/3
		0.5		**5SY7 605-7**	**5SY7 605-8**	0.660	1/3
		1		**5SY7 601-7**	**5SY7 601-8**	0.660	1/3
		1.6		**5SY7 615-7**	**5SY7 615-8**	0.660	1/3
		2		**5SY7 602-7**	**5SY7 602-8**	0.660	1/3
		3		**5SY7 603-7**	**5SY7 603-8**	0.660	1/3
		4		**5SY7 604-7**	**5SY7 604-8**	0.660	1/3
		6		**5SY7 606-7**	**5SY7 606-8**	0.660	1/3
		8		**5SY7 608-7**	**5SY7 608-8**	0.660	1/3
		10		**5SY7 610-7**	**5SY7 610-8**	0.660	1/3
		13		**5SY7 613-7**	**5SY7 613-8**	0.660	1/3
		16		**5SY7 616-7**	**5SY7 616-8**	0.660	1/3
		20		**5SY7 620-7**	**5SY7 620-8**	0.660	1/3
		25		**5SY7 625-7**	**5SY7 625-8**	0.660	1/3
		32		**5SY7 632-7**	**5SY7 632-8**	0.660	1/3
		40		**5SY7 640-7**	**5SY7 640-8**	0.660	1/3
		50		**5SY7 650-7**	**5SY7 650-8**	0.660	1/3
		63		**5SY7 663-7**	**5SY7 663-8**	0.660	1/3
	**4-pole** 	0.3	4	**5SY7 414-7**	**5SY7 414-8**	0.660	1/3
		0.5		**5SY7 405-7**	**5SY7 405-8**	0.660	1/3
		1		**5SY7 401-7**	**5SY7 401-8**	0.660	1/3
		1.6		**5SY7 415-7**	**5SY7 415-8**	0.660	1/3
		2		**5SY7 402-7**	**5SY7 402-8**	0.660	1/3
		3		**5SY7 403-7**	**5SY7 403-8**	0.660	1/3
		4		**5SY7 404-7**	**5SY7 404-8**	0.660	1/3
		6		**5SY7 406-7**	**5SY7 406-8**	0.660	1/3
		8		**5SY7 408-7**	**5SY7 408-8**	0.660	1/3
		10		**5SY7 410-7**	**5SY7 410-8**	0.660	1/3
		13		**5SY7 413-7**	**5SY7 413-8**	0.660	1/3
		16		**5SY7 416-7**	**5SY7 416-8**	0.660	1/3
		20		**5SY7 420-7**	**5SY7 420-8**	0.660	1/3
		25		**5SY7 425-7**	**5SY7 425-8**	0.660	1/3
		32		**5SY7 432-7**	**5SY7 432-8**	0.660	1/3
		40		**5SY7 440-7**	**5SY7 440-8**	0.660	1/3
		50		**5SY7 450-7**	**5SY7 450-8**	0.660	1/3
		63		**5SY7 463-7**	**5SY7 463-8**	0.660	1/3

The 5SY7 versions are certified acc. to UL 1077 and CSA 22.2 No. 235-M 89 and can be installed as "supplementary protectors" up to 277 V AC (1-pole, 1-pole + N) and 480 V AC (2-pole, 3-pole, 3-pole + N, 4-pole).

For additional components, see page 3/47; for accessories, see page 3/57.

1) Only applicable for 5SY7 332-7:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic B or C and I_n = 40 A.

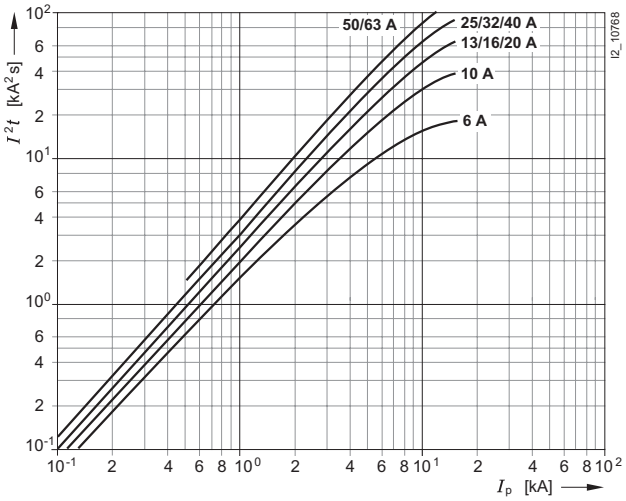
*** You can order this quantity or a multiple thereof.**

5SY7, 15 kA

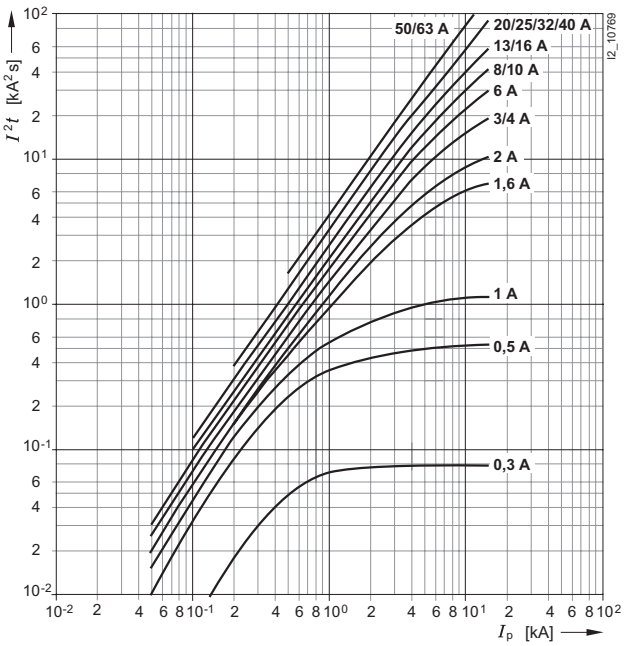
Characteristic curves

Let-through I^2t values

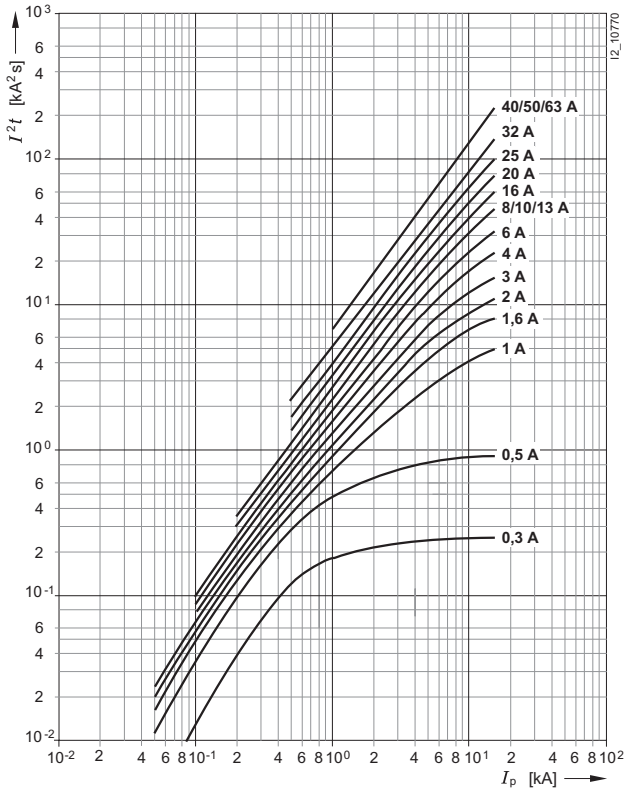
Characteristic B



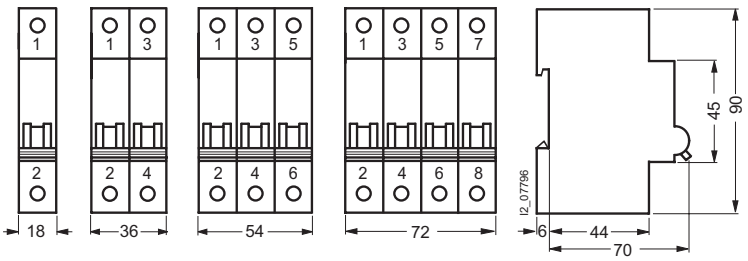
Characteristic C



Characteristic D



Dimensional drawings



Application

- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60947-2, IEC 60947-2
- Additional components can be retrofitted.

Characteristic C
General line protection, especially advantageous with higher starting currents (lamps, motors, etc.)

Characteristic D
Tripping range adapted to operating equipment involving significant pulse generation (transformers, solenoid valves).

Selection and ordering data

		I_n	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item	PS*/ P. unit
		A				kg	Items
	**1-pole** 	0.3	1	**5SY8 114-7**	**5SY8 114-8**	0.165	1/12
		0.5		**5SY8 105-7**	**5SY8 105-8**	0.165	1/12
		1		**5SY8 101-7**	**5SY8 101-8**	0.165	1/12
		1.6		**5SY8 115-7**	**5SY8 115-8**	0.165	1/12
		2		**5SY8 102-7**	**5SY8 102-8**	0.165	1/12
		3		**5SY8 103-7**	**5SY8 103-8**	0.165	1/12
		4		**5SY8 104-7**	**5SY8 104-8**	0.165	1/12
		6		**5SY8 106-7**	**5SY8 106-8**	0.165	1/12
		8		**5SY8 108-7**	**5SY8 108-8**	0.165	1/12
		10		**5SY8 110-7**	**5SY8 110-8**	0.165	1/12
		13		**5SY8 113-7**	**5SY8 113-8**	0.165	1/12
		16		**5SY8 116-7**	**5SY8 116-8**	0.165	1/12
		20		**5SY8 120-7**	**5SY8 120-8**	0.165	1/12
		25		**5SY8 125-7**	**5SY8 125-8**	0.165	1/12
		32 [1]		**5SY8 132-7**	**5SY8 132-8**	0.165	1/12
		40		**5SY8 140-7**	**5SY8 140-8**	0.165	1/12
		50		**5SY8 150-7**	**5SY8 150-8**	0.165	1/12
		63		**5SY8 163-7**	**5SY8 163-8**	0.165	1/12
	**1-pole + N** 	0.3	2	**5SY8 514-7**	**5SY8 514-8**	0.330	1/6
		0.5		**5SY8 505-7**	**5SY8 505-8**	0.330	1/6
		1		**5SY8 501-7**	**5SY8 501-8**	0.330	1/6
		1.6		**5SY8 515-7**	**5SY8 515-8**	0.330	1/6
		2		**5SY8 502-7**	**5SY8 502-8**	0.330	1/6
		3		**5SY8 503-7**	**5SY8 503-8**	0.330	1/6
		4		**5SY8 504-7**	**5SY8 504-8**	0.330	1/6
		6		**5SY8 506-7**	**5SY8 506-8**	0.330	1/6
		8		**5SY8 508-7**	**5SY8 508-8**	0.330	1/6
		10		**5SY8 510-7**	**5SY8 510-8**	0.330	1/6
		13		**5SY8 513-7**	**5SY8 513-8**	0.330	1/6
		16		**5SY8 516-7**	**5SY8 516-8**	0.330	1/6
		20		**5SY8 520-7**	**5SY8 520-8**	0.330	1/6
		25		**5SY8 525-7**	**5SY8 525-8**	0.330	1/6
		32		**5SY8 532-7**	**5SY8 532-8**	0.330	1/6
		40		**5SY8 540-7**	**5SY8 540-8**	0.330	1/6
		50		**5SY8 550-7**	**5SY8 550-8**	0.330	1/6
		63		**5SY8 563-7**	**5SY8 563-8**	0.330	1/6
	**2-pole** 	0.3	2	**5SY8 214-7**	**5SY8 214-8**	0.330	1/6
		0.5		**5SY8 205-7**	**5SY8 205-8**	0.330	1/6
		1		**5SY8 201-7**	**5SY8 201-8**	0.330	1/6
		1.6		**5SY8 215-7**	**5SY8 215-8**	0.330	1/6
		2		**5SY8 202-7**	**5SY8 202-8**	0.330	1/6
		3		**5SY8 203-7**	**5SY8 203-8**	0.330	1/6
		4		**5SY8 204-7**	**5SY8 204-8**	0.330	1/6
		6		**5SY8 206-7**	**5SY8 206-8**	0.330	1/6
		8		**5SY8 208-7**	**5SY8 208-8**	0.330	1/6
		10		**5SY8 210-7**	**5SY8 210-8**	0.330	1/6
		13		**5SY8 213-7**	**5SY8 213-8**	0.330	1/6
		16		**5SY8 216-7**	**5SY8 216-8**	0.330	1/6
		20		**5SY8 220-7**	**5SY8 220-8**	0.330	1/6
		25		**5SY8 225-7**	**5SY8 225-8**	0.330	1/6
		32		**5SY8 232-7**	**5SY8 232-8**	0.330	1/6
		40		**5SY8 240-7**	**5SY8 240-8**	0.330	1/6
		50		**5SY8 250-7**	**5SY8 250-8**	0.330	1/6
		63		**5SY8 263-7**	**5SY8 263-8**	0.330	1/6

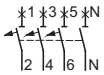
For additional components, see page 3/47. For accessories, see page 3/57.

1) Only applicable for 5SY8 132-7:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic C and I_n = 40 A.

*** You can order this quantity or a multiple thereof.**

5SY8, 25 kA

Selection and ordering data

		I_n A	MW	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**3-pole** 	0.3	3	**5SY8 314-7**	**5SY8 314-8**	0.495	1/4
		0.5		**5SY8 305-7**	**5SY8 305-8**	0.495	1/4
		1		**5SY8 301-7**	**5SY8 301-8**	0.495	1/4
		1.6		**5SY8 315-7**	**5SY8 315-8**	0.495	1/4
		2		**5SY8 302-7**	**5SY8 302-8**	0.495	1/4
		3		**5SY8 303-7**	**5SY8 303-8**	0.495	1/4
		4		**5SY8 304-7**	**5SY8 304-8**	0.495	1/4
		6		**5SY8 306-7**	**5SY8 306-8**	0.495	1/4
		8		**5SY8 308-7**	**5SY8 308-8**	0.495	1/4
		10		**5SY8 310-7**	**5SY8 310-8**	0.495	1/4
		13		**5SY8 313-7**	**5SY8 313-8**	0.495	1/4
		16		**5SY8 316-7**	**5SY8 316-8**	0.495	1/4
		20		**5SY8 320-7**	**5SY8 320-8**	0.495	1/4
		25		**5SY8 325-7**	**5SY8 325-8**	0.495	1/4
		32 [1]		**5SY8 332-7**	**5SY8 332-8**	0.495	1/4
		40		**5SY8 340-7**	**5SY8 340-8**	0.495	1/4
		50		**5SY8 350-7**	**5SY8 350-8**	0.495	1/4
		63		**5SY8 363-7**	**5SY8 363-8**	0.495	1/4
	**3-pole + N** 	0.3	4	**5SY8 614-7**	**5SY8 614-8**	0.660	1/3
		0.5		**5SY8 605-7**	**5SY8 605-8**	0.660	1/3
		1		**5SY8 601-7**	**5SY8 601-8**	0.660	1/3
		1.6		**5SY8 615-7**	**5SY8 615-8**	0.660	1/3
		2		**5SY8 602-7**	**5SY8 602-8**	0.660	1/3
		3		**5SY8 603-7**	**5SY8 603-8**	0.660	1/3
		4		**5SY8 604-7**	**5SY8 604-8**	0.660	1/3
		6		**5SY8 606-7**	**5SY8 606-8**	0.660	1/3
		8		**5SY8 608-7**	**5SY8 608-8**	0.660	1/3
		10		**5SY8 610-7**	**5SY8 610-8**	0.660	1/3
		13		**5SY8 613-7**	**5SY8 613-8**	0.660	1/3
		16		**5SY8 616-7**	**5SY8 616-8**	0.660	1/3
		20		**5SY8 620-7**	**5SY8 620-8**	0.660	1/3
		25		**5SY8 625-7**	**5SY8 625-8**	0.660	1/3
		32		**5SY8 632-7**	**5SY8 632-8**	0.660	1/3
		40		**5SY8 640-7**	**5SY8 640-8**	0.660	1/3
		50		**5SY8 650-7**	**5SY8 650-8**	0.660	1/3
		63		**5SY8 663-7**	**5SY8 663-8**	0.660	1/3
	**4-pole** 	0.3	4	**5SY8 414-7**	**5SY8 414-8**	0.660	1/3
		0.5		**5SY8 405-7**	**5SY8 405-8**	0.660	1/3
		1		**5SY8 401-7**	**5SY8 401-8**	0.660	1/3
		1.6		**5SY8 415-7**	**5SY8 415-8**	0.660	1/3
		2		**5SY8 402-7**	**5SY8 402-8**	0.660	1/3
		3		**5SY8 403-7**	**5SY8 403-8**	0.660	1/3
		4		**5SY8 404-7**	**5SY8 404-8**	0.660	1/3
		6		**5SY8 406-7**	**5SY8 406-8**	0.660	1/3
		8		**5SY8 408-7**	**5SY8 408-8**	0.660	1/3
		10		**5SY8 410-7**	**5SY8 410-8**	0.660	1/3
		13		**5SY8 413-7**	**5SY8 413-8**	0.660	1/3
		16		**5SY8 416-7**	**5SY8 416-8**	0.660	1/3
		20		**5SY8 420-7**	**5SY8 420-8**	0.660	1/3
		25		**5SY8 425-7**	**5SY8 425-8**	0.660	1/3
		32		**5SY8 432-7**	**5SY8 432-8**	0.660	1/3
		40		**5SY8 440-7**	**5SY8 440-8**	0.660	1/3
		50		**5SY8 450-7**	**5SY8 450-8**	0.660	1/3
		63		**5SY8 463-7**	**5SY8 463-8**	0.660	1/3

For additional components, see page 3/47. For accessories, see page 3/57.

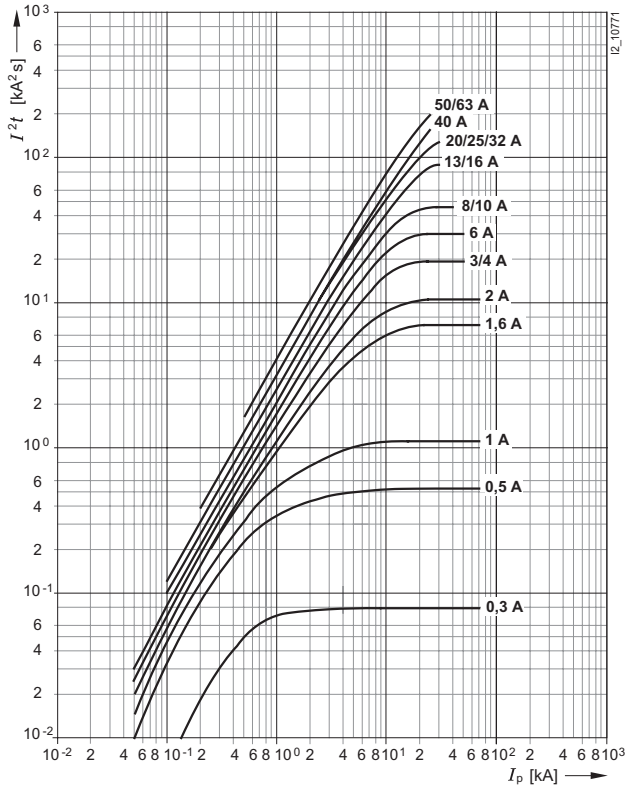
1) Only applicable for 5SY8 332-7:
Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using miniature circuit-breakers of characteristic C and I_n = 40 A is recommended.

*** You can order this quantity or a multiple thereof.**

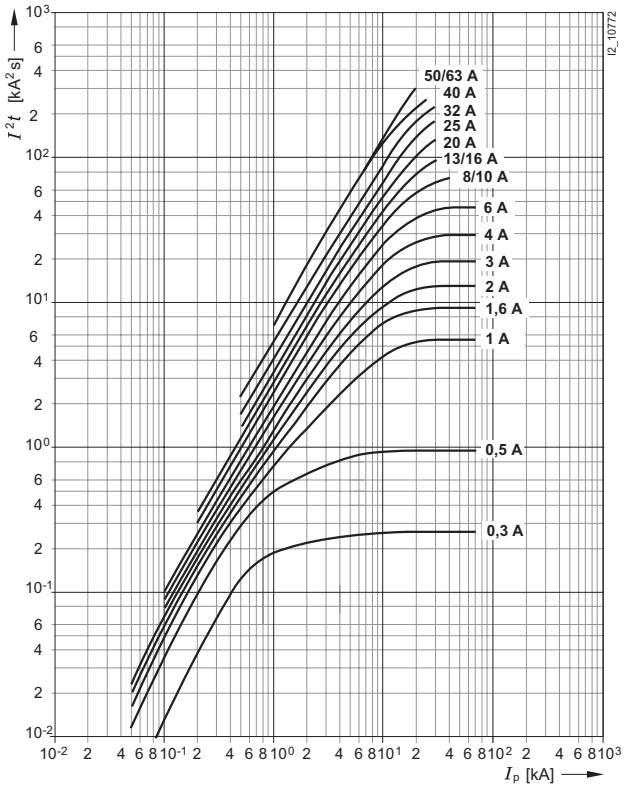
Characteristic curves

Let-through I^2t values

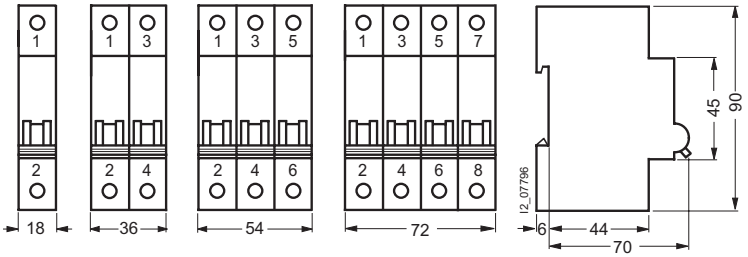
Characteristic C



Characteristic D



Dimensional drawings



5SY5, 10 kA

Application

- U_n: 230/400 V, 50 to 60 Hz, 220 V DC per pole, can be used in systems up to 250/440 V AC
  - 220 V DC: 1-pole
  - 440 V DC: 2-pole
- Standards: EN 60898, DIN VDE 0641 Part 11, IEC 60898
- Additional components can be retrofitted.

Selection and ordering data

		I_n A	MW	Characteristic B Order No.	Characteristic C Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole**						
		0.3	1	–	**5SY5 114-7**	0.165	1/12
		0.5		–	**5SY5 105-7**	0.165	1/12
		1		–	**5SY5 101-7**	0.147	1/12
		1.6		–	**5SY5 115-7**	0.165	1/12
		2		–	**5SY5 102-7**	0.165	1/12
		3		–	**5SY5 103-7**	0.165	1/12
		4		–	**5SY5 104-7**	0.165	1/12
		6		**5SY5 106-6**	**5SY5 106-7**	0.165	1/12
		8		–	**5SY5 108-7**	0.165	1/12
		10		**5SY5 110-6**	**5SY5 110-7**	0.165	1/12
		13		**5SY5 113-6**	**5SY5 113-7**	0.165	1/12
		16		**5SY5 116-6**	**5SY5 116-7**	0.165	1/12
		20		**5SY5 120-6**	**5SY5 120-7**	0.165	1/12
		25		**5SY5 125-6**	**5SY5 125-7**	0.165	1/12
		32 [1]		**5SY5 132-6**	**5SY5 132-7**	0.165	1/12
		40		**5SY5 140-6**	**5SY5 140-7**	0.165	1/12
		50		**5SY5 150-6**	**5SY5 150-7**	0.165	1/12
		63		**5SY5 163-6**	**5SY5 163-7**	0.165	1/12
	**2-pole**						
		0.3	2	–	**5SY5 214-7**	0.330	1/6
		0.5		–	**5SY5 205-7**	0.330	1/6
		1		–	**5SY5 201-7**	0.330	1/6
		1.6		–	**5SY5 215-7**	0.330	1/6
		2		–	**5SY5 202-7**	0.330	1/6
		3		–	**5SY5 203-7**	0.330	1/6
		4		–	**5SY5 204-7**	0.330	1/6
		6		**5SY5 206-6**	**5SY5 206-7**	0.330	1/6
		8		–	**5SY5 208-7**	0.330	1/6
		10		**5SY5 210-6**	**5SY5 210-7**	0.330	1/6
		13		**5SY5 213-6**	**5SY5 213-7**	0.330	1/6
		16		**5SY5 216-6**	**5SY5 216-7**	0.330	1/6
		20		**5SY5 220-6**	**5SY5 220-7**	0.330	1/6
		25		**5SY5 225-6**	**5SY5 225-7**	0.330	1/6
		32		**5SY5 232-6**	**5SY5 232-7**	0.330	1/6
		40		**5SY5 240-6**	**5SY5 240-7**	0.330	1/6
		50		**5SY5 250-6**	**5SY5 250-7**	0.330	1/6
		63		**5SY5 263-6**	**5SY5 263-7**	0.330	1/6

The terminal section indicates the DC polarity value which must essentially be observed during connection.
For additional components, see page 3/47. For accessories, see page 3/57.

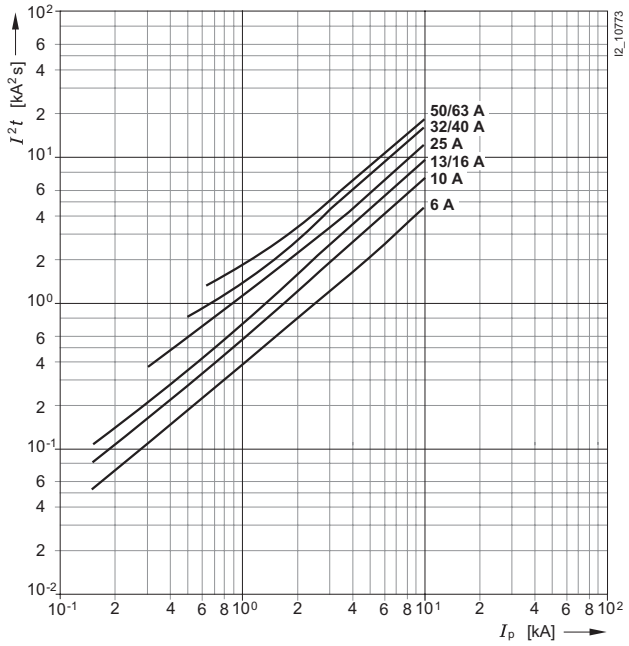
1) Also suitable for 21-kW active power at 400 V three-phase AC (e.g. continuous-flow heaters with short-time operation duty) or 7-kW active power at 230 V AC (e.g. storage in not-continuous duty). For continuous load applications, we recommend using 5SY. ...-6/-7 miniature circuit-breakers with I_n = 40 A.

* You can order this quantity or a multiple thereof.

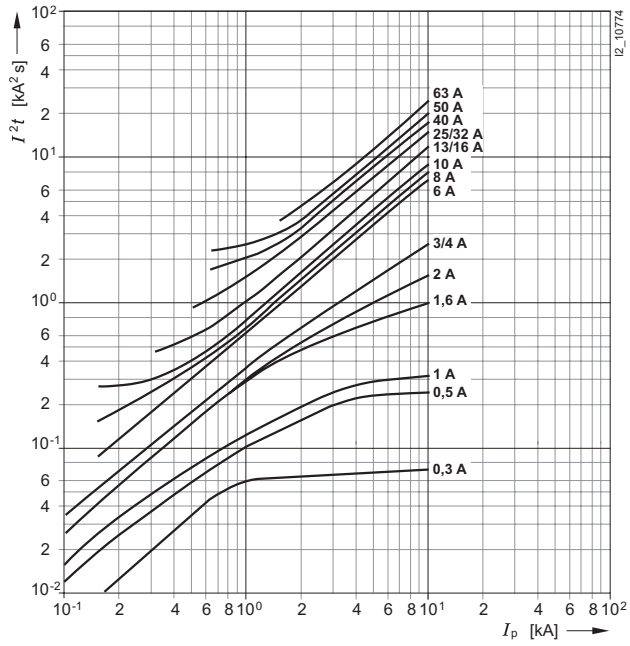
Characteristic curves

Let-through I^2t values

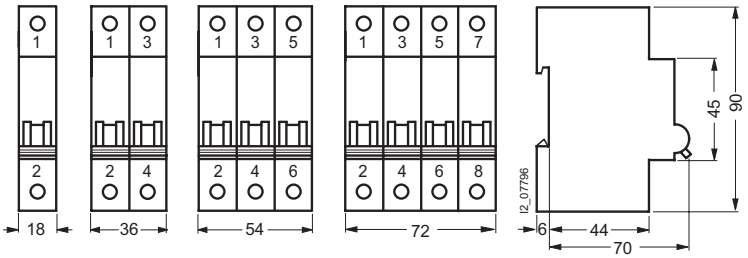
Characteristic B



Characteristic C



Dimensional drawings



10 000
3

5SP4, 10 kA

Application

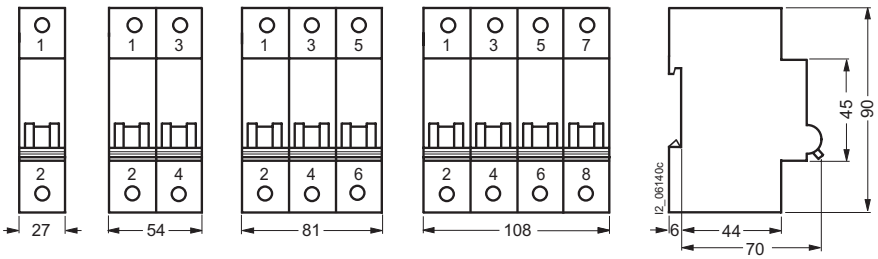
- U_n: 230/400 V, 50 to 60 Hz, can be used in systems up to 250/440 V AC, 60 V DC per pole
- Standards: EN 60898, IEC 60898, DIN VDE 0641 Part 11, EN 60204
- Additional components can be retrofitted individually.
- Main switch characteristics acc. to EN 60204
- Can be snapped onto standard mounting rail acc. to EN 60715
- Can be screwed onto bases
- As main and miniature circuit-breakers in non-residential and industrial buildings.

Selection and ordering data

		I_n A	MW	Characteristic B Order No.	Characteristic C Order No.	Characteristic D Order No.	Weight 1 item kg	PS*/ P. unit Items
	**1-pole** 	80	1.5	**5SP4 180-6**	**5SP4 180-7**	**5SP4 180-8**	0.258	1/6
		100		**5SP4 191-6**	**5SP4 191-7**	**5SP4 191-8**	0.258	1/6
		125		**5SP4 192-6**	**5SP4 192-7**	–	0.258	1/6
	**2-pole** 	80	3	**5SP4 280-6**	**5SP4 280-7**	**5SP4 280-8**	0.516	1/3
		100		**5SP4 291-6**	**5SP4 291-7**	**5SP4 291-8**	0.516	1/3
		125		**5SP4 292-6**	**5SP4 292-7**	–	0.516	1/3
	**3-pole** 	80	4.5	**5SP4 380-6**	**5SP4 380-7**	**5SP4 380-8**	0.762	1/2
		100		**5SP4 391-6**	**5SP4 391-7**	**5SP4 391-8**	0.762	1/2
		125		**5SP4 392-6**	**5SP4 392-7**	–	0.762	1/2
	**4-pole** 	80	6	**5SP4 480-6**	**5SP4 480-7**	**5SP4 480-8**	1.032	1
		100		**5SP4 491-6**	**5SP4 491-7**	**5SP4 491-8**	1.032	1
		125		**5SP4 492-6**	**5SP4 492-7**	–	1.032	1

For additional components, see page 3/47.
For accessories, see page 3/57.

Dimensional drawings



* You can order this quantity or a multiple thereof.

Overview

	Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	Additional components can be retrofitted	~ (type AC) 1)	~ (type A) 2)
RC units for 5SY4, 5SY6, 5SY7, 5SY8 miniature circuit-breakers 3)							
instantaneous tripping, surge current withstand capability >1 kA 4)	2	10	0.3 ... 16	2	at the MCB	•	•
	2	30, 300	0.3 ... 40	2	at the MCB	•	•
		30, 300, 500	0.3 ... 63		at the MCB	•	•
	3	30, 300	0.3 ... 40	3	at the MCB	•	•
		30, 300, 500	0.3 ... 63		at the MCB	•	•
	4	30, 300	0.3 ... 40	3	at the MCB	•	•
		30, 300, 500	0.3 ... 63		at the MCB	•	•
K short-time delayed surge current withstand capability >3 kA	4	30	0.3 ... 40	3	at the MCB	–	•
			0.3 ... 63		at the MCB	–	•
S selective surge current withstand capability >5 kA	2	300	0.3 ... 40	2	at the MCB	–	•
			0.3 ... 63		at the MCB	–	•
	3	300, 500, 1 000	0.3 ... 63	3	at the MCB	–	•
	4	300, 500, 1 000	0.3 ... 63	3	at the MCB	–	•
RC units for 5SP4 miniature circuit-breakers 3)							
instantaneous tripping, surge current withstand capability >1 kA 4)	2	30, 300	80 ... 100	3.5	at the MCB	•	•
	4	30, 300	80 ... 100	5	at the MCB	•	•
S selective surge current withstand capability >5 kA	2	300	80 ... 100	3.5	at the MCB	–	•
	4	300, 1 000	80 ... 100	5	at the MCB	–	•

1) ~ = type AC for AC fault currents.

2) ~ = type A for AC and pulsating DC fault currents.

3) RC unit, additional components for 5SY. and 5SP4 miniature circuit-breakers, see also section, "Miniature circuit-breakers".

4) For type A.

Installation

The RC unit for 5SM2 ... miniature circuit-breaker is selected in accordance with the number of poles, I_n and $I_{\Delta n}$.

The miniature circuit-breaker is selected from the series 5SY4, 5SY6, 5SY7 or 5SY8 with the same number of poles as the desired characteristic (A, B, C or D) and suitable I_n.

The two components are simply plugged together without the need for any tools. After the connecting screws of the conductor connection between the RC unit and the miniature circuit-breaker have been tightened, the two devices form an RCBO.

(Type AC) (Type A)

5SM2, product overview

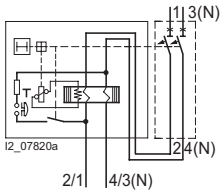
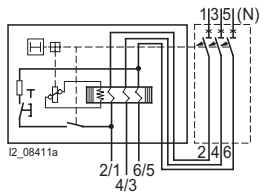
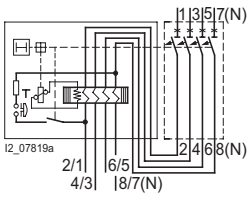
Technical specifications

Standards		IEC/EN 61009, VDE 0664 Part 20, IEC/EN 61543, VDE 0664 Part 30		
Versions		2-pole, 3-pole and 4-pole		
Rated voltages U_n	V AC	230 ... 400, 50 ... 60 Hz		
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, 300, 500, 1 000		
Enclosure		gray molded-plastic (RAL 7035)		
Mounting depth	mm	70		
Terminals		Tunnel terminals with wire protection	Conductor cross-section mm^2	Recommended terminal tightening torque Nm
		up to I_n = 63 A	1.0 ... 25	2.5 ... 3.0
		I_n = 80/100 A	6.0 ... 35	3.0 ... 3.5
Supply connection		either top or bottom		
Mounting position		any		
Mounting technique		can be snapped onto standard mounting rail 35 mm (TH 35 acc. to EN 60715)		
Degree of protection		IP20 acc. to EN 60529 (VDE 0470 Part 1) IP40 for installation in distribution boards IP54 for installation in molded-plastic enclosure		
Protection against contact		Protection against contact with fingers or the back of the hand acc. to EN 50274 (VDE 0660 Part 514)		
Minimum operating voltage for test function operation	V AC	up to I_n = 63 A, 4-pole up to I_n = 63 A, 2 and 3-pole I_n = 80/100 A	100 195 100	
Device service life		> 10 000 operations (electrical and mechanical; Test cycle acc. to regulations)		
Storage temperature	°C	-40 ... +75		
Ambient temperature	°C	-5 ... +45, for versions with the symbol  : -25 ... +45		
Resistance to climate acc. to IEC 60068-2-30		28 cycles (55 °C; 95 % rel. humidity)		
CFC and silicone-free		yes		

Application

- Personnel and fire protection
  - $I_{\Delta n} \leq 30$ mA: Additional protection in the case of direct contact
  - $I_{\Delta n} \leq 300$ mA: Preventative fire protection in the case of ground fault currents
- Product standards: IEC/EN 61009-1; IEC/EN 61009-2-1; IEC/EN 61543 (VDE 0664, Part 30)
- Rated voltage for 2, 3 and 4-pole devices: 230 to 400 V AC; 50 to 60 Hz; applicable in systems up to: 250/440 V AC
- Can be combined with miniature circuit-breakers of characteristic A, B, C and D.

Selection and ordering data

	Circuit diagram	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	Version	Order No.	Weight 1 item kg	PS*/ P. unit Items
Instantaneous tripping [1]								
	**230 ... 400 V AC; 50 ... 60 Hz; 2-pole** 	10	0.3 ... 16	2		**5SM2 121-0**	0.170	1
		30	0.3 ... 40			**5SM2 322-0**	0.170	1
		300				**5SM2 622-0**	0.170	1
		30	0.3 ... 63			**5SM2 325-0**	0.170	1
		300				**5SM2 625-0**	0.170	1
		500				**5SM2 725-0**	0.170	1
		1000				**5SM2 825-0**	0.170	1
	**230 ... 400 V AC; 50 ... 60 Hz; 3-pole** 	30	0.3 ... 40	3		**5SM2 332-0**	0.260	1
		300				**5SM2 632-0**	0.260	1
		30	0.3 ... 63			**5SM2 335-0**	0.260	1
		300				**5SM2 635-0**	0.260	1
	**230 ... 400 V AC; 50 ... 60 Hz; 4-pole** 	30	0.3 ... 40	3		**5SM2 342-0**	0.290	1
		300				**5SM2 642-0**	0.290	1
		30	0.3 ... 63			**5SM2 345-0**	0.290	1
		300				**5SM2 645-0**	0.290	1

1) Not for 5SY6 ...-.KV.

Additional Components

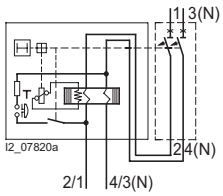
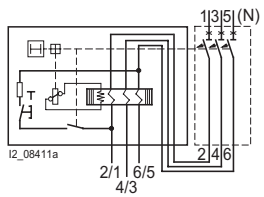
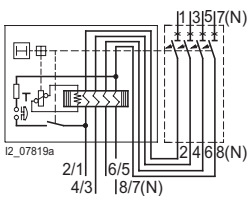
(Type A)

5SM2, type A, 0.3 ... 63 A, for 5SY4, 5SY6, 5SY7, 5SY8

Application

- Personnel and fire protection
  - $I_{\Delta n} \leq 30$ mA: Additional protection in the case of direct contact
  - $I_{\Delta n} \leq 300$ mA: Preventative fire protection in the case of ground fault currents
- Product standards: IEC/EN 61009-1 (VDE 0664, Part 20); IEC/EN 61009-2-1 (VDE 0664, Part 21); IEC/EN 61543 (VDE 0664, Part 30)
- Rated voltage for 2, 3 and 4-pole version: 230 to 400 V AC; 50 to 60 Hz; applicable in systems up to: 250/440 V AC
- Can be combined with miniature circuit-breakers of characteristic A, B, C and D
- Definition of surge current withstand capability with current waveform 8/20 µs acc. to DIN VDE 0432, Part 2
- S S-type: Can be used as upstream group switch for selective tripping contrary to a downstream standard RCCB or RC unit. Very high surge current withstand capability: >5 kA
- K K-type: Short-time delayed disconnection in the case of transient leakage currents. High surge current withstand capability: >3 kA.

Selection and ordering data

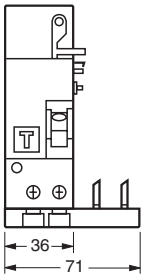
	Circuit diagram	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	Version	Order No.	Weight 1 item kg	PS*/ P. unit Items
Instantaneous tripping, surge current withstand capability >1 kA [1]								
	**230 ... 400 V AC; 50 ... 60 Hz; 2-pole** 	10	0.3 ... 16	2		**5SM2 121-6**	0.170	1
		30	0.3 ... 40	2		**5SM2 322-6**	0.170	1
		300				**5SM2 622-6**	0.170	1
		30	0.3 ... 63			**5SM2 325-6**	0.170	1
		300				**5SM2 625-6**	0.170	1
		500			NEW	**5SM2 725-6**	0.170	1
	**230 ... 400 V AC; 50 ... 60 Hz; 3-pole** 	30	0.3 ... 40	3		**5SM2 332-6**	0.260	1
		300				**5SM2 632-6**	0.260	1
		30	0.3 ... 63			**5SM2 335-6**	0.260	1
		300				**5SM2 635-6**	0.260	1
		500				**5SM2 735-6**	0.260	1
	**230 ... 400 V AC; 50 ... 60 Hz; 4-pole** 	30	0.3 ... 40	3		**5SM2 342-6**	0.290	1
		300				**5SM2 642-6**	0.290	1
		30	0.3 ... 63			**5SM2 345-6**	0.290	1
		300				**5SM2 645-6**	0.290	1
		500				**5SM2 745-6**	0.290	1
K short-time delayed, surge current withstand capability >3 kA [1]								
	230 ... 400 V AC; 50 ... 60 Hz; 4-pole	30	0.3 ... 40	3	K	**5SM2 342-6KK01**	0.290	1
			0.3 ... 63		K	**5SM2 345-6KK01**	0.290	1
S selective, surge current withstand capability >5 kA [1]								
	230 ... 400 V AC; 50 ... 60 Hz; 2-pole	300	0.3 ... 40	2	S	**5SM2 622-8**	0.170	1
		300	0.3 ... 63		S	**5SM2 625-8**	0.170	1
	230 ... 400 V AC; 50 ... 60 Hz; 3-pole	300	0.3 ... 63	3	S	**5SM2 635-8**	0.260	1
		500			S NEW	**5SM2 735-8**	0.260	1
		1 000			S	**5SM2 835-8**	0.260	1
	230 ... 400 V AC; 50 ... 60 Hz; 4-pole	300	0.3 ... 63	3	S	**5SM2 645-8**	0.290	1
		500			S NEW	**5SM2 745-8**	0.290	1
		1 000			S	**5SM2 845-8**	0.290	1

1) Not for 5SY6 ...-.KV.

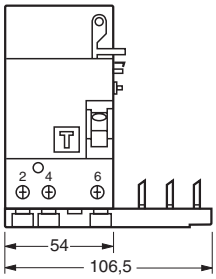
* You can order this quantity or a multiple thereof.

Dimensional drawings

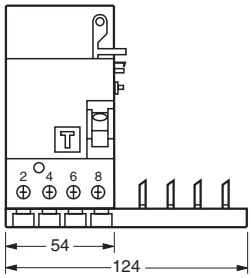
5SM2 322-6,
5SM2 325-6,
5SM2 622-.,
5SM2 625-.,

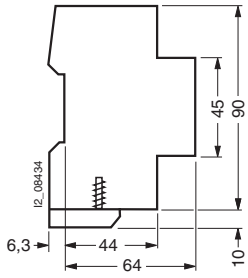


5SM2 332-6,
5SM2 335-6,
5SM2 632-6,
5SM2 635-.,
5SM2 835-8,



5SM2 342-6,
5SM2 345-6,
5SM2 642-6,
5SM2 645-.,
5SM2 845-8





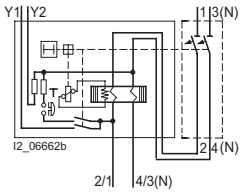
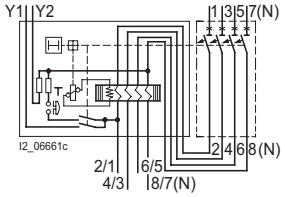
(Type AC)

5SM2, type AC, 80 ... 100 A, for 5SP4

Application

- Personnel and fire protection
  - $I_{\Delta n} \leq 30$ mA: Additional protection in the case of direct contact
  - $I_{\Delta n} \leq 300$ mA: Preventative fire protection in the case of ground fault currents
- Product standards: IEC/EN 61009-1; IEC/EN 61009-2-1; IEC/EN 61543 (VDE 0664, Part 30)
- Rated voltage
  - 2-pole: 125 ... 230 V AC; 50 to 60 Hz; applicable in networks up to 125/240 V AC
  - 4-pole: 230 to 400 V AC; 50 to 60 Hz; applicable in networks up to 230/400 V AC
- Can be combined with miniature circuit-breakers of characteristic B and C.

Selection and ordering data

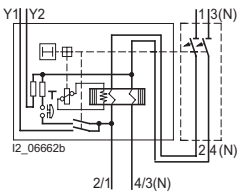
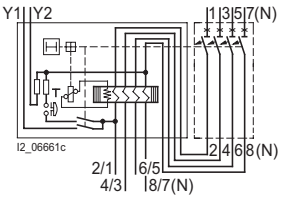
	Circuit diagram	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	Version	Order No.	Weight 1 item kg	PS*/ P. unit Items
Instantaneous tripping								
	**125 ... 230 V AC; 50 ... 60 Hz; 2-pole** 	30 300	80 ... 100	3.5		**5SM2 327-0** **5SM2 627-0**	0.550 0.550	1 1
	**230 ... 400 V AC; 50 ... 60 Hz; 4-pole** 	30 300	80 ... 100	5		**5SM2 347-0** **5SM2 647-0**	0.944 0.944	1 1

*** You can order this quantity or a multiple thereof.**

Application

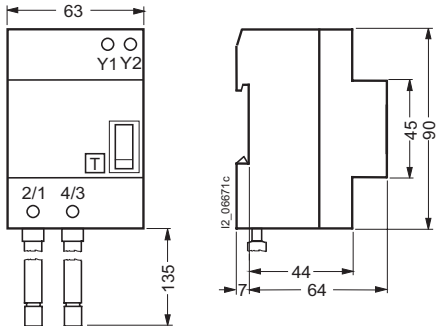
- Personnel and fire protection
  - $I_{\Delta n}$ ≤ 30 mA: Additional protection in the case of direct contact
  - $I_{\Delta n}$ ≤ 300 mA: Preventative fire protection in the case of ground fault currents
- Product standards: IEC/EN 61009-1 (VDE 0664, Part 20); IEC/EN 61009-2-1 (VDE 0664, Part 21); IEC/EN 61543 (VDE 0664, Part 30)
- Rated voltage
  - 2-pole: 125 ... 230 V AC; 50 to 60 Hz; applicable in networks up to 125/240 V AC
  - 4-pole: 230 to 400 V AC; 50 to 60 Hz; applicable in networks up to 230/400 V AC
- Can be combined with miniature circuit-breakers of characteristic B and C
- Definition of surge current withstand capability with current waveform 8/20 µs acc. to DIN VDE 0432, Part 2
- [S] S-type: Can be used as upstream group switch for selective tripping contrary to a downstream standard RCCB. Very high surge current withstand capability: >5 kA.

Selection and ordering data

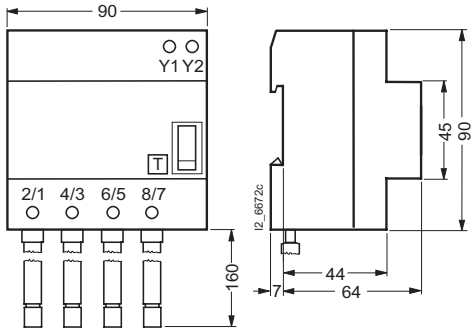
	Circuit diagram	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	Version	Order No.	Weight 1 item kg	PS*/ P. unit Items
Instantaneous tripping, surge current withstand capability >1 kA								
	**125 ... 230 V AC; 50 ... 60 Hz; 2-pole** 	30 300	80 ... 100	3.5		**5SM2 327-6** **5SM2 627-6**	0.410 0.410	1 1
	**230 ... 400 V AC; 50 ... 60 Hz; 4-pole** 	30 300	80 ... 100	5		**5SM2 347-6** **5SM2 647-6**	0.630 0.630	1 1
[S] selective, surge current withstand capability >5 kA								
	125 ... 230 V AC; 50 ... 60 Hz; 2-pole	300	80 ... 100		[S]	**5SM2 627-8**	0.410	1
	230 ... 400 V AC; 50 ... 60 Hz; 4-pole	300 1 000	80 ... 100		[S] [S]	**5SM2 647-8** **5SM2 847-8**	0.630 0.630	1 1

Dimensional drawings

5SM2 327-.,
5SM2 627-.



5SM2 347-.,
5SM3 647-.,
5SM2 847-8



* You can order this quantity or a multiple thereof.

Additional Components

Auxiliary circuit switch/fault signal contact for 5SY. and 5SP4

Benefits

- Can be retrofitted individually (for mounting concept, rfer to page 3/55)
- Mounting with factory-fitted brackets
- Short-circuit protection by means of miniature circuit-breakers of B or C characteristic and I_n = 6 A or gL 6 A fuses.
- Wide range of applications thanks to additional version for controlling programmable controllers (PLCs) acc. to EN 61131-2
- Can be connected to *instabus* KNX *EIB* and AS-Interface bus over binary inputs

Application

Indication of the miniature circuit-breaker's switching state:
- AS: ON/OFF
- FC: tripped.

Design

Auxiliary circuit switch (AS)
5ST3 013
5ST3 014
5ST3 015

- Area of application 1 mA/ 5 V DC to 50 mA/30 V DC.

Auxiliary circuit switch (AS) and fault signal contact (FC)
5ST3 0.0
5ST3 0.1
5ST3 0.2

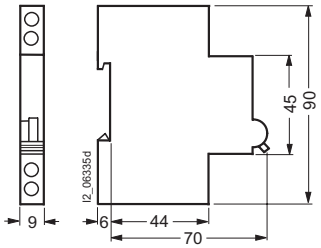
- Min. contact load: 50 mA, 24 V
- Max. contact load:
  NO contacts:
  2 A, 400 V AC, AC-14
  6 A, 230 V AC, AC-14
  1 A, 220 V DC, DC-13
  1 A, 110 V DC, DC-13
  3 A, 60 V DC, DC-13
  6 A, 24 V DC, DC-13
  NC contacts:
  2 A, 400 V AC, AC-13
  6 A, 230 V AC, AC-13
  1 A, 220 V DC, DC-13
  1 A, 110 V DC, DC-13
  3 A, 60 V DC, DC-13
  6 A, 24 V DC, DC-13

Selection and ordering data

		Version	MW	Order No.	Weight 1 item kg	PS*/ P. unit Items
	**Auxiliary circuit switches (AS) for 5SY miniature circuit-breaker** [1]					
		for small output	1 NO + 1 NC 0.5	**5ST3 010**	0.050	1
				5ST3 013	0.050	1
		for small output	2 NO	**5ST3 011**	0.050	1
				5ST3 014	0.050	1
		for small output	2 NC	**5ST3 012**	0.050	1
				5ST3 015	0.050	1
	**Fault signal contacts (FC) for 5SY miniature circuit-breaker** [1]					
			1 NO + 1 NC 0.5	**5ST3 020**	0.050	1
			2 NO	**5ST3 021**	0.050	1
			2 NC	**5ST3 022**	0.050	1

1) Not for 5SY6 ..-.KV.

Dimensional drawings



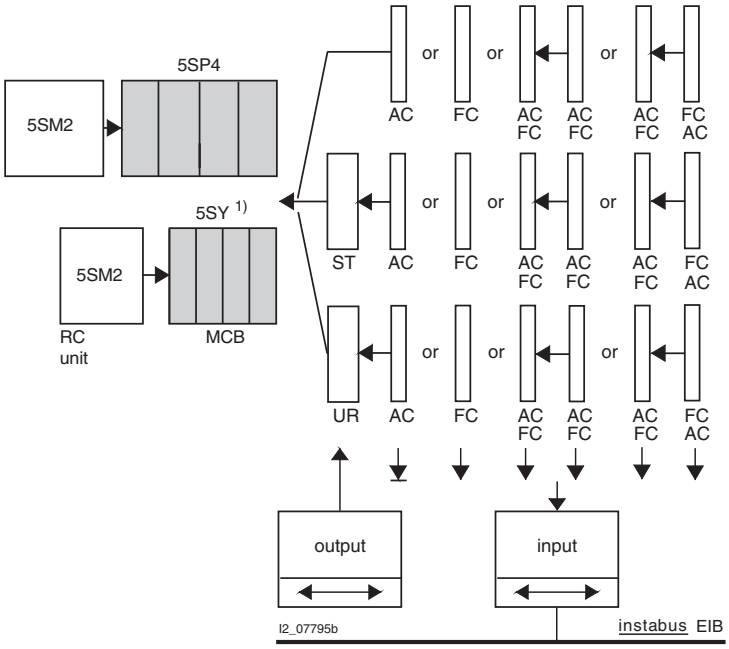
* You can order this quantity or a multiple thereof.

Benefits

- Can be retrofitted individually (for mounting concept, see below)
- Mounting with factory-fitted brackets
- Can be mechanically latched and locked
- Further additional components can be attached
- Function switch on the front
- Can be connected to *instabus* KNX *EIB* and AS-Interface through binary inputs and outputs
- U_n = 230 V, 50 to 60 Hz

Mounting concept

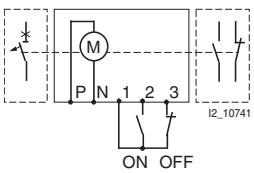
Using this mounting concept, all additional 5ST3 components can be combined with miniature circuit-breaker of the 5SY [1] and 5SP4 series:



Function

- ON/OFF remote control switch of miniature circuit-breaker
- Remote switching ON is possible following acknowledgment of fault occurrence
- Manual switching on-site possible
- Remote display of switching status of remote controlled mechanism and miniature circuit-breaker

Selection and ordering data

		Rated voltage U_n V AC	MW	Order No.	Weight 1 item kg	PS*/ P. unit Items
	**Remote controlled mechanism (RC) for 5SY and 5SP4 miniature circuit-breakers** [1] 	230	3.5	**5ST3 050**	0.390	1

For detailed application information, see operator guide.

1) Not for 5SY6 ..-.KV.

Additional Components

Shunt trip/undervoltage release for 5SY. and 5SP4

Benefits

Shunt release

- Can be retrofitted individually (for mounting concept, refer to page 3/55)
- Response limits acc. to DIN VDE 0660 Part 100, 7.2.1.4
- Suitable for voltages:
  110 to 415 V AC, 110 V AC
  24 to 48 V AC/DC
- Can be connected to
  instabus KNX *EIB* and AS-Interface bus through binary outputs

Undervoltage releases

- Can be retrofitted individually (for mounting concept, refer to page 3/55)
- Response limits acc. to DIN VDE 0660 Part 100, 7.2.1.3
- Suitable for voltages:
  230 V AC
  110 V DC
  24 V DC
- Can be connected to
  instabus KNX *EIB* and AS-Interface bus through binary outputs

Application

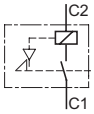
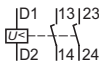
Shunt release

- Remote tripping of the miniature circuit-breaker.

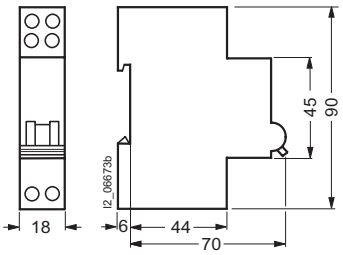
Undervoltage releases

- Applicable as remote trip in an EMERGENCY-OFF loop
- Ensures disconnection of the control circuit acc. to EN 60204
- In cases of interrupted or insufficient voltage, the undervoltage release trips the miniature circuit-breaker or prevents it from switching on.

Selection and ordering data

		Rated voltage U_n	MW	Order No.	Weight 1 item kg	PS*/ P. unit Items
	**Shunt trips (ST) for miniature circuit-breakers 5SY4, 5SY6, 5SY7, 5SY8, 5SY5, 5SP4** [1]					
		110 ... 415 V AC	1	**5ST3 030**	0.098	1
		24 ... 48 V AC/DC	1	**5ST3 031**	0.098	1
	**Undervoltage releases (UR) for miniature circuit-breakers 5SY4, 5SY6, 5SY7, 5SY8, 5SY5, 5SP4** [1]					
		230 V AC	1	**5ST3 040**	0.115	1
		110 V DC		**5ST3 041**	0.115	1
		24 V DC		**5ST3 042**	0.115	1
		230 V AC	1	**5ST3 043**	0.115	1
		110 V DC		**5ST3 044**	0.115	1
		24 V DC		**5ST3 045**	0.115	1

Dimensional drawings



1) Not for 5SY6 ...-.KV.

*** You can order this quantity or a multiple thereof.**

Application

5ST3 7 busbar system

- Acc. to DIN 57606 and DIN 57659
- Load at infeed single-sided/in center
  - 50 A/90 A for 10 mm^2
  - 65 A/120 A for 16 mm^2.
- Pin-type connections
- Single and multi-phase
- Cu 10 mm^2, 16 mm^2 fully insulated
- Lug spacing: 18 mm
- No additional connection terminal required for stranded connections up to 35 mm^2
- Excellent accessibility of the feeder cables.

5ST3 6 busbar system

- Acc. to IEC 60664, 500 V (40 °C), fully insulated
- Load at infeed single-sided/in center
  - 50 A/90 A for 10 mm^2
  - 65 A/120 A for 16 mm^2.

Application

- Pin-type connections
- Any length possible thanks to the combination of 3 fixed busbar lengths
- Favorable current and temperature conduction thanks to the overlapping of individual components
- Time-consuming work such as cutting, cutting to length, deburring, cleaning of cut surfaces as well as mounting of end caps is made unnecessary
- Safe protection against contact for non-assigned connections

Selection and ordering data

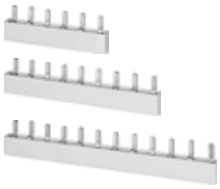
	Length	Order No.	Weight 1 item	PS*/ P. unit
	mm		kg	Items
5ST3 7 busbar system for miniature circuit-breakers 5SJ6, 5SY6, 5SY4, 5SY7, 5SY8, 5SY5				
 **Busbars 10 mm^2**				
fully insulated:				
1-phase	214	**5ST3 730**	0.040	1/50
1-phase + AS		**5ST3 732**	0.040	1/50
2-phase		**5ST3 734**	0.060	1/25
2-phase + AS		**5ST3 736**	0.060	1/25
3-phase		**5ST3 738**	0.100	1/25
3-phase + AS		**5ST3 741**	0.100	1/25
3 × (1-phase + AS)		**5ST3 743**	0.100	1/25
4-phase		**5ST3 745**	0.110	1/20
3-phase, for a 5SM3 4-pole RCCB with 8 miniature circuit-breakers:				
3/N + 8 terminals		**5ST3 747**	0.150	1/25
without end caps:				
1-phase	1016	**5ST3 731**	0.190	1/50
1-phase + AS		**5ST3 733**	0.190	1/50
2-phase		**5ST3 735**	0.220	1/20
2-phase + AS		**5ST3 737**	0.220	1/20
3-phase		**5ST3 740**	0.430	1/20
3-phase + AS		**5ST3 742**	0.300	1/20
3 × (1-phase + AS)		**5ST3 744**	0.300	1/20
4-phase		**5ST3 746**	0.700	1/15
 **Busbars 16 mm^2**				
fully insulated:				
1-phase	214	**5ST3 700**	0.040	1/50
1-phase + AS		**5ST3 702**	0.040	1/50
2-phase		**5ST3 704**	0.060	1/25
2-phase + AS		**5ST3 706**	0.060	1/25
3-phase		**5ST3 708**	0.100	1/25
3-phase + AS		**5ST3 711**	0.100	1/25
3 × (1-phase + AS)		**5ST3 713**	0.100	1/25
4-phase		**5ST3 715**	0.150	1/20
3-phase, for a 5SM3 4-pole RCCB with 8 miniature circuit-breakers:				
3/N + 8 terminals		**5ST3 717**	0.150	1/25
without end caps:				
1-phase	1016	**5ST3 701**	0.190	1/50
1-phase + AS		**5ST3 703**	0.190	1/50
2-phase		**5ST3 705**	0.290	1/20
2-phase + AS		**5ST3 707**	0.290	1/20
3-phase		**5ST3 710**	0.430	1/20
3-phase + AS		**5ST3 712**	0.430	1/20
3 × (1-phase + AS)		**5ST3 714**	0.430	1/20
4-phase		**5ST3 716**	0.700	1/15

*** You can order this quantity or a multiple thereof.**

Accessories

for 5SJ6, 5SY. and 5SP4

Selection and ordering data

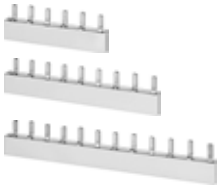
		Order No.		Weight 1 item	PS*/ P. unit
				kg	Items
5ST3 7 busbar system for miniature circuit-breakers 5SJ6, 5SY6, 5SY4, 5SY7, 5SY8, 5SY5					
	**End caps** for lateral insulation of cut-to-length busbars				
	1-phase	**5ST3 748**		0.001	1/10
	2- and 3-phase	**5ST3 750**		0.001	1/10
	4-phase	**5ST3 718**		0.001	10
5ST3 6 busbar system for miniature circuit-breakers 5SJ6, 5SY6, 5SY4, 5SY7, 5SY8, 5SY5					
	**Busbars 10 mm²** fully insulated:				
	1-phase				
	2 x single-phase	**5ST3 600**	NEW	0.005	1/10
	6 x single-phase	**5ST3 601**	NEW	0.018	1/10
	12 x single-phase	**5ST3 602**	NEW	0.036	1/10
	2 x (single-phase + AS/FC)	**5ST3 603**	NEW	0.008	1/10
	6 x (single-phase + AS/FC)	**5ST3 604**	NEW	0.024	1/10
	9 x (single-phase + AS/FC)	**5ST3 605**	NEW	0.036	1/10
	2-phase				
	2 x 2-phase	**5ST3 606**	NEW	0.016	1/10
	3 x 2-phase	**5ST3 607**	NEW	0.024	1/10
	6 x 2-phase	**5ST3 608**	NEW	0.048	1/10
	2 x (2-phase + AS/FC)	**5ST3 610**	NEW	0.020	1/10
	3 x (2-phase + AS/FC)	**5ST3 611**	NEW	0.030	1/10
	5 x (2-phase + AS/FC)	**5ST3 612**	NEW	0.050	1/10
	3-phase				
	2 x 3-phase	**5ST3 613**	NEW	0.039	1/10
	3 x 3-phase	**5ST3 614**	NEW	0.060	1/10
	4 x 3-phase	**5ST3 615**	NEW	0.076	1/10
	2 x (3-phase + AS/FC)	**5ST3 616**	NEW	0.040	1/10
	4 x (3-phase + AS/FC)	**5ST3 617**	NEW	0.080	1/10
	2 x (3 x (single-phase) + AS/FC) [1]	**5ST3 618**	NEW	0.044	1/10
	3 x (3 x (single-phase) + AS/FC) [1]	**5ST3 620**	NEW	0.066	1/10
	4-phase				
	2 x 4-phase	**5ST3 621**	NEW	0.051	1/10
	3 x 4-phase	**5ST3 622**	NEW	0.078	1/10
	2 x 3 x (single-phase + N) [2]	**5ST3 623**	NEW	0.078	1/10
	3-phase, for a 5SM3 4-pole RCCB with 8 miniature circuit-breakers:				
	3/N + 8 terminals	**5ST3 624**	NEW	0.075	1/10
	**Protection against contact** for unassigned connections, yellow (RAL 1004)	**5ST3 655**	NEW	0.003	1/10
	Assortment			1 set	
	20 x 5ST3 613 + 10 x 5ST3 614 + 50 x 5ST3 615 + 50 x 5ST3 655	**5ST3 656**	NEW	5.330	1 set

1) 3 x (single-phase + AS/FC) ≙ 3 x (L1 + AS/FC, L2 + AS/FC, L3 + AS/FC).

2) 3 x (single-phase + N) ≙ 3 x (L1 + N, L2 + N, L3 + N).

* You can order this quantity or a multiple thereof.

Selection and ordering data

		Order No.	Weight 1 item kg	PS*/ P. unit Items
5ST3 6 busbar system for miniature circuit-breakers 5SJ6, 5SY6, 5SY4, 5SY7, 5SY8, 5SY5				
	**Busbars 16 mm²**			
	fully insulated:			
	1-phase			
	2 x single-phase	**5ST3 630**	0.008	1/10
	6 x single-phase	**5ST3 631**	0.025	1/10
	12 x single-phase	**5ST3 632**	0.048	1/10
	2 x (single-phase + AS/FC)	**5ST3 633**	0.013	1/10
	6 x (single-phase + AS/FC)	**5ST3 634**	0.039	1/10
	9 x (single-phase + AS/FC)	**5ST3 635**	0.059	1/10
	2-phase			
	2 x 2-phase	**5ST3 636**	0.026	1/10
	3 x 2-phase	**5ST3 637**	0.038	1/10
	6 x 2-phase	**5ST3 638**	0.076	1/10
	2 x (2-phase + AS/FC)	**5ST3 640**	0.032	1/10
	3 x (2-phase + AS/FC)	**5ST3 641**	0.076	1/10
	5 x (2-phase + AS/FC)	**5ST3 642**	0.084	1/10
	3-phase			
	2 x 3-phase	**5ST3 643**	0.058	1/10
	3 x 3-phase	**5ST3 644**	0.083	1/10
	4 x 3-phase	**5ST3 645**	0.110	1/10
	2 x (3-phase + AS/FC)	**5ST3 646**	0.060	1/10
	4 x (3-phase + AS/FC)	**5ST3 647**	0.120	1/10
	2 x (3 x (single-phase) + AS/FC) [1]	**5ST3 648**	0.061	1/10
	3 x (3 x (single-phase) + AS/FC) [1]	**5ST3 650**	0.093	1/10
	4-phase			
	2 x 4-phase	**5ST3 651**	0.080	1/10
	3 x 4-phase	**5ST3 652**	0.116	1/10
	2 x 3 x (single-phase + N) [2]	**5ST3 653**	0.116	1/10
	3-phase, for a 5SM3 4-pole RCCB with 8 miniature circuit-breakers:			
	3/N + 8 terminals	**5ST3 654**	0.114	1/10
	**Protection against contact** for unaasigned connections, yellow (RAL 1004)	**5ST3 655**	0.003	1/10
	Assortment		1 set	
	20 x 5ST3 643 + 10 x 5ST3 644 + 50 x 5ST3 645 + 50 x 5ST3 655	**5ST3 657**	7.640	1 set

1) 3 x (single-phase + AS/FC) ≙ 3 x (L1 + AS/FC, L2 + AS/FC, L3 + AS/FC).

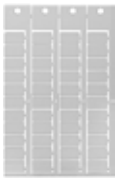
2) 3 x (single-phase + N) ≙ 3 x (L1 + N, L2 + N, L3 + N).

* You can order this quantity or a multiple thereof.

Accessories

for 5SJ6, 5SY. and 5SP4

Selection and ordering data

		MW	Order No.	Weight 1 item	PS*/ P. unit
				kg	Items
Accessories for miniature circuit-breakers 5SJ6, 5SY6, 5SY4, 5SY7, 5SY8, 5SY5,					
	**Terminal cover** applicable with all types of poles; as an additional cover for screw openings; prevents removal of the device from the standard mounting rail; sealable		**5ST3 800**	0.001	5/10
	**Handle locking device** applicable with all types of poles; sealable against unintended on- and off-switching; padlock with a shackle of max. 3 mm		**5ST3 801**	0.008	1
	**Padlock** for 5ST3 801 handle locking device		**5ST3 802**	0.027	1
	Locking device consisting of 5ST3 801 handle locking device and 5ST3 802 padlock		**5ST3 803**	1 set 0.035	1 set
	**Spacer** contour for modular devices with a mounting depth of 70 mm; can be snapped onto either side of the busbar, so that two spacers allow for convenient cable routing	0.5	**5TG8 240**	0.010	2
	**Snap-on terminal** for 35 mm mounting rail, for conductors up to 16 mm^2 solid or conductors up to 10 mm^2 stranded width: 0.5 MW		**5ST2 112**	0.008	1/50
	**Fixing parts** 1 MW (sheet metal) 4 MW (plastic)		**5ST2 121** **5ST2 201**	0.017 0.012	1/10 1/20
	**Inscription labels (white)** 15 mm x 9 mm, 3 frames à 44 labels, can be mounted on lower casing collar • self-adhesive • inscription options		**5ST2 173**	1 set 0.038	1 set
	Labeling system To download the labeling program free of charge, please visit our Web site at: www.siemens.de/beta Recommended labels; ELAT-3-747 can be ordered at: Brady GmbH Otto-Hahn-Str. 5-7 D-63222 Langen Tel: 06103/7598-660				

*** You can order this quantity or a multiple thereof.**

Overview

Voltage-independent and selective main miniature circuit-breakers (SHU) acc. to DIN VDE 0645

Selective main miniature circuit-breakers are generally based on the function principle of ordinary miniature circuit-breakers and are equipped with a delayed thermal release for overload protection, as well as an electromagnetic fast release with an impact cutout blade for short-circuit protection.
In addition, they also comprise a selectivity device which detects whether the downstream miniature circuit-breaker in the load circuit is capable of independently coping with a short circuit or not. If it detects that this will exceed the capacity of the miniature circuit-breaker, the selective main miniature circuit-breaker will trip.

Regardless of the rated current of the SHU switch, this ensures a selectivity for downstream miniature circuit-breakers acc. to EN 60898 or DIN VDE 0641 Part 11, up to its rated short-circuit capacity. 6 000 / 3

Furthermore, the selective main miniature circuit-breaker also offers a back-up protection of up to 25 kA to all downstream miniature circuit-breakers.

In the past, melting fuses installed at the meter panel were usually sealed in order to prevent the theft of power supplies.

Due to the various function principles and thus, the different characteristic curves, only limited short-circuit selectivity is possible in a cascade of upstream melting fuses and downstream miniature circuit-breakers. This selectivity also depends on the respective rated currents. This meant that, in the past, if a meter back-up fuse blew due to an overcurrent or a short circuit, it was necessary to contact the engineers of the power supply company to replace the sealed fuse as this could not be done by non-specialists.

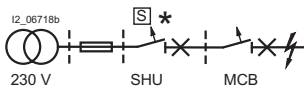
However, the new selective main miniature circuit-breakers can be switched on again - even by non-specialists.

The new selective main miniature circuit-breakers offer the following advantages to system operators:

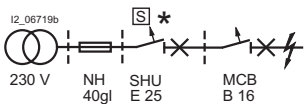
- Improved current limiting characteristics thanks to the main selective miniature circuit-breaker supporting the downstream miniature circuit-breaker
- System-compatibility as no operation characteristics of other devices are influenced - apart from the downstream miniature circuit-breaker.
- High and safe selectivity between sub-distribution and meter panel
- Safe, fast and cost-favorable on-switching after failures - even by non-specialists
- Prevention of on-switching until the cause of the short-circuit cause has been eliminated
- Tariff monitoring function to assure network-compatible power consumption
- Insulation characteristics with contact position indication acc. to EN 60204.

Application examples

Selectivity towards downstream miniature circuit-breakers up to the rated short-circuit capacity 6 000 / 3



Selectivity towards upstream fuses up to 2,000 A



Application

- U_n: 230/400 V, 50-60 Hz, applicable in networks up to: 250/440 V AC
- Standards: DIN VDE 0645
- As main miniature circuit-breaker at the meter
- As group miniature circuit-breaker in distribution board applications
- Characteristic E:
  adapted to the special application requirements for cascade circuits between melting fuses and miniature circuit-breakers.

At a glance

- Protection of insulated cables against overcurrents
- Disconnecting loads
- Assurance of network-compatible power consumption
- Can be switched on again after failures even by non- specialists
- Complies with defined selectivity requirements for upstream and downstream overcurrent protection devices
- Can be screwed onto mounting plates
- Can be clipped onto busbars using adapters
- Can be snapped onto standard mounting rails using mounting plates acc. to EN 60715.

5SP3, 25 kA
Mounting depth 92 mm

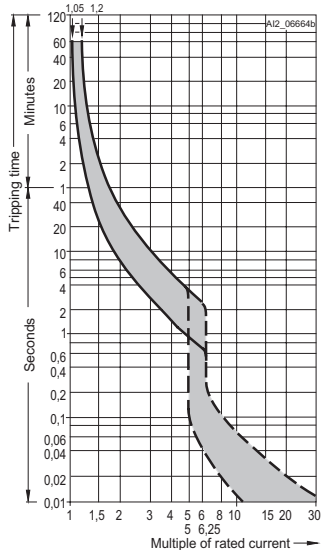
Selection and ordering data

	I_n A	MW	Characteristic E Order No.	Weight 1 item kg	PS*/ P. unit Items
	**Selective main miniature circuit-breakers**				
	16	2	**5SP3 716**	0.550	1/3
	20		**5SP3 720**	0.550	1/3
	25		**5SP3 725**	0.550	1/3
	32		**5SP3 732**	0.550	1/3
	35		**5SP3 735**	0.550	1/3
	40		**5SP3 740**	0.550	1/3
	50		**5SP3 750**	0.550	1/3
	63		**5SP3 763**	0.550	1/3
	80		**5SP3 780**	0.550	1/3
	100		**5SP3 791**	0.550	1/3
	**Selective main miniature circuit-breakers** 3 x 1-pole, premounted to 5ST1 328 busbar adapter; can be clipped onto busbar (spacing: 40 mm); including three 5ST1 323 transparent operating protective covers			1 set	
	16	6	**5SP3 716-1**	1.700	1 set
	20		**5SP3 720-1**	1.700	1 set
	25		**5SP3 725-1**	1.700	1 set
	32		**5SP3 732-1**	1.700	1 set
	35		**5SP3 735-1**	1.700	1 set
	40		**5SP3 740-1**	1.700	1 set
	50		**5SP3 750-1**	1.700	1 set
	63		**5SP3 763-1**	1.700	1 set
	80		**5SP3 780-1**	1.700	1 set
	100		**5SP3 791-1**	1.700	1 set

Characteristic curves

Tripping characteristics acc. to DIN VDE 0645

Tripping characteristics E

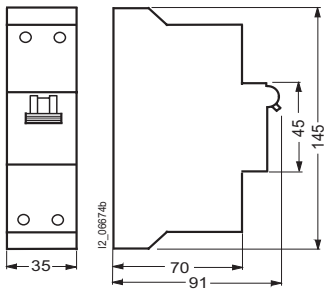


- for reliable and high selectivity at meter mounting boards

Dimensional drawings

5SP3 7 main circuit-breakers (SHU)

Device mounting depth 91 mm



* You can order this quantity or a multiple thereof.

Selection and ordering data

		Order No.	Weight 1 item	PS*/ P. unit
			kg	Items
Accessories for main miniature circuit-breakers (SHU)				
	**Busbar adapter** suitable for a busbar spacing of 40 mm; can be equipped with 3 main miniature circuit-breakers; for clip-on assembly	**5ST1 328**	0.234	1
	**Breaker blocking cover** to prevent manual off-switching	**5ST1 318**	0.001	3/10
	**Transparent operating protective cover** offering multiple locking options against accidental and deliberate operation by means of: • Padlocks • Philips screwdrivers • Special wrenches (Antilux) • These can be installed by the operator or the power supply company	**5ST1 323**	0.012	1/3
	**Terminal cover** 2 items required per device; for covering terminals within the overall dimensions acc. to DIN 43880	**5ST1 316**	0.001	6

* You can order this quantity or a multiple thereof.

Notes