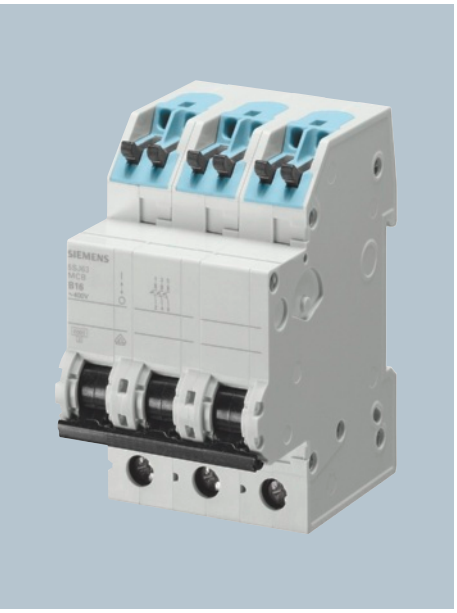
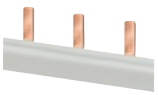
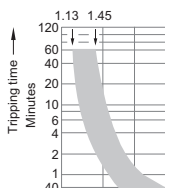
BETA Protecting Miniature Circuit Breakers



BETA Protecting
Miniature Circuit Breakers

Product overview

Overview

Devices		Page	Field of application	Standards	Used in		
					Non-resid. buildings	Residential buildings	Industry
	**5SP and 5SY miniature circuit breakers**	1/3	For all applications from 0.3 to 125 A with switching capacity 6000, 10 000 or 15 000 A according to EN 60898. Applications for universal current and 0.3 to 63 A with switching capacity of at least 25 kA according to EN 60947-2.	EN 60898 EN 60947-2	✓	✓	✓
	**5SJ6 …-.KS miniature circuit breakers with plug-in terminals**	1/21	For socket outlet and lighting circuits in all building installations. The plug-in terminals offer easy front connection for manual insertion of conductors, which considerably reduces mounting times.	EN 60898	✓	✓	✓
	**5SY6 0 miniature circuit breakers 1+N in 1 MW**	1/24	For socket outlet and lighting circuits in all building installations where a switchable neutral conductor is required. The miniature circuit breaker 1+N saves space in the distribution board.	EN 60898	✓	✓	✓
	**Additional components**	1/28	Auxiliary switches, fault signal contacts, shunt trips, undervoltage releases for higher plant availability, RC units for personal safety and remote controlled mechanisms for remote switching.		✓		✓
	**Busbars**	1/35	Busbars in 10 and 16 mm² save space in the distribution board and time during mounting.		✓	✓	✓
	**5SJ4 miniature circuit breakers to UL and IEC**	1/42	Miniature circuit breakers can be used as "branch circuit protection" and approved for the connection type "same polarity" and "opposite polarity" in the characteristics B and C according to UL489 from 0.3 to 63 A	UL 489	✓	✓	✓
	**SHU, 5SP3 main miniature circuit breakers**	1/50	Voltage-independent and selective main miniature circuit breakers (SHU) according to DIN VDE 0645 in the precounter sector support the downstream miniature circuit breakers with better current limitation.	DIN VDE 0641-21	✓	✓	
	**5SK9 circuit breaker terminals**	1/53	Circuit breaker terminals are used for short-circuit protection or for protection against overload and short-circuits in auxiliary and control circuits downstream of control transformers.				✓
	**Configuration**	1/56	Notes for configuration, expanded technical specifications and certifications.				

Overview

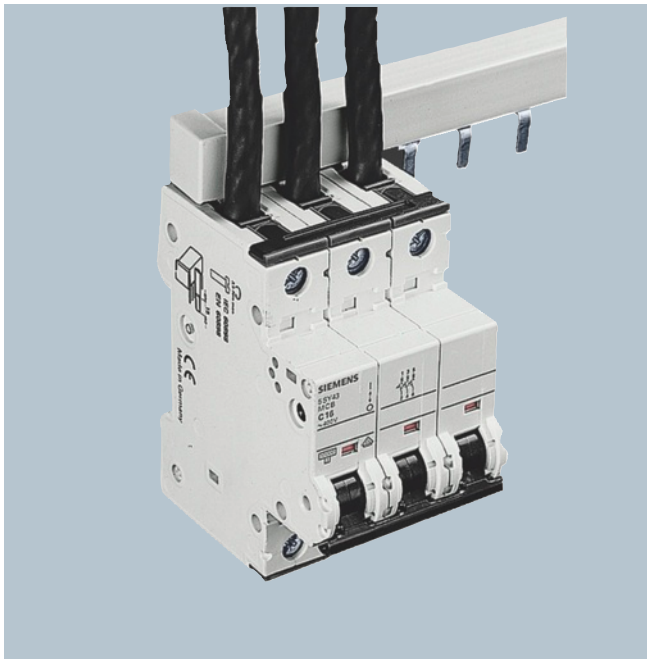
MCBs are used to protect plants in buildings and for industrial applications. The devices can be used as main switches for the disconnection or isolation of plants.

For industrial applications and in plant engineering, miniature circuit breakers can be supplemented with additional components, such as auxiliary switches, fault signal contacts, shunt trips, undervoltage releases, remote controlled mechanisms and RC units.

The devices are approved for worldwide use according to IEC standards for systems up to 250/440 V AC. 60 V DC per pole is permitted in DC systems.

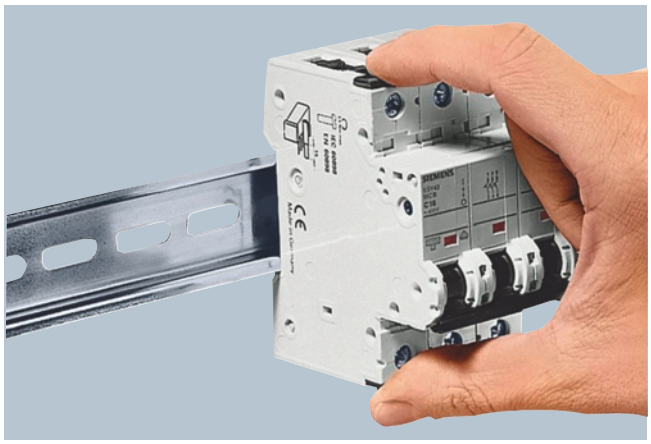
For North America, we also have additional certification to UL 1077 for use as "supplementary protectors" in systems up to 480Y/277 V AC. For use in ship building, the devices have numerous certifications according to shipping classifications BV, DNV, GL and LRS. For further information, please refer to the section "Configuration".

Benefits

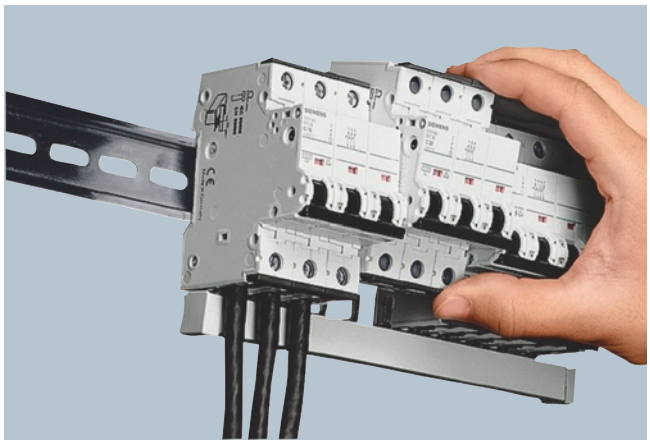


- The infeed can be either from the top or the bottom as the terminals are identical.
- Clear and visible conductor connection in front of the busbars that can be easily checked.
- Large and easily accessible wiring space enables easy insertion of conductor in the terminal.

- Integrated movable terminal covers located at the cable entries ensure the terminals are fully insulated when the screws are tightened.
- The effective touch protection when grasping the device considerably exceeds the requirements of VBG 4/BGV A3.



- Manual snap-on fixing and release systems that require no tools enable fast assembly and disassembly of MCBs.
- Highlighted labeling field on all modular installation devices for uniform, quick and simple labeling.



- The MCBs can be quickly and easily removed from the busbar assembly by hand, e.g. if connections need to be changed.
- Time saving if parts need to be replaced because the busbars no longer need to be freed from the adjacent devices.

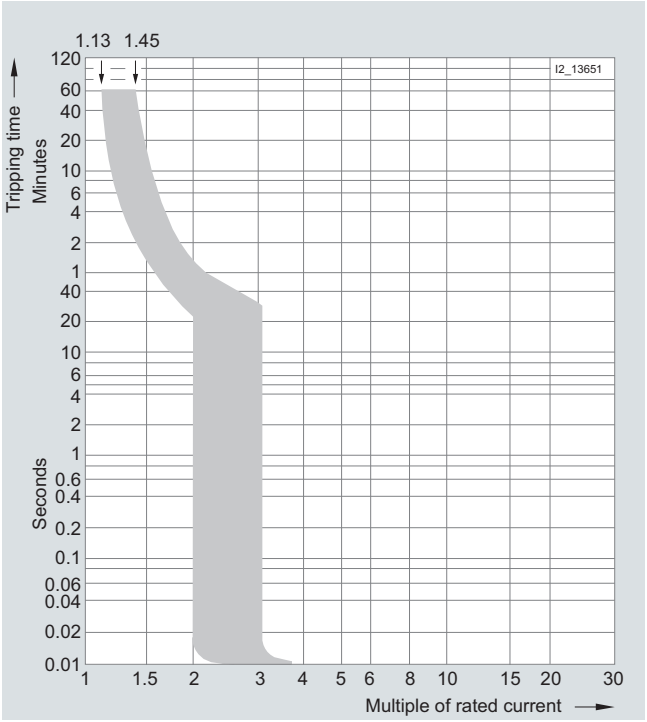
Technical specifications

			5SY6	5SY4	5SY5	5SY7	5SY8	5SP4	5SP5
Standards			EN 60898	EN 60898; EN 60947-2			--	EN 60898; EN 60947-2	
Approved acc. to			EN 60898; UL 1077; CSA C22.2 No.235; UL File No. E 116386		--	EN 60898; UL 1077; CSA C22.2 No.235; UL File No. E 116386			--
Operational voltage	Min.	V AC/DC	24	24	24	24	24	24	24
Acc. to EN 60898 and EN 60947-2	Max.	V DC/pole	60[1)]	60[1)]	220	60[1)]	60[1)]	60[1)]	220
	Max.	V AC	440	440	440	440	440	440	440
Acc. to UL 1077 and CSA C22.2	Max.	V AC	480	480	--	480	480	480	--
No.235		V DC/pole	60	60	--	60	60	60	--
Rated switching capacity									
• I_{cn} acc. to IEC/EN 60898-1		kA AC	6	10	10	15	--	10	3
• I_{cn} acc. to IEC/EN 60898-2		kA DC	--	--	10	--	--	--	10
• I_{cu} acc. to IEC/EN 60947-2		kA AC	--	--	--	--	25	--	--
• Acc. to UL1077 and CSA C22.2 No.235		kA AC	5	5	--	5	5	5	--
Insulation coordination									
• Rated insulation voltage		V AC	250/440						
• Degree of pollution for overvoltage category			3/III						
Touch protection Acc. to EN 50274-1			Yes						
Handle end position, sealable			Yes						
Degree of protection Acc. to EN 60529			IP20, with connected conductors						
CFC and silicone-free			Yes						
Mounting									
• Snap-on fixing system			Yes					--	
• Standard mounting rail and screw fixing			--					Yes	
Terminals									
• Tunnel terminals at both ends			--					Yes	
• Combined terminals at both ends			Yes					--	
• Terminal, solid, stranded or finely stranded, with end sleeve		mm^2	0.75 ... 25						
• Terminal tightening torque		Nm	2.5 ... 3					2.5 ... 3.5	
		lb. in	22 ... 26					22 ... 31	
Conductor cross-sections									
• Solid and stranded		mm^2	0.75 ... 35					0.75 ... 50	
• Finely stranded, with end sleeve		mm^2	0.75 ... 25					0.75 ... 35	
• AWG cables		AWG	14 ... 4					14 ... 2	
Mains connection			Any						
Mounting position			Any						
Service life On average, with rated load		Operations Operations	20000 For 5SY5 at 40 A, 50 A and 63 A 10 000						
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75						
Resistance to climate Acc. to IEC 60068-2-30			6 cycles						
Resistance to vibrations Acc. to IEC 60068-2-6		m/s^2	60 at 10 Hz ... 150 Hz						

[1)] The operational voltage 60 V DC/pole takes into account a battery charging voltage with peak value of 72 V.

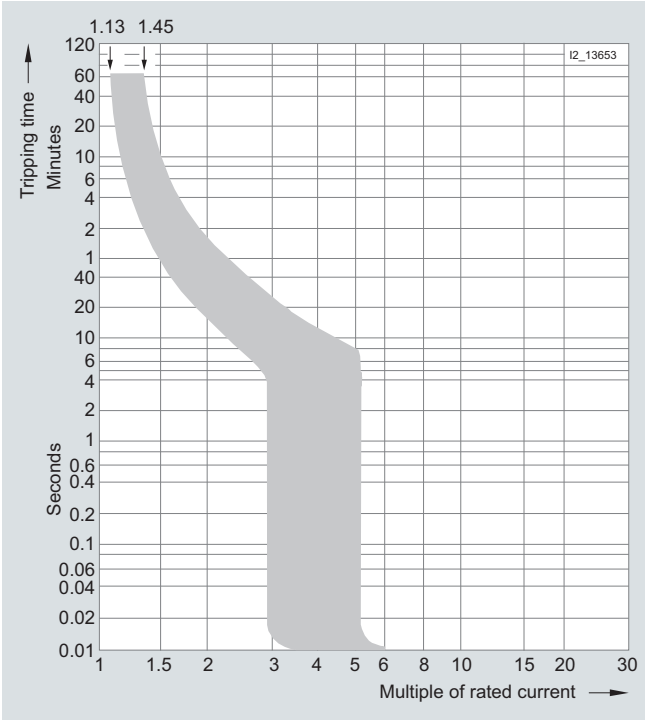
Characteristic curves

Tripping characteristics according to IEC/EN 60898, DIN VDE 0641-11



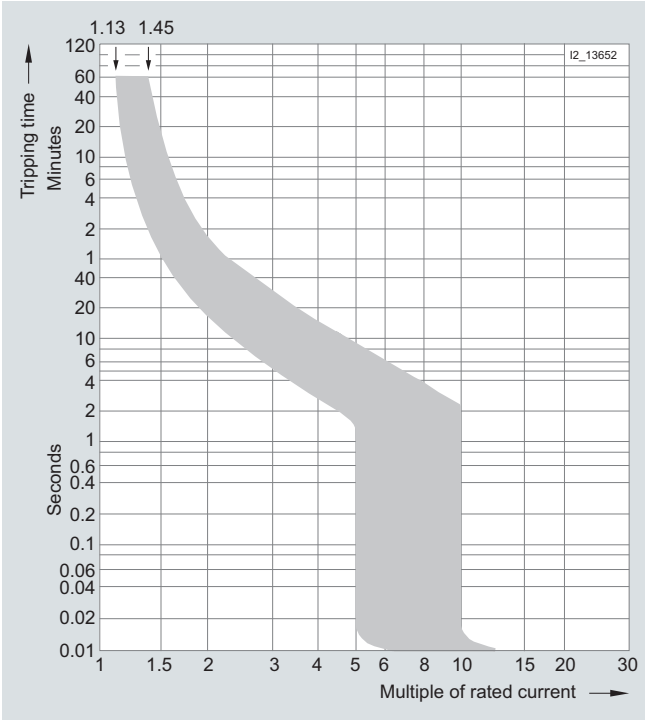
Tripping characteristic A

For limited semiconductor protection, protection of measuring circuits with transformers. Protection of circuits with tripping in 0.4 s according to DIN VDE 0100-410 for long cable lengths.



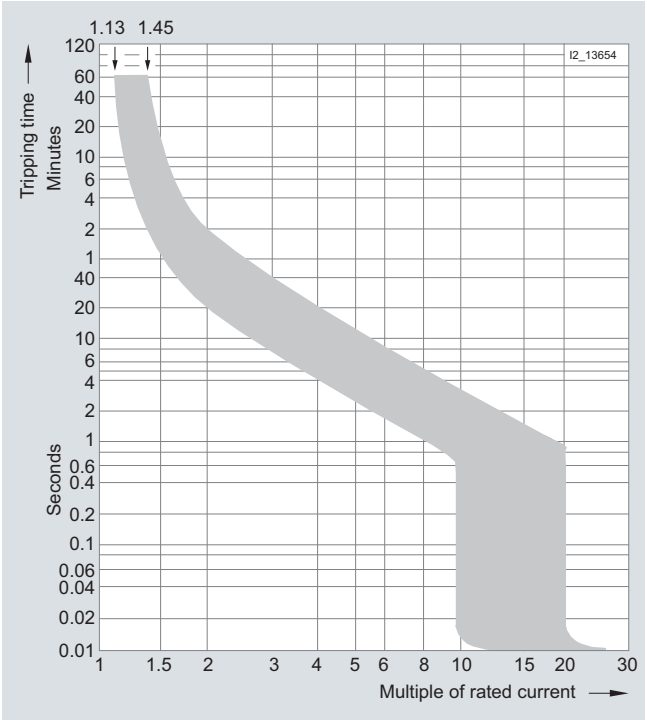
Tripping characteristic B

For universal use in socket outlet and lighting circuits. Proof of personal safety according DIN VDE 0100-410 is not required.



Tripping characteristic C

Particularly advantageous in lamp and motor circuits with higher starting currents.



Tripping characteristic D

For electrical circuits with strong pulse-generating equipment, such as transformers or solenoid valves.

BETA Protecting
Miniature Circuit Breakers

5SP and 5SY miniature circuit breakers

Selection and ordering data

6 000 / 3	I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A						Unit(s)	Unit(s)	kg
	MCBs 6000 A								
	1P, 230/400 V AC								
	2	1	B	**5SY6 102-6**		002	1	1	0.165
	4		B	**5SY6 104-6**		002	1	1	0.165
	6		►	**5SY6 106-6**		002	1	1/12	0.165
	10		►	**5SY6 110-6**		002	1	1/12	0.165
	13		A	**5SY6 113-6**		002	1	1/12	0.165
	16		►	**5SY6 116-6**		002	1	1/12	0.165
	20		A	**5SY6 120-6**		002	1	1/12	0.165
	25		A	**5SY6 125-6**		002	1	1/12	0.165
	32		A	**5SY6 132-6**		002	1	1/12	0.165
	40		B	**5SY6 140-6**		002	1	1	0.165
	50		B	**5SY6 150-6**		002	1	1	0.165
	63		B	**5SY6 163-6**		002	1	1	0.165
	1P+N, 230 V AC								
	6	2	A	**5SY6 506-6**		002	1	1	0.330
	10		A	**5SY6 510-6**		002	1	1	0.330
	13		A	**5SY6 513-6**		002	1	1/6	0.330
	16		A	**5SY6 516-6**		002	1	1/6	0.330
	20		B	**5SY6 520-6**		002	1	1	0.330
	25		B	**5SY6 525-6**		002	1	1	0.330
	32		B	**5SY6 532-6**		002	1	1	0.330
	40		C	**5SY6 540-6**		002	1	1	0.330
	50		C	**5SY6 550-6**		002	1	1	0.330
	63		C	**5SY6 563-6**		002	1	1	0.330
	2P, 400 V AC								
	6	2	A	**5SY6 206-6**		002	1	1/6	0.330
	10		A	**5SY6 210-6**		002	1	1/6	0.330
	13		B	**5SY6 213-6**		002	1	1	0.330
	16		A	**5SY6 216-6**		002	1	1/6	0.330
	20		B	**5SY6 220-6**		002	1	1	0.330
	25		B	**5SY6 225-6**		002	1	1	0.330
	32		A	**5SY6 232-6**		002	1	1	0.330
	40		B	**5SY6 240-6**		002	1	1	0.330
	50		C	**5SY6 250-6**		002	1	1	0.330
	63		C	**5SY6 263-6**		002	1	1	0.330
	3P, 400 V AC								
	6	3	A	**5SY6 306-6**		002	1	1	0.495
	10		A	**5SY6 310-6**		002	1	1/4	0.495
	13		B	**5SY6 313-6**		002	1	1	0.495
	16		►	**5SY6 316-6**		002	1	1/4	0.495
	20		A	**5SY6 320-6**		002	1	1	0.495
	25		A	**5SY6 325-6**		002	1	1	0.495
	32		A	**5SY6 332-6**		002	1	1/4	0.495
	40		A	**5SY6 340-6**		002	1	1	0.495
	50		B	**5SY6 350-6**		002	1	1	0.495
	63		B	**5SY6 363-6**		002	1	1	0.495
	3P+N, 400 V AC								
	6	4	B	**5SY6 606-6**		002	1	1	0.660
	10		B	**5SY6 610-6**		002	1	1	0.660
	13		B	**5SY6 613-6**		002	1	1	0.660
	16		A	**5SY6 616-6**		002	1	1	0.660
	20		A	**5SY6 620-6**		002	1	1	0.660
	25		B	**5SY6 625-6**		002	1	1	0.660
	32		B	**5SY6 632-6**		002	1	1	0.660
	40		C	**5SY6 640-6**		002	1	1	0.660
	50		C	**5SY6 650-6**		002	1	1	0.660
	63		C	**5SY6 663-6**		002	1	1	0.660
	4P, 400 V AC								
	6	4	C	**5SY6 406-6**		002	1	1	0.660
	10		B	**5SY6 410-6**		002	1	1	0.660
	13		C	**5SY6 413-6**		002	1	1	0.660
	16		A	**5SY6 416-6**		002	1	1	0.660
	20		A	**5SY6 420-6**		002	1	1	0.660
	25		A	**5SY6 425-6**		002	1	1	0.660
	32		B	**5SY6 432-6**		002	1	1	0.660
	40		B	**5SY6 440-6**		002	1	1	0.660
	50		B	**5SY6 450-6**		002	1	1	0.660
	63		B	**5SY6 463-6**		002	1	1	0.660

* You can order this quantity or a multiple thereof.

6 000
3

	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 6000 A												
	1P, 230/400 V AC												
	0.3	1	A	**5SY6 114-7**		003	C	**5SY6 114-8**		004	1	1	0.165
	0.5		A	**5SY6 105-7**		003	A	**5SY6 105-8**		004	1	1	0.165
	1		▶	**5SY6 101-7**		003	A	**5SY6 101-8**		004	1	1	0.165
	1.6		A	**5SY6 115-7**		003	C	**5SY6 115-8**		004	1	1	0.147
	2		▶	**5SY6 102-7**		003	A	**5SY6 102-8**		004	1	1/12	0.165
	3		A	**5SY6 103-7**		003	A	**5SY6 103-8**		004	1	1	0.165
	4		▶	**5SY6 104-7**		003	A	**5SY6 104-8**		004	1	1	0.165
	6		▶	**5SY6 106-7**		003	A	**5SY6 106-8**		004	1	1/12	0.165
	8		A	**5SY6 108-7**		003	A	**5SY6 108-8**		004	1	1	0.165
	10		▶	**5SY6 110-7**		003	A	**5SY6 110-8**		004	1	1	0.165
	13		A	**5SY6 113-7**		003	A	**5SY6 113-8**		004	1	1	0.165
	16		▶	**5SY6 116-7**		003	A	**5SY6 116-8**		004	1	1	0.165
	20		▶	**5SY6 120-7**		003	A	**5SY6 120-8**		004	1	1	0.165
	25		▶	**5SY6 125-7**		003	A	**5SY6 125-8**		004	1	1	0.165
	32		▶	**5SY6 132-7**		003	B	**5SY6 132-8**		004	1	1	0.165
	40		A	**5SY6 140-7**		003	B	**5SY6 140-8**		004	1	1	0.165
	50		A	**5SY6 150-7**		003	B	**5SY6 150-8**		004	1	1	0.165
	63		A	**5SY6 163-7**		003	B	**5SY6 163-8**		004	1	1	0.165
	1P+N, 230 V AC												
	0.3	2	B	**5SY6 514-7**		003	C	**5SY6 514-8**		004	1	1	0.330
	0.5		A	**5SY6 505-7**		003	B	**5SY6 505-8**		004	1	1	0.330
	1		A	**5SY6 501-7**		003	C	**5SY6 501-8**		004	1	1	0.330
	1.6		B	**5SY6 515-7**		003	B	**5SY6 515-8**		004	1	1	0.330
	2		A	**5SY6 502-7**		003	B	**5SY6 502-8**		004	1	1	0.330
	3		A	**5SY6 503-7**		003	B	**5SY6 503-8**		004	1	1	0.330
	4		A	**5SY6 504-7**		003	B	**5SY6 504-8**		004	1	1	0.330
	6		A	**5SY6 506-7**		003	A	**5SY6 506-8**		004	1	1	0.330
	8		B	**5SY6 508-7**		003	B	**5SY6 508-8**		004	1	1	0.330
	10		A	**5SY6 510-7**		003	B	**5SY6 510-8**		004	1	1	0.330
	13		A	**5SY6 513-7**		003	C	**5SY6 513-8**		004	1	1	0.330
	16		▶	**5SY6 516-7**		003	A	**5SY6 516-8**		004	1	1	0.330
	20		A	**5SY6 520-7**		003	C	**5SY6 520-8**		004	1	1	0.330
	25		A	**5SY6 525-7**		003	C	**5SY6 525-8**		004	1	1	0.330
	32		A	**5SY6 532-7**		003	C	**5SY6 532-8**		004	1	1	0.330
	40		B	**5SY6 540-7**		003	C	**5SY6 540-8**		004	1	1	0.330
	50		B	**5SY6 550-7**		003	C	**5SY6 550-8**		004	1	1	0.330
	63		B	**5SY6 563-7**		003	C	**5SY6 563-8**		004	1	1	0.330
	2P, 400 V AC												
	0.3	2	B	**5SY6 214-7**		003	B	**5SY6 214-8**		004	1	1	0.330
	0.5		A	**5SY6 205-7**		003	A	**5SY6 205-8**		004	1	1	0.330
	1		A	**5SY6 201-7**		003	A	**5SY6 201-8**		004	1	1	0.330
	1.6		A	**5SY6 215-7**		003	A	**5SY6 215-8**		004	1	1	0.330
	2		▶	**5SY6 202-7**		003	A	**5SY6 202-8**		004	1	1/6	0.330
	3		A	**5SY6 203-7**		003	A	**5SY6 203-8**		004	1	1	0.330
	4		▶	**5SY6 204-7**		003	A	**5SY6 204-8**		004	1	1/6	0.330
	6		▶	**5SY6 206-7**		003	A	**5SY6 206-8**		004	1	1/6	0.330
	8		A	**5SY6 208-7**		003	A	**5SY6 208-8**		004	1	1	0.330
	10		▶	**5SY6 210-7**		003	A	**5SY6 210-8**		004	1	1/6	0.330
	13		A	**5SY6 213-7**		003	B	**5SY6 213-8**		004	1	1	0.330
	16		▶	**5SY6 216-7**		003	A	**5SY6 216-8**		004	1	1	0.330
	20		▶	**5SY6 220-7**		003	A	**5SY6 220-8**		004	1	1	0.330
	25		A	**5SY6 225-7**		003	A	**5SY6 225-8**		004	1	1	0.330
	32		A	**5SY6 232-7**		003	A	**5SY6 232-8**		004	1	1	0.330
	40		A	**5SY6 240-7**		003	B	**5SY6 240-8**		004	1	1	0.330
	50		A	**5SY6 250-7**		003	B	**5SY6 250-8**		004	1	1	0.330
	63		A	**5SY6 263-7**		003	B	**5SY6 263-8**		004	1	1	0.330

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

BETA Protecting
Miniature Circuit Breakers

5SP and 5SY miniature circuit breakers

6 000 / 3	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 6000 A												
	3P, 400 V AC												
	0.3	3	C	**5SY6 314-7**		003	C	**5SY6 314-8**		004	1	1	0.495
	0.5		A	**5SY6 305-7**		003	C	**5SY6 305-8**		004	1	1	0.495
	1		A	**5SY6 301-7**		003	A	**5SY6 301-8**		004	1	1	0.495
	1.6		B	**5SY6 315-7**		003	C	**5SY6 315-8**		004	1	1	0.495
	2		A	**5SY6 302-7**		003	A	**5SY6 302-8**		004	1	1	0.495
	3		A	**5SY6 303-7**		003	A	**5SY6 303-8**		004	1	1	0.495
	4		A	**5SY6 304-7**		003	A	**5SY6 304-8**		004	1	1	0.495
	6		▶	**5SY6 306-7**		003	A	**5SY6 306-8**		004	1	1	0.495
	8		A	**5SY6 308-7**		003	B	**5SY6 308-8**		004	1	1	0.495
	10		▶	**5SY6 310-7**		003	A	**5SY6 310-8**		004	1	1	0.495
	13		A	**5SY6 313-7**		003	B	**5SY6 313-8**		004	1	1	0.495
	16		▶	**5SY6 316-7**		003	A	**5SY6 316-8**		004	1	1	0.495
	20		▶	**5SY6 320-7**		003	A	**5SY6 320-8**		004	1	1	0.495
	25		▶	**5SY6 325-7**		003	A	**5SY6 325-8**		004	1	1	0.495
	32		▶	**5SY6 332-7**		003	A	**5SY6 332-8**		004	1	1	0.495
	40		A	**5SY6 340-7**		003	A	**5SY6 340-8**		004	1	1	0.495
	50		A	**5SY6 350-7**		003	A	**5SY6 350-8**		004	1	1	0.495
	63		A	**5SY6 363-7**		003	A	**5SY6 363-8**		004	1	1	0.495
	3P+N, 400 V AC												
	0.3	4	C	**5SY6 614-7**		003	C	**5SY6 614-8**		004	1	1	0.660
	0.5		C	**5SY6 605-7**		003	C	**5SY6 605-8**		004	1	1	0.660
	1		C	**5SY6 601-7**		003	C	**5SY6 601-8**		004	1	1	0.660
	1.6		C	**5SY6 615-7**		003	C	**5SY6 615-8**		004	1	1	0.660
	2		A	**5SY6 602-7**		003	C	**5SY6 602-8**		004	1	1	0.660
	3		C	**5SY6 603-7**		003	C	**5SY6 603-8**		004	1	1	0.660
	4		B	**5SY6 604-7**		003	C	**5SY6 604-8**		004	1	1	0.660
	6		A	**5SY6 606-7**		003	A	**5SY6 606-8**		004	1	1	0.660
	8		C	**5SY6 608-7**		003	C	**5SY6 608-8**		004	1	1	0.660
	10		A	**5SY6 610-7**		003	B	**5SY6 610-8**		004	1	1	0.660
	13		B	**5SY6 613-7**		003	C	**5SY6 613-8**		004	1	1	0.660
	16		▶	**5SY6 616-7**		003	B	**5SY6 616-8**		004	1	1	0.660
	20		A	**5SY6 620-7**		003	B	**5SY6 620-8**		004	1	1	0.660
	25		A	**5SY6 625-7**		003	B	**5SY6 625-8**		004	1	1	0.660
	32		A	**5SY6 632-7**		003	B	**5SY6 632-8**		004	1	1	0.660
	40		A	**5SY6 640-7**		003	B	**5SY6 640-8**		004	1	1	0.660
	50		A	**5SY6 650-7**		003	B	**5SY6 650-8**		004	1	1	0.660
	63		A	**5SY6 663-7**		003	B	**5SY6 663-8**		004	1	1	0.660
	4P, 400 V AC												
	0.3	4	C	**5SY6 414-7**		003	C	**5SY6 414-8**		004	1	1	0.660
	0.5		C	**5SY6 405-7**		003	C	**5SY6 405-8**		004	1	1	0.660
	1		B	**5SY6 401-7**		003	C	**5SY6 401-8**		004	1	1	0.660
	1.6		C	**5SY6 415-7**		003	C	**5SY6 415-8**		004	1	1	0.660
	2		A	**5SY6 402-7**		003	C	**5SY6 402-8**		004	1	1	0.660
	3		B	**5SY6 403-7**		003	C	**5SY6 403-8**		004	1	1	0.660
	4		B	**5SY6 404-7**		003	C	**5SY6 404-8**		004	1	1	0.660
	6		A	**5SY6 406-7**		003	B	**5SY6 406-8**		004	1	1	0.660
	8		B	**5SY6 408-7**		003	C	**5SY6 408-8**		004	1	1	0.660
	10		A	**5SY6 410-7**		003	A	**5SY6 410-8**		004	1	1	0.660
	13		A	**5SY6 413-7**		003	C	**5SY6 413-8**		004	1	1	0.660
	16		▶	**5SY6 416-7**		003	A	**5SY6 416-8**		004	1	1	0.660
	20		A	**5SY6 420-7**		003	A	**5SY6 420-8**		004	1	1	0.660
	25		▶	**5SY6 425-7**		003	A	**5SY6 425-8**		004	1	1	0.660
	32		▶	**5SY6 432-7**		003	A	**5SY6 432-8**		004	1	1	0.660
	40		▶	**5SY6 440-7**		003	A	**5SY6 440-8**		004	1	1	0.660
	50		A	**5SY6 450-7**		003	A	**5SY6 450-8**		004	1	1	0.660
	63		A	**5SY6 463-7**		003	▶	**5SY6 463-8**		004	1	1	0.660

* You can order this quantity or a multiple thereof.

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	I_n	MW	DT	Characteristic A Order No.	Price per PU	PG	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 10 000 A												
	1P, 230/400 V AC												
	1	1	A	**5SY4 101-5**		001		**--**			1	1	0.165
	1.6		B	**5SY4 115-5**		001		**--**			1	1	0.165
	2		A	**5SY4 102-5**		001		**--**			1	1	0.165
	3		A	**5SY4 103-5**		001		**--**			1	1	0.165
	4		A	**5SY4 104-5**		001		**--**			1	1/12	0.165
	6		A	**5SY4 106-5**		001	A	**5SY4 106-6**		002	1	1/12	0.165
	8		B	**5SY4 108-5**		001		**--**			1	1	0.165
	10		A	**5SY4 110-5**		001	▶	**5SY4 110-6**		002	1	1/12	0.165
	13		C	**5SY4 113-5**		001	A	**5SY4 113-6**		002	1	1	0.165
	16		A	**5SY4 116-5**		001	▶	**5SY4 116-6**		002	1	1/12	0.165
	20		A	**5SY4 120-5**		001	A	**5SY4 120-6**		002	1	1	0.165
	25		A	**5SY4 125-5**		001	▶	**5SY4 125-6**		002	1	1	0.165
	32		B	**5SY4 132-5**		001	A	**5SY4 132-6**		002	1	1	0.165
	40		B	**5SY4 140-5**		001	B	**5SY4 140-6**		002	1	1	0.165
	50		C	**5SY4 150-5**		001	B	**5SY4 150-6**		002	1	1	0.165
	63		C	**5SY4 163-5**		001	B	**5SY4 163-6**		002	1	1	0.165
	80			**--**			C	**5SY4 180-6**		002	1	1	0.162
	1P+N, 230 V AC												
	1	2	C	**5SY4 501-5**		001		**--**			1	1	0.330
	1.6		B	**5SY4 515-5**		001		**--**			1	1	0.330
	2		B	**5SY4 502-5**		001		**--**			1	1	0.330
	3		C	**5SY4 503-5**		001		**--**			1	1	0.330
	4		B	**5SY4 504-5**		001		**--**			1	1	0.330
	6		C	**5SY4 506-5**		001	A	**5SY4 506-6**		002	1	1	0.330
	8		C	**5SY4 508-5**		001		**--**			1	1	0.330
	10		B	**5SY4 510-5**		001	A	**5SY4 510-6**		002	1	1	0.330
	13		C	**5SY4 513-5**		001	A	**5SY4 513-6**		002	1	1/6	0.330
	16		C	**5SY4 516-5**		001	A	**5SY4 516-6**		002	1	1/6	0.330
	20		C	**5SY4 520-5**		001	B	**5SY4 520-6**		002	1	1	0.330
	25		C	**5SY4 525-5**		001	B	**5SY4 525-6**		002	1	1	0.330
	32		C	**5SY4 532-5**		001	B	**5SY4 532-6**		002	1	1	0.330
	40		C	**5SY4 540-5**		001	C	**5SY4 540-6**		002	1	1	0.330
	50		C	**5SY4 550-5**		001	C	**5SY4 550-6**		002	1	1	0.330
	63		C	**5SY4 563-5**		001	C	**5SY4 563-6**		002	1	1	0.330
	2P, 400 V AC												
	1	2	B	**5SY4 201-5**		001		**--**			1	1	0.330
	1.6		B	**5SY4 215-5**		001		**--**			1	1	0.330
	2		A	**5SY4 202-5**		001		**--**			1	1	0.330
	3		B	**5SY4 203-5**		001		**--**			1	1	0.330
	4		A	**5SY4 204-5**		001		**--**			1	1	0.330
	6		A	**5SY4 206-5**		001	A	**5SY4 206-6**		002	1	1	0.330
	8		C	**5SY4 208-5**		001		**--**			1	1	0.330
	10		A	**5SY4 210-5**		001	A	**5SY4 210-6**		002	1	1/6	0.330
	13		C	**5SY4 213-5**		001	B	**5SY4 213-6**		002	1	1	0.330
	16		A	**5SY4 216-5**		001	▶	**5SY4 216-6**		002	1	1/6	0.330
	20		B	**5SY4 220-5**		001	A	**5SY4 220-6**		002	1	1	0.330
	25		B	**5SY4 225-5**		001	A	**5SY4 225-6**		002	1	1	0.330
	32		A	**5SY4 232-5**		001	B	**5SY4 232-6**		002	1	1	0.330
	40		B	**5SY4 240-5**		001	B	**5SY4 240-6**		002	1	1	0.330
	50		C	**5SY4 250-5**		001	B	**5SY4 250-6**		002	1	1	0.330
	63		C	**5SY4 263-5**		001	B	**5SY4 263-6**		002	1	1	0.330
	80			**--**			C	**5SY4 280-6**		002	1	1	0.324

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

BETA Protecting
Miniature Circuit Breakers

5SP and 5SY miniature circuit breakers

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I_n	MW	DT	Characteristic A Order No.	Price per PU	PG	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A										Unit(s)	Unit(s)	kg
MCBs 10 000 A												
3P, 400 V AC												
1	3	C	**5SY4 301-5**		001		**--**			1	1	0.495
1.6		C	**5SY4 315-5**		001		**--**			1	1	0.495
2		B	**5SY4 302-5**		001		**--**			1	1	0.495
3		C	**5SY4 303-5**		001		**--**			1	1	0.495
4		B	**5SY4 304-5**		001		**--**			1	1	0.495
6		B	**5SY4 306-5**		001	A	**5SY4 306-6**		002	1	1	0.495
8		C	**5SY4 308-5**		001		**--**			1	1	0.495
10		B	**5SY4 310-5**		001	▶	**5SY4 310-6**		002	1	1	0.495
13		C	**5SY4 313-5**		001	B	**5SY4 313-6**		002	1	1	0.495
16		A	**5SY4 316-5**		001	▶	**5SY4 316-6**		002	1	1/4	0.495
20		B	**5SY4 320-5**		001	A	**5SY4 320-6**		002	1	1	0.495
25		B	**5SY4 325-5**		001	A	**5SY4 325-6**		002	1	1	0.495
32		B	**5SY4 332-5**		001	▶	**5SY4 332-6**		002	1	1/4	0.495
40		B	**5SY4 340-5**		001	A	**5SY4 340-6**		002	1	1	0.495
50		B	**5SY4 350-5**		001	A	**5SY4 350-6**		002	1	1	0.495
63		C	**5SY4 363-5**		001	A	**5SY4 363-6**		002	1	1	0.495
80			**--**			B	**5SY4 380-6**		002	1	1	0.486
3P+N, 400 V AC												
1	4	C	**5SY4 601-5**		001		**--**			1	1	0.660
1.6		C	**5SY4 615-5**		001		**--**			1	1	0.660
2		C	**5SY4 602-5**		001		**--**			1	1	0.660
3		C	**5SY4 603-5**		001		**--**			1	1	0.660
4		C	**5SY4 604-5**		001		**--**			1	1	0.660
6		C	**5SY4 606-5**		001	B	**5SY4 606-6**		002	1	1	0.660
8		C	**5SY4 608-5**		001		**--**			1	1	0.660
10		C	**5SY4 610-5**		001	B	**5SY4 610-6**		002	1	1	0.660
13		C	**5SY4 613-5**		001	C	**5SY4 613-6**		002	1	1	0.660
16		C	**5SY4 616-5**		001	A	**5SY4 616-6**		002	1	1	0.660
20		C	**5SY4 620-5**		001	B	**5SY4 620-6**		002	1	1	0.660
25		C	**5SY4 625-5**		001	A	**5SY4 625-6**		002	1	1	0.660
32		C	**5SY4 632-5**		001	B	**5SY4 632-6**		002	1	1	0.660
40		C	**5SY4 640-5**		001	C	**5SY4 640-6**		002	1	1	0.660
50		C	**5SY4 650-5**		001	C	**5SY4 650-6**		002	1	1	0.660
63		C	**5SY4 663-5**		001	A	**5SY4 663-6**		002	1	1	0.660
4P, 400 V AC												
1	4	C	**5SY4 401-5**		001		**--**			1	1	0.660
1.6		C	**5SY4 415-5**		001		**--**			1	1	0.660
2		C	**5SY4 402-5**		001		**--**			1	1	0.660
3		C	**5SY4 403-5**		001		**--**			1	1	0.660
4		C	**5SY4 404-5**		001		**--**			1	1	0.660
6		C	**5SY4 406-5**		001	A	**5SY4 406-6**		002	1	1	0.660
8		C	**5SY4 408-5**		001		**--**			1	1	0.660
10		C	**5SY4 410-5**		001	B	**5SY4 410-6**		002	1	1	0.660
13		C	**5SY4 413-5**		001	C	**5SY4 413-6**		002	1	1	0.660
16		C	**5SY4 416-5**		001	A	**5SY4 416-6**		002	1	1	0.660
20		C	**5SY4 420-5**		001	C	**5SY4 420-6**		002	1	1	0.660
25		C	**5SY4 425-5**		001	B	**5SY4 425-6**		002	1	1	0.660
32		C	**5SY4 432-5**		001	B	**5SY4 432-6**		002	1	1	0.660
40		C	**5SY4 440-5**		001	B	**5SY4 440-6**		002	1	1	0.660
50		C	**5SY4 450-5**		001	B	**5SY4 450-6**		002	1	1	0.660
63		C	**5SY4 463-5**		001	B	**5SY4 463-6**		002	1	1	0.660
80			**--**			B	**5SY4 480-6**		002	1	1	0.648

* You can order this quantity or a multiple thereof.

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I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A										Unit(s)	Unit(s)	kg
MCBs 10 000 A												
1P, 230/400 V AC												
0.3	1	B	**5SY4 114-7**		003	C	**5SY4 114-8**		004	1	1	0.165
0.5		A	**5SY4 105-7**		003	B	**5SY4 105-8**		004	1	1	0.165
1		▶	**5SY4 101-7**		003	A	**5SY4 101-8**		004	1	1	0.165
1.6		A	**5SY4 115-7**		003	B	**5SY4 115-8**		004	1	1	0.165
2		▶	**5SY4 102-7**		003	A	**5SY4 102-8**		004	1	1/12	0.165
3		A	**5SY4 103-7**		003	A	**5SY4 103-8**		004	1	1	0.165
4		▶	**5SY4 104-7**		003	A	**5SY4 104-8**		004	1	1/12	0.165
6		▶	**5SY4 106-7**		003	A	**5SY4 106-8**		004	1	1	0.165
8		A	**5SY4 108-7**		003	A	**5SY4 108-8**		004	1	1	0.165
10		▶	**5SY4 110-7**		003	A	**5SY4 110-8**		004	1	1/12	0.165
13		A	**5SY4 113-7**		003	B	**5SY4 113-8**		004	1	1	0.165
16		▶	**5SY4 116-7**		003	A	**5SY4 116-8**		004	1	1	0.165
20		▶	**5SY4 120-7**		003	A	**5SY4 120-8**		004	1	1	0.165
25		▶	**5SY4 125-7**		003	B	**5SY4 125-8**		004	1	1	0.165
32		▶	**5SY4 132-7**		003	B	**5SY4 132-8**		004	1	1	0.165
40		A	**5SY4 140-7**		003	B	**5SY4 140-8**		004	1	1	0.165
50		A	**5SY4 150-7**		003	B	**5SY4 150-8**		004	1	1	0.165
63		B	**5SY4 163-7**		003	B	**5SY4 163-8**		004	1	1	0.165
80		B	**5SY4 180-7**		003		**--**			1	1	0.161
1P+N, 230 V AC												
0.3	2	C	**5SY4 514-7**		003	C	**5SY4 514-8**		004	1	1	0.330
0.5		B	**5SY4 505-7**		003	C	**5SY4 505-8**		004	1	1	0.330
1		A	**5SY4 501-7**		003	B	**5SY4 501-8**		004	1	1	0.330
1.6		C	**5SY4 515-7**		003	C	**5SY4 515-8**		004	1	1	0.330
2		A	**5SY4 502-7**		003	A	**5SY4 502-8**		004	1	1	0.330
3		A	**5SY4 503-7**		003	B	**5SY4 503-8**		004	1	1	0.330
4		A	**5SY4 504-7**		003	B	**5SY4 504-8**		004	1	1	0.330
6		A	**5SY4 506-7**		003	A	**5SY4 506-8**		004	1	1	0.330
8		B	**5SY4 508-7**		003	C	**5SY4 508-8**		004	1	1	0.330
10		A	**5SY4 510-7**		003	A	**5SY4 510-8**		004	1	1	0.330
13		A	**5SY4 513-7**		003	B	**5SY4 513-8**		004	1	1	0.330
16		A	**5SY4 516-7**		003	A	**5SY4 516-8**		004	1	1	0.330
20		A	**5SY4 520-7**		003	B	**5SY4 520-8**		004	1	1	0.330
25		A	**5SY4 525-7**		003	B	**5SY4 525-8**		004	1	1	0.330
32		A	**5SY4 532-7**		003	B	**5SY4 532-8**		004	1	1	0.330
40		B	**5SY4 540-7**		003	C	**5SY4 540-8**		004	1	1	0.330
50		C	**5SY4 550-7**		003	C	**5SY4 550-8**		004	1	1	0.330
63		C	**5SY4 563-7**		003	C	**5SY4 563-8**		004	1	1	0.330
80		B	**5SY4 580-7**		003		**--**			1	1	0.323
2P, 400 V AC												
0.3	2	A	**5SY4 214-7**		003	B	**5SY4 214-8**		004	1	1	0.330
0.5		A	**5SY4 205-7**		003	A	**5SY4 205-8**		004	1	1	0.330
1		A	**5SY4 201-7**		003	A	**5SY4 201-8**		004	1	1	0.330
1.6		A	**5SY4 215-7**		003	A	**5SY4 215-8**		004	1	1	0.330
2		A	**5SY4 202-7**		003	A	**5SY4 202-8**		004	1	1	0.330
3		A	**5SY4 203-7**		003	A	**5SY4 203-8**		004	1	1	0.330
4		A	**5SY4 204-7**		003	A	**5SY4 204-8**		004	1	1	0.330
6		A	**5SY4 206-7**		003	A	**5SY4 206-8**		004	1	1	0.330
8		A	**5SY4 208-7**		003	A	**5SY4 208-8**		004	1	1	0.330
10		▶	**5SY4 210-7**		003	A	**5SY4 210-8**		004	1	1	0.330
13		A	**5SY4 213-7**		003	A	**5SY4 213-8**		004	1	1	0.330
16		▶	**5SY4 216-7**		003	A	**5SY4 216-8**		004	1	1	0.330
20		A	**5SY4 220-7**		003	A	**5SY4 220-8**		004	1	1	0.330
25		A	**5SY4 225-7**		003	A	**5SY4 225-8**		004	1	1	0.330
32		A	**5SY4 232-7**		003	A	**5SY4 232-8**		004	1	1	0.330
40		A	**5SY4 240-7**		003	A	**5SY4 240-8**		004	1	1	0.330
50		A	**5SY4 250-7**		003	B	**5SY4 250-8**		004	1	1	0.330
63		A	**5SY4 263-7**		003	B	**5SY4 263-8**		004	1	1	0.330
80		B	**5SY4 280-7**		003		**--**			1	1/6	0.323

* You can order this quantity or a multiple thereof.

BETA Protecting
Miniature Circuit Breakers

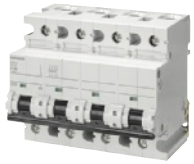
5SP and 5SY miniature circuit breakers

10 000
3

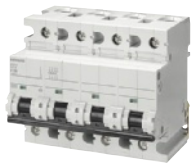
I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A										Unit(s)	Unit(s)	kg
MCBs 10 000 A												
3P, 400 V AC												
0.3	3	C	**5SY4 314-7**		003	C	**5SY4 314-8**		004	1	1	0.495
0.5		B	**5SY4 305-7**		003	B	**5SY4 305-8**		004	1	1	0.495
1		A	**5SY4 301-7**		003	A	**5SY4 301-8**		004	1	1	0.495
1.6		C	**5SY4 315-7**		003	B	**5SY4 315-8**		004	1	1	0.495
2		A	**5SY4 302-7**		003	A	**5SY4 302-8**		004	1	1	0.495
3		A	**5SY4 303-7**		003	A	**5SY4 303-8**		004	1	1	0.495
4		A	**5SY4 304-7**		003	A	**5SY4 304-8**		004	1	1	0.495
6		▶	**5SY4 306-7**		003	A	**5SY4 306-8**		004	1	1	0.495
8		A	**5SY4 308-7**		003	B	**5SY4 308-8**		004	1	1	0.495
10		▶	**5SY4 310-7**		003	A	**5SY4 310-8**		004	1	1	0.495
13		A	**5SY4 313-7**		003	B	**5SY4 313-8**		004	1	1	0.495
16		▶	**5SY4 316-7**		003	A	**5SY4 316-8**		004	1	1/4	0.495
20		▶	**5SY4 320-7**		003	A	**5SY4 320-8**		004	1	1	0.495
25		▶	**5SY4 325-7**		003	A	**5SY4 325-8**		004	1	1	0.495
32		▶	**5SY4 332-7**		003	A	**5SY4 332-8**		004	1	1	0.495
40		A	**5SY4 340-7**		003	A	**5SY4 340-8**		004	1	1	0.495
50		A	**5SY4 350-7**		003	A	**5SY4 350-8**		004	1	1	0.495
63		A	**5SY4 363-7**		003	A	**5SY4 363-8**		004	1	1	0.495
80		B	**5SY4 380-7**		003		**--**			1	1	0.482
3P+N, 400 V AC												
0.3	4	C	**5SY4 614-7**		003	C	**5SY4 614-8**		004	1	1	0.660
0.5		C	**5SY4 605-7**		003	C	**5SY4 605-8**		004	1	1	0.660
1		C	**5SY4 601-7**		003	C	**5SY4 601-8**		004	1	1	0.660
1.6		C	**5SY4 615-7**		003	C	**5SY4 615-8**		004	1	1	0.660
2		B	**5SY4 602-7**		003	C	**5SY4 602-8**		004	1	1	0.660
3		B	**5SY4 603-7**		003	C	**5SY4 603-8**		004	1	1	0.660
4		C	**5SY4 604-7**		003	C	**5SY4 604-8**		004	1	1	0.660
6		B	**5SY4 606-7**		003	C	**5SY4 606-8**		004	1	1	0.660
8		C	**5SY4 608-7**		003	C	**5SY4 608-8**		004	1	1	0.660
10		A	**5SY4 610-7**		003	B	**5SY4 610-8**		004	1	1	0.660
13		B	**5SY4 613-7**		003	C	**5SY4 613-8**		004	1	1	0.660
16		A	**5SY4 616-7**		003	A	**5SY4 616-8**		004	1	1	0.660
20		A	**5SY4 620-7**		003	B	**5SY4 620-8**		004	1	1	0.660
25		A	**5SY4 625-7**		003	A	**5SY4 625-8**		004	1	1	0.660
32		A	**5SY4 632-7**		003	A	**5SY4 632-8**		004	1	1	0.660
40		A	**5SY4 640-7**		003	A	**5SY4 640-8**		004	1	1	0.660
50		B	**5SY4 650-7**		003	A	**5SY4 650-8**		004	1	1	0.660
63		A	**5SY4 663-7**		003	B	**5SY4 663-8**		004	1	1	0.660
80		B	**5SY4 680-7**		003		**--**			1	1	0.647
4P, 400 V AC												
0.3	4	C	**5SY4 414-7**		003	C	**5SY4 414-8**		004	1	1	0.660
0.5		C	**5SY4 405-7**		003	C	**5SY4 405-8**		004	1	1	0.660
1		C	**5SY4 401-7**		003	C	**5SY4 401-8**		004	1	1	0.660
1.6		C	**5SY4 415-7**		003	C	**5SY4 415-8**		004	1	1	0.660
2		B	**5SY4 402-7**		003	C	**5SY4 402-8**		004	1	1	0.660
3		C	**5SY4 403-7**		003	C	**5SY4 403-8**		004	1	1	0.660
4		B	**5SY4 404-7**		003	C	**5SY4 404-8**		004	1	1	0.660
6		A	**5SY4 406-7**		003	B	**5SY4 406-8**		004	1	1	0.660
8		C	**5SY4 408-7**		003	C	**5SY4 408-8**		004	1	1	0.660
10		A	**5SY4 410-7**		003	A	**5SY4 410-8**		004	1	1	0.660
13		C	**5SY4 413-7**		003	C	**5SY4 413-8**		004	1	1	0.660
16		A	**5SY4 416-7**		003	▶	**5SY4 416-8**		004	1	1	0.660
20		A	**5SY4 420-7**		003	A	**5SY4 420-8**		004	1	1	0.660
25		A	**5SY4 425-7**		003	A	**5SY4 425-8**		004	1	1	0.660
32		A	**5SY4 432-7**		003	▶	**5SY4 432-8**		004	1	1	0.660
40		A	**5SY4 440-7**		003	A	**5SY4 440-8**		004	1	1	0.660
50		A	**5SY4 450-7**		003	A	**5SY4 450-8**		004	1	1	0.660
63		A	**5SY4 463-7**		003	A	**5SY4 463-8**		004	1	1	0.660
80		B	**5SY4 480-7**		003		**--**			1	1	0.647

* You can order this quantity or a multiple thereof.

10 000

	I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A						Unit(s)	Unit(s)	kg
	MCBs 10 000 A, high current								
	1P, 230/400 V AC								
	80	1.5	B	**5SP4 180-6**		002	1	1	0.258
	100		C	**5SP4 191-6**		002	1	1	0.258
	125		B	**5SP4 192-6**		002	1	1	0.258
	2P, 400 V AC								
	80	3	C	**5SP4 280-6**		002	1	1	0.516
	100		C	**5SP4 291-6**		002	1	1	0.516
	125		C	**5SP4 292-6**		002	1	1	0.516
	3P, 400 V AC								
	80	4.5	B	**5SP4 380-6**		002	1	1	0.762
	100		B	**5SP4 391-6**		002	1	1	0.762
	125		C	**5SP4 392-6**		002	1	1	0.762
	4P, 400 V AC								
	80	6	B	**5SP4 480-6**		002	1	1	1.032
	100		C	**5SP4 491-6**		002	1	1	1.032
	125		C	**5SP4 492-6**		002	1	1	1.032

10 000

	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 10 000 A, high current												
	1P, 230/400 V AC												
	80	1.5	A	**5SP4 180-7**		003	B	**5SP4 180-8**		004	1	1	0.258
	100		A	**5SP4 191-7**		003	C	**5SP4 191-8**		004	1	1	0.258
	125		A	**5SP4 192-7**		003		**--**			1	1	0.258
	2P, 400 V AC												
	80	3	A	**5SP4 280-7**		003	C	**5SP4 280-8**		004	1	1	0.516
	100		A	**5SP4 291-7**		003	C	**5SP4 291-8**		004	1	1	0.516
	125		A	**5SP4 292-7**		003		**--**			1	1	0.516
	3P, 400 V AC												
	80	4.5	▶	**5SP4 380-7**		003	A	**5SP4 380-8**		004	1	1	0.762
	100		▶	**5SP4 391-7**		003	A	**5SP4 391-8**		004	1	1	0.762
	125		A	**5SP4 392-7**		003		**--**			1	1	0.762
	4P, 400 V AC												
	80	6	A	**5SP4 480-7**		003	A	**5SP4 480-8**		004	1	1	1.032
	100		A	**5SP4 491-7**		003	C	**5SP4 491-8**		004	1	1	1.032
	125		A	**5SP4 492-7**		003		**--**			1	1	1.032

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

BETA Protecting
Miniature Circuit Breakers

5SP and 5SY miniature circuit breakers

10 000 / 3	I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	DT	Characteristic C Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 10 000 A, universal current												
	1P, 230/400 V AC, 220 V DC												
	0.3	1		--			C	**5SY5 114-7**		003	1	1	0.165
	0.5			--			B	**5SY5 105-7**		003	1	1	0.165
	1			--			A	**5SY5 101-7**		003	1	1	0.147
	1.6			--			A	**5SY5 115-7**		003	1	1	0.165
	2		C	**5SY5 102-6**		002	A	**5SY5 102-7**		003	1	1	0.165
	3			--			A	**5SY5 103-7**		003	1	1	0.165
	4		B	**5SY5 104-6**		002	A	**5SY5 104-7**		003	1	1	0.165
	6		A	**5SY5 106-6**		002	▶	**5SY5 106-7**		003	1	1	0.165
	8			--			A	**5SY5 108-7**		003	1	1	0.165
	10		A	**5SY5 110-6**		002	▶	**5SY5 110-7**		003	1	1	0.165
	13		C	**5SY5 113-6**		002	B	**5SY5 113-7**		003	1	1	0.165
	16		A	**5SY5 116-6**		002	A	**5SY5 116-7**		003	1	1	0.165
	20		C	**5SY5 120-6**		002	A	**5SY5 120-7**		003	1	1	0.165
	25		C	**5SY5 125-6**		002	B	**5SY5 125-7**		003	1	1	0.165
	32		C	**5SY5 132-6**		002	B	**5SY5 132-7**		003	1	1	0.165
	40		C	**5SY5 140-6**		002	C	**5SY5 140-7**		003	1	1	0.165
	50		C	**5SY5 150-6**		002	C	**5SY5 150-7**		003	1	1	0.165
	63		C	**5SY5 163-6**		002	C	**5SY5 163-7**		003	1	1	0.165
	80	1.5		--			B	**5SP5 180-7**		003	1	1	0.258
	100			--			B	**5SP5 191-7**		003	1	1	0.258
	125			--			B	**5SP5 192-7**		003	1	1	0.258
	2P, 440 V AC, 440 V DC												
	0.3	2		--			C	**5SY5 214-7**		003	1	1	0.330
	0.5			--			B	**5SY5 205-7**		003	1	1	0.330
	1			--			A	**5SY5 201-7**		003	1	1	0.330
	1.6			--			B	**5SY5 215-7**		003	1	1	0.330
	2			--			▶	**5SY5 202-7**		003	1	1	0.330
	3			--			▶	**5SY5 203-7**		003	1	1	0.330
	4			--			A	**5SY5 204-7**		003	1	1	0.330
	6		A	**5SY5 206-6**		002	▶	**5SY5 206-7**		003	1	1/6	0.330
	8			--			B	**5SY5 208-7**		003	1	1	0.330
	10		A	**5SY5 210-6**		002	▶	**5SY5 210-7**		003	1	1	0.330
	13		C	**5SY5 213-6**		002	B	**5SY5 213-7**		003	1	1	0.330
	16		A	**5SY5 216-6**		002	▶	**5SY5 216-7**		003	1	1	0.330
	20		A	**5SY5 220-6**		002	A	**5SY5 220-7**		003	1	1	0.330
	25		C	**5SY5 225-6**		002	A	**5SY5 225-7**		003	1	1	0.330
	32		B	**5SY5 232-6**		002	B	**5SY5 232-7**		003	1	1	0.330
	40		C	**5SY5 240-6**		002	B	**5SY5 240-7**		003	1	1	0.330
	50		C	**5SY5 250-6**		002	A	**5SY5 250-7**		003	1	1	0.330
	63		C	**5SY5 263-6**		002	A	**5SY5 263-7**		003	1	1	0.330
	80	3		--			B	**5SP5 280-7**		003	1	1	0.516
	100			--			B	**5SP5 291-7**		003	1	1	0.516
	125			--			B	**5SP5 292-7**		003	1	1	0.516

* You can order this quantity or a multiple thereof.

15 000
3

I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A						Unit(s)	Unit(s)	kg
MCBs 15 000 A								
1P, 230/400 V AC								
6	1	►	**5SY7 106-6**		002	1	1	0.165
10		►	**5SY7 110-6**		002	1	1	0.165
13		C	**5SY7 113-6**		002	1	1	0.165
16		►	**5SY7 116-6**		002	1	1	0.165
20		B	**5SY7 120-6**		002	1	1	0.165
25		B	**5SY7 125-6**		002	1	1	0.165
32		B	**5SY7 132-6**		002	1	1	0.165
40		C	**5SY7 140-6**		002	1	1	0.165
50		C	**5SY7 150-6**		002	1	1	0.165
63		C	**5SY7 163-6**		002	1	1	0.165
1P+N, 230 V AC								
6	2	C	**5SY7 506-6**		002	1	1	0.330
10		C	**5SY7 510-6**		002	1	1	0.330
13		C	**5SY7 513-6**		002	1	1	0.330
16		C	**5SY7 516-6**		002	1	1	0.330
20		C	**5SY7 520-6**		002	1	1	0.330
25		C	**5SY7 525-6**		002	1	1	0.330
32		C	**5SY7 532-6**		002	1	1	0.330
40		C	**5SY7 540-6**		002	1	1	0.330
50		C	**5SY7 550-6**		002	1	1	0.330
63		C	**5SY7 563-6**		002	1	1	0.330
2P, 400 V AC								
6	2	B	**5SY7 206-6**		002	1	1	0.330
10		B	**5SY7 210-6**		002	1	1	0.330
13		C	**5SY7 213-6**		002	1	1	0.330
16		B	**5SY7 216-6**		002	1	1	0.330
20		B	**5SY7 220-6**		002	1	1	0.330
25		B	**5SY7 225-6**		002	1	1	0.330
32		C	**5SY7 232-6**		002	1	1	0.330
40		C	**5SY7 240-6**		002	1	1	0.330
50		C	**5SY7 250-6**		002	1	1	0.330
63		C	**5SY7 263-6**		002	1	1	0.330
3P, 400 V AC								
6	3	B	**5SY7 306-6**		002	1	1	0.495
10		B	**5SY7 310-6**		002	1	1	0.495
13		C	**5SY7 313-6**		002	1	1	0.495
16		A	**5SY7 316-6**		002	1	1	0.495
20		B	**5SY7 320-6**		002	1	1	0.495
25		B	**5SY7 325-6**		002	1	1	0.495
32		B	**5SY7 332-6**		002	1	1	0.495
40		B	**5SY7 340-6**		002	1	1	0.495
50		B	**5SY7 350-6**		002	1	1	0.495
63		C	**5SY7 363-6**		002	1	1	0.495
3P+N, 400 V AC								
6	4	C	**5SY7 606-6**		002	1	1	0.660
10		C	**5SY7 610-6**		002	1	1	0.660
13		C	**5SY7 613-6**		002	1	1	0.660
16		C	**5SY7 616-6**		002	1	1	0.660
20		C	**5SY7 620-6**		002	1	1	0.660
25		C	**5SY7 625-6**		002	1	1	0.660
32		C	**5SY7 632-6**		002	1	1	0.660
40		C	**5SY7 640-6**		002	1	1	0.660
50		C	**5SY7 650-6**		002	1	1	0.660
63		C	**5SY7 663-6**		002	1	1	0.660
4P, 400 V AC								
6	4	C	**5SY7 406-6**		002	1	1	0.660
10		B	**5SY7 410-6**		002	1	1	0.660
13		C	**5SY7 413-6**		002	1	1	0.660
16		B	**5SY7 416-6**		002	1	1	0.660
20		B	**5SY7 420-6**		002	1	1	0.660
25		C	**5SY7 425-6**		002	1	1	0.660
32		C	**5SY7 432-6**		002	1	1	0.660
40		C	**5SY7 440-6**		002	1	1	0.660
50		C	**5SY7 450-6**		002	1	1	0.660
63		C	**5SY7 463-6**		002	1	1	0.660






* You can order this quantity or a multiple thereof.

BETA Protecting
Miniature Circuit Breakers

5SP and 5SY miniature circuit breakers

15 000
3

I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A										Unit(s)	Unit(s)	kg
MCBs 15 000 A												
1P, 230/400 V AC												
0.3	1	B	**5SY7 114-7**		003	C	**5SY7 114-8**		004	1	1	0.165
0.5		B	**5SY7 105-7**		003	C	**5SY7 105-8**		004	1	1	0.165
1		A	**5SY7 101-7**		003	C	**5SY7 101-8**		004	1	1	0.165
1.6		B	**5SY7 115-7**		003	C	**5SY7 115-8**		004	1	1	0.165
2		▶	**5SY7 102-7**		003	C	**5SY7 102-8**		004	1	1	0.165
3		A	**5SY7 103-7**		003	C	**5SY7 103-8**		004	1	1	0.165
4		A	**5SY7 104-7**		003	B	**5SY7 104-8**		004	1	1	0.165
6		▶	**5SY7 106-7**		003	B	**5SY7 106-8**		004	1	1	0.165
8		B	**5SY7 108-7**		003	C	**5SY7 108-8**		004	1	1	0.165
10		▶	**5SY7 110-7**		003	B	**5SY7 110-8**		004	1	1	0.165
13		B	**5SY7 113-7**		003	C	**5SY7 113-8**		004	1	1	0.165
16		▶	**5SY7 116-7**		003	B	**5SY7 116-8**		004	1	1	0.165
20		A	**5SY7 120-7**		003	C	**5SY7 120-8**		004	1	1	0.165
25		B	**5SY7 125-7**		003	C	**5SY7 125-8**		004	1	1	0.165
32		B	**5SY7 132-7**		003	C	**5SY7 132-8**		004	1	1	0.165
40		B	**5SY7 140-7**		003	C	**5SY7 140-8**		004	1	1	0.165
50		C	**5SY7 150-7**		003	C	**5SY7 150-8**		004	1	1	0.165
63		B	**5SY7 163-7**		003	C	**5SY7 163-8**		004	1	1	0.165
1P+N, 230 V AC												
0.3	2	C	**5SY7 514-7**		003	C	**5SY7 514-8**		004	1	1	0.330
0.5		C	**5SY7 505-7**		003	C	**5SY7 505-8**		004	1	1	0.330
1		B	**5SY7 501-7**		003	C	**5SY7 501-8**		004	1	1	0.330
1.6		C	**5SY7 515-7**		003	C	**5SY7 515-8**		004	1	1	0.330
2		B	**5SY7 502-7**		003	C	**5SY7 502-8**		004	1	1	0.330
3		B	**5SY7 503-7**		003	C	**5SY7 503-8**		004	1	1	0.330
4		B	**5SY7 504-7**		003	B	**5SY7 504-8**		004	1	1	0.330
6		A	**5SY7 506-7**		003	C	**5SY7 506-8**		004	1	1	0.330
8		C	**5SY7 508-7**		003	C	**5SY7 508-8**		004	1	1	0.330
10		A	**5SY7 510-7**		003	C	**5SY7 510-8**		004	1	1	0.330
13		B	**5SY7 513-7**		003	C	**5SY7 513-8**		004	1	1	0.330
16		A	**5SY7 516-7**		003	B	**5SY7 516-8**		004	1	1	0.330
20		B	**5SY7 520-7**		003	C	**5SY7 520-8**		004	1	1	0.330
25		B	**5SY7 525-7**		003	C	**5SY7 525-8**		004	1	1	0.330
32		B	**5SY7 532-7**		003	C	**5SY7 532-8**		004	1	1	0.330
40		C	**5SY7 540-7**		003	C	**5SY7 540-8**		004	1	1	0.330
50		C	**5SY7 550-7**		003	C	**5SY7 550-8**		004	1	1	0.330
63		C	**5SY7 563-7**		003	C	**5SY7 563-8**		004	1	1	0.330
2P, 400 V AC												
0.3	2	C	**5SY7 214-7**		003	C	**5SY7 214-8**		004	1	1	0.330
0.5		B	**5SY7 205-7**		003	C	**5SY7 205-8**		004	1	1	0.330
1		A	**5SY7 201-7**		003	B	**5SY7 201-8**		004	1	1	0.330
1.6		C	**5SY7 215-7**		003	C	**5SY7 215-8**		004	1	1	0.330
2		A	**5SY7 202-7**		003	A	**5SY7 202-8**		004	1	1	0.330
3		A	**5SY7 203-7**		003	B	**5SY7 203-8**		004	1	1	0.330
4		A	**5SY7 204-7**		003	A	**5SY7 204-8**		004	1	1	0.330
6		▶	**5SY7 206-7**		003	A	**5SY7 206-8**		004	1	1	0.330
8		B	**5SY7 208-7**		003	B	**5SY7 208-8**		004	1	1	0.330
10		▶	**5SY7 210-7**		003	A	**5SY7 210-8**		004	1	1	0.330
13		B	**5SY7 213-7**		003	C	**5SY7 213-8**		004	1	1	0.330
16		▶	**5SY7 216-7**		003	A	**5SY7 216-8**		004	1	1	0.330
20		A	**5SY7 220-7**		003	B	**5SY7 220-8**		004	1	1	0.330
25		A	**5SY7 225-7**		003	B	**5SY7 225-8**		004	1	1	0.330
32		A	**5SY7 232-7**		003	C	**5SY7 232-8**		004	1	1	0.330
40		A	**5SY7 240-7**		003	C	**5SY7 240-8**		004	1	1	0.330
50		B	**5SY7 250-7**		003	C	**5SY7 250-8**		004	1	1	0.330
63		B	**5SY7 263-7**		003	C	**5SY7 263-8**		004	1	1	0.330

* You can order this quantity or a multiple thereof.

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	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 15 000 A												
	3P, 400 V AC												
	0.3	3	C	**5SY7 314-7**		003	C	**5SY7 314-8**		004	1	1	0.495
	0.5		C	**5SY7 305-7**		003	C	**5SY7 305-8**		004	1	1	0.495
	1		C	**5SY7 301-7**		003	C	**5SY7 301-8**		004	1	1	0.495
	1.6		C	**5SY7 315-7**		003	C	**5SY7 315-8**		004	1	1	0.495
	2		B	**5SY7 302-7**		003	C	**5SY7 302-8**		004	1	1	0.495
	3		C	**5SY7 303-7**		003	C	**5SY7 303-8**		004	1	1	0.495
	4		A	**5SY7 304-7**		003	C	**5SY7 304-8**		004	1	1	0.495
	6		A	**5SY7 306-7**		003	C	**5SY7 306-8**		004	1	1	0.495
	8		C	**5SY7 308-7**		003	B	**5SY7 308-8**		004	1	1	0.495
	10		A	**5SY7 310-7**		003	B	**5SY7 310-8**		004	1	1	0.495
	13		B	**5SY7 313-7**		003	C	**5SY7 313-8**		004	1	1	0.495
	16		►	**5SY7 316-7**		003	A	**5SY7 316-8**		004	1	1	0.495
	20		►	**5SY7 320-7**		003	B	**5SY7 320-8**		004	1	1	0.495
	25		►	**5SY7 325-7**		003	A	**5SY7 325-8**		004	1	1	0.495
	32		►	**5SY7 332-7**		003	B	**5SY7 332-8**		004	1	1	0.495
	40		►	**5SY7 340-7**		003	B	**5SY7 340-8**		004	1	1	0.495
	50		►	**5SY7 350-7**		003	B	**5SY7 350-8**		004	1	1	0.495
	63		►	**5SY7 363-7**		003	B	**5SY7 363-8**		004	1	1	0.495
	3P+N, 400 V AC												
	0.3	4	C	**5SY7 614-7**		003	C	**5SY7 614-8**		004	1	1	0.660
	0.5		C	**5SY7 605-7**		003	C	**5SY7 605-8**		004	1	1	0.660
	1		C	**5SY7 601-7**		003	C	**5SY7 601-8**		004	1	1	0.660
	1.6		C	**5SY7 615-7**		003	C	**5SY7 615-8**		004	1	1	0.660
	2		C	**5SY7 602-7**		003	C	**5SY7 602-8**		004	1	1	0.660
	3		C	**5SY7 603-7**		003	C	**5SY7 603-8**		004	1	1	0.660
	4		C	**5SY7 604-7**		003	C	**5SY7 604-8**		004	1	1	0.660
	6		C	**5SY7 606-7**		003	C	**5SY7 606-8**		004	1	1	0.660
	8		C	**5SY7 608-7**		003	C	**5SY7 608-8**		004	1	1	0.660
	10		B	**5SY7 610-7**		003	C	**5SY7 610-8**		004	1	1	0.660
	13		C	**5SY7 613-7**		003	C	**5SY7 613-8**		004	1	1	0.660
	16		A	**5SY7 616-7**		003	C	**5SY7 616-8**		004	1	1	0.660
	20		B	**5SY7 620-7**		003	C	**5SY7 620-8**		004	1	1	0.660
	25		B	**5SY7 625-7**		003	C	**5SY7 625-8**		004	1	1	0.660
	32		B	**5SY7 632-7**		003	C	**5SY7 632-8**		004	1	1	0.660
	40		B	**5SY7 640-7**		003	C	**5SY7 640-8**		004	1	1	0.660
	50		B	**5SY7 650-7**		003	C	**5SY7 650-8**		004	1	1	0.660
	63		B	**5SY7 663-7**		003	C	**5SY7 663-8**		004	1	1	0.660
	4P, 400 V AC												
	0.3	4	C	**5SY7 414-7**		003	C	**5SY7 414-8**		004	1	1	0.660
	0.5		C	**5SY7 405-7**		003	C	**5SY7 405-8**		004	1	1	0.660
	1		C	**5SY7 401-7**		003	C	**5SY7 401-8**		004	1	1	0.660
	1.6		C	**5SY7 415-7**		003	C	**5SY7 415-8**		004	1	1	0.660
	2		C	**5SY7 402-7**		003	C	**5SY7 402-8**		004	1	1	0.660
	3		C	**5SY7 403-7**		003	C	**5SY7 403-8**		004	1	1	0.660
	4		B	**5SY7 404-7**		003	C	**5SY7 404-8**		004	1	1	0.660
	6		B	**5SY7 406-7**		003	C	**5SY7 406-8**		004	1	1	0.660
	8		C	**5SY7 408-7**		003	C	**5SY7 408-8**		004	1	1	0.660
	10		►	**5SY7 410-7**		003	B	**5SY7 410-8**		004	1	1	0.660
	13		C	**5SY7 413-7**		003	C	**5SY7 413-8**		004	1	1	0.660
	16		►	**5SY7 416-7**		003	B	**5SY7 416-8**		004	1	1	0.660
	20		A	**5SY7 420-7**		003	B	**5SY7 420-8**		004	1	1	0.660
	25		►	**5SY7 425-7**		003	B	**5SY7 425-8**		004	1	1	0.660
	32		►	**5SY7 432-7**		003	B	**5SY7 432-8**		004	1	1	0.660
	40		A	**5SY7 440-7**		003	B	**5SY7 440-8**		004	1	1	0.660
	50		A	**5SY7 450-7**		003	B	**5SY7 450-8**		004	1	1	0.660
	63		►	**5SY7 463-7**		003	B	**5SY7 463-8**		004	1	1	0.660

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

5SP and 5SY miniature circuit breakers

	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 25 kA												
	1P, 230/400 V AC												
	0.3	1	C	**5SY8 114-7**		003	C	**5SY8 114-8**		004	1	1	0.165
	0.5		C	**5SY8 105-7**		003	C	**5SY8 105-8**		004	1	1	0.165
	1		B	**5SY8 101-7**		003	C	**5SY8 101-8**		004	1	1	0.165
	1.6		C	**5SY8 115-7**		003	C	**5SY8 115-8**		004	1	1	0.165
	2		A	**5SY8 102-7**		003	B	**5SY8 102-8**		004	1	1	0.165
	3		C	**5SY8 103-7**		003	C	**5SY8 103-8**		004	1	1	0.165
	4		B	**5SY8 104-7**		003	C	**5SY8 104-8**		004	1	1	0.165
	6		A	**5SY8 106-7**		003	C	**5SY8 106-8**		004	1	1	0.165
	8		C	**5SY8 108-7**		003	C	**5SY8 108-8**		004	1	1	0.165
	10		A	**5SY8 110-7**		003	C	**5SY8 110-8**		004	1	1	0.165
	13		C	**5SY8 113-7**		003	C	**5SY8 113-8**		004	1	1	0.165
	16		A	**5SY8 116-7**		003	C	**5SY8 116-8**		004	1	1	0.165
	20		A	**5SY8 120-7**		003	C	**5SY8 120-8**		004	1	1	0.165
	25		C	**5SY8 125-7**		003	C	**5SY8 125-8**		004	1	1	0.165
	32		B	**5SY8 132-7**		003	C	**5SY8 132-8**		004	1	1	0.165
	40		C	**5SY8 140-7**		003	C	**5SY8 140-8**		004	1	1	0.165
	50		C	**5SY8 150-7**		003	C	**5SY8 150-8**		004	1	1	0.165
	63		C	**5SY8 163-7**		003	C	**5SY8 163-8**		004	1	1	0.165
	1P+N, 230 V AC												
	0.3	2	C	**5SY8 514-7**		003	C	**5SY8 514-8**		004	1	1	0.330
	0.5		C	**5SY8 505-7**		003	C	**5SY8 505-8**		004	1	1	0.330
	1		C	**5SY8 501-7**		003	C	**5SY8 501-8**		004	1	1	0.330
	1.6		C	**5SY8 515-7**		003	C	**5SY8 515-8**		004	1	1	0.330
	2		C	**5SY8 502-7**		003	C	**5SY8 502-8**		004	1	1	0.330
	3		C	**5SY8 503-7**		003	C	**5SY8 503-8**		004	1	1	0.330
	4		C	**5SY8 504-7**		003	C	**5SY8 504-8**		004	1	1	0.330
	6		B	**5SY8 506-7**		003	C	**5SY8 506-8**		004	1	1	0.330
	8		C	**5SY8 508-7**		003	C	**5SY8 508-8**		004	1	1	0.330
	10		B	**5SY8 510-7**		003	C	**5SY8 510-8**		004	1	1	0.330
	13		C	**5SY8 513-7**		003	C	**5SY8 513-8**		004	1	1	0.330
	16		B	**5SY8 516-7**		003	C	**5SY8 516-8**		004	1	1	0.330
	20		C	**5SY8 520-7**		003	C	**5SY8 520-8**		004	1	1	0.330
	25		C	**5SY8 525-7**		003	C	**5SY8 525-8**		004	1	1	0.330
	32		B	**5SY8 532-7**		003	C	**5SY8 532-8**		004	1	1	0.330
	40		C	**5SY8 540-7**		003	B	**5SY8 540-8**		004	1	1	0.330
	50		B	**5SY8 550-7**		003	B	**5SY8 550-8**		004	1	1	0.330
	63		B	**5SY8 563-7**		003	B	**5SY8 563-8**		004	1	1	0.330
	2P, 400 V AC												
	0.3	2	C	**5SY8 214-7**		003	C	**5SY8 214-8**		004	1	1	0.330
	0.5		C	**5SY8 205-7**		003	C	**5SY8 205-8**		004	1	1	0.330
	1		B	**5SY8 201-7**		003	C	**5SY8 201-8**		004	1	1	0.330
	1.6		C	**5SY8 215-7**		003	C	**5SY8 215-8**		004	1	1	0.330
	2		B	**5SY8 202-7**		003	B	**5SY8 202-8**		004	1	1	0.330
	3		C	**5SY8 203-7**		003	C	**5SY8 203-8**		004	1	1	0.330
	4		A	**5SY8 204-7**		003	C	**5SY8 204-8**		004	1	1	0.330
	6		A	**5SY8 206-7**		003	A	**5SY8 206-8**		004	1	1	0.330
	8		C	**5SY8 208-7**		003	C	**5SY8 208-8**		004	1	1	0.330
	10		A	**5SY8 210-7**		003	B	**5SY8 210-8**		004	1	1	0.330
	13		C	**5SY8 213-7**		003	C	**5SY8 213-8**		004	1	1	0.330
	16		A	**5SY8 216-7**		003	C	**5SY8 216-8**		004	1	1	0.330
	20		B	**5SY8 220-7**		003	C	**5SY8 220-8**		004	1	1	0.330
	25		B	**5SY8 225-7**		003	B	**5SY8 225-8**		004	1	1	0.330
	32		B	**5SY8 232-7**		003	C	**5SY8 232-8**		004	1	1	0.330
	40		C	**5SY8 240-7**		003	C	**5SY8 240-8**		004	1	1	0.330
	50		C	**5SY8 250-7**		003	C	**5SY8 250-8**		004	1	1	0.330
	63		C	**5SY8 263-7**		003	C	**5SY8 263-8**		004	1	1	0.330

* You can order this quantity or a multiple thereof.

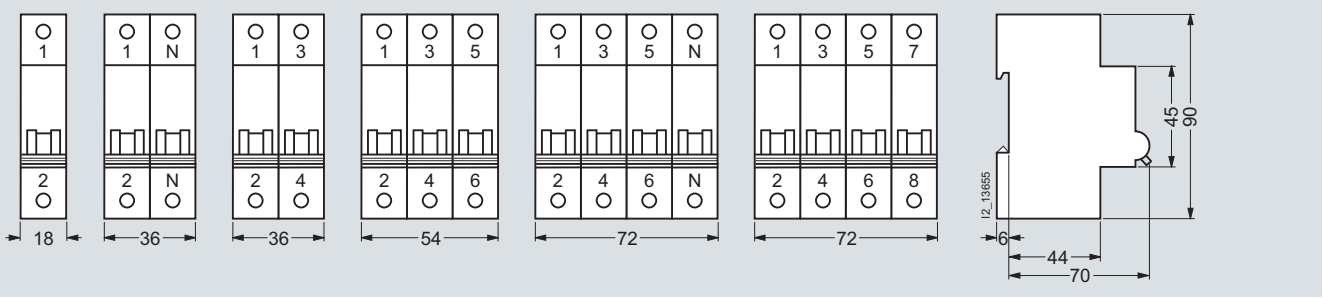
	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	MCBs 25 kA												
	3P, 400 V AC												
	0.3	3	C	**5SY8 314-7**		003	C	**5SY8 314-8**		004	1	1	0.495
	0.5		C	**5SY8 305-7**		003	C	**5SY8 305-8**		004	1	1	0.495
	1		A	**5SY8 301-7**		003	C	**5SY8 301-8**		004	1	1	0.495
	1.6		C	**5SY8 315-7**		003	C	**5SY8 315-8**		004	1	1	0.495
	2		C	**5SY8 302-7**		003	C	**5SY8 302-8**		004	1	1	0.495
	3		C	**5SY8 303-7**		003	C	**5SY8 303-8**		004	1	1	0.495
	4		C	**5SY8 304-7**		003	C	**5SY8 304-8**		004	1	1	0.495
	6		B	**5SY8 306-7**		003	C	**5SY8 306-8**		004	1	1	0.495
	8		C	**5SY8 308-7**		003	C	**5SY8 308-8**		004	1	1	0.495
	10		B	**5SY8 310-7**		003	C	**5SY8 310-8**		004	1	1	0.495
	13		C	**5SY8 313-7**		003	C	**5SY8 313-8**		004	1	1	0.495
	16		A	**5SY8 316-7**		003	C	**5SY8 316-8**		004	1	1	0.495
	20		C	**5SY8 320-7**		003	C	**5SY8 320-8**		004	1	1	0.495
	25		A	**5SY8 325-7**		003	B	**5SY8 325-8**		004	1	1	0.495
	32		A	**5SY8 332-7**		003	B	**5SY8 332-8**		004	1	1	0.495
	40		B	**5SY8 340-7**		003	C	**5SY8 340-8**		004	1	1	0.495
	50		B	**5SY8 350-7**		003	B	**5SY8 350-8**		004	1	1	0.495
	63		B	**5SY8 363-7**		003	C	**5SY8 363-8**		004	1	1	0.495
	3P+N, 400 V AC												
	0.3	4	C	**5SY8 614-7**		003	C	**5SY8 614-8**		004	1	1	0.660
	0.5		C	**5SY8 605-7**		003	C	**5SY8 605-8**		004	1	1	0.660
	1		C	**5SY8 601-7**		003	C	**5SY8 601-8**		004	1	1	0.660
	1.6		C	**5SY8 615-7**		003	C	**5SY8 615-8**		004	1	1	0.660
	2		C	**5SY8 602-7**		003	C	**5SY8 602-8**		004	1	1	0.660
	3		C	**5SY8 603-7**		003	C	**5SY8 603-8**		004	1	1	0.660
	4		C	**5SY8 604-7**		003	C	**5SY8 604-8**		004	1	1	0.660
	6		C	**5SY8 606-7**		003	C	**5SY8 606-8**		004	1	1	0.660
	8		C	**5SY8 608-7**		003	C	**5SY8 608-8**		004	1	1	0.660
	10		C	**5SY8 610-7**		003	C	**5SY8 610-8**		004	1	1	0.660
	13		C	**5SY8 613-7**		003	C	**5SY8 613-8**		004	1	1	0.660
	16		B	**5SY8 616-7**		003	C	**5SY8 616-8**		004	1	1	0.660
	20		C	**5SY8 620-7**		003	C	**5SY8 620-8**		004	1	1	0.660
	25		C	**5SY8 625-7**		003	C	**5SY8 625-8**		004	1	1	0.660
	32		B	**5SY8 632-7**		003	C	**5SY8 632-8**		004	1	1	0.660
	40		C	**5SY8 640-7**		003	C	**5SY8 640-8**		004	1	1	0.660
	50		C	**5SY8 650-7**		003	C	**5SY8 650-8**		004	1	1	0.660
	63		A	**5SY8 663-7**		003	C	**5SY8 663-8**		004	1	1	0.660
	4P, 400 V AC												
	0.3	4	C	**5SY8 414-7**		003	C	**5SY8 414-8**		004	1	1	0.660
	0.5		C	**5SY8 405-7**		003	C	**5SY8 405-8**		004	1	1	0.660
	1		C	**5SY8 401-7**		003	C	**5SY8 401-8**		004	1	1	0.660
	1.6		C	**5SY8 415-7**		003	C	**5SY8 415-8**		004	1	1	0.660
	2		C	**5SY8 402-7**		003	C	**5SY8 402-8**		004	1	1	0.660
	3		C	**5SY8 403-7**		003	C	**5SY8 403-8**		004	1	1	0.660
	4		C	**5SY8 404-7**		003	C	**5SY8 404-8**		004	1	1	0.660
	6		C	**5SY8 406-7**		003	C	**5SY8 406-8**		004	1	1	0.660
	8		C	**5SY8 408-7**		003	C	**5SY8 408-8**		004	1	1	0.660
	10		B	**5SY8 410-7**		003	C	**5SY8 410-8**		004	1	1	0.660
	13		C	**5SY8 413-7**		003	C	**5SY8 413-8**		004	1	1	0.660
	16		A	**5SY8 416-7**		003	C	**5SY8 416-8**		004	1	1	0.660
	20		A	**5SY8 420-7**		003	C	**5SY8 420-8**		004	1	1	0.660
	25		A	**5SY8 425-7**		003	C	**5SY8 425-8**		004	1	1	0.660
	32		A	**5SY8 432-7**		003	C	**5SY8 432-8**		004	1	1	0.660
	40		A	**5SY8 440-7**		003	C	**5SY8 440-8**		004	1	1	0.660
	50		A	**5SY8 450-7**		003	C	**5SY8 450-8**		004	1	1	0.660
	63		A	**5SY8 463-7**		003	C	**5SY8 463-8**		004	1	1	0.660

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

5SP and 5SY miniature circuit breakers

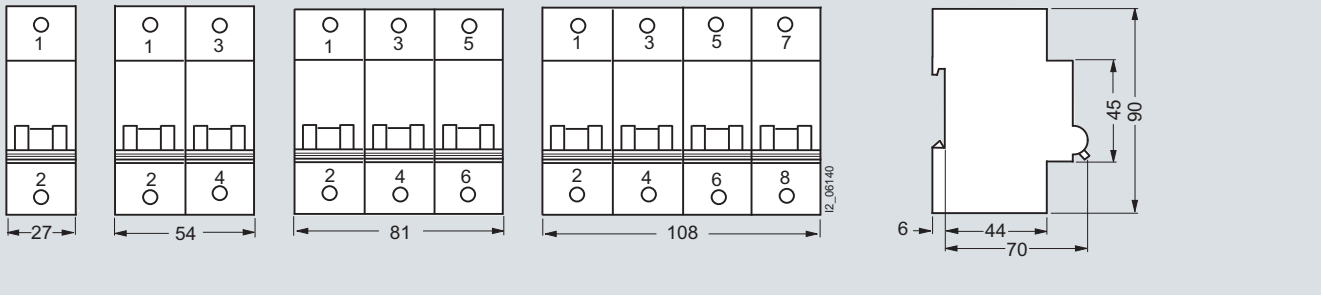
Dimensional drawings

5SY



1P 1P+N 2P 3P 3P+N 4P

5SP



1P 2P 3P 4P

Schematics

5SY6, 5SY4, 5SY7, 5SY8

1P 1P+N 2P 3P 3P+N 4P

5SP4

1P 2P 3P 4P

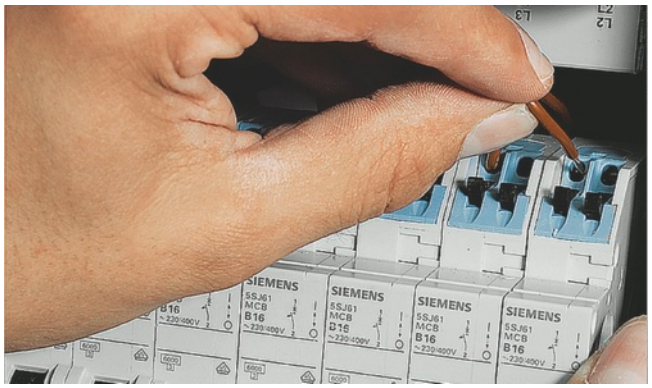
5SY5, 5SP5

1P 2P

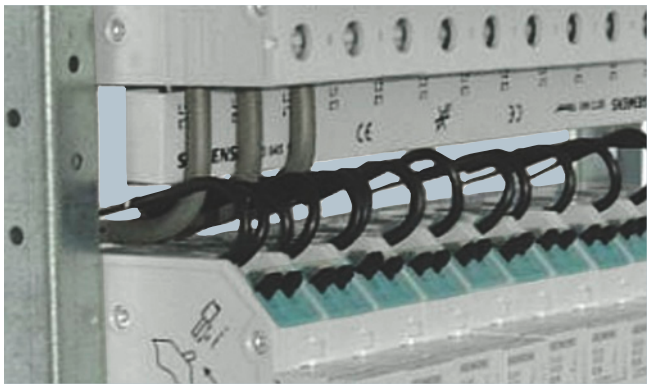
Overview

Miniature circuit breakers with plug-in terminals are used for the protection of socket outlets and lighting circuits with the most common rated currents of 10 to 20 A.

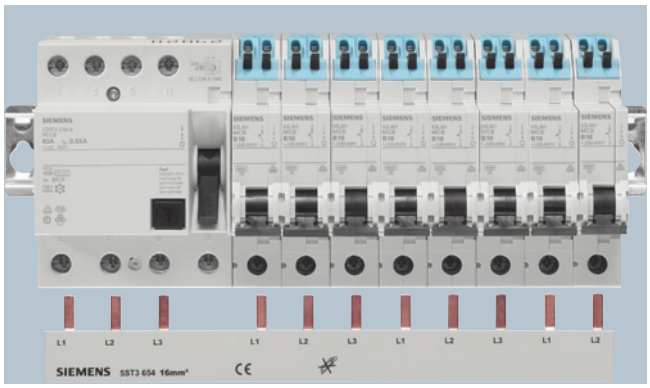
Benefits



- Double, self-contained, screwless outgoing terminals for fast connection of conductors.



- The plug-in terminals offer angled, easily accessible cable entries for manual insertion, which saves mounting time.
- Separate removal of individual conductors requires no tools and ensures high operating safety.
- No end sleeves required for finely stranded conductors. This saves mounting time.



- Conventional pin busbars are used for the incoming terminal. This ensures clear, manageable and convenient access to all connections within the framework of the Siemens connection concept.

5SJ6 ...-.KS miniature circuit breakers with plug-in terminals

Technical specifications

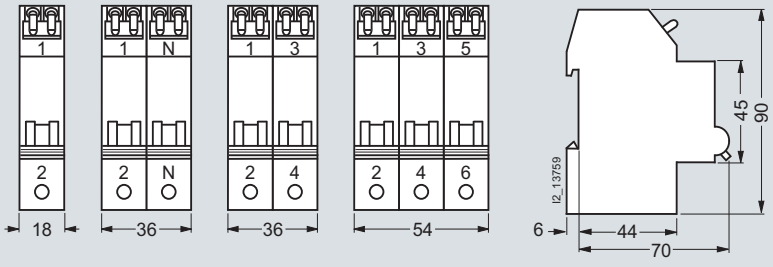
			5SJ6 ...-.KS
Standards **Approved acc. to**			EN 60898 EN 60898
Operational voltage	Min.	V AC/DC	24
	Max.	V AC	400
	Max.	V DC/pole	60
Rated switching capacity	Acc. to EN 60898	kA AC	6
Insulation coordination			
• Rated insulation voltage		V AC	250/440
• Degree of pollution for overvoltage category			2/III
Touch protection	Acc. to DIN VDE 106-100		Yes
Handle end position, sealable			Yes
Degree of protection	Acc. to EN 60529		IP20, with connected conductors
CFC and silicone-free			Yes
Terminals			Screwless terminals on outgoing terminals for 1.5 ... 4 mm^2
Conductor cross-sections			
• Top, plug-in terminals			
- Solid, stranded and finely stranded, without end sleeve		mm^2	1.5 ... 4
- Finely stranded, with end sleeve		mm^2	1.5 ... 2.5
• Bottom, tunnel terminal			
- Solid, stranded or finely stranded, with end sleeve		mm^2	0.75 ... 25
Mounting position			Any
Service life On average, with rated load			20 000 actuations
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75
Resistance to climate	Acc. to IEC 60068-2-30		6 cycles
Resistance to vibrations	Acc. to IEC 60068-2-6	m/s^2	60 at 10 Hz ... 150 Hz

The operational voltage 60 V DC/pole takes into account a battery charging voltage with peak value of 72 V.

Selection and ordering data

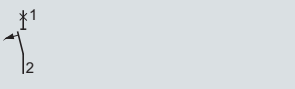
6 000 / 3	I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	DT	Characteristic C Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	Miniature circuit breakers with plug-in terminals												
	1P												
	10	1	B	**5SJ6 110-6KS**		002	B	**5SJ6 110-7KS**		003	1	1	0.111
	13		B	**5SJ6 113-6KS**		002	B	**5SJ6 113-7KS**		003	1	1/12	0.111
	16		A	**5SJ6 116-6KS**		002	B	**5SJ6 116-7KS**		003	1	1	0.111
	20		B	**5SJ6 120-6KS**		002	B	**5SJ6 120-7KS**		003	1	1/12	0.111
	1P+N												
	10	2	B	**5SJ6 510-6KS**		002	B	**5SJ6 510-7KS**		003	1	1/6	0.185
	13		B	**5SJ6 513-6KS**		002	B	**5SJ6 513-7KS**		003	1	1/6	0.185
	16		B	**5SJ6 516-6KS**		002	B	**5SJ6 516-7KS**		003	1	1/6	0.185
	20		B	**5SJ6 520-6KS**		002	B	**5SJ6 520-7KS**		003	1	1/6	0.185
	2P												
	10	2	B	**5SJ6 210-6KS**		002	B	**5SJ6 210-7KS**		003	1	1/6	0.225
	13		B	**5SJ6 213-6KS**		002	B	**5SJ6 213-7KS**		003	1	1/6	0.225
	16		B	**5SJ6 216-6KS**		002	B	**5SJ6 216-7KS**		003	1	1/6	0.225
	20		B	**5SJ6 220-6KS**		002	B	**5SJ6 220-7KS**		003	1	1/6	0.225
	3P												
	10	3	B	**5SJ6 310-6KS**		002	B	**5SJ6 310-7KS**		003	1	1/4	0.345
	13		B	**5SJ6 313-6KS**		002	B	**5SJ6 313-7KS**		003	1	1/4	0.345
	16		B	**5SJ6 316-6KS**		002	B	**5SJ6 316-7KS**		003	1	1/4	0.345
	20		B	**5SJ6 320-6KS**		002	B	**5SJ6 320-7KS**		003	1	1/4	0.345

Dimensional drawings

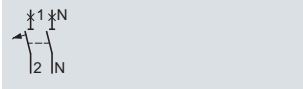


1P 1P+N 2P 3P

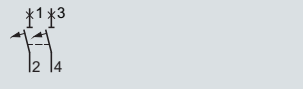
Schematics



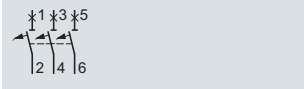
1P



1P+N



2P



3P

* You can order this quantity or a multiple thereof.

BETA Protecting
Miniature Circuit Breakers

5SY6 0 miniature circuit breakers 1+N in 1 MW

Overview

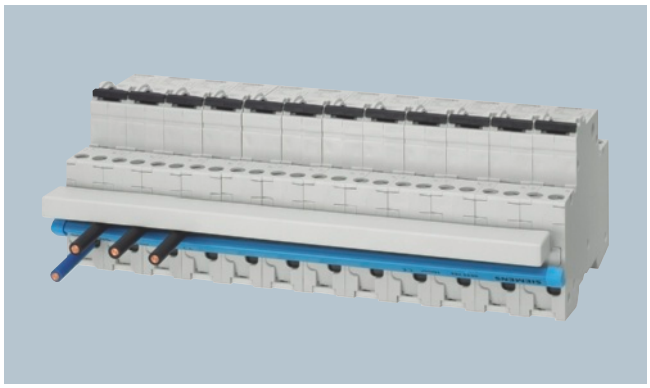
These miniature circuit breakers are used for the protection of plants with switched neutral conductors in distribution boards with little space. They are just a single modular width.

Compact busbars facilitate installation in space saving distribution boards.

The devices are approved for worldwide use according to IEC standards for systems up to 250 V AC. 60 V DC per pole is permitted in DC systems according to IEC standards.

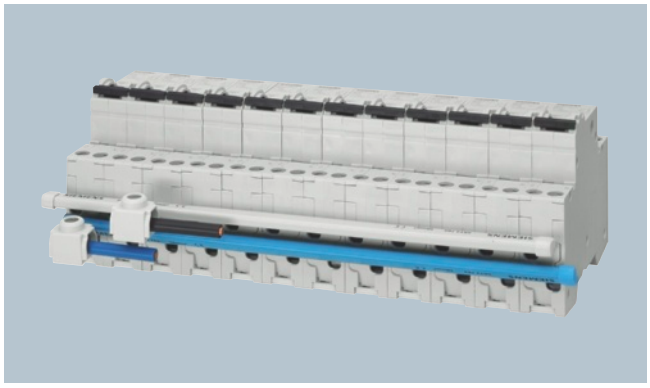
Benefits

- Auxiliary switches and fault signal contacts from the high-capacity range can be freely mounted on these miniature circuit breakers. This increases availability and cuts down on logistics.



- For 3-pole busbars, the 5ST3 6 busbar system is used – a universal system, suitable for all miniature circuit breakers.

- By actuating the latching slide, the miniature circuit breakers can be quickly and easily removed from the assembly.



- The infeed can be implemented either from the top or the bottom. Additional terminals with lateral insertion of conductors facilitate mounting when using large conductor cross-sections.

Technical specifications

			5SY6 0..
Standards **Approved acc. to**			EN 60898 EN 60898
Rated voltage U_n		V AC	230
Operational voltage	Min.	V AC/DC	24
	Max.	V AC	250
	Max.	V DC/pole	60
Rated switching capacity I_{cn} • Acc. to IEC/EN 60898-1		kA AC kA AC	6 6
Insulation coordination • Rated insulation voltage • Degree of pollution for overvoltage category		 V AC	 250 3/III
Touch protection	Acc. to EN 50274-1		Yes
Handle end position, sealable			Yes
Degree of protection			IP20, with connected conductors
CFC and silicone-free			Yes
Terminals • Solid and stranded, top and bottom terminal • Finely stranded, with end sleeve, top and bottom terminal		 mm^2 mm^2	 0.75 ... 16 0.75 ... 10
Terminal tightening torque		Nm	2.0
Mains connection			Bottom
Mounting position			Any
Service life On average, with rated load			20 000 operations
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75
Resistance to climate	Acc. to IEC 60068-2-30		6 cycles
Resistance to vibrations	Acc. to IEC 60068-2-6	m/s^2	60 at 10 ... 150 Hz

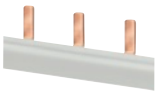
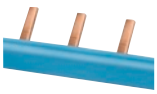
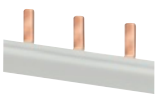
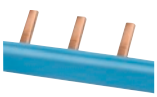
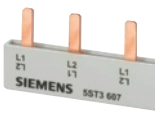
Note:
Internal resistance R_i and power loss P_v of miniature circuit breakers, compact range 1+N in 1 MW, 5SY6 0 see page 1/78.

BETA Protecting
Miniature Circuit Breakers

5SY6 0 miniature circuit breakers 1+N in 1 MW

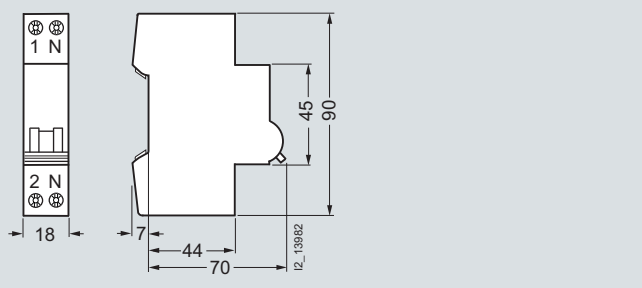
Selection and ordering data

6 000 / 3	I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	DT	Characteristic C Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	**Miniature circuit breakers, compact N pole right 1P+N, 230 V AC**												
	2 NEW	1		--			A	**5SY6 002-7**		003	1	1	0.100
	4 NEW			--			A	**5SY6 004-7**		003	1	1	0.100
	6		A	**5SY6 006-6**		002	A	**5SY6 006-7**		003	1	1	0.100
	8			--			D	**5SY6 008-7**		003	1	1	0.100
	10		A	**5SY6 010-6**		002	A	**5SY6 010-7**		003	1	1	0.100
	13		A	**5SY6 013-6**		002	A	**5SY6 013-7**		003	1	1	0.100
	16		A	**5SY6 016-6**		002	A	**5SY6 016-7**		003	1	1	0.100
	20		A	**5SY6 020-6**		002	A	**5SY6 020-7**		003	1	1	0.100
	25		A	**5SY6 025-6**		002	A	**5SY6 025-7**		003	1	1	0.100
	32		A	**5SY6 032-6**		002	A	**5SY6 032-7**		003	1	1	0.100
	40 NEW		A	**5SY6 040-6**		002	D	**5SY6 040-7**		003	1	1	0.100
	**Miniature circuit breakers, compact N pole left 1P+N, 230 V AC** NEW												
	2	1		--			A	**5SY6 002-7KL**		003	1	1	0.100
	4			--			A	**5SY6 004-7KL**		003	1	1	0.100
	6			--			D	**5SY6 006-7KL**		003	1	1	0.100
	8			--			D	**5SY6 008-7KL**		003	1	1	0.100
	10			--			A	**5SY6 010-7KL**		003	1	1	0.100
	13			--			D	**5SY6 013-7KL**		003	1	1	0.100
	16			--			D	**5SY6 016-7KL**		003	1	1	0.100
	20			--			D	**5SY6 020-7KL**		003	1	1	0.100
	25			--			D	**5SY6 025-7KL**		003	1	1	0.100
	32			--			D	**5SY6 032-7KL**		003	1	1	0.100
	40			--			D	**5SY6 040-7KL**		003	1	1	0.100

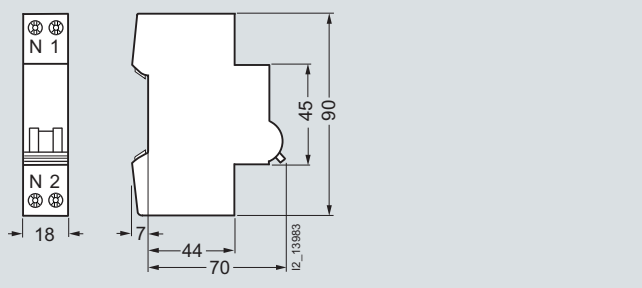
		Pin spacing	Length	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
		MW	mm					Unit(s)	Unit(s)	kg
	**5ST3 7 busbar systems, 10 mm², 12 MW, for MCBs 1+N in 1 MW of the compact range, can be cut, with end caps**									
	Single-phase									
	For 12 MCB 1+N, gray	1	216	A	**5ST3 762**		027	1	10	0.029
	For 12 MCB 1+N, blue		216	A	**5ST3 763**		027	1	10	0.029
	**5ST3 7 busbar systems, 10 mm², for MCBs 1+N in 1 MW of the compact range, can be cut, without end caps**									
	Single-phase									
	For MCB 1+N, gray	1	1016	A	**5ST3 764**		027	1	10	0.134
	For MCB 1+N, blue		1016	A	**5ST3 765**		027	1	10	0.134
	**End caps for 5ST3 76 busbars**									
	1 set comprises a right and a left cap									
	Gray			A	**5ST3 766**		027	1 set	10 sets	
	Blue			A	**5ST3 767**		027	1 set	10 sets	
	**5ST3 6 busbar systems, 10 mm², for MCBs fixed lengths, cannot be cut, fully insulated**									
	Three-phase									
	For 2 MCB 3P	1	102	A	**5ST3 613**		027	1	10	0.039
	For 3 MCB 3P		257.5	A	**5ST3 614**		027	1	10	0.060
	For 4 MCB 3P		210	▶	**5ST3 615**		027	1	10	0.076
	**Terminals for 5ST3 76**									
	Side terminals			A	**5ST3 768**		027	1	25	0.011
	For conductors up to 25 mm²									

* You can order this quantity or a multiple thereof.

Dimensional drawings

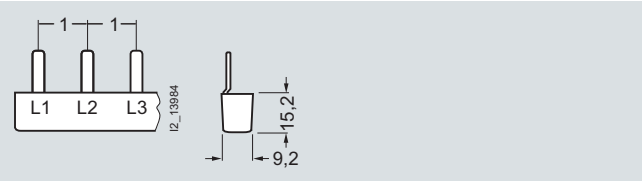


1P+N
N pole right



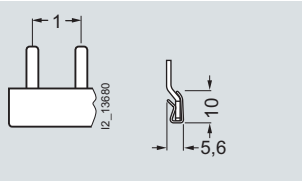
1P+N
N pole left

5ST3 6 pin spacing in MW

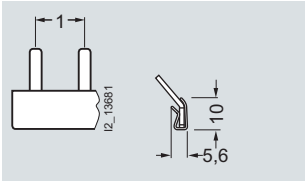


5ST3 613
5ST3 614
5ST3 615

5ST3 7 pin spacing in MW



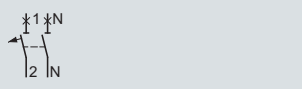
5ST3 762
5ST3 764



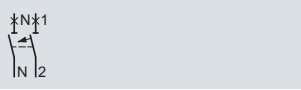
5ST3 763
5ST3 765

Dimensions of side view in mm (approx.).

Schematics



1P+N
N pole right



1P+N
N pole left

Additional components

Overview

Using this mounting concept, all additional 5ST3 components can be combined with miniature circuit breakers of the 5SY, 5SP4 and 5SP5 series.

The auxiliary switch (AS) signals the contact position. In the event of a fault, the fault signal contact (FC) signals the automatic tripping of the miniature circuit breaker and the contact position.

Undervoltage releases are integrated in an EMERGENCY STOP loop, thus ensuring that the miniature circuit breaker trips in the event of an emergency, which in turn ensures disconnection of the control circuit according to EN 60204. In the event that the voltage is interrupted or too low, it also trips, i.e. prevents the miniature circuit breaker from switching on.

Shunt trips are used for the remote tripping of miniature circuit breakers.

Remote controlled mechanisms are used for the remote ON/OFF switching of miniature circuit breakers and the remote ON switching of RC units. Remote controlled mechanisms also enable local manual switching. A blocking function permits maintenance work. In the event that a miniature circuit breaker or RC unit is tripped, an acknowledgment must be carried out prior to switching back on.

For information on RC units, please refer to the section "Residual current protective devices".

Benefits

- Bus systems, such as *instabus* KNX, AS-Interface bus or PROFIBUS, are integrated in the communication over binary inputs and actuators.
- Captive metal brackets on the additional components ensure fast mounting of the devices.

Auxiliary switches (AS)

- Huge range of applications, thanks to additional versions for the switching of small currents and voltages for the control of programmable control systems (PLCs) according to EN 61131-2.

Remote controlled mechanisms (RC)

- The remote controlled mechanism has an operating mode selector switch with the functions: "Locked", "Manual" and "Remote switching". The mechanism can be mechanically latched and locked, which serves to protect personnel during maintenance work.

Technical specifications

			Auxiliary switches		Fault signal contacts
			5ST3 010 5ST3 011 5ST3 012	5ST3 013 5ST3 014 5ST3 015	5ST3 020 5ST3 021 5ST3 022
Standards **Approved acc. to**			EN 62019; UL 1077; CSA C22.2 No. 235 EN 62019; UL 1077; UL File No. E106582; CSA C22.2 No. 235		
Short-circuit protection			B6 miniature circuit breaker, C6 or fuse gG 6 A		
Contact load	Min.		50 mA, 24 V	1 mA/5 V DC	50 mA, 24 V
Contact load	Max.		--	50 mA/30 V DC	--
• 400 V AC, AC-14, NO contact		A	2	--	2
• 230 V AC, AC-14, NO contact		A	6	--	6
• 400 V AC, AC-13, NC contact		A	2	--	2
• 230 V AC, AC-13, NC contact		A	6	--	6
• 220 V DC, DC-13, NO + NC contact		A	1	--	1
• 110 V DC, DC-13, NO + NC contact		A	1	--	1
• 60 V DC, DC-13, NO + NC contact		A	3	--	3
• 24 V DC, DC-13, NO + NC contact		A	6	--	6

			Undervoltage releases	Shunt trips	Remote controlled mechanisms
			5ST3 04.	5ST3 030 5ST3 031	5ST3 050
Standards			EN 60898; EN 60947-1		
Rated voltages U_n		V AC	230	24 ... 48 110 ... 415	230
• Rated frequency f_n		Hz	--	50 ... 60	50 ... 60
		V DC	24, 110	24 ... 48, 110	--
Response limits					
• Acc. to EN 60947-1, 7.2.1.3	Releases		< 0.35 ... 0.7 × U_n	--	--
	Permissible fluctuations of the power supply		0.85 ... 1.1 × U_n	--	--
• Acc. to EN 60947-1, 7.2.1.4			--	0.7 ... 1.1 × U_n	--

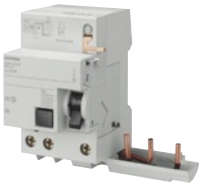
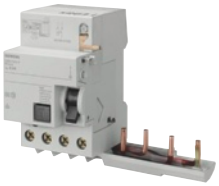
Selection and ordering data

	Rated voltage U_n V	MW	DT	Order No.	Price per PU	PG	PU Unit(s)	PS*/ P. unit Unit(s)	Weight per PU approx. kg
	Auxiliary switches (AS)								
	For 5SP4 and 5SY miniature circuit breakers								
	1 NO + 1 NC	0.5	►	**5ST3 010**		027	1	1	0.050
	For small output		►	**5ST3 013**		027	1	1	0.050
	2 NO		A	**5ST3 011**		027	1	1	0.050
	For small output		B	**5ST3 014**		027	1	1	0.050
	2 NC		A	**5ST3 012**		027	1	1	0.050
	For small output		B	**5ST3 015**		027	1	1	0.050
	Fault signal contacts (FC)								
	For 5SP4 and 5SY miniature circuit breakers								
	1 NO + 1 NC	0.5	►	**5ST3 020**		027	1	1	0.050
	2 NO		B	**5ST3 021**		027	1	1	0.050
	2 NC		A	**5ST3 022**		027	1	1	0.050
	Undervoltage releases (UR)								
	For 5SP4 and 5SY miniature circuit breakers but not for 5SY6 0..								
	230 AC	1	A	**5ST3 040**		027	1	1	0.115
	110 DC		B	**5ST3 041**		027	1	1	0.115
	24 DC		B	**5ST3 042**		027	1	1	0.115
	230 AC	1	A	**5ST3 043**		027	1	1	0.115
	110 DC		B	**5ST3 044**		027	1	1	0.115
	24 DC		A	**5ST3 045**		027	1	1	0.115
	Shunt trips (ST)								
	For 5SP4 and 5SY miniature circuit breakers but not for 5SY6 0..								
	110 ... 415 AC	1	►	**5ST3 030**		027	1	1	0.098
	24 ... 48 AC/DC	1	►	**5ST3 031**		027	1	1	0.098
	Remote controlled mechanisms (RC)								
	For 5SP4 and 5SY miniature circuit breakers								
	230 AC	3.5	A	**5ST3 050**		027	1	1	0.395

* You can order this quantity or a multiple thereof.

BETA Protecting
Miniature Circuit Breakers

Additional components

	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	DT	Order No.	Price per PU	PG	PU Unit(s)	PS*/ P. unit Unit(s)	Weight per PU approx. kg
	RC units, type A, instantaneous tripping									
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..									
	2P, 230 ... 400 V AC, 50 ... 60 Hz									
	10	0.3 ... 16	2	B	**5SM2 121-6**		007	1	1	0.180
	30	0.3 ... 40		▶	**5SM2 322-6**		007	1	1	0.170
	300			A	**5SM2 622-6**		007	1	1	0.170
	30	0.3 ... 63		A	**5SM2 325-6**		007	1	1	0.170
	100			B	**5SM2 425-6**		007	1	1	0.170
	300			B	**5SM2 625-6**		007	1	1	0.170
	500			B	**5SM2 725-6**		007	1	1	0.170
	3P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	0.3 ... 40	3	A	**5SM2 332-6**		007	1	1	0.260
	300			A	**5SM2 632-6**		007	1	1	0.260
	30	0.3 ... 63		B	**5SM2 335-6**		007	1	1	0.260
	100			B	**5SM2 435-6**		007	1	1	0.260
	300			B	**5SM2 635-6**		007	1	1	0.260
	500			B	**5SM2 735-6**		007	1	1	0.260
	4P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	0.3 ... 40	3	▶	**5SM2 342-6**		007	1	1	0.290
	300			▶	**5SM2 642-6**		007	1	1	0.290
	30	0.3 ... 63		A	**5SM2 345-6**		007	1	1	0.290
	100			B	**5SM2 445-6**		007	1	1	0.290
	300			A	**5SM2 645-6**		007	1	1	0.290
	500			A	**5SM2 745-6**		007	1	1	0.290
	For 5SP4 miniature circuit breakers									
	2P, 125 ... 230 V AC, 50 ... 60 Hz									
	30	80 ... 100	3.5	B	**5SM2 327-6**		007	1	1	0.410
	300			B	**5SM2 627-6**		007	1	1	0.410
	4P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	80 ... 100	5	B	**5SM2 347-6**		007	1	1	0.630
	300			A	**5SM2 647-6**		007	1	1	0.630

* You can order this quantity or a multiple thereof.

	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	DT	Order No.	Price per PU	PG	PU Unit(s)	PS*/ P. unit Unit(s)	Weight per PU approx. kg
	RC units, type A, super resistant K									
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..									
	2P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	0.3 ... 40	2	B	**5SM2 322-6KK01**		007	1	1	0.350
	30	0.3 ... 63		B	**5SM2 325-6KK01**		007	1	1	0.350
	3P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	0.3 ... 40	3	B	**5SM2 332-6KK01**		007	1	1	0.365
	30	0.3 ... 63		B	**5SM2 335-6KK01**		007	1	1	0.365
	4P, 230 ... 400 V AC, 50 ... 60 Hz									
	30	0.3 ... 40	3	B	**5SM2 342-6KK01**		007	1	1	0.290
	30	0.3 ... 63		B	**5SM2 345-6KK01**		007	1	1	0.290
	RC units, type A, selective S									
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..									
	2P, 230 ... 400 V AC, 50 ... 60 Hz									
	300	0.3 ... 40	2	A	**5SM2 622-8**		007	1	1	0.170
	300	0.3 ... 63		B	**5SM2 625-8**		007	1	1	0.170
	3P, 230 ... 400 V AC, 50 ... 60 Hz									
	300	0.3 ... 63	3	B	**5SM2 635-8**		007	1	1	0.260
	500			B	**5SM2 735-8**		007	1	1	0.400
	1000			B	**5SM2 835-8**		007	1	1	0.260
	4P, 230 ... 400 V AC, 50 ... 60 Hz									
	300	0.3 ... 63	3	A	**5SM2 645-8**		007	1	1	0.290
	500			A	**5SM2 745-8**		007	1	1	0.400
	1000			A	**5SM2 845-8**		007	1	1	0.290
	For 5SP4 miniature circuit breakers									
	2P; 125 ... 230 V AC, 50 ... 60 Hz									
	300	80 ... 100	3.5	B	**5SM2 627-8**		007	1	1	0.410
	4P; 230 ... 400 V AC, 50 ... 60 Hz									
	300	80 ... 100	5	A	**5SM2 647-8**		007	1	1	0.630
	1000			A	**5SM2 847-8**		007	1	1	0.630

* You can order this quantity or a multiple thereof.

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Additional components

	Version	MW	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
							Unit(s)	Unit(s)	kg
	**Terminal covers** For 5SP4 and 5SY miniature circuit breakers For additional covering of the screw openings per pole, sealable. In the case of 5SY, also prevents removal of device from the standard mounting rail.		B	**5ST3 800**		027	1	10	0.001
	**Handle locking devices** For 5SP4 and 5SY miniature circuit breakers Sealable, to prevent unwanted manual ON/OFF switching, for padlock with max. 3 mm shackle		A	**5ST3 801**		027	1	1	0.008
	**Padlocks** For 5ST3 801 handle locking device		►	**5ST3 802**		027	1	1	0.027
	Locking devices Comprising 5ST3 801 handle locking device and 5ST3 802 padlock		B	**5ST3 803**		027	1 set	1 set	0.035
	**Spacers** Can be placed on either side of the standard mounting rail, so that two spacers allow for convenient cable routing	0.5	►	**5TG8 240**		027	1	2	0.010
	**Fixing parts** Made of plastic, for use with a mounting plate		B	**5ST2 201**		027	1	1	0.012
	Inscription labels 15 mm × 9 mm, 3 frames à 44 labels, can be mounted on casing collar, white, self-adhesive		B	**5ST2 173**		027	1 set	1 set	0.038

Labeling system

Inscription on self-adhesive labels for a uniform and tidy appearance in electrical power distribution.
The labeling program can be downloaded to your PC free of charge at:

http://www.siemens.com/labeling-tool

Recommended ELAT-3-747 labels for printing out on normal printers can be ordered at:

Brady GmbH
Otto-Hahn-Str. 5-7
D-63222 Langen
Tel: +49 (0) 61 03/75 98-660

* You can order this quantity or a multiple thereof.

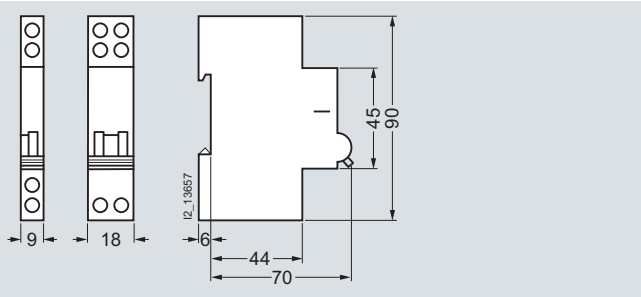
	Version	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
						Unit(s)	Unit(s)	kg
	**Terminal covers, gray** For surface mounting, degree of protection IP40, sealable, with 35 mm standard mounting rail							
	• Up to 2.5 MW	B	**5SW3 004**		008	1	1	0.084
	• Up to 4.5 MW	B	**5SW3 005**		008	1	1	0.114
	**Wall enclosures, gray** For flush mounting, degree of protection IP40, with 35 mm standard mounting rail							
	• Up to 2.5 MW	B	**5SW3 006**		008	1	1/4	0.126
	• Up to 4.5 MW	B	**5SW3 007**		008	1	1	0.147
	**Molded-plastic enclosures, gray** For surface mounting, degree of protection IP54, with 35 mm standard mounting rail, sealable, with transparent hinged lid							
	For 4.5 MW	A	**5SW1 200**		008	1	1	0.450
	**Covers** Can be assembled as mini distribution board, suitable for all devices, cover parts prepared for rail mounting of conventional label caps, comprising:							
	• End plates (for snapping onto standard mounting rail)	A	**5ST2 134**		027	1	10	0.022
	• Angle section (approx. 1 m long)	A	**5ST2 135**		027	1	5	0.330
	• Flat profile (as a cover between the rows of devices length approx. 1 m)	B	**5ST2 136**		027	1	5	0.260

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

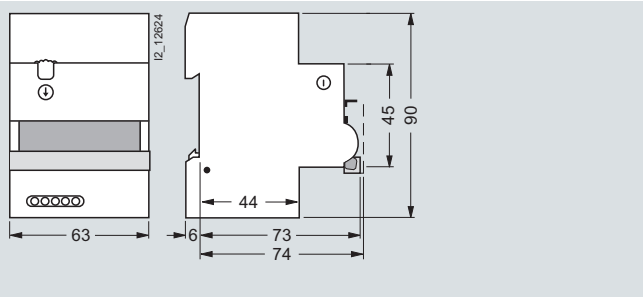
BETA Protecting
Miniature Circuit Breakers

Additional components

Dimensional drawings



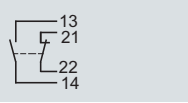
AS UR
FC ST



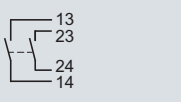
RC

Schematics

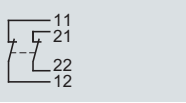
Auxiliary switches (AS)



5ST3 010
5ST3 013

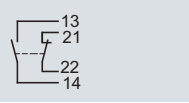


5ST3 011
5ST3 014

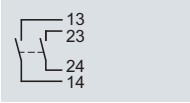


5ST3 012
5ST3 015

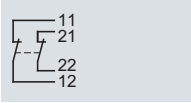
Fault signal contacts (FC)



5ST3 020

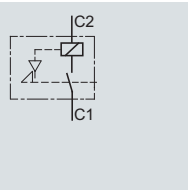


5ST3 021



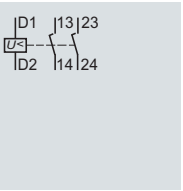
5ST3 022

Shunt trips (ST)

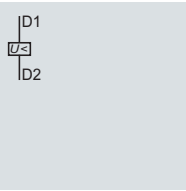


5ST3 030
5ST3 031

Undervoltage releases (UR)

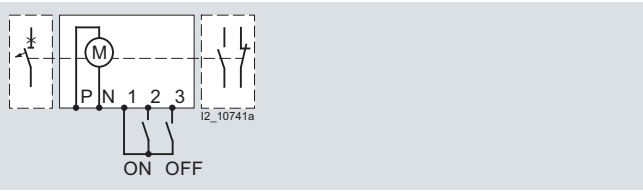


5ST3 040
5ST3 041
5ST3 042



5ST3 043
5ST3 044
5ST3 045

Remote controlled mechanisms (RC)

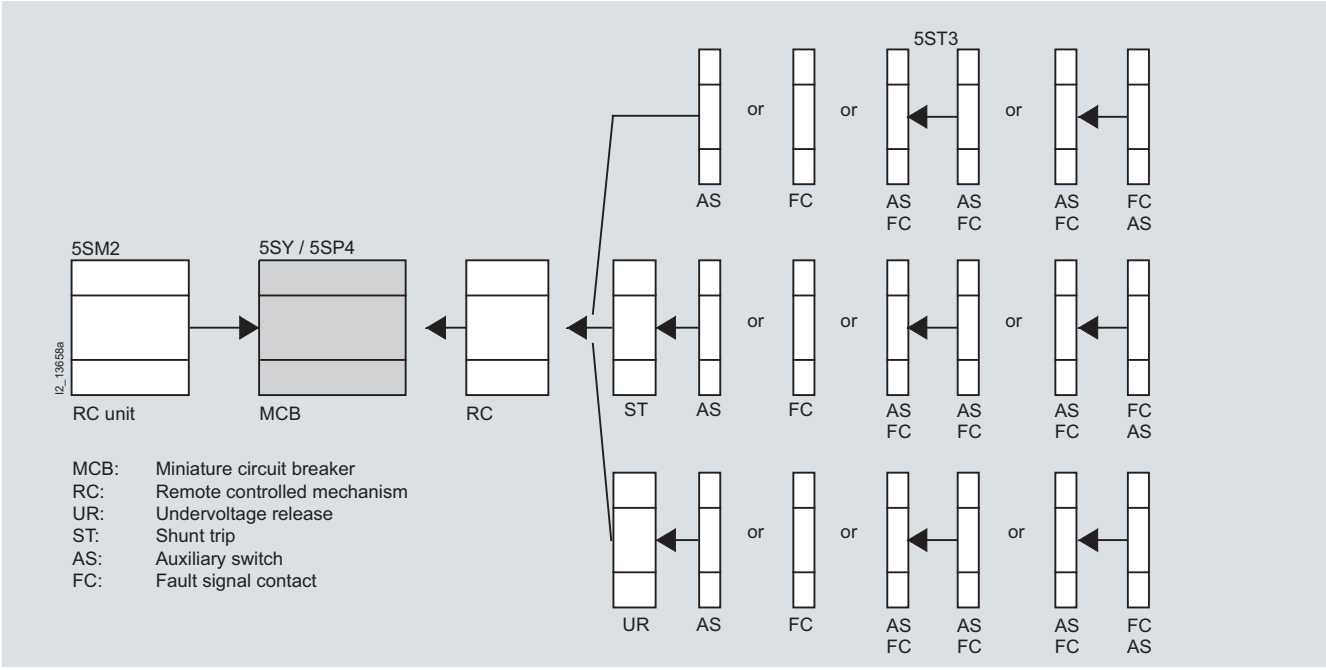


5ST3 050

More information

Using this mounting concept, all additional 5ST3 components can be combined with miniature circuit breakers of the 5SY and 5SP4 series (no RC unit on 5SY5 universal current MCB).

The 5SY6 0.. miniature circuit breakers are only designed for the mounting of auxiliary switches, fault signal contacts and remote controlled mechanisms. The chart shows which additional components can be mounted on either the right or the left.



Overview

The busbar system with pin-type terminals can be used for all 5SJ6 . . .-.KS and 5SY miniature circuit breakers with or without mounted auxiliary switch (AS) or fault signal contact (FC).

Busbars are available in 10 mm^2 and 16 mm^2 versions.

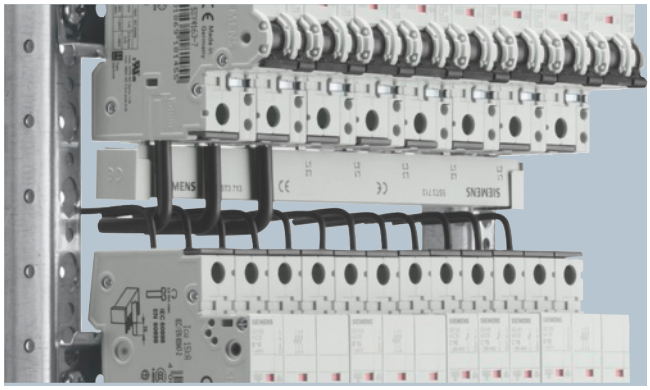
The 5ST3 7 busbar system with busbars that can be cut to any length required.

The extremely flexible 5ST3 6 busbar system with fixed lengths enables installation in any length as the busbars can be overlapped. No further need for time-consuming tasks, such as cutting, cutting to length, deburring, cleaning of cut surfaces and mounting of end caps.

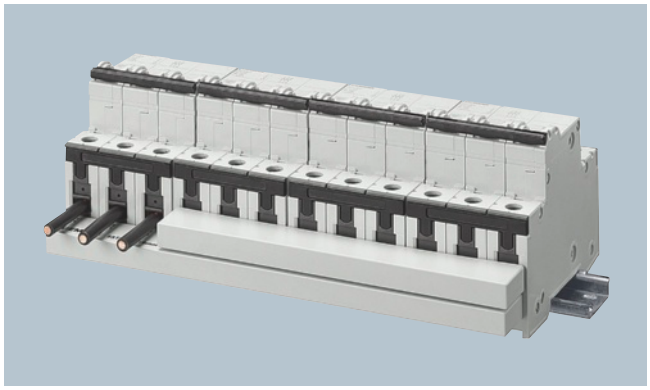
Any free pins on the busbars can be made safe by covering with touch protection.

For further information on bus-mounting miniature circuit breakers with residual current operated circuit breakers, please refer to the chapter "Residual current protective devices".

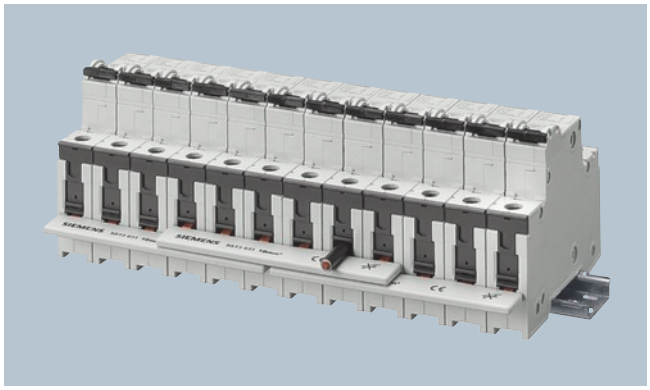
Benefits



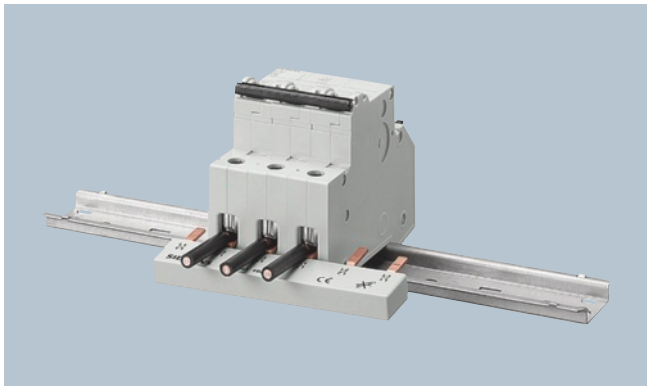
- Between the devices, the busbar, located at the bottom and behind the conductor, provides an optimum wiring space with easy view of the inserted conductor. This enables easy control of connections.



- The ability to overlap the busbar mounting enables a cross-section enlargement of up to 32 mm^2 using the respective components, 10 and 16 mm^2.



- By overlapping the busbars with fixed lengths, it is possible to achieve device combinations with any number of devices.



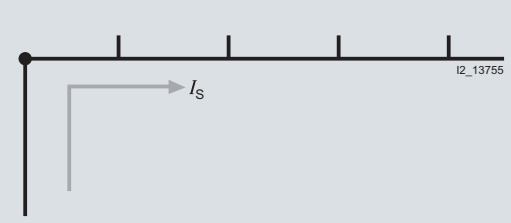
- The fact that the connection of the conductor is always clearly visible facilitates control and insertion of conductors of all pole types and considerably reduces mounting times.

Busbars

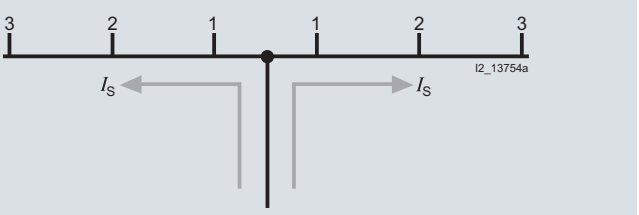
Technical specifications

			5ST3
Standards			EN 60439-1 (VDE 0660-500): 2005-01
Busbar material			SF-Cu F 24
Partition material			Plastic, Cycoloy 3600 heat-resistant to more than 90 °C flame-retardant and self-extinguishing, dioxin and halogen-free
Rated operational voltage U_c		V AC	400
Rated current I_n			
• Cross-section 10 mm^2		A	63
• Cross-section 16 mm^2		A	80
Rated impulse withstand voltage U_{imp}		kV	4
Test pulse voltage (1.2/50)		kV	6.2
Rated conditional short-circuit current I_{cc}		kA	25
Resistance to climate			
• Constant atmosphere	Acc. to DIN 50015		23/83; 40/92; 55/20
• Humid heat	Acc. to IEC 60068-2-30		28 cycles
Insulation coordination			
• Overvoltage category			III
• Degree of pollution			2
Maximum busbar current I_S/phase			
• Infeed at the start of the busbar			
- Cross-section 10 mm^2		A	63
- Cross-section 16 mm^2		A	80
• Infeed at the center of the busbar			
- Cross-section 10 mm^2		A	100
- Cross-section 16 mm^2		A	130

Infeed at the start or end of the busbar

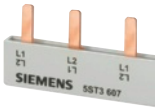
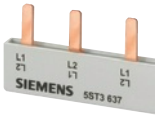


Infeed along the busbar or midpoint infeed



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

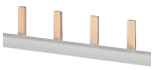
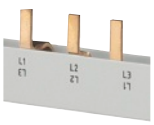
Selection and ordering data

		Pin spacing	Length	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
		MW	mm					Unit(s)	Unit(s)	kg
	5ST3 6 busbar systems, 10 mm², for MCB, fixed lengths, cannot be cut, fully insulated									
	Single-phase									
	For 2 MCB 1P	1	33	A	**5ST3 600**		027	1	10	0.005
	For 6 MCB 1P		105	A	**5ST3 601**		027	1	10	0.018
	For 12 MCB 1P		210	A	**5ST3 602**		027	1	10	0.036
	Single-phase, for MCB with AS or FC									
	For 2 MCB 1P	1.5	40	A	**5ST3 603**		027	1	10	0.008
	For 6 MCB 1P		156.5	A	**5ST3 604**		027	1	10	0.024
	For 9 MCB 1P		237	A	**5ST3 605**		027	1	10	0.036
	Two-phase									
	For 2 MCB 2P	1	75.5	A	**5ST3 606**		027	1	10	0.016
	For 3 MCB 2P		105	A	**5ST3 607**		027	1	10	0.024
	For 6 MCB 2P		210	A	**5ST3 608**		027	1	10	0.048
	Three-phase									
	For 2 MCB 3P	1	102	A	**5ST3 613**		027	1	10	0.039
	For 3 MCB 3P		157.5	A	**5ST3 614**		027	1	10	0.060
	For 4 MCB 3P		210	►	**5ST3 615**		027	1	10	0.076
	Three-phase, for MCB with AS or FC									
	For 2 MCB 3P	1+1+1.5	115	A	**5ST3 616**		027	1	10	0.040
	For 4 MCB 3P		237	A	**5ST3 617**		027	1	10	0.080
	For 6 MCB 1P	1.5	125	A	**5ST3 618**		027	1	10	0.044
	For 9 MCB 1P		229	A	**5ST3 620**		027	1	10	0.066
	Four-phase									
	For 2 MCB 4P or 3P+N	1		A	**5ST3 621**		027	1	10	0.051
	For 3 MCB 4P or 3P+N			A	**5ST3 622**		027	1	10	0.078
	For 6 MCB 2P or 1P+N			A	**5ST3 623**		027	1	10	0.078
	Three-phase									
	For 1 RCCB 4P N right And 8 MCB 1P	1	210	A	**5ST3 624**		027	1	10	0.075
	For 1 RCCB 4P N left And 8 MCB 1P	1	192	A	**5ST3 667**		027	1	10	0.061
	5ST3 6 busbars, 16 mm², for MCB, fixed lengths, cannot be cut, fully insulated									
	Single-phase									
	For 2 MCB 1P	1	33	A	**5ST3 630**		027	1	10	0.008
	For 6 MCB 1P		105	A	**5ST3 631**		027	1	10	0.025
	For 12 MCB 1P		210	A	**5ST3 632**		027	1	10	0.048
	Single-phase, for MCB with AS or FC									
	For 2 MCB 1P	1.5	40	A	**5ST3 633**		027	1	10	0.013
	For 6 MCB 1P		156.5	A	**5ST3 634**		027	1	10	0.039
	For 9 MCB 1P		237	A	**5ST3 635**		027	1	10	0.059
	Two-phase									
	For 2 MCB 2P	1	75.5	A	**5ST3 636**		027	1	10	0.024
	For 3 MCB 2P		105	A	**5ST3 637**		027	1	10	0.039
	For 6 MCB 2P		210	A	**5ST3 638**		027	1	10	0.076
	Two-phase, for MCB with AS or FC									
	For 2 MCB 2P	1+1.5	75.5	A	**5ST3 640**		027	1	10	0.026
	For 3 MCB 2P		120.5	A	**5ST3 641**		027	1	10	0.045
	For 5 MCB 2P		210	A	**5ST3 642**		027	1	10	0.084

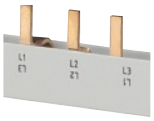
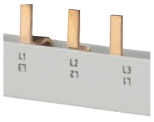
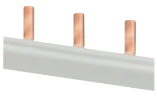
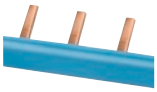
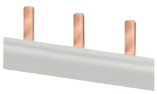
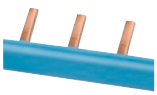
* You can order this quantity or a multiple thereof.

BETA Protecting
Miniature Circuit Breakers

Busbars

		Pin spacing	Length	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
		MW	mm					Unit(s)	Unit(s)	kg
	5ST3 6 busbars, 16 mm², for MCB, fixed lengths, cannot be cut, fully insulated									
	Three-phase									
	For 2 MCB 3P	1	102.5	A	**5ST3 643**		027	1	10	0.058
	For 3 MCB 3P		157.5	A	**5ST3 644**		027	1	10	0.083
	For 4 MCB 3P		210	▶	**5ST3 645**		027	1	10	0.110
	Three-phase, for MCB with AS or FC									
	For 2 MCB 3P	1+1+1.5	115	A	**5ST3 646**		027	1	10	0.060
	For 4 MCB 3P		237	A	**5ST3 647**		027	1	10	0.120
	For 6 MCB 1P	1.5	156	A	**5ST3 648**		027	1	10	0.061
	For 9 MCB 1P		245	A	**5ST3 650**		027	1	10	0.093
	5ST3 6 busbars, 16 mm², for MCB, fixed lengths, cannot be cut, fully insulated									
	Four-phase									
	For 2 MCB 4P or 3P+N	1		A	**5ST3 651**		027	1	10	0.080
	For 3 MCB 4P or 3P+N			A	**5ST3 652**		027	1	10	0.116
	For 6 MCB 2P or 1P+N			A	**5ST3 653**		027	1	10	0.116
	Three-phase,									
	For 1 RCCB 4P N right and 8 MCB 1P	1	210	A	**5ST3 654**		027	1	10	0.114
	For 1 RCCB 4P N left and 8 MCB 1P	1	210	A	**5ST3 668**		027	1	10	0.099
	**Touch protection for free terminals**									
	Yellow, RAL 1004			A	**5ST3 655**		027	1	10	0.003
	Range									
	10 mm²									
	20 × 5ST3 613 + 10 × 5ST3 614 + 50 × 5ST3 615 + 50 × 5ST3 655			A	**5ST3 656**		027	1 set	1 set	5.490
	16 mm²									
	20 × 5ST3 643 + 10 × 5ST3 644 + 50 × 5ST3 645 + 50 × 5ST3 655			A	**5ST3 657**		027	1 set	1 set	7.640
	5ST3 7 busbar systems, 10 mm² 12 MW, for MCB, can be cut, with end caps									
	Single-phase, angled									
	For 12 MCB 1P	1	214	A	**5ST3 730**		027	1	1	0.040
	For 9 MCB 1P with AS or FC	1.5		A	**5ST3 732**		027	1	1	0.040
	Two-phase									
	For 6 MCB 2P	1		A	**5ST3 734**		027	1	1	0.060
	For 4 MCB 2P with AS or FC	1+1.5		A	**5ST3 736**		027	1	1	0.060
	Three-phase									
	For 4 MCB 3P	1		▶	**5ST3 738**		027	1	1	0.100
	for 3 MCB 3P with AS or FC	1+1+1.5		A	**5ST3 741**		027	1	1	0.100
	For 3 MCB 1P with AS or FC	1.5		A	**5ST3 743**		027	1	1	0.100
	Four-phase									
	For 3 MCB 4P or 3P+N	1		A	**5ST3 745**		027	1	1	0.150
	5ST3 7 busbar systems, 10 mm² 56 MW, for MCB, can be cut, without end caps									
	Single-phase, angled									
	For MCB 1P	1	1016	A	**5ST3 731**		027	1	1	0.190
	For MCB 1P with AS or FC	1.5		A	**5ST3 733**		027	1	1	0.190
	Two-phase									
	For MCB 2P	1		A	**5ST3 735**		027	1	1	0.290
	For MCB 2P with AS or FC	1.5		A	**5ST3 737**		027	1	1	0.290
	Three-phase									
	For MCB 3P	1		A	**5ST3 740**		027	1	1	0.430
	For MCB 3P with AS or FC	1+1+1.5		A	**5ST3 742**		027	1	1	0.430
	For MCB 1P with AS or FC	1.5		A	**5ST3 744**		027	1	1	0.430
	Four-phase									
	For MCB 4P or 3P+N	1		A	**5ST3 746**		027	1	1	0.700

* You can order this quantity or a multiple thereof.

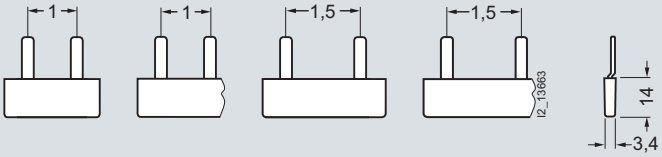
		Pin spacing	Length	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
		MW	mm					Unit(s)	Unit(s)	kg
	**5ST3 7 busbar systems, 16 mm² 12 MW, for MCB, can be cut, with end caps**									
	Single-phase, angled									
	For MCB 1P	1	214	▶	**5ST3 700**		027	1	1	0.040
	For MCB 1P with AS or FC	1.5		A	**5ST3 702**		027	1	1	0.040
	Two-phase									
	For MCB 2P	1		A	**5ST3 704**		027	1	1	0.060
	For MCB 2P with AS or FC	1.5		A	**5ST3 706**		027	1	1	0.060
	Three-phase									
	For MCB 3P	1		▶	**5ST3 708**		027	1	1	0.100
	For MCB 3P with AS or FC	1+1+1.5		A	**5ST3 711**		027	1	1	0.100
	For MCB 1P with AS or FC	1.5		A	**5ST3 713**		027	1	1	0.100
	Four-phase									
	For MCB 4P or 3P+N	1		A	**5ST3 715**		027	1	1	0.150
	**5ST3 7 busbar systems, 16 mm² 56 MW, for MCB, can be cut, without end caps**									
	Single-phase, angled									
	For MCB 1P	1	1016	A	**5ST3 701**		027	1	1	0.190
	For MCB 1P with AS or FC	1.5		A	**5ST3 703**		027	1	1	0.190
	Two-phase									
	For MCB 2P	1		A	**5ST3 705**		027	1	1	0.290
	For MCB 2P with AS or FC	1.5		A	**5ST3 707**		027	1	1	0.290
	Three-phase									
	For MCB 3P	1		▶	**5ST3 710**		027	1	1	0.430
	For MCB 3P with AS or FC	1+1+1.5		A	**5ST3 712**		027	1	1	0.430
	For MCB 1P with AS or FC	1.5		A	**5ST3 714**		027	1	1	0.430
	Four-phase									
	For MCB 4P or 3P+N	1		A	**5ST3 716**		027	1	1	0.700
	**End caps for 5ST3 7, can be cut**									
	For single-phase busbars			▶	**5ST3 748**		027	1	10	0.001
	For two and three-phase busbars			▶	**5ST3 750**		027	1	10	0.001
	For four-phase busbars			▶	**5ST3 718**		027	1	10	0.001
	**5ST3 7 busbar systems, 10 mm², 12 MW, for MCB 1+N in 1 MW of the compact range, can be cut, with end caps**									
	Single-phase									
	For 12 MCB 1+N, gray		216	A	**5ST3 762**		027	1	10	0.029
	For 12 MCB 1+N, blue			A	**5ST3 763**		027	1	10	0.029
	**5ST3 7 busbar systems, 10 mm² 56 MW for MCB 1+N in 1 MW of the compact range, can be cut, without end caps**									
	Single-phase									
	For MCB 1+N, gray		1016	A	**5ST3 764**		027	1	10	0.134
	For MCB 1+N, blue			A	**5ST3 765**		027	1	10	0.134
	**End caps for 5ST3 76**									
	1 set comprises a right and a left cap									
	Gray			A	**5ST3 766**		027	1 set	10 sets	0.001
	Blue			A	**5ST3 767**		027	1 set	10 sets	0.001
	**Terminals for 5ST3 76**									
	Terminal version S For conductors up to 25 mm²			A	**5ST3 768**		027	1	25	0.011

* You can order this quantity or a multiple thereof.

Dimensional drawings

5ST3 6
Pin spacing in MW

Dimensions of side view in mm (approx.)

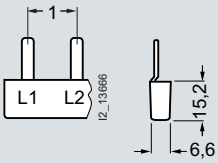


5ST3 600
5ST3 630

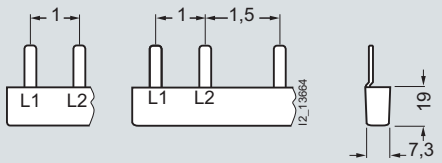
5ST3 601
5ST3 602
5ST3 631
5ST3 632

5ST3 603
5ST3 633

5ST3 604
5ST3 605
5ST3 634
5ST3 635

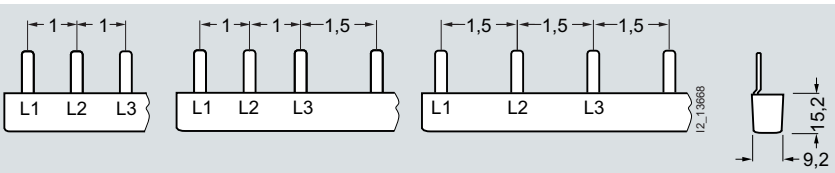


5ST3 606
5ST3 607
5ST3 608



5ST3 636
5ST3 637
5ST3 638

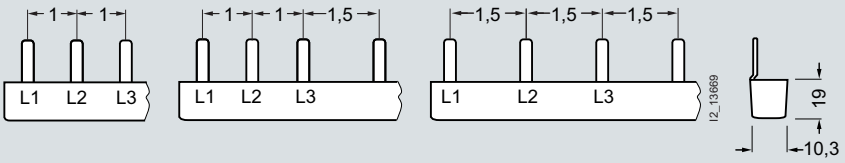
5ST3 640
5ST3 641
5ST3 642



5ST3 613
5ST3 614
5ST3 615
5ST3 667

5ST3 616
5ST3 617

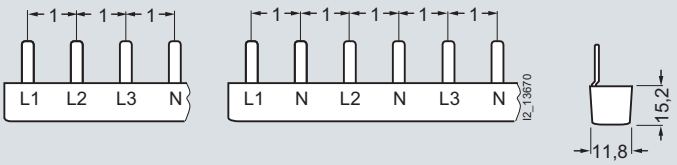
5ST3 618
5ST3 620



5ST3 643
5ST3 644
5ST3 645
5ST3 668

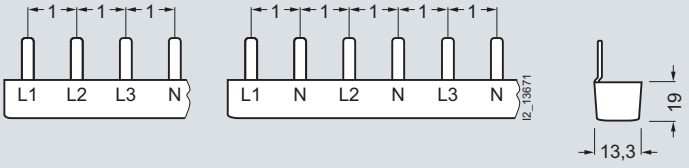
5ST3 646
5ST3 647

5ST3 648
5ST3 650



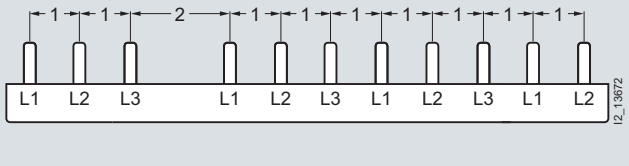
5ST3 621
5ST3 622

5ST3 623

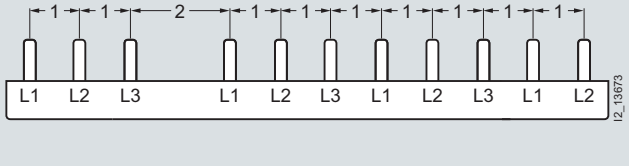


5ST3 651
5ST3 652

5ST3 653



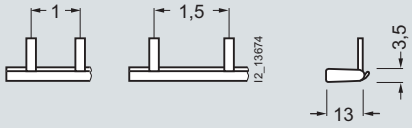
5ST3 624



5ST3 654

5ST3 7
Pin spacing in MW

Dimensions of side view in mm (approx.)

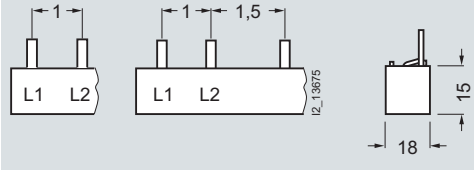


5ST3 700
5ST3 701
5ST3 730
5ST3 731

Single-phase

5ST3 702
5ST3 703
5ST3 732
5ST3 733

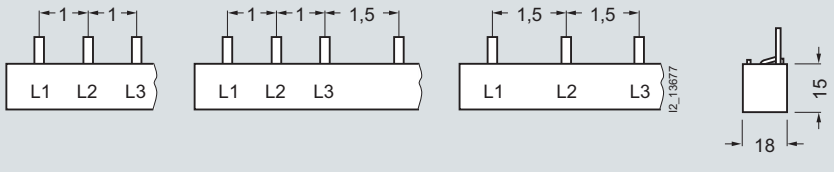
Single-phase



5ST3 704
5ST3 705
5ST3 734
5ST3 735

Two-phase

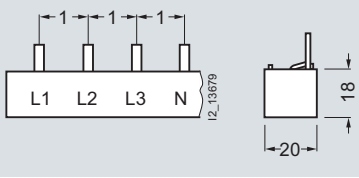
5ST3 706
5ST3 707
5ST3 736
5ST3 737



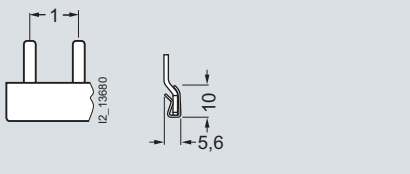
5ST3 708
5ST3 710
5ST3 738
5ST3 740

5ST3 711
5ST3 712
5ST3 741
5ST3 742

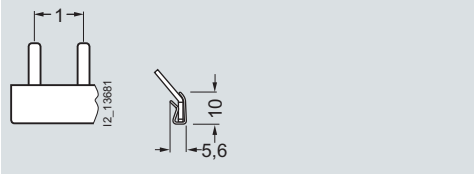
5ST3 713
5ST3 714
5ST3 743
5ST3 744



5ST3 715
5ST3 716
5ST3 745
5ST3 746



5ST3 762
5ST3 764



5ST3 763
5ST3 765

5SJ4 miniature circuit breakers to UL and IEC

Overview

UL standards are used in North America, but also in several other countries. This is of particular importance to European exporters of electrical switchgear equipment for machines who export to the USA, as their products will only be accepted if they meet the relevant UL standards.

A wide range of BETA devices comply with UL standards and are therefore suitable for implementation worldwide in both IEC/EN and UL applications within the framework of their specified use.

Miniature circuit breakers certified to UL 489 permit use as an all-round solution for protection tasks in distribution boards, control cabinets and control systems to UL 508A as "branch protectors". In particular, they are also approved for the protection of electrical circuits in heating, ventilating and cooling systems (HVAC), as well as for DC applications up to 60 V/125 V in the area of telecommunication applications. The busbar system according to UL 489 enables fast and simple installation in the assembly.

This covers a wide range of protection tasks, in residential and non-residential buildings, as well as in industry. The tripping characteristics B, C and D to EN/IEC 60898 have been adapted so that they fall in the permissible tripping range according to UL 489, as well as for applications at 25 °C and 40 °C.

This means that the devices are approved for use according to both standards. The enclosure dimensions of the devices correspond to DIN format. This means that the device series are suitable for universal use worldwide to IEC or UL standards.

The key difference between the three device series is their application in different power supply systems.

- 5SJ4 … -.HG40: 240/120 V AC, 1-pole, "same polarity only",
- 5SJ4 … -.HG41: 240 V AC, 1-, 2- and 3-pole,
- 5SJ4 … -.HG42: 480Y/277 V AC, 1-, 2- and 3-pole.

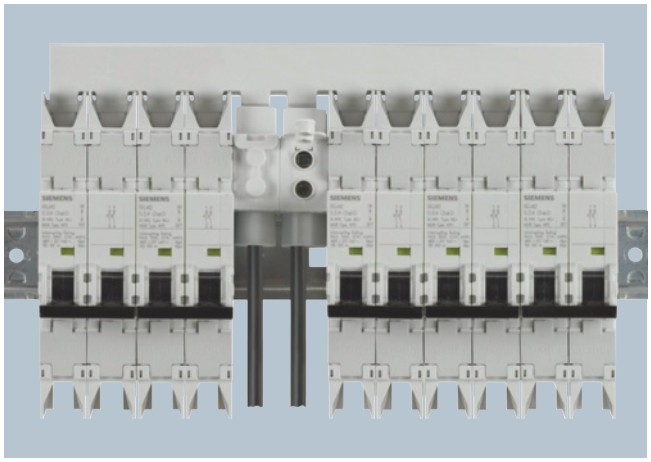
The terminals are suitable for "field wiring". This means that the devices can be installed not only in factory-finished distribution boards and control cabinets, but also on-site in a customer system.

Single, two and three-phase busbars in 3 lengths with 6, 12 or 18 pins are available as accessories for all device series. The infeed is over connection terminals, which are available in two versions, for direct infeed at either the busbar or the miniature circuit breakers. Pins that are not required can be covered with touch protection covers.

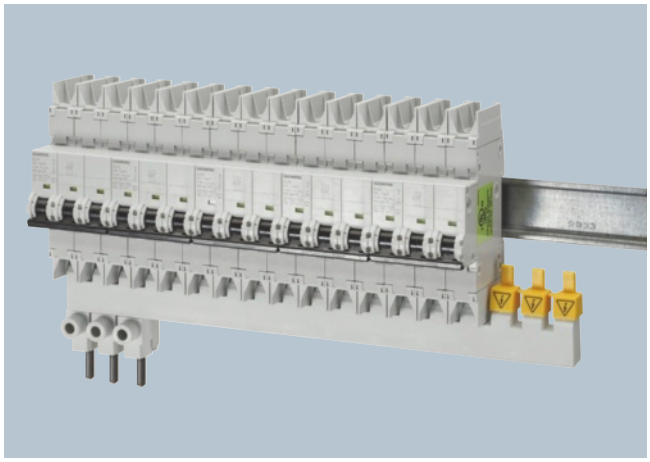
A handle locking device according to UL is also available as a further accessory.

Benefits

- Can be used globally for all applications in residential, non-residential and industrial buildings. This facilitates the planning of plants and enhances export opportunities.
- The devices can be used according to IEC/EN 60898 and UL 489, which means these devices can be installed anywhere in the world.



Bus-mounting with direct infeed at busbars with a conductor cross-section of up to 50 mm^2



Direct infeed at miniature circuit breaker for conductor cross-sections up to 35 mm^2

Technical specifications

			5SJ4 ...-.HG40	5SJ4 ...-.HG41	5SJ4 ...-.HG42
Standards			EN 60898; EN 60947-2; UL 489; CSA C22.2 No. 5-02		
Approved acc. to			UL 489; CSA C22.2 No. 5-02; UL File No. E243414		
Tripping characteristic			B, C, D	C, D	
Operational voltage	Min.	V AC/DC	24		
• Acc. to IEC 60898	Max.	V DC/pole	60		
	Max.	V AC	440		
• Acc. to UL 489 and CSA C22.2 No. 5-02	Max.	V AC	240/120	240	480/277
		V DC/1P	60		
		V DC/2P	--	125	
Rated breaking capacity					
• I_{cn} acc. to IEC 60898-1		kA AC	10		
• Acc. to UL 489 and CSA C22.2 No. 5-02		kA AC	14/10[1)]	14/10[1)]	10[1)]
Insulation coordination					
• Rated insulation voltage		V AC	250	250/440	
• Degree of pollution for overvoltage category			3/III		
Touch protection acc. to EN 50274			Yes		
Handle end position, sealable			Yes		
Degree of protection acc. to EN 60529			IP20, with connected conductors		
CFC and silicone-free			Yes		
Mounting			On standard mounting rail		
Terminals					
• Combined terminals at both ends			Yes		
• Terminal tightening torque		Nm	3.5		
		lb. in	31		
Conductor cross-sections					
• AWG cables		AWG	14 ... 4		
• Solid and stranded		mm^2	0.75 ... 35		
• Finely stranded, with end sleeve		mm^2	0.75 ... 25		
Mains connection			Any		
Mounting position			Any		
Average service life, with rated load			20 000 actuations		
Ambient temperature		°C	-25 ... +45, occasionally +55, max. 95 % humidity, storage temperature: -40 ... +75		
Resistance to climate acc. to IEC 60068-2-30			6 cycles		
Resistance to vibrations acc. to IEC 60068-2-6		m/s^2	60 at 10 ... 150 Hz		

[1)] For detailed information on rated switching capacity, see page 1/56.

Version		**Busbars**	**Terminals**	
Type		**5ST3 663 5ST3 664 5ST3 665**	**5ST3 666-0HG**	**5ST3 666-2HG**
Standards		UL 489		
Certifications		UL 489; UL File No. E243414		
Operational voltage				
• Acc. to IEC	V AC	690		
• Acc. to UL 489	V AC	480Y/277 and 240		
Rated conditional short-circuit current	kA	15 kA (with NH3 355A gL/gG 500 V)		
• Dielectric strength	kV/mm	30		
• Surge strength	kV	> 9.5		
Rated current up to 40 °C ambient temperature	A	115		
Insulation coordination				
• Degree of pollution		2		
• Overvoltage category		III		
Busbar cross-section (Cu)	mm^2	16		
Infeed		Any		
Conductor cross-sections				
• AWG cables	AWG	--	14 ... 2	14 ... 1
• Solid and stranded	mm^2	--	2.5 ... 35	2.5 ... 50
Terminals				
• Terminal tightening torque	Nm	--	3.3	3.3
	lb. in	--	30	30
Temperature resistance	°C	200 – UL 94-V0/0.4 mm		

BETA Protecting
Miniature Circuit Breakers

5SJ4 miniature circuit breakers to UL and IEC

Selection and ordering data

I_n	MW	DT	Characteristic B Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A						Unit(s)	Unit(s)	kg
Miniature circuit breakers "same polarity only" 1P, 240 V AC								
6	1	B	**5SJ4 106-6HG40**		012	1	1	0.120
10		B	**5SJ4 110-6HG40**		012	1	1	0.120
13		C	**5SJ4 113-6HG40**		012	1	1	0.120
15		C	**5SJ4 118-6HG40**		012	1	1	0.120
16		C	**5SJ4 116-6HG40**		012	1	1	0.120
20		C	**5SJ4 120-6HG40**		012	1	1	0.120
25		C	**5SJ4 125-6HG40**		012	1	1	0.120
30		C	**5SJ4 130-6HG40**		012	1	1	0.120
32		C	**5SJ4 132-6HG40**		012	1	1	0.120
35		C	**5SJ4 135-6HG40**		012	1	1	0.120
40		C	**5SJ4 140-6HG40**		012	1	1	0.120
45		C	**5SJ4 145-6HG40**		012	1	1	0.120
50		C	**5SJ4 150-6HG40**		012	1	1	0.120
60		C	**5SJ4 160-6HG40**		012	1	1	0.120
63		C	**5SJ4 163-6HG40**		012	1	1	0.120

I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
A										Unit(s)	Unit(s)	kg
Miniature circuit breakers "same polarity only" 1P, 240 V AC												
0.3	1	C	**5SJ4 114-7HG40**		012	C	**5SJ4 114-8HG40**		012	1	1	0.120
0.5		C	**5SJ4 105-7HG40**		012	C	**5SJ4 105-8HG40**		012	1	1	0.120
1		B	**5SJ4 101-7HG40**		012	C	**5SJ4 101-8HG40**		012	1	1	0.120
1.6		C	**5SJ4 115-7HG40**		012	C	**5SJ4 115-8HG40**		012	1	1	0.120
2		B	**5SJ4 102-7HG40**		012	C	**5SJ4 102-8HG40**		012	1	1	0.120
3		B	**5SJ4 103-7HG40**		012	C	**5SJ4 103-8HG40**		012	1	1	0.120
4		B	**5SJ4 104-7HG40**		012	C	**5SJ4 104-8HG40**		012	1	1	0.120
5		C	**5SJ4 111-7HG40**		012	C	**5SJ4 111-8HG40**		012	1	1	0.120
6		B	**5SJ4 106-7HG40**		012	C	**5SJ4 106-8HG40**		012	1	1	0.120
8		B	**5SJ4 108-7HG40**		012	C	**5SJ4 108-8HG40**		012	1	1	0.120
10		B	**5SJ4 110-7HG40**		012	C	**5SJ4 110-8HG40**		012	1	1	0.120
13		C	**5SJ4 113-7HG40**		012	C	**5SJ4 113-8HG40**		012	1	1	0.120
15		C	**5SJ4 118-7HG40**		012	C	**5SJ4 118-8HG40**		012	1	1	0.120
16		B	**5SJ4 116-7HG40**		012	C	**5SJ4 116-8HG40**		012	1	1	0.120
20		B	**5SJ4 120-7HG40**		012	C	**5SJ4 120-8HG40**		012	1	1	0.120
25		B	**5SJ4 125-7HG40**		012	C	**5SJ4 125-8HG40**		012	1	1	0.120
30		C	**5SJ4 130-7HG40**		012	C	**5SJ4 130-8HG40**		012	1	1	0.120
32		C	**5SJ4 132-7HG40**		012	C	**5SJ4 132-8HG40**		012	1	1	0.120
35		C	**5SJ4 135-7HG40**		012	C	**5SJ4 135-8HG40**		012	1	1	0.120
40		C	**5SJ4 140-7HG40**		012	C	**5SJ4 140-8HG40**		012	1	1	0.120
45		C	**5SJ4 145-7HG40**		012	C	**5SJ4 145-8HG40**		012	1	1	0.120
50		C	**5SJ4 150-7HG40**		012	C	**5SJ4 150-8HG40**		012	1	1	0.120
60		C	**5SJ4 160-7HG40**		012	C	**5SJ4 160-8HG40**		012	1	1	0.120
63		C	**5SJ4 163-7HG40**		012	C	**5SJ4 163-8HG40**		012	1	1	0.120

* You can order this quantity or a multiple thereof.

	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	Miniature circuit breakers 1P, 240 V AC												
	0.3	1	C	**5SJ4 114-7HG41**		012	C	**5SJ4 114-8HG41**		012	1	1	0.155
	0.5		C	**5SJ4 105-7HG41**		012	C	**5SJ4 105-8HG41**		012	1	1	0.155
	1		C	**5SJ4 101-7HG41**		012	C	**5SJ4 101-8HG41**		012	1	1	0.155
	1.6		C	**5SJ4 115-7HG41**		012	C	**5SJ4 115-8HG41**		012	1	1	0.155
	2		C	**5SJ4 102-7HG41**		012	C	**5SJ4 102-8HG41**		012	1	1	0.155
	3		C	**5SJ4 103-7HG41**		012	C	**5SJ4 103-8HG41**		012	1	1	0.155
	4		C	**5SJ4 104-7HG41**		012	C	**5SJ4 104-8HG41**		012	1	1	0.155
	5		C	**5SJ4 111-7HG41**		012	C	**5SJ4 111-8HG41**		012	1	1	0.155
	6		C	**5SJ4 106-7HG41**		012	C	**5SJ4 106-8HG41**		012	1	1	0.155
	8		C	**5SJ4 108-7HG41**		012	C	**5SJ4 108-8HG41**		012	1	1	0.155
	10		C	**5SJ4 110-7HG41**		012	C	**5SJ4 110-8HG41**		012	1	1	0.155
	13		C	**5SJ4 113-7HG41**		012	C	**5SJ4 113-8HG41**		012	1	1	0.155
	15		C	**5SJ4 118-7HG41**		012	C	**5SJ4 118-8HG41**		012	1	1	0.155
	16		C	**5SJ4 116-7HG41**		012	C	**5SJ4 116-8HG41**		012	1	1	0.155
	20		C	**5SJ4 120-7HG41**		012	C	**5SJ4 120-8HG41**		012	1	1	0.155
	25		C	**5SJ4 125-7HG41**		012	C	**5SJ4 125-8HG41**		012	1	1	0.155
	30		C	**5SJ4 130-7HG41**		012	C	**5SJ4 130-8HG41**		012	1	1	0.155
	32		C	**5SJ4 132-7HG41**		012	C	**5SJ4 132-8HG41**		012	1	1	0.155
	35		C	**5SJ4 135-7HG41**		012	C	**5SJ4 135-8HG41**		012	1	1	0.155
	40		C	**5SJ4 140-7HG41**		012	C	**5SJ4 140-8HG41**		012	1	1	0.155
	45		C	**5SJ4 145-7HG41**		012	C	**5SJ4 145-8HG41**		012	1	1	0.155
	50		C	**5SJ4 150-7HG41**		012	C	**5SJ4 150-8HG41**		012	1	1	0.155
	60		C	**5SJ4 160-7HG41**		012	C	**5SJ4 160-8HG41**		012	1	1	0.155
	63		C	**5SJ4 163-7HG41**		012	C	**5SJ4 163-8HG41**		012	1	1	0.155
	Miniature circuit breakers 2P, 240 V AC												
	0.3	2	C	**5SJ4 214-7HG41**		012	C	**5SJ4 214-8HG41**		012	1	1	0.310
	0.5		C	**5SJ4 205-7HG41**		012	C	**5SJ4 205-8HG41**		012	1	1	0.310
	1		C	**5SJ4 201-7HG41**		012	C	**5SJ4 201-8HG41**		012	1	1	0.310
	1.6		C	**5SJ4 215-7HG41**		012	C	**5SJ4 215-8HG41**		012	1	1	0.310
	2		C	**5SJ4 202-7HG41**		012	C	**5SJ4 202-8HG41**		012	1	1	0.310
	3		C	**5SJ4 203-7HG41**		012	C	**5SJ4 203-8HG41**		012	1	1	0.310
	4		C	**5SJ4 204-7HG41**		012	C	**5SJ4 204-8HG41**		012	1	1	0.310
	5		C	**5SJ4 211-7HG41**		012	C	**5SJ4 211-8HG41**		012	1	1	0.310
	6		C	**5SJ4 206-7HG41**		012	C	**5SJ4 206-8HG41**		012	1	1	0.310
	8		C	**5SJ4 208-7HG41**		012	C	**5SJ4 208-8HG41**		012	1	1	0.310
	10		C	**5SJ4 210-7HG41**		012	C	**5SJ4 210-8HG41**		012	1	1	0.310
	13		C	**5SJ4 213-7HG41**		012	C	**5SJ4 213-8HG41**		012	1	1	0.310
	15		C	**5SJ4 218-7HG41**		012	C	**5SJ4 218-8HG41**		012	1	1	0.310
	16		C	**5SJ4 216-7HG41**		012	C	**5SJ4 216-8HG41**		012	1	1	0.310
	20		C	**5SJ4 220-7HG41**		012	C	**5SJ4 220-8HG41**		012	1	1	0.310
	25		C	**5SJ4 225-7HG41**		012	C	**5SJ4 225-8HG41**		012	1	1	0.310
	30		C	**5SJ4 230-7HG41**		012	C	**5SJ4 230-8HG41**		012	1	1	0.310
	32		C	**5SJ4 232-7HG41**		012	C	**5SJ4 232-8HG41**		012	1	1	0.310
	35		C	**5SJ4 235-7HG41**		012	C	**5SJ4 235-8HG41**		012	1	1	0.310
	40		C	**5SJ4 240-7HG41**		012	C	**5SJ4 240-8HG41**		012	1	1	0.310
	45		C	**5SJ4 245-7HG41**		012	C	**5SJ4 245-8HG41**		012	1	1	0.310
	50		C	**5SJ4 250-7HG41**		012	C	**5SJ4 250-8HG41**		012	1	1	0.310
	60		C	**5SJ4 260-7HG41**		012	C	**5SJ4 260-8HG41**		012	1	1	0.310
	63		C	**5SJ4 263-7HG41**		012	C	**5SJ4 263-8HG41**		012	1	1	0.310

* You can order this quantity or a multiple thereof.

5SJ4 miniature circuit breakers to UL and IEC

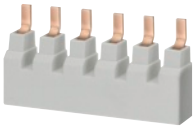
	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	Miniature circuit breakers 3P, 240 V AC												
	0.3	3	C	**5SJ4 314-7HG41**		012	C	**5SJ4 314-8HG41**		012	1	1	0.465
	0.5		C	**5SJ4 305-7HG41**		012	C	**5SJ4 305-8HG41**		012	1	1	0.465
	1		C	**5SJ4 301-7HG41**		012	C	**5SJ4 301-8HG41**		012	1	1	0.465
	1.6		C	**5SJ4 315-7HG41**		012	C	**5SJ4 315-8HG41**		012	1	1	0.465
	2		C	**5SJ4 302-7HG41**		012	C	**5SJ4 302-8HG41**		012	1	1	0.465
	3		C	**5SJ4 303-7HG41**		012	C	**5SJ4 303-8HG41**		012	1	1	0.465
	4		C	**5SJ4 304-7HG41**		012	C	**5SJ4 304-8HG41**		012	1	1	0.465
	5		C	**5SJ4 311-7HG41**		012	C	**5SJ4 311-8HG41**		012	1	1	0.465
	6		C	**5SJ4 306-7HG41**		012	C	**5SJ4 306-8HG41**		012	1	1	0.465
	8		C	**5SJ4 308-7HG41**		012	C	**5SJ4 308-8HG41**		012	1	1	0.465
	10		C	**5SJ4 310-7HG41**		012	C	**5SJ4 310-8HG41**		012	1	1	0.465
	13		C	**5SJ4 313-7HG41**		012	C	**5SJ4 313-8HG41**		012	1	1	0.465
	15		C	**5SJ4 318-7HG41**		012	C	**5SJ4 318-8HG41**		012	1	1	0.465
	16		C	**5SJ4 316-7HG41**		012	C	**5SJ4 316-8HG41**		012	1	1	0.465
	20		C	**5SJ4 320-7HG41**		012	C	**5SJ4 320-8HG41**		012	1	1	0.465
	25		C	**5SJ4 325-7HG41**		012	C	**5SJ4 325-8HG41**		012	1	1	0.465
	30		C	**5SJ4 330-7HG41**		012	C	**5SJ4 330-8HG41**		012	1	1	0.465
	32		C	**5SJ4 332-7HG41**		012	C	**5SJ4 332-8HG41**		012	1	1	0.465
	35		C	**5SJ4 335-7HG41**		012	C	**5SJ4 335-8HG41**		012	1	1	0.465
	40		C	**5SJ4 340-7HG41**		012	C	**5SJ4 340-8HG41**		012	1	1	0.465
	45		C	**5SJ4 345-7HG41**		012	C	**5SJ4 345-8HG41**		012	1	1	0.465
	50		C	**5SJ4 350-7HG41**		012	C	**5SJ4 350-8HG41**		012	1	1	0.465
	60		C	**5SJ4 360-7HG41**		012	C	**5SJ4 360-8HG41**		012	1	1	0.465
	63		C	**5SJ4 363-7HG41**		012	C	**5SJ4 363-8HG41**		012	1	1	0.465
	Miniature circuit breakers 1P, 480Y/277 V AC NEW												
	0.3	1	C	**5SJ4 114-7HG42**		012	C	**5SJ4 114-8HG42**		012	1	1	0.155
	0.5		C	**5SJ4 105-7HG42**		012	C	**5SJ4 105-8HG42**		012	1	1	0.155
	1		C	**5SJ4 101-7HG42**		012	C	**5SJ4 101-8HG42**		012	1	1	0.155
	1.6		C	**5SJ4 115-7HG42**		012	C	**5SJ4 115-8HG42**		012	1	1	0.155
	2		C	**5SJ4 102-7HG42**		012	C	**5SJ4 102-8HG42**		012	1	1	0.155
	3		C	**5SJ4 103-7HG42**		012	C	**5SJ4 103-8HG42**		012	1	1	0.155
	4		C	**5SJ4 104-7HG42**		012	C	**5SJ4 104-8HG42**		012	1	1	0.155
	5		C	**5SJ4 111-7HG42**		012	C	**5SJ4 111-8HG42**		012	1	1	0.155
	6		C	**5SJ4 106-7HG42**		012	C	**5SJ4 106-8HG42**		012	1	1	0.155
	8		C	**5SJ4 108-7HG42**		012	C	**5SJ4 108-8HG42**		012	1	1	0.155
	10		C	**5SJ4 110-7HG42**		012	C	**5SJ4 110-8HG42**		012	1	1	0.155
	13		C	**5SJ4 113-7HG42**		012	C	**5SJ4 113-8HG42**		012	1	1	0.155
	15		C	**5SJ4 118-7HG42**		012	C	**5SJ4 118-8HG42**		012	1	1	0.155
	16		C	**5SJ4 116-7HG42**		012	C	**5SJ4 116-8HG42**		012	1	1	0.155
	20		C	**5SJ4 120-7HG42**		012	C	**5SJ4 120-8HG42**		012	1	1	0.155
	25		C	**5SJ4 125-7HG42**		012	C	**5SJ4 125-8HG42**		012	1	1	0.155
	30		C	**5SJ4 130-7HG42**		012	C	**5SJ4 130-8HG42**		012	1	1	0.155
	32		C	**5SJ4 132-7HG42**		012	C	**5SJ4 132-8HG42**		012	1	1	0.155
	35		C	**5SJ4 135-7HG42**		012		--			1	1	0.155
	40		C	**5SJ4 140-7HG42**		012		--			1	1	0.155

* You can order this quantity or a multiple thereof.

	I_n	MW	DT	Characteristic C Order No.	Price per PU	PG	DT	Characteristic D Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
	A										Unit(s)	Unit(s)	kg
	Miniature circuit breakers 2P, 480Y/277 V AC		NEW										
	0.3	2	C	**5SJ4 214-7HG42**		012	C	**5SJ4 214-8HG42**		012	1	1	0.310
	0.5		C	**5SJ4 205-7HG42**		012	C	**5SJ4 205-8HG42**		012	1	1	0.310
	1		C	**5SJ4 201-7HG42**		012	C	**5SJ4 201-8HG42**		012	1	1	0.310
	1.6		C	**5SJ4 215-7HG42**		012	C	**5SJ4 215-8HG42**		012	1	1	0.310
	2		C	**5SJ4 202-7HG42**		012	C	**5SJ4 202-8HG42**		012	1	1	0.310
	3		C	**5SJ4 203-7HG42**		012	C	**5SJ4 203-8HG42**		012	1	1	0.310
	4		C	**5SJ4 204-7HG42**		012	C	**5SJ4 204-8HG42**		012	1	1	0.310
	5		C	**5SJ4 211-7HG42**		012	C	**5SJ4 211-8HG42**		012	1	1	0.310
	6		C	**5SJ4 206-7HG42**		012	C	**5SJ4 206-8HG42**		012	1	1	0.310
	8		C	**5SJ4 208-7HG42**		012	C	**5SJ4 208-8HG42**		012	1	1	0.310
	10		C	**5SJ4 210-7HG42**		012	C	**5SJ4 210-8HG42**		012	1	1	0.310
	13		C	**5SJ4 213-7HG42**		012	C	**5SJ4 213-8HG42**		012	1	1	0.310
	15		C	**5SJ4 218-7HG42**		012	C	**5SJ4 218-8HG42**		012	1	1	0.310
	16		C	**5SJ4 216-7HG42**		012	C	**5SJ4 216-8HG42**		012	1	1	0.310
	20		C	**5SJ4 220-7HG42**		012	C	**5SJ4 220-8HG42**		012	1	1	0.310
	25		C	**5SJ4 225-7HG42**		012	C	**5SJ4 225-8HG42**		012	1	1	0.310
	30		C	**5SJ4 230-7HG42**		012	C	**5SJ4 230-8HG42**		012	1	1	0.310
	32		C	**5SJ4 232-7HG42**		012	C	**5SJ4 232-8HG42**		012	1	1	0.310
	35		C	**5SJ4 235-7HG42**		012		**--**			1	1	0.310
	40		C	**5SJ4 240-7HG42**		012		**--**			1	1	0.310
	Miniature circuit breakers 3P, 480Y/277 V AC		NEW										
	0.3	3	C	**5SJ4 314-7HG42**		012	C	**5SJ4 314-8HG42**		012	1	1	0.465
	0.5		C	**5SJ4 305-7HG42**		012	C	**5SJ4 305-8HG42**		012	1	1	0.465
	1		C	**5SJ4 301-7HG42**		012	C	**5SJ4 301-8HG42**		012	1	1	0.465
	1.6		C	**5SJ4 315-7HG42**		012	C	**5SJ4 315-8HG42**		012	1	1	0.465
	2		C	**5SJ4 302-7HG42**		012	C	**5SJ4 302-8HG42**		012	1	1	0.465
	3		C	**5SJ4 303-7HG42**		012	C	**5SJ4 303-8HG42**		012	1	1	0.465
	4		C	**5SJ4 304-7HG42**		012	C	**5SJ4 304-8HG42**		012	1	1	0.465
	5		C	**5SJ4 311-7HG42**		012	C	**5SJ4 311-8HG42**		012	1	1	0.465
	6		C	**5SJ4 306-7HG42**		012	C	**5SJ4 306-8HG42**		012	1	1	0.465
	8		C	**5SJ4 308-7HG42**		012	C	**5SJ4 308-8HG42**		012	1	1	0.465
	10		C	**5SJ4 310-7HG42**		012	C	**5SJ4 310-8HG42**		012	1	1	0.465
	13		C	**5SJ4 313-7HG42**		012	C	**5SJ4 313-8HG42**		012	1	1	0.465
	15		C	**5SJ4 318-7HG42**		012	C	**5SJ4 318-8HG42**		012	1	1	0.465
	16		C	**5SJ4 316-7HG42**		012	C	**5SJ4 316-8HG42**		012	1	1	0.465
	20		C	**5SJ4 320-7HG42**		012	C	**5SJ4 320-8HG42**		012	1	1	0.465
	25		C	**5SJ4 325-7HG42**		012	C	**5SJ4 325-8HG42**		012	1	1	0.465
	30		C	**5SJ4 330-7HG42**		012	C	**5SJ4 330-8HG42**		012	1	1	0.465
	32		C	**5SJ4 332-7HG42**		012	C	**5SJ4 332-8HG42**		012	1	1	0.465
	35		C	**5SJ4 335-7HG42**		012		**--**			1	1	0.465
	40		C	**5SJ4 340-7HG42**		012		**--**			1	1	0.465

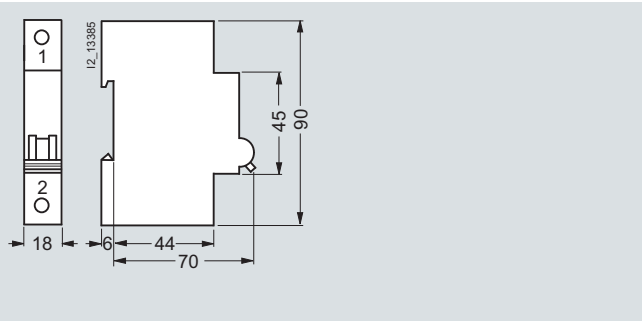
*** You can order this quantity or a multiple thereof.**

Accessories

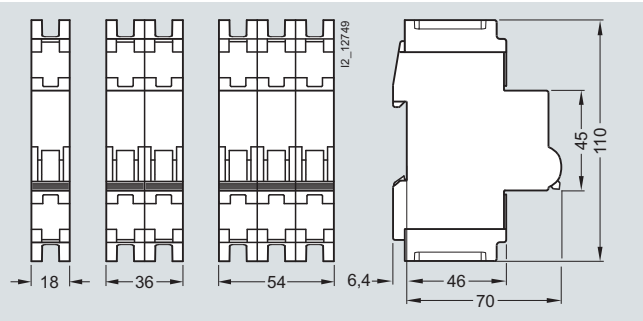
		Pin spacing	Length	DT	Order No.	Price per PU	PG	PU	PS*/ P. unit	Weight per PU approx.
		MW	mm					Unit(s)	Unit(s)	kg
	**Busbars according to UL 489 specially for 5SJ4 … -.HG.. MCB, fixed lengths, cannot be cut**		NEW							
	Single-phase									
	For 6 MCB 1P	1	100	A	**5ST3 663-0HG**		012	1	10	0.056
	For 12 MCB 1P		205	A	**5ST3 663-1HG**		012	1	10	0.112
	For 18 MCB 1P		310	A	**5ST3 663-2HG**		012	1	10	0.170
	Two-phase									
	For 6 MCB 2P	1	100	A	**5ST3 664-0HG**		012	1	10	0.065
	For 12 MCB 2P		205	A	**5ST3 664-1HG**		012	1	10	0.137
	For 18 MCB 2P		310	A	**5ST3 664-2HG**		012	1	10	0.211
	Three-phase									
	For 6 MCB 3P	1	100	A	**5ST3 665-0HG**		012	1	10	0.067
	For 12 MCB 3P		205	A	**5ST3 665-1HG**		012	1	10	0.155
	For 18 MCB 3P		310	A	**5ST3 665-2HG**		012	1	10	0.243
	Terminals according to UL 489 specially for 5SJ4 … -.HG.. miniature circuit breakers		NEW							
	Infeed at the miniature circuit breaker Max. 35 mm^2			A	**5ST3 666-0HG**		012	1	10	0.033
	Infeed at the busbar Max. 50 mm^2			A	**5ST3 666-2HG**		012	1	10	0.034
	**Touch protection covers for busbars according to UL 489**		NEW							
	3 × 1 pin			A	**5ST3 666-1HG**		012	1	10	0.003
	**Handle locking devices according to UL 489** Sealable to prevent unwanted manual ON/OFF switching, for padlock with max. 3 mm shackle			A	**5ST3 801**		027	1	1	0.008
	**Padlocks** For 5ST3 801 handle locking device			▶	**5ST3 802**		027	1	1	0.027

* You can order this quantity or a multiple thereof.

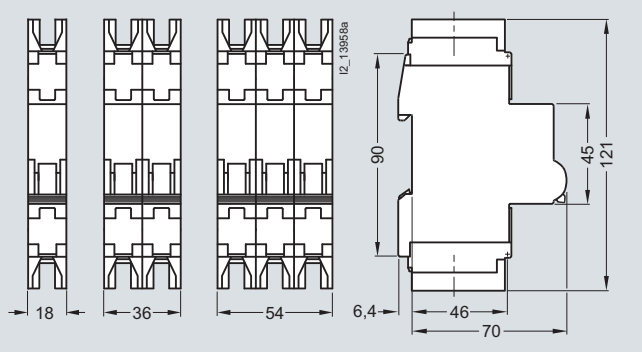
Dimensional drawings



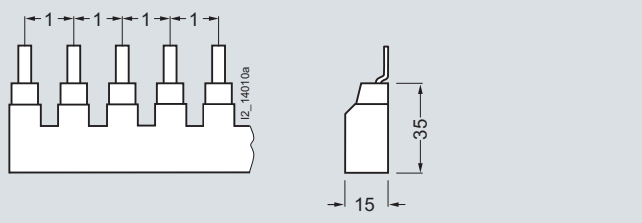
5SJ4 ...-.HG40



5SJ4 ...-.HG41



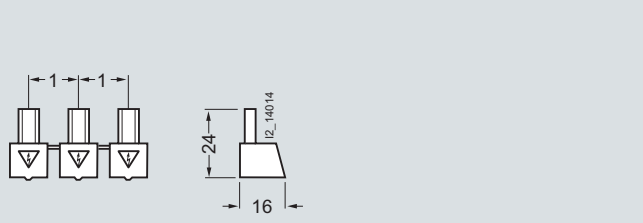
5SJ4 ...-.HG42



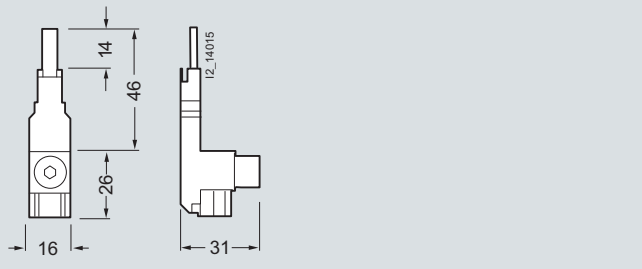
5ST3 663-0HG
5ST3 663-1HG
5ST3 663-2HG

5ST3 664-0HG
5ST3 664-1HG
5ST3 664-2HG

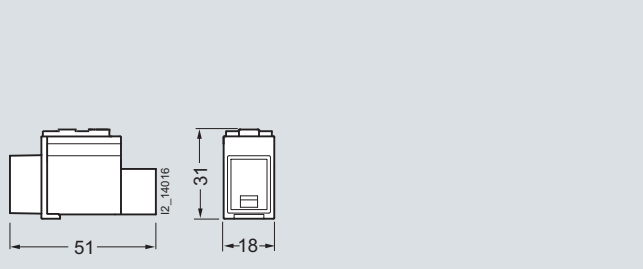
5ST3 665-0HG
5ST3 665-1HG
5ST3 665-2HG



5ST3 666-1HG

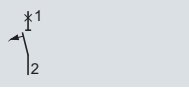


5ST3 666-0HG

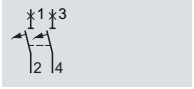


5ST3 666-2HG

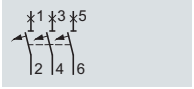
Schematics



5SJ4
1P



2P



3P

BETA Protecting
Miniature Circuit Breakers

SHU, 5SP3 main miniature circuit breakers

Overview

Selective main miniature circuit breakers are used as circuit breakers at meter panels or as group miniature circuit breakers in distribution board applications.

Characteristic E is adapted to the special application requirements for cascade circuits between melting fuses and miniature circuit breakers.

The devices can be screwed onto a mounting plate or attached to a 40 mm busbar by means of an adapter. Using a mounting plate, they can be mounted on a standard mounting rail according to EN 60715.

Benefits

- Improved current limitation characteristics increases plant protection, thanks to the selective main miniature circuit breakers supporting downstream miniature circuit breakers.
- High and safe selectivity between sub-distribution and meter panel ensures a continued power supply to unaffected circuits in the event of a fault, thus improving plant availability.
- The selective main miniature circuit breaker prevents the affected circuit from being reconnected until the fault is eliminated, thus providing greater operating safety.
- No previous knowledge required for operation of the selective main miniature circuit breakers. This ensures fast and safe disconnection and reconnection of loads.
- Meets all the requirements of TAB 2007.

Technical specifications

			5SP3
Standards			DIN VDE 0645
Rated voltage U_n/U_e • 1-pole • Multipole		 V AC V AC	 230/400 400
Operational voltage	Min. Max.	V AC V AC	110 440
Rated frequency		Hz	50 ... 60
Rated current I_n/I_e		A	16 ... 100
Rated insulation voltage U_i		V AC	690
Rated switching capacity I_{cn}		A	25000
Insulation coordination • Overvoltage category • Degree of pollution			 IV 3
Impulse withstand voltage U_{imp}		kV	6
Impact resistance			30 g, at least 3 impacts, impact duration 11 ms
Resistance to vibrations			2 g, 20 frequency cycles 5 ... 150 ... 15 Hz
Switching position indication			OFF = green, ON = red
Main conductor characteristics	Acc. to EN 60204-1		Yes
Handle end position, sealable			Yes
Device depth		mm	92
Degree of protection			IP20, with connected conductors
Mains connection			Any
Mounting position			Any
Mounting			With accessories on 35-mm standard mounting rail or busbar or screw fixing
Service life on average, with rated load		Operations	20000
Connection			Saddle terminals at both ends
Conductor cross-sections • Solid • Stranded • Finely stranded, with end sleeve		 mm^2 mm^2 mm^2	 2.5 ... 50 2.5 ... 70 2.5 ... 50
Storage temperature		°C	-40 ... +70
Ambient temperature		°C	-25 ... +55

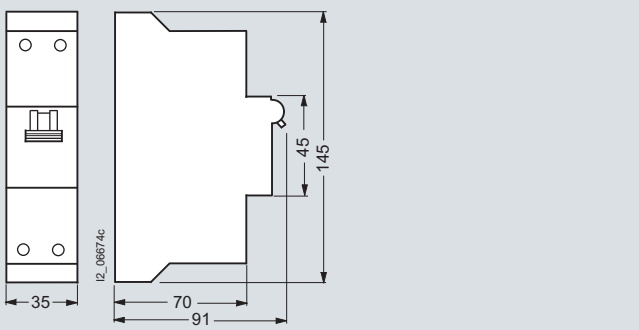
Selection and ordering data

	I_n A	MW	DT	Order No.	Price per PU	PG	PU Unit(s)	PS*/ P. unit Unit(s)	Weight per PU approx. kg
	Main miniature circuit breakers, 1P								
	16	2	B	**5SP3 716**		005	1	1	0.550
	20		C	**5SP3 720**		005	1	1	0.550
	25		B	**5SP3 725**		005	1	1	0.550
	32		C	**5SP3 732**		005	1	1	0.550
	35		A	**5SP3 735**		005	1	1	0.550
	40		B	**5SP3 740**		005	1	1	0.550
	50		B	**5SP3 750**		005	1	1	0.550
	63		A	**5SP3 763**		005	1	1	0.550
	80		B	**5SP3 780**		005	1	1	0.550
	100		B	**5SP3 791**		005	1	1	0.550
	Main miniature circuit breakers, 3 x 1P								
	Premounted on 5ST1 324 busbar adapter; can be clipped onto busbars (spacing: 40 mm); including three 5ST1 323 transparent operating protective covers								
	16	6	B	**5SP3 716-1**		005	1 set	1 set	1.700
	20		B	**5SP3 720-1**		005	1 set	1 set	1.700
	25		B	**5SP3 725-1**		005	1 set	1 set	1.700
	32		B	**5SP3 732-1**		005	1 set	1 set	1.700
	35		A	**5SP3 735-1**		005	1 set	1 set	1.700
	40		A	**5SP3 740-1**		005	1 set	1 set	1.700
	50		A	**5SP3 750-1**		005	1 set	1 set	1.700
	63		A	**5SP3 763-1**		005	1 set	1 set	1.700
	80		B	**5SP3 780-1**		005	1 set	1 set	1.700
	100		B	**5SP3 791-1**		005	1 set	1 set	1.700
	Busbar adapters								
	Suitable for busbar spacing 40 mm can be equipped with 3 selective main miniature circuit breakers		B	**5ST1 328**		005	1	1	0.234
	Breaker blocking covers								
	To prevent manual off-switching		D	**5ST1 318**		005	1	10	0.001
	Transparent operating protective covers								
	Multiple locking options against accidental and deliberate operation • Padlocks • Phillips screwdrivers • Special wrenches (Antilux) • These can be installed by the operator or the power supply company		B	**5ST1 323**		005	1	3	0.012
	Terminal covers								
	2 units required per contactor Terminal cover in compliance with cladding dimensions according to DIN 43880		B	**5ST1 316**		005	1	6	0.001

* You can order this quantity or a multiple thereof.

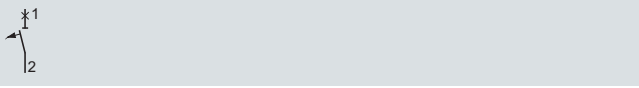
SHU, 5SP3 main miniature circuit breakers

Dimensional drawings



5SP3 7

Schematics



1P

Overview

Circuit breaker terminals are used for short-circuit protection or for protection against overloading and short-circuiting in auxiliary and control circuits after control transformers. All terminals are designed for 2 wires. The terminal block labeling accessories are used for inscription.

Benefits

- Integration of line protection switching function in the terminal technology of control cabinets in compact 12 mm design
- Display of switching position or the "Tripped" state for the fast detection of faults
- Switching/isolating function facilitates fault locating
- Device versions with integral auxiliary switch (AS) signal the contact position
- Device versions with floating through-type connection parallel to the switching contacts facilitate line connection.

These devices are listed as "Supplementary Protectors" according to UL 1077 (UL Recognized Components) and CSA 235 (CSA Component Accepted).

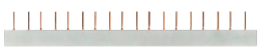
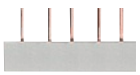
Technical specifications

			5SK9 011-1KK2., 5SK9 011-2KK2.	5SK9 011-4KK2., 5SK9 011-6KK2., 5SK9 011-8KK2.
Standards			DIN VDE 0660-101, IEC/EN 60947-2, UL 1077	
Rated operational voltage	Max.	AC	250 V AC at 50/60 Hz	
		DC	60 V DC	
Operational voltage	Min.	V AC/DC	24	
Power loss	Max.	W	1	
Rated impulse withstand voltage		kV	4	
Degree of pollution	Acc. to EN 60664-1		3	
Rated current of through-type connection		A	16	
Rated operational current of auxiliary switch		A	1	
Mechanical service life		Operations	16 000	
Electrical service life on average, with rated load		Operations	8000	
Polarity with direct current			Any	
Mounting position			Any	
Resistance to vibrations			10 g at ≤ 70 Hz	
Enclosures			With thermoplastic insulating body Screw connection at both ends for 2 conductors each Enclosed on both sides	
Touch protection	Acc. to EN 50274-1		Yes	
Terminal size		mm^2	1.5	2.5
Terminal tightening torque, recommended		Nm	0.8	
Conductor cross-sections				
• Solid		mm^2	1 or 2 × (0.75 ... 1.5)	
• Finely stranded, with end sleeve		mm^2	1 or 2 × (1 ... 2.5)	
• AWG 14-12			Yes	--
• AWG 14			Yes	--
Stripped length		mm	10	

BETA Protecting
Miniature Circuit Breakers

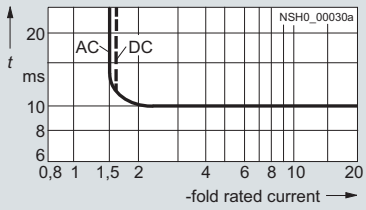
5SK9 circuit breaker terminals

Selection and ordering data

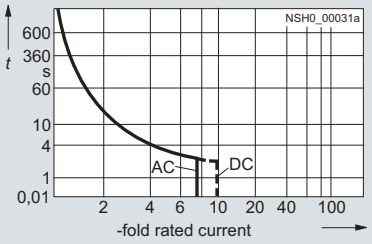
	Version	I_n A	DT	Order No.	Price per PU	PG	PU Unit(s)	PS*/ P. unit Unit(s)	Weight per PU approx. kg
	**Terminal size 1.5 mm²**								
	With short-circuit release								
		1	A	**5SK9 011-1KK24**		027	1	10	0.053
		2	A	**5SK9 011-1KK25**		027	1	10	0.052
		4	B	**5SK9 011-1KK26**		027	1	10	0.053
		6	A	**5SK9 011-1KK27**		027	1	10	0.053
		10	B	**5SK9 011-1KK28**		027	1	10	0.050
	With overload and short-circuit release								
		1	A	**5SK9 011-2KK24**		027	1	10	0.053
		2	A	**5SK9 011-2KK25**		027	1	10	0.052
		4	A	**5SK9 011-2KK26**		027	1	10	0.053
		6	A	**5SK9 011-2KK27**		027	1	10	0.053
		10	B	**5SK9 011-2KK28**		027	1	10	0.050
	**Terminal size 2.5 mm²**								
	With short-circuit release, auxiliary switch with 1 NO and 1 NC								
		1	B	**5SK9 011-6KK24**		027	1	5	0.096
		2	B	**5SK9 011-6KK25**		027	1	5	0.093
		4	B	**5SK9 011-6KK26**		027	1	5	0.092
		6	B	**5SK9 011-6KK27**		027	1	5	0.093
		10	B	**5SK9 011-6KK28**		027	1	5	0.090
	With overload and short-circuit release, auxiliary switch with 1 NC and through-type connection								
		1	B	**5SK9 011-4KK24**		027	1	5	0.089
		2	A	**5SK9 011-4KK25**		027	1	5	0.092
		4	A	**5SK9 011-4KK26**		027	1	5	0.091
		6	B	**5SK9 011-4KK27**		027	1	5	0.105
		10	B	**5SK9 011-4KK28**		027	1	5	0.088
	With overload and short-circuit release, auxiliary switch with 1 NO and 1 NC								
		0.5	B	**5SK9 011-8KK23**		027	1	5	0.092
		1	A	**5SK9 011-8KK24**		027	1	5	0.092
		2	A	**5SK9 011-8KK25**		027	1	5	0.097
		4	A	**5SK9 011-8KK26**		027	1	5	0.092
		6	A	**5SK9 011-8KK27**		027	1	5	0.090
		10	B	**5SK9 011-8KK28**		027	1	5	0.090
	Feeder terminals Rated uninterrupted current 76 A Connection up to 16 mm²		A	**5ST1 822-7KK00**		027	1	10	0.012
 5ST1 822-7KK02	**Link rails, single-phase** Rated uninterrupted current 65 A		A	**5ST1 822-7KK02**		027	1	20	0.015
	5 connections • Length 104mm • For terminals: 5SK9 011-4KK2., 5SK9 011-6KK2., 5SK9 011-8KK2.								
	9 connections • Length 104 mm • For terminals: 5SK9 011-1KK2., 5SK9 011-2KK2.		A	**5ST1 822-7KK07**		027	1	20	0.013
	10 connections • Length 206 mm • For terminals: 5SK9 011-4KK2., 5SK9 011-6KK2.		A	**5ST1 822-7KK01**		027	1	20	0.031
 5ST1 822-7KK06	18 connections • Length 206 mm • For terminals: 5SK9 011-1KK2., 5SK9 011-2KK2.		A	**5ST1 822-7KK06**		027	1	20	0.036
 5ST1 822-7KK04	**Link rails, two-phase** Rated uninterrupted current 120 A for terminal 5SK9 011-4KK2.								
	5 connections/pole • Length 104 mm		A	**5ST1 822-7KK04**		027	1	10	0.031
	9 connections/pole • Length 206 mm		A	**5ST1 822-7KK03**		027	1	10	0.061

* You can order this quantity or a multiple thereof.

Characteristic curves

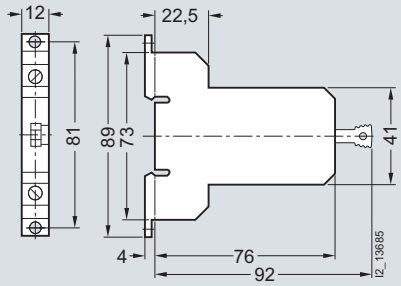


Tripping characteristic of short-circuit releases

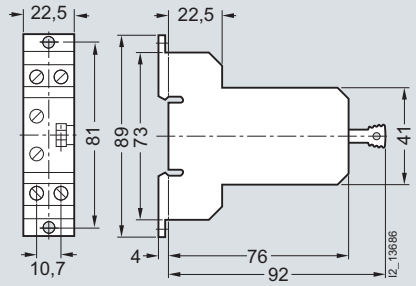


Tripping characteristic of combined overload and short-circuit releases at an ambient temperature of 40 °C

Dimensional drawings

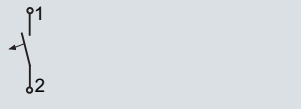


5SK9 011-1KK2.
5SK9 011-2KK2.

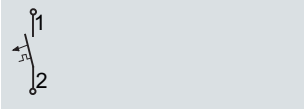


5SK9 011-4KK2.
5SK9 011-6KK2.
5SK9 011-8KK2.

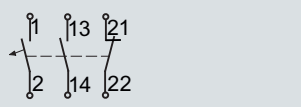
Schematics



5SK9 011-1KK2.

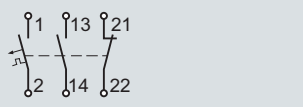


5SK9 011-2KK2.



5SK9 011-6KK2.

5SK9 011-4KK2.



5SK9 011-8KK2.

Configuration

Overview

Approvals	VDE	IMQ		UL	BV	DNV	GL	LRS	CCC
Miniature circuit breakers									
5SY6	✓	✓	✓	--	✓	✓	✓	✓	✓
5SJ4 . . .-.HG	--	--	--	✓	--	--	--	--	--
5SY4	✓	✓	✓	--	✓	✓	✓	✓	✓
5SP4	✓	--	✓	--	--	--	✓	--	✓
5SP5	✓	--	--	--	--	--	--	--	--
5SY5, universal current	✓	--	--	--	--	--	--	--	✓
5SY7	✓	✓	✓	--	✓	✓	✓	✓	✓
5SY8	--	--	✓	--	--	--	--	--	--
Miniature circuit breakers according to UL and IEC									
5SJ6 . . .-.KS	✓	--	--	--	--	--	--	--	--
Miniature circuit breakers 1+N									
5SY6 0..	✓	✓	--	--	--	--	--	--	✓
Main miniature circuit breakers									
5SP3	✓	--	--	--	--	--	--	--	--

Switching capacity

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

The values are standardized and are determined according to the test conditions of IEC/EN 60898 or DIN VDE 0641-11.

The values of the rated switching capacity are 6 000 and 10 000.

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

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

Rated switching capacity

5SP4 and 5SY4, 5SY6, 5SY7 and 5SY8 miniature circuit breakers

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

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

5SP5 and 5SY5 miniature circuit breakers

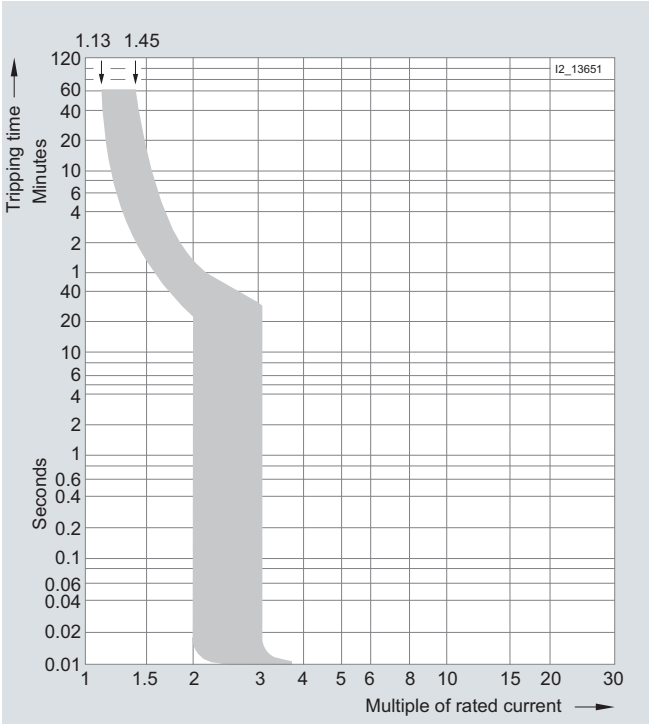
Miniature circuit breakers, universal current		**IEC/EN 60898-2**		**IEC/EN 60898-2**	
		1-pole 230 V AC	**2-pole** 400 V AC	**1-pole** 220 V DC	**2-pole** 440 V DC
	I_n [A]	I_{cn} [kA]	I_{cn} [kA]	I_{cn} [kA]	I_{cn} [kA]
5SY5	0.3 ... 63	10		15	
5SP5	80 ... 125	3		10	

Miniature circuit breakers according to UL and IEC, 5SJ4

Designation	Characteristic	Current A	Rated switching capacity (operational voltage 240 V AC) kA AC	Rated switching capacity (operational voltage 480Y/277 V AC) kA AC
5SJ4 …-.HG40	B	6 ... 63	14	--
	C	0.3 ... 40	14	--
	C	45 ... 63	10	--
	D	0.3 ... 20	14	--
	D	25 ... 63	10	--
5SJ4 …-.HG41	C	0.3 ... 40	14	--
	C	45 ... 63	10	--
	D	0.3 ... 20	14	--
	D	25 ... 63	10	--
5SJ4 …-.HG42	C	0.3 ... 40	14	10
	D	0.3 ... 20	14	10
	D	25 ... 32	10	10

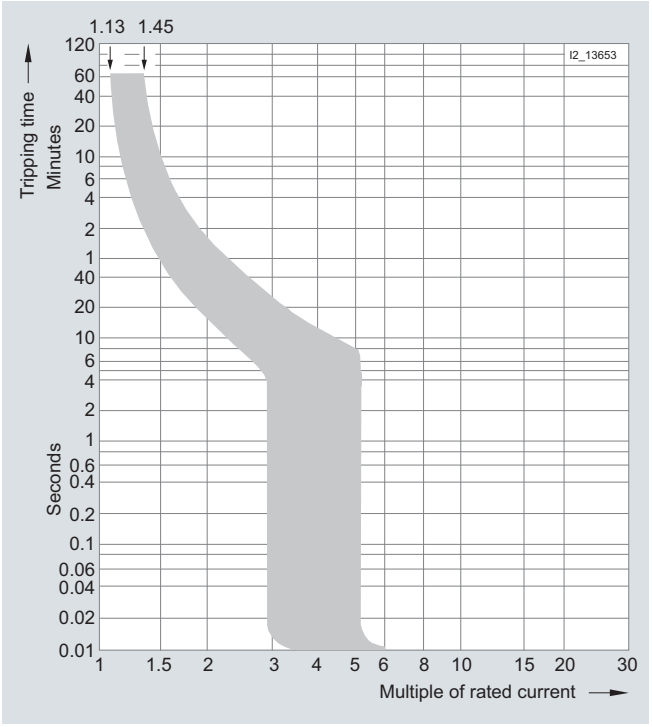
Characteristic curves

Tripping characteristics according to IEC/EN 60898, DIN VDE 0641-11



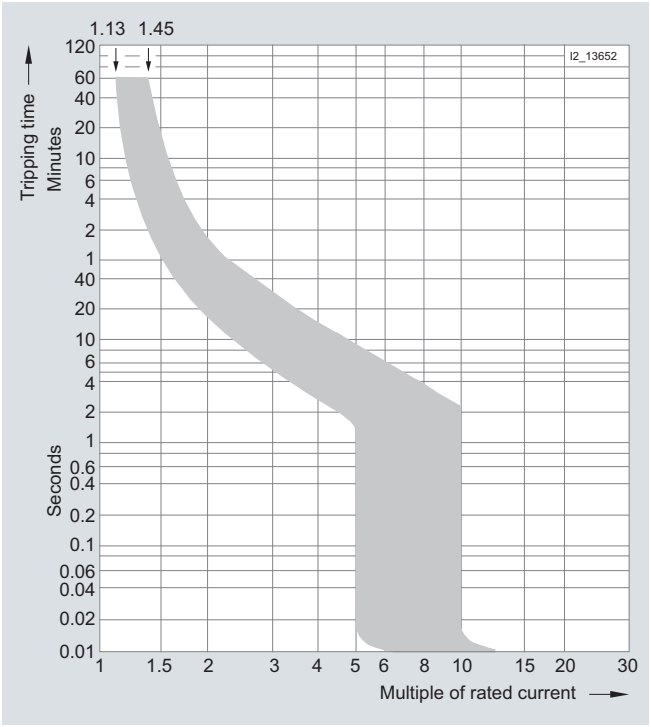
Tripping characteristic A

For limited semiconductor protection, protection of measuring circuits with transformers. Protection of circuits with tripping in 0.4 s according to DIN VDE 0100-410 for long cable lengths.



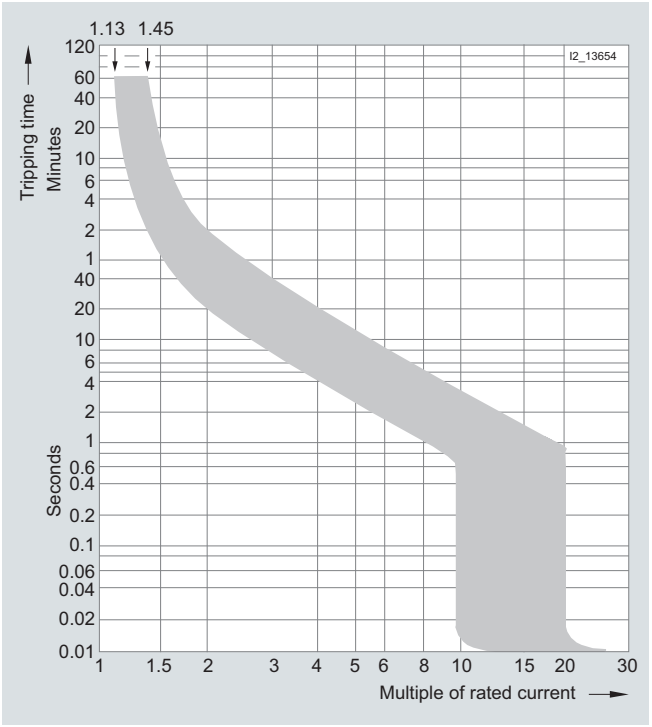
Tripping characteristic B

For universal use in socket outlet and lightingcircuits. Proof of personal safety according to DIN VDE 0100-410 is not required.



Tripping characteristic C

Particularly advantageous in lamp and motor circuits with higher starting currents.



Tripping characteristic D

For electrical circuits with strong pulse-generating equipment, such as transformers or solenoid valves.

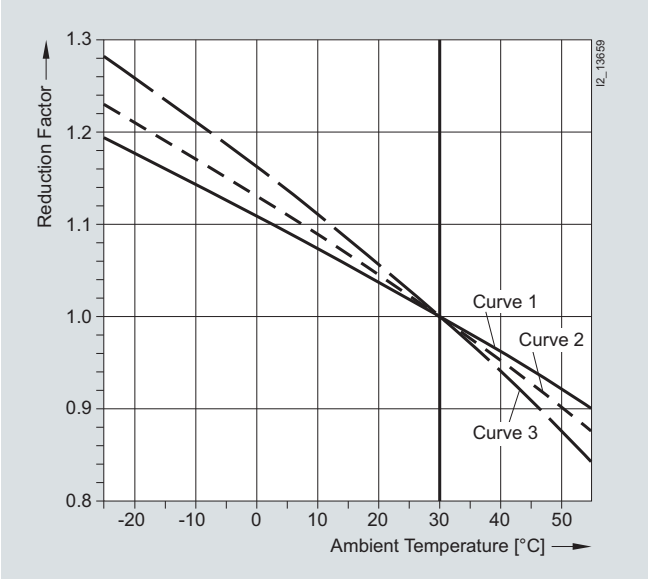
Tripping characteristics

Tripping characteristics at an ambient temperature of 30 °C

Tripping characteristic	Standards	Thermal trips Test currents: Limiting Test current I_1	Minimum Test current I_2	Tripping time $I_n \leq 63$ A t	Tripping time $I_n > 63$ A t	Electromagnetic trips Test currents: Hold I_4	Latest Tripping instant I_5	Tripping time t
A		1.13 × I_n		> 1 h	> 2 h	2 × I_n		≥ 0.1 s
			1.45 × I_n	< 1 h	< 2 h		3 × I_n	< 0.1 s
B	IEC/EN 60898, DIN VDE 0641-11	1.13 × I_n		> 1 h	> 2 h	3 × I_n		≥ 0.1 s
			1.45 × I_n	< 1 h	< 2 h		5 × I_n	< 0.1 s
C		1.13 × I_n		> 1 h	> 2 h	5 × I_n		≥ 0.1 s
			1.45 × I_n	< 1 h	< 2 h		10 × I_n	< 0.1 s
D		1.13 × I_n		> 1 h	> 2 h	10 × I_n		≥ 0.1 s
			1.45 × I_n	< 1 h	< 2 h		20 × I_n	< 0.1 s
							(IEC 60898: 50 × I_n)	

Correction factors for rated current at different ambient temperatures

Dependence of permissible continuous load current on ambient temperature.



Curve for correction factor (for curves, see the diagram above)

Rated current (A)		0.3	0.5	1	1.6	2	3	4	6	8	10	13	16	20	25	32	40	50	63
Characteristic	Pole type																		
A	1P/2P	3	3	2	2	2	3	3	3	2	3	2	2	3	2	2	3	2	3
	3P/4P	2	2	2	1	2	2	2	2	2	2	1	1	2	1	1	1	1	2
B	1P/2P	--	--	--	--	--	--	--	3	--	3	2	2	3	3	2	3	2	3
	3P/4P	--	--	--	--	--	--	--	2	--	2	1	2	2	1	1	1	1	1
C	1P/2P	3	3	2	2	2	3	3	3	3	3	2	3	3	2	2	3	2	3
	3P/4P	2	2	2	1	2	2	2	2	3	3	2	2	2	2	1	1	1	2
D	1P/2P	3	3	2	2	2	3	3	3	3	3	2	3	3	2	2	3	2	3
	3P/4P	2	2	2	1	2	2	2	2	3	3	2	2	2	2	2	2	1	2

Configuration

Correction factors for rated current in the case of bundling

If more than one electrical circuit is loaded in a series of miniature circuit breakers, the resulting increase in ambient temperature affects the characteristic curve. In this case it is necessary to take into account an additional correction factor specific to the rated current of the MCB.

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

Correction factors for rated current at different frequencies

The tripping characteristic applies to a frequency of 50 to 60 Hz. In the case of other frequencies, the following correction factors must be taken into account.
In the overrange, the limits of the characteristic curves correspond to the correction factors of the thermal tripping operation. In the case of a short-circuit, the limits of the characteristic curves correspond to the correction factors of the magnetic tripping operation.
In the case of direct voltage, the maximum current values correspond to the frequency of 0 Hz.

Thermal tripping operation

Rated current I_n (A)	**Correction factor for**					
	0 Hz	**16 2/3 Hz**	**50 Hz**	**125 Hz**	**400 Hz**	**1000 Hz**
0.3 ... 10	1	1	1	1	0.99	0.97
1 ... 40	1	1	1	0.98	0.97	0.93
50 ... 63	1	1	1	0.98	0.94	0.86

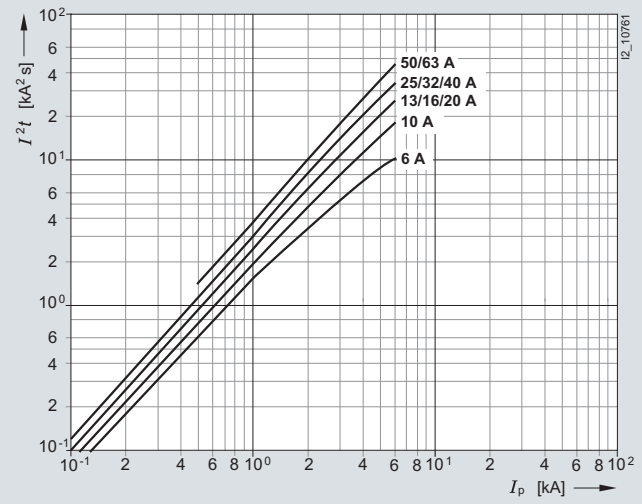
Magnetic tripping operation

Rated current I_n (A)	**Correction factor for**					
	0 Hz	**16 2/3 Hz**	**50 Hz**	**125 Hz**	**400 Hz**	**1000 Hz**
0.3 ... 63	1.2	1	1	1.2	1.4	1.7

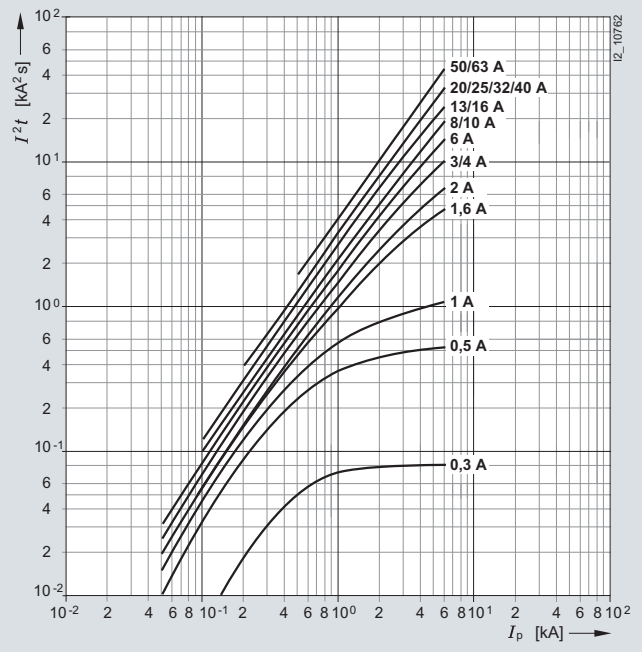
Characteristic curves 5SY6

Let-through I^2t values

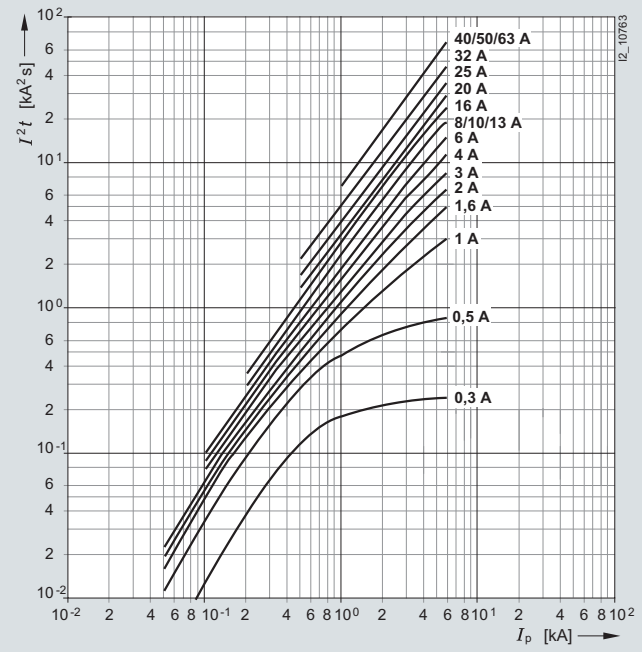
Characteristic B



Characteristic C



Characteristic D

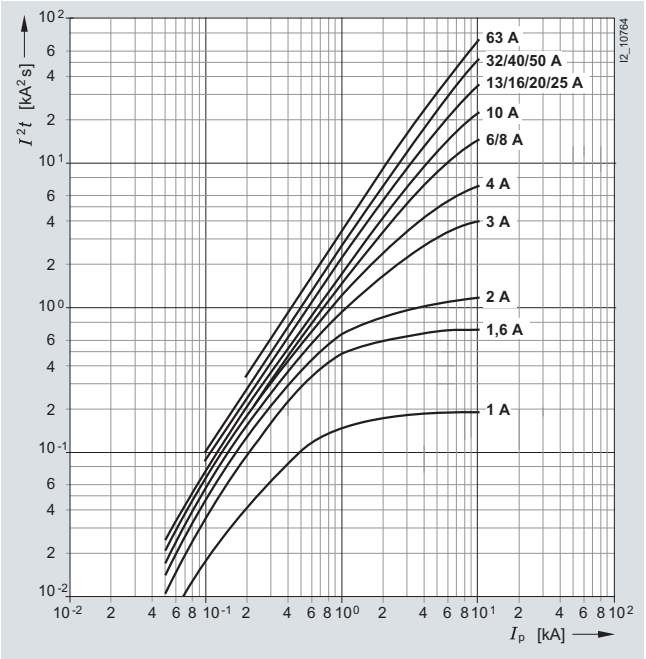


Configuration

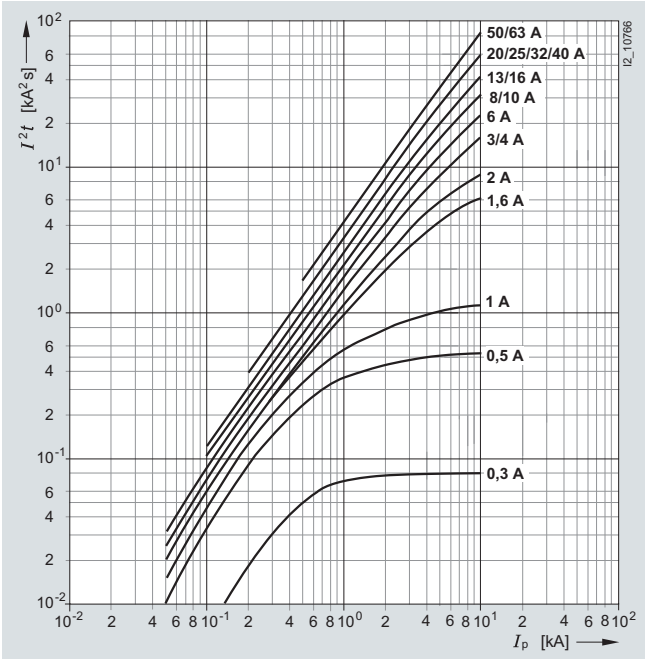
Characteristic curves 5SY4

Let-through I^2t values

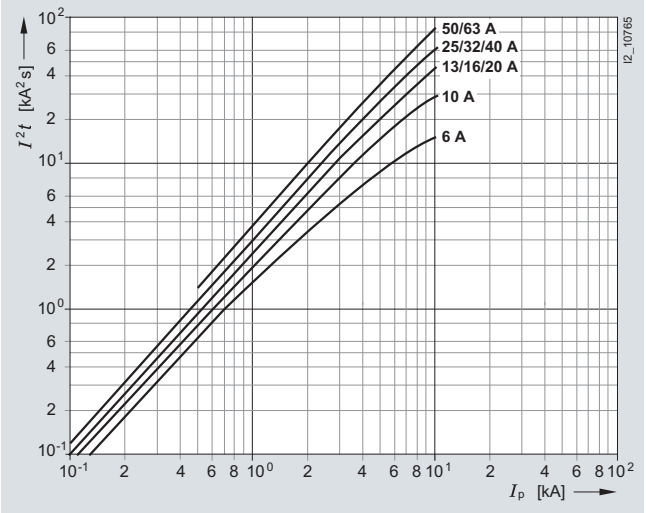
Characteristic A



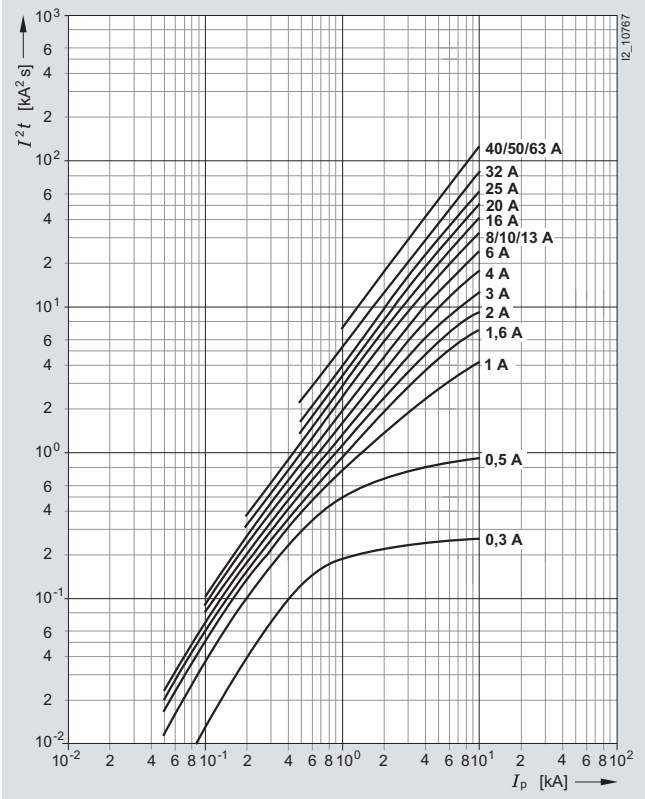
Characteristic C



Characteristic B



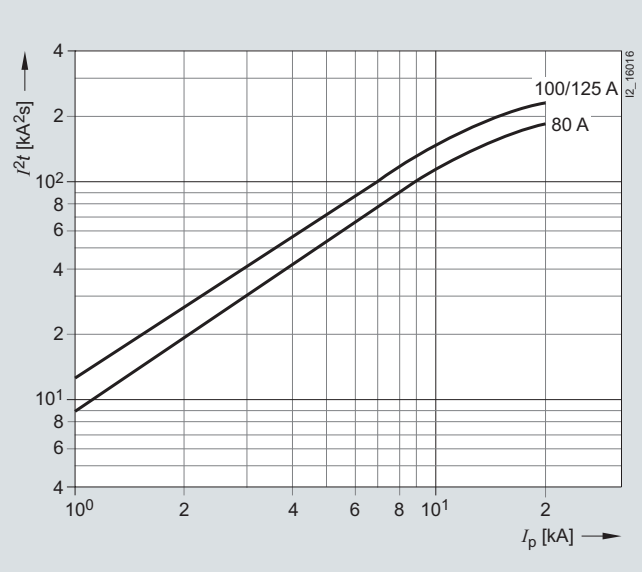
Characteristic D



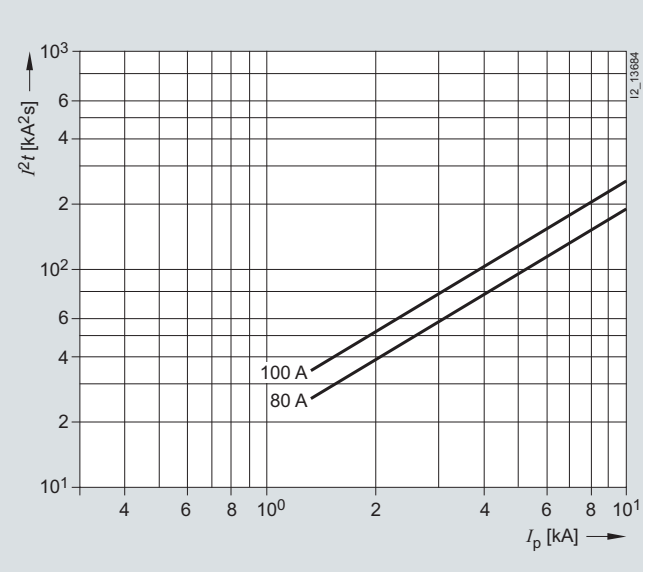
Characteristic curves 5SP4

Let-through I^2t values

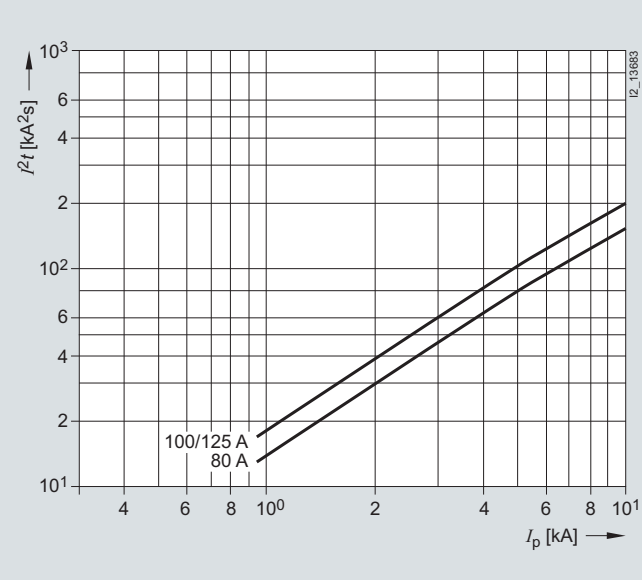
Characteristic B



Characteristic D



Characteristic C

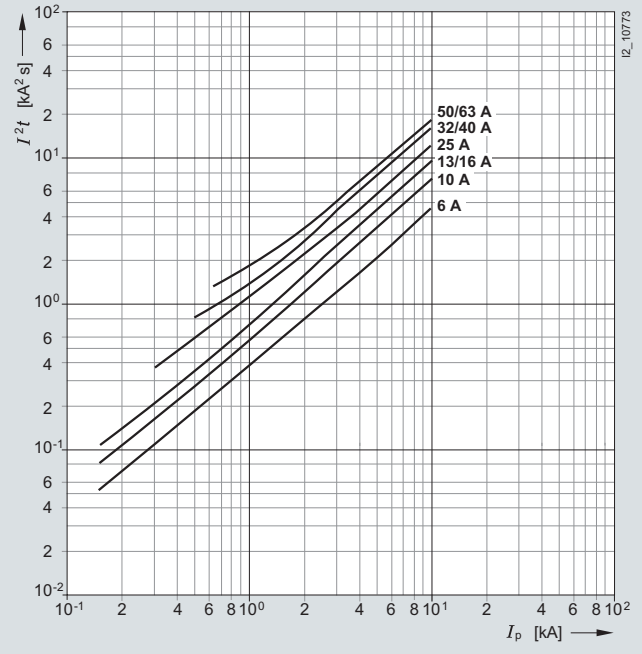


Configuration

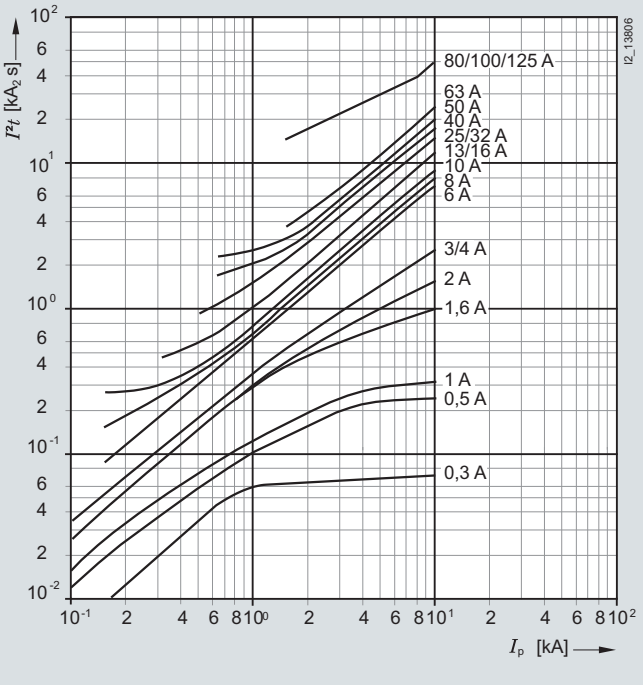
Characteristic curves 5SY5, 5SP5 (characteristic C only)

Let-through I^2t values

Characteristic B



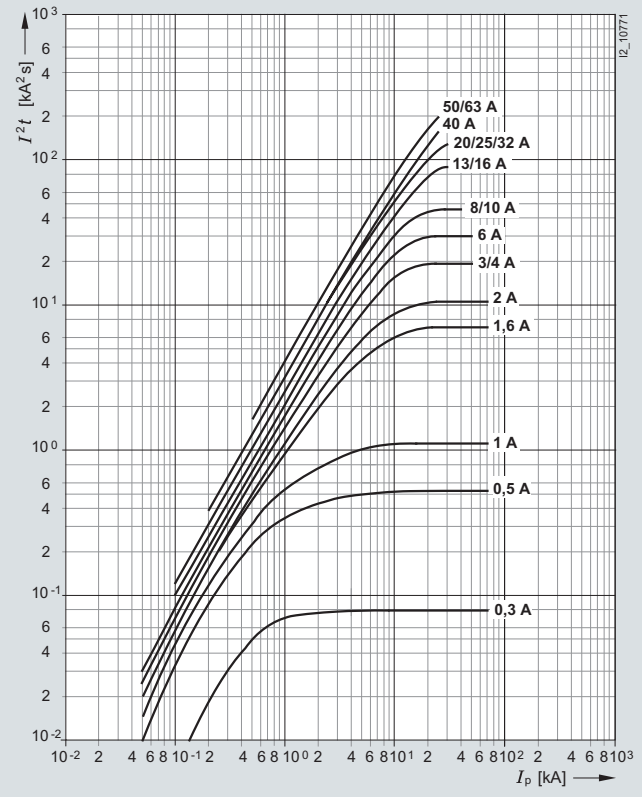
Characteristic C



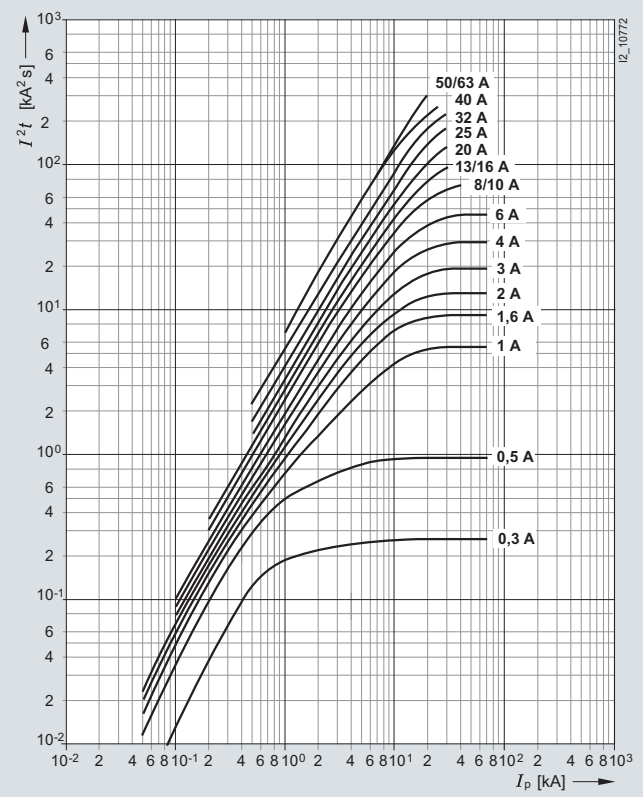
Characteristic curves 5SY8

Let-through I^2t values

Characteristic C



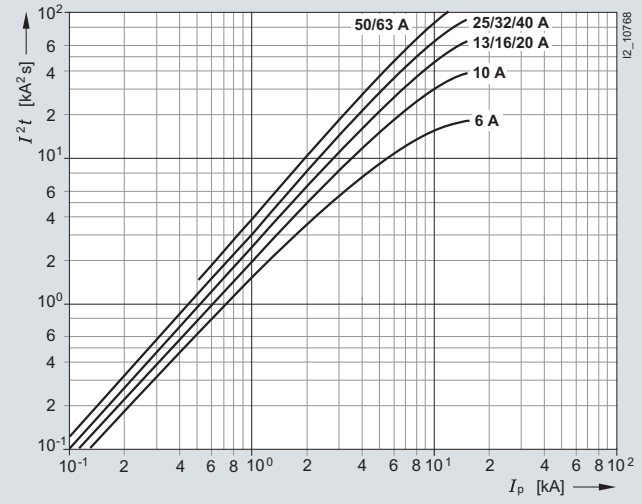
Characteristic D



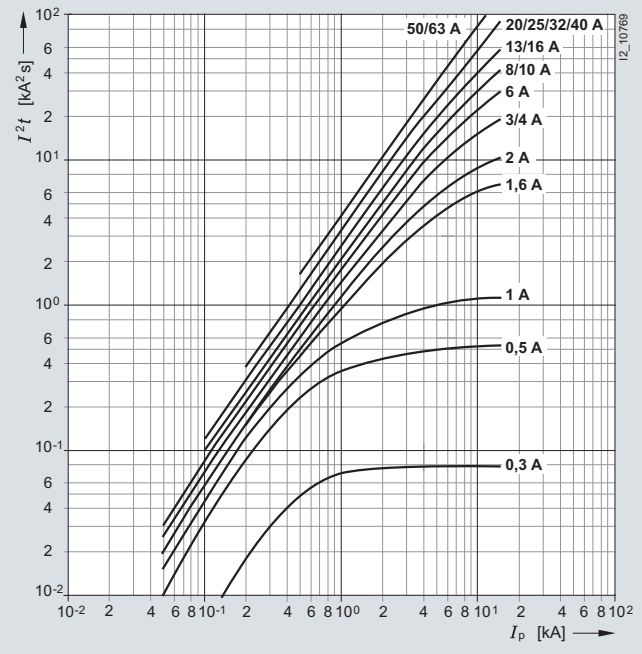
Characteristic curves 5SY7

Let-through I^2t values

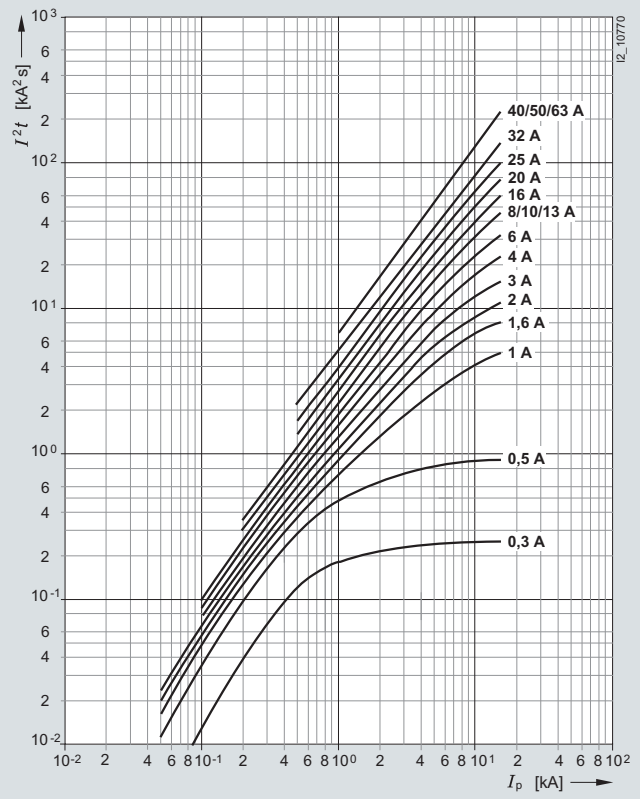
Characteristic B



Characteristic C



Characteristic D

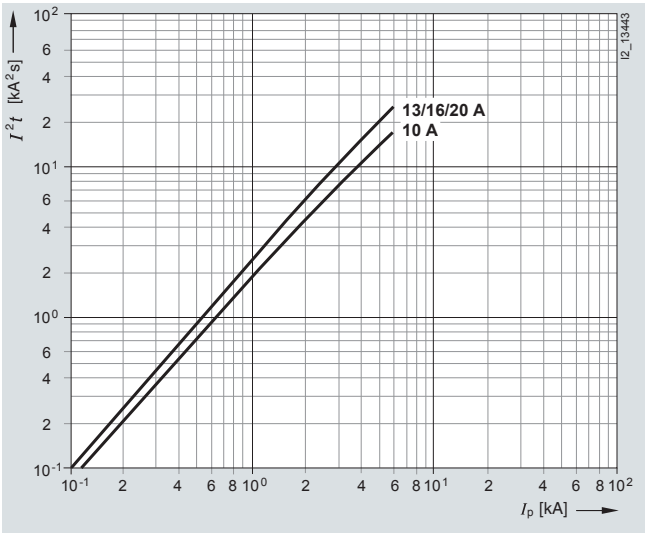


Configuration

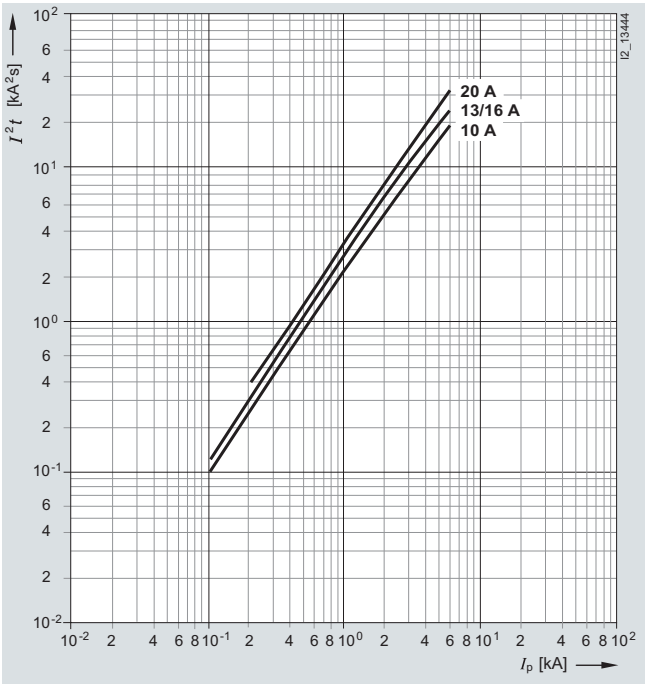
Characteristic curves 5SJ6

Let-through I^2t values

Characteristic B



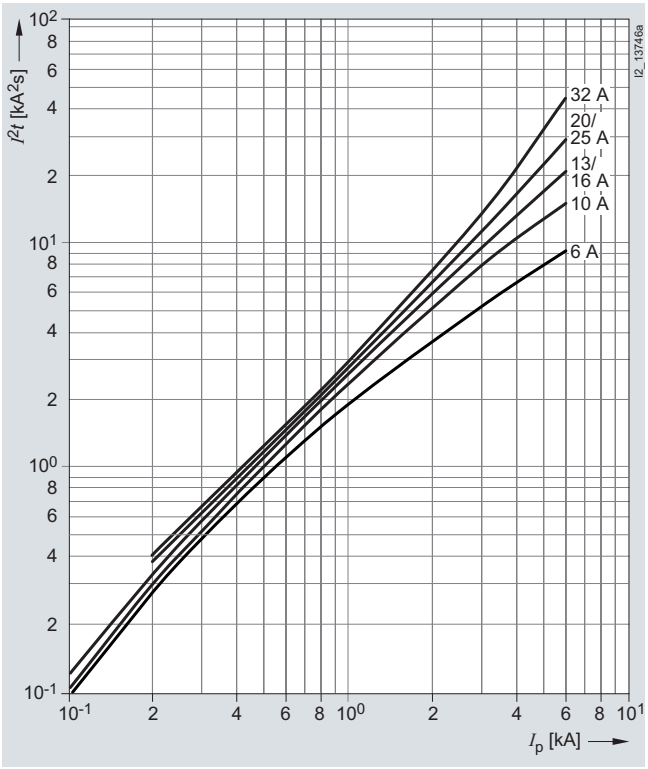
Characteristic C



Characteristic curves 5SY60

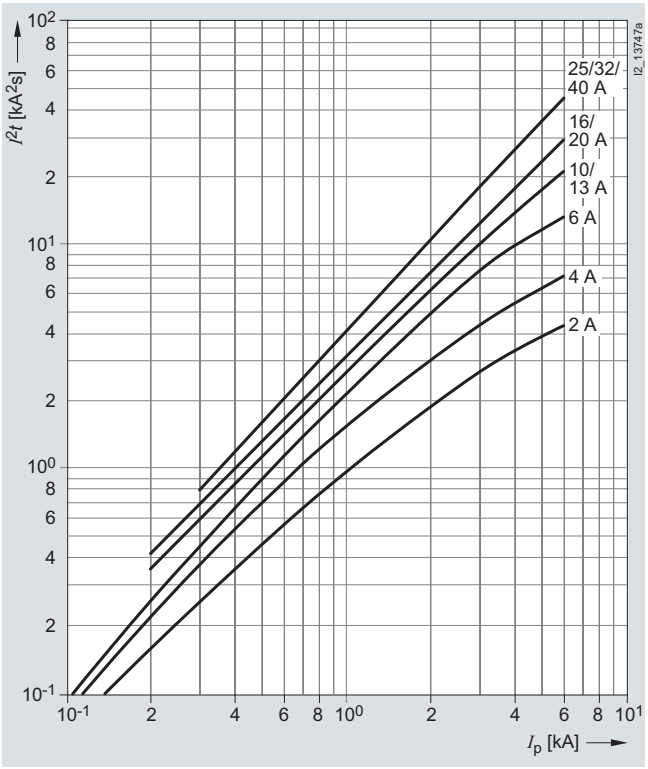
Let-through I^2t values of 5SY6 0...-6 MCB range

Characteristic B



Let-through I^2t values of 5SY6 0...-7 MCB range

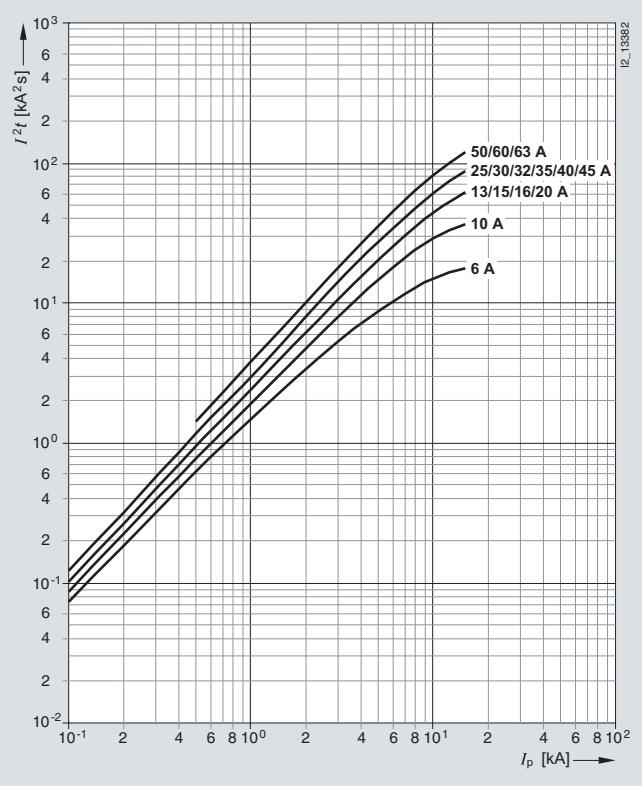
Characteristic C



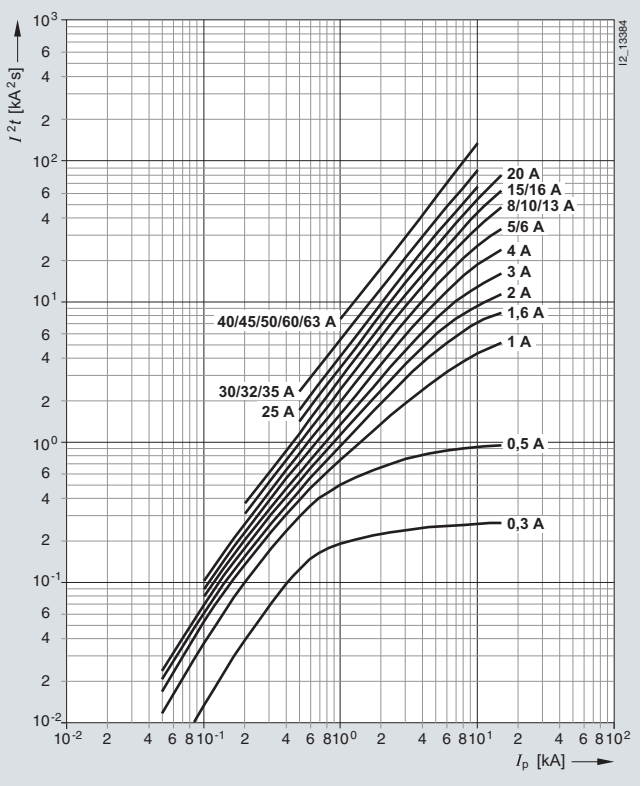
Characteristic curves 5SJ4 . . .-.HG40, 5SJ4 . . .-.HG41, 5SJ4 . . .-.HG42

Let-through I^2t values

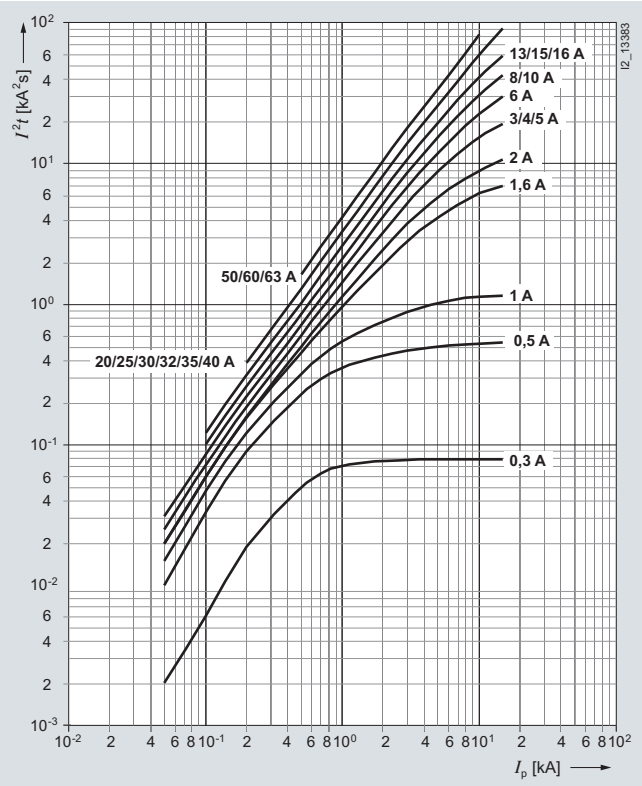
Characteristic B



Characteristic D



Characteristic C



Configuration

Selectivity for 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 path is tripped. This enables current paths in parallel to maintain a power flow.

In the case of miniature circuit breakers with upstream fuses, the selectivity limit depends largely on the current limitation 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 switching capacity.

The following tables provide information on the short-circuit currents up to which selectivity is still maintained between miniature circuit breakers and upstream fuse according to DIN VDE 0636-21. The values specified in kA 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 for miniature circuit breakers/fuses in kA

Downstream miniature circuit breakers		**Upstream fuses**							
	I_n [A]	16 A	20 A	25 A	35 A	50 A	63 A	80 A	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 switching capacity 5SY6 according to EN 60898 6 000.

Selectivity for miniature circuit breakers/fuses

In the event of a short-circuit, there is selectivity between the 5SY4, 5SY7, 5SP4 miniature circuit breakers and melting fuses according to DIN VDE 0636-21 up to the specified values in kA.

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

Downstream miniature circuit breakers	I_n [A]	**Upstream fuses** 16 A	20 A	25 A	35 A	50 A	63 A	80 A	100 A	125 A
5SY4, 5SY7										
Characteristic B, C	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 switching capacity 5SY4 according to EN 60898 10 000.

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

Downstream miniature circuit breakers	I_n [A]	**Upstream fuses** 100 A	125 A	160 A	200 A	224 A	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 switching capacity 5SP4 according to EN 60898 10 000.

Values for 5SY8 on request.

Configuration

Power loss for miniature circuit breakers according to UL and IEC, 5SJ4

Rated current	Characteristic B		Characteristic C		Characteristic D	
I_n A	R_i mΩ	P_v W	R_i mΩ	P_v W	R_i mΩ	P_v W
0.3	--	--	12900	1.2	12600	1.1
0.5	--	--	4900	1.2	4600	1.2
1	--	--	1650	1.7	1480	1.5
1.6	--	--	620	1.6	570	1.5
2	--	--	440	1.8	435	1.8
3	--	--	197	1.8	190	1.7
4	--	--	115	1.8	100	1.6
5	--	--	115	2.9	100	2.5
6	85	3.1	74	2.7	73	2.6
8	--	--	40	2.6	39	2.5
10	16.5	1.7	13.5	1.4	11.9	1.2
13	11.7	2.0	10.2	1.7	10.2	1.7
15	8.5	1.9	7.8	1.8	7.7	1.7
16	8.5	2.2	7.8	2.0	7.7	2.0
20	6.7	2.7	5.5	2.2	5.5	2.2
25	4.3	2.7	4.2	2.6	4.2	2.6
30	3.4	3.1	3.5	3.2	3.0	2.7
32	3.4	3.5	3.5	3.6	3.0	3.1
35	2.8	3.4	2.8	3.4	2.7	3.3
40	2.8	4.5	2.8	4.5	2.5	4.0
45	2.8	5.7	2.7	5.5	2.5	5.1
50	2.1	5.3	2.1	5.0	2.0	5.0
60	1.7	6.1	1.7	6.1	1.7	6.1
63	1.7	6.7	1.7	6.7	1.7	6.7

Selectivity for 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 Î 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 circuitbreakers and upstream circuit breaker according to IEC/EN 60947-2 or DIN VDE 0660-101, at 230/400 V AC, 50 Hz.

Limit values of selectivity for 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	1000	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.

Configuration

Selectivity for miniature circuit breakers/circuit breakers

In the event of a short-circuit, there is selectivity between miniature circuit breakers and motor starter protectors according to IEC/EN 60947-2 or DIN VDE 0660-101 up to the specified values in kA.

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

Downstream miniature circuit breakers				**Upstream circuit breakers**						
				3RV1.3						
	I_n [A]	$I>$ [A]	I_{cn} [kA]	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	1000	6/10/15	--	--	--	--	--	--	--

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

Selectivity for miniature circuit breakers/circuit breakers

In the event of a short-circuit, there is selectivity between miniature circuit breakers and motor starter protectors according to IEC/EN 60947-2 or DIN VDE 0660-101 up to the specified values in kA.

Limit values of selectivity for 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	1080	1140
			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	1000	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.

Configuration

Selectivity for miniature circuit breakers/circuit breakers

In the event of a short-circuit, there is selectivity between miniature circuit breakers and motor starter protectors according to IEC/EN 60947-2 or DIN VDE 0660-101 up to the specified values in kA.

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

Downstream miniature circuit breakers				**Upstream circuit breakers**												
				3VL1, TM non-adjustable						**3VL2, TM adjustable**						
	I_n [A]	$I >$[A]	I_{cn} [kA]	50 500 40/70/ 100	63 630 40/70/ 100	80 800 40/70/ 100	100 1000 40/70/ 100	125 1250 40/70/ 100	160 1600 40/70/ 100	50 400 40/70/ 100	63 500 40/70/ 100	80 630 40/70/ 100	100 800 40/70/ 100	125 1000 40/70/ 100	160 1280 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	5.5	5.5	T	T	T	T	2.5	2.5	5.1	7.3	T	T
	10	50	6/10/15	3.1	3.1	6.7	6.7	6.7	6/12/4	2.0	2.0	3.0	3.9	5.0	8.6
	13	65	6/10/15	2.5	2.5	5.0	5.0	5.0	8.0	1.5	1.5	3.1	3.4	4.5	5.8
	16	80	6/10/15	2.5	2.5	4.4	4.4	4.4	7.2	1.5	1.5	2.0	3.1	4.0	5.1
	20	100	6/10/15	2.0	2.0	4.3	4.3	4.3	6.6	1.5	1.5	2.0	2.5	3.9	5.0
	25	125	6/10/15	2.0	2.0	3.9	3.9	3.9	6.1	1.5	1.5	2.0	2.1	3.4	4.6
	32	160	6/10/15	2.0	2.0	3.7	3.7	3.7	5.0	1.5	1.5	2.0	2.1	3.4	4.8
	40	200	6/10/15	2.0	2.0	3.7	3.7	3.7	5.0	1.2	1.2	2.0	2.1	3.3	4.3
	50	250	6/10/15	--	1.5	3.2	3.2	3.2	4.0	--	--	1.5	2.0	2.5	3.6
Characteristic C	0.5	5	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
	1	10	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
	1.5	15	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
	2	20	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
	3	30	6/10/15	3.2	3.2	T	T	T	T	2.5	T	T	T	T	T
	4	40	6/10/15	3.2	3.2	T	T	T	T	2.5	T	T	T	T	T
	6	60	6/10/15	3.2	3.2	7	7	7	6/10/ 13.9	2.5	2.5	5.1	7.3	T	T
	8	80	6/10/15	2.5	2.5	5.4	5.4	5.4	6/9/2	2.3	3.7	3.8	3.9	5.6	8.6
	10	100	6/10/15	2.5	2.5	5.4	5.4	5.4	6/9/2	2.0	2.0	3.0	3.4	5.6	8.6
	13	130	6/10/15	2.5	2.5	4.3	4.3	4.3	7.1	1.5	1.5	2.5	3.4	4.5	5.8
	16	160	6/10/15	2.0	2.5	4.0	4.0	4.0	7.1	1.5	1.5	2.5	3.1	4.0	5.1
	20	200	6/10/15	2.0	2.0	3.7	3.7	3.7	6.3	1.5	1.5	2.0	2.5	3.9	5.0
	25	250	6/10/15	2.0	2.0	3.6	3.6	3.6	5.5	1.5	1.5	2.0	2.5	3.5	4.6
	32	320	6/10/15	2.0	2.0	3.5	3.5	3.5	5.5	1.5	1.5	2.0	2.5	3.4	4.5
	40	400	6/10/15	1.5	1.5	3.3	3.3	3.3	5.1	1.2	1.2	2.0	2.5	3.3	4.3
	50	500	6/10/15	--	1.5	3.1	3.1	3.1	4.0	--	--	1.5	2.5	2.5	3.6
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	1.4	4.8	5	6	6	2.3	4.1	4.2	4.2	4.3	6
	10	200	6/10/15	1.3	1.3	4.5	5	6	6	1.9	3.7	3.7	3.7	4	6
	16	320	6/10/15	1.1	1.1	3.2	3.2	3.2	4.0	1.7	3.3	3.7	3.3	3.5	4.7
	32	640	6/10/15	--	--	2.3	2.3	2.3	4.0	--	--	--	2.4	2.7	3.7
	40	800	6/10/15	--	--	--	2.1	2.1	3.8	--	--	--	--	1.5	3
	50	1000	6/10/15	--	--	--	--	2.0	2.8	--	--	--	--	--	2.6
5SP4																
Characteristic C	80	800	10	--	--	--	1.0	1.2	2.0	--	--	--	--	1.2	1.5
	100	1000	10	--	--	--	--	1.2	1.5	--	--	--	--	--	1.5
Characteristic D	80	1600	10	--	--	--	--	--	--	--	--	--	--	--	--
	100	1200	10	--	--	--	--	--	--	--	--	--	--	--	--

Values for 5SY8 on request.

T ≙ full selectivity up to rated breaking capacity I_{cn} of the downstream protective device.

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.

Selectivity for miniature circuit breakers/circuit breakers

In the event of a short-circuit, there is selectivity between miniature circuit breakers and motor starter protectors according to IEC/EN 60947-2 or VDE 0660-101 up to the specified values in kA.

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

Downstream miniature circuit breakers			**Upstream circuit breakers**											
			3VL3, TM		**3VL4, TM**				**3VL6, ETU**		**3VL7. ETU**	**3VL8, ETU**	**3WN1**	**3WN6**
I_n [A]			200	250	200	250	315	400	315	400 ... 800	400 ... 1250	800 ... 2500	315 ... 6300	315 ... 3200
$I >$[A]			2000	2500	2000	2500	3150	4000	3200	1575 ... 6400	15000	20000	3780 ... 75600	3780 ... 48000
	I_{cn} [kA]		40 ... 100	40 ... 100	45 ... 100	45 ... 100	45 ... 100	45 ... 100	45 ... 100	45 ... 100	50 ... 100	70/100	65 ... 100	65/75
			Selectivity limits [kA][1]											
5SY6, 5SY4, 5SY7														
Characteristic A														
2	6	10	T	T	T	T	T	T	T	T	T	T	T	T
10	30	10	T	T	T	T	T	T	T	T	T	T	T	T
16	48	10	T	T	T	T	T	T	T	T	T	T	T	T
32	96	10	T	T	T	T	T	T	T	T	T	T	T	T
40	120	10	T	T	T	T	T	T	T	T	T	T	T	T
Characteristic B														
6	30	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
10	50	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
13	65	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
16	80	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
20	100	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
25	125	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
32	160	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
40	200	6/10/15	6	6	6	T	T	T	T	T	T	T	T	T
50	250	6/10/15	6	6	6/10/ 14.1	T	T	T	T	T	T	T	T	T
Characteristic C														
0.5	5	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
1	10	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
1.5	15	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
2	20	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
3	30	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
4	40	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
6	60	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
8	80	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
10	100	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
13	130	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
16	160	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
20	200	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
25	250	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
32	320	6/10/15	6/10/11	T	T	T	T	T	T	T	T	T	T	T
40	400	6/10/15	6/10	T	T	T	T	T	T	T	T	T	T	T
50	500	6/10/15	6/10	T	T	T	T	T	T	6/10/ 14.2	T	T	T	T
Characteristic D														
2	40	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
6	120	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
10	200	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
16	320	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
32	640	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
40	800	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
50	1000	6/10/15	T	T	T	T	T	T	T	T	T	T	T	T
5SP4														
Characteristic C														
80	800	10	3	3	3	3	3	6	8	T	T	T	T	T
100	1000	10	3	3	3	3	3	5	6	T	T	T	T	T
Characteristic D														
80	1600	10	3	3	2.5	3	3	5	6	T	T	T	T	T
100	2000	10	--	2.5	--	3	3	5	6	T	T	T	T	T

Values for 5SY8 on request.

T ≙ full selectivity up to rated breaking capacity I_{cn} of the downstream protective device.

[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.

Configuration

Selectivity for miniature circuit breakers/miniature circuit breakers

Within narrow limits, miniature circuit breakers also offer selectivity between circuit breakers in a fuseless distribution board. The following table shows the short-circuit current in kA up to which selectivity is still maintained between series-connected miniature circuit breakers at 230 V AC.

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.

Limit values of selectivity for miniature circuit breakers/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]	20 200 10	25 250 10	32 320 10	40 400 10	50 500 10	80 800 10	100 1000 10	80 1200 10	100 1500 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	T	T
	1	10	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	T	T
	1.5	15	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	T	T
	2	20	6/10/15	0.2	0.3	0.5	0.8	0.8	1.2	4	T	T
	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

T ≙ full selectivity up to rated breaking capacity I_{cn} of the downstream protective device.

[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.

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 switching 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 according to DIN VDE 0636-21.

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

Downstream miniature circuit breakers		Upstream fuses					
	I_n [A]	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					
	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
p.f. = 0.3 ... 0.5

Test cycle:

According to EN 60947-2 (0 - C0)

BETA Protecting
Miniature Circuit Breakers

Configuration

Back-up protection miniature circuit breakers/circuit breakers

If miniature circuit breakers are installed in fuseless distribution boards, circuit breakers according to IEC/EN 60947-2 or DIN VDE 0660-101 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			Upstream circuit breakers																	
			3VL1 Non-adjustable											3VL2 Adjustable						
	I_n [A]		16	20	25	32	40	50	63	80	100	125	160	50	63	80	100	125	160
	I >[A]		160	200	250	320	400	500	630	800	1000	1250	1600	400	500	630	800	1000	1280
	I_{cu} [kA]		40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/ 70	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100	40/70/ 100
	I_n [A]	I_{cn} [kA]	Back-up protection up to kA																	
5SY6																				
Characteristic B	0.3 ... 6	6	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Characteristic C	8 ... 32	6	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Characteristic D	40 ... 63	6	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
5SY4																				
Characteristic A	0.3 ... 6	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Characteristic B	8 ... 32	10	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Characteristic C	40 ... 63	10	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Characteristic D																				
5SY7																				
Characteristic B	0.3 ... 2	15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Characteristic C	3 ... 10	15	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	13 ... 32	15	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	40 ... 63	15	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Characteristic D	0.3 ... 2	15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3 ... 10	15	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	13 ... 32	15	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	40	15	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	50 ... 63	15	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
5SY8																				
Characteristic C	0.3 ... 2	25	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
	3 ... 6	25	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	8 ... 32	25	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	40 ... 63	25	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Characteristic D	0.3 ... 2	25	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
	3 ... 6	25	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	8 ... 32	25	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	40	25	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	50 ... 63	25	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
5SP4																				
Characteristic B	80 ... 125	10	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Characteristic C																				
Characteristic D	80 ... 100	10	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20

Downstream miniature circuit breakers			Upstream circuit breakers													
			3VL3		3VL4				3VL5				3VL6	3VL7	3VL8	3WN1/ 3WS1
		I_n [A]	200	250	200	250	315	400	250 ... 315	315 ... 400	400 ... 500	500 ... 630	320 ... 800	400 ... 1250	1600 ... 2000	315 ... 6300
		I >[A]	2000	2500	2000	2500	3150	4000	2500 ... 3150	3150 ... 4000	4000 ... 5000	5000 ... 6300	3200 ... 6300	15000	20000	3780 ... 75600
		I_{cn} [kA]	40/70/ 100	40/70/ 100	45/70/ 100	45/70/ 100	45/70/ 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 ... 100
	I_n [A]	I_{cn} [kA]	Back-up protection up to kA													
5SY6																
Characteristic B	0.3 ... 6	6	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Characteristic C	8 ... 32	6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Characteristic D	40 ... 63	6	20	20	20	20	20	20	20	20	20	20	20	20	20	20
5SY4																
Characteristic A	0.3 ... 6	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Characteristic B	8 ... 32	10	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Characteristic C	40 ... 63	10	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Characteristic D																
5SY7																
Characteristic B	0.3 ... 2	10	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Characteristic C	3 ... 10	10	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	13 ... 32	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	40 ... 63	10	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Characteristic D	0.3 ... 2	10	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3 ... 10	10	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	13 ... 32	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	40	10	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	50 ... 63	10	30	30	30	30	30	30	30	30	30	30	30	30	30	30
5SY8																
Characteristic C	0.3 ... 2	25	70	70	70	70	70	70	70	70	70	70	70	--	--	--
	3 ... 6	25	50	50	50	50	50	50	50	50	50	50	50	--	--	--
	8 ... 32	25	45	45	45	45	45	45	45	45	45	45	45	--	--	--
	40 ... 63	25	40	40	40	40	40	40	40	40	40	40	40	--	--	--
Characteristic D	0.3 ... 2	25	70	70	70	70	70	70	70	70	70	70	70	--	--	--
	3 ... 6	25	50	50	50	50	50	50	50	50	50	50	50	--	--	--
	8 ... 32	25	45	45	45	45	45	45	45	45	45	45	45	--	--	--
	40	25	40	40	40	40	40	40	40	40	40	40	40	--	--	--
	50 ... 63	25	35	35	35	35	35	35	35	35	35	35	35	--	--	--
5SP4																
Characteristic B Characteristic C	80 ... 125	10	25	25	25	25	25	25	25	25	25	25	25	--	--	--
Characteristic D	80 ... 100	10	20	20	20	20	20	20	20	20	20	20	20	--	--	--

Configuration

Internal resistances and power loss

(Data per pole 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	--	--	--	--	10500	0.9	10200	1
	0.5	--	--	--	--	3400	0.9	3120	0.8
	1	1955	2.0	--	--	1210	1.2	1030	1.0
	1.6	786	2.0	--	--	459	1.2	409	1.1
	2	510	2.0	375	1.5	295	1.2	292	1.2
	3	205	1.9	--	--	137	1.2	131	1.2
	4	134	2.1	91	1.45	81	1.3	73	1.2
	5	--	--	--	--	86	2.1	--	--
	6	58	2.1	55	2.0	44	1.6	43	1.6
	8	27	1.7	--	--	14	0.9	12	0.7
	10	18.1	1.8	13	1.3	10	1.0	8.4	0.8
	13	11.4	1.9	9.5	1.6	8.0	1.4	8.0	1.4
	15	--	--	--	--	6.3	1.4	--	--
	16	8.4	2.2	6.6	1.7	5.9	1.5	5.8	1.5
	20	6.2	2.5	5.2	2.1	4.0	1.6	3.8	1.5
	25	4.6	2.9	3.4	2.2	3.3	2.1	3.0	1.9
	30	--	--	--	--	2.4	2.2	--	--
	32	3	3.1	2.3	2.4	2.4	2.5	1.9	2.0
	35	--	--	--	--	2.0	2.4	--	--
	40	2.2	3.5	2.1	3.4	2.1	3.3	1.8	2.8
	45	--	--	--	--	1.4	2.9	--	--
	50	1.7	4.3	1.5	3.8	1.4	3.5	1.4	3.5
	60	--	--	--	--	1.1	4.1	--	--
	63	1.5	5.9	1.4	5.4	1.1	4.4	1.1	4.4
	80	--	--	1.0	6.4	1.0	6.4	--	--
5SP4, 5SP5									
	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 loss

- Direct current and alternating current up to 60 Hz × 1.0
- Alternating current 200 Hz × 1.1
  400 Hz × 1.15
  1100 Hz × 1.3

Internal resistances R_i and power loss P_v of the miniature circuit breaker compact range 1+N in 1 MW, 5SY6 0

(Data per pole with I_n)

Rated current I_n	Characteristic B				Characteristic C			
	Phase-pole		N pole		Phase-pole		N pole	
A	R_i mΩ	P_v W	R_i mΩ	P_v W	R_i mΩ	P_v W	R_i mΩ	P_v W
2	--	--	--	--	290	1161	3.8	15
4	--	--	--	--	110	1766	4.0	64
6	30	1092	4.2	150	26	931	4.3	154
8	--	--	--	--	19.8	1264	3.9	249
10	15	1539	4.1	407	13	1297	4.1	406
13	9.5	1598	4.1	692	9.1	1531	4.4	742
16	8.7	2219	4.0	1018	7.5	1926	3.3	852
20	5.2	2082	1.1	436	5.3	2118	1.2	478
25	3.3	2065	1.3	804	3.0	1906	1.1	674
32	2.6	2625	1.2	1192	2.7	2718	1.3	1310
40	2.3	3619	1.1	1789	2.2	3531	1.1	1820

Personnel safety with miniature circuit breakers

According to DIN VDE 0100-410, in order to protect against dangerous leakage currents in the TN system, the cross-sections of the conductor, or its distance from the protective device, must be dimensioned such that if a fault with negligible impedance (i.e. short circuit) occurs at any point between a phase conductor and a PE conductor, or a connected exposed conductive part, the device automatically trips within the specified times of 0.4 s or 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 all electrical circuits
I_a ≙ Current that trips within the specified times
U_o ≙ Voltage against ground

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

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, $Z_s \times 1.04$ applies.
At U_o = 127 V AC, $Z_s \times 0.55$ applies.

Configuration

Fusing of luminaire circuits

Maximum permissible lamp load of a miniature circuit breaker when operating fluorescent lamps L 18 W, L 36 W, L 38 W, L 58 W.

Maximum number of fluorescent lamps

I_n [A]	Lamps	Electronic ballasts											
		Full switching at 230 V 1 lamp[1]			2 lamps			Group switching at 230 V 1 lamp[2]			2 lamps		
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 mΩ.
At 400 mΩ, the permissible values are reduced by 10 %.

Reduction factors for miniature circuit breakers for the simultaneously switching on of incandescent lamp load taking into account the rated current of the miniature circuit breaker and the summation operational current of the lamps

	Reduction factor	
	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

Current carrying capacity of miniature circuit breakers with corrected and uncorrected HQ, HQI and NAV lamps (number)

		Lamp power [W]							
		35	70	150	250	400	1000	2000	3500
Lamp current	[A]	0.5	1	1.8	3	3.5	9.5	10.3	18
Corrected 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	1000	2000	3500
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.

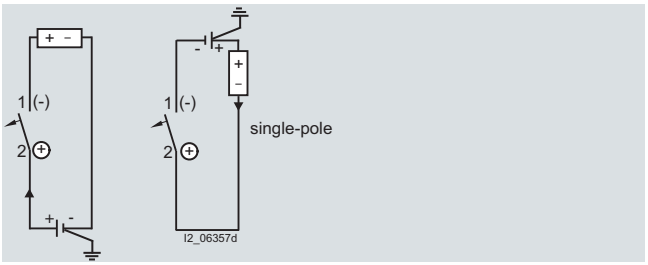
Configuration

Direct current, universal current

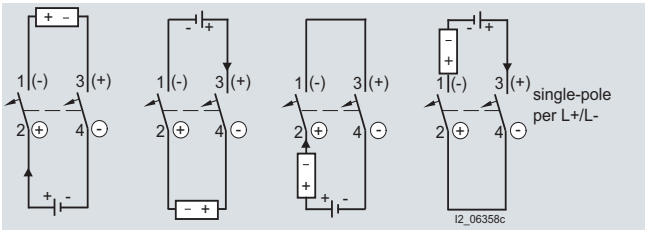
All 1-pole and 2-pole 5SJ, 5SY and 5SP4 miniature circuit breakers can be used in DC systems up to 60 V or 120 V.

For higher voltages, 5SY5 and 5SP5 versions are required. In contrast to to other product ranges, the arcing chamber area of the 5SY5 and 5SP5 are equipped with an additional permanent magnet to support the positive quenching of the electric arc.

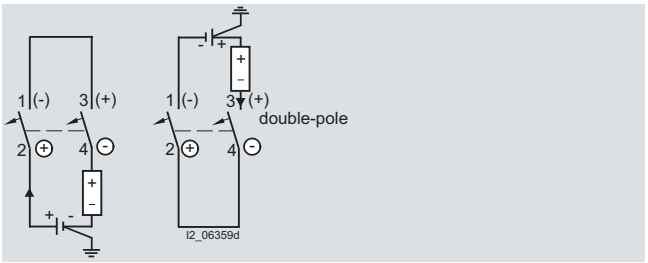
For this reason, the polarity of the switch is coded and must be observed when connecting the conductor.



Up to max. 220 V DC battery voltage



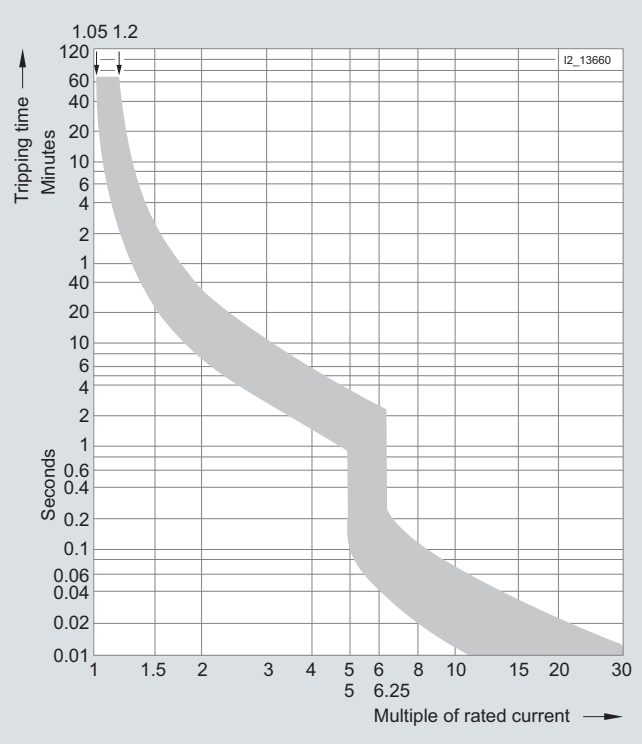
Up to max. 220 V DC battery voltage



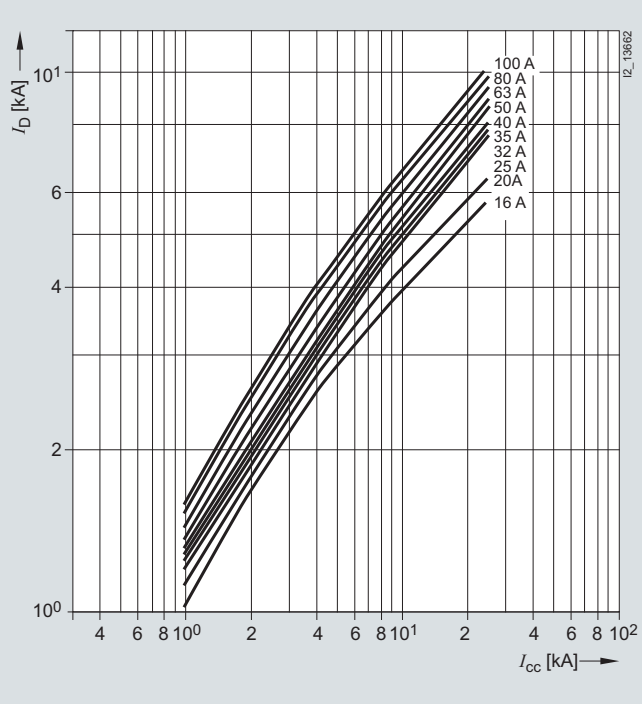
Up to max. 440 V DC battery voltage.

Characteristic curves of 5SP37 selective main miniature circuit breakers

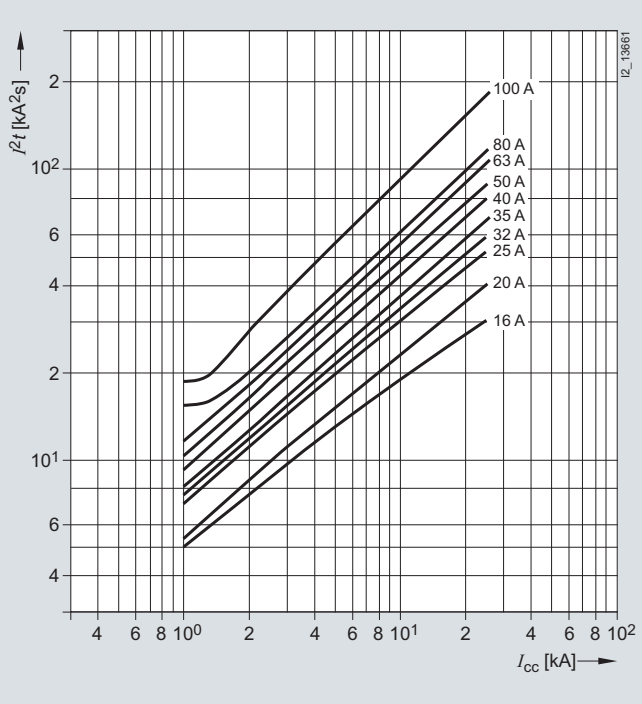
Characteristic E according to DIN VDE 0645



Let-through current



Let-through I^2t value



Configuration

Voltage-independent main miniature circuit breakers (SHU)

Selective main miniature circuit breakers are generally based on the miniature circuit principle of operation of conventional miniature circuit breakers and have a delayed thermal release for overload protection and an electromagnetic fast release with an impact cutout blade for short-circuit protection.

An additional selectivity device is also used that recognizes whether the downstream miniature circuit breaker in the load circuit is capable of dealing with the short circuit on its own. 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 selective main miniature circuit breaker, this ensures a selectivity for downstream miniature circuit breakers according to IEC/EN 60898, DIN VDE 0641-11, up to its rated switching capacity.

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

Application examples

Full selectivity up to the rated switching capacity of the downstream miniature circuit breaker.

Selectivity towards upstream fuses up to 2000 A