

5S Breaker Offering

Introduction

5SP and 5SY Supplementary Protectors are single and multi-pole thermal / magnetic overcurrent protection devices that are intended for general industrial use. They are UL Recognized (File No. E116386) in accordance with UL 1077, "Supplementary Protectors for Use in Electrical Equipment" and Certified to Canadian Standards (CSA 22.2 No. 2352). They are provided with a manual means for opening the circuit and they are not ambient compensated.

Features

- Thermal magnetic protection
- High interrupting rating / rated switching capacity –
- UL 1077: up to 14,000 maximum RMS symmetrical amps AC
- (I_{cn}) to IEC 60 898-1: up to 10,000 A AC
- (I_{cu}) to IEC 60 947-2: up to 15,000 A AC
- Can be used for "field wiring" applications:
- 5SP4: AWG 14 to AWG 2, Copper (Cu) only
- 5SY: AWG 14 to AWG 4, Copper (Cu) only
- Calibration base:
 - UL: 25°C (77°F)
 - IEC: 30°C (86°F)
- Meets trip characteristics: A, B, C, D
- Rated voltage
- UL 1077
 - 277 VAC (1- & 1+N-pole)
 - 480 VAC (multi-poles)
- EN 60 898 and EN 60947-2
 - VAC/DC: 24 minimum
 - VDC/pole: 60 maximum
 - VAC: 440 maximum
- Available with: 1-, 1+N-, 2-, 3-, 3+N- and 4-poles
- Available from: 0.3 to 80 Amps (depending on the device selected)
- Visible indicator for ON and OFF/Trip
- Touch protection to EN 50274-1
- Standard DIN rail mounting
- Identical wire screw connections on line and load side
- CFC and silicone free

Certifications And Standards

- UL recognized and certified to Canadian Standards (File E116386)
- UL 1077
- CSA 22.2 No. 235
- CE
- EN 60 898, IEC/EN 60 947-2

Catalog Number Structure

5SY4 1 10 7

Frame Style

- 5SY4 – 10 kA, standard frame
- 5SY5 – 10 kA, universal current
- 5SY6 – 6 kA, standard frame
- 5SY7 – 15 kA, standard frame
- 5SY8 – 25 kA, standard frame
- 5SP4 – 10 kA, high current

Poles

- 1 – 1 Pole
- 5 – 1 Pole + Neutral
- 2 – 2 Pole
- 3 – 3 Pole
- 6 – 3 Pole + Neutral
- 4 – 4 Pole

Code Rated current (I_n)

14	–	0.3
05	–	0.5
01	–	1
15	–	1.6
02	–	2
03	–	3
04	–	4
11	–	5
06	–	6
08	–	8
10	–	10
13	–	13
18	–	15
16	–	16
20	–	20
25	–	25
30	–	30
32	–	32
35	–	35
40	–	40
45	–	45
50	–	50
60	–	60
63	–	63
80	–	80
91	–	100
92	–	125

Trip Curve (Characteristic)

- 5 – Trip curve A, Magnetic trip point 2 to 3 I_n , 1.13 to 1.45 breaker rating
- 6 – Trip curve B, Magnetic trip point 3 to 5 I_n , 1.13 to 1.45 breaker rating
- 7 – Trip curve C, Magnetic trip point 5 to 10 I_n , 1.13 to 1.45 breaker rating
- 6 – Trip curve D, Magnetic trip point 10 to 20 I_n , 1.13 to 1.45 breaker rating

Control Circuit Protection Supplementary Protection

5SY and 5SP Supplementary Protectors



		5SY4 ^②	5SY5 ^②	5SP4 ^②
Technical Data				
Standards		EN 60898; EN 60947-2; UL 1077; CSA C22.2 No. 235	EN 60898; EN 60947-2	EN 60898; EN 60947-2; UL 1077; CSA C22.2 No. 235
Certifications		CE; cURus, UL File No. E116386	Not UL/CSA Rated	CE; cURus, UL File No. E106582
Tripping Characteristic		A, B, C, D	B, C	B, C, D
Number Of Poles		1, 1+N, 2, 3, 3+N, 4	1, 2	1, 2, 3, 4
Operating Voltage - EN 60898, EN 60947-2 - UL 1077 and CSA C22.2 No. 2352	Min. V AC/DC Max. V DC/pole Max. V AC Max. V AC V DC/pole	24 60 ^① 440 480 -	220 440 - -	60 ^① 440 480 60
Interrupting Rating - I _{cn} to IEC/EN 60898-1 - I _{cn} to IEC/EN 60898-2 - UL 1077 and CSA C22.2 No. 235 AC: Max. RMS Symmetrical	kA AC kA AC 120/240, 240 V: kA AC 240 V: kA AC 277 V: kA AC 480 V: kA AC	10 - 14 7.5 5 5	10 10 Not UL Rated	10 - 14 7.5 5 5
Touch protection to EN 50274-1		Yes	Yes	Yes
Degree of protection to EN 60529		IP20, with connected conductors	IP20, with connected conductors	IP20, with connected conductors
CFC and Silicone Free		Yes	Yes	Yes
Mounting - Snap-on mounting - Standard mounting rail and mounting		Yes -	Yes -	- Yes
Device depth	mm	70	70	70
Terminals - Tunnel terminals at both ends - Combined terminals at both ends - Terminal, solid, stranded or finely stranded with end sleeve - Terminal tightening torque	mm ² lb. in. Nm	- Yes 0.75 to 25 22 to 26 2.5 to 3	- Yes 0.75 to 25 22 to 26 2.5 to 3	Yes - 0.75 to 25 22 to 31 2.5 to 3.5
Conductor cross sections - Solid and stranded - Finely stranded, with end sleeve	mm ² mm ² AWG	0.75 to 35 0.75 to 25 14 to 4	0.75 to 35 0.75 to 25 14 to 4	0.75 to 50 0.75 to 35 14 to 2
Calibration Base	°C	30 (EN 60898)	30 (EN 60898)	30 (EN 60898)
Average Service Life, With Rated Load	Operations	20,000	20,000 (above 40A: 10,000)	20,000
Ambient Operating Temperature	°C	-25 to 45, occasionally +55, max. 95% humidity	-25 to 45, occasionally +55, max. 95% humidity	-25 to 45, occasionally +55, max. 95% humidity
Storage Temperature	°C	-40 to +75	-40 to +75	-40 to +75
Resistance to vibration to IEC 600068-2-6	m/s ²	60 at 10 Hz to 150 Hz	60 at 10 Hz to 150 Hz	60 at 10 Hz to 150 Hz

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

② 50 °C Calibration.

Miniature Circuit Breakers

5SY and 5SP Miniature Circuit Breakers

Introduction

Technical specifications

		5SY6	5SY4	5SY5	5SY7	5SY8	5SP4
Standards		EN 60898-1	EN 60898-1	EN 60898-2	EN 60898-1	EN 60947-2	EN 60898-1
Approvals		www.siemens.com/lowvoltage/certificates					
Rated voltage U_n	V AC V DC	230/400 --	230/400 --	230/400 220/440/ 880 ⁵⁾	230/400 --	230/400 --	230/400 --
Operational voltage							
Acc. to EN 60898-1/-2 and EN 60947-2	Min. V AC/DC/pole	24	24	24	24	24	24
	Max. V DC/pole	72 ⁴⁾	72 ⁴⁾	250	72 ⁴⁾	72 ⁴⁾	72
Acc. to UL 1077 and CSA C22.2 No.235	Max. V AC	250/440	250/440	250/440	250/440	250/440	250/440
	Max. V DC	480/277	480/277	--	480/277	480/277	480/277
Max. V DC		60	60 ⁶⁾	--	60 ⁶⁾	60 ⁶⁾	60
Breaking capacity¹⁾							
• I_{cn} acc. to IEC/EN 60898-1	kA AC	6	10	10	15	--	10
• I_{cn} acc. to IEC/EN 60898-2	kA DC	10	10	10	15	--	10
• I_{cu} acc. to IEC/EN 60947-2	kA AC	30 ... 10 ¹⁾	35 ... 10 ¹⁾	35 ... 10 ¹⁾	50 ... 15 ¹⁾	70 ... 20 ¹⁾	10
	kA DC	15	15	15	15	15	15
• Acc. to UL1077 and CSA C22.2 No.235	kA AC	5	5	--	5	5	5
Insulation coordination							
• Rated insulation voltage	V AC V DC/pole	250/440 --	--	250	--	--	--
Pollution degree for overvoltage category		3/III ³⁾					
Touch protection	Acc. to EN 50274	Yes					
Handle end position, sealable		Yes					
Degree of protection	Acc. to EN 60529	IP20 with connected conductors, IP40 in the area of the handle with distribution cover					
CFC and silicone-free		Yes					
Mounting							
• Snap-on fixing system		Yes					
• Standard mounting rail and screw fixing		--					
Terminals	± screw (Pozidriv)	2					
• Tunnel terminals at both ends		--					
• Combined terminals at both ends		Yes					
• Terminal tightening torque	Nm lbs/in.	2.5 ... 3 22 ... 26					
Conductor cross-sections							
• Solid and stranded	mm ²	0.75 ... 35					
• Finely stranded, with end sleeve	mm ²	0.75 ... 25					
• AWG conductors (Cu 60/75 °C $I_n \leq 40$ A; 60 °C $I_n > 40$ A)	AWG	14 ... 4					
Mains connection							
• AC		Any					
• DC		Any					
Mounting position		Any					
Endurance							
On average, with rated load	Actuations	20000					
	Actuations	10000 for 5SY5 at 40 A, 50 A and 63 A					
Ambient temperature	°C	-25 ... +55, max. 95 % humidity					
Storage temperature	°C	-40 ... +75					
Resistance to climate	Acc. to IEC 60068-2-30	6 cycles					
Shock	Acc. to IEC 60068-2-27	m/s ² 150 at 11 ms half-sine					
Resistance to vibrations	Acc. to IEC 60068-2-6	m/s ² 50 at 25 ... 150 Hz and 60 at 35 Hz (4 sec)					

¹⁾ For further information, see Configuration Manual "Miniature Circuit Breakers" at: www.siemens.com/lowvoltage/manuals.

²⁾ Ensure compliance with the specified polarity when connecting DC.

³⁾ 5SY54.. 4-pole, degree of pollution 2 at overvoltage category III.

⁴⁾ Exempt: C/D 0.3 A ... 0.5 A





⁵⁾ 5SY54.. 4-pole 880 V is not a standardized voltage acc. to EN 60898-1, suitable for max. 1000 V DC, if the four poles are connected in series.

⁶⁾ Valid for 1-pole switching devices only.

Miniature Circuit Breakers

5SY and 5SP Miniature Circuit Breakers

5SY4, 10000 A

10000 3		I_n	Mounting width MW ¹⁾	DT	Characteristic C			Characteristic D			PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
					Article No. www.siemens.com/ product?Article.No.	Price per PU	PG DT	Article No. www.siemens.com/ product?Article.No.	Price per PU	PG				
Miniature circuit breakers 10000 A														
	1P, 230/400 V AC													
	0.3	1	5SY4114-7		002		5SY4114-8		1	1 unit	002	0.173		
	0.5		5SY4105-7		002		5SY4105-8		1	1 unit	002	0.171		
	1		5SY4101-7		002		5SY4101-8		1	1 unit	002	0.165		
	1.6		5SY4115-7		002		5SY4115-8		1	1 unit	002	0.164		
	2	▶	5SY4102-7		002		5SY4102-8		1	1/12 units	002	0.151		
	3		5SY4103-7		002		5SY4103-8		1	1 unit	002	0.165		
	4	▶	5SY4104-7		002		5SY4104-8		1	1/12 units	002	0.147		
	5		5SY4111-7		002		--							
	6	▶	5SY4106-7		002		5SY4106-8		1	1 unit	002	0.161		
	8		5SY4108-7		002		5SY4108-8		1	1 unit	002	0.155		
	10	▶	5SY4110-7		002		5SY4110-8		1	1/12 units	002	0.147		
	13		5SY4113-7		002		5SY4113-8		1	1 unit	002	0.157		
	15		5SY4118-7		002		--							
	16	▶	5SY4116-7		002		5SY4116-8		1	1 unit	002	0.157		
	20		5SY4120-7		002		5SY4120-8		1	1 unit	002	0.162		
	25		5SY4125-7		002		5SY4125-8		1	1 unit	002	0.160		
	30		5SY4130-7		002		--							
	32		5SY4132-7		002		5SY4132-8		1	1 unit	002	0.167		
	35		5SY4135-7		002		--							
	40		5SY4140-7		002		5SY4140-8		1	1 unit	002	0.174		
45		5SY4145-7		002		--								
50		5SY4150-7		002		5SY4150-8		1	1 unit	002	0.164			
60		5SY4160-7		002		--								
63		5SY4163-7		002		5SY4163-8		1	1 unit	002	0.154			
80		5SY4180-7		002		--								
	1P+N, 230 V AC													
	0.3	2	5SY4514-7		002		5SY4514-8		1	1 unit	002	0.324		
	0.5		5SY4505-7		002		5SY4505-8		1	1 unit	002	0.340		
	1		5SY4501-7		002		5SY4501-8		1	1 unit	002	0.320		
	1.6		5SY4515-7		002		5SY4515-8		1	1 unit	002	0.321		
	2		5SY4502-7		002		5SY4502-8		1	1 unit	002	0.317		
	3		5SY4503-7		002		5SY4503-8		1	1 unit	002	0.312		
	4		5SY4504-7		002		5SY4504-8		1	1 unit	002	0.308		
	6		5SY4506-7		002		5SY4506-8		1	1 unit	002	0.289		
	8		5SY4508-7		002		5SY4508-8		1	1 unit	002	0.307		
	10		5SY4510-7		002		5SY4510-8		1	1 unit	002	0.301		
	13		5SY4513-7		002		5SY4513-8		1	1 unit	002	0.301		
	16		5SY4516-7		002		5SY4516-8		1	1 unit	002	0.298		
	20		5SY4520-7		002		5SY4520-8		1	1 unit	002	0.317		
	25		5SY4525-7		002		5SY4525-8		1	1 unit	002	0.313		
	32		5SY4532-7		002		5SY4532-8		1	1 unit	002	0.323		
	40		5SY4540-7		002		5SY4540-8		1	1 unit	002	0.326		
50		5SY4550-7		002		5SY4550-8		1	1 unit	002	0.322			
63		5SY4563-7		002		5SY4563-8		1	1 unit	002	0.324			
80		5SY4580-7		002		--								
	2P, 400 V AC													
	0.3	2	5SY4214-7		002		5SY4214-8		1	1 unit	002	0.322		
	0.5		5SY4205-7		002		5SY4205-8		1	1 unit	002	0.326		
	1		5SY4201-7		002		5SY4201-8		1	1 unit	002	0.339		
	1.6		5SY4215-7		002		5SY4215-8		1	1 unit	002	0.321		
	2	▶	5SY4202-7		002		5SY4202-8		1	1 unit	002	0.319		
	3		5SY4203-7		002		5SY4203-8		1	1 unit	002	0.317		
	4		5SY4204-7		002		5SY4204-8		1	1 unit	002	0.289		
	5		5SY4211-7		002		--							
	6	▶	5SY4206-7		002		5SY4206-8		1	1 unit	002	0.310		
	8		5SY4208-7		002		5SY4208-8		1	1 unit	002	0.303		
	10	▶	5SY4210-7		002		5SY4210-8		1	1 unit	002	0.299		
	13		5SY4213-7		002		5SY4213-8		1	1 unit	002	0.307		
	15		5SY4218-7		002		--							
	16	▶	5SY4216-7		002		5SY4216-8		1	1 unit	002	0.303		
	20		5SY4220-7		002		5SY4220-8		1	1 unit	002	0.321		
	25		5SY4225-7		002		5SY4225-8		1	1 unit	002	0.323		
	30		5SY4230-7		002		--							
	32		5SY4232-7		002		5SY4232-8		1	1 unit	002	0.330		
	35		5SY4235-7		002		--							
	40		5SY4240-7		002		5SY4240-8		1	1 unit	002	0.327		
45		5SY4245-7		002		--								
50		5SY4250-7		002		5SY4250-8		1	1 unit	002	0.328			
60		5SY4260-7		002		--								
63		5SY4263-7		002		5SY4263-8		1	1 unit	002	0.325			
80		5SY4280-7		002		--								

* You can order this quantity or a multiple thereof.