

Application

Siemens' UL 1077 Supplementary Protectors are designed to provide additional protection along with a branch circuit protection device. Since our Supplementary protectors are made to trip faster than a standard UL 489 Circuit Breaker they are able to provide additional protection for more sensitive devices inside the panel. Supplementary protectors can be used in a number of industrial applications such as to provide selectivity for multiple motor control circuits on the secondary side of a control transformer or power supply by allowing the user to quickly find the problem circuit should a fault occur without having to shut down all of the other control circuits. Supplementary protectors may also be used as a local disconnecting means inside the panel when a branch circuit protection device is already present.

Always remember to follow the National Electric code when wiring your panel for applications within the United States.

Design

Supplementary protectors are equipped with a delayed overload/time-dependent thermal release (thermal bimetal) for low overcurrents and with an instantaneous electromagnetic release for high overload and short-circuit currents.

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

Mode of operation

Thanks to the extremely fast contact separation in cases of failures and the rapid quenching of the arc consequently generated in the arcing chamber, supplementary protectors assure a safe and current-limiting off-switching.

The permissible limit- I^2t -values of the energy limitation class 3 specified in EN 60 898 are generally undercut. This guarantees an excellent selectivity towards upstream overcurrent protection devices.

Features

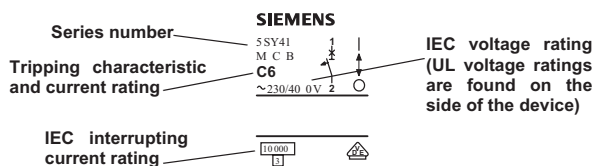
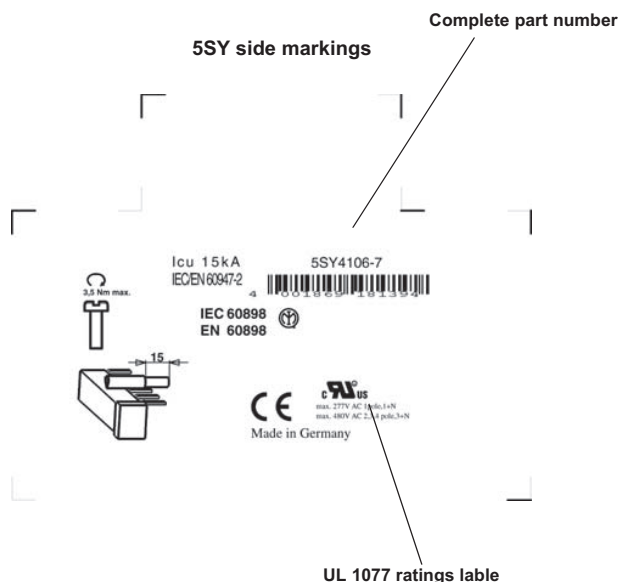
- High rated breaking capacity of up to 10,000 A acc. to EN 60 898 / up to 15 kA acc. to EN 60 947-2
- Excellent current limiting and selectivity characteristics
- Tripping characteristic A, B, C and D
- Terminals offer protection against contact with fingers or the back of the hand acc. to the German accident prevention regulations VBG 4/ BGV A2
- Combined terminals enable a simultaneous connection of busbars and feeder cables
- Uniform components that can be quickly mounted individually, thanks to their snap-on technique
- The handle locking device virtually prevents any unauthorized operation of the handle

Features of 5SY

- Rapid connection of the feeder cable in front of the busbar
- Identical terminals at both sides for an optional infeed from the top or the bottom
- No tool required for mounting or dismounting
- Supports a fast and comfortable removal from the assembly
- Trip indication

Features of 5SP4

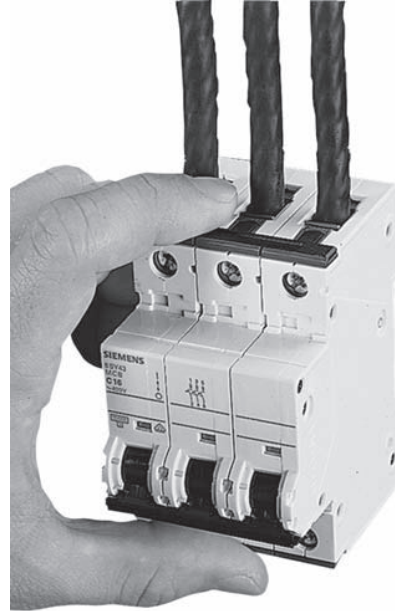
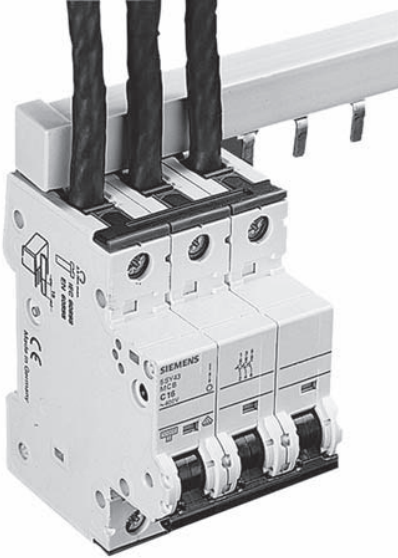
- Disconnection characteristics acc. to EN 60947-3 (DIN VDE 0660 Part 107)
- Main switch characteristics acc. to EN 60 204-1
- Can be screwed onto bases
- Separate switch position indication.

Device markings**5SY Front Markings****5SY side markings**

5SY4 Supplementary Protection

Overview

Features of 5SY supplementary protectors

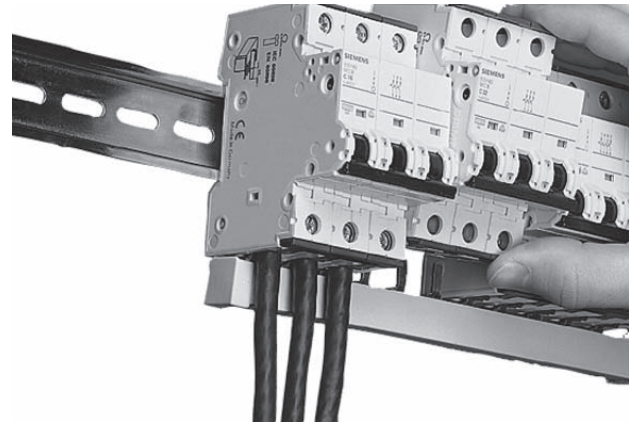
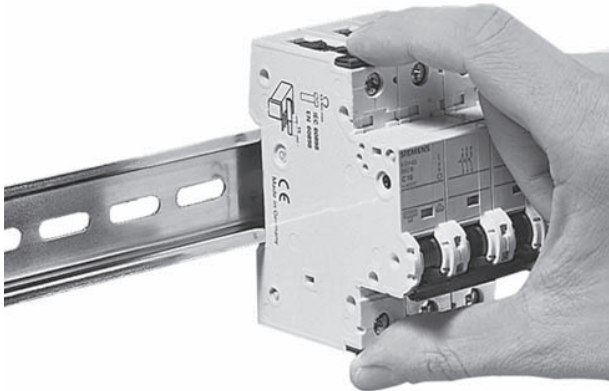


Easier, faster, enlarged wiring space

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

Protection against contact with clear advantages

- Integrated movable terminal covers located at the feeder cable input
- The terminals are completely closed when screws are fully tightened
- Effective protection against contact, also when the device is fully grabbed



Flexible and no use of tools required

- Manually operable quick-assembly and disassembly systems requiring no use of tools
- Fast assembly and disassembly of 5SY supplementary protectors to and from the standard mounting rail.
- All devices can be easily and comfortably replaced at any time.

Removal from the assembly

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

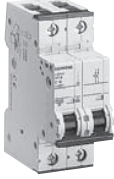
5SY4 Supplementary Protection

5SY4 70 mm mounting depth

Features

All 5SY4 designs have been certified to **UL 1077 and CSA 22.2 No. 235-M 89** and can therefore be used as "supplementary protectors" for applications up to 277 V AC (1-pole and 1-pole + N designs) and 480 V AC (2-pole, 3-pole, 3-pole + N and 4-pole designs).

Selection and ordering data

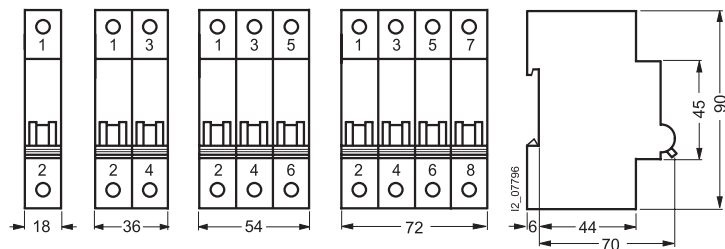
	I_n	MW	Characteristic A		Characteristic B		Characteristic C		Characteristic D		Weight 1 item kg
			Order No.	List Price \$ 1 item	Order No.	List Price \$ 1 item	Order No.	List Price \$ 1 item	Order No.	List Price \$ 1 item	
 1-pole 	A										0.165
	0.3	1	—	—	—	—	5SY4 114-7	—	5SY4 114-8	—	
	0.5		5SY4 105-5	—	—	—	5SY4 105-7	—	5SY4 105-8	—	
	1		5SY4 101-5	—	—	—	5SY4 101-7	—	5SY4 101-8	—	
	1.6		5SY4 115-5	—	—	—	5SY4 115-7	—	5SY4 115-8	—	
	2		5SY4 102-5	—	5SY4 102-6	—	5SY4 102-7	—	5SY4 102-8	—	
	3		5SY4 103-5	—	—	—	5SY4 103-7	—	5SY4 103-8	—	
	4		5SY4 104-5	—	5SY4 104-6	—	5SY4 104-7	—	5SY4 104-8	—	
	5		—	—	—	—	5SY4 111-7	—	—	—	
	6		5SY4 106-5	—	5SY4 106-6	—	5SY4 106-7	—	5SY4 106-8	—	
	8		5SY4 108-5	—	—	—	5SY4 108-7	—	5SY4 108-8	—	
	10		5SY4 110-5	—	5SY4 110-6	—	5SY4 110-7	—	5SY4 110-8	—	
	13		5SY4 113-5	—	5SY4 113-6	—	5SY4 113-7	—	5SY4 113-8	—	
	15		—	—	—	—	5SY4 118-7	—	—	—	
	16		5SY4 116-5	—	5SY4 116-6	—	5SY4 116-7	—	5SY4 116-8	—	
	20		5SY4 120-5	—	5SY4 120-6	—	5SY4 120-7	—	5SY4 120-8	—	
	25		5SY4 125-5	—	5SY4 125-6	—	5SY4 125-7	—	5SY4 125-8	—	
	30		—	—	—	—	5SY4 130-7	—	—	—	
	32		5SY4 132-5	—	5SY4 132-6	—	5SY4 132-7	—	5SY4 132-8	—	
	35		—	—	—	—	5SY4 135-7	—	—	—	
	40		5SY4 140-5	—	5SY4 140-6	—	5SY4 140-7	—	5SY4 140-8	—	
 1-pole + N 	0.3	2	—	—	—	—	5SY4 514-7	—	5SY4 514-8	—	0.330
	0.5		—	—	—	—	5SY4 505-7	—	5SY4 505-8	—	
	1		5SY4 501-5	—	—	—	5SY4 501-7	—	5SY4 501-8	—	
	1.6		5SY4 515-5	—	—	—	5SY4 515-7	—	5SY4 515-8	—	
	2		5SY4 502-5	—	—	—	5SY4 502-7	—	5SY4 502-8	—	
	3		5SY4 503-5	—	—	—	5SY4 503-7	—	5SY4 503-8	—	
	4		5SY4 504-5	—	—	—	5SY4 504-7	—	5SY4 504-8	—	
	6		5SY4 506-5	—	5SY4 506-6	—	5SY4 506-7	—	5SY4 506-8	—	
	8		5SY4 508-5	—	—	—	5SY4 508-7	—	5SY4 508-8	—	
	10		5SY4 510-5	—	5SY4 510-6	—	5SY4 510-7	—	5SY4 510-8	—	
	13		5SY4 513-5	—	5SY4 513-6	—	5SY4 513-7	—	5SY4 513-8	—	
	16		5SY4 516-5	—	5SY4 516-6	—	5SY4 516-7	—	5SY4 516-8	—	
	20		5SY4 520-5	—	5SY4 520-6	—	5SY4 520-7	—	5SY4 520-8	—	
	25		5SY4 525-5	—	5SY4 525-6	—	5SY4 525-7	—	5SY4 525-8	—	
	32		5SY4 532-5	—	5SY4 532-6	—	5SY4 532-7	—	5SY4 532-8	—	
 2-pole 	0.3	2	—	—	—	—	5SY4 214-7	—	5SY4 214-8	—	0.330
	0.5		5SY4 205-5	—	—	—	5SY4 205-7	—	5SY4 205-8	—	
	1		5SY4 201-5	—	—	—	5SY4 201-7	—	5SY4 201-8	—	
	1.6		5SY4 215-5	—	—	—	5SY4 215-7	—	5SY4 215-8	—	
	2		5SY4 202-5	—	—	—	5SY4 202-7	—	5SY4 202-8	—	
	3		5SY4 203-5	—	—	—	5SY4 203-7	—	5SY4 203-8	—	
	4		5SY4 204-5	—	—	—	5SY4 204-7	—	5SY4 204-8	—	
	5		—	—	—	—	5SY4 211-7	—	—	—	
	6		5SY4 206-5	—	5SY4 206-6	—	5SY4 206-7	—	5SY4 206-8	—	
	8		5SY4 208-5	—	—	—	5SY4 208-7	—	5SY4 208-8	—	
	10		5SY4 210-5	—	5SY4 210-6	—	5SY4 210-7	—	5SY4 210-8	—	
	13		5SY4 213-5	—	5SY4 213-6	—	5SY4 213-7	—	5SY4 213-8	—	
	15		—	—	—	—	5SY4 218-7	—	—	—	
	16		5SY4 216-5	—	5SY4 216-6	—	5SY4 216-7	—	5SY4 216-8	—	
	20		5SY4 220-5	—	5SY4 220-6	—	5SY4 220-7	—	5SY4 220-8	—	
	25		5SY4 225-5	—	5SY4 225-6	—	5SY4 225-7	—	5SY4 225-8	—	
	30		—	—	—	—	5SY4 230-7	—	—	—	
	32		5SY4 232-5	—	5SY4 232-6	—	5SY4 232-7	—	5SY4 232-8	—	
	35		—	—	—	—	5SY4 235-7	—	—	—	
	40		5SY4 240-5	—	5SY4 240-6	—	5SY4 240-7	—	5SY4 240-8	—	
	45		—	—	—	—	5SY4 245-7	—	—	—	
	50		5SY4 250-5	—	5SY4 250-6	—	5SY4 250-7	—	5SY4 250-8	—	
	60		—	—	—	—	5SY4 260-7	—	—	—	
	63		5SY4 263-5	—	5SY4 263-6	—	5SY4 263-7	—	5SY4 263-8	—	

1 MW = modular width
of 18 mm. Depth = 70
mm.

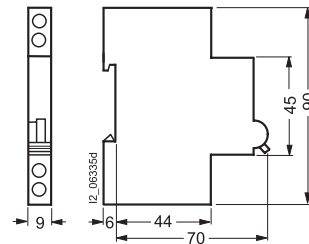
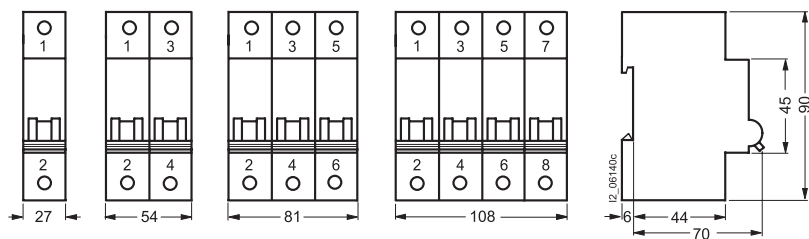
Technical data

		5SY4	5SY6	5SY5	5SP4
Standards		EN60898 EN 60947-2 UL 1077; CSA C22.2 No. 235	EN60898 EN 60947-2 UL 1077; CSA C22.2 No. 235	EN60898 EN 60947-2	EN60898 EN 60947-2 UL 1077; CSA C22.2 No. 235
Certifications		cE; cURus, UL File No. E116386	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	B, C, D
Number of poles		1, 1+N, 2, 3, 3+N, 4	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 22.2 No. 235	Min. V AC/DC	24	24	24	24
	Max. V DC/pole	60 ¹⁾	60 ¹⁾	250	60 ¹⁾
	Max. V AC	400	400	400	400
	Max. V AC V DC/pole	480Y/277 —	480Y/277	—	480Y/277
Interrupting rating					
I _{cn} to IEC/EN 60898-1	kA AC	10	6	10	10
I _{cn} to IEC/EN 60898-2	kA AC	10	10	10	10
– UL 1077 and CSA 22.2 No. 235	120/240, 240 V: kA AC	14	14	Not UL Rated	14
AC: Max. RMS Symmetrical	240 V: kA AC	7.5	7.5		7.5
	277 V: kA AC	5	5		5
	480 V: kA AC	5	5		5
Touch Protection to EN 50274-1		Yes			
Degree of protection to EN 60529		IP20, with connected conductors			
CFC and silicone free		Yes			
Mounting					
– Snap-on mounting		Yes			—
– Standard mounting rail and mounting		—			Yes
Device Depth	mm	70			
Terminals					
– Tunnel Terminals at both ends		—	—	—	Yes
– Combined terminals at both ends		Yes	Yes	Yes	—
– Terminal, solid, stranded or finely stranded with end sleeve	mm ²	0.75 to 25			
– Terminal tightening torque	lb. in.	22 to 26			
	Nm	2.5 to 3			
Conductor cross sections					
– Solid and stranded	mm ²	0.75 to 35			
– Finely stranded, with end sleeve	mm ²	0.75 to 25			
	AWG	14 to 4			
Calibration Base	°C	30 (EN 60898)			
Average service life, with rated load	Operations	20,000	20,000	20,000 (above 40A: 10, 000)	20,000
Ambient temperature	°C	-25 to 45, occasionally +55, max. 95% humidity			
Storage Temperature	°C	-40 to +75			
Resistance to vibration to IEC 60068-2-6	m/s ²	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.

5SY4, 5SY5, 5SY6 supplementary protectors**5ST3 auxiliary switch
5ST3 fault signal contact**

can be used with 5SY4, 5SY5, 5SY6, 5SP4

**5SP4 supplementary protectors****5ST3 shunt trip
5ST3 undervoltage release**can be used with
5SY4, 5SY5, 5SY6, 5SP4