

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

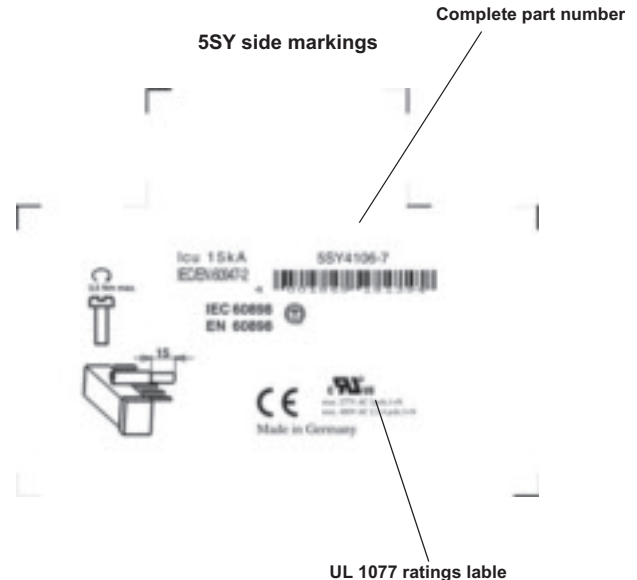
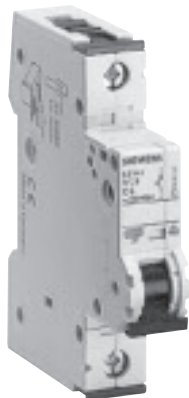
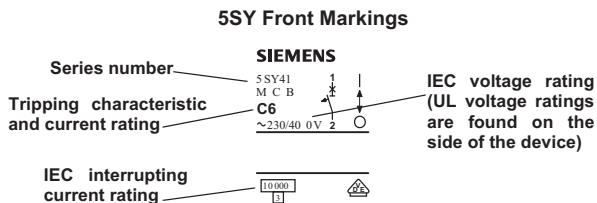
Features of 5SY

- 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

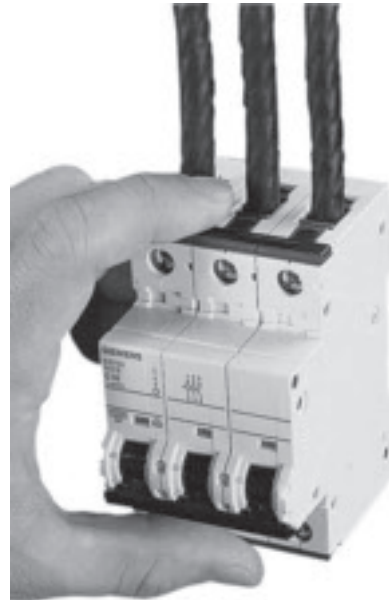


Control Circuit Protection

5SY4 Supplementary Protection

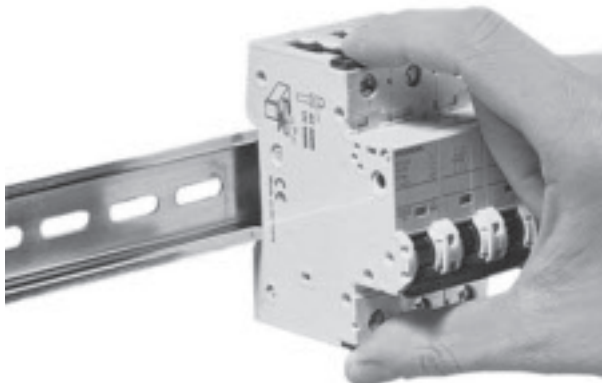
Overview

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.



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.

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



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.

Control Circuit Protection







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 \$	Order No.	List Price \$	Order No.	List Price \$	Order No.	List Price \$	
1-pole											
	A		—	1 item	—	1 item	5SY4 114-7	1 item	5SY4 114-8	1 item	0.165
		0.3	1	—	—	—	5SY4 105-7	—	5SY4 105-8	—	
		0.5	—	5SY4 105-5	—	—	5SY4 101-7	—	5SY4 101-8	—	
		1	—	5SY4 101-5	—	—	5SY4 115-7	—	5SY4 115-8	—	
		1.6	—	5SY4 115-5	—	—	5SY4 102-7	—	5SY4 102-8	—	
		2	—	5SY4 102-5	—	—	5SY4 103-7	—	5SY4 103-8	—	
		3	—	5SY4 103-5	—	—	5SY4 104-7	—	5SY4 104-8	—	
		4	—	5SY4 104-5	—	—	5SY4 111-7	—	—	—	
		5	—	—	—	—	5SY4 106-7	5SY4 106-6	5SY4 106-8	5SY4 106-8	
		6	—	5SY4 106-5	—	—	5SY4 108-7	—	5SY4 108-8	—	
		8	—	5SY4 108-5	—	—	5SY4 110-7	5SY4 110-6	5SY4 110-8	5SY4 110-8	
		10	—	5SY4 110-5	—	—	5SY4 113-7	5SY4 113-6	5SY4 113-8	5SY4 113-8	
		13	—	5SY4 113-5	—	—	5SY4 118-7	—	—	—	
		15	—	—	—	—	5SY4 116-7	5SY4 116-6	5SY4 116-8	5SY4 116-8	
		16	—	5SY4 116-5	—	—	5SY4 120-7	5SY4 120-6	5SY4 120-8	5SY4 120-8	
		20	—	5SY4 120-5	—	—	5SY4 125-7	5SY4 125-6	5SY4 125-8	5SY4 125-8	
		25	—	5SY4 125-5	—	—	5SY4 130-7	—	—	—	
		30	—	—	—	—	5SY4 132-7	5SY4 132-6	5SY4 132-8	5SY4 132-8	
		32	—	5SY4 132-5	—	—	5SY4 135-7	—	—	—	
35	—	—	—	—	5SY4 140-7	5SY4 140-6	5SY4 140-8	5SY4 140-8			
40	—	5SY4 140-5	—	—	5SY4 145-7	—	—	—			
45	—	—	—	—	5SY4 150-7	5SY4 150-6	5SY4 150-8	5SY4 150-8			
50	—	5SY4 150-5	—	—	5SY4 160-7	—	—	—			
60	—	—	—	—	5SY4 163-7	5SY4 163-6	5SY4 163-8	5SY4 163-8			
63	—	5SY4 163-5	—	—	—	—	—	—			
1-pole + N											
	A		—	—	—	5SY4 514-7	—	5SY4 514-8	—	0.330	
		0.3	2	—	—	—	5SY4 505-7	—	5SY4 505-8		—
		0.5	—	—	—	—	5SY4 501-7	—	5SY4 501-8		—
		1	—	5SY4 501-5	—	—	5SY4 515-7	—	5SY4 515-8		—
		1.6	—	5SY4 515-5	—	—	5SY4 502-7	—	5SY4 502-8		—
		2	—	5SY4 502-5	—	—	5SY4 503-7	—	5SY4 503-8		—
		3	—	5SY4 503-5	—	—	5SY4 504-7	—	5SY4 504-8		—
		4	—	5SY4 504-5	—	—	5SY4 506-7	5SY4 506-6	5SY4 506-8		5SY4 506-8
		6	—	5SY4 506-5	—	—	5SY4 508-7	—	5SY4 508-8		—
		8	—	5SY4 508-5	—	—	5SY4 510-7	5SY4 510-6	5SY4 510-8		5SY4 510-8
		10	—	5SY4 510-5	—	—	5SY4 513-7	5SY4 513-6	5SY4 513-8		5SY4 513-8
		13	—	5SY4 513-5	—	—	5SY4 516-7	5SY4 516-6	5SY4 516-8		5SY4 516-8
		16	—	5SY4 516-5	—	—	5SY4 520-7	5SY4 520-6	5SY4 520-8		5SY4 520-8
		20	—	5SY4 520-5	—	—	5SY4 525-7	5SY4 525-6	5SY4 525-8		5SY4 525-8
		25	—	5SY4 525-5	—	—	5SY4 532-7	5SY4 532-6	5SY4 532-8		5SY4 532-8
32	—	5SY4 532-5	—	—	5SY4 540-7	5SY4 540-6	5SY4 540-8	5SY4 540-8			
40	—	5SY4 540-5	—	—	5SY4 550-7	5SY4 550-6	5SY4 550-8	5SY4 550-8			
50	—	5SY4 550-5	—	—	5SY4 563-7	5SY4 563-6	5SY4 563-8	5SY4 563-8			
63	—	5SY4 563-5	—	—	—	—	—	—			
2-pole											
	A		—	—	—	5SY4 214-7	—	5SY4 214-8	—	0.330	
		0.3	2	—	—	—	5SY4 205-7	—	5SY4 205-8		—
		0.5	—	—	—	—	5SY4 201-7	—	5SY4 201-8		—
		1	—	5SY4 201-5	—	—	5SY4 215-7	—	5SY4 215-8		—
		1.6	—	5SY4 215-5	—	—	5SY4 202-7	—	5SY4 202-8		—
		2	—	5SY4 202-5	—	—	5SY4 203-7	—	5SY4 203-8		—
		3	—	5SY4 203-5	—	—	5SY4 204-7	—	5SY4 204-8		—
		4	—	5SY4 204-5	—	—	5SY4 211-7	—	—		—
		5	—	—	—	—	5SY4 206-7	5SY4 206-6	5SY4 206-8		5SY4 206-8
		6	—	5SY4 206-5	—	—	5SY4 208-7	—	5SY4 208-8		—
		8	—	5SY4 208-5	—	—	5SY4 210-7	5SY4 210-6	5SY4 210-8		5SY4 210-8
		10	—	5SY4 210-5	—	—	5SY4 213-7	5SY4 213-6	5SY4 213-8		5SY4 213-8
		13	—	5SY4 213-5	—	—	5SY4 218-7	—	—		—
		15	—	—	—	—	5SY4 216-7	5SY4 216-6	5SY4 216-8		5SY4 216-8
		16	—	5SY4 216-5	—	—	5SY4 220-7	5SY4 220-6	5SY4 220-8		5SY4 220-8
		20	—	5SY4 220-5	—	—	5SY4 225-7	5SY4 225-6	5SY4 225-8		5SY4 225-8
		25	—	5SY4 225-5	—	—	5SY4 230-7	—	—		—
		30	—	—	—	—	5SY4 232-7	5SY4 232-6	5SY4 232-8		5SY4 232-8
		32	—	5SY4 232-5	—	—	5SY4 235-7	—	—		—
35	—	—	—	—	5SY4 240-7	5SY4 240-6	5SY4 240-8	5SY4 240-8			
40	—	5SY4 240-5	—	—	5SY4 245-7	—	—	—			
45	—	—	—	—	5SY4 250-7	5SY4 250-6	5SY4 250-8	5SY4 250-8			
50	—	5SY4 250-5	—	—	5SY4 260-7	—	—	—			
60	—	—	—	—	5SY4 263-7	5SY4 263-6	5SY4 263-8	5SY4 263-8			
63	—	5SY4 263-5	—	—	—	—	—	—			

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

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




Control Circuit Protection

5SY4 Supplementary Protection

5SY4 70 mm mounting depth

Selection and ordering data

All 5SY4 designs have been certified acc. to **UL 1077 and CSA 22.2 No. 235-M 89** and can therefore be used as "supplementary protectors" for applications of 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).

	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	
 <p>3-pole</p> 	0.3	3	—	—	—	5SY4 314-7	5SY4 314-8	0.495			
	0.5		—	—	—	5SY4 305-7	5SY4 305-8				
	1		5SY4 301-5	—	—	5SY4 301-7	5SY4 301-8				
	1.6		5SY4 315-5	—	—	5SY4 315-7	5SY4 315-8				
	2		5SY4 302-5	—	—	5SY4 302-7	5SY4 302-8				
	3		5SY4 303-5	—	—	5SY4 303-7	5SY4 303-8				
	4		5SY4 304-5	—	—	5SY4 304-7	5SY4 304-8				
	5		—	—	—	5SY4 311-7	—				
	6		5SY4 306-5	5SY4 306-6	5SY4 306-7	5SY4 306-8					
	8		5SY4 308-5	—	5SY4 308-7	5SY4 308-8					
	10		5SY4 310-5	5SY4 310-6	5SY4 310-7	5SY4 310-8					
	13		5SY4 313-5	5SY4 313-6	5SY4 313-7	5SY4 313-8					
	15		—	—	5SY4 318-7	—					
	16		5SY4 316-5	5SY4 316-6	5SY4 316-7	5SY4 316-8					
	20		5SY4 320-5	5SY4 320-6	5SY4 320-7	5SY4 320-8					
	25		5SY4 325-5	5SY4 325-6	5SY4 325-7	5SY4 325-8					
	30		—	—	5SY4 330-7	—					
	32		5SY4 332-5	5SY4 332-6	5SY4 332-7	5SY4 332-8					
	35		—	—	5SY4 335-7	—					
40	5SY4 340-5	5SY4 340-6	5SY4 340-7	5SY4 340-8							
45	—	—	5SY4 345-7	—							
50	5SY4 350-5	5SY4 350-6	5SY4 350-7	5SY4 350-8							
60	—	—	5SY4 360-7	—							
63	5SY4 363-5	5SY4 363-6	5SY4 363-7	5SY4 363-8							
 <p>3-pole + N</p> 	0.3	4	—	—	5SY4 614-7	5SY4 614-8	0.660				
	0.5		—	—	5SY4 605-7	5SY4 605-8					
	1		5SY4 601-5	—	5SY4 601-7	5SY4 601-8					
	1.6		5SY4 615-5	—	5SY4 615-7	5SY4 615-8					
	2		5SY4 602-5	—	5SY4 602-7	5SY4 602-8					
	3		5SY4 603-5	—	5SY4 603-7	5SY4 603-8					
	4		5SY4 604-5	—	5SY4 604-7	5SY4 604-8					
	6		5SY4 606-5	5SY4 606-6	5SY4 606-7	5SY4 606-8					
	8		5SY4 608-5	—	5SY4 608-7	5SY4 608-8					
	10		5SY4 610-5	5SY4 610-6	5SY4 610-7	5SY4 610-8					
	13		5SY4 613-5	5SY4 613-6	5SY4 613-7	5SY4 613-8					
	16		5SY4 616-5	5SY4 616-6	5SY4 616-7	5SY4 616-8					
	20		5SY4 620-5	5SY4 620-6	5SY4 620-7	5SY4 620-8					
	25		5SY4 625-5	5SY4 625-6	5SY4 625-7	5SY4 625-8					
	32		5SY4 632-5	5SY4 632-6	5SY4 632-7	5SY4 632-8					
40	5SY4 640-5	5SY4 640-6	5SY4 640-7	5SY4 640-8							
50	5SY4 650-5	5SY4 650-6	5SY4 650-7	5SY4 650-8							
63	5SY4 663-5	5SY4 663-6	5SY4 663-7	5SY4 663-8							
 <p>4-pole</p> 	0.3	4	—	—	5SY4 414-7	5SY4 414-8	0.660				
	0.5		—	—	5SY4 405-7	5SY4 405-8					
	1		5SY4 401-5	—	5SY4 401-7	5SY4 401-8					
	1.6		5SY4 415-5	—	5SY4 415-7	5SY4 415-8					
	2		5SY4 402-5	—	5SY4 402-7	5SY4 402-8					
	3		5SY4 403-5	—	5SY4 403-7	5SY4 403-8					
	4		5SY4 404-5	—	5SY4 404-7	5SY4 404-8					
	6		5SY4 406-5	5SY4 406-6	5SY4 406-7	5SY4 406-8					
	8		5SY4 408-5	—	5SY4 408-7	5SY4 408-8					
	10		5SY4 410-5	5SY4 410-6	5SY4 410-7	5SY4 410-8					
	13		5SY4 413-5	5SY4 413-6	5SY4 413-7	5SY4 413-8					
	16		5SY4 416-5	5SY4 416-6	5SY4 416-7	5SY4 416-8					
	20		5SY4 420-5	5SY4 420-6	5SY4 420-7	5SY4 420-8					
	25		5SY4 425-5	5SY4 425-6	5SY4 425-7	5SY4 425-8					
	32		5SY4 432-5	5SY4 432-6	5SY4 432-7	5SY4 432-8					
40	5SY4 440-5	5SY4 440-6	5SY4 440-7	5SY4 440-8							
50	5SY4 450-5	5SY4 450-6	5SY4 450-7	5SY4 450-8							
63	5SY4 463-5	5SY4 463-6	5SY4 463-7	5SY4 463-8							

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





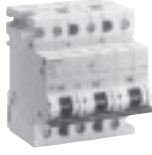

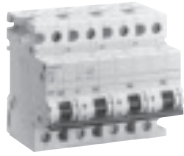

Control Circuit Protection Supplementary Protection, High-Current Product Range

5SP4 70 mm mounting depth

Features

5SP4 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 of up to 277 V AC (1-pole designs) and 480 V AC (2-pole, 3-pole, and 4-pole designs).

Selection and ordering data

	I_n	MW	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	
	1-pole								
		A							
		80 100 125	1.5	5SP4 180-6 5SP4 191-6 5SP4 192-6		5SP4 180-7 5SP4 191-7 5SP4 192-7		5SP4 180-8 5SP4 191-8 -	0.258
	2-pole								
		A							
		80 100 125	3	5SP4 280-6 5SP4 291-6 5SP4 292-6		5SP4 280-7 5SP4 291-7 5SP4 292-7		5SP4 280-8 5SP4 291-8 -	0.516
	3-pole								
		A							
		80 100 125	4.5	5SP4 380-6 5SP4 391-6 5SP4 392-6		5SP4 380-7 5SP4 391-7 5SP4 392-7		5SP4 380-8 5SP4 391-8 -	0.762
	4-pole								
		A							
		80 100 125	6	5SP4 480-6 5SP4 491-6 5SP4 492-6		5SP4 480-7 5SP4 491-7 5SP4 492-7		5SP4 480-8 5SP4 491-8 -	1.032

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

Control Circuit Protection



Supplementary Protection, AC/DC Product Range

5SY5 70 mm mounting depth

Features

- Operating voltage to EN 60898 and EN 60947-2
 - 220 V DC/pole max.
 - 440 V AC max.
- Standards: EN 60 898-1, DIN VDE 0641 Part 11, IEC 60 898
- Additional components can be retrofitted.
- **Devices do not comply with UL1077**

Selection and ordering data

	I_n	MW ¹⁾	Characteristic B		Characteristic C		Weight 1 item kg
			Order No.	List Price \$ 1 item	Order No.	List Price \$ 1 item	
1-pole							
	A	1	-	-	5SY5 114-7	-	0.147
	0.3	1	-	-	5SY5 105-7	-	
	0.5	1	-	-	5SY5 101-7	-	
	1	1	-	-	5SY5 115-7	-	
	1.6	1	5SY5 102-6	-	5SY5 102-7	-	
	2	1	-	-	5SY5 103-7	-	
	3	1	-	-	5SY5 104-7	-	
	4	1	5SY5 106-6	-	5SY5 106-7	-	
	6	1	-	-	5SY5 108-7	-	
	8	1	5SY5 110-6	-	5SY5 110-7	-	
	10	1	5SY5 113-6	-	5SY5 113-7	-	
	13	1	5SY5 116-6	-	5SY5 116-7	-	
	16	1	5SY5 120-6	-	5SY5 120-7	-	
	20	1	5SY5 125-6	-	5SY5 125-7	-	
	25	1	5SY5 132-6	-	5SY5 132-7	-	
	32 ¹⁾	1	5SY5 140-6	-	5SY5 140-7	-	
40	1	5SY5 150-6	-	5SY5 150-7	-		
50	1	5SY5 163-6	-	5SY5 163-7	-		
63	1						
2-pole							
	A	2	-	-	5SY5 214-7	-	0.304
	0.3	2	-	-	5SY5 205-7	-	
	0.5	2	-	-	5SY5 201-7	-	
	1	2	-	-	5SY5 215-7	-	
	1.6	2	5SY5 202-6	-	5SY5 202-7	-	
	2	2	-	-	5SY5 203-7	-	
	3	2	-	-	5SY5 204-7	-	
	4	2	5SY5 206-6	-	5SY5 206-7	-	
	6	2	-	-	5SY5 208-7	-	
	8	2	5SY5 210-6	-	5SY5 210-7	-	
	10	2	5SY5 213-6	-	5SY5 213-7	-	
	13	2	5SY5 216-6	-	5SY5 216-7	-	
	16	2	5SY5 220-6	-	5SY5 220-7	-	
	20	2	5SY5 225-6	-	5SY5 225-7	-	
	25	2	5SY5 232-6	-	5SY5 232-7	-	
	32	2	5SY5 240-6	-	5SY5 240-7	-	
40	2	5SY5 250-6	-	5SY5 250-7	-		
50	2	5SY5 263-6	-	5SY5 263-7	-		
63	2						

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

Control Circuit Protection Supplementary Protection

Additional components for 5SY4, 5SY5 and 5SP4 supplementary protectors

Features

- UL Recognized to UL 1077 (5ST3 010, 011, 012, 020, 021 & 022)
- Individual retrofitting possible
- Assembly via factory-fitted clips
- Short-circuit protection via supplementary protectors of characteristic B or C and $I_n = 6\text{ A}$ or 6 A gL fuses
- Low output versions in accordance with EN 61131-2 for controlling PLCs

Design

Auxiliary switches (AS) and fault signal contacts (FC) (5ST30.0, 5ST30.1, 5ST30.2)

- Min. contact load: 50 mA, 24 V
- Max. contact load:
NO contacts:
2 A, 400 V AC, AC-14
6 A, 230 V AC, AC-14
1 A, 220 V DC, DC-13
1 A, 110 V DC, DC-13
3 A, 60 V DC, DC-13
6 A, 24 V DC, DC-13
NC contacts:
2 A, 400 V AC, AC-13
6 A, 230 V AC, AC-13
1 A, 220 V DC, DC-13
1 A, 110 V DC, DC-13
3 A, 60 V DC, DC-13
6 A, 24 V DC, DC-13
- Connectable to *instabus EIB* and AS-Interface bus via binary inputs

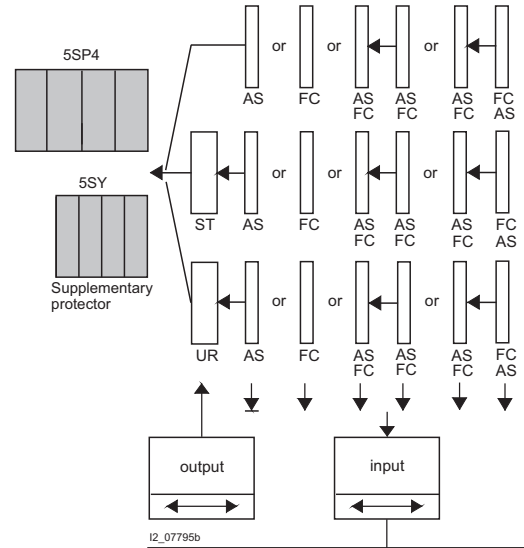
Auxiliary switches (AS) with low output (5ST3013, 5ST3014, 5ST3015)

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

Application

Indication of the supplementary protectors' switching state:

- AS: ON/OFF
- FC: tripped



Selection and ordering data

	MW	Order No.	List Price \$ 1 item	Price group	Weight 1 item kg
	Auxiliary switches (AS) for 5SY4, 5SY5, 5SP4 supplementary protectors				
		1 NO + 1 NC, 0.5	5ST3 010		0.050
		1 NO + 1 NC, low output ¹⁾	5ST3 013		
		2 NO	5ST3 011		
		2 NO, low output ¹⁾	5ST3 014		
	Fault signal contacts (FC) for 5SY4, 5SY5, 5SP4 supplementary protectors				
		1 NO + 1 NC 0.5	5ST3 020		0.050
		2 NO	5ST3 021		
		2 NC	5ST3 022		

¹⁾Not UL Rated.

Control Circuit Protection Supplementary Protection

Additional components for 5SY4, 5SY5 and 5SP4 supplementary protectors

Features


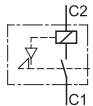
Shunt trips

- Response limits acc. to DIN VDE 0660 Part 100, 7.2.1.4
- Suitable for voltages: 110 to 415 V AC, 110 V AC, 24 to 48 V AC/DC

Application

Remote tripping of the supplementary protectors

Selection and ordering data

		MW	Order No.	List Price \$	Price group	Weight 1 item
				1 item		kg
	Shunt trips (ST) for 5SY4, 5SY5, 5SP4 supplementary protectors 1) 	110-415 V AC	1	5ST3 030		0.098
		24-48 V AC/DC	1	5ST3 031		

Features


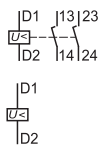
Undervoltage releases

- Response limits acc. to DIN VDE 0660 Part 100, 7.2.1.3
- Suitable for voltages: 230 V AC, 110 V DC, 24 V DC
- Connectable to *instabus EIB* and AS-Interface bus via binary inputs.

Application

- Applicable as remote trip in an EMERGENCY-OFF loop
- Assures disconnection of the control circuit acc. to EN 60 204
- In cases of interrupted or insufficient voltage, the undervoltage release trips the supplementary protector or prevents it from switching on.

Selection and ordering data

		MW	Order No.	List Price \$	Price group	Weight 1 item
				1 item		kg
	Undervoltage releases (UR) for 5SY4, 5SY5, 5SP4 supplementary protectors 1) 	230 V AC	1	5ST3 040		0.115
		110 V DC		5ST3 041		
		24 V DC		5ST3 042		
		230 V AC	1	5ST3 043		
		110 V DC		5ST3 044		
		24 V DC		5ST3 045		

1) Not UL/CSA Rated.

Control Circuit Protection Supplementary Protection Accessories

Accessories for
5SY and 5SP supplementary protectors

Features

- For use with 5SY and 5SP supplementary protectors
- UL and CSA Certified to UL 508

Selection and ordering data



	Length mm	For use with 5SY			For use with 5SP ³⁾		
		Order No.	List Price \$ 1 item	Weight 1 item kg	Order No.	List Price \$ 1 item	Weight 1 item kg
Busbars²⁾ without end caps (can be cut)							
1-pole	1000	5ST3 701-0HG		0.330	5ST3 701-2HG		0.450
1-pole + AS or FC ¹⁾		5ST3 703-0HG			-		
2-pole	1000	5ST3 705-0HG		0.508	5ST3 705-2HG		0.690
2-pole + AS or FC ¹⁾		5ST3 707-0HG			-		
3-pole	1000	5ST3 710-0HG		0.800	5ST3 710-2HG		1.090
3-pole + AS or FC ¹⁾		5ST3 712-0HG			-		
Busbar End Caps							
1-pole		5ST3 748-0HG		0.001	5ST3 748-0HG		0.001
2- & 3- pole		5ST3 750-0HG			5ST3 750-0HG		
Connection terminals							
	Wire size						
Infeed - MCBs	6 - 35 mm ² 10 - 1/0 AWG	5ST3 770-0HG		0.035	5ST3 770-0HG		0.035
Infeed - busbars	1.5 - 50 mm ² 14 - 1 AWG	5ST3 770-1HG		0.016	5ST3 770-1HG		0.016
Touch protection covers²⁾							
		5ST3 655-0HG		0.003	5ST3 655-0HG		0.003
	5 x 1 pin						

1) Used with appropriate pole supplementary protector + 1 auxiliary switch (AS) or 1 fault signal contact (FC).

2) Always cover all exposed terminals with touch protection covers 5ST3655-0HG.

3) Maximum 100 A for infeed at the start of a busbar.

Technical Data

		5ST3 7..-0HG	5ST3 7..-2HG	5ST3 770-0HG	5ST3 770-1HG
Standards		UL 508, CSA C22.2 No. 14-M 95,			
Certifications		UL 508 File No. E328403 CSA			
Operational voltage					
• IEC	V AC	690			
• UL 508	V AC	600			
Rated current	A	-	-	115	
Maximum busbar current I_s per phase					
• Infeed at the start of the busbar	A	80	100	-	-
• Infeed at the center of the busbar	A	160	200	-	-
Busbar cross-section	mm ² Cu	18	25	-	-
Conductor cross-sections					
	AWG	-	-	10-1/0	14-1
	mm ²	-	-	6-35	1.5-50
Terminals - terminal tightening torque					
	Nm	-	-	5	3.5
	lbs/in	-	-	50	35

Control Circuit Protection Supplementary Protection Accessories

Accessories for 5SY and 5SP supplementary protectors

Technical Data







Busbar system ¹⁾

- Acc. to DIN 57 606 and DIN 57 659
- Load for one-side/central infeed:
80 A/130 A for 16 mm²

- Pin-type connections
- Single and multi-phase
- Cu: 16 mm² and fully insulated
- Lug spacing: 18 mm

- No additional connection terminal required for stranded connections up to 35 mm²
- Excellent accessibility of the feeder cables
- Busbars do not comply with UL1077

Selection and ordering data

	Length mm	Order No.	List Price \$ 1 item	Price group	Weight 1 item kg
Accessories for 5SY4, 5SY5 miniature circuit-breakers					
		Busbars 16mm²			
		Fully insulated (Do not cut):			
	214	5ST3 700			0.040
		5ST3 702			
		5ST3 704			0.060
		5ST3 706			
		5ST3 708			0.100
		5ST3 711			
		5ST3 713			
		5ST3 715			0.150
		Without end caps (Can be cut):			
	1016	5ST3 701			0.190
		5ST3 703			
		5ST3 705			0.290
		5ST3 707			
		5ST3 710			0.430
		5ST3 712			
		5ST3 714			
		5ST3 716			0.700
		End caps for lateral insulation of cut-to-length busbars			
		5ST3 748			0.001
		5ST3 750			0.001
		5ST3 718			0.001
Accessories for 5SY4, 5SY5, 5SP4 supplementary protectors					
		Handle locking device applicable with all types of poles; sealable against unintended on- and off-switching; padlock with a shackle of max. 3 mm			
		5ST3 801		1 item	0.008
		Terminal cover applicable with all types of poles; as an additional cover for screw openings; prevents removal of the device from the standard mounting rail; sealable			
		5ST3 800		1 item	0.001
		Padlock for handle locking device 5ST3 801			
		5ST3 802		1 item	0.027
		Locking mechanism consisting of 5ST3 801 handle locking device and 5ST3 802 padlock			
		5ST3 803		1 item	0.035
		Inscription labels (white) for 5SY4, 5SY5, 5SP4 miniature circuit-breakers 15 x 9 mm, 3 frames containing 44 labels each, attachable to the lower casing collar • Self-adhesive			
		5ST2 173		1 item	0.038

1) Not UL/CSA Rated.

Technical data

		5SY4	5SY5	5SP4
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		Min. V AC/DC 24		
- EN 60898, EN 60947-2	Max. V DC/pole	60 ¹⁾	220	60 ¹⁾
	Max. V AC	440	440	440
- UL 1077 and CSA C22.2 No. 2352	Max. V AC	480	-	480
	V DC/pole	-	-	60
Interrupting rating				
- I _{cn} to IEC/EN 60898-1	kA AC	10	10	10
- I _{cn} to IEC/EN 60898-2	kA AC	-	10	-
- UL 1077 and CSA C22.2 No. 235	120/240, 240 V: kA AC	14	Not UL Rated	14
AC: Max. RMS Symmetrical	240 V: kA AC	7.5		7.5
	277 V: kA AC	5		5
	480 V: kA AC	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		-
- Terminal, solid, stranded or finely stranded with end sleeve	mm ²	0.75 to 25		0.75 to 25
- Terminal tightening torque	lb. in.	22 to 26		22 to 31
	Nm	2.5 to 3		2.5 to 3.5
Conductor cross sections				
- Solid and stranded	mm ²	0.75 to 35		0.75 to 50
- Finely stranded, with end sleeve	mm ²	0.75 to 25		0.75 to 35
	AWG	14 to 4		14 to 2
Calibration Base		°C	30 (EN 60898)	
Average service life, with rated load		Operations	20,000	20,000 (above 40A: 10,000)
Ambient temperature		°C	-25 to 45, occasionally +55, max. 95% humidity	
Storage Temperature		°C	-40 to +75	
Resistance to vibration to IEC 600068-2-6		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.

Control Circuit Protection

Supplementary Protection, General Data

Tripping characteristics and breaking capacity

Tripping characteristics

Tripping performance at an ambient temperature of 30 °C

Tripping characteristic	Standards	Thermal release				Electromagnetic release		
		Test currents:		tripping time		hold	trips at the latest at	tripping time
		low test current I_1	high test current I_2	$63 A \geq I_n$ t	$63 A \leq I_n$	I_4	I_5	t
A		$1.13 \times I_n$	$1.45 \times I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$> 2 \text{ h}$ $< 2 \text{ h}$	$2 \times I_n$	$3 \times I_n$	$\geq 0.1 \text{ s}$ $< 0.1 \text{ s}$
B	IEC 60 898/EN 60 898 DIN VDE 0641 Part 11	$1.13 \times I_n$	$1.45 \times I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$> 2 \text{ h}$ $< 2 \text{ h}$	$3 \times I_n$	$5 \times I_n$	$\geq 0.1 \text{ s}$ $< 0.1 \text{ s}$
C		$1.13 \times I_n$	$1.45 \times I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$> 2 \text{ h}$ $< 2 \text{ h}$	$5 \times I_n$	$10 \times I_n$	$\geq 0.1 \text{ s}$ $< 0.1 \text{ s}$
D		$1.13 \times I_n$	$1.45 \times I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$> 2 \text{ h}$ $< 2 \text{ h}$	$10 \times I_n$	$20 \times I_n$	$\geq 0.1 \text{ s}$ $< 0.1 \text{ s}$

(IEC 60 898: $50 \times I_n$)

Breaking capacity

Breaking capacity ratings for UL1077 are broken down in four main line voltages that are tested. These voltages shown in the table below.

For IEC ratings, there are special requirements with regard to the breaking capacity.

The values are standardized and determined according to the testing conditions of EN 60 898 and DIN VDE 0641 Part 11.

The most usual values are $6\,000$ and $10\,000$.

For other test conditions, other values can be specified which lie above those of EN 60 898 and DIN VDE 0641 Part 11.

An example of another standard is EN 60 947-2 or DIN VDE 0660 Part 101 for MCBs.

Interrupting Rating

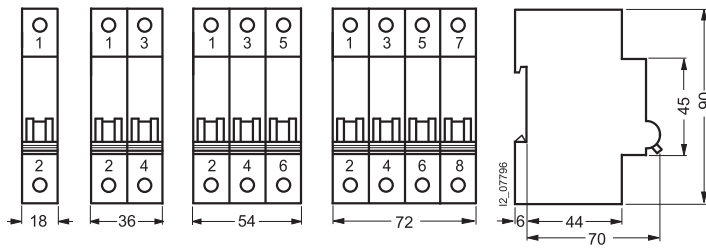
		UL 1077 1-pole 120/240 V AC (in pairs) 240 V AC		1-pole 240 V AC		1-pole 277 V AC		2-, 3-, 4-pole 480 V AC (3-phase)	
Rated current	I_n [A]	I_{cn} [kA]	I_{cn} [kA]	I_{cu} [kA]	I_{cu} [kA]	I_{cu} [kA]	I_{cu} [kA]	I_{cu} [kA]	I_{cu} [kA]
5SP4	80 - 125	14	7.5	5	5	5	5	5	5
5SY4	0.3 - 63	14	7.5	5	5	5	5	5	5

		UL 1077 1-pole 65 V DC		2-pole 125 V DC	
Rated current	I_n [A]	I_{cn} [A]	I_{cn} [A]	I_{cu} [A]	I_{cu} [A]
5SP4	80 - 125	400	600		
5SY4	0.3 - 63	400	600		

		EN 60 898 (IEC 60 898)		EN 60 947-2 (IEC 60 947-2)	
		1-pole 230 V AC	2-, 3-, 4-pole 400 V AC	1-pole 230 V AC	2-, 3-, 4-pole 400 V AC
Rated current	I_n [A]	I_{cn} [kA]	I_{cn} [kA]	I_{cu} [kA]	I_{cu} [kA]
5SP4	80 - 125	10	10	15	15
5SY4	0.3 ...6	10	10	35	35
	8 ...32	10	10	20	20
	40 ...63	10	10	15	15

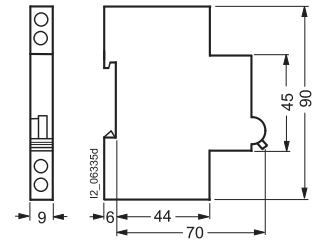
		EN 60 898-2		EN 60 898-2	
		1-pole 230 V AC	2-pole 400 V AC	1-pole 220 V DC	2-pole 440 V DC
Rated current	I_n [A]	I_{cn} [kA]	I_{cn} [kA]	I_{cn} [kA]	I_{cn} [kA]
5SY5	0.5 - 63	10	10	15	15

5SY4, 5SY5 supplementary protectors

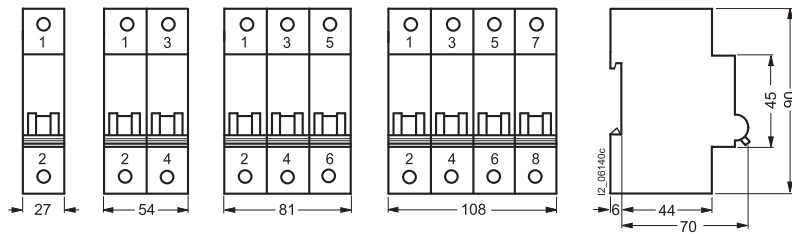


5ST3 auxiliary switch 5ST3 fault signal contact

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



5SP4 supplementary protectors



5ST3 shunt trip 5ST3 undervoltage release

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

