SIEMENS

Fuse Systems

Totally Integrated Power – SENTRON

Configu-ration Manual

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Cylindrical fuse links and cylindrical fuse holders

Overview

Cylindrical fuses are standard in Europe. There are a range of different cylindrical fuse links and holders that comply with the standards IEC 60269-1, -2 and -3, and which are suitable for use in industrial applications.
In South West Europe they are also approved for use in residential buildings.

The cylindrical fuse holders are also approved according to UL 512. The cylindrical fuse holders are tested and approved as fuse disconnectors according to the switching device standard IEC 60947-3. They are not suitable for switching loads.

Cylindrical fuse holders can be supplied with or without signal detectors. In the case of devices with signal detector, a small electronic device with LED is located behind an inspection window in the plug-in module. If the inserted fuse link is tripped, this is indicated by the LED flashing.

The switching state of the fuse holder can be signaled over a laterally retrofitted auxiliary switch, which enables the integration of the fuses in the automation process.

Benefits

- Devices with pole number 1P+N are available in a single modular width. This reduces the footprint by 50 %
- The sliding catch for type ranges 8 x 32 mm and 10 x 38 mm enables the removal of individual devices from the assembly
- Space for a spare fuse in the plug-in module enables the fast replacement of fuses. This saves time and money and increases system availability
- A flashing LED signals that a fuse link has been tripped. This enables fast detection during runtime

Technical specifications

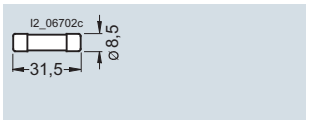
		Cylindrical fuse links						
		3NW63..	**3NW60..**	**3NW61..**	**3NW62..**	**3NW80..**	**3NW81..**	**3NW82..**
Size	mm × mm	8 × 32	10 × 38	14 × 51	22 × 58	10 × 38	14 × 51	22 × 58
Standards		IEC 60269-1, -2, -3; NF C 60-200; NF C 63-210, -211; NBN C 63269-2, CEI 32-4, -12						
Operational class		gG				aM		
Rated voltages U_n	V AC	400	400 or 500					
Rated current I_n	A	2 ... 20	0.5 ... 32	4 ... 50	8 ... 100	0.5 ... 32	2 ... 50	10 ... 100
Rated breaking capacity								
• 500 V versions	kA AC	--	120	100		120	100	
• 400 V versions	kA AC	20	120	20		120	20	
Mounting position		Any, preferably vertical						

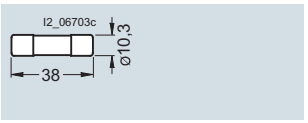
			Cylindrical fuse holders			
			3NW73..	**3NW70..**	**3NW71..**	**3NW72..**
Size		mm × mm	8 × 32	10 × 38	14 × 51	22 × 58
Standards			IEC 60269-1, -2, -3; NF C 60-200, NF C 63-210, -211; NBN C 63269-2-1; CEI 32-4, -12; UL 4248-1			
Approvals	Acc. to UL		--			--
	Acc. to CSA		--			--
Rated voltage U_n		V AC	400	690		
	Acc. to UL/CSA	V AC	400	600		
Rated current I_n		A AC	20	32	50	100
Rated breaking capacity		kA	20	100		
Breaking capacity • Utilization category			AC-20B (switching without load), DC-20B			
No-voltage changing Of fuse links			Yes			
Sealable When installed			Yes			
Mounting position			Any, preferably vertical			
Degree of protection	Acc. to IEC 60529		IP20, with connected conductors[1]			
Terminals with touch protection According to BGV A3 at incoming and outgoing feeder			Yes			
Ambient temperature		°C	-5 ... +40, humidity 90 % at +20			
Conductor cross-sections						
• Rigid		mm^2	0.5 ... 10		2.5 ... 10	4 ... 10
• Stranded		mm^2	0.5 ... 10		2.5 ... 25	4 ... 50
• Finely stranded, with end sleeve		mm^2	0.5 ... 10[2]		2.5 ... 16	4 ... 35
• AWG (American Wire Gauge)		AWG	--	10 ... 20	6 ... 10	--
Tightening torque		Nm	1.2		2.0	2.5

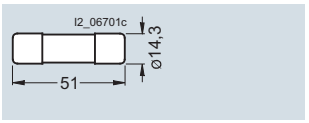
1) Degree of protection IP20 is tested according to the applicable regulations with a straight test finger (from the front); the device must be mounted and equipped with a cover or other enclosure.

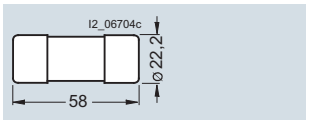
2) Max. cross-section 10 mm^2 with K28 crimper from Klauke.

Dimensional drawings

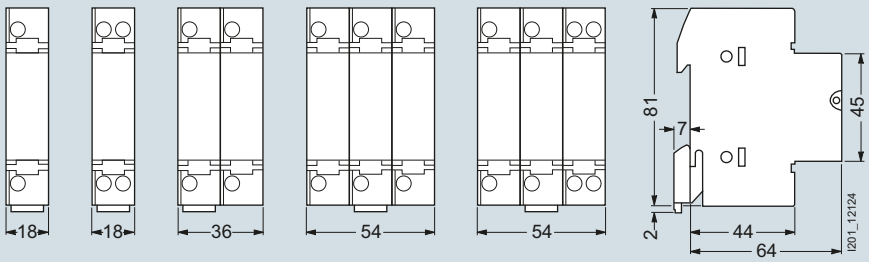




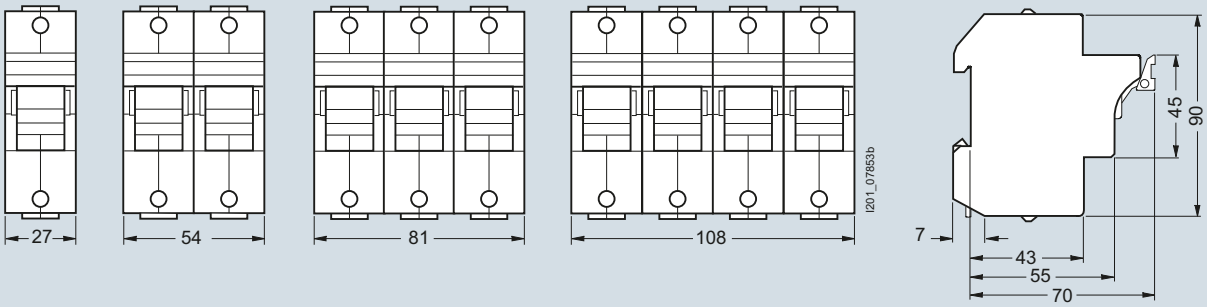




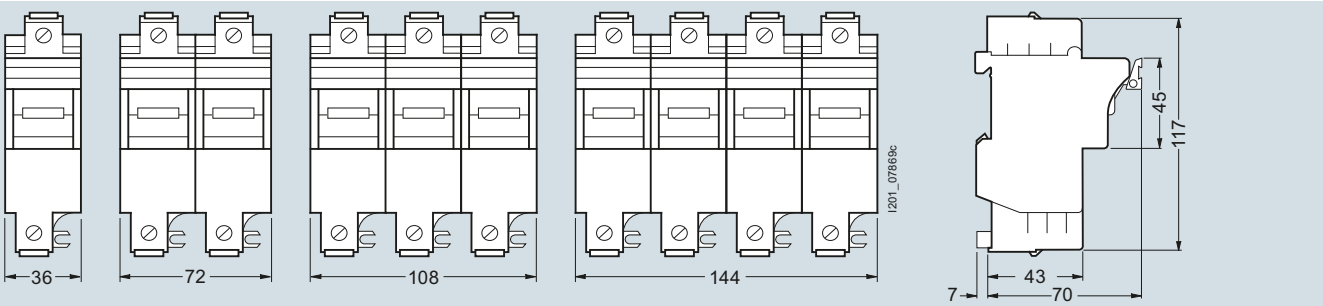
Size
8 × 32 mm | 10 × 38 mm | 14 × 51 mm | 22 × 58 mm



3NW70, 3NW73
1P | 1P + N | 2P | 3P | 3P+N

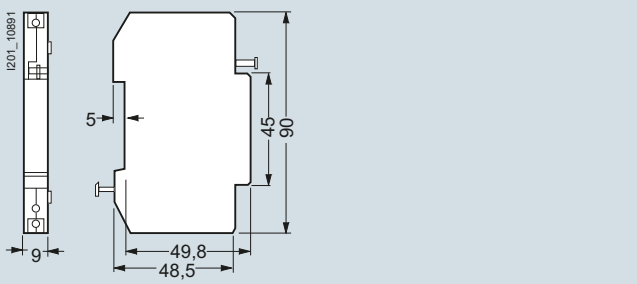


3NW71
1P | 1P+N/2P | 3P | 3P+N

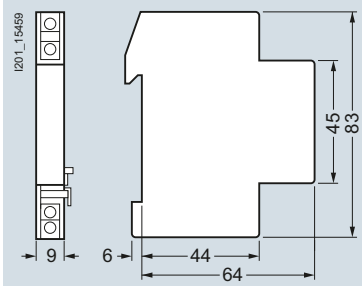


3NW72
1P | 1P+N/2P | 3P | 3P+N

Auxiliary switches



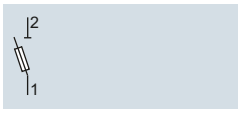
3NW7901
3NW7902



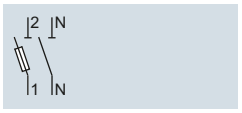
3NW7903

Circuit diagrams

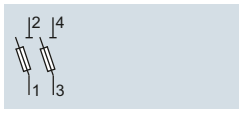
Graphic symbols



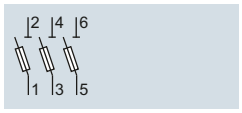
1P



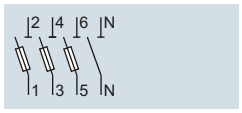
1P+N



2P

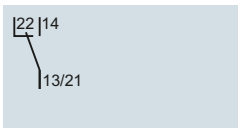


3P



3P+N

Auxiliary switches



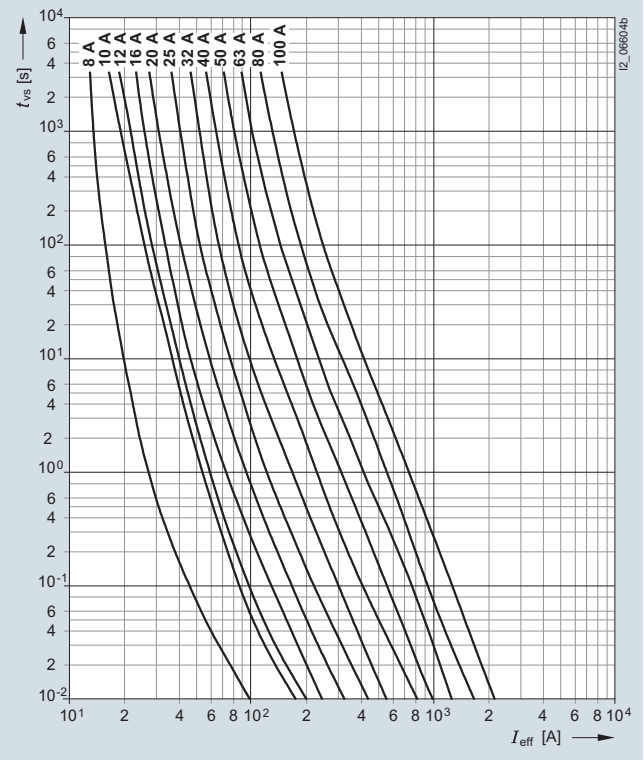
3NW7901
3NW7902

3NW7903

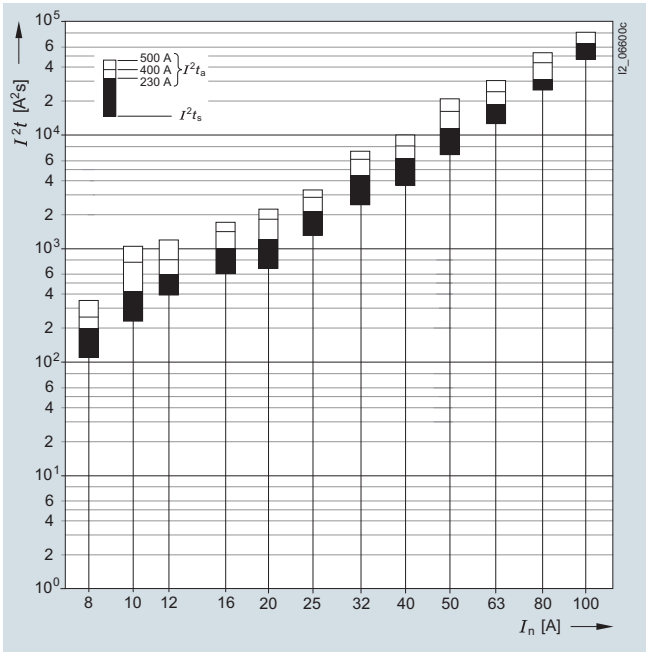
3NW62 series

Size:	22 × 58 mm
Operational class:	gG
Rated voltage:	500 V AC (8 ... 80 A), 400 V AC (100 A)
Rated current:	8 ... 100 A

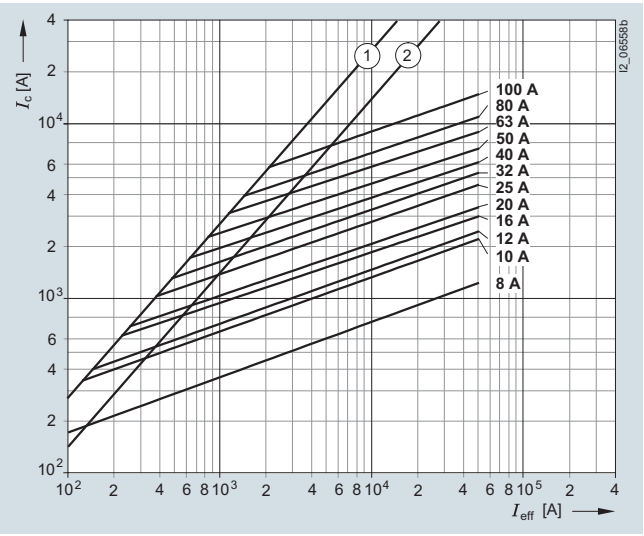
Time/current characteristics diagram



Melting I^2t values diagram



Current limitation diagram



① Peak short-circuit current with largest DC component
② Peak short-circuit current without DC component

Type	I_n	P_v	$\Delta\vartheta$	I^2t_s	I^2t_a		
				1 ms	230 V AC	400 V AC	500 V AC
	A	W	K	A^2s	A^2s	A^2s	A^2s
3NW6208-1	8	2.5	15	110	200	170	350
3NW6203-1	10	0.9	10.5	230	420	760	1050
3NW6206-1	12	1.1	12	390	600	800	1200
3NW6205-1	16	1.6	14.5	600	1000	1400	1700
3NW6207-1	20	2.4	22.5	670	1200	1800	2200
3NW6210-1	25	2.7	24	1300	2100	2800	3300
3NW6212-1	32	3.2	28	2450	4400	6100	7200
3NW6217-1	40	4.9	35	3600	6200	8000	10000
3NW6220-1	50	5.9	46	6800	11400	16200	20600
3NW6222-1	63	6.8	48	12500	18800	24000	30000
3NW6224-1	80	7.5	48	24700	30500	43000	52500
3NW6230-1	100	8.4	55	46000	64700	80000	--

Technical specifications

		Cylindrical fuse holders 3NW70..-1	Fuse holders 3NW75..-1HG
Size	mm × mm	10 × 38	Class CC
Standards		IEC 60269; UL4248-1; CSA	UL4248-1; CSA
Approvals • Acc. to UL • Acc. to CSA		, UL File Number E171267 	, UL File Number E171267
Rated voltage U_n	V AC	690	600
Rated current I_n	A AC	32	30
Rated short-circuit strength	kA	120 (at 500 V) 80 (at 690 V)	200
Breaking capacity • Utilization category		AC-20B (switching without load)	--
Rated impulse withstand voltage	kV	6	
Overvoltage category		III	
Pollution degree		2	
Max. power dissipation of the fuse link	W	3	
No-voltage changing of fuse links	°C	-5 ... +40, humidity 90 % at +20	
Sealable when installed		Yes	
Lockable with padlock		Yes	
Mounting position		Any, preferably vertical	
Current direction		Any	
Degree of protection Acc. to IEC 60529		IP20, with connected conductors[1)]	
Terminals with touch protection according to BGV A3 at incoming and outgoing feeder		Yes	
Ambient temperature	°C	-5 ... +40, humidity 90 % at +20	
Conductor cross-sections • Finely stranded, with end sleeve • AWG cables (American Wire Gauge)	 mm^2 AWG	 1 ... 4 18 ... 10	
Tightening torque • Terminal screws	Nm lb.in	1.5 13 PZ2	

		Auxiliary switches 3NW7903-1							
Standards		IEC 60947							
Approvals		, , UL 508, UL File Number E334003							
Utilization category		AC-12	DC-13			AC-15			Acc. to UL
Rated voltage U_n	V AC V DC	250 --	-- 24	-- 120	-- 240	24 --	120 --	240 --	240 --
Rated current I_n	A	5	2	0.5	0.25	4	3	1.5	5

		Busbars 5ST260.	
For cylindrical fuse holders		3NW70..-1	3NW75..-1HG
Pin spacing	mm	15	
Standards		EN 609741 (VDE 0660-100), IEC 60947-1:2004, UL 508, CSA 22.2	
Approvals		, UL 4248-1, UL File Number E337131	
Busbar material		E-Cu 58 F25	
Partition material		PA66-V0	
Lamp wire resistance /1.5 mm^2	°C	960	
Insulation coordination		Overvoltage category III, degree of pollution 2	
Rated voltage U_n • Acc. to UL • Acc. to IEC	 V AC V AC	 -- 690	 600 --
Maximum busbar current I_n • Acc. to UL • Acc. to IEC	 A A	 -- 80	 65 --

[1)] Degree of protection IP20 is tested according to the applicable regulations with a straight test finger (from the front); the device must be mounted and equipped with a cover or other enclosure.

Fuse holders in size 10 x 38 mm and Class CC

		Terminals 5ST2600	
For cylindrical fuse holders		3NW70..-1	3NW75..-1HG
Pin spacing	mm	15	
Standards		IEC 60999:2000, UL 508	
Approvals		UL, UL 4248-1, UL File Number E337131	
Enclosure/cover material		PA66-V0	
Lamp wire resistance /1 mm²	°C	960	
Temperature resistance PA66-V0, HDT B ISO 179, UL 94-V0/1.5	°C	200	
Insulation coordination		Overvoltage category III, degree of pollution 2	
Max. operational voltage U_{max}			
• Acc. to UL	V AC	--	600
• Acc. to IEC	V AC	690	--
Maximum electrical load I_{max}			
• Acc. to UL	A	--	65
• Acc. to IEC	A	80	--
Rated current I_n	A	63	
Conductor cross-sections			
• Solid/stranded	mm²	2.5 ... 35	
• Finely stranded, with end sleeve	mm²	2.5 ... 25	
Tightening torque of clamping screw	Nm	2.5 ... 3.5	