



finder[®]
SWITCH TO THE FUTURE

38
SERIES

Relay interface modules 0.1 - 2 - 3 - 5 - 6 - 8 - 16 A



Bottling plant



Packaging machines



Control panels



Traffic light controls



Vending machines



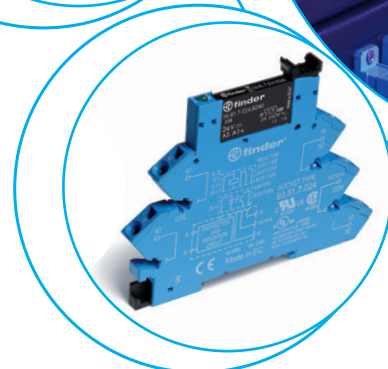
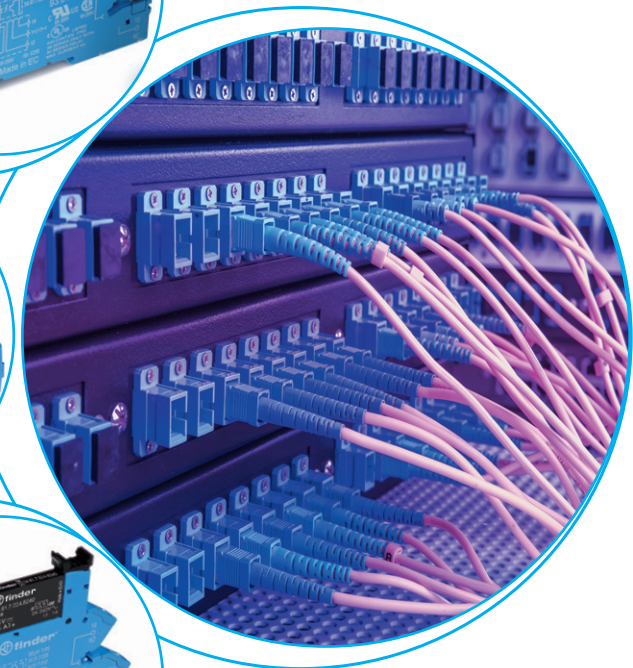
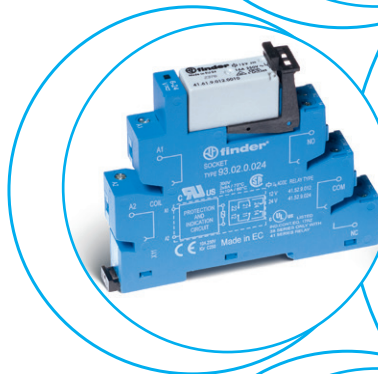
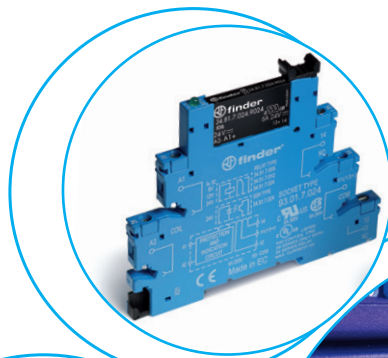
Programmable controllers

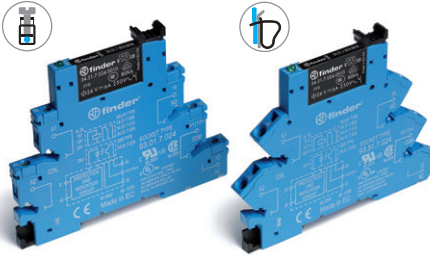

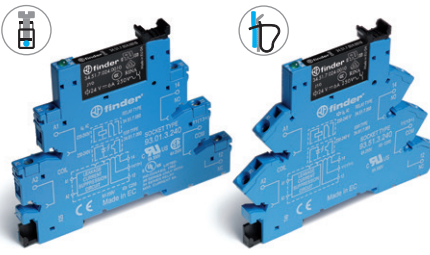
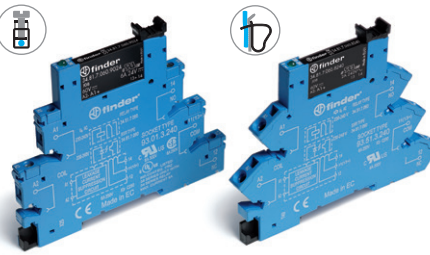

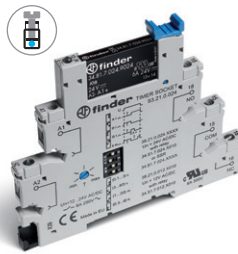
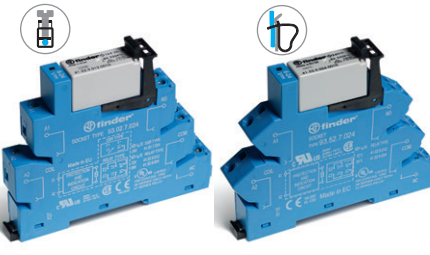



Panels for electrical distribution



Labelling machines



<p>Common features</p> <ul style="list-style-type: none"> • Instant ejection of relay by plastic retaining clip • Integral coil indication and protection circuit • 35 mm rail (EN 60715) mounting 	<p>EMR Electromechanical Relays</p>	<p>SSR Solid State Relays</p>
<p>6.2 mm wide</p> <ul style="list-style-type: none"> • EMR - DC, AC or AC/DC coil versions • SSR - DC or AC/DC input versions • Screw and Screwless terminal options 	<p>38.51/38.61</p>  <ul style="list-style-type: none"> • 1 CO - 6 A/250 V AC <p>Page 1</p>	<p>38.81/38.91</p>  <ul style="list-style-type: none"> • Single solid state output: Options 0.1 A/48 V DC, 6 A/24 V DC, 2 A/240 V AC • Silent, high speed switching • Long electrical life <p>Page 2</p>
<p>6.2 mm wide</p> <ul style="list-style-type: none"> • Special coil/input leakage current suppression types • EMR - AC or AC/DC coil versions • SSR - AC or AC/DC input versions • Screw and Screwless terminal options 	<p>38.51.3... - 38.61.3...</p>  <ul style="list-style-type: none"> • 1 CO - 6 A/250 V AC <p>Page 1</p>	<p>38.81.3... - 38.91.3...</p>  <ul style="list-style-type: none"> • Single solid state output: Options 0.1 A/48 V DC, 6 A/24 V DC, 2 A/240 V AC • Silent, high speed switching • Long electrical life <p>Page 2</p>
<p>6.2 mm wide</p> <ul style="list-style-type: none"> • Timed Interface module • 4 functions & 4 time scales 0.1 s...6 h • EMR - AC/DC (12 or 24 V) supply versions • SSR - AC/DC (24 V) supply • Screw terminals 	<p>38.21</p>  <ul style="list-style-type: none"> • 1 CO - 6 A/250 V AC <p>Page 3</p>	<p>38.21...9024-8240</p>  <ul style="list-style-type: none"> • Single solid state output: Options 6 A/24 V DC, 2 A/240 V AC • Silent, high speed switching • Long electrical life <p>Page 3</p>
<p>14 mm wide</p> <ul style="list-style-type: none"> • 2 pole 8 A or 1 pole 16 A • EMR - DC or AC/DC coil versions • SSR - DC input versions • Screw and Screwless terminal options 	<p>38.01/38.52/38.11/38.62</p>  <ul style="list-style-type: none"> • 1 CO - 16 A/250 V AC • 2 CO - 8 A/250 V AC <p>Page 4</p>	<p>38.31/38.41</p>  <ul style="list-style-type: none"> • Single solid state output: Options 5 A/24 V DC, 3 A/240 V AC • Silent, high speed switching • Long electrical life <p>Page 5</p>

B

1 Pole - 6 A electromechanical relay interface modules, 6.2 mm wide.

Ideal interface for PLC and electronic systems

- Sensitive DC coil or AC/DC coil versions
- Integral coil indication and protection circuit
- Instant ejection of relay using plastic retaining clip
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

38.51/38.51.3
Screw terminal

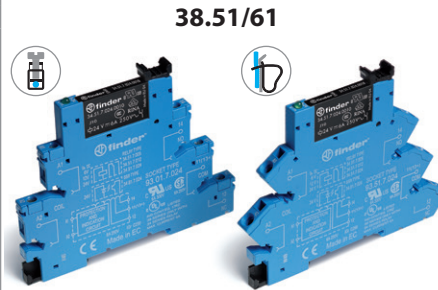
38.61/38.61.3
Screwless terminal



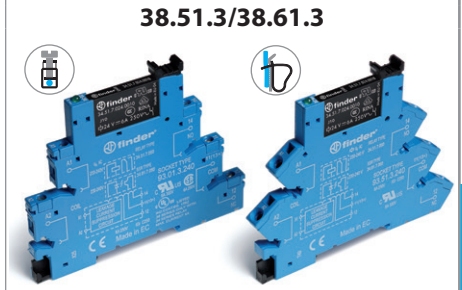
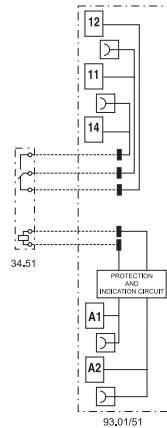
* Special version for max ambient temperature +70 °C.

** Maximum ambient temperature limitations apply in the case of adjacent mounting of modules, where the coil is energised with a duty cycle of $\geq 50\%$ or where the ON time exceeds 1 hour:
+55 °C: applies to groups limited to 2 adjacent modules and where each group is separated by an air gap ≥ 6.2 mm.
+30 °C: applies to a group of more than 2 adjacent modules.

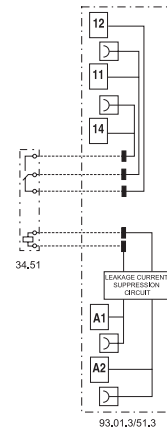
For outline drawing see page 13



- 1 pole electromechanical relay
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting



- Leakage current suppression
- 1 pole electromechanical relay
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting



Contact specification

Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/ Maximum peak current	A	6/10	6/10
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	1500	1500
Rated load AC15 (230 V AC)	VA	300	300
Single phase motor rating (230 V AC)	kW	0.185	0.185
Breaking capacity DC1: 30/110/220 V	A	6/0.2/0.12	6/0.2/0.12
Minimum switching load	mW (V/mA)	500 (12/10)	500 (12/10)
Standard contact material		AgNi	AgNi

Coil specification

Nominal voltage (U _N)	V AC/DC	12 - 24 - 48 - 60 - (110...125) - (220...240)**	(110...125)	—
	V AC	(230...240)*	—	(230...240)
	V DC	6 - 12 - 24 - 48 - 60 (non polarized)	—	—
Rated power AC/DC	VA (50 Hz)/W	See page 9	1/1	0.5/—
Operating range	AC/DC	(0.8...1.1)U _N	(94...138)V	—
	AC	(184...264)V	—	(184...264)V
	DC	(0.8...1.2)U _N	—	—
Holding voltage	AC/DC	0.6 U _N / 0.6 U _N	0.6 U _N / 0.6 U _N	
Must drop-out voltage	AC/DC	0.1 U _N / 0.05 U _N	44 V	72 V

Technical data

Mechanical life AC/DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	60 · 10 ³	60 · 10 ³
Operate/release time	ms	5/6	5/6
Insulation between coil and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range (U _N ≤ 60 V / > 60 V)	°C	-40...+70 / -40...+55	- / -40...+55
Protection category		IP 20	IP 20

Approvals relay (according to type)



Single output - solid state relay interface modules, 6.2 mm wide.

Ideal interface for PLC and electronic systems

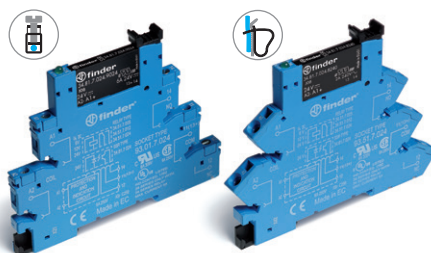
- DC, AC or AC/DC input versions
- Supplied with integral coil indication and protection circuit
- Silent, high switching speed and long electrical life
- Instant ejection of relay using plastic retaining clip
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

38.81/38.81.3
Screw terminal

38.91/38.91.3
Screwless terminal

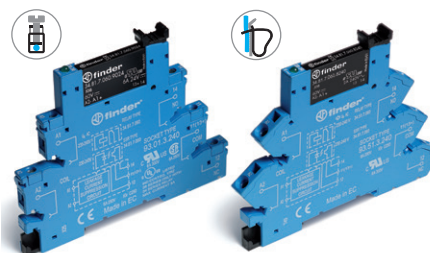


38.81/38.91

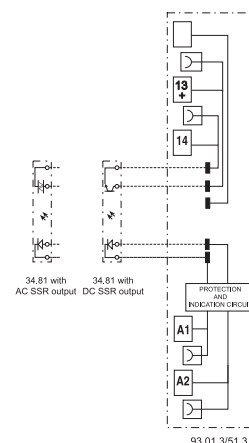
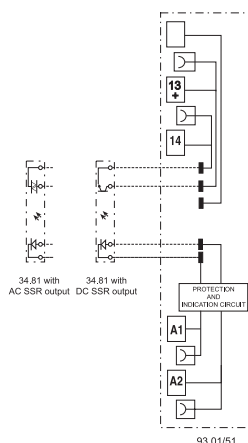


- AC or DC output switching
- SSR relay - DC input voltage
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting

38.81.3/38.91.3



- Leakage current suppression
- AC or DC output
- SSR relay - AC or AC/DC input voltage
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting



For outline drawing see page 13

Output specification

Contact configuration	1 NO (SPST-NO)			1 NO (SPST-NO)			
	6/50	0.1/0.5	2/80	6/50	0.1/0.5	2/80	
Rated current/ Maximum peak current (10 ms)	A	6/50	0.1/0.5	2/80	6/50	0.1/0.5	2/80
Rated voltage/ Maximum blocking voltage	V	24/33 DC	48/53 DC	240/— AC	24/33 DC	48/53 DC	240/— AC
Switching voltage range	V	(1.5...33)DC	(1.5...53)DC	(12...275)AC	(1.5...33)DC	(1.5...53)DC	(12...275)AC
Repetitive peak off-state voltage	V _{pk}	—	—	800	—	—	800
Minimum switching current	mA	1	0.05	35	1	0.05	35
Max. "OFF-state" leakage current	mA	0.001	0.001	1.5	0.001	0.001	1.5
Max. "ON-state" voltage drop	V	0.4	1	1.6	0.4	1	1.6

Input specification

Nominal voltage (U _N)	V AC	—	230...240
	V DC	6 - 24 - 60	—
	V AC/DC	(110...125) - (220...240)	110...125
Operating range	V DC	See page 10	See page 10
Control current	mA	See page 10	See page 10
Release voltage	V DC	See page 10	See page 10

Technical data

Operate/release time: ON/OFF (DC input)	ms	0.2/0.6	0.04/0.11	12/12	0.2/0.6	0.04/0.11	12/12
Dielectric strength between input/output	V AC	2500		2500			
Ambient temperature range	°C	-20...+55		-20...+55			
Environmental protection		IP20		IP20			

Approvals relay (according to type)



Slim timed interface module, 6.2 mm wide.

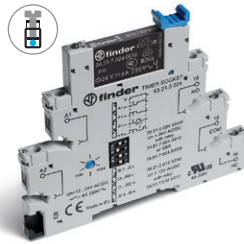
- 1 pole, 6 A - electromechanical relay**
- 1 output, 2 A DC or AC - solid state relay**

- Electromechanical or solid state output
- Multi-functions timer
- AC/DC supply
- 4 time scales from 0.1 s to 6 h
- Instant ejection of relay using plastic retaining clip
- 6.2 mm wide, 35 mm rail (EN 60715) mounting

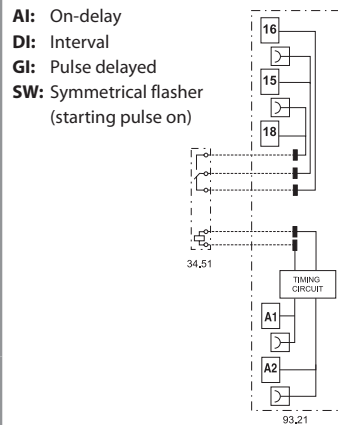
38.21
Screw terminal



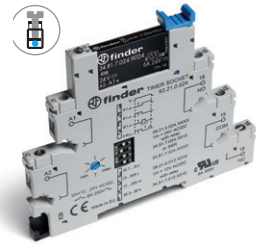
38.21



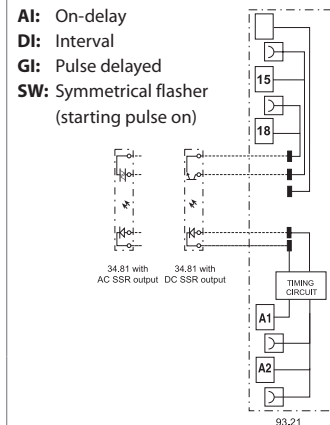
- 1 pole electromechanical output relay
- 12 or 24 V AC/DC supply
- Screw terminal
- 35 mm rail (EN 60715) mounting



38.21...9024-8240



- DC or AC solid state output relays
- 24 V AC/DC supply voltage
- Screw terminal
- 35 mm rail (EN 60715) mounting



For outline drawing see page 13

Contact specification

Contact configuration		1 CO (SPDT)	—
Rated current/ Maximum peak current	A	6/10	—
Rated voltage/ Maximum switching voltage	V AC	250/400	—
Rated load AC1	VA	1500	—
Breaking capacity DC1: 30/110/220 V	A	6/0.2/0.12	—
Minimum switching load	mW (V/mA)	500 (12/10)	—
Standard contact material		AgNi	—

Output specification

			DC output (...9024)	AC output (...8240)
Output configuration		—	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	—	6/50	2/80
Rated voltage/ Maximum blocking voltage	V	—	(24/33)DC	(240/—)AC
Switching voltage range	V	—	(1.5...33)DC	(12...275)AC
Repetitive peak off-state voltage	V _{pk}	—	—	800
Minimum switching current	mA	—	1	35
Max. "OFF-state" leakage current	mA	—	0.001	1.5
Max. "ON-state" voltage drop	V	—	0.4	1.6

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)/DC	12 - 24	24
Rated power	VA/W	0.5	0.5
Operating range	AC	(0.8...1.1)U _N	(0.8...1.1)U _N
	DC	(0.8...1.1)U _N	(0.8...1.1)U _N

Technical data

Specified time range		(0.1...3)s, (3...60)s, (1...20)min, (0.3...6)h	
Repeatability	%	± 1	
Recovery time	ms	≤ 50	
Setting accuracy-full range	%	5%	
Ambient temperature	°C	-40...+70	-20...+55

Protection category

IP 20

Approvals relay (according to type)



Electromechanical relay interface modules,
14 mm wide.

38.01 and 38.11 - 1 Pole 16 A
38.52 and 38.62 - 2 Pole 8 A

Ideal interface for PLC and electronic systems

- Sensitive DC coil or AC/DC coil versions
- Integral coil indication and protection circuit
- Instant ejection of relay using plastic retaining clip
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

B

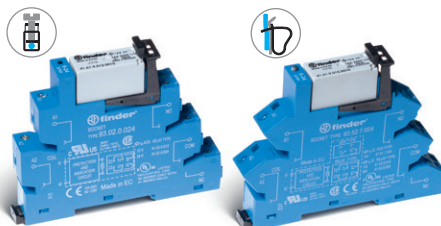
38.01/52
Screw terminal



38.11/62
Screwless terminal

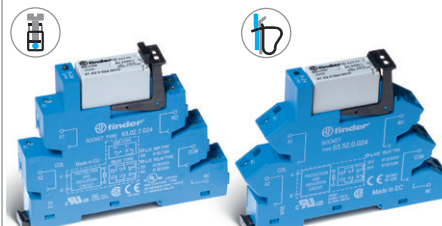


38.01/38.11

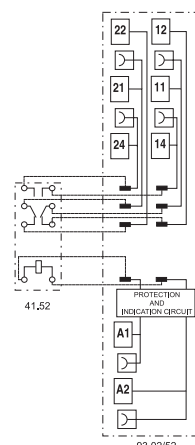
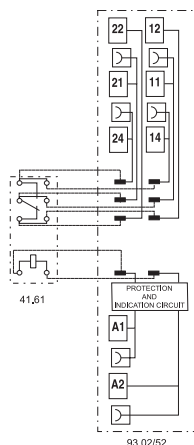


- Screw terminal and screwless terminal
- 1 pole electromechanical relay
- 35 mm rail (EN 60715) mounting

38.52/38.62



- Screw terminal and screwless terminal
- 2 pole electromechanical relay
- 35 mm rail (EN 60715) mounting



* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).

For outline drawing see page 13

Contact specification

Contact configuration		1 CO (SPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	16*/30	8/15
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	2000
Rated load AC15 (230 V AC)	VA	750	400
Single phase motor rating (230 V AC)	kW	0.5	0.3
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	8/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi

Coil specification

Nominal voltage (U _N)	V AC/DC	24 - 60 - (110...125) - (220...240)	24 - 60 - (110...125) - (220...240)
	V AC	230...240	230...240
	V DC	12 - 24 - 60	12 - 24 - 60
Rated power AC/DC	VA (50 Hz)/W	See page 9	See page 9
Operating range	AC/DC	0.8...1.1	0.8...1.1
	DC	(0.8...1.2)U _N	(0.8...1.2)U _N
Holding voltage	AC/DC	0.6 U _N / 0.6 U _N	0.6 U _N / 0.6 U _N
Must drop-out voltage	AC/DC	0.1 U _N / 0.05 U _N	0.1 U _N / 0.05 U _N

Technical data

Mechanical life AC/DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	50 · 10 ³	60 · 10 ³
Operate/release time	ms	8/10	8/10
Insulation between coil and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range (U _N ≤ 60 V / > 60 V)	°C	-40...+70 / -40...+55	-40...+70 / -40...+55
Protection category		IP 20	IP 20

Approvals relay (according to type)



Single output - solid state relay interface modules, 14 mm wide.

Ideal interface for PLC and electronic systems

- DC input versions
- Supplied with integral coil indication and protection circuit
- Silent, high switching speed and long electrical life
- Instant ejection of relay using plastic retaining clip
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

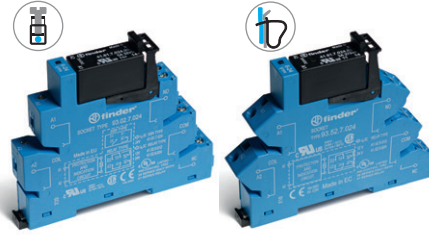
38.31
Screw terminal



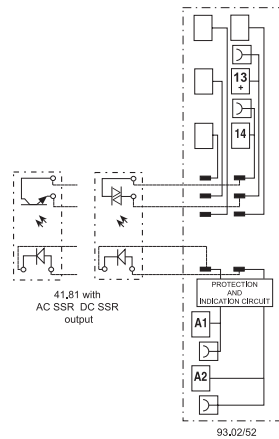
38.41
Screwless terminal



38.31/38.41



- Screw terminal and screwless terminal
- AC or DC output switching
- SSR relay - DC input voltage
- 35 mm rail (EN 60715) mounting



For outline drawing see page 13

Output specification

Contact configuration	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/ Maximum peak current (10 ms)	A	5/40
Rated voltage/ Maximum blocking voltage	V	(24/35)DC
Switching voltage range	V	(1.5...24)DC
Repetitive peak off-state voltage	V _{pk}	600
Minimum switching current	mA	1
Max. "OFF-state" leakage current	mA	0.01
Max. "ON-state" voltage drop	V	0.3

Input specification

Nominal voltage (U _N)	V AC/DC	24
	V DC	12 - 24
Operating range	V DC	See page 10
Control current	mA	See page 10
Release voltage	V DC	See page 10

Technical data

Operate/release time: ON/OFF (DC input)	ms	0.05/0.25	12/12
Dielectric strength between input/output	V AC	2500	
Ambient temperature range	°C	-20...+55	
Environmental protection		IP20	

Approvals relay (according to type)



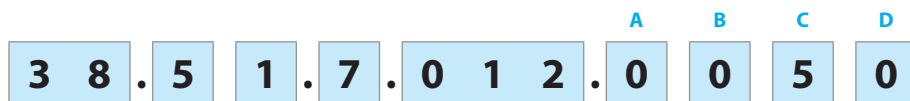
B

Ordering information

Electromechanical relay - 1 or 2 Pole

Example: 38 series screw terminal relay interface module, 1 CO (SPDT), sensitive 12 V DC coil.

B



Series

Type

- 0 = Electromechanical 16 A relay, with screw terminal
- 1 = Electromechanical 16 A relay, with screwless terminal
- 2 = Timer multifunction (AI, DI, GI, SW), with screw terminal
- 5 = Electromechanical relay, with screw terminal
- 6 = Electromechanical relay, with screwless terminal

No. of poles

- 1 = 1 pole, 6 or 16 A
- 2 = 2 pole, 8 A

Coil version

- 0 = AC (50/60 Hz)/DC
- 3 = Leakage current suppression for (110...125)V AC/DC - (230...240)V AC
- 7 = Sensitive DC, (6, 12, 24, 48, 60)V only
- 8 = AC (50/60 Hz)

Coil voltage

See coil specifications

D: Special versions

0 = Standard

C: Options

- 5 = Standard DC
- 6 = Standard AC or AC/DC

B: Contact circuit

0 = CO (nPDT)

A: Contact material

- 0 = AgNi Standard
- 4 = AgSnO₂
- 5 = AgNi + Au

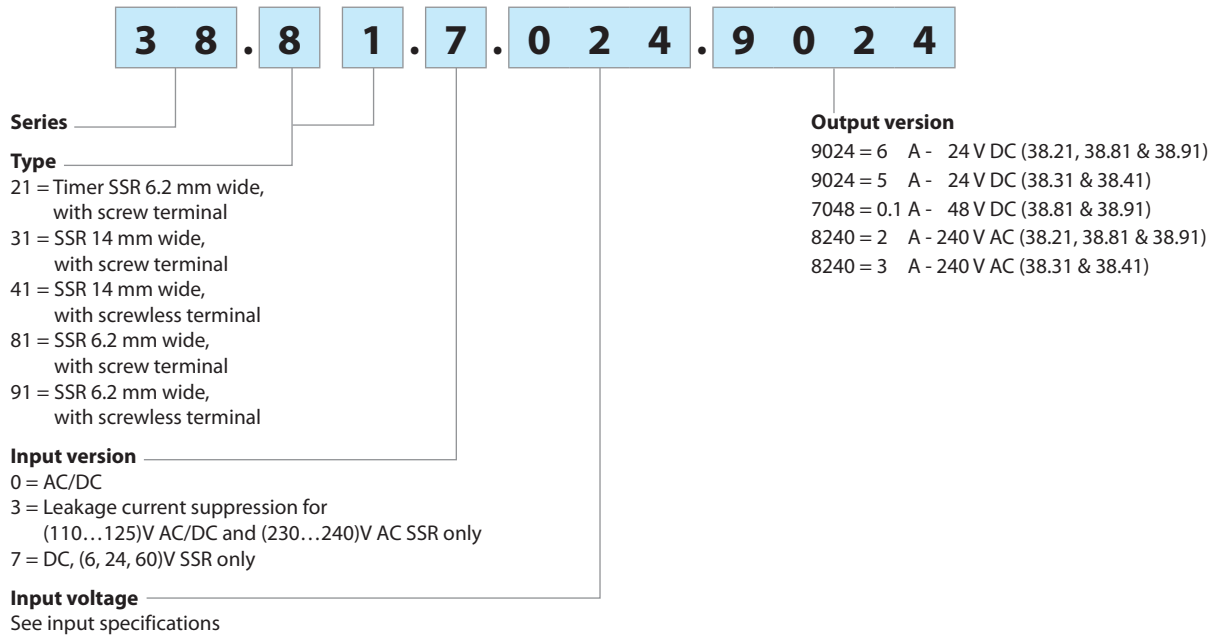
Selecting features and options: only combinations in the same row are possible.

Type	Coil version	A	B	C	D
38.01/11	7	0 - 4	0	5	0
38.01/11	0 - 8	0 - 4	0	6	0
38.51/61	7	0 - 4 - 5	0	5	0
38.51/61	0 - 3 - 8	0 - 4 - 5	0	6	0
38.52/62	7	0 - 5	0	5	0
38.52/62	0 - 8	0 - 5	0	6	0
38.21	0	0	0	6	0

Ordering information

Solid state relay - Single output - 6.2 & 14 mm wide

Example: 38 series screw terminal SSR relay interface module, 6.2 mm wide, 6 A output, 24 V DC input.



B

Selecting features and options: only combinations in the same row are possible.

Type	Input version	Output version
38.81/91	7	9024 - 7048 - 8240
38.81/91	0 - 3	9024 - 7048 - 8240
38.31/41	0 - 7	9024 - 8240
38.21	0	9024 - 8240

Technical data - 1 & 2 Pole Electromechanical Relays

Insulation

Insulation according to EN 61810-1	insulation rated voltage	V	250	400
	rated impulse withstand voltage	kV	4	4
	pollution degree		3	2
	overvoltage category		III	III

Insulation between coil and contacts (1.2/50 μs)	kV	6 (8 mm)
Dielectric strength between open contacts	V AC	1000

Conducted disturbance immunity

Burst (5...50)ns, 5 kHz, on A1 - A2 according to EN 61000-4-4	level 4 (4 kV)
Surge (1.2/50 μs) on A1 - A2 (differential mode) according to EN 61000-4-5	level 3 (2 kV)

Other data

		1 Pole 6 A	1 Pole 16 A - 2 Pole 8 A
Bounce time: NO/NC	ms	1/6	2/5
Vibration resistance (10...55)Hz: NO/NC	g	10/5	15/2
Power lost to the environment	without contact current	W	0.2 (12 V) - 0.9 (240 V)
	with rated current	W	0.5 (12 V) - 1.5 (240 V)
			1.3 (24 V) - 1.7 (240 V)

Terminals

Wire strip length	mm	10	10
⊖ Screw torque	Nm	0.5	—

Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1 x 2.5 / 2 x 1.5	1 x 2.5 / 2 x 1.5	1 x 2.5	1 x 2.5
	AWG	1 x 14 / 2 x 16	1 x 14 / 2 x 16	1 x 14	1 x 14
		38.01 / 38.52	38.11 / 38.62		

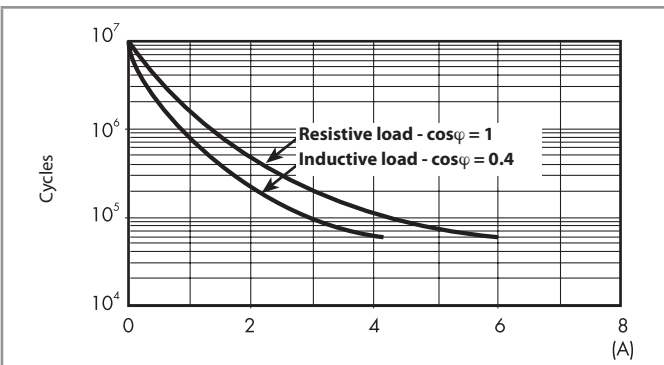
Wire strip length	mm	10	10
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⊖ Screw torque	Nm	0.5	—
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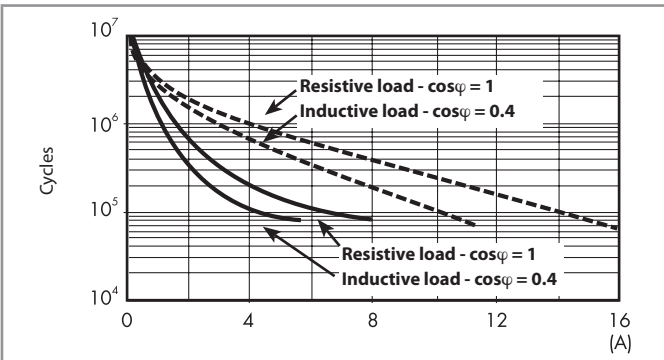
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1 x 2.5 / 2 x 1.5	1 x 2.5 / 2 x 1.5	1 x 2.5	1 x 2.5
	AWG	1 x 14 / 2 x 16	1 x 14 / 2 x 16	1 x 14	1 x 14

Contact specification - 1 & 2 Pole Electromagnetic Relays

F 38 - Electrical life (AC) v contact current, 1 Pole 6 A

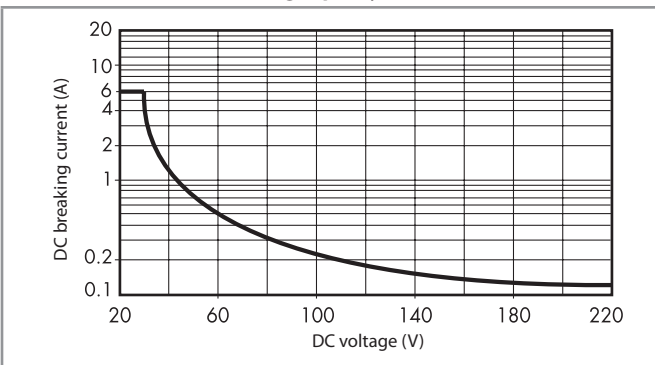


F 38 - Electrical life (AC) v contact current, 1 Pole 16 A and 2 Pole 8 A

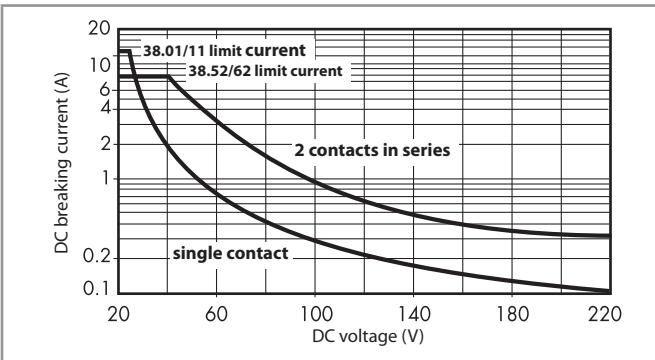


————: 2 Pole 8 A
————: 1 Pole 16 A

H 38 - Maximum DC1 breaking capacity, 1 Pole 6 A



H 38 - Maximum DC1 breaking capacity, 1 Pole 16 A and 2 Pole 8 A



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 60 \cdot 10^3$ (1 Pole) or $\geq 80 \cdot 10^3$ (2 Pole) can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load. Note: the release time for the load will be increased.

Coil specifications - 1 Pole 6 A Electromechanical Relay

Coil data sensitive DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	W
6	7.006	4.8	7.2	35	0.2
12	7.012	9.6	14.4	15.2	0.2
24	7.024	19.2	28.8	10.4	0.3
48	7.048	38.4	57.6	6.3	0.3
60	7.060	48	72	7	0.4

Coil data AC/DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	VA/W
12	0.012	9.6	13.2	16	0.2/0.2
24	0.024	19.2	26.4	12	0.3/0.2
48	0.048	38.4	52.8	6.9	0.3/0.3
60	0.060	48	66	7	0.5/0.5
110...125	0.125	88	138	5(*)	0.6/0.6(*)
220...240	0.240	176	264	4(*)	1/0.9(*)

(*) Rated coil consumption and power consumption values relate to $U_N = 125$ and 240 V.

Coil data AC, 1 Pole (indicated for max ambient temperature +70 °C)

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	VA/W
(230...240) AC	8.240	184	264	3	0.7/0.3

Coil data, leakage current suppression types, 1 Pole

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	VA/W
(110...125) AC/DC	3.125	94	138	8(*)	1/1(*)
(230...240) AC	3.240	184	264	7(*)	1.7/0.5(*)

(*) Rated coil consumption and power consumption values relate to $U_N = 125$ and 240 V.

The 38 Series interface modules (supply version 3) have built-in leakage current suppression to address industry concerns of the contacts not dropping-out when there is residual current in the circuit; at (110...125)V AC and (230...240)V AC.

This problem can occur, for example, when connecting the interface modules to PLCs with triac outputs or when connecting via relatively long cables.

Coil specifications - 1 Pole 16 A and 2 Pole 8 A Electromechanical Relay

Coil data sensitive DC, 1 Pole 16 A and 2 Pole 8 A

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	W
12	7.012	9.6	14.4	41	0.5
24	7.024	19.2	28.8	19.5	0.5
60	7.060	48	72	8	0.5

Coil data AC/DC, 1 Pole 16 A and 2 Pole 8 A

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	W
24	0.024	19.2	26.4	20	0.5/0.5
60	0.060	48	66	7.1	0.5/0.5
110...125	0.125	88	138	4.6	0.6/0.6
220...240	0.240	184	264	3.8	0.9/0.9

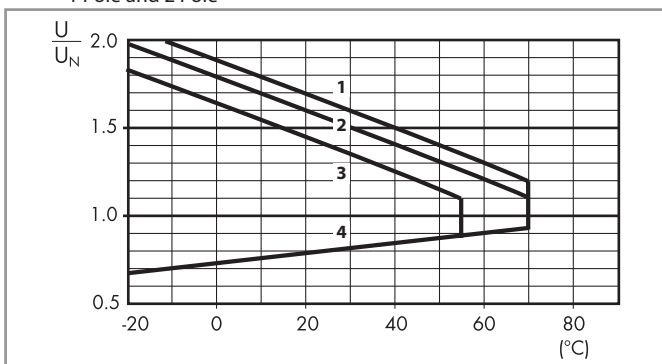
Coil data AC, 1 Pole 16 A and 2 Pole 8 A

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min}	U_{max}		
V		V	V	mA	VA/W
230...240	8.230	184	264	5.3	1.2/0.6

Coil specification - 1 & 2 Pole Electromagnetic Relays



R 38 - DC coil operating range v ambient temperature

1 Pole and 2 Pole



- 1 - Max. permitted coil voltage at nominal load (DC coil).
- 2 - Max. permitted coil voltage at nominal load (AC/DC coils $U \leq 60$ V).
- 3 - Max. permitted coil voltage at nominal load (AC/DC coils $U > 60$ V).
- 4 - Min pick-up voltage with coil at ambient temperature.

Technical data - Solid State Relays

Other data		38.81/38.91		38.31/38.41	
Power lost to the environment	without output current	W	0.25 (24 V DC)	0.5	
	with rated current	W	0.4	2.2 (DC output)/3 (AC output)	
Terminals		38.81		38.91	
Wire strip length	mm	10		10	
 Screw torque	Nm	0.5		—	
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1 x 2.5 / 2 x 1.5	1 x 2.5 / 2 x 1.5	1 x 2.5	1 x 2.5
	AWG	1 x 14 / 2 x 16	1 x 14 / 2 x 16	1 x 14	1 x 14
		38.31		38.41	
Wire strip length	mm	10		10	
 Screw torque	Nm	0.5		—	
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1 x 2.5 / 2 x 1.5	1 x 2.5 / 2 x 1.5	1 x 2.5	1 x 2.5
	AWG	1 x 14 / 2 x 16	1 x 14 / 2 x 16	1 x 14	1 x 14

Input specifications - Solid State Relays type 38.81 and 38.91 - 6.2 mm wide

Input data DC

Nominal voltage U _N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U _N	Power consumption P
		U _{min}	U _{max}			
V		V	V	V	mA	W
6	7.006	5	7.2	2.4	7	0.2
24	7.024	16.8	30	10	10.5	0.3
60	7.060	35.6	72	20	6.5	0.4

Input data AC/DC

Nominal voltage U _N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U _N	Power consumption P
		U _{min}	U _{max}			
V		V	V	V	mA	VA/W
110...125	0.125	88	138	22	5.5*	0.7/0.7
220...240	0.240	184	264	44	3.5*	1/0.9

(*) Rated coil consumption and power consumption values relate to U_N = 125 and 240 V.

Input data - Leakage current suppression types

Nominal voltage U _N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U _N	Power consumption P at U _N
		U _{min}	U _{max}			
V		V	V	V	mA	W
110...125 AC/DC	3.125	94	138	44	8(*)	1/1(*)
230...240 AC	3.240	184	264	72	6.5(*)	1.6/0.6(*)

(*) Rated coil consumption and power consumption values relate to U_N = 125 and 240 V.

The 38 Series interface modules (supply version 3) have built-in leakage current suppression to address industry concerns of the contacts not dropping-out when there is residual current in the circuit; at (110...125)V AC and (230...240)V AC.

This problem can occur, for example, when connecting the interface modules to PLCs with triac outputs or when connecting via relatively long cables.

Input specification - Solid State Relay types 38.31 and 38.41 - 14 mm wide

Input data DC

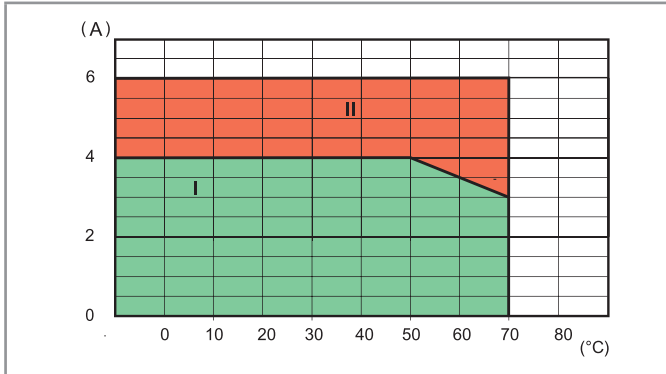
Nominal voltage U _N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U _N	Power consumption P
		U _{min}	U _{max}			
V		V	V	V	mA	W
12	7.012	9.6	18	5	9	0.2
24	7.024	16.8	30	5	12	0.3

Input data AC/DC

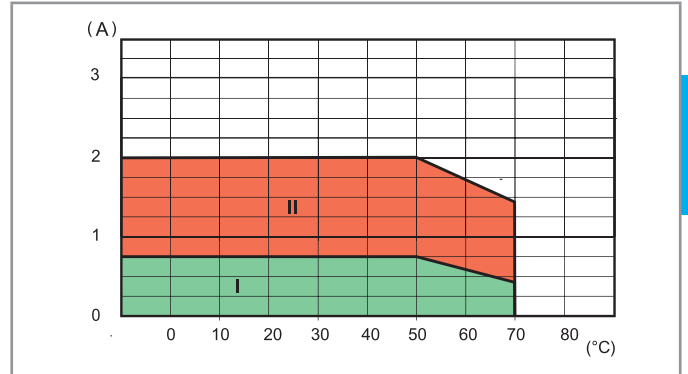
Nominal voltage U _N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U _N	Power consumption P
		U _{min}	U _{max}			
V		V	V	V	mA	W
24	0.024	16.8	30	9	16.5	0.3

Output specification - Solid State Relays

L 34-1 - Output DC current v ambient temperature
38.x1.x.xxx.9024 (only 38.81/91/21)



L 34 - Output AC current v ambient temperature
38.x1.x.xxx.8240 (only 38.81/91/21)



I: SSR installed as a group (without gap between sockets)

II: SSR installed individually in free air, or with a gap ≥ 9 mm, which implies a not significant influence from nearby components

Max recommended switching frequency (Cycles/Hour, with 50% Duty-cycle) at ambient temperature 50°C, single mounting (only 38.81/91/21)

Load	38.x1.x.xxx. 9024	38.x1.x.xxx. 8240	38.x1.x.xxx. 7048
24 V 6 A DC1	180 000	—	—
24 V 3 A DC L/R = 10 ms	5000	—	—
24 V 2 A DC L/R = 40 ms	3600	—	—
24 V 1 A DC L/R = 40 ms	6500	—	—
24 V 0.8 A DC L/R = 40 ms	9000	—	—
24 V 1.5 A DC L/R = 80 ms	3250	—	—
230 V 2 A AC1	—	60 000	—
230 V 1.25 A AC15	—	3600	—
48 V 0.1 A DC1	—	—	60 000

Additional technical data - Timed Interface Module

EMC specifications

Type of test	Reference standard		
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV
	air discharge	EN 61000-4-2	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals		EN 61000-4-4	4 kV
Surges (1.2/50 µs) on Supply terminals	common mode	EN 61000-4-5	4 kV
	differential mode	EN 61000-4-5	4 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals		EN 61000-4-6	10 V
Radiated and conducted emission		EN 55022	class B

Other data

		EMR	SSR
Power lost to the environment	without contact current	W 0.1	0.1
	with rated current	W 0.6	0.5

Terminals

		38.21	
Wire strip length	mm	10	
Screw torque	Nm	0.5	
Max. wire size		solid cable	stranded cable
	mm ²	1 x 2.5 / 2 x 1.5	1 x 2.5 / 2 x 1.5
	AWG	1 x 14 / 2 x 16	1 x 14 / 2 x 16

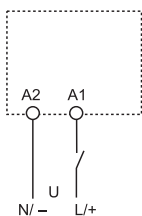
Times scales



Functions

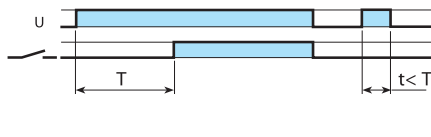
LED	Supply voltage	NO contact/output
	OFF	Open
	ON	Open (time in progress)
	ON	Closed

Wiring diagram



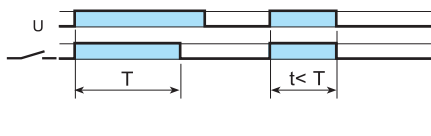
U = Supply voltage

= Output contact



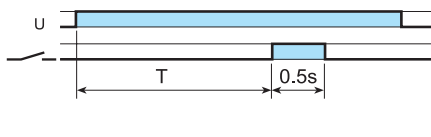
(AI) On-delay.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.



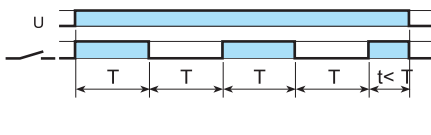
(DI) Interval.

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



(GI) Pulse delayed.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5 s.

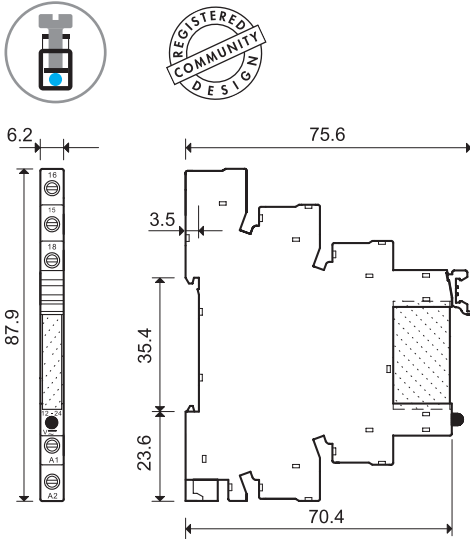


(SW) Symmetrical flasher (starting pulse on).

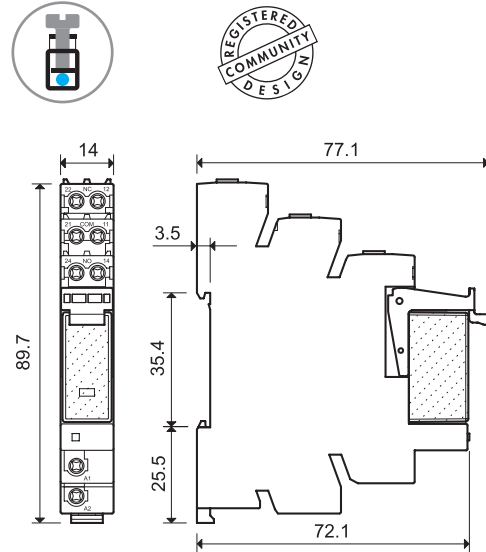
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

Outline drawings

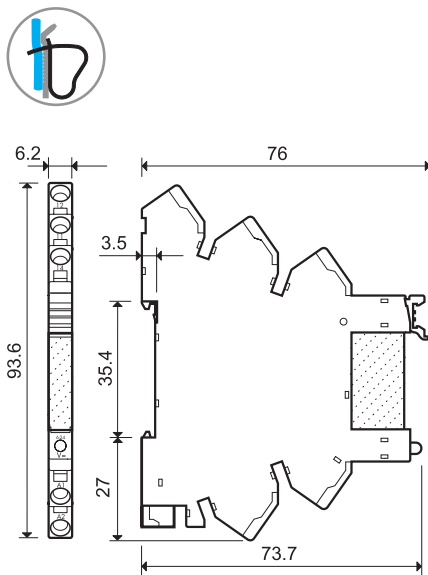
Types 38.21
38.51 / 38.51.3
38.81 / 38.81.3
Screw terminal



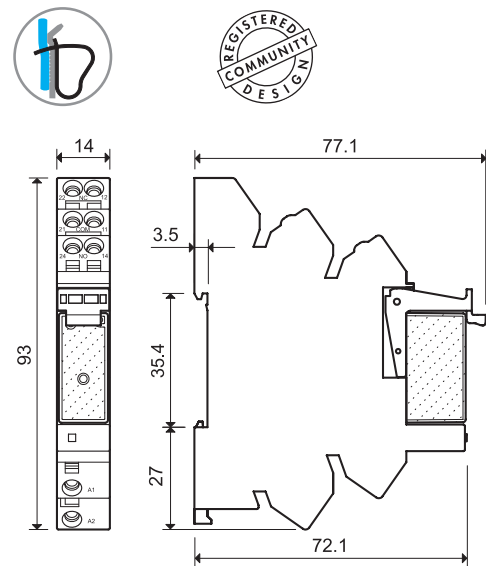
Types 38.01
38.31
38.52
Screw terminal



Types 38.61 / 38.61.3
38.91 / 38.91.3
Screwless terminal



Types 38.11
38.41
38.62
Screwless terminal



Electromechanical Relay & Socket Combinations

Screw terminal - 1 Pole relay 6 A

Interface Module Code	Coil voltage	Relay	Socket
38.51.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.01.0.024
38.51.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.01.0.024
38.51.0.048.0060	48 V AC/DC	34.51.7.048.0010	93.01.0.060
38.51.0.060.0060	60 V AC/DC	34.51.7.060.0010	93.01.0.060
38.51.0.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.01.0.125
38.51.0.240.0060	(220...240)V AC/DC	34.51.7.060.0010	93.01.0.240
38.51.3.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.01.3.125
38.51.3.240.0060	(230...240)V AC	34.51.7.060.0010	93.01.3.240
38.51.7.006.0050	6 V DC	34.51.7.005.0010	93.01.7.024
38.51.7.012.0050	12 V DC	34.51.7.012.0010	93.01.7.024
38.51.7.024.0050	24 V DC	34.51.7.024.0010	93.01.7.024
38.51.7.048.0050	48 V DC	34.51.7.048.0010	93.01.7.060
38.51.7.060.0050	60 V DC	34.51.7.060.0010	93.01.7.060
38.51.8.240.0060	(230...240)V AC	34.51.7.060.0010	93.01.8.240

Screwless terminal - 1 Pole relay 6 A

Interface Module Code	Coil voltage	Relay	Socket
38.61.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.51.0.024
38.61.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.51.0.024
38.61.0.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.51.0.125
38.61.0.240.0060	(220...240)V AC/DC	34.51.7.060.0010	93.51.0.240
38.61.3.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.51.3.125
38.61.3.240.0060	(230...240)V AC	34.51.7.060.0010	93.51.3.240
38.61.7.012.0050	12 V DC	34.51.7.012.0010	93.51.7.024
38.61.7.024.0050	24 V DC	34.51.7.024.0010	93.51.7.024
38.61.8.240.0060	(230...240)V AC	34.51.7.060.0010	93.51.8.240

Screw terminal - 1 Pole relay 16 A

Interface Module Code	Coil voltage	Relay	Socket
38.01.7.012.0050	12 V DC	41.61.9.012.0010	93.02.7.024
38.01.7.024.0050	24 V DC	41.61.9.024.0010	93.02.7.024
38.01.7.060.0050	60 V DC	41.61.9.060.0010	93.02.7.060
38.01.0.024.0060	24 V AC/DC	41.61.9.024.0010	93.02.0.024
38.01.0.060.0060	60 V AC/DC	41.61.9.060.0010	93.02.0.060
38.01.0.125.0060	125 V AC/DC	41.61.9.110.0010	93.02.0.125
38.01.0.240.0060	240 V AC/DC	41.61.9.110.0010	93.02.0.240
38.01.8.230.0060	230 V AC	41.61.9.110.0010	93.02.8.230

Screwless terminal - 1 Pole relay 16 A

Interface Module Code	Coil voltage	Relay	Socket
38.11.7.012.0050	12 V DC	41.61.9.012.0010	93.52.7.024
38.11.7.024.0050	24 V DC	41.61.9.024.0010	93.52.7.024
38.11.7.060.0050	60 V DC	41.61.9.060.0010	93.52.7.060
38.11.0.024.0060	24 V AC/DC	41.61.9.024.0010	93.52.0.024
38.11.0.060.0060	60 V AC/DC	41.61.9.060.0010	93.52.0.060
38.11.0.125.0060	125 V AC/DC	41.61.9.110.0010	93.52.0.125
38.11.0.240.0060	240 V AC/DC	41.61.9.110.0010	93.52.0.240
38.11.8.230.0060	230 V AC	41.61.9.110.0010	93.52.8.230

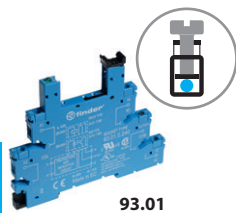
Screw terminal - 2 Pole relay 8 A

Interface Module Code	Coil voltage	Relay	Socket
38.52.0.024.0060	24 V AC/DC	41.52.9.024.0010	93.02.0.024
38.52.0.060.0060	60 V AC/DC	41.52.9.060.0010	93.02.0.060
38.52.0.125.0060	(110...125)V AC/DC	41.52.9.110.0010	93.02.0.125
38.52.0.240.0060	(220...240)V AC/DC	41.52.9.110.0010	93.02.0.240
38.52.7.012.0050	12 V DC	41.52.9.012.0010	93.02.7.024
38.52.7.024.0050	24 V DC	41.52.9.024.0010	93.02.7.024
38.52.7.060.0050	60 V DC	41.52.9.060.0010	93.02.7.060
38.52.8.230.0060	(230...240)V AC	41.52.9.110.0010	93.02.8.230

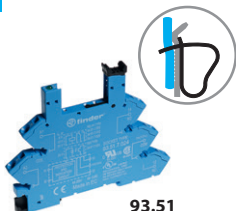
Screwless terminal - 2 Pole relay 8 A

Interface Module Code	Coil voltage	Relay	Socket
38.62.0.024.0060	24 V AC/DC	41.52.9.024.0010	93.52.0.024
38.62.0.060.0060	60 V AC/DC	41.52.9.060.0010	93.52.0.060
38.62.0.125.0060	(110...125)V AC/DC	41.52.9.110.0010	93.52.0.125
38.62.0.240.0060	(220...240)V AC/DC	41.52.9.110.0010	93.52.0.240
38.62.7.012.0050	12 V DC	41.52.9.012.0010	93.52.7.024
38.62.7.024.0050	24 V DC	41.52.9.024.0010	93.52.7.024
38.62.7.060.0050	60 V DC	41.52.9.060.0010	93.52.7.060
38.62.8.230.0060	(230...240)V AC	41.52.9.110.0010	93.52.8.230

B



93.01



93.51



93.02




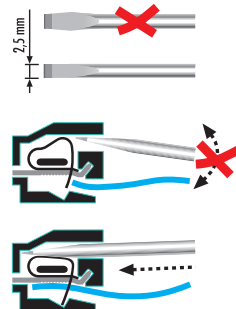
93.52

Approvals

(according to type):

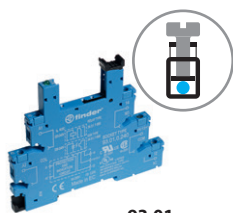


CUL US

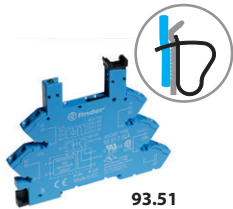
 Certain relay/socket combinations


B

Solid State Relay & Socket Combinations - 6.2 mm wide



93.01

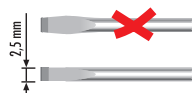


93.51

Approvals
(according to type):



Certain relay/socket combinations



Screw terminal

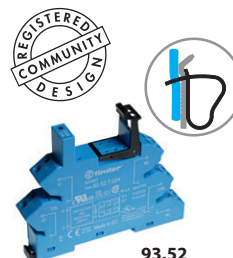
Interface Module Code	Input voltage	Relay	Socket
38.81.7.006.xxxx	6 V DC	34.81.7.005.xxxx	93.01.7.024
38.81.7.024.xxxx	24 V DC	34.81.7.024.xxxx	93.01.7.024
38.81.7.060.xxxx	60 V DC	34.81.7.060.xxxx	93.01.7.060
38.81.0.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.01.0.125
38.81.0.240.xxxx	(220...240)V AC/DC	34.81.7.060.xxxx	93.01.0.240
38.81.3.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.01.3.125
38.81.3.240.xxxx	(230...240)V AC	34.81.7.060.xxxx	93.01.3.240

Screwless terminal

Interface Module Code	Input voltage	Relay	Socket
38.91.7.006.xxxx	6 V DC	34.81.7.005.xxxx	93.51.7.024
38.91.7.024.xxxx	24 V DC	34.81.7.024.xxxx	93.51.7.024
38.91.7.060.xxxx	60 V DC	34.81.7.060.xxxx	93.51.7.060
38.91.0.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.51.0.125
38.91.0.240.xxxx	(220...240)V AC/DC	34.81.7.060.xxxx	93.51.0.240
38.91.3.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.51.3.125
38.91.3.240.xxxx	(230...240)V AC	34.81.7.060.xxxx	93.51.3.240

Example: .xxxx
.9024
.7048
.8240

Solid State Relay & Socket Combinations - 14 mm wide



93.52

Approvals
(according to type):



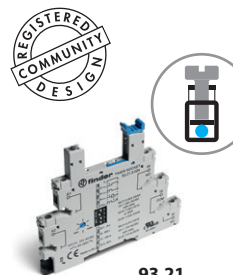
Screw terminal

Interface Module Code	Input voltage	Relay	Socket
38.31.0.024.xxxx	24 V AC/DC	41.81.7.024.xxxx	93.02.0.024
38.31.7.012.xxxx	12 V DC	41.81.7.012.xxxx	93.02.7.024
38.31.7.024.xxxx	24 V DC	41.81.7.024.xxxx	93.02.7.024

Screwless terminal

Interface Module Code	Input voltage	Relay	Socket
38.41.0.024.xxxx	24 V AC/DC	41.81.7.024.xxxx	93.52.0.024
38.41.7.012.xxxx	12 V DC	41.81.7.012.xxxx	93.52.7.024
38.41.7.024.xxxx	24 V DC	41.81.7.024.xxxx	93.52.7.024

SSR / EMR & Timer Socket Combinations



93.21

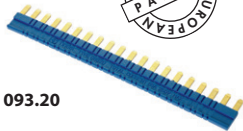
Approvals
(according to type):



Screw terminal

Interface Module Code	Input / Coil voltage	Relay	Socket
38.21.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.21.0.024
38.21.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.21.0.024
38.21.0.024.xxxx	24 V AC/DC	34.81.7.024.xxxx	93.21.0.024

Accessories



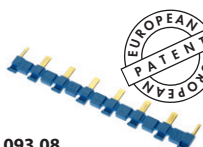
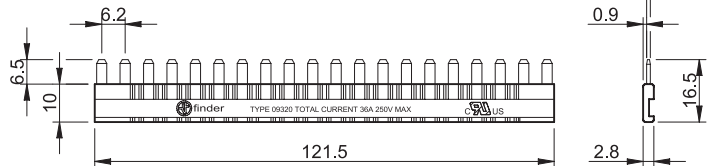
093.20

B

Approvals
(according to type):



20-way jumper link for 38.21/51/61/81/91	093.20 (blue)	093.20.0 (black)	093.20.1 (red)
Rated values	36 A - 250 V		

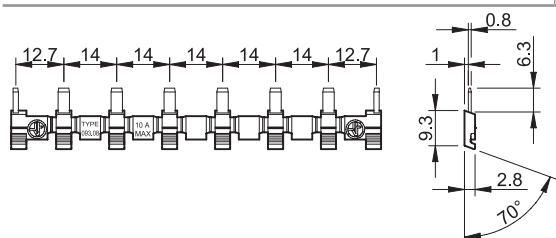


093.08

Approvals
(according to type):



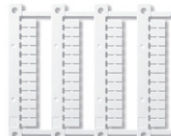
8-way jumper link for 38.01/11/31/41/52/62	093.08 (blue)	093.08.0 (black)	093.08.1 (red)
Rated values	10 A - 250 V		



093.01

Plastic separator	093.01
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Thickness 2 mm, required at the start and the end of a group of interfaces.
Can be used for visual separation group, must be used for:
- protective separation of different voltages of neighbouring PLC interfaces according to VDE 0106-101
- protection of cut jumper links



093.48

Sheet of marker tags for 38.21/51/61/81/91, plastic, 48 tags, 6 x 10 mm	093.48
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060.48

Sheet of marker tags (CEMBRE Thermal transfer printers) for 38.01/11/31/41/52/62 types (48 tags), 6 x 12 mm	060.48
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