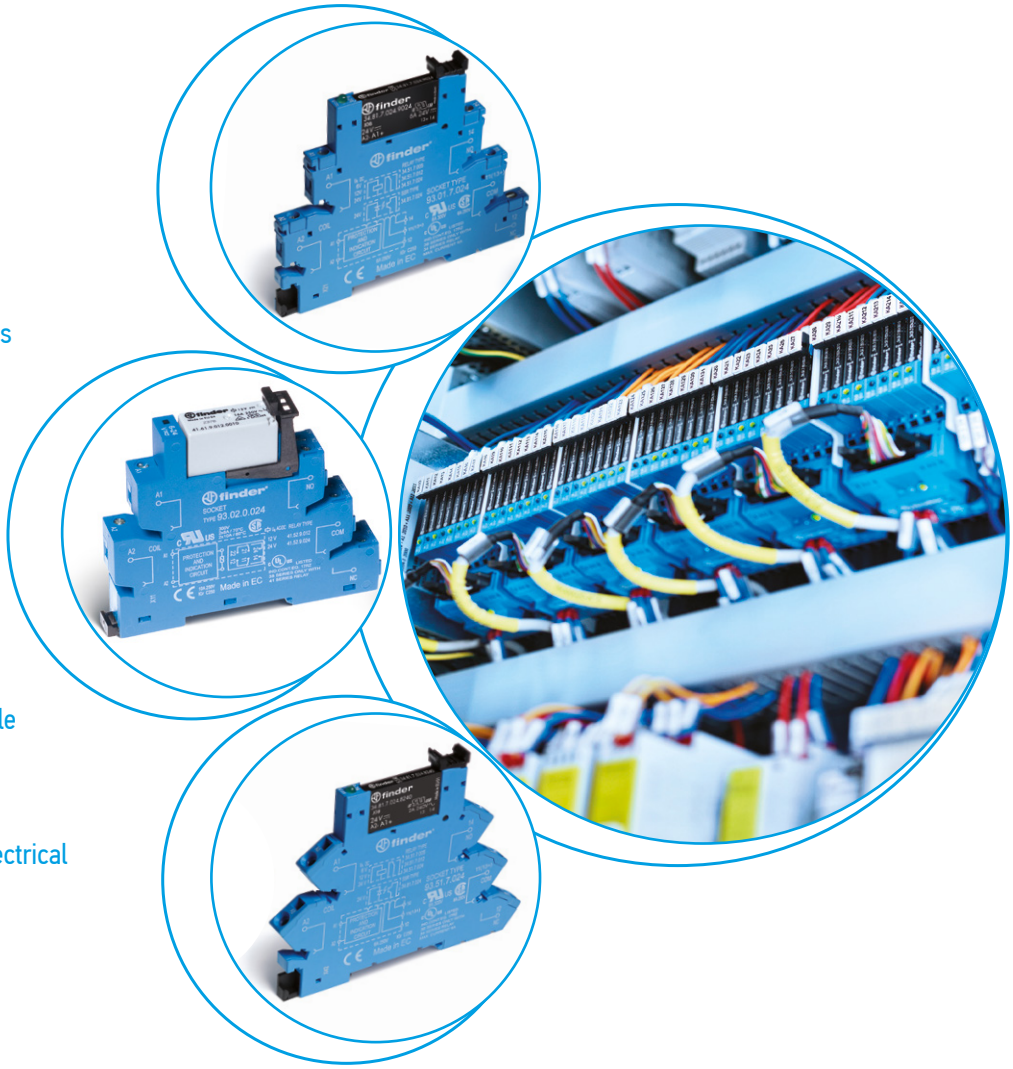
finder
RELAYING INNOVATION

38
SERIES

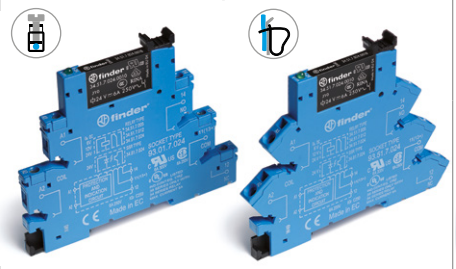
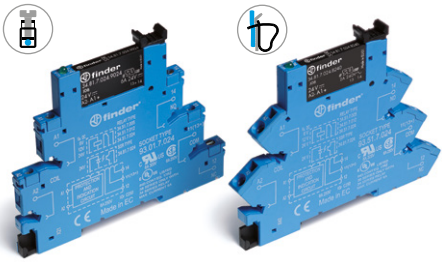
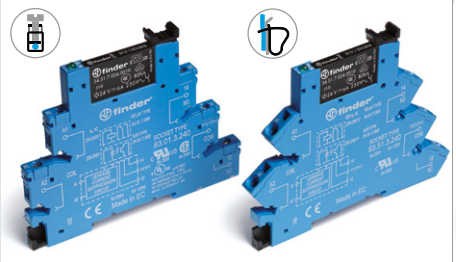
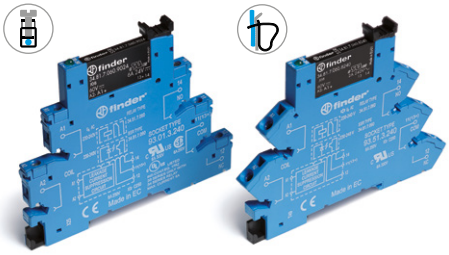
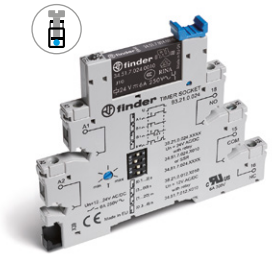
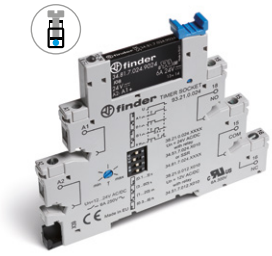
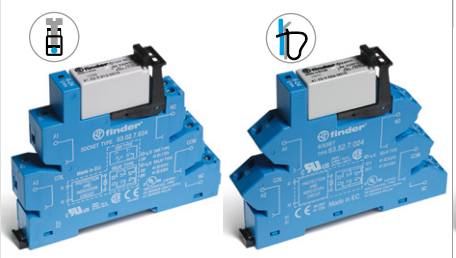
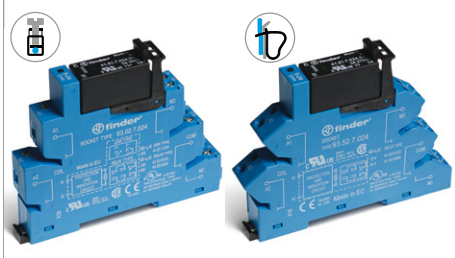
Relay interface modules
0.1 - 2 - 3 - 5 - 6 - 8 - 16 A

- Bottling plant
- Packaging machines
- Control panels
- Traffic light controls
- Vending machines
- Programmable controllers
- Panels for electrical distribution
- Labelling machines



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B

Common features	EMR Electromechanical Relays	SSR Solid State Relays
• Instant ejection of relay by plastic retaining clip • Integral coil indication and protection circuit • 35 mm rail (EN 60715) mounting		
6.2 mm wide • **EMR - DC, AC or AC/DC coil versions** • **SSR - DC or AC/DC input versions** • Screw and Screwless terminal options	**38.51/38.61**  • **1 CO - 6 A/250 V AC** **Page 1**	**38.81/38.91**  • 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 **Page 2**
6.2 mm wide • **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	**38.51.3... - 38.61.3...**  • **1 CO - 6 A/250 V AC** **Page 1**	**38.81.3... - 38.91.3...**  • 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 **Page 2**
6.2 mm wide • **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** • Box clamp	**38.21**  • **1 CO - 6 A/250 V AC** **Page 3**	**38.21...9024-8240**  • Single solid state output: Options **6 A/24 V DC, 2 A/240 V AC** • Silent, high speed switching • Long electrical life **Page 3**
14 mm wide • **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	**38.01/38.52/38.11/38.62**  • **1 CO - 16 A/250 V AC** • **2 CO - 8 A/250 V AC** **Page 4**	**38.31/38.41**  • Single solid state output: Options **5 A/24 V DC, 3 A/240 V AC** • Silent, high speed switching • Long electrical life **Page 5**

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

Ideal interface for PLC and electronic systems

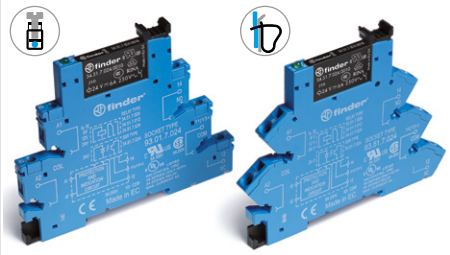
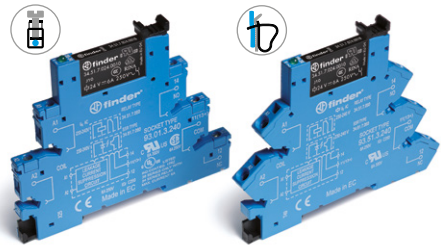
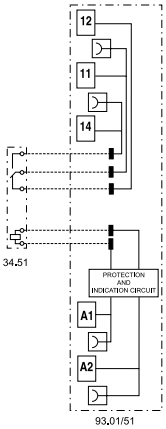
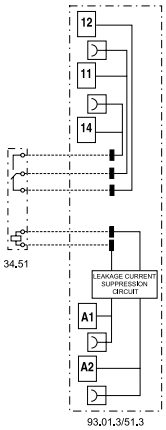
- Sensitive DC coil or AC/DC coil versions
- Integral coil indication and protection circuit
- Instant ejection of relay using plastic retaining clip
- UL Listing (certain relay/socket combinations)
- 35 mm rail (EN 60715) mounting

38.51/38.51.3
Box clamp



38.61/38.61.3
Screwless terminal



38.51/61	38.51.3/38.61.3
	
• 1 pole electromechanical relay • Box clamp and screwless terminal • 35 mm rail (EN 60715) mounting	• Leakage current suppression • 1 pole electromechanical relay • Box clamp and screwless terminal • 35 mm rail (EN 60715) mounting
 93.01/51	 93.01.3/51.3

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

For outline drawing see page 13

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: 24/110/220 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)	(110…125)	—
	V AC	(230…240)*	—	(230…240)
	V DC	6 - 12 - 24 - 48 - 60 - 220 (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	$10 \cdot 10^6$	$10 \cdot 10^6$	
Electrical life at rated load AC1	cycles	$60 \cdot 10^3$	$60 \cdot 10^3$	
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 ($U_N \leq 60$ V/> 60 V)	°C	–40…+70/–40…+55	—/–40…+55	
Protection category		IP 20	IP 20	
Approvals relay (according to type)				

38 SERIES
Relay interface modules - Single output SSR

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

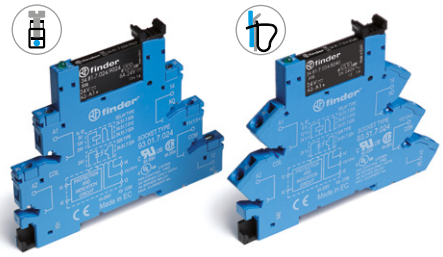
38.81/38.81.3
Box clamp



38.91/38.91.3
Screwless terminal

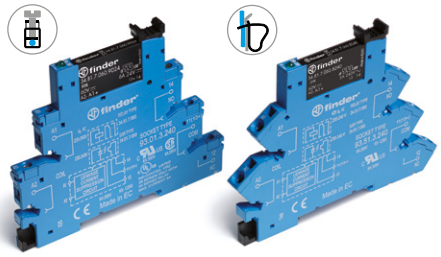


38.81/38.91

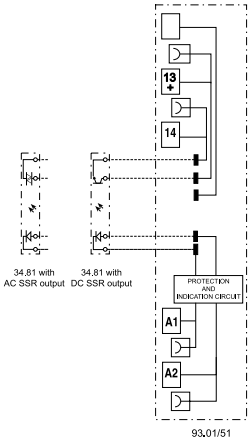


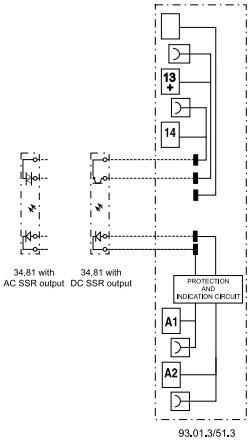
- AC or DC output switching
- SSR relay - DC input voltage
- Box clamp and screwless terminal
- 35 mm rail (EN 60715) mounting

38.81.3/38.91.3



- Leakage current suppression
- AC or DC output
- SSR relay - AC or AC/DC input voltage
- Box clamp 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)		
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)							

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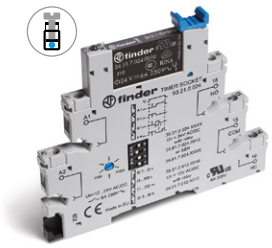
Slim timed interface module, 6.2 mm wide.
1 pole, 6 A - electromechanical relay
1 output, 2 A DC or AC - solid state relay

- 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
Box clamp

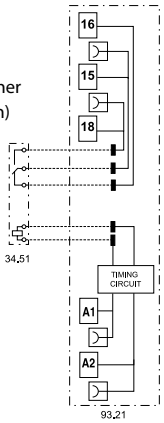


38.21

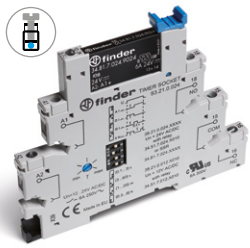


- 1 pole electromechanical output relay
- 12 or 24 V AC/DC supply
- Box clamp
- 35 mm rail (EN 60715) mounting

AI: On-delay
DI: Interval
GI: Pulse delayed
SW: Symmetrical flasher (starting pulse on)

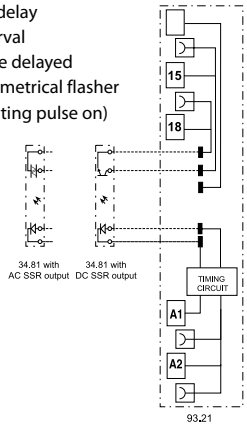


38.21...9024-8240



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

AI: On-delay
DI: Interval
GI: Pulse delayed
SW: Symmetrical flasher (starting pulse on)



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: 24/110/220 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)		CE UKCA EAC cULus		

38 SERIES
Relay interface modules - 1 Pole 16 A and 2 Pole 8 A EMR

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

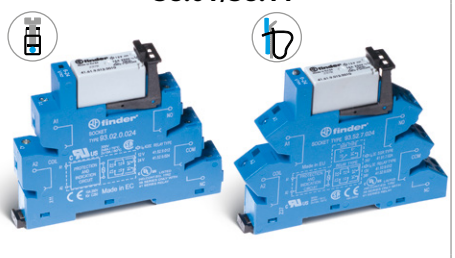
38.01/38.52
Box clamp



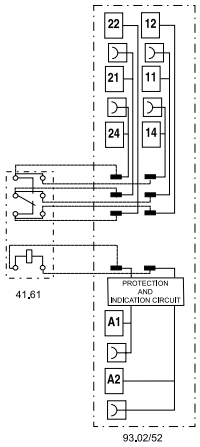
38.11/38.62
Screwless terminal



38.01/38.11

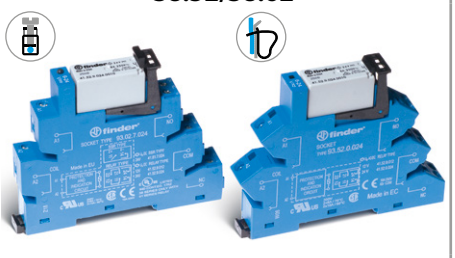


- Box clamp and screwless terminal
- 1 pole electromechanical relay
- 35 mm rail (EN 60715) mounting

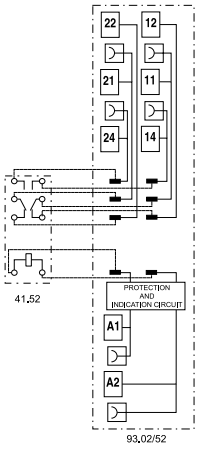


* For currents > 10 A, contact terminals must be connected in parallel (21 with 11, 24 with 14, 22 with 12).

38.52/38.62



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



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: 24/110/220 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)	24 - 60 - (110…125)
		V AC	230…240	230…240
		V DC	12 - 24 - 60 - 220	12 - 24 - 60 - 220
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	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1		cycles	$50 \cdot 10^3$	$60 \cdot 10^3$
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 ($U_N \leq 60$ V/> 60 V)		°C	–40…+70/–40…+55	–40…+70/–40…+55
Protection category			IP 20	IP 20
Approvals relay (according to type)				

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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

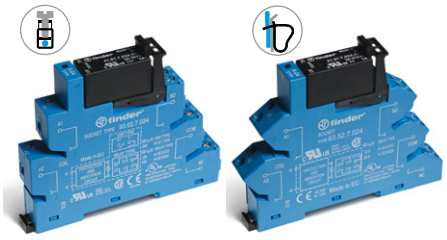
38.31
Box clamp



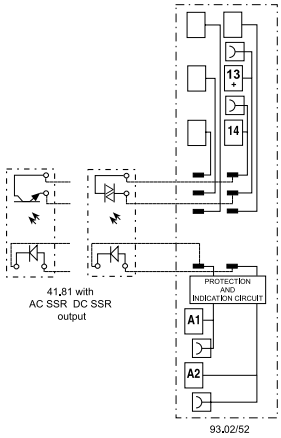
38.41
Screwless terminal



38.31/38.41



- Box clamp 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	3/40
Rated voltage/ Maximum blocking voltage	V	(24/35)DC	(240/—)AC
Switching voltage range	V	(1.5…24)DC	(12…275)AC
Repetitive peak off-state voltage	V_{pk}	—	600
Minimum switching current	mA	1	50
Max. "OFF-state" leakage current	mA	0.01	1
Max. "ON-state" voltage drop	V	0.3	1.1
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		IP 20	
Approvals relay (according to type)			

B

Ordering information

Electromechanical relay - 1 or 2 Pole

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

												A		B		C	D
3	8	.	5		1	.	7	.	0	1	2	.	0		0	5	0

Series

Type
0 = Electromechanical 16 A relay, with box clamp
1 = Electromechanical 16 A relay, with screwless terminal
2 = Timer multifunction (AI, DI, GI, SW), with box clamp
5 = Electromechanical relay, with box clamp
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, DC only, for 240 V version
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

A: Contact material
0 = AgNi Standard
4 = $AgSnO_2$
5 = AgNi + Au

B: Contact circuit
0 = CO (nPDT)

C: Options
5 = Standard DC
6 = Standard AC or AC/DC

D: Special versions
0 = Standard

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 box clamp SSR relay interface module, 6.2 mm wide, 6 A output, 24 V DC input.

3 8 . 8 1 . 7 . 0 2 4 . 9 0 2 4

Series

Type
21 = Timer SSR 6.2 mm wide, with box clamp
31 = SSR 14 mm wide, with box clamp
41 = SSR 14 mm wide, with screwless terminal
81 = SSR 6.2 mm wide, with box clamp
91 = SSR 6.2 mm wide, with screwless terminal

Input version
0 = AC (50/60 Hz)/DC, DC only, for 240 V version
3 = Leakage current suppression for (110…125)V AC/DC and (230…240)V AC SSR only
7 = DC, (6, 24, 60)V SSR only

Input voltage
See input specifications

Output version
9024 = 6 A - 24 V DC (38.21, 38.81 & 38.91)
9024 = 5 A - 24 V DC (38.31 & 38.41)
7048 = 0.1 A - 48 V DC (38.81 & 38.91)
8240 = 2 A - 240 V AC (38.21, 38.81 & 38.91)
8240 = 3 A - 240 V AC (38.31 & 38.41)

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

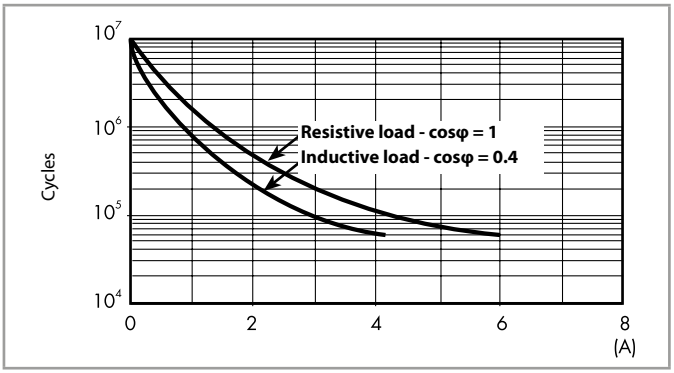
B

Technical data - 1 & 2 Pole Electromechanical Relays

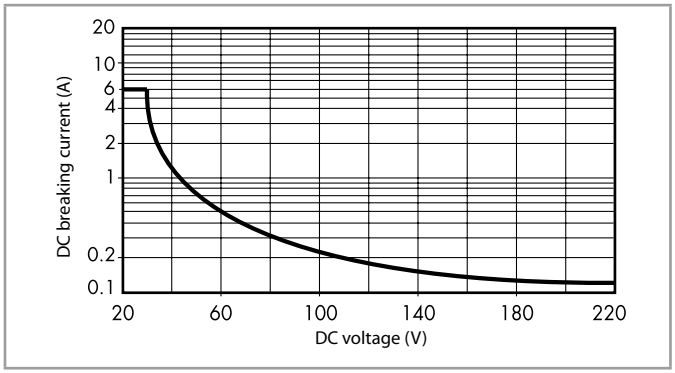
Insulation						
Insulation according to EN 61810-1	insulation rated voltage	V	250		400	
	rated impulse withstand voltage	kV	4		4	
	pollution degree		3		2	
	overvoltage category		III		III	
Insulation between coil and contacts (1.2/50 µs)		kV	6 (8 mm)			
Dielectric strength between open contacts		V AC	1000			
Insulation between coil terminals						
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)		kV (1.2/50 µs)	2			
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)		0.5 (24 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			**38.21 / 38.51**		**38.61**	
Wire strip length		mm	10		10	
⊖ Screw torque		Nm	0.5		—	
Max. wire size			solid cable	stranded cable	solid cable	stranded cable
		mm²	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	
⊖ Screw torque		Nm	0.5		—	
Max. wire size			solid cable	stranded cable	solid cable	stranded cable
		mm²	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

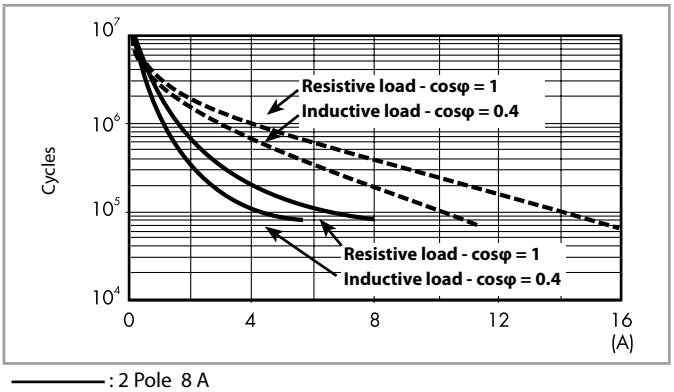
F 38 - Electrical life (AC) v contact current, 1 Pole 6 A



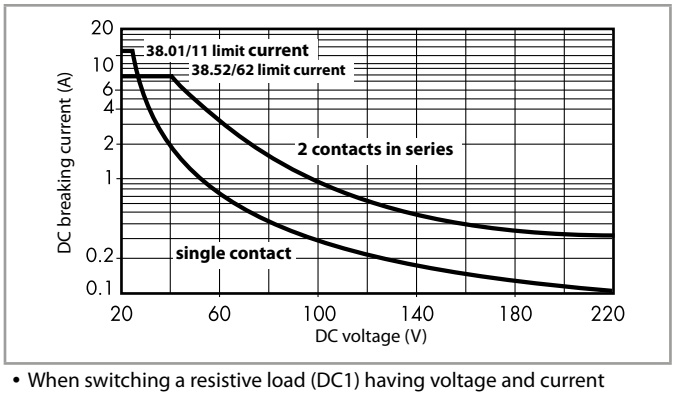
H 38 - Maximum DC1 breaking capacity, 1 Pole 6 A



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



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



——— : 2 Pole 8 A

——— : 1 Pole 16 A

- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 60 · 10³ (1 Pole) or ≥ 80 · 10³ (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.

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Coil specifications - 1 Pole 6 A Electromechnical Relay

Coil data sensitive DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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
220	**0**.240	176	264	4	0.9

Coil data AC/DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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(*)

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

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

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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 U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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 PLC,s 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 U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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
220	**0**.240	176	264	4	0.9

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

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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

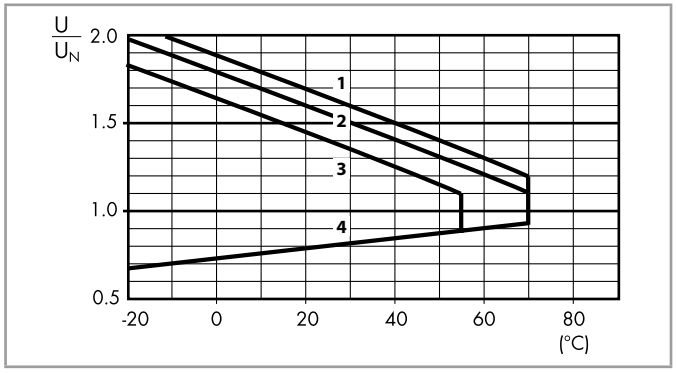
Coil data AC, 1 Pole 16 A and 2 Pole 8 A

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
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 ≤ 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.

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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

B

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

Input data DC

Nominal voltage	Supply code	Operating range		Release voltage	Rated coil consumption	Power consumption
U_N		U_{min}	U_{max}	U	I at U_N	P
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
220	**0**.240	176	264	—	4	0.9

Input data AC/DC

Nominal voltage	Supply code	Operating range		Release voltage	Rated coil consumption	Power consumption
U_N		U_{min}	U_{max}	U	I at U_N	P
V		V	V	V	mA	VA/W
110…125	**0**.125	88	138	22	5.5*	0.7/0.7

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

Input data - Leakage current suppression types

Nominal voltage	Supply code	Operating range		Release voltage	Rated coil consumption	Power consumption
U_N		U_{min}	U_{max}	U	I at U_N	P at U_N
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 PLC,s 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	Supply code	Operating range		Release voltage	Rated coil consumption	Power consumption
U_N		U_{min}	U_{max}	U	I at U_N	P
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

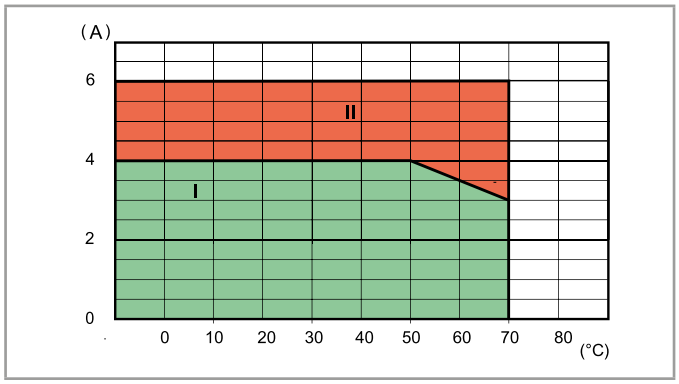
Nominal voltage	Supply code	Operating range		Release voltage	Rated coil consumption	Power consumption
U_N		U_{min}	U_{max}	U	I at U_N	P
V		V	V	V	mA	W
24	**0**.024	16.8	30	9	16.5	0.3

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Output specification - Solid State Relays

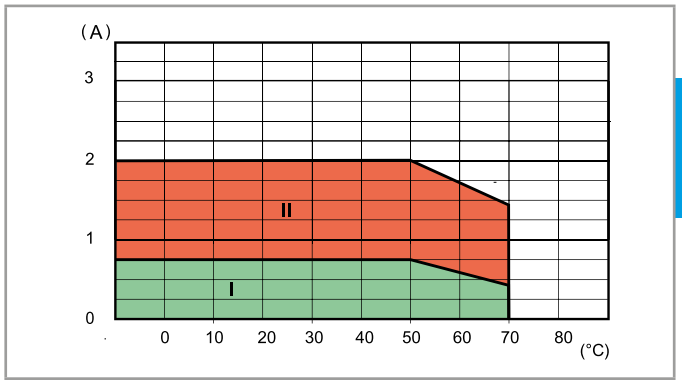
L 34-1 - Output DC current v ambient temperature

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

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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
		mm²	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



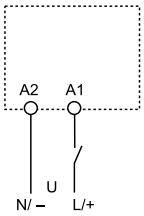
(0.1…3)s (3…60)s (1…20)min (0.3…6)h

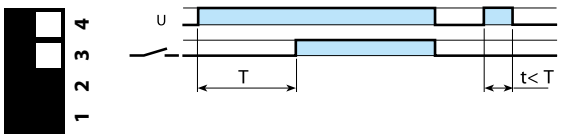
Functions

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

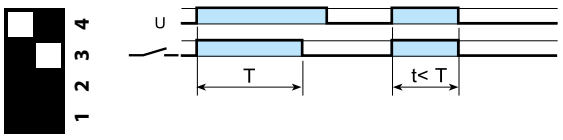
Wiring diagram

U = Supply voltage — = Output contact

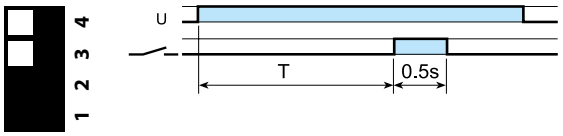




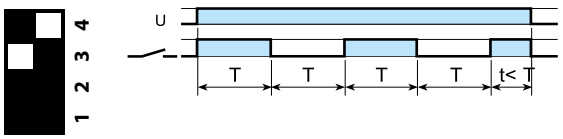
(AI) On-delay.
Apply power to timer.
Output contacts transfer after preset time has elapsed.
Reset occurs when power is removed.



(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.

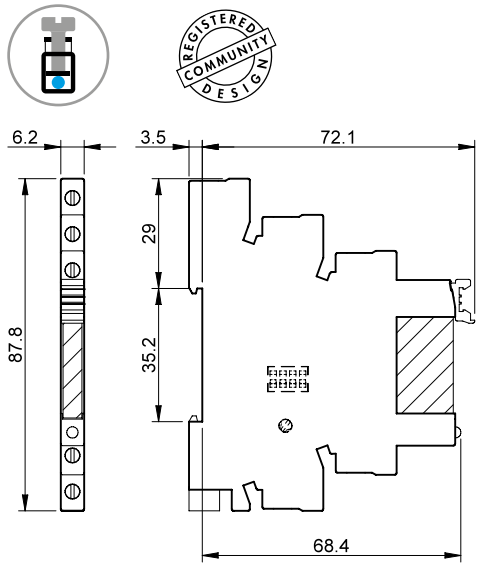


(SW) Symmetrical flasher (starting pulse on).
Apply power to timer.
Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied.
The ratio is 1:1 (time on = time off).

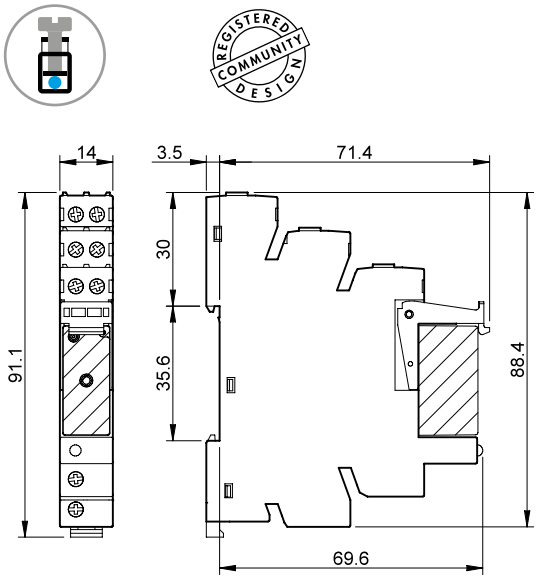
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Outline drawings

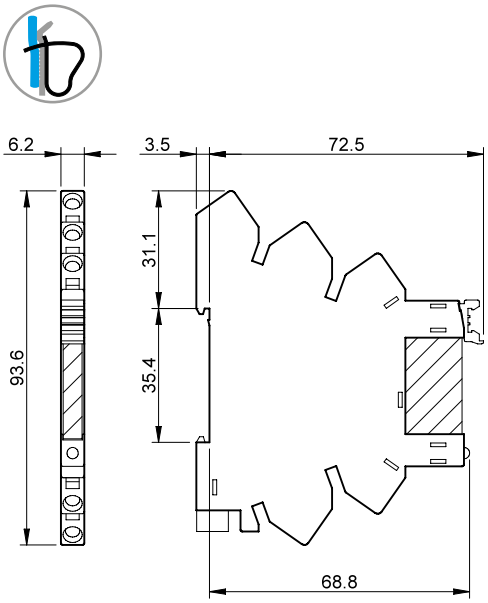
Types 38.21
38.51 / 38.51.3
38.81 / 38.81.3
Box clamp



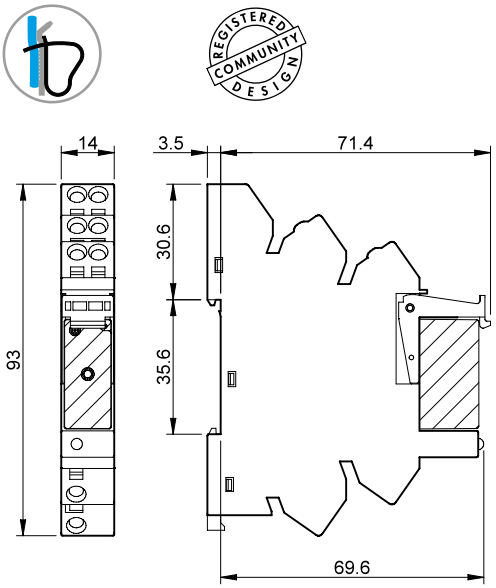
Types 38.01
38.31
38.52
Box clamp



Types 38.61 / 38.61.3
38.91 / 38.91.3
Screwless terminal



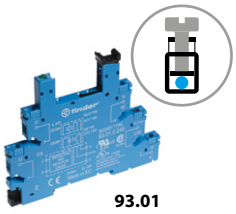
Types 38.11
38.41
38.62
Screwless terminal



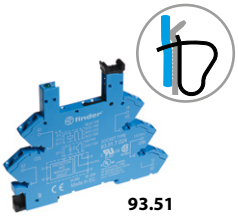
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B

Electromechanical Relay & Socket Combinations



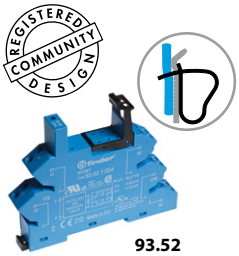
93.01



93.51



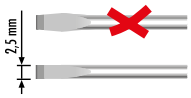
93.02



93.52

Approvals
(according to type):

Certain relay/socket combinations

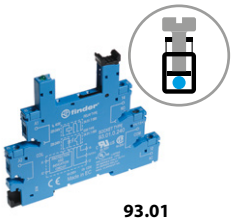




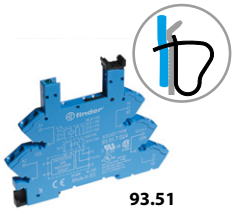


Box clamp - 1 Pole relay 6 A			
Interface Module Code	**Coil voltage**	**Relay**	**Socket**
38.51.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.01.0.024
38.51.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.01.0.024
38.51.0.048.0060	48 V AC/DC	34.51.7.048.0010	93.01.0.060
38.51.0.060.0060	60 V AC/DC	34.51.7.060.0010	93.01.0.060
38.51.0.125.0060	(110…125)V AC/DC	34.51.7.060.0010	93.01.0.125
38.51.3.125.0060	(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
38.51.0.240.0060	220 V DC	34.51.7.060.0010	93.01.0.240
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
38.61.3.125.0060	(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
38.61.0.240.0060	220 V DC	34.51.7.060.0010	93.51.0.240
38.61.8.240.0060	(230…240)V AC	34.51.7.060.0010	93.51.8.240
Box clamp - 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	220 V 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	220 V 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
Box clamp - 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
38.52.7.012.0050	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
38.52.0.240.0060	220 V DC	41.52.9.110.0010	93.02.0.240
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
38.62.7.012.0050	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
38.62.0.240.0060	220 V DC	41.52.9.110.0010	93.52.0.240
38.62.8.230.0060	(230…240)V AC	41.52.9.110.0010	93.52.8.230

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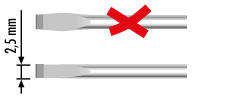
93.01



93.51

Approvals (according to type):

Certain relay/socket combinations







Solid State Relay & Socket Combinations - 6.2 mm wide

Box clamp			
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 V 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 V 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

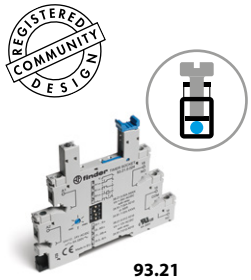


93.52

Approvals (according to type):

Solid State Relay & Socket Combinations - 14 mm wide

Box clamp			
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



93.21

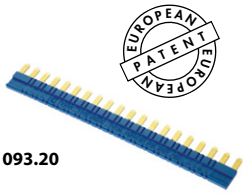
Approvals (according to type):

SSR / EMR & Timer Socket Combinations

Box clamp			
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

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Accessories

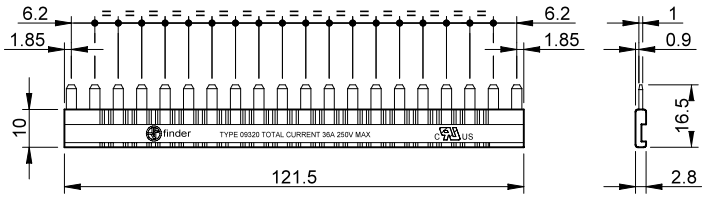


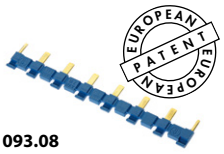
093.20

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		

* Maximum capacity of the jumper link. Each individual pole must not exceed the 6 A limit of the interface to which it is connected.

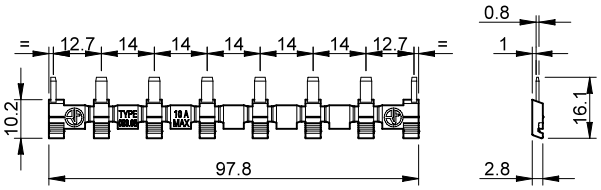


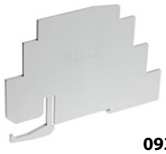


093.08

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		

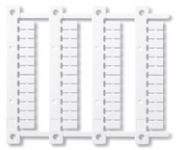




093.01

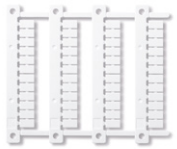
Plastic separator	093.01

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



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