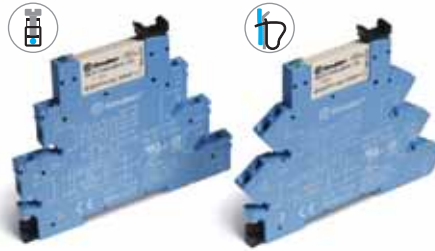| Common features	EMR Electromechanical Relays	SSR Solid State Relays
• Instant ejection of relay by plastic retaining clip • Integral coil indication and protection circuit • 35 mm rail (EN 60715) mounting		

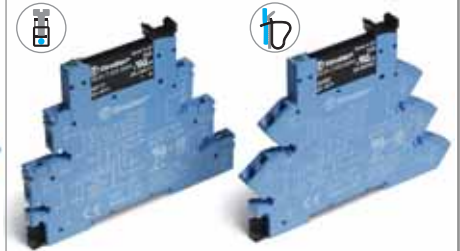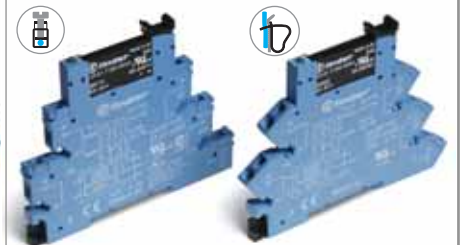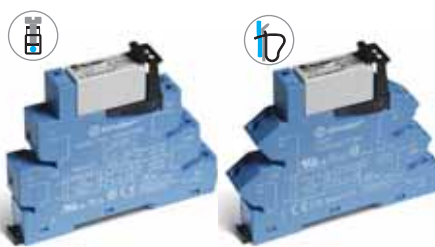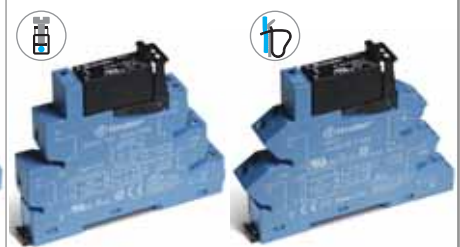| **6.2 mm wide**
• EMR - DC, AC or AC/DC coil versions
• SSR - DC or AC/DC input versions
• Screw and Screwless terminal options | **38.51/38.61**

• 1 CO - 6 A 250VAC

Page 1 | **38.81/38.91**

• Single solid state output:
  Options **0.1A 48VDC, 2A 24VDC, 2A 240VAC**
• 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 250VAC
	
	Page 1
		38.81.3… - 38.91.3…
		
		• Single solid state output:
		  Options **0.1A 48VDC, 2A 24VDC, 2A 240VAC**
		• Silent, high speed switching
		• Long electrical life
		
		Page 2

6.2 mm wide • Timed Interface module • 4 functions & 4 time scales 0.1s … 6h • EMR - AC/DC (12 or 24V) supply versions • SSR - AC/DC (24V) supply • Screw terminals	**38.21** • 1 CO - 6 A 250VAC Page 3	**38.21...9024-8240** • Single solid state output: Options **2A 24VDC, 2A 240VAC** • Silent, high speed switching • Long electrical life Page 3
14 mm wide • EMR - DC or AC/DC coil versions • SSR - DC input versions • Screw and Screwless terminal options	**38.52/38.62** • 2 CO - 8 A 250VAC Page 4	**38.31/38.41** • Single solid state output: Options **5A 24VDC, 3A 240VAC** • Silent, high speed switching • Long electrical life Page 5

38 Series - Relay interface modules - 1 Pole 6 A EMR

Features

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)
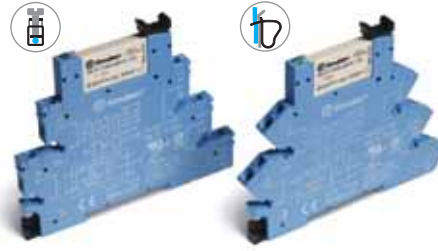- 35 mm rail (EN 60715) mounting

38.51 / 38.51.3
Screw terminal

38.61 / 38.61.3
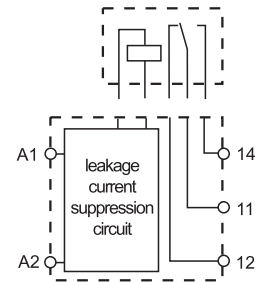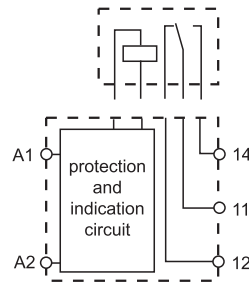Screwless terminal

38.51/61

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

38.51.3 / 38.61.3

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

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

For outline drawing see page 12

Contact specification		38.51/61	38.51.3 / 38.61.3	
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	1,500	1,500	
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	6/0.2/0.15	6/0.2/0.15	
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	$10 \cdot 10^6$	$10 \cdot 10^6$	
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	1,000	1,000	
Ambient temperature range (U_N≤ 60 V/>60V)	°C	–40…+70/–40…+55	—/–40…+55	
Protection category		IP 20	IP 20	
Approvals relay (according to type)				

1

Features

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
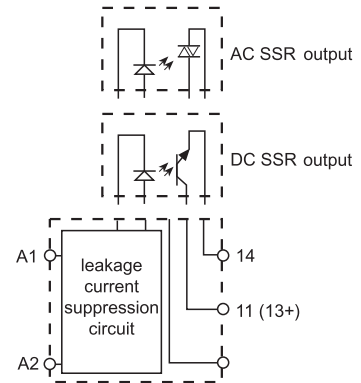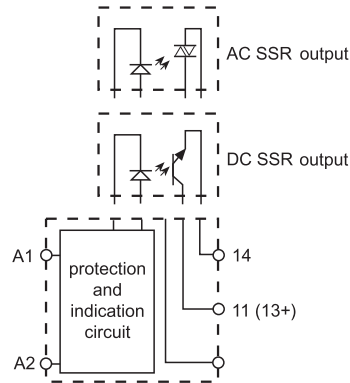Screwless terminal

38.81/38.91
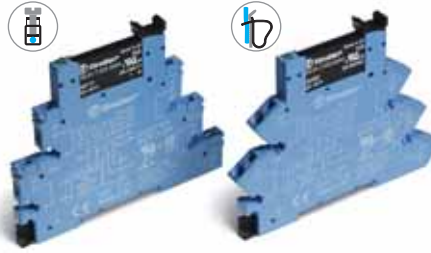
- AC or DC output switching
- SSR relay - DC input voltage
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting

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

AC SSR output

DC SSR output

A1 — protection and indication circuit — 14

11 (13+)

A2

AC SSR output

DC SSR output

A1 — leakage current suppression circuit — 14

11 (13+)

A2

For outline drawing see page 12

Output specification							
Contact configuration		1 NO (SPST-NO)			1 NO (SPST-NO)		
Rated current/Maximum peak current (10 ms) A		2/20	0.1/0.5	2/40	2/20	0.1/0.5	2/40
Rated voltage/Maximum blocking voltage V		24/33 DC	48/60 DC	240/275 AC	24/33 DC	48/60 DC	240/275 AC
Switching voltage range V		(1.5…24)DC	(1.5…48)DC	(12…240)AC	(1.5…24)DC	(1.5…48)DC	(12…240)AC
Minimum switching current mA		1	0.05	22	1	0.05	22
Max. "OFF-state" leakage current mA		0.001	0.001	1.5	0.001	0.001	1.5
Max. "ON-state" voltage drop V		0.12	1	1.6	0.12	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		2,500			2,500		
Ambient temperature range °C		–20…+55			–20…+55		
Environmental protection		IP20			IP20		
Approvals relay (according to type)		CE PG cULus					

finder

Features

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 0.1s to 6h
- Instant ejection of relay using plastic retaining clip
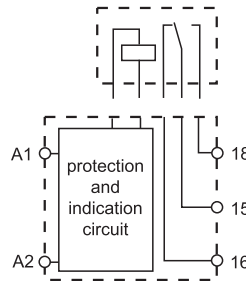- 6.2 mm wide, 35 mm rail (EN 60715) mounting

38.21
Screw terminal

NEW 38.21

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

NEW 38.21...9024-8240

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

AI: ON delay
DI: ON pulse
GI: Fixed pulse (0.5s) delayed
SW: Symmetrical recycling: ON start

AI: ON delay
DI: ON pulse
GI: Fixed pulse (0.5s) delayed
SW: Symmetrical recycling: ON start

AC SSR output

DC SSR output

For outline drawing see page 12
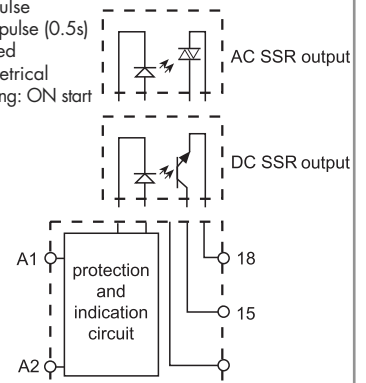
Contact specification			
Contact configuration		1 CO (SPDT)	—
Rated current/Maximum peak current A		6/10	—
Rated voltage/Maximum switching voltage V AC		250/400	—
Rated load AC1 VA		1,500	—
Breaking capacity DC1: 30/110/220 V A		6/0.2/0.12	—
Minimum switching load mW (V/mA)		500 (12/10)	—
Standard contact 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	—	2/20	2/40
Rated voltage/Maximum blocking voltage V	—	(24/33)DC	(240/275)AC
Switching voltage range V	—	(1.5...24)DC	(12...275)AC
Minimum switching current mA	—	1	22
Max. "OFF-state" leakage current mA	—	0.001	1.5
Max. "ON-state" voltage drop V	—	0.12	1.6
Supply specification			
Nominal voltage (U_N) V AC (50/60Hz)/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	–40…+55
Protection category		IP 20	
Approvals relay (according to type)		CE	

Features

2 Pole - 8 A electromechanical relay interface modules, 14 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)
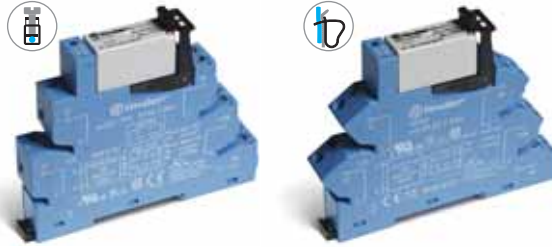- 35 mm rail (EN 60715) mounting

38.52
Screw terminal

38.62
Screwless terminal

38.52/38.62

- Screw terminal and screwless terminal
- 2 pole electromechanical relay
- 35 mm rail (EN 60715) mounting
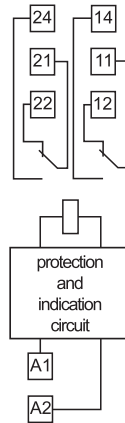
For outline drawing see page 12

Contact specification		
Contact configuration		2 CO (DPDT)
Rated current/Maximum peak current	A	8/15
Rated voltage/Maximum switching voltage	V AC	250/400
Rated load AC1	VA	2,000
Rated load AC15 (230 V AC)	VA	400
Single phase motor rating (230 V AC)	kW	0.3
Breaking capacity DC1: 30/110/220 V	A	8/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)
Standard contact material		AgNi
Coil specification		
Nominal voltage (U_N)	V AC/DC	24 - 60 - (110...125) - (220...240)
	V DC	12 - 24 - 60
Rated power AC/DC	VA (50 Hz)/W	See page 9
Operating range	AC/DC	0.8...1.1
	DC	$(0.8...1.2)U_N$
Holding voltage	AC/DC	0.6 / 0.6 U_N
Must drop-out voltage	AC/DC	0.1 / 0.05 U_N
Technical data		
Mechanical life AC/DC	cycles	$30 \cdot 10^6$
Electrical life at rated load AC1	cycles	$80 \cdot 10^3$
Operate/release time	ms	8 / 10
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)
Dielectric strength between open contacts	V AC	1,000
Ambient temperature range ($U_N \le$ 60 V/>60V)	°C	–40...+70 / –40...+55
Protection category		IP 20
Approvals relay (according to type)		CE SA PG VDE RINA cULus

Features

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

NEW 38.31/38.41

38.31
Screw terminal

38.41
Screwless terminal
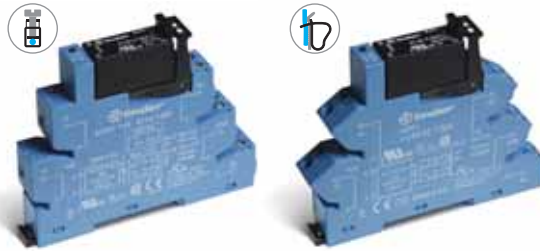
- Screw terminal and screwless terminal
- AC or DC output switching
- SSR relay - DC input voltage
- 35 mm rail (EN 60715) mounting
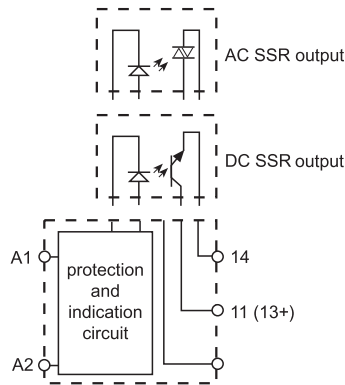
AC SSR output

DC SSR output

A1 — protection and indication circuit — 14
11 (13+)
A2

Output specification			
Contact configuration		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current (100 µs)	A	5/40	3/40
Rated voltage/Maximum blocking voltage	V	(24/35)DC	(240/275)AC
Switching voltage range	V	(1.5…35)DC	(12…275)AC
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	—	
	V DC	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	2,500	
Ambient temperature range	°C	–20…+55	
Environmental protection		IP20	
Approvals relay (according to type)		CE P c$\boldsymbol{\Re}$us	

Ordering information

Electromechanical relay - 1 or 2 Pole

Example: 38 series screw terminal 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
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 A
2 = 2 pole, 8 A

Coil version
0 = AC (50/60 Hz)/ DC
0 = AC (50/60 Hz)/DC, (24, 60, 125, 240)V only (38.52)
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/DC

B: Contact circuit
0 = CO (nPDT)

A: Contact material
0 = AgNi Standard
4 = AgSnO$_2$
5 = AgNi + Au (5 µm)

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

Type	Coil version	A	B	C	D
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 - 4 - 5	0	5	0
38.52/62	0 - 8	0 - 4 - 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, 2 A output, 24 V DC input.

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

Series

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

Input version
0 = AC/DC for (110...125)V and (220...240)V only
3 = Leakage current suppression for
    (110...125)V AC/DC and (230...240)V AC
7 = DC, (6, 24, 60)V only

Input voltage
See input specifications

Output version
9024 = 2 A -   24 V DC (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 (38.81 & 38.91)
8240 = 3 A - 240 V AC (38.31 & 38.41)

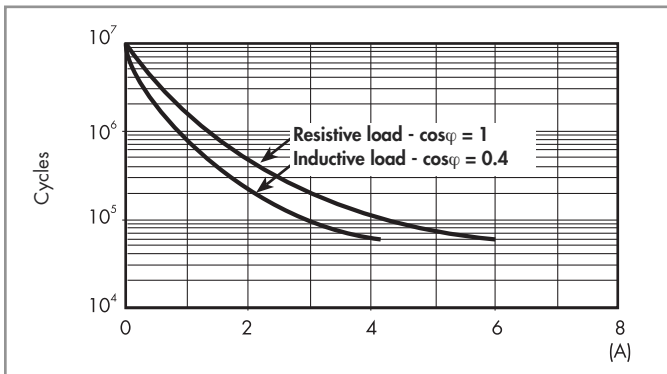**Selecting features and options: only combinations in the same row are possible.**

Type	Input version	Output version
38.81/91	7	9024 - 7048 - 8240
38.81/91	0 - 3	9024 - 7048 - 8240
38.31/41	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	1,000	
Conducted disturbance immunity				
Burst (5…50)ns, 5 kHz, on A1 - A2			EN 61000-4-4	level 4 (4 kV)
Surge (1.2/50 μs) on A1 - A2 (differential mode)			EN 61000-4-5	level 3 (2 kV)
Other data			**1 Pole**	**2 Pole**
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			**38.51**	**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	1x2.5/2x1.5	1x2.5/2x1.5	1x2.5	1x2.5
		AWG	1x14/2x16	1x14/2x16	1x14	1x14
			38.52	**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	1x2.5/2x1.5	1x2.5/2x1.5	1x2.5	1x2.5
		AWG	1x14/2x16	1x14/2x16	1x14	1x14

Contact specification - 1 & 2 Pole Electromagnetic Relays

F 38 - Electrical life (AC) v contact current, 1 Pole
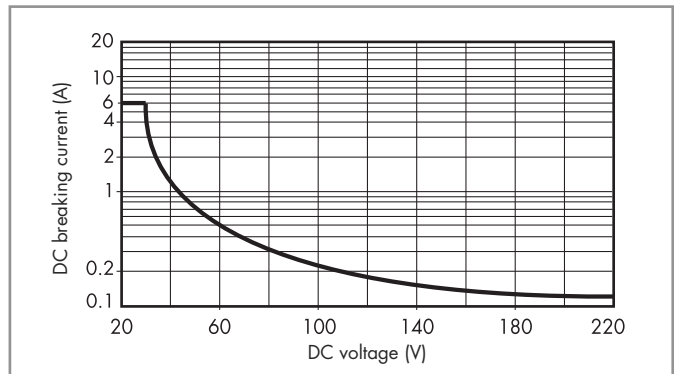
Resistive load - cosφ = 1
Inductive load - cosφ = 0.4

H 38 - Maximum DC1 breaking capacity, 1 Pole

F 38 - Electrical life (AC) v contact current, 2 Pole

Resistive load - cosφ = 1
Inductive load - cosφ = 0.4

H 38 - Maximum DC1 breaking capacity, 2 Pole

2 contacts in series

single contact
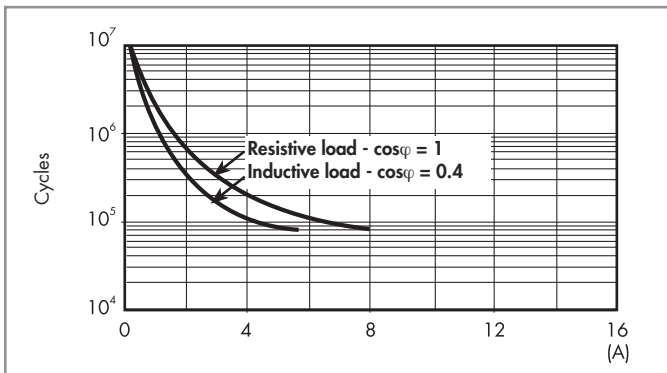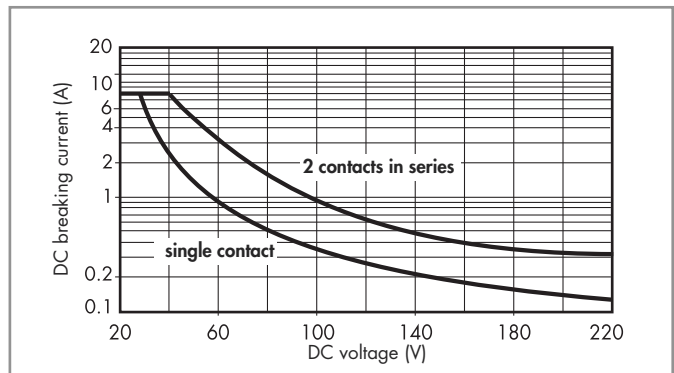
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 60·10³ (1 Pole) or ≥ 80·10³ (2 Pole) can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load. Note: the release time for the load will be increased.

Coil specifications - 1 Pole Electromechnical Relay

Coil data sensitive DC, 1 Pole

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

Coil data AC/DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption	Power consumption
		U_{min}	U_{max}	I at U_N	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(*)
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	Power consumption
		U_{min}	U_{max}	I at U_N	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		Rated coil consumption	Power consumption
		U_{min}	U_{max}	I at U_N	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 - 2 Pole Electromechanical Relay

Coil data sensitive DC, 2 Pole

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

Coil data AC/DC, 2 Pole

Nominal voltage U_N	Coil code	Operating range		Rated coil consumption	Power consumption
		U_{min}	U_{max}	I at U_N	P at U_N
V		V	V	mA	VA/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 specification - 1 & 2 Pole Electromagnetic Relays

R 38 - DC coil operating range v ambient temperature
1 Pole and 2 Pole
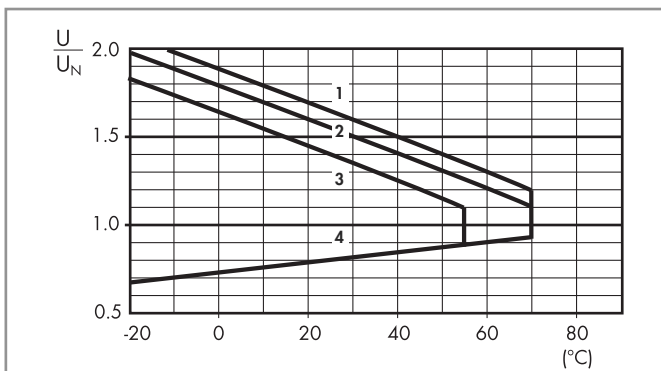
1 - Max. permitted coil voltage at nominal load (DC coil).
2 - Max. permitted coil voltage at nominal load (AC/DC coils U ≤ 60 V).
3 - Max. permitted coil voltage at nominal load (AC/DC coils U > 60 V).
4 - Min pick-up voltage with coil at ambient temperature.

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
		mm²	1x2.5 / 2x1.5	1x2.5 / 2x1.5	1x2.5	1x2.5
		AWG	1x14 / 2x16	1x14 / 2x16	1x14	1x14
			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
		mm²	1x2.5 / 2x1.5	1x2.5 / 2x1.5	1x2.5	1x2.5
		AWG	1x14 / 2x16	1x14 / 2x16	1x14	1x14

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 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 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	**7**.024	16.8	30	5	12	0.3

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	1x2.5 / 2x1.5	1x2.5 / 2x1.5
	AWG	1x14 / 2x16	1x14 / 2x16

Times scales

(0.1…3)s   (3…60)s   (1…20)min   (0.3…6)h
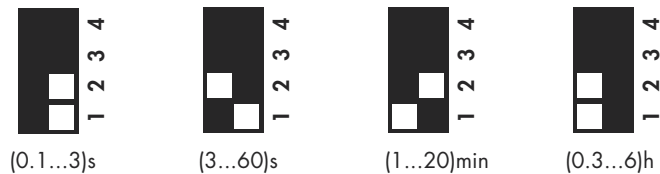
Functions

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

Wiring diagram
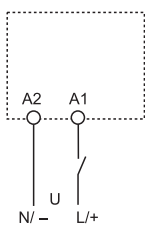
U = Supply voltage   ⌐⌐ = Output contact

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

(DI) ON pulse.
Apply power to timer.
Output contacts transfer immediately.
After the preset time has elapsed, contacts reset.

(GI) Fixed pulse (0.5s) delayed.
Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5s.

(SW) Symmetrical recycling: ON start.
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

38.21
38.51 / 38.51.3
38.81 / 38.81.3
Screw terminal

16	NO	12	NC
15	COM	11	COM
18	NC	14	NO
	COIL		COIL

TIMING CIRCUIT

PROTECTION AND INDICATION CIRCUIT

A1

A2

A1

A2

38.21   38.51/81

6.2   75.6

87.9   3.5   35.4   23.6   70.4

38.31
38.52
Screw terminal

22		12	NC
21		11	COM
24		14	NO
			COIL

PROTECTION AND INDICATION CIRCUIT

A1

A2

14   77.1

89.7   3.5   35.4   25.5   72.1
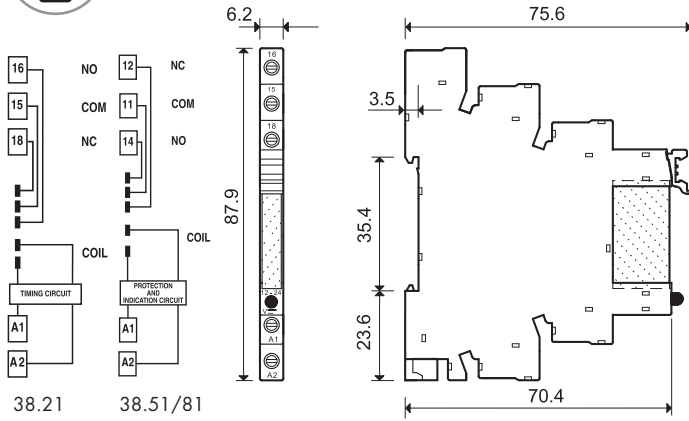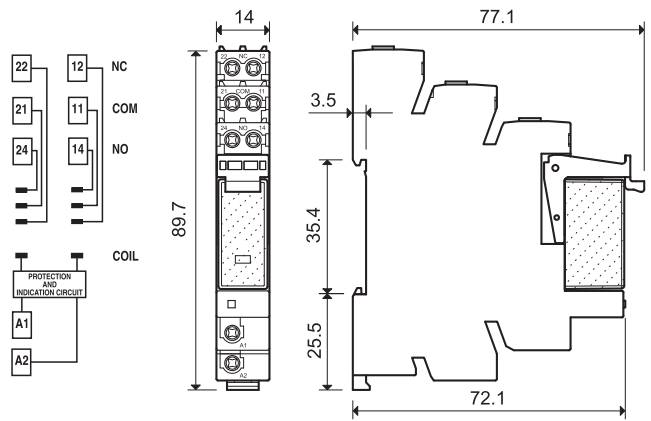
38.61 / 38.61.3
38.91 / 38.91.3
Screwless terminal

12	NC
11	COM
14	NO
	COIL

PROTECTION AND INDICATION CIRCUIT

A1

A2

6.2   76

93.6   3.5   35.4   27   73.7
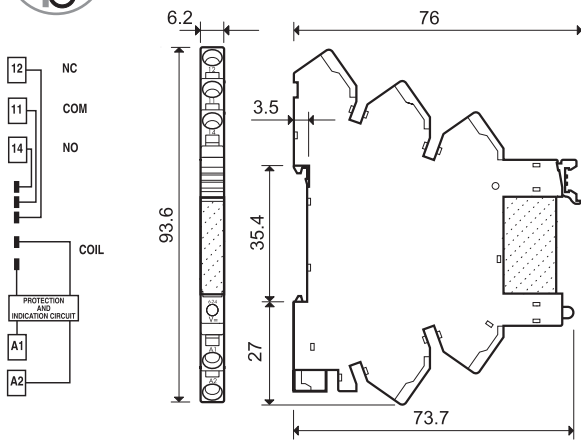
38.41
38.62
Screwless terminal

22		12	NC
21		11	COM
24		14	NO
			COIL

PROTECTION AND INDICATION CIRCUIT

A1

A2

14   77.1

93   3.5   35.4   27   72.1
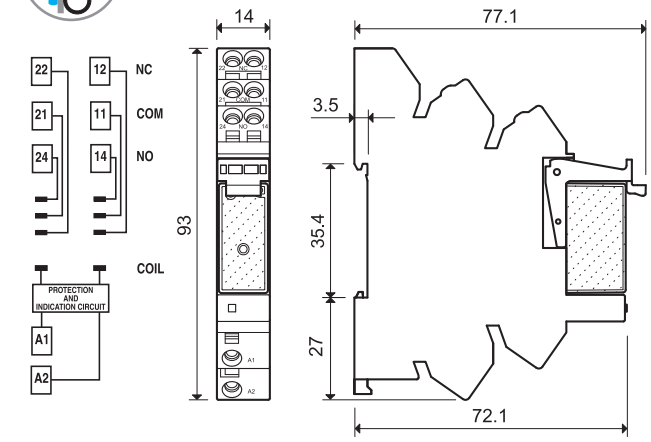
Electromechanical Relay & Socket Combinations
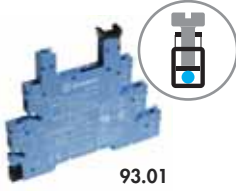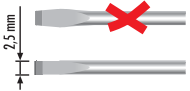
Screw terminal - 1 Pole relay			
Interface Module Code	**Coil voltage**	**Relay**	**Socket**
38.51.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.01.0.024
38.51.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.01.0.024
38.51.0.048.0060	48 V AC/DC	34.51.7.048.0010	93.01.0.060
38.51.0.060.0060	60 V AC/DC	34.51.7.060.0010	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			
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 - 2 Pole relay			
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

Screwless terminal - 2 Pole relay			
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

Solid State Relay & Socket Combinations - 6.2 mm wide

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

finder

93.01

93.51

93.02

93.52

Approvals
(according to type):

CE CSA PC+

VDE cULus

cULus Certain relay/socket
combinations

2,5 mm

finder

Solid State Relay & Socket Combinations - 14 mm wide

93.52

Approvals
(according to type):

| Screw terminal			
Interface Module Code	Input voltage	Relay	Socket
38.31.7.024.9024	24 V DC	41.81.7.024.9024	93.02.7.024
38.31.7.024.8240	24 V DC	41.81.7.024.8240	93.02.7.024
Screwless terminal			
Interface Module Code	Input voltage	Relay	Socket
38.41.7.024.9024	24 V DC	41.81.7.024.9024	93.52.7.024
38.41.7.024.8240	24 V DC	41.81.7.024.8240	93.52.7.024

SSR / EMR & Timer Socket Combinations
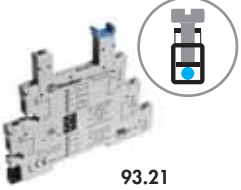
93.21

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
38.21.0.024.9024	24 V AC/DC	34.81.7.024.9024	93.21.0.024
38.21.0.024.8240	24 V AC/DC	34.81.7.024.8240	93.21.0.024

Accessories
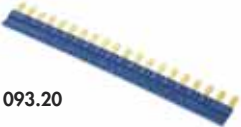
093.20

Approvals
(according to type):

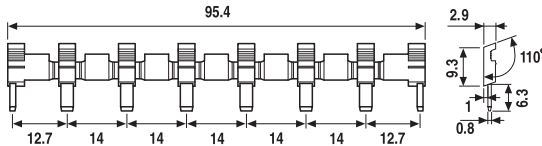| **20-way jumper link** for 38.x1	093.20 (blue)	093.20.0 (black)	093.20.1 (red)
Rated values	36 A - 250 V		

121.5   2.8   10   6.5   16.5
1.85 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 1.85
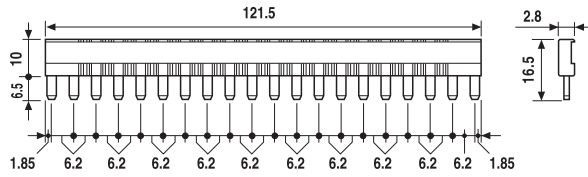
093.08

Approvals
(according to type):

8-way jumper link for 38.x2	093.08 (blue)	093.08.0 (black)	093.08.1 (red)
Rated values	10 A - 250 V		

95.4   2.9   9.3   110°   6.3   1   0.8
12.7 14 14 14 14 14 12.7

093.01

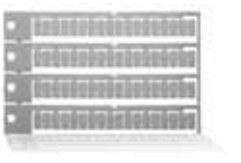| **Plastic separator**	093.01

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

093.64

Sheet of marker tags for 38.x1, plastic, 64 tags, 6x10 mm	093.64

060.72

Sheet of marker tags for 38.x2, plastic, 72 tags, 6x12 mm	060.72

14