

Common features

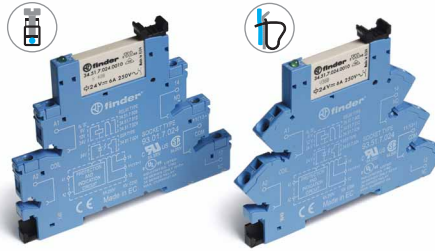
- Instant ejection of relay by plastic retaining clip
- Integral coil indication and protection circuit
- 35 mm rail (EN 60715) mounting

6.2 mm wide

- EMR - DC, AC or AC/DC coil versions
- SSR - DC or AC/DC input versions
- Screw and Screwless terminal options

EMR
Electromechanical Relays

38.51/38.61

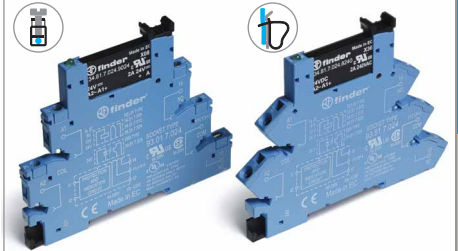


- 1 CO - 6 A 250VAC

Page 1

SSR
Solid State Relays

38.81/38.91



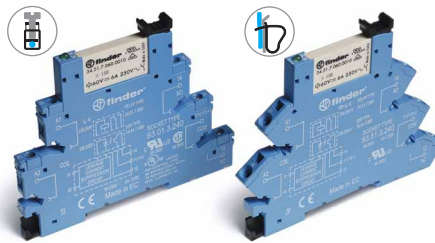
- Single solid state output:
Options 0.1A 48VDC, 2A 24VDC, 2A 240VAC
- Silent, high speed switching
- Long electrical life

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

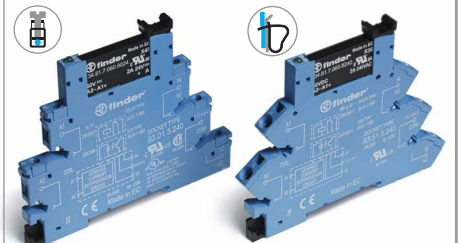
38.51.3... - 38.61.3...



- 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

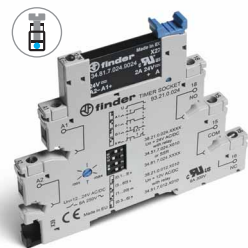
38.21



- 1 CO - 6 A 250VAC

Page 3

38.21...9024-8240



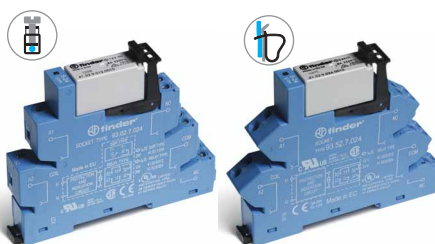
- Single solid state output:
Options 2A 24VDC, 2A 240VAC
- Silent, high speed switching
- Long electrical life

Page 3

14 mm wide

- 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

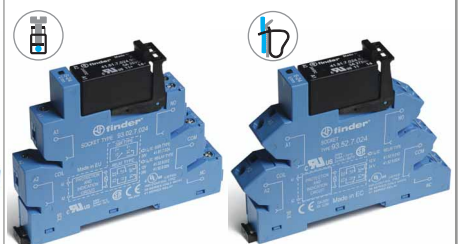
38.01/38.52/38.11/38.62



- 1 CO - 16 A 250VAC
- 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

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

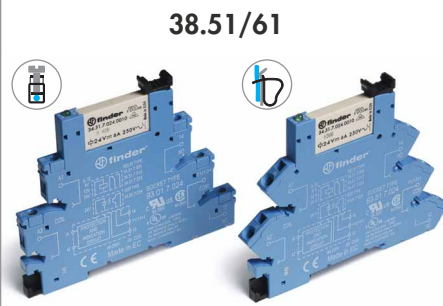
38.51 / 38.51.3
Screw terminal

38.61 / 38.61.3
Screwless terminal

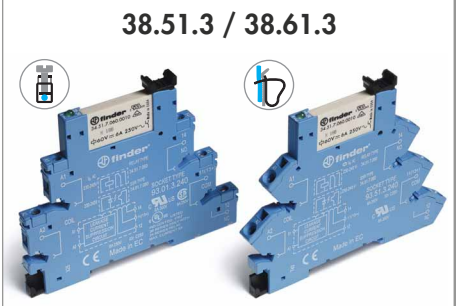


* Special version for max ambient temperature +70°C.

For outline drawing see page 12



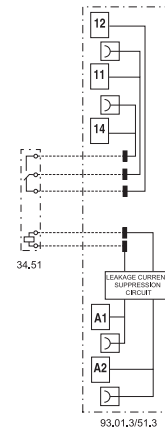
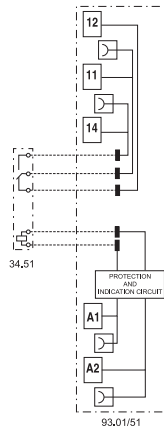
38.51/61



38.51.3 / 38.61.3

- 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 | 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 | 6/0.2/0.12 | 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 | 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)



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

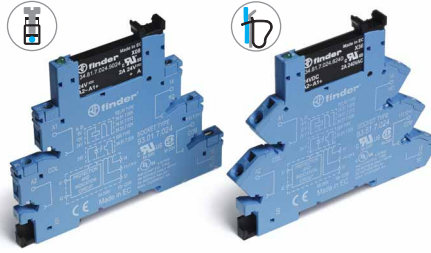
B

38.81 / 38.81.3
Screw terminal

38.91 / 38.91.3
Screwless terminal



38.81/38.91

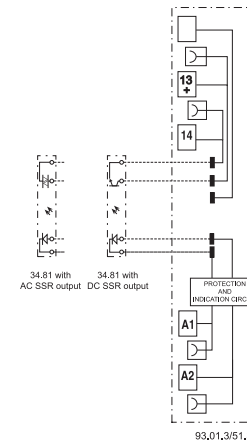
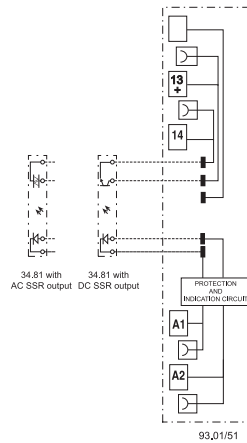


- AC or DC output switching
- SSR relay - DC input voltage
- Screw terminal and screwless terminal
- 35 mm rail (EN 60715) mounting

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 12

| Output specification | | 1 NO (SPST-NO) | | | 1 NO (SPST-NO) | | |
|---|---------|---------------------------|--------------|--------------|----------------|--------------|--------------|
| 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/— AC | 24/33 DC | 48/60 DC | 240/— AC |
| Switching voltage range V | | (1.5...24)DC | (1.5...48)DC | (12...275)AC | (1.5...24)DC | (1.5...48)DC | (12...275)AC |
| Repetitive peak off-state voltage V _{pk} | | — | — | 600 | — | — | 600 |
| 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 AC | | 2,500 | | | 2,500 | | |
| Ambient temperature range °C | | -20...+55 | | | -20...+55 | | |
| Environmental protection | | IP20 | | | IP20 | | |
| Approvals relay (according to type) | | | | | | | |

Features

Slim timed interface module, 6.2 mm wide.

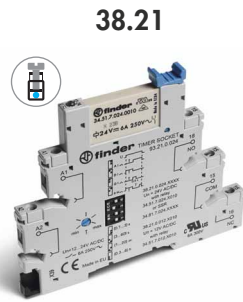
- 1 pole, 6 A - electromechanical relay
- 1 output, 2 A DC or AC - solid state relay

- 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

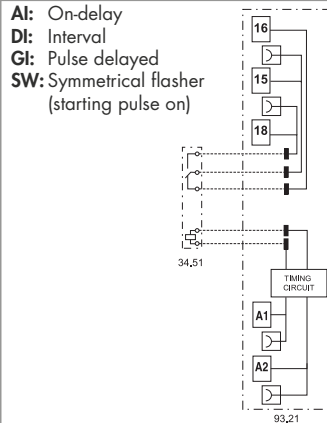
38.21
Screw terminal



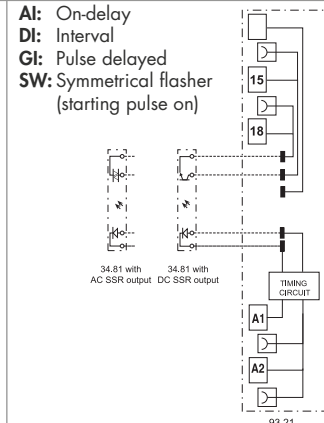
For outline drawing see page 12



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



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



| 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/—)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 | 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 | -20...+55 |
| Protection category | | IP 20 | |
| Approvals relay (according to type) | | | |

Features

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

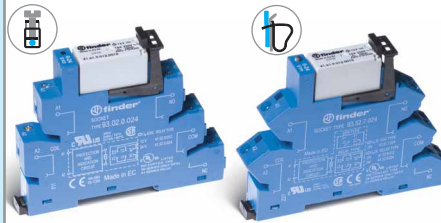
38.01/52
Screw terminal



38.11/62
Screwless terminal

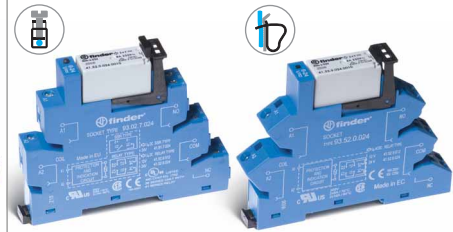


38.01/38.11

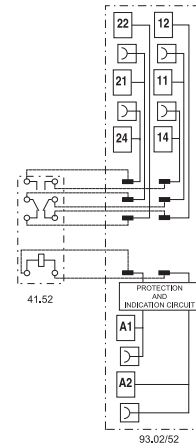
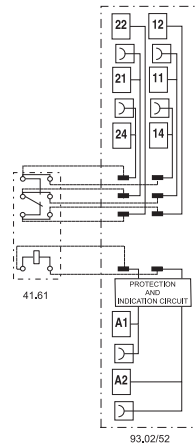


- Screw terminal and screwless terminal
- 1 pole electromechanical relay
- 35 mm rail (EN 60715) mounting

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 12

Contact specification

| Contact configuration | 1 CO (DPDT) | 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 | 4,000 | 2,000 |
| 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 | | | |
| | 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 / 0.6 U _N | 0.6 / 0.6 U _N |
| Must drop-out voltage | AC/DC | | 0.1 / 0.05 U _N | 0.1 / 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 | 1,000 | 1,000 |
| Ambient temperature range (U _N ≤ 60 V / >60V) | °C | -40...+70 / -40...+55 | -40...+70 / -40...+55 |
| Protection category | | IP 20 | IP 20 |

Approvals relay (according to type)



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

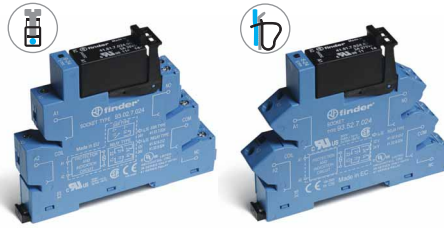
38.31
Screw terminal



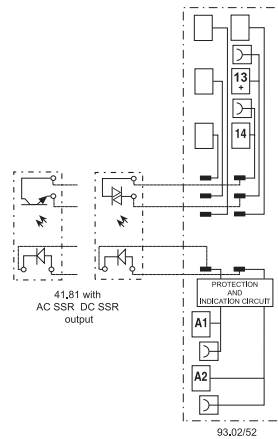
38.41
Screwless terminal



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 12

| Output specification | | 38.31 | 38.41 |
|---|---------|----------------|----------------|
| 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 | | 2,500 | |
| Ambient temperature range °C | | -20...+55 | |
| Environmental protection | | IP20 | |
| Approvals relay (according to type) | | | |

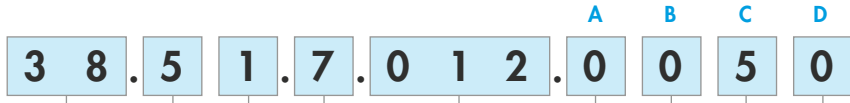
B

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, 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
- 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 = 2 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.

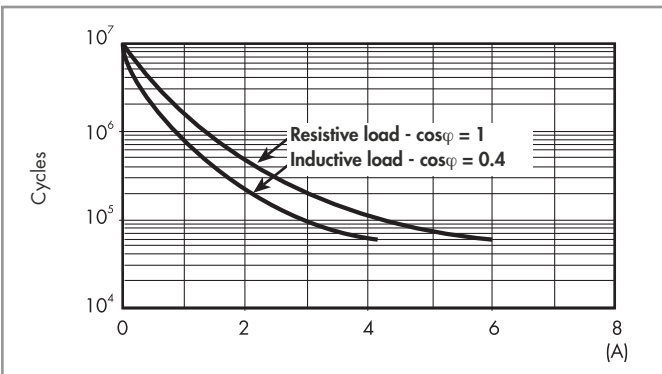
| Type | Input version | Output version |
|----------|---------------|--------------------|
| 38.81/91 | 7 | 9024 - 7048 - 8240 |
| 38.81/91 | 0 - 3 | 9024 - 7048 - 8240 |
| 38.31/41 | 0 - 7 | 9024 - 8240 |
| 38.21 | 0 | 9024 - 8240 |

Technical data - 1 & 2 Pole Electromechanical Relays

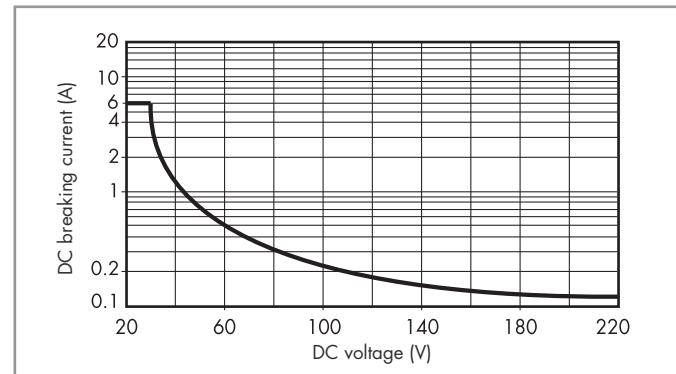
| Insulation | | | | |
|--|---------------------------------|-------------------------|----------------------|--------------------------|
| Insulation according to EN 61810-1 | insulation rated voltage | V | 250 | 400 |
| | rated impulse withstand voltage | kV | 4 | 4 |
| | pollution degree | | 3 | 2 |
| | 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 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) |
| | | | | 0.5 (24 V) - 0.9 (240 V) |
| | | | | 1.3 (24 V) - 1.7 (240 V) |
| Terminals | | | | |
| Wire strip length | | mm | 10 | |
| ⊖ Screw torque | | Nm | 0.5 | |
| Max. wire size | | | solid cable | stranded cable |
| | | mm ² | 1x2.5/2x1.5 | 1x2.5/2x1.5 |
| | | AWG | 1x14/2x16 | 1x14/2x16 |
| | | | solid cable | stranded cable |
| | | | 1x2.5 | 1x2.5 |
| | | | 1x14 | 1x14 |
| | | | 38.01 / 38.52 | 38.11 / 38.62 |
| Wire strip length | | mm | 10 | |
| ⊖ Screw torque | | Nm | 0.5 | |
| Max. wire size | | | solid cable | stranded cable |
| | | mm ² | 1x2.5/2x1.5 | 1x2.5/2x1.5 |
| | | AWG | 1x14/2x16 | 1x14/2x16 |
| | | | solid cable | stranded cable |
| | | | 1x2.5 | 1x2.5 |
| | | | 1x14 | 1x14 |

Contact specification - 1 & 2 Pole Electromagnetic Relays

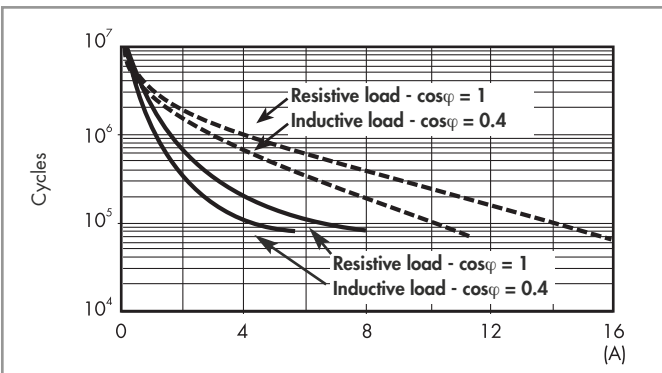
F 38 - Electrical life (AC) v contact current, 1 Pole 6 A



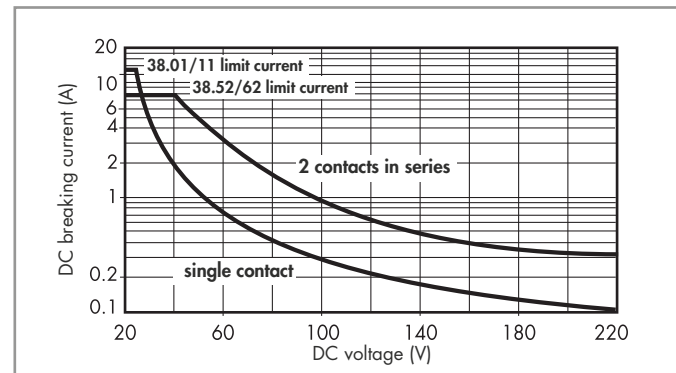
H 38 - Maximum DC1 breaking capacity, 1 Pole 6 A



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 $\geq 60 \cdot 10^3$ (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 V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N W |
|-------------------------------|-----------|-----------------|----------------|--|--------------------------------------|
| | | U_{min} V | U_{max} V | | |
| 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 V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N VA/W |
|-------------------------------|-----------|-----------------|----------------|--|---|
| | | U_{min} V | U_{max} V | | |
| 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 V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N VA/W |
|-------------------------------|-----------|-----------------|----------------|--|---|
| | | U_{min} V | U_{max} V | | |
| (230...240) AC | 8.240 | 184 | 264 | 3 | 0.7/0.3 |

Coil data, leakage current suppression types, 1 Pole

| Nominal voltage U_N V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N VA/W |
|-------------------------------|-----------|-----------------|----------------|--|---|
| | | U_{min} V | U_{max} V | | |
| (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 V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N W |
|-------------------------------|-----------|-----------------|----------------|--|--------------------------------------|
| | | U_{min} V | U_{max} V | | |
| 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 V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N VA/W |
|-------------------------------|-----------|-----------------|----------------|--|---|
| | | U_{min} V | U_{max} V | | |
| 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 |

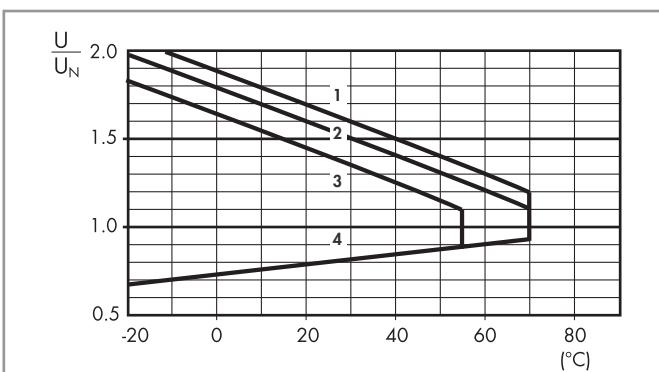
Coil data AC, 1 Pole 16 A and 2 Pole 8 A

| Nominal voltage U_N V | Coil code | Operating range | | Rated coil consumption I at U_N mA | Power consumption P at U_N VA/W |
|-------------------------------|-----------|-----------------|----------------|--|---|
| | | U_{min} V | U_{max} V | | |
| 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 | 1x2.5 / 2x1.5 | | 1x2.5 | |
| | | AWG | 1x14 / 2x16 | | 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 |
| | | mm ² | 1x2.5 / 2x1.5 | | 1x2.5 | |
| | | AWG | 1x14 / 2x16 | | 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 - 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.

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.

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 |
| 12 | 7.012 | 9.6 | 18 | 5 | 9 | 0.2 |
| 24 | 7.024 | 16.8 | 30 | 5 | 12 | 0.3 |

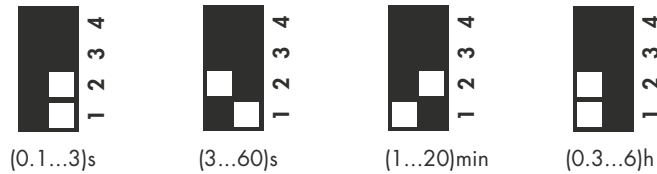
Input data AC/DC

| 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 |

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 ÷ 1,000 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 |
| | with rated current | W | 0.6 |
| Terminals | | 38.21 | |
| Wire strip length | mm | 10 | |
| ⊕ Screw torque | Nm | 0.5 | |
| Max. wire size | | solid cable | stranded cable |
| | mm ² | 1x2.5 / 2x1.5 | 1x2.5 / 2x1.5 |
| | AWG | 1x14 / 2x16 | 1x14 / 2x16 |

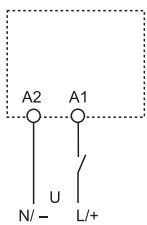
Times scales



Functions

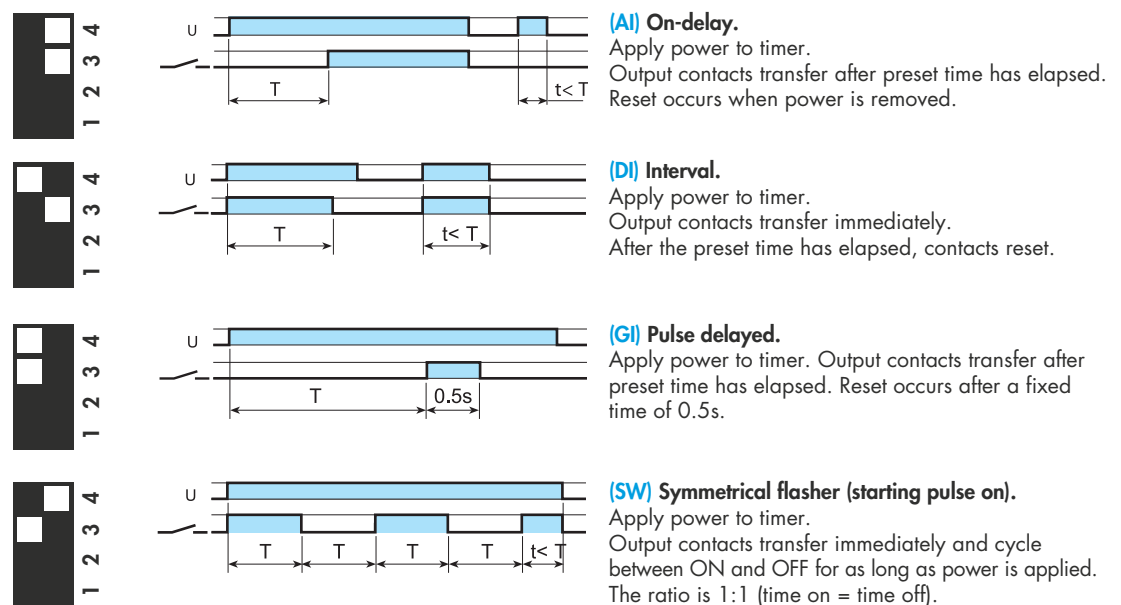
| LED | Supply voltage | NO contact/output |
|-----|----------------|-------------------------|
| — | OFF | Open |
| — | ON | Open (time in progress) |
| █ | ON | Closed |

Wiring diagram



U = Supply voltage

— = Output contact

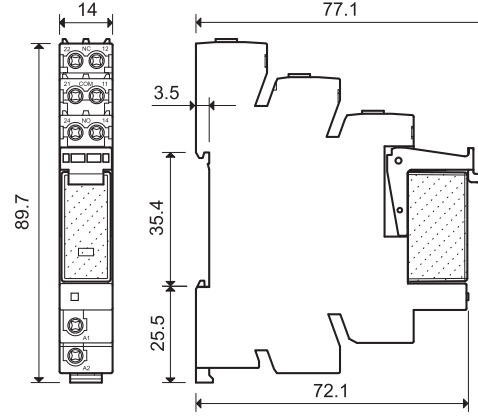
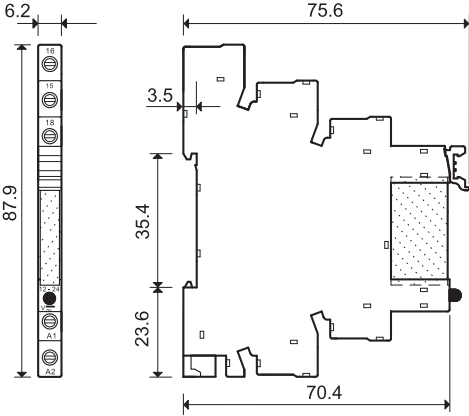


Outline drawings

38.21
38.51 / 38.51.3
38.81 / 38.81.3
Screw terminal

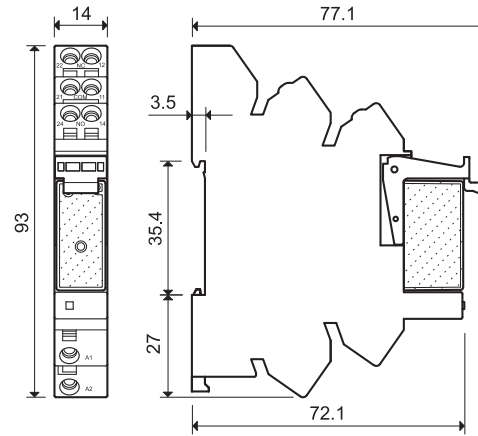
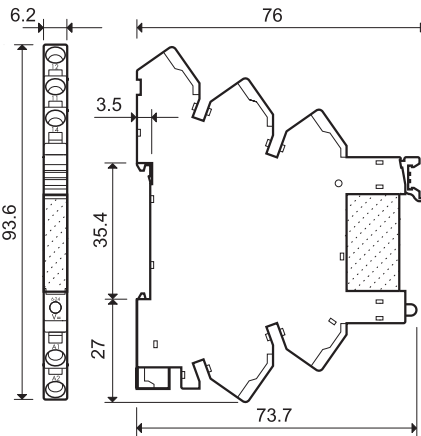
38.01
38.31
38.52
Screw terminal

B

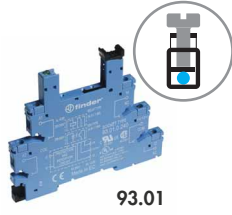


38.61 / 38.61.3
38.91 / 38.91.3
Screwless terminal

38.11
38.41
38.62
Screwless terminal



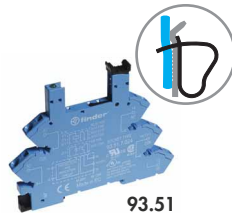
Electromechanical Relay & Socket Combinations



93.01

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 |



93.51

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 |



93.02

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 |



93.52

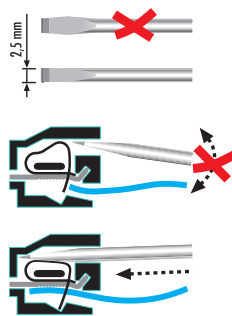
Screwless terminal - 1 Pole relay 16 A

| 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 |

Approvals (according to type):



UL US Certain relay/socket combinations



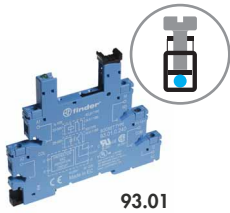
Screw terminal - 2 Pole relay 8 A

| 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 |

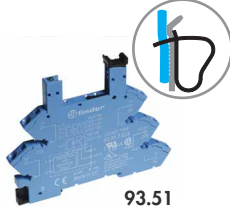
Screwless terminal - 2 Pole relay 8 A

| 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

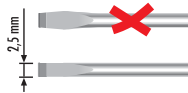


93.51

Approvals
(according to type):



Certain relay/socket combinations



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



93.52

Approvals
(according to type):



Solid State Relay & Socket Combinations - 14 mm wide

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 |



93.21

Approvals
(according to type):

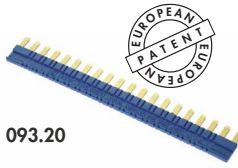


SSR / EMR & Timer Socket Combinations

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

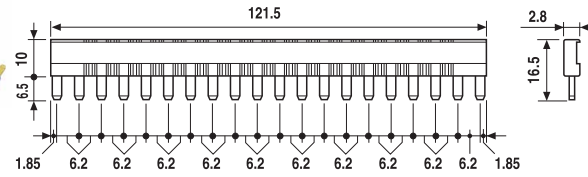


093.20

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 | | |

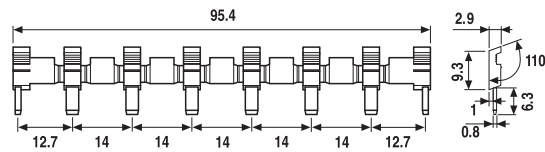


093.08

Approvals
(according to type):



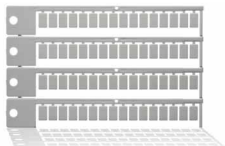
| | | | |
|---|---------------|------------------|----------------|
| 8-way jumper link for 38.01/11/31/41/52/62 | 093.08 (blue) | 093.08.0 (black) | 093.08.1 (red) |
| Rated values | 10 A - 250 V | | |



093.01

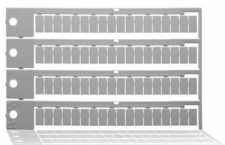
| | |
|--------------------------|--------|
| Plastic separator | 093.01 |
|--------------------------|--------|

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 38.21/51/61/81/91, plastic, 64 tags, 6x10 mm | 093.64 |
|--|--------|



060.72

| | |
|---|--------|
| Sheet of marker tags for 38.01/11/31/41/52/62, plastic, 72 tags, 6x12 mm | 060.72 |
|---|--------|

