**13.81 - Electronic step relay - Rail mount - 1 Pole**

**13.91 - Electronic step relay and timing step relay Switch box mount - 1 Pole**

- Fixed time (10 minutes) timing function selectable (13.91)
- Use with 3 or 4 wire connection, with automatic recognition by the relay
- Control input can be continuously applied
- Longer mechanical and electrical life, and much quieter than electromechanical step relays
- "Zero crossing" load switching
- Can be mounted behind blanking plates, as widely used in residential wiring systems such as; BTicino: Axolute, Matix, Living and Magic, Gewiss: GW24, Vimar: Plana and Idea … (13.91)
- 35 mm rail (EN 60715) mount (13.81)
- Cadmium free contact material

13.81/91
Screw terminals

For outline drawing see page 10

**13.81**

- 1 NO (SPST-NO)
- 35 mm rail (EN 60715) mount
- 17.5 mm wide

NEW GENERATION **13.91**

- 1 NO (SPST-NO)
- Step relay and timing step relay (10 minutes)
- For mounting within residential switch boxes

| | | | |
|---|---|---|---|
| **Contact specification** | | | |
| Contact configuration | | 1 NO (SPST-NO) | 1 NO (SPST-NO) |
| Rated current/Maximum peak current | A | 16/30 (120 - 5 ms) | 16/20 (80 - 5 ms) |
| Rated voltage/ Maximum switching voltage | V AC | 230/— | 230/— |
| Rated load AC1 | VA | 3700 | 2300 |
| Rated load AC15 (230 V AC) | VA | 750 | 450 |
| Nominal lamp rating: | | | |
| 230 V incandescent/halogen | W | 3000 | 1000 |
| fluorescent tubes with electronic ballast | W | 1500 | 500 |
| fluorescent tubes with electromechanical ballast | W | 1000 | 350 |
| CFL | W | 600 | 300 |
| 230 V LED | W | 600 | 300 |
| LV halogen or LED with electronic ballast | W | 600 | 300 |
| LV halogen or LED with electromechanical ballast | W | 1500 | 500 |
| Minimum switching load | mW (V/mA) | 1000 (10/10) | 1000 (10/10) |
| Standard contact material | | $AgSnO_2$ | $AgSnO_2$ |
| **Supply specification** | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | 230 | 230 |
| | V DC | — | — |
| Rated power | V A (50 Hz)/W | 3/1.2 | 2/1 |
| Operating range | AC (50 Hz) | $(0.8…1.1)U_N$ | $(0.8…1.1)U_N$ |
| | DC | — | — |
| **Technical data** | | | |
| Electrical life at rated load in AC1 | cycles | $100 \cdot 10^3$ | $100 \cdot 10^3$ |
| Maximum impulse duration | | continuous | continuous |
| Dielectric strength between: open contacts | V AC | 1000 | 1000 |
| supply - contacts | V AC | — | — |
| Ambient temperature range | °C | –10…+60 | –10…+50 |
| Protection category | | IP 20 | IP 20 |
| **Approvals** (according to type) | | CE EAC PG NF | CE EAC PG |

**13.01 - Electronic step/monostable relay Rail mount - 1 Pole**

**13.61 - Multifunction step/monostable relay with reset command - Rail mount 1 Pole**

- Selectable Step or Monostable operation (13.01)
- Multifunction (Step, Timing step, Monostable, Light ON) (13.61)
- Reset feature, for centralized off command (13.61)
- Set feature, for centralized on command (13.61.0.024)
- Control input can be continuously applied
- Longer mechanical and electrical life, and much quieter than electromechanical step relays
- 12…24 V AC/DC and 110…240 V AC supply versions (13.61)
- Suitable for SELV applications and available also for supply 12 and 24 V AC/DC (13.01)
- "Zero-crossing" load switching (13.61)
- 35 mm rail (EN 60715) mount
- Cadmium free contact material

13.01/61
Screw terminals

For outline drawing see page 10

### 13.01

- 1 CO (SPDT)
- Step or monostable relay
- 35 mm rail (EN 60715) mount
- 35 mm wide

### NEW 13.61.0.024.0000

- 1 CO (SPDT)
- Reset feature, for centralized off command
- Set feature, for centralized on command
- Multifunction:
  - step relay
  - timing step relay
  - monostable relay
  - light on
- 35 mm rail (EN 60715) mount
- 17.5 mm wide

### 13.61.8.230.0000

- 1 NO (SPST-NO)
- Reset feature, for centralized off command
- Multifunction:
  - step relay
  - timing step relay
  - monostable relay
  - light on
- 35 mm rail (EN 60715) mount
- 17.5 mm wide

| | | | | | |
|---|---|---|---|---|---|
| **Contact specification** | | | | | |
| Contact configuration | | 1 CO (SPDT) | | 1 CO | 1 NO |
| Rated current/Maximum peak current | A | 16/30 (120 A - 5 ms) | | 16/30 (120 A - 5 ms) | 16/30 (120 A - 5 ms) |
| Rated voltage/ Maximum switching voltage | V AC | 250/400 | | 250/400 | 250/400 |
| Rated load AC1 | VA | 4000 | | 4000 | 4000 |
| Rated load AC15 (230 V AC) | VA | 750 | | 750 | 750 |
| Nominal lamp rating: | | | | | |
| 230 V incandescent/halogen | W | 2000 | | 2000 | 3000 |
| fluorescent tubes with electronic ballast | W | 1000 | | 1000 | 1500 |
| fluorescent tubes with electromechanical ballast | W | 750 | | 750 | 1000 |
| CFL | W | 400 | | 400 | 600 |
| 230 V LED | W | 400 | | 400 | 600 |
| LV halogen or LED with electronic ballast | W | 400 | | 400 | 600 |
| LV halogen or LED with electromechanical ballast | W | 800 | | 800 | 1500 |
| Minimum switching load | mW (V/mA) | 1000 (10/10) | | 1000 (10/10) | 1000 (10/10) |
| Standard contact material | | $AgSnO_2$ | | $AgSnO_2$ | $AgSnO_2$ |
| **Supply specification** | | | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | 110…125 | 230…240 | — | 110…240 |
| | V DC/AC (50/60 Hz) | 12 | 24 | 12…24 | — |
| Rated power AC/DC | V A (50/60 Hz)/W | 2.5/2.5 | | 1/0.5 | 3.2/1 |
| Operating range | V AC (50 Hz) | 90…130 | 184…253 | — | 90…264 |
| | V DC/AC (50 Hz) | 10.8…13.2 | 20.6…33.6 | 10.2…26.4 | — |
| **Technical data** | | | | | |
| Electrical life at rated load in AC1 | cycles | $100 \cdot 10^3$ | | $100 \cdot 10^3$ | $100 \cdot 10^3$ |
| Maximum impulse duration | | continuous | | continuous | continuous |
| Dielectric strength between: open contacts | V AC | 1000 | | 1000 | 1000 |
| supply - contacts | V AC | 4000 | | 2000 | 2000 |
| Ambient temperature range | °C | –10…+60 | | –10…+60 | –10…+60 |
| Protection category | | IP 20 | | IP 20 | IP 20 |
| **Approvals** (according to type) | | | | | |



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**13.11 - Call & Reset Relay - Rail mount - 1 Pole**
**13.12 - Call & Reset Relay - Rail mount - 2 Pole**
**13.31 - Electromechanical monostable relay Switch box mount - 1 Pole**

- Call relay with reset command suitable for residential and commercial applications: public bathroom, hospital, hotel (type 13.11/13.12)
- Can be mounted behind blanking plates, as widely used in residential wiring systems such as; BTicino: Axolute, Matix, Living e Magic, Gewiss: GW24, Vimar: Plana e Idea … (13.31)
- 35 mm rail (EN 60715) or flange mount (13.11 and 13.12)
- Cadmium free contact material (13.31)

13.11/12/31
Screw terminals

| | 13.11 | 13.12 | 13.31 |
|---|---|---|---|
| | | | |
| | • 1 CO (SPDT)<br>• Call relay with reset command<br>• 35 mm rail (EN 60715) mount<br>• 17.5 mm wide | • 1 CO (SPDT) + 1 NO (SPST-NO)<br>• Call relay with reset command<br>• 35 mm rail (EN 60715) mount<br>• 17.5 mm wide | • 1 NO (SPST-NO)<br>• Interposing monostable relay<br>• For mounting within residential switch boxes |

* During impulse only.
For outline drawing see page 10

| | | | | |
|---|---|---|---|---|
| **Contact specification** | | | | |
| Contact configuration | | 1 CO (SPDT) | 1 CO (SPDT) + 1 NO (SPST-NO) | 1 NO (SPST-NO) |
| Rated current/Maximum peak current | A | 12/30 | 8/15 | 12/20 (80 A - 5 ms) |
| Rated voltage/ Maximum switching voltage | V AC | 250/400 | 250/400 | 250/400 |
| Rated load AC1 | VA | 3000 | 2000 | 3000 |
| Rated load AC15 (230 V AC) | VA | 750 | 400 | 450 |
| Nominal lamp rating: | | | | |
| 230 V incandescent/halogen | W | 1200 | 800 | 800 |
| fluorescent tubes with electronic ballast | W | 500 | 300 | 400 |
| fluorescent tubes with electromechanical ballast | W | 400 | 250 | 300 |
| CFL | W | 300 | 150 | 200 |
| 230 V LED | W | 300 | 150 | 200 |
| LV halogen or LED with electronic ballast | W | 300 | 150 | 200 |
| LV halogen or LED with electromechanical ballast | W | 500 | 300 | 400 |
| Minimum switching load | mW (V/mA) | 500 (5/5) | 300 (5/5) | 1000 (10/10) |
| Standard contact material | | AgCdO | AgCdO | $AgSnO_2$ |
| **Supply specification** | | | | |
| Nominal voltage ($U_N$) | V AC (50/60 Hz) | 230…240 | 12 - 24 | 12 - 230 |
| | V DC | — | 12 - 24 | 24 |
| Rated power AC/DC | V A (50 Hz)/W | 1.7/0.7* | 3/2.5* | 1/0.4 |
| Operating range | AC (50 Hz) | $(0.8…1.1)U_N$ | $(0.8…1.1)U_N$ | $(0.8…1.1)U_N$ |
| | DC | — | $(0.8…1.1)U_N$ | $(0.8…1.1)U_N$ |
| **Technical data** | | | | |
| Electrical life at rated load in AC1 | cycles | $100 \cdot 10^3$ | $100 \cdot 10^3$ | $70 \cdot 10^3$ |
| Maximum impulse duration | | 10 s (100 ms minimum) | 10 s (100 ms minimum) | continuous |
| Dielectric strength between: open contacts | V AC | 1000 | 1000 | 1000 |
| supply - contacts | V AC | 2000 | 2000 | 2000 |
| Ambient temperature range | °C | –10…+60 | –10…+60 | –10…+60 |
| Protection category | | IP 20 | IP 20 | IP 20 |
| **Approvals** (according to type) | | CE EAC | | CE EAC |

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## Ordering information

Example: 13 series, electronic step/monostable relay, 35 mm rail (EN 60715) mount, 1 CO (SPDT) 16 A contact, 230 V AC supply.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | A | B | C | D | |
| 1 | 3 | . | 0 | 1 | . | 8 | . | 2 | 3 | 0 | . | 0 | 0 | 0 | 0 |

**Series**

**Type**
0 = Step/Monostable, 35 mm rail (EN 60715) mount, 35 mm wide
1 = Call & Reset relay, 35 mm rail (EN 60715) mount, 17.5 mm wide
3 = Monostable relay, switch box mounting
6 = Multifunction relay, 35 mm rail (EN 60715) mount, 17.5 mm wide
8 = Modular step relay, 35 mm rail (EN 60715) mount, 17.5 mm wide
9 = Step relay and timing step relay, switch box mounting

**No. of poles**
1 = 1 pole
2 = 1 pole CO (SPDT) + 1 NO (SPST-NO)

**Supply version**
0 = AC (50/60 Hz)/DC
8 = AC (50/60 Hz)
9 = DC

**Supply voltage**
012 = 12 V AC/DC (13.01 and 13.12 only)
012 = 12 V AC (13.31 only)
024 = 24 V AC/DC (13.01 and 13.12 only)
024 = 24 V DC (13.31 only)
024 = 12…24 V AC/DC (13.61 only)
125 = (110…125)V AC (13.01 only)
230 = (230…240)V AC (13.01 and 13.11)
230 = 110…240 V AC (13.61 only)
230 = 230 V AC (13.31, 13.81 and 13.91)

**A: Contact material**
0 = Standard
5 = Standard AgSnO2 (only for 13.31)

**B: Contact circuit**
0 = Standard
3 = Standard NO (only for 13.31)

**Codes / Supply voltage**
13.01.0.012.0000 12 V AC/DC
13.01.0.024.0000 24 V AC/DC
13.01.8.125.0000 110…125 V AC
13.01.8.230.0000 230…240 V AC
13.11.8.230.0000 230…240 V AC
13.12.0.012.0000 12 V AC/DC
13.12.0.024.0000 24 V AC/DC
13.31.8.012.4300 12 V AC
13.31.9.024.4300 24 V DC
13.31.8.230.4300 230 V AC
13.61.8.230.0000 110…240 V AC
13.61.0.024.0000 12…24 V AC/DC
13.81.8.230.0000 230 V AC
13.91.8.230.0000 230 V AC

## Technical data

| **Insulation** | | **13.01.8** | **13.01.0** | **13.11 - 13.12** | **13.31 - 13.61** | **13.81 - 13.91** |
|---|---|---|---|---|---|---|
| Dielectric strength | | | | | | |
| between control circuit and supply | V AC | 4000 | — | — | — | — |
| between control circuit and contacts | V AC | 4000 | 4000 | — | — | — |
| between R-S-A2 and contacts | V AC | — | — | 2000 | — | — |
| between supply and contacts | V AC | 4000 | 4000 | — | 2000 | — |
| between open contacts | V AC | 1000 | 1000 | 1000 | 1000 | 1000 |

| **Other data** | | **13.01** | **13.11 - 13.12** | **13.31** | **13.61** | **13.81** | **13.91** |
|---|---|---|---|---|---|---|---|
| Power lost to the environment | | | | | | | |
| without contact current | W | 2.2 | — | 0.4 | 1 | 1.2 | 0.7 |
| with rated current | W | 3.5 | 1,5 | 1.6 | 1.8 | 2 | 1.8 |
| Max cable lenght for push-button connection | m | 100 | 100 | — | 200 | 200 | 100 |
| Max. no. of illuminated push-button | (≤1mA) | — | — | — | 10* | 15 | 12 |

| **Terminals** | | **13.01** | | **13.11 - 13.12 - 13.31 - 13.61 - 13.81 - 13.91** | |
|---|---|---|---|---|---|
| Max. wire size | | solid cable | stranded cable | solid cable | stranded cable |
| | mm² | 1 x 6 / 2 x 4 | 1 x 6 / 2 x 2.5 | 1 x 6 / 2 x 4 | 1 x 4 / 2 x 2.5 |
| | AWG | 1 x 10 / 2 x 12 | 1 x 10 / 2 x 14 | 1 x 10 / 2 x 12 | 1 x 12 / 2 x 14 |
| Screw torque | Nm | 0.8 | | 0.8 | |

* For 8.230 version.



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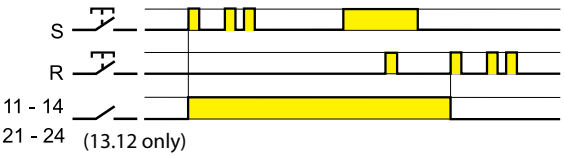
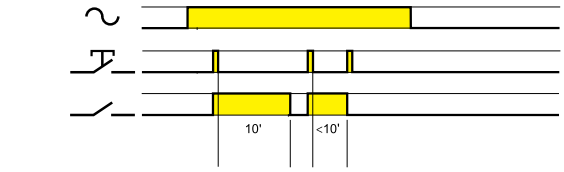
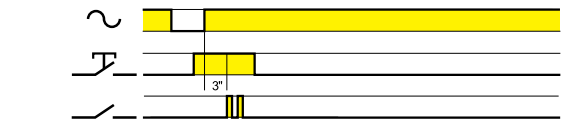
## Functions

| Type | | |
|---|---|---|
| 13.01 | | **Monostable**<br>On closure of a switch between terminals (B2-B3) the output contact will close, and remain so, until the switch opens. |
| | | **Step relay (bistable)**<br>After every impulse (B1-B2), the output contact changes state - alternately switching from open to closed and vice versa. |
| 13.11<br>13.12 |  | **Call and Reset relay**<br>On momentary closure of the Set switch (S), the output contact closes. Only a momentary closure of the Reset switch (R) will open the output contact. |
| 13.81 | | **(RI) Step relay**<br>After every impulse, the output contact changes state - alternately switching from open to closed and vice versa. |
| 13.91 | | **(RI) Step relay**<br>After every impulse, the output contact changes state - alternately switching from open to closed and vice versa. |
| |  | **(IT) Timing step relay**<br>On initial impulse the output contact closes and timing starts for the pre-set duration (fixed 10 min); On expiry of the time delay, the output contact opens.<br>During the timing period it is possible to immediately open the contact with a further impulse. |

## Operating mode setup for type 13.91

RI → IT




IT → RI

a) Remove the supply voltage
b) Press the control button
c) Apply the supply to the relay, keeping the button closed. After 3 second, the light will flash twice to indicate the selection of the "IT" function, or flash once for "RI" function.

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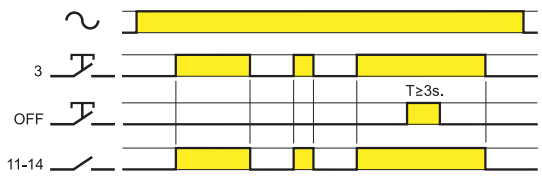
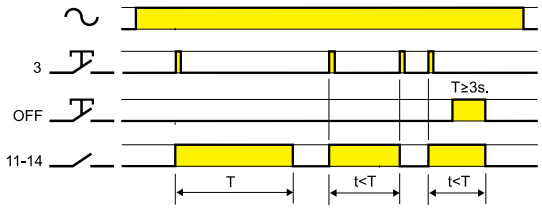
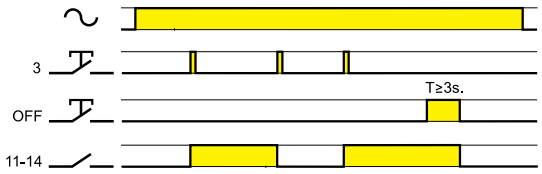
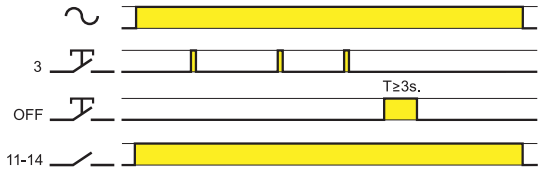
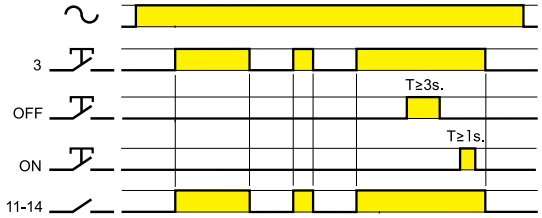
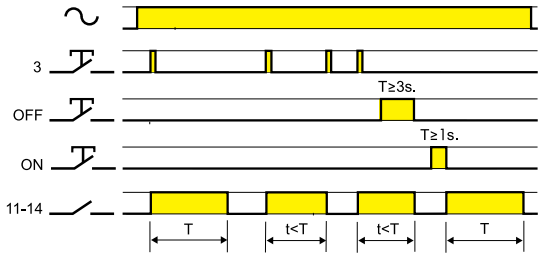
## Functions

| Type | Functions | |
|---|---|---|
| 13.61.8.230 |  | **(RM) Monostable**<br>On closure of a switch between terminal 3 and Line (or Neutral, in case of 3-wire connection) the output contact will close, and remain so, until the switch opens. |
| |  | **(IT) Timing step relay**<br>On initial impulse the output contact closes and timing starts for the pre-set duration T; On expiry of the time delay, the output contact opens.<br>During the timing period it is possible to immediately open the contact with a further impulse. |
| |  | **(RI) Step relay**<br>After every impulse, the output contact changes state - alternately switching from open to closed and vice versa. |
| |  | **Light ON**<br>With this function set - the output contact stays permanently closed. |
| 13.61.0.024 |  | **(RM) Monostable**<br>On closure of a switch between terminal 3 and Line (or Neutral, in case of 3-wire connection) the output contact will close, and remain so, until the switch opens. |
| |  | **(IT) Timing step relay**<br>On initial impulse the output contact closes and timing starts for the pre-set duration T; On expiry of the time delay, the output contact opens.<br>During the timing period it is possible to immediately open the contact with a further impulse. |
| | | **(RI) Step relay**<br>After every impulse, the output contact changes state - alternately switching from open to closed and vice versa. |
| | | **Light ON**<br>With this function set - the output contact stays permanently closed. |

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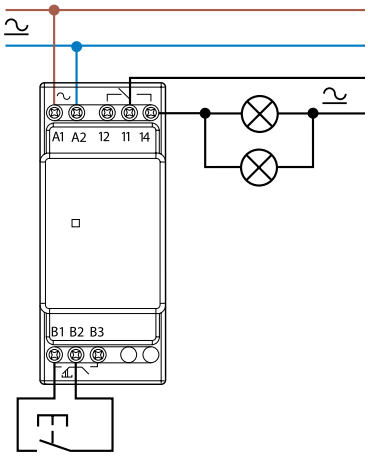
## Wiring diagrams (13.01, 13.11, 13.12 and 13.31)

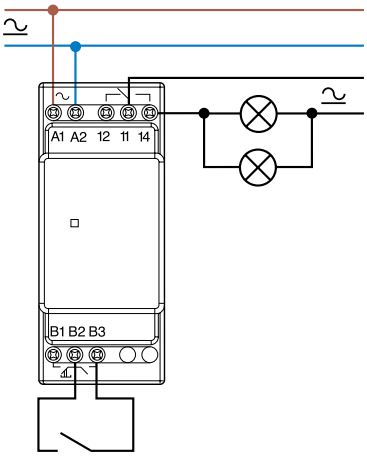
**Type 13.01**
Step wiring diagram

Red LED indication:
Continuous = relay ON

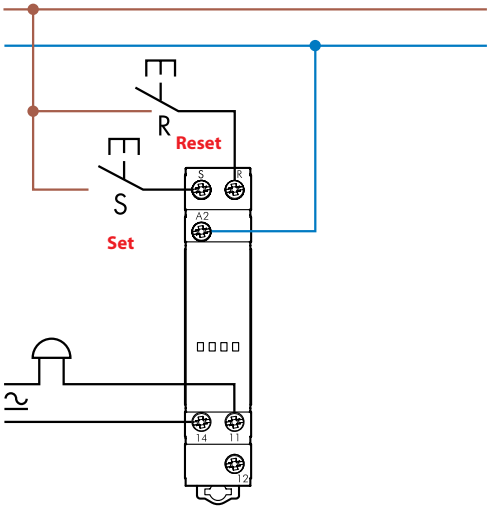



**Type 13.01**
Monostable wiring diagram

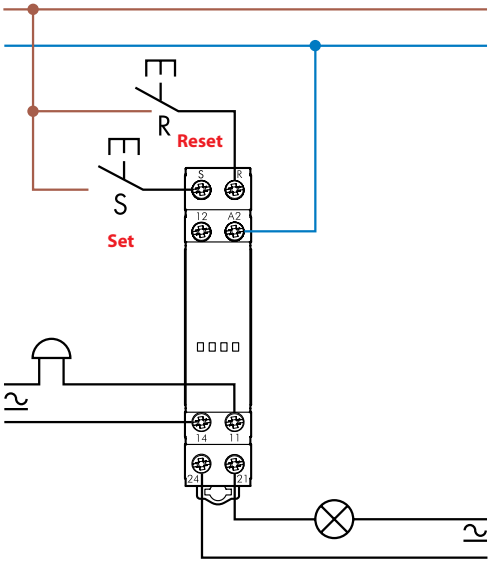
Red LED indication:
Continuous = relay ON



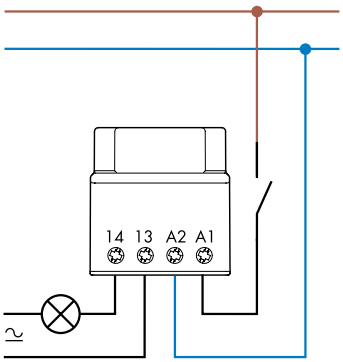

**Type 13.11**
Call & reset relay




**Type 13.12**
Call & reset relay




**Type 13.31**
Connection

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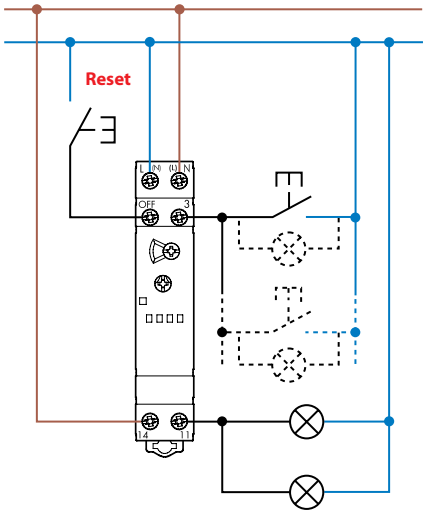
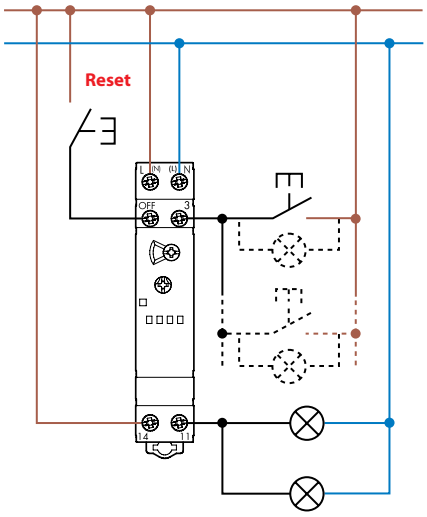
## Wiring diagrams (13.61)

**Type 13.61.8.230**
3 wire connection
Red LED indication:
Continuous = relay ON
Blinking = relay OFF



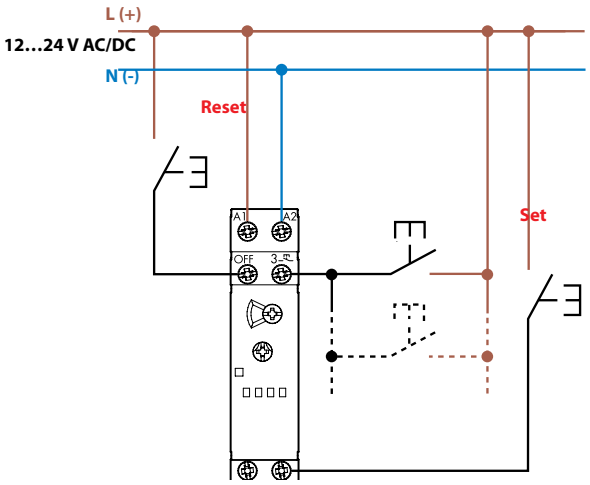

Max 10 (≤ 1 mA)
illuminated push buttons

**Type 13.61.8.230**
4 wire connection
Red LED indication:
Continuous = relay ON
Blinking = relay OFF

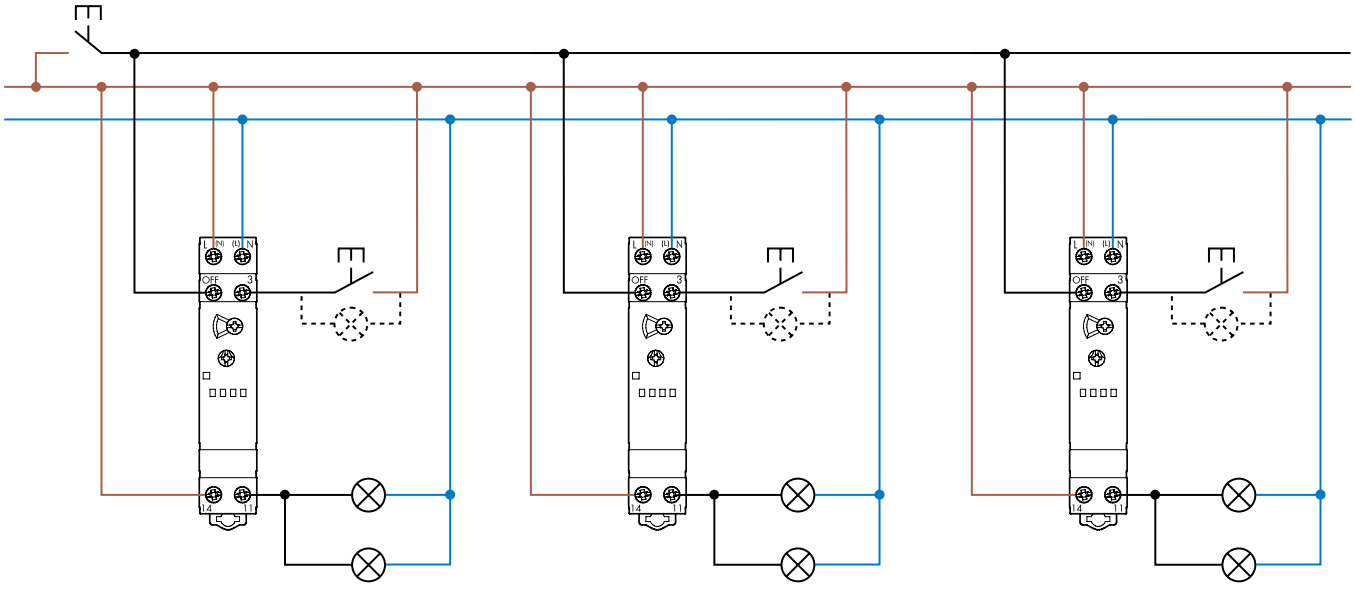



Max 10 (≤ 1 mA)
illuminated push buttons

**Type 13.61.0.024**
4 wire connection
Red LED indication:
Continuous = relay ON
Blinking = relay OFF




**Type 13.61.8.230 - Examples of multiple 4 wire connection with centralized reset pushbutton**



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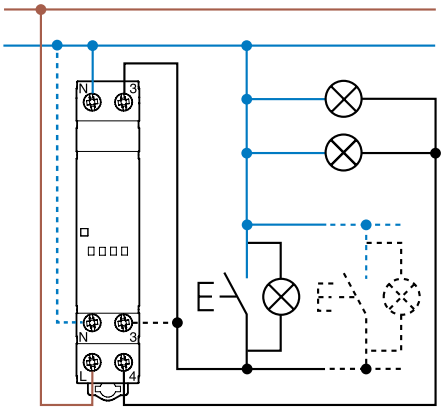
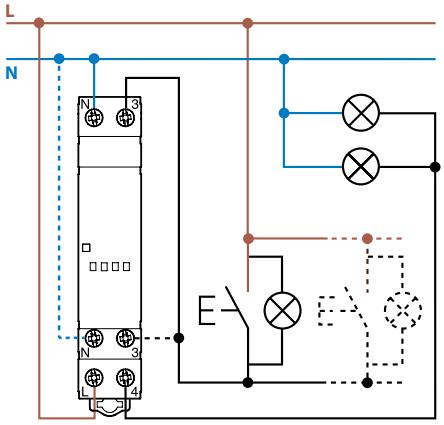
## Wiring diagrams (13.81 and 13.91)

**Type 13.81**
3 wire connection
Red LED indication:
Continuous = relay ON
Blinking = relay OFF



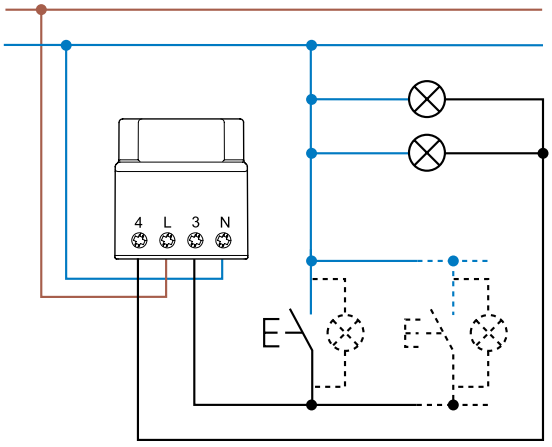

Max 15 (≤ 1 mA)
illuminated push buttons

**Type 13.81**
4 wire connection
Red LED indication:
Continuous = relay ON
Blinking = relay OFF



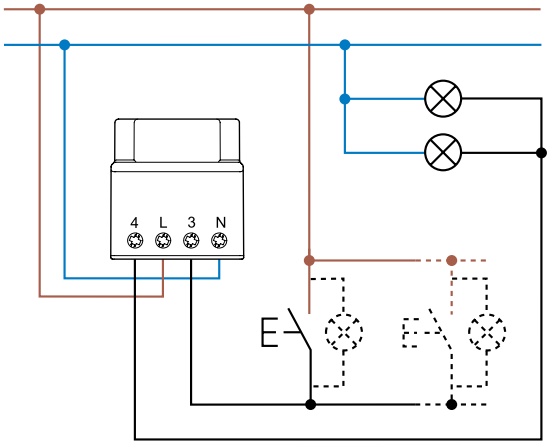

Max 15 (≤ 1 mA)
illuminated push buttons

**Type 13.91**
3 wire connection




Max 12 (≤ 1 mA)
illuminated push buttons

**Type 13.91**
4 wire connection




Max 12 (≤ 1 mA)
illuminated push buttons

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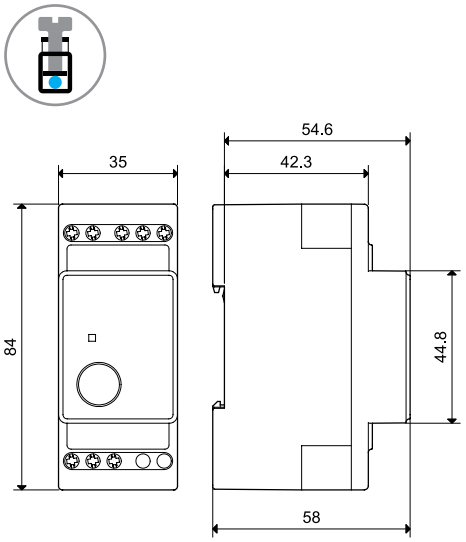
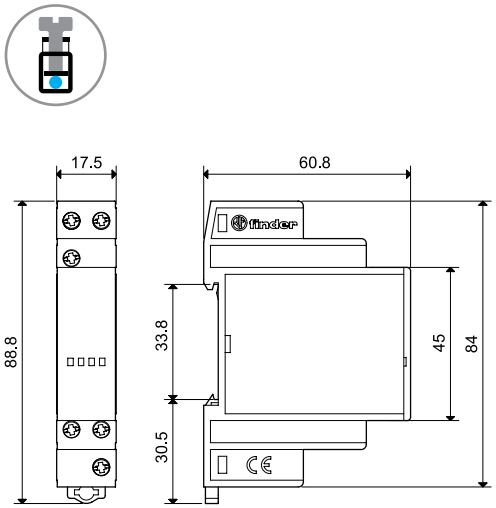
## Outline drawings

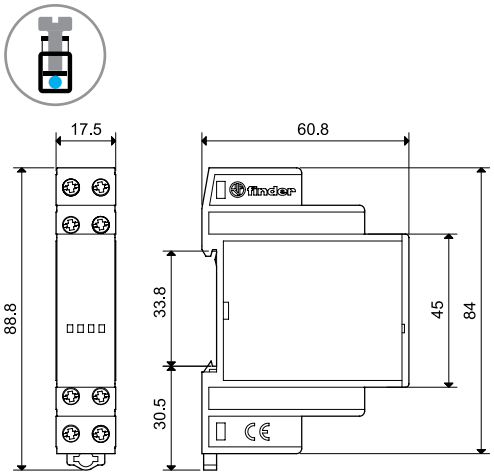
13.01
Screw terminal



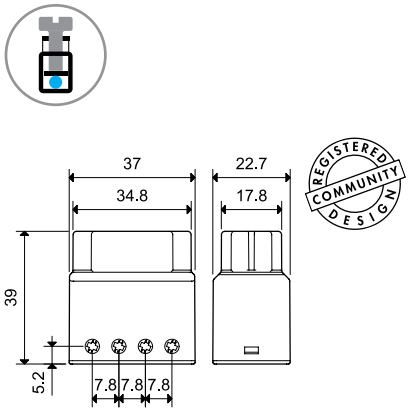

13.11
Screw terminal



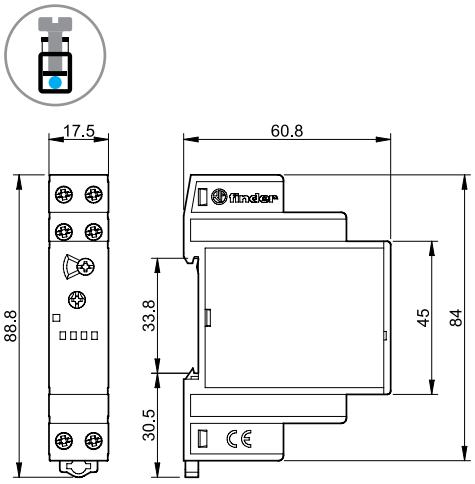

13.12
Screw terminal



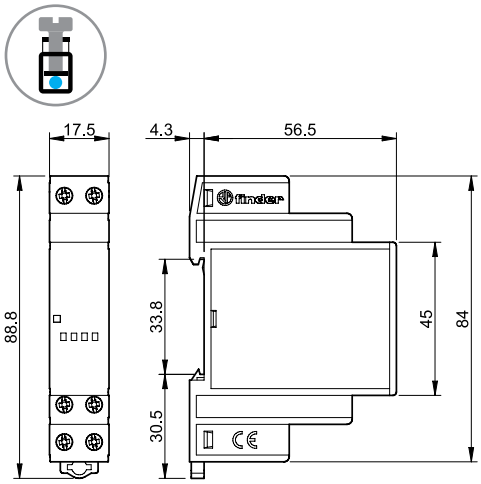

13.31/13.91
Screw terminal




13.61
Screw terminal




13.81
Screw terminal

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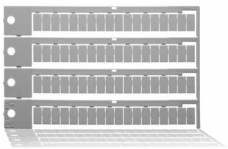
## Accessories

011.01

| | |
|---|---|
| **Adaptor for panel mounting,** for type 13.01, 35 mm wide | 011.01 |

020.01

| | |
|---|---|
| **Adaptor for panel mounting,** for type 13.11, 13.12, 13.61 and 13.81, 17.5 mm wide | 020.01 |



060.72

| | |
|---|---|
| **Sheet of marker tags** for type, 13.11, 13.12, 13.61 and 13.81, plastic, 72 tags, 6 x 12 mm | 019.01 |



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