

## Features

**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 terminal



For outline drawing see page 9

### Contact specification

Contact configuration		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	16/30 (120 A - 5 ms)	10/20 (80 A - 5 ms)
Rated voltage/Maximum switching voltage V AC		230/—	230/—
Rated load AC1	VA	3,700	2,300
Rated load AC15 (230 V AC)	VA	750	450
Nominal lamp rating: 230V incandescent/halogen W		3,000	1,000
fluorescent tubes with electronic ballast W		1,500	500
fluorescent tubes with electromechanical ballast W		1,000	350
CFL W		600	300
230V LED W		600	300
LV halogen or LED with electronic ballast W		600	300
LV halogen or LED with electromechanical ballast W		1,500	500
Minimum switching load	mW (V/mA)	1,000 (10/10)	1,000 (10/10)
Standard contact material		AgSnO <sub>2</sub>	AgSnO <sub>2</sub>

### Supply specification

Nominal voltage (U <sub>N</sub> )	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 <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	—	—

### Technical data

Electrical life at rated load in AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
Maximum impulse duration		continuous	continuous
Dielectric strength between: open contacts	V AC	1,000	1,000
supply - contacts	V AC	—	—
Ambient temperature range	°C	-10...+60	-10...+50
Protection category		IP 20	IP 20

**Approvals** (according to type)

<p><b>13.81</b></p> <ul style="list-style-type: none"> <li>• 1 NO (SPST-NO)</li> <li>• 35 mm rail (EN 60715) mount</li> <li>• 17.5 mm wide</li> </ul>	<p><b>13.91</b></p> <ul style="list-style-type: none"> <li>• 1 NO (SPST-NO)</li> <li>• Step relay and timing step relay (10 minutes)</li> <li>• For mounting within residential switch boxes</li> </ul>

## Features

**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)
- Control input can be continuously applied
- Longer mechanical and electrical life, and much quieter than electromechanical step relays
- 110...240 V AC supply, 50/60 Hz (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 terminal



\* For version 24 V  $U_{max} = 33.6$  V  
For outline drawing see page 9

13.01



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

NEW 13.61



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

### Contact specification

Contact configuration		1 CO (SPDT)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	16/30 (120 A - 5 ms)	16/30 (120 A - 5 ms)
Rated voltage/Maximum switching voltage V AC		250/400	250/400
Rated load AC1	VA	4,000	4,000
Rated load AC15 (230 V AC)	VA	750	750
Nominal lamp rating: 230V incandescent/halogen W		2,000	3,000
fluorescent tubes with electronic ballast W		1,000	1,500
fluorescent tubes with electromechanical ballast W		750	1,000
CFL W		400	600
230V LED W		400	600
LV halogen or LED with electronic ballast W		400	600
LV halogen or LED with electromechanical ballast W		800	1,500
Minimum switching load	mW (V/mA)	1,000 (10/10)	1,000 (10/10)
Standard contact material		AgSnO <sub>2</sub>	AgSnO <sub>2</sub>

### Supply specification

Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	12 - 24 * - 110...125 - 230...240	110...240
	V DC	12 - 24 *	—
Rated power AC/DC	V A (50/60 Hz)/W	2.5/2.5	3.2/1
Operating range	V AC (50 Hz)	(0.8...1.1) $U_N$	90...264
	DC	(0.9...1.1) $U_N$	—

### Technical data

Electrical life at rated load in AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
Maximum impulse duration		continuous	continuous
Dielectric strength between:	open contacts V AC	1,000	1,000
	supply - contacts V AC	4,000	2,000
Ambient temperature range	°C	-10...+60	-10...+60
Protection category		IP 20	IP 20

Approvals (according to type)



## Features

**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 terminal



\* During impulse only.  
For outline drawing see page 9

### 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	3,000	2,000	3,000
Rated load AC15 (230 V AC) VA	750	400	450
Nominal lamp rating: 230V incandescent/halogen W	1,200	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
230V 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)	1,000 (10/10)
Standard contact material	AgCdO	AgCdO	AgSnO <sub>2</sub>

### Supply specification

Nominal voltage (U <sub>N</sub> )	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 <sub>N</sub>	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	—	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>

### Technical data

Electrical life at rated load in AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>	70 · 10 <sup>3</sup>
Maximum impulse duration		10 s (100 ms minimum)	10 s (100 ms minimum)	continuous
Dielectric strength between:	open contacts V AC	1,000	1,000	1,000
	supply - contacts V AC	2,000	2,000	2,000
Ambient temperature range	°C	-10...+60	-10...+60	-10...+60
Protection category		IP 20	IP 20	IP 20

**Approvals** (according to type)



**13.11**



- 1 CO (SPDT)
- Call relay with reset command
- 35 mm rail (EN 60715) mount
- 17.5 mm wide

**13.12**



- 1 CO (SPDT) + 1 NO (SPST-NO)
- Call relay with reset command
- 35 mm rail (EN 60715) mount
- 17.5 mm wide



**13.31**



- 1 NO (SPST-NO)
- Interposing monostable relay
- For mounting within residential switch boxes

### 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.



- 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)
  - 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
  - 4 = Standard AgSnO<sub>2</sub> (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
  - 13.81.8.230.0000 230 V AC
  - 13.91.8.230.0000 230 V AC

### Technical data

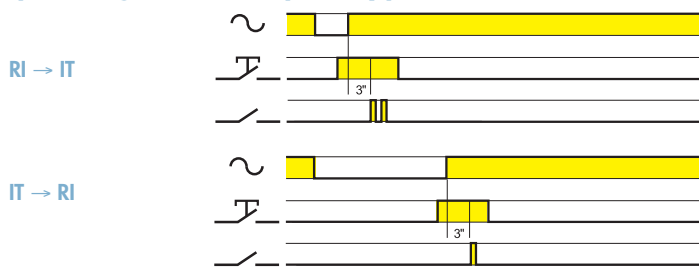
Insulation		13.01.8	13.01.0	13.11 - 13.12	13.31 - 13.61	13.81 - 13.91	
Dielectric strength	between control circuit and supply	V AC 4,000	—	—	—	—	
	between control circuit and contacts	V AC 4,000	4,000	—	—	—	
	between R-S-A2 and contacts	V AC —	—	2,000	—	—	
	between supply and contacts	V AC 4,000	4,000	—	2,000	—	
	between open contacts	V AC 1,000	1,000	1,000	1,000	1,000	
<b>Other data</b>		<b>13.01</b>	<b>13.11 - 13.12</b>	<b>13.31</b>	<b>13.61</b>	<b>13.81</b>	<b>13.91</b>
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 length for push-button connection	m	100	100	—	200	200	100
Max. no. of illuminated push-button	(≤ 1 mA)	—	—	—	10	15	12
<b>Terminals</b>		<b>13.01</b>		<b>13.11 - 13.12 - 13.31 - 13.61 - 13.81 - 13.91</b>			
Max. wire size		solid cable	stranded cable	solid cable		stranded cable	
	mm <sup>2</sup>	1x6 / 2x4	1x6 / 2x2.5	1x6 / 2x4		1x4 / 2x2.5	
	AWG	1x10 / 2x12	1x10 / 2x14	1x10 / 2x12		1x12 / 2x14	
Screw torque	Nm	0.8		0.8			

K

Functions

Type	Functions	
13.01		<b>Monostable</b> On closure of a switch between terminals (B2-B3) the output contact will close, and remain so, until the switch opens.
		<b>Step relay (bistable)</b> After every impulse (B1-B2), the output contact changes state - alternately switching from open to closed and vice versa.
13.11 13.12		<b>Call and Reset relay</b> 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.
13.61		<b>(RM) Monostable</b> 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.
		<b>(IT) Timing step relay</b> 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. During the timing period it is possible to immediately open the contact with a further impulse.
		<b>(RI) Step relay</b> After every impulse, the output contact changes state - alternately switching from open to closed and vice versa.
		<b>Light ON</b> With this function set - the output contact stays permanently closed.
13.81		<b>(RI) Step relay</b> After every impulse, the output contact changes state - alternately switching from open to closed and vice versa.
13.91		<b>(RI) Step relay</b> After every impulse, the output contact changes state - alternately switching from open to closed and vice versa.
		<b>(IT) Timing step relay</b> 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. During the timing period it is possible to immediately open the contact with a further impulse.

Operating mode setup for type 13.91

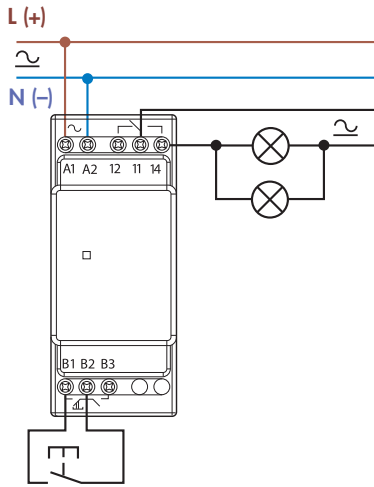


- Remove the supply voltage
- Press the control button
- Apply the supply to the relay, keeping the button closed. After 3 second, the light will flash twice to indicate the selection of the "IT" function, or flash once for "RI" function.

Wiring diagrams (13.01, 13.11, 13.12 and 13.31)

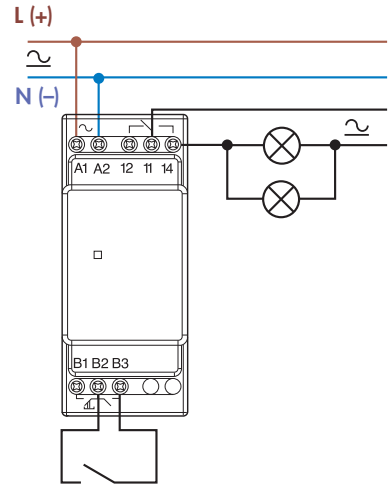
**Type 13.01**  
Step wiring diagram

Red LED indication:  
Continuous = relay ON

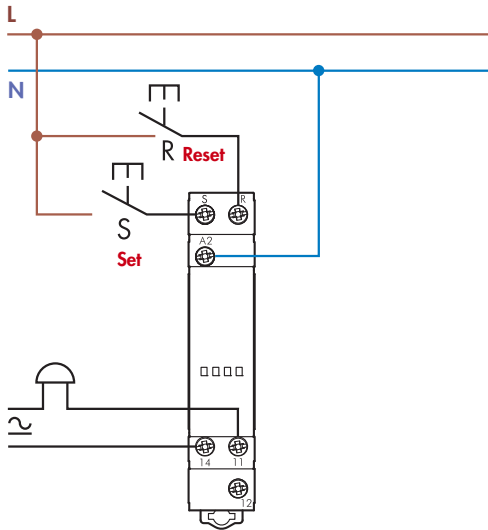


**Type 13.01**  
Monostable wiring diagram

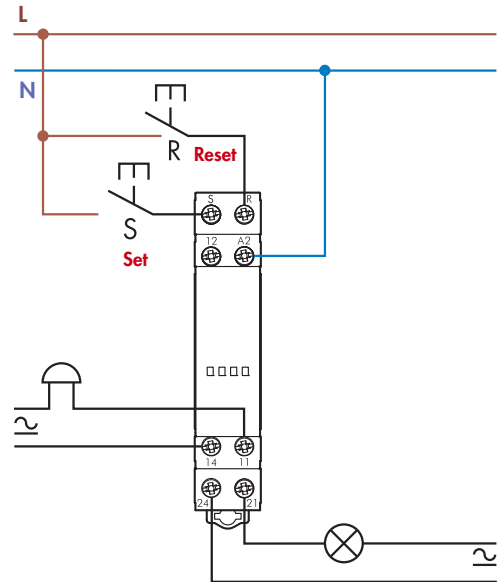
Red LED indication:  
Continuous = relay ON



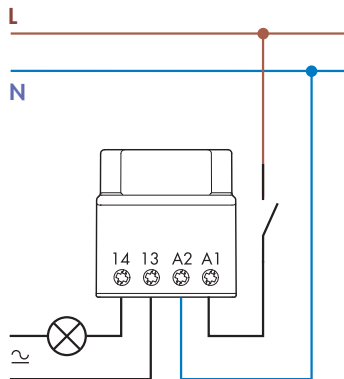
**Type 13.11**  
Call & reset relay



**Type 13.12**  
Call & reset relay



**Type 13.31**  
Connection

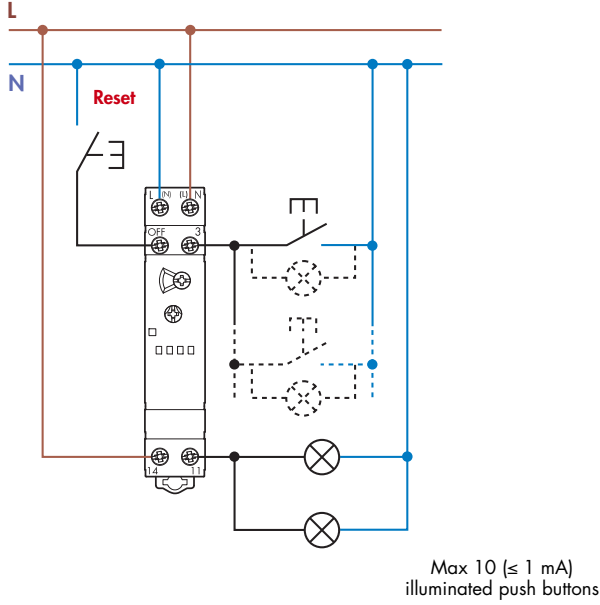


K

Wiring diagrams (13.61)

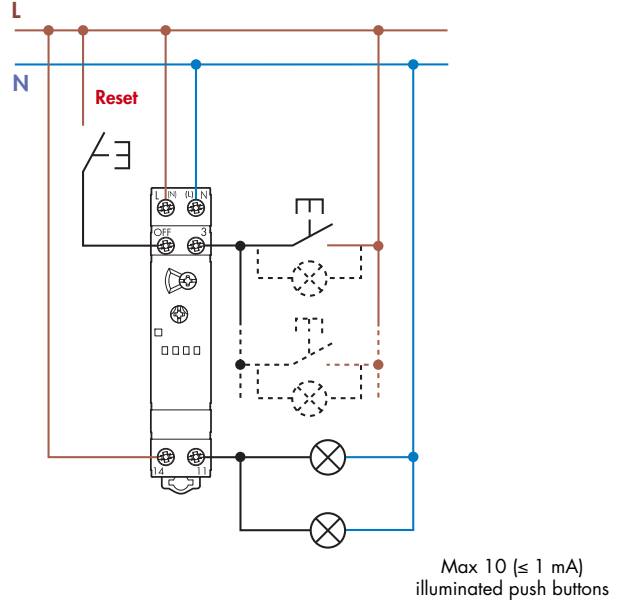
**Type 13.61**

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

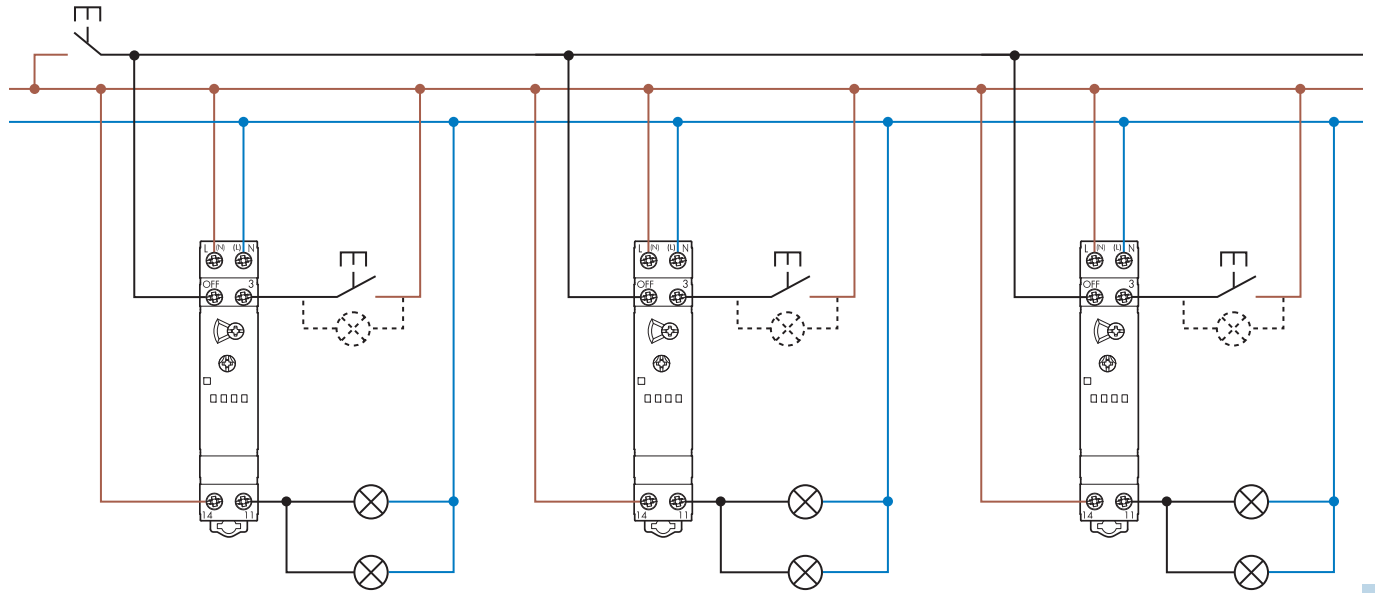


**Type 13.61**

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



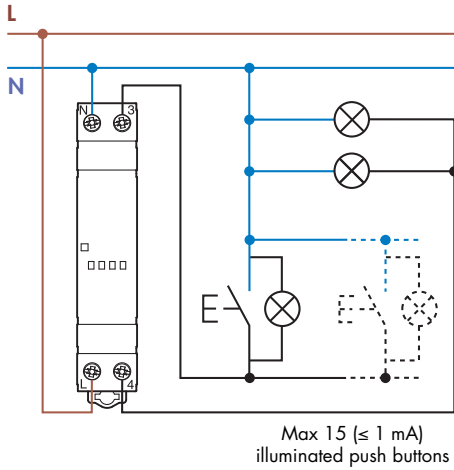
**Type 13.61 - Examples of multiple 4 wire connection with centralized reset pushbutton**



Wiring diagrams (13.81 and 13.91)

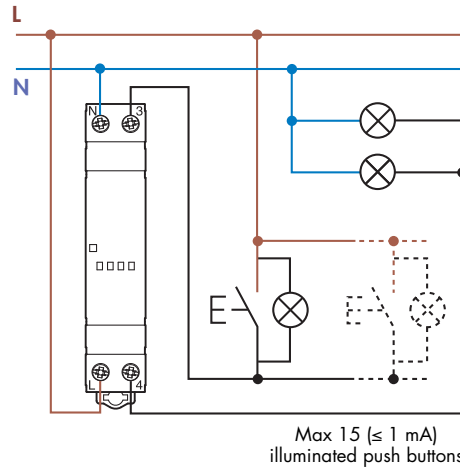
**Type 13.81**

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



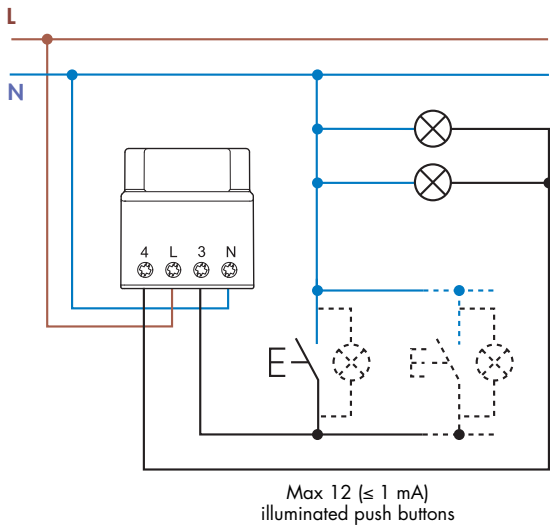
**Type 13.81**

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



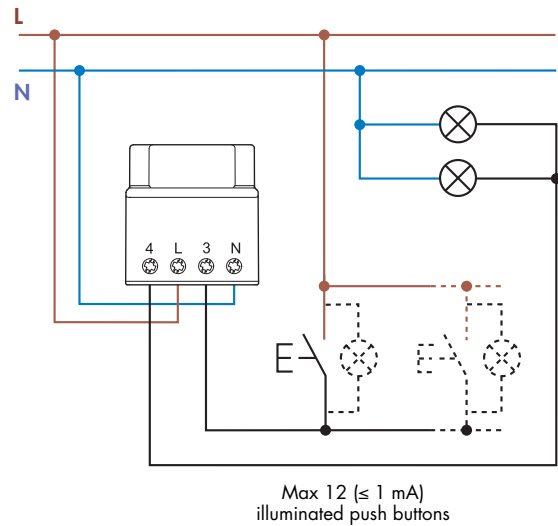
**Type 13.91**

3 wire connection



**Type 13.91**

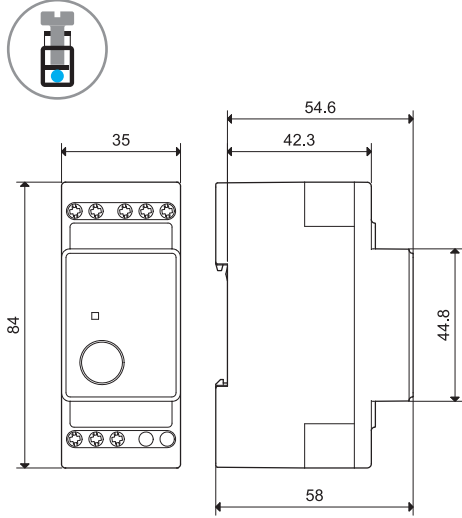
4 wire connection



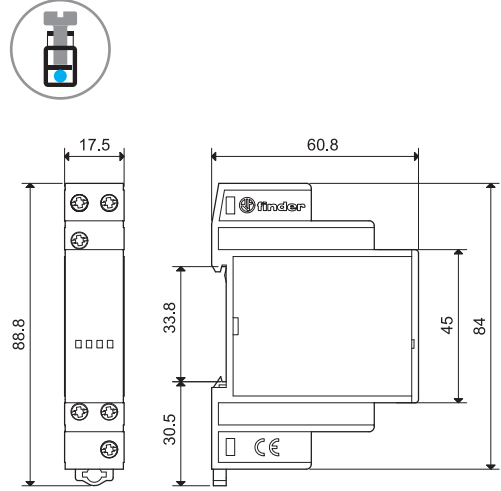


Outline drawings

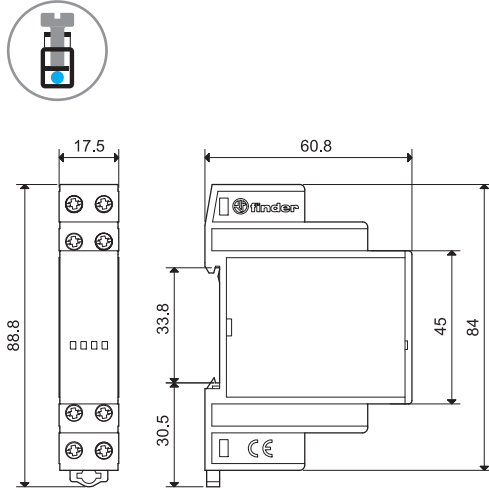
13.01  
Screw terminal



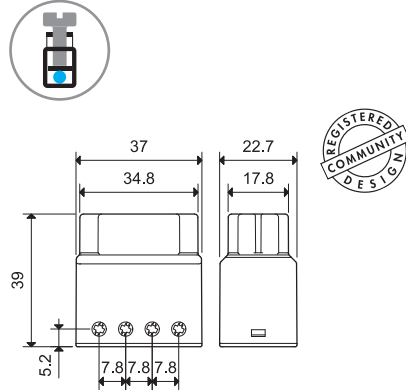
13.11  
Screw terminal



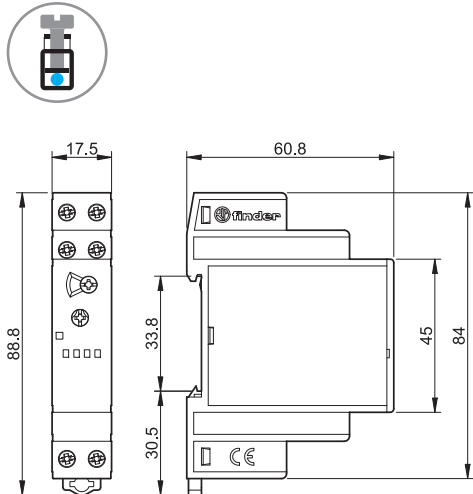
13.12  
Screw terminal



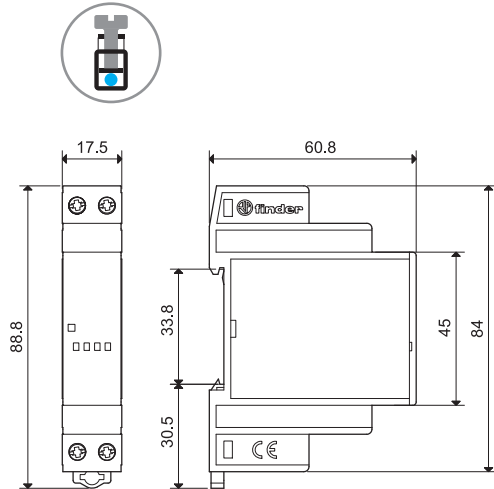
13.31/13.91  
Screw terminal



13.61  
Screw terminal



13.81  
Screw terminal



Accessories



011.01

**Adaptor for panel mounting**, for type 13.01, 35 mm wide

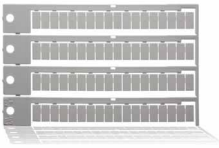
011.01



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, 6x12 mm

060.72