

# Electronic step, call/reset and monostable relays



Call and reset switches  
for bathrooms



Bathrooms  
lighting control



Bedroom  
light control



Living room  
light control



Office lighting  
control



**13**  
SERIES



### 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 12

#### Contact specification

Contact configuration	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current A	16/30 (120 - 5 ms)	10/20 (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 <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		1000	1000
supply - contacts V AC		—	—
Ambient temperature range	°C	-10...+60	-10...+50
Protection category		IP 20	IP 20

Approvals (according to type)



### 13.81



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

### 13.91



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

**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 12

**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 <sub>2</sub>	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>

**Supply specification**

Nominal voltage (U <sub>N</sub> )	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 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
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)****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 (30s...20min)
  - 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 (30s...20min)
  - monostable relay
  - light on
- 35 mm rail (EN 60715) mount
- 17.5 mm wide

**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



\* During impulse only.  
For outline drawing see page 12

**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 <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	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)

## 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.






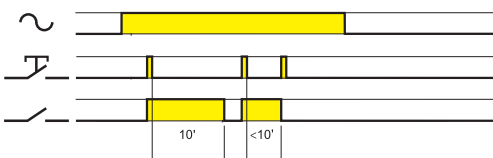
	1	3	.	0	1	.	8	.	2	3	0	.	A	B	C	D
<b>Series</b>	13.0				1.8				230				0000			
<b>Type</b>	0 = Step/Monostable, 35 mm rail (EN 60715) mount, 35 mm wide 1 = Call & Reset relay, 35 mm rail (EN 60715) mount, 17.5 mm wide 3 = Monostable relay, switch box mounting 6 = Multifunction relay, 35 mm rail (EN 60715) 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												<b>A: Contact material</b> 0 = Standard 4 = Standard AgSnO <sub>2</sub> (only for 13.31) <b>B: Contact circuit</b> 0 = Standard 3 = Standard NO (only for 13.31)			
<b>No. of poles</b>					1 = 1 pole 2 = 1 pole CO (SPDT) + 1 NO (SPST-NO)											
<b>Supply version</b>	0 = AC (50/60 Hz)/DC 8 = AC (50/60 Hz) 9 = DC												<b>Codes / Supply voltage</b> 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			
<b>Supply voltage</b>	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)															

## Technical data

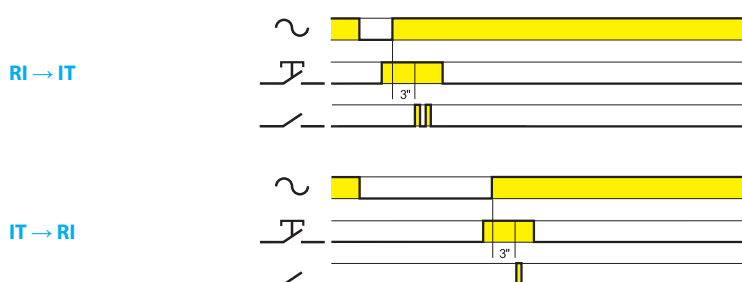
Insulation		13.01.8	13.01.0	13.11 - 13.12	13.31 - 13.61		13.81 - 13.91	
Dielectric strength								
between control circuit and supply	V AC	4000	—	—	—		—	
between control circuit and contacts	V AC	4000	4000	—	—		—	
between R-S-A2 and contacts	V AC	—	—	2000	—		—	
between supply and contacts	V AC	4000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

## Functions

Type		
<b>13.01</b>		<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.
<b>13.11</b> <b>13.12</b>		<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.
<b>13.81</b>		<b>(RI) Step relay</b> After every impulse, the output contact changes state - alternately switching from open to closed and vice versa.
<b>13.91</b>		<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.

## Functions

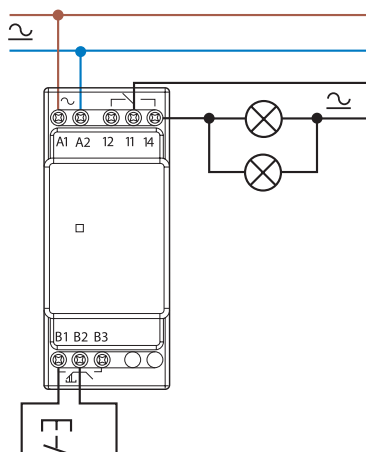
Type	Functions	
13.61.8.230		<b>(RM) Monostable</b> On closure of a switch between terminal 3 and Line (or Neutral, in case of 3-wire connection) the output contact will close, and remain so, until the switch opens.
		<b>(IT) Timing step relay</b> On initial impulse the output contact closes and timing 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. Switch-off delay time: 30s...20min
		<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.
13.61.0.024		<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. Switch-off delay time: 30s...20min
		<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.

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

### Type 13.01

Step wiring diagram

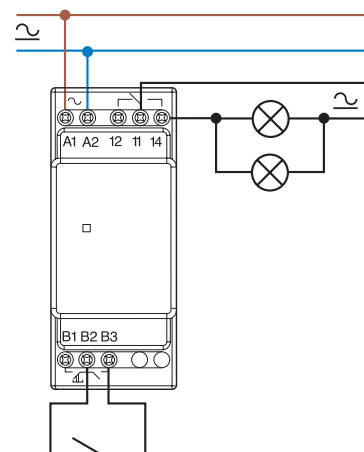
Red LED indication:  
Continuous = relay ON



### Type 13.01

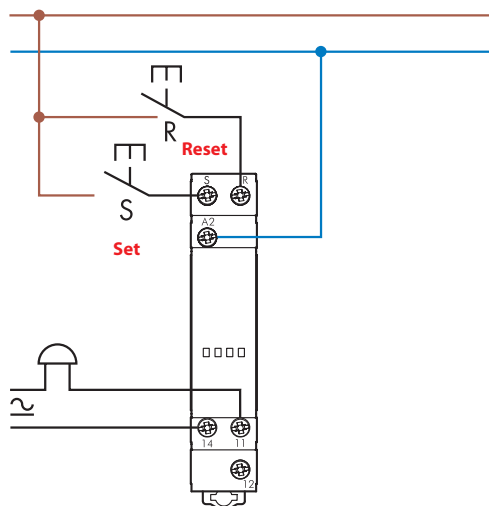
Monostable wiring diagram

Red LED indication:  
Continuous = relay ON



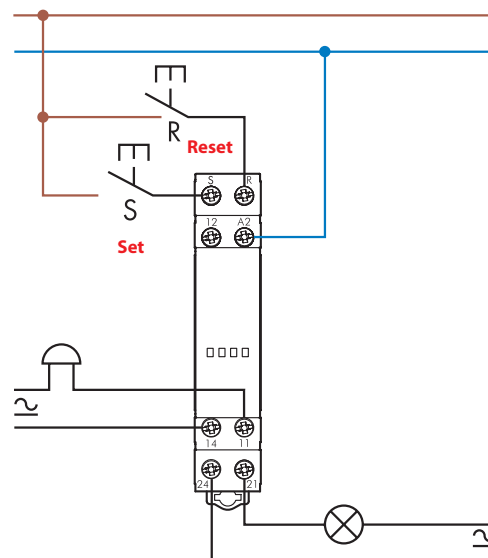
### Type 13.11

Call & reset relay



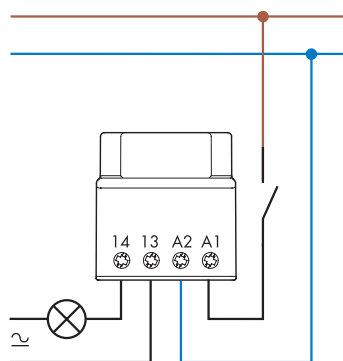
### Type 13.12

Call & reset relay



### Type 13.31

Connection



## Wiring diagrams (13.61)

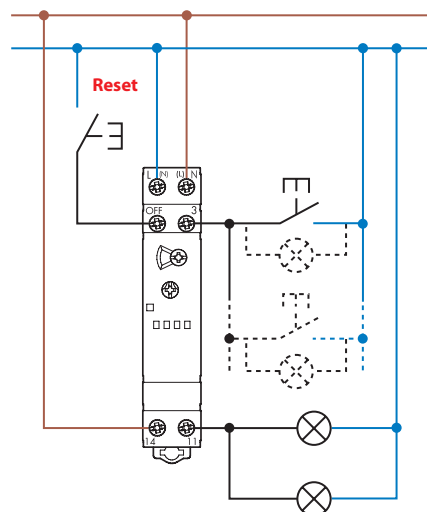
### Type 13.61.8.230

3 wire connection

Red LED indication:

Continuous = relay ON

Blinking = relay OFF



Max 10 ( $\leq 1$  mA)  
illuminated push buttons

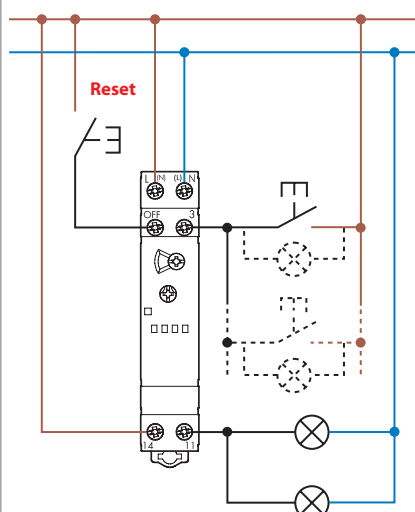
### Type 13.61.8.230

4 wire connection

Red LED indication:

Continuous = relay ON

Blinking = relay OFF



Max 10 ( $\leq 1$  mA)  
illuminated push buttons

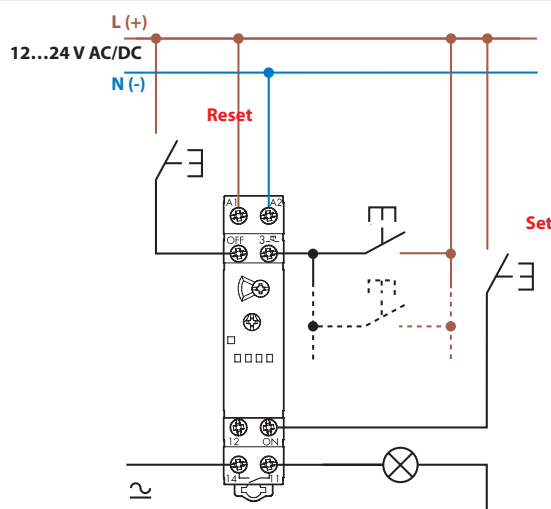
### Type 13.61.0.024

4 wire connection

Red LED indication:

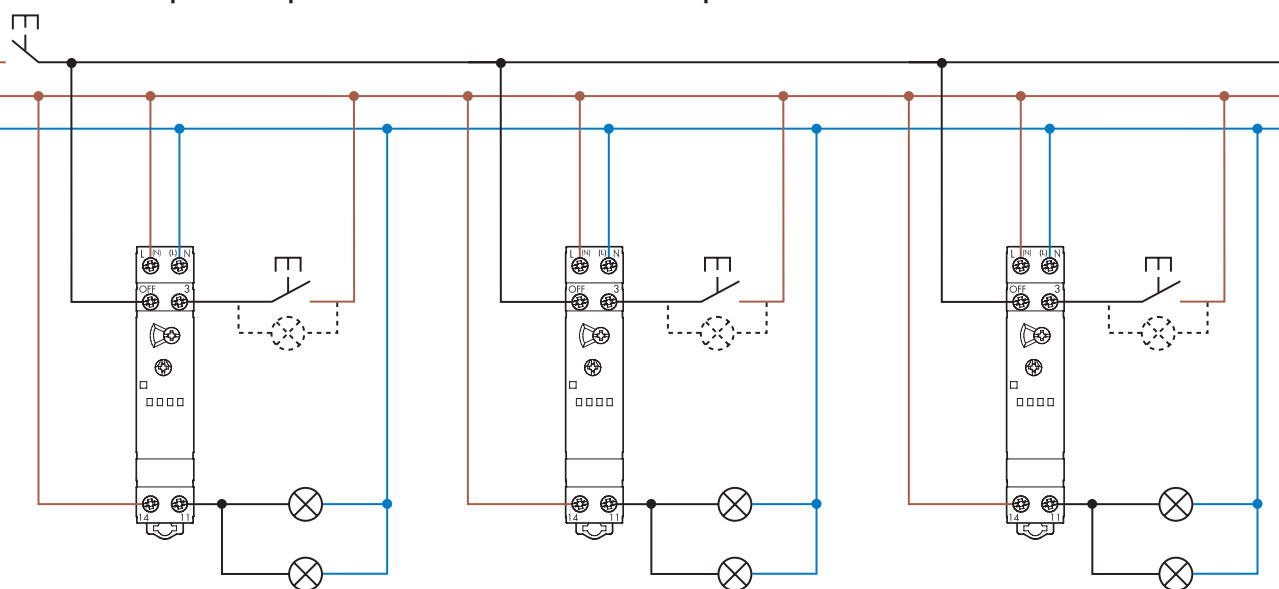
Continuous = relay ON

Blinking = relay OFF



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

K



## Wiring diagrams (13.81 and 13.91)

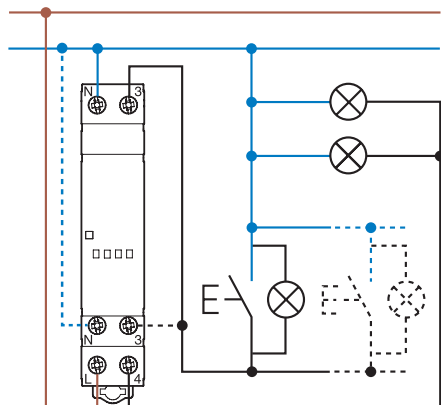
### Type 13.81

### 3 wire connection

Red LED indication:

Continuous = relay ON

Blinking = relay OFF



Max 15 ( $\leq 1$  mA)  
illuminated push buttons

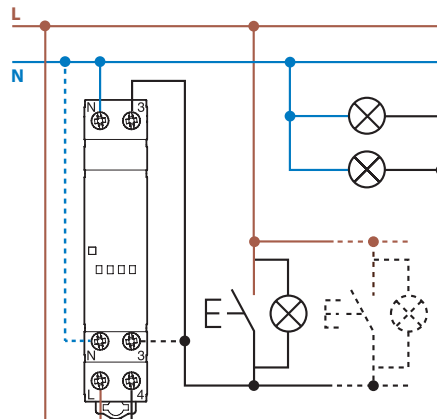
## Type 13.81

4 wire connection

Red LED indication:

Continuous = relay ON

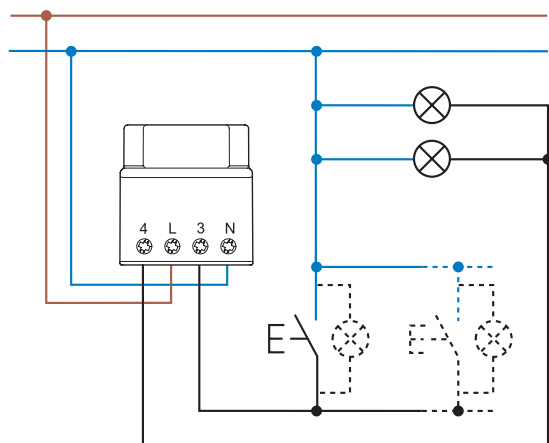
Blinking = relay OFF



Max 15 ( $\leq 1$  mA)  
illuminated push buttons

### Type 13.91

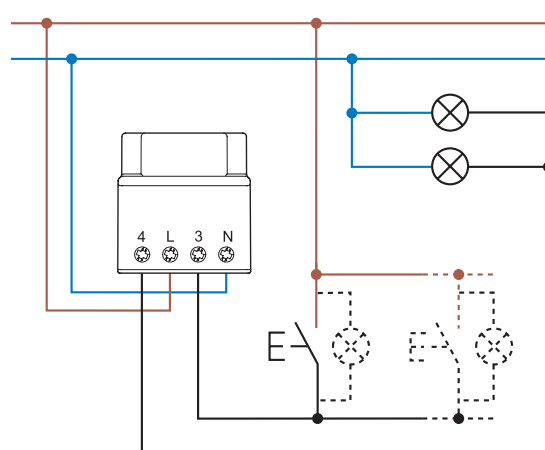
### 3 wire connection



Max 12 ( $\leq 1$  mA)  
illuminated push buttons

## Type 13.91

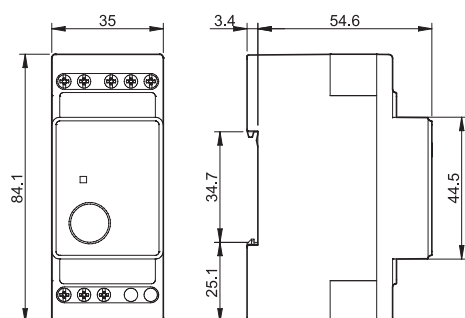
4 wire connection



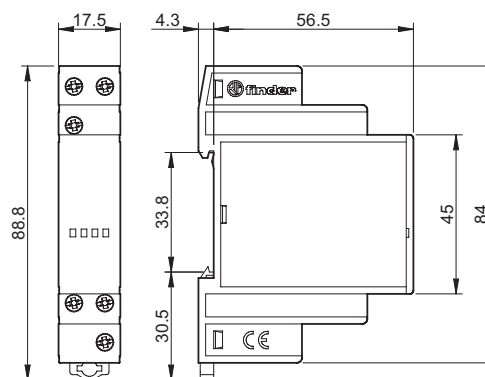
Max 12 ( $\leq 1$  mA)  
illuminated push buttons

## Outline drawings

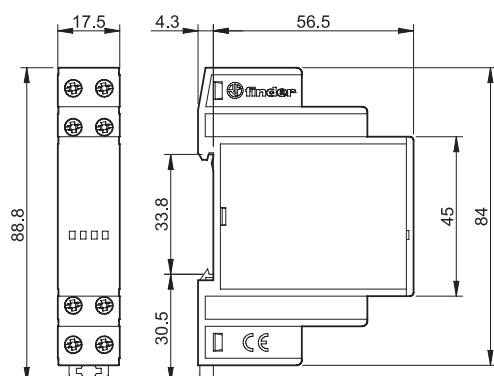
13.01  
Screw terminal



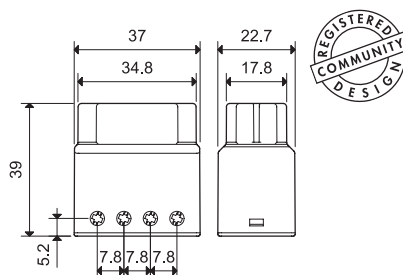
13.11  
Screw terminal



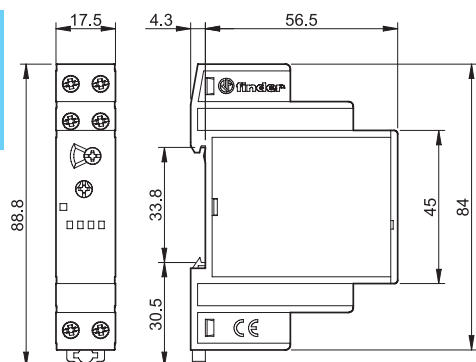
13.12  
Screw terminal



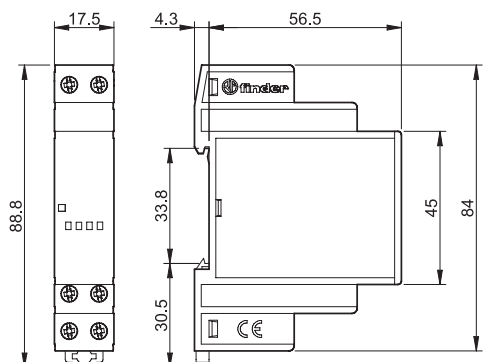
13.31/13.91  
Screw terminal



13.61  
Screw terminal



13.81  
Screw terminal



## Accessories



**011.01**

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

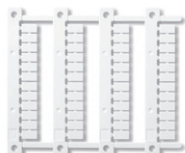
011.01



**020.01**

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

020.01



**060.48**

**Sheet of marker tags (CEMBRE Thermal transfer printers)** for relays types 13.11, 13.12, 13.61 and 13.81 (48 tags), 6 x 12 mm

060.48

