

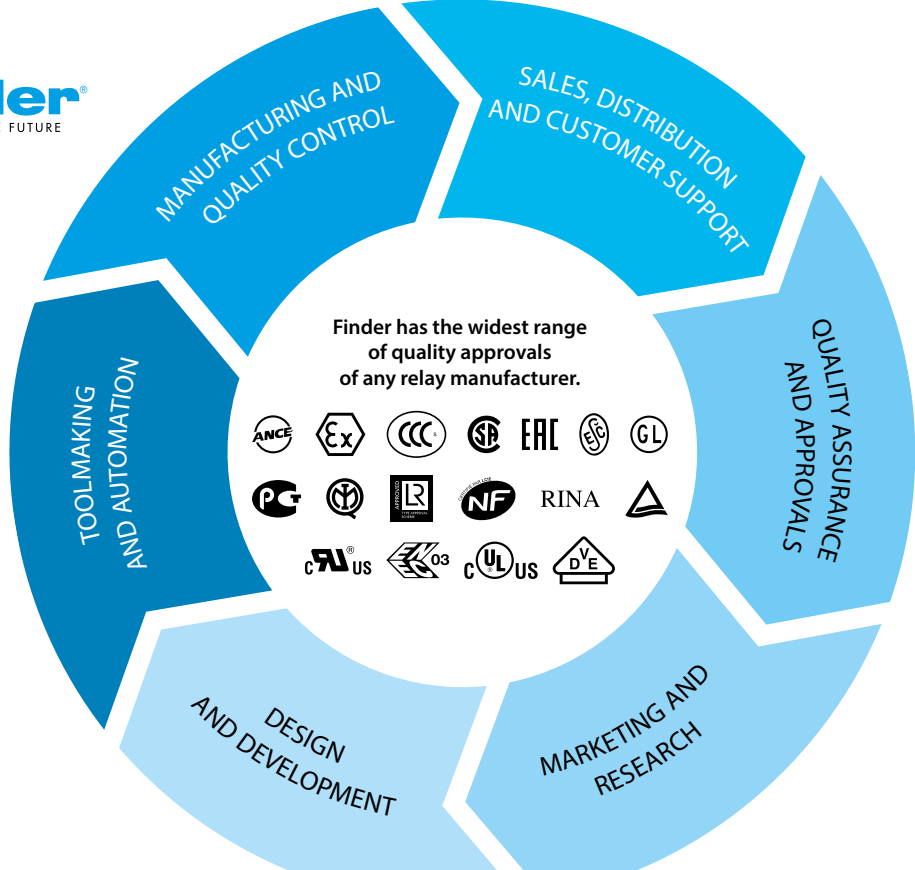


THE ELECTRICIANS' GUIDE

WIRING SCHEMES
for residential and
commercial applications



Since 1954,
light when
you need it



Today, there is a practical and viable alternative to the traditional way of controlling domestic and commercial lighting.

Economy and flexibility

Achieving the control of lighting where there is more than one control switch, particularly where they are located some distance from one another, has always been complicated and costly. A second control switch requires 3 additional wires, whilst every intermediate switching location requires no less than 4 wires.

In such cases, utilising an impulse (or step) relay has many advantages;

- designing the system is simpler
- it is more easily expanded
- installation costs are noticeably reduced.

Simplicity

Using 2-wire pushbuttons to control the coil of a centrally located impulse relay, which in turn controls the lights, greatly simplifies the wiring normally associated with one-way, two-way and intermediate switches. The 2-wire coil "command circuit" is easily extended to as many lighting control locations as needed, and can use smaller and neater conductors

(typically 0.5 mm² - as permitted by National regulations), since they need only to carry the load of the relay coil (typically 20...600 mA). The power circuit to the lights should of course be of sufficient capacity, but instead of following the usual route of a traditional system to all the switches, it needs to run only to the impulse relay and then to the lights.

Safety

Where necessary, and particularly for safety reasons, a transformer can be used to power the command circuit at a voltage lower than the supply voltage - impulse relay coils being available in several AC or DC voltages. No other component offers this enhanced safety through separating the command from the power circuit, nor the savings derived from added versatility and simplification of the system.

Versatility

In addition to the technical advantages already described, a number of versatile mounting modes for the relay are possible; ranging from a normal junction box, screw fixing, and 35 mm rail (EN 60715) mounting systems.

Conforming to International Standards

In Europe, the Low Voltage European Directive 2014/35/EU and successive amendments state that, as well as using recognised technicians to carry out the installation, the materials and components used in the system should adhere to International and National standards. It is particularly important that this can be verified with Declarations of Conformity citing the appropriate standards, and certification documents from the appropriate National certification organisation.

FINDER impulse relays are designed and constructed in compliance with EN/IEC standards, depending on type, have been officially certified by the appropriate standards authorities with respect to performance and quality, being subject to both Type Testing and ongoing periodic QC testing.

APPROPRIATE STANDARDS






















- EN 61810-1: Electromechanical Elementary Relays – Part 1: General and safety requirements
- EN 60669-1: Switches for household and similar fixed electrical installations. General requirements
- 64 - 8: Electrical Systems.

Noise level

FINDER is engaged in continual research into the reduction of the acoustic noise generated by the mechanical action of operating the contacts.

Improved with respect to earlier versions of impulse relay, the current 20, 26 Series and 27 series create no more noise than a normal switch (about 20 dB), whilst the SILENT IMPULSE RELAY “13.81” and “13.91” generates no noise noticeable above the general background noise where it is installed.

The Switching Function fundamentally defines the particular sequence in which the step relay contacts open and close, and the number of “steps” before this sequence repeats itself. The digit in the fourth position of the Finder part number denotes the Switching Function.

Relay type	Number of Steps	Switching Sequence			
		1	2	3	4
xx.x1	2				
xx.x2	2				
xx.x3	2				
xx.x4	4				
xx.x5	4				
xx.x6	3				
xx.x8	4				

Switching function code

The 1 pole 2 step switching function xx.x1 will allow the On/Off control of a single lighting zone.

The 2 pole types allow the independent control of 2 lighting zones. The specific lighting sequence will depend on the specific Switching Function code chosen.

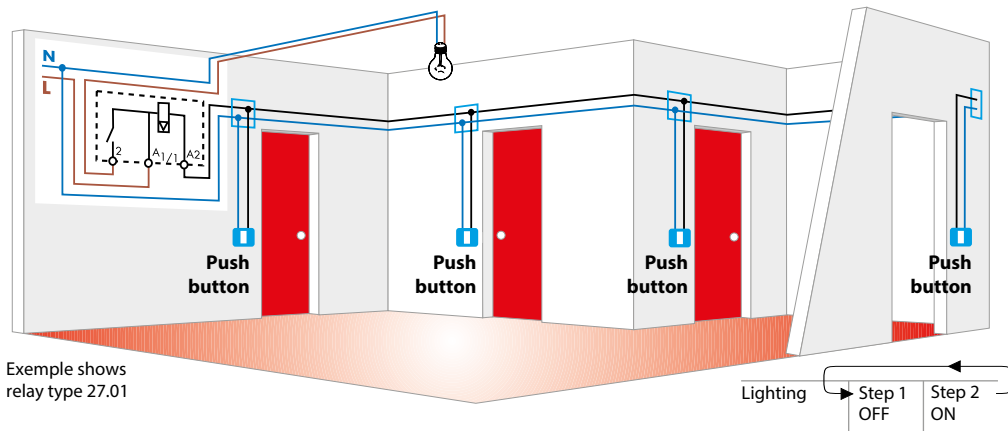
Note:

- Not all Finder Step relays are available with all the possible alternative Switching functions.
- The Switching function code generally has the same meaning for all Finder step relays, although there are a few minor anomalies – so in practice refer carefully to the data sheet for the specific relay.

For example:

The Switching Function code “6” (2 pole, 3-step sequence) can be implemented with relay types 20.26 – 26.06 – 27.06, but the latter has coil and contact circuits that are common to each other.

Relay System Wiring – Single Zone On/Off control - Using single relay (Function code “1”) and simple wiring - Possible relay types, 20.21 - 26.01 - 27.01 - 27.21 - 13.81 - 13.91

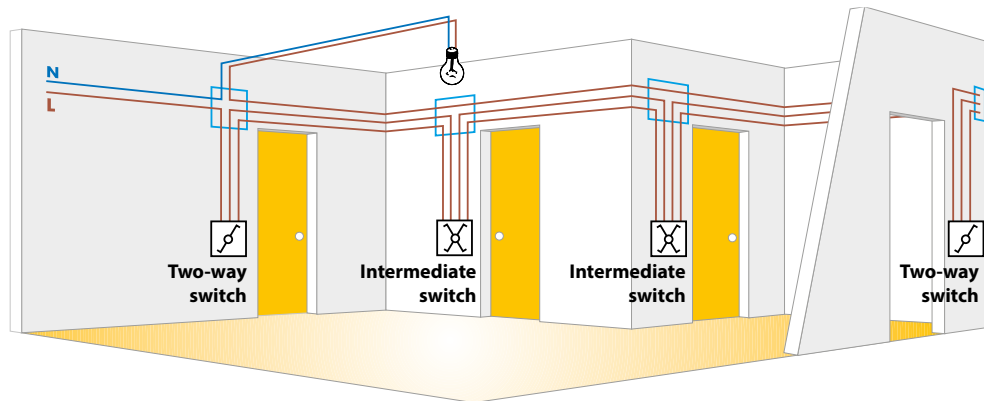


Comparing both systems, even for the simplest uses, the relay system offers advantages.

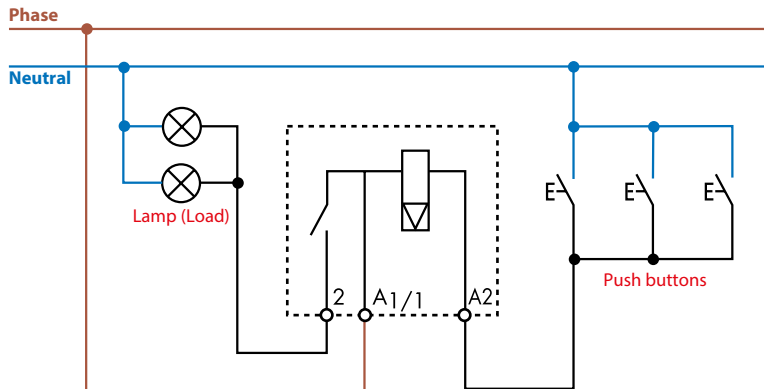
Only two wires are required for the “command circuit”, and they can be of a smaller cross section (0.5 mm). Whereas, in a traditional system the conductors have to be sized

to take the load current and are far more numerous. From an economic viewpoint, not only are there savings in material costs, but also less time is taken by the electrician to install the relay system. This system is also much easier to modify or extend.

Traditional System Wiring – Single Zone On/Off control - Using multi-pole switches and multiple wiring

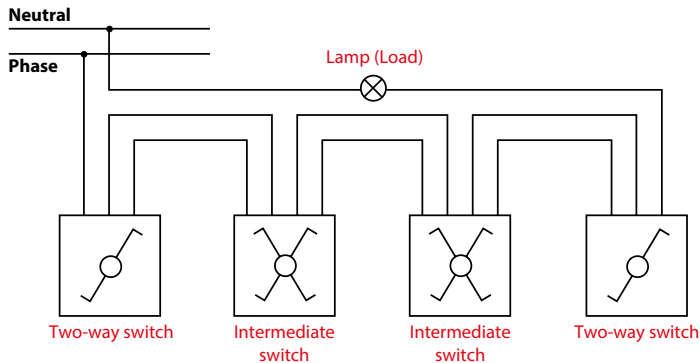


Wiring Schematic - Relay system Single Zone On/Off control - Function code "1" (1 pole 2 step sequence) relay

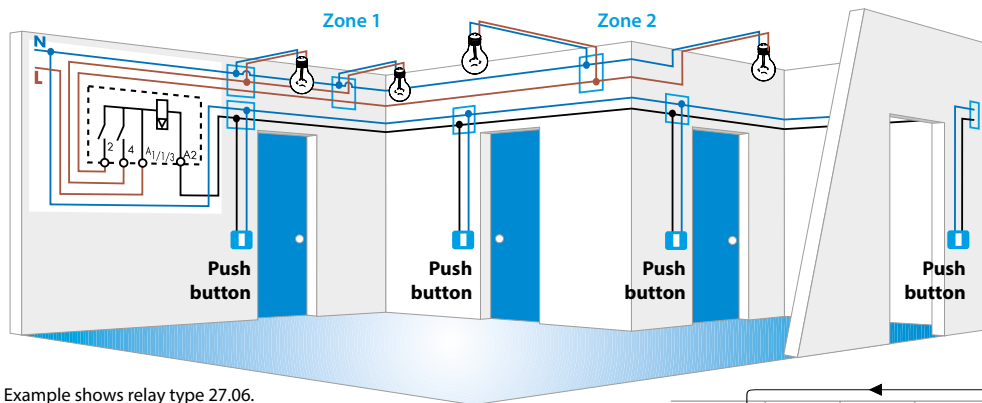


Example shows relay type 27.01.

Wiring Schematic - Traditional system - Single Zone On/Off switching - Multi-pole switches and wiring



Relay System Wiring – 2 Lighting Zones, 3 sequence On/Off control - Using single relay (Function code “6”) and simple wiring Possible relay types, 20.26 - 26.06 - 27.06 - 27.26



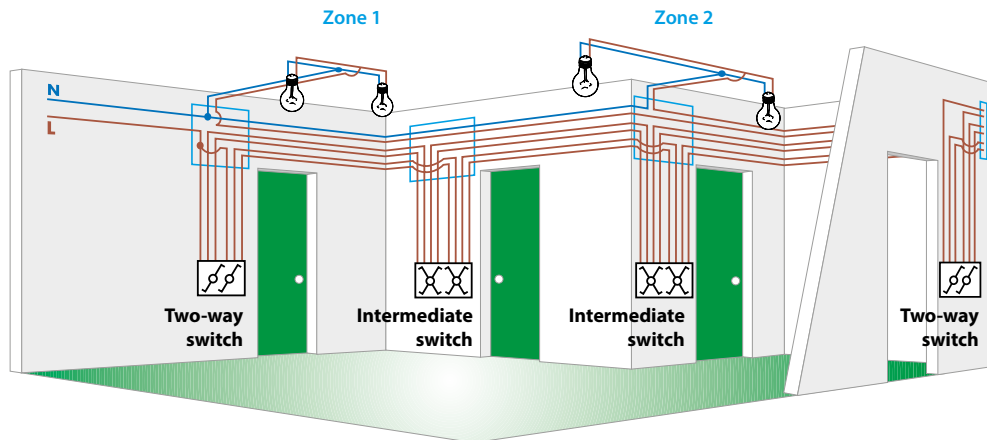
Example shows relay type 27.06.

Lighting	Step 1	Step 2	Step 3
Zone 1	OFF	OFF	ON
Zone 2	OFF	ON	ON

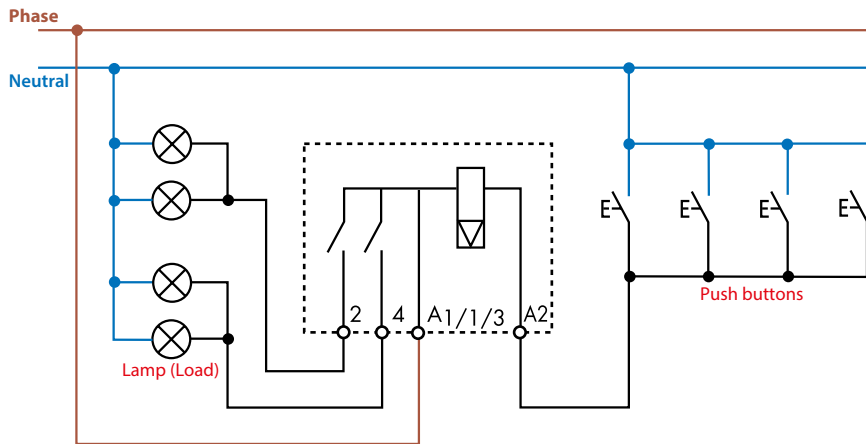
For more complex functions such as the one above, the relay system is self evidently simpler and more economical to install. Savings of typically 40% can be achieved. The function of this particular application is to offer 3-step

sequence control over two circuits, or lighting “zones”, using a single impulse relay with 2 independent contacts. Successive operation of any of the push buttons sequences the lighting through all three permutations.

Traditional System Wiring – 2 Lighting Zones - Using multi-pole switches and complex wiring

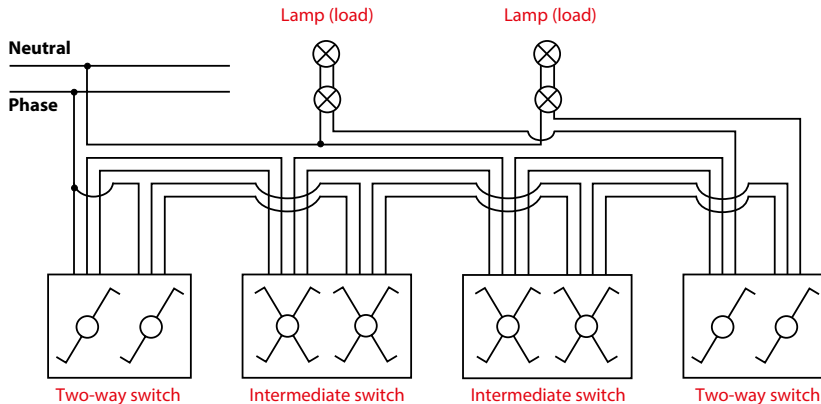


Wiring Schematic - Relay system - 2 Zone On/Off switching - Function code "6" (2 pole 3 step sequence) relay



Example shows relay type 27.06.

Wiring Schematic - Traditional system - 2 Zone On/Off switching - Multi-pole switches and complex wiring



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11 Series - Modular light dependent relays ..	page 20...27	27 Series - Step relays	page 110...113
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Wiring diagram showing types :		70 Series - Line monitoring relays	page 117...121
27.01, 27.21, 26.01, 13.81, 13.91, 15.51	page 59	72 Series - Level control relays for conductive liquids	page 122...129
15 Series - Dimmers	page 60...69	Type 72.42 - Priority change relay	page 130...131
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		81 Series - Modular timers	page 168...170
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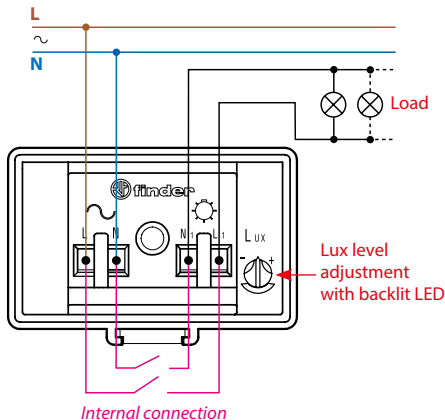


Type 10.32

**Double output - 2 NO 16A
for Live and Neutral switching**

- 2 NO, 16 A 230 V AC
- Supply voltage: AC
- For pole or wall mounting

*Italian Patent "light feedback compensation"
innovative principle*



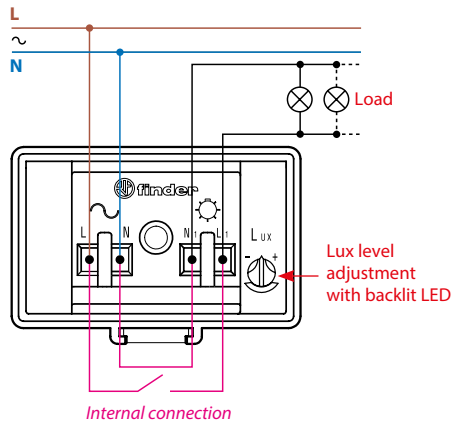


Type 10.41

Single output - 1 NO 16A for Live switching

- 1 NO, 16 A 230 V AC
- Supply voltage: AC
- For pole or wall mounting

*Italian Patent "light feedback compensation"
innovative principle*

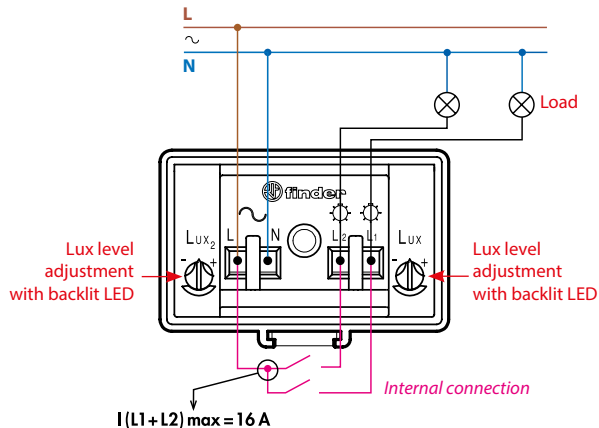




Type 10.42

Two independent outputs

- 2 NO, 16 A 230 V AC
- Supply voltage: AC
- For pole or wall mounting



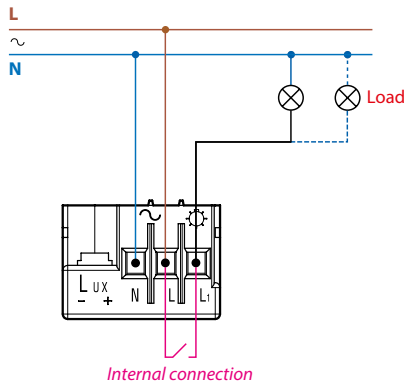


Type 10.51

Single output - 1 NO 12A

- 1 NO, 12 A 230 V AC
- Supply voltage: AC
- For pole or wall mounting

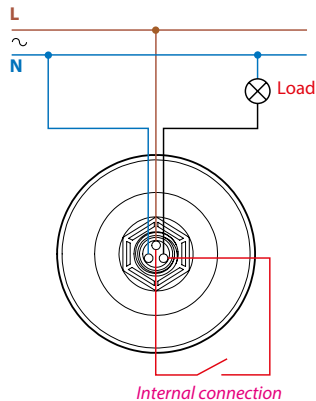
Italian Patent “light feedback compensation” innovative principle



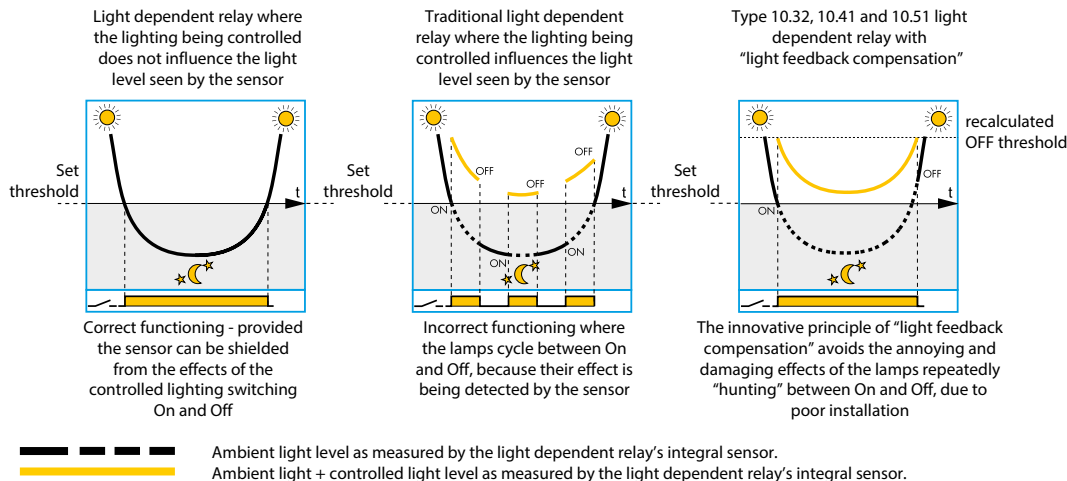


Type 10.61

- Fixed sensitivity 10 lux ($\pm 20\%$)
- Prewired with silicone wire, 500 mm length
- 1 NO, 16 A 230 V AC
- Supply voltage: AC
- Mounting on street light body



Advantage of the “light feedback compensation” principle



Notes

1. It is good practice to try to achieve a correct installation where the light emitted from the lamp(s) does not influence the light level seen by the sensor, although the “light feedback compensation” principle will help when this is not fully achievable. In this case it should be appreciated that the “light feedback compensation” principle may delay slightly the time of Switch Off - beyond the ideal.
2. The compensation principle is not effective where the combined effect of the ambient light and the controlled lighting exceeds 120 lux.
3. The 10.32 and 10.41 types are compatible with gas discharge lamps that attain full output within 10 minutes, since the electronic circuit monitors lamps' light output over a 10 minutes period to achieve a true assessment of its contribution to the overall lighting level.

Energy saving in a new light !



11 Series. Light dependent relays 12 - 16 A

- Innovative Finder patent simplifies installation
- Totally Cadmium free (contacts and photosensor)
- Double insulation between supply and light sensor





Type 11.31

17.5 mm width

- 1 NO, 16 A 250 V AC

- Supply voltage: AC

- 35 mm rail (EN 60715) mount

Accessories

Light sensor
Type 011.02



- Protection category: IP 54

- Cadmium free

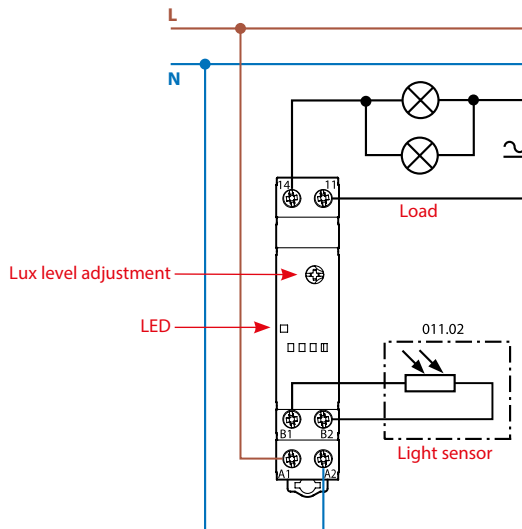
- Non polarized

- Double insulated with respect to light dependent relay supply

Flush-mounted light sensor
Type 011.03



Protection category: IP 66/67





Type 11.41

"zero hysteresis", 4 position selector

- 1 CO, 16 A 250 V AC
- Supply voltage: 230 V AC
- 35 mm rail (EN 60715) mount

*European patent "Zero hysteresis" for energy saving
Italian patent "Light feedback compensation" principle*

Accessories

Light sensor Type 011.02



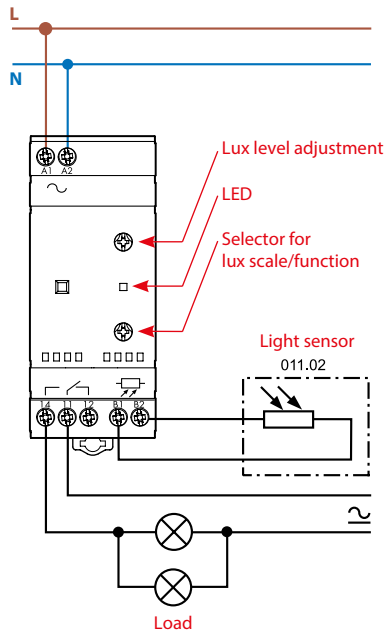
- Protection category: IP 54

- Cadmium free
- Non polarized
- Double insulated with respect to light dependent relay supply

Flush-mounted light sensor Type 011.03



Protection category: IP 66/67





Type 11.42

- 2 independent outputs
- 2 individual lux settings
- 4 position selector
- 1 CO + 1 NO, 12 A 250 V AC
- Supply voltage: 230 V AC
- 35 mm rail (EN 60715) mount

Accessories

Light sensor Type 011.02



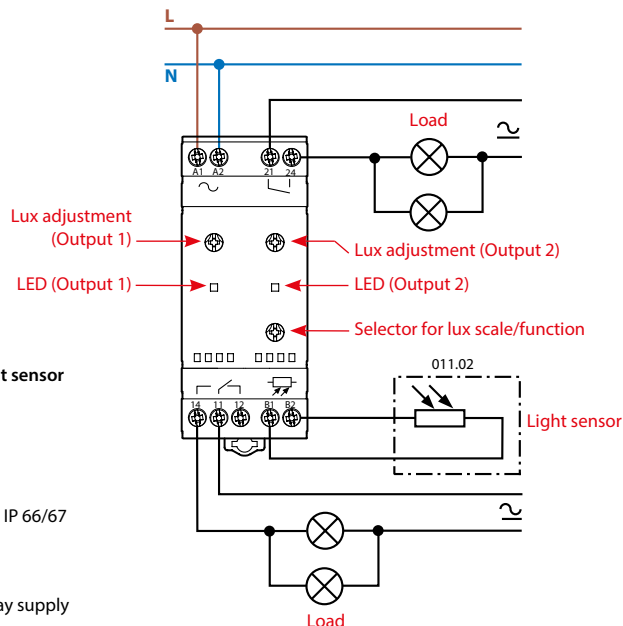
- Protection category: IP 54

- Cadmium free
- Non polarized
- Double insulated with respect to light dependent relay supply

Flush-mounted light sensor Type 011.03



Protection category: IP 66/67





Type 11.91

Light dependent relay + time switch
Auxiliary output (light only dependent)
to power optional 19.91 power module

- 1 CO (16 A 250 V AC) + 1 aux output
- Supply voltage: 230 V AC
- 35 mm rail (EN 60715) mount

Italian patent "Light feedback compensation" principle

Accessories

Light sensor
Type 011.02



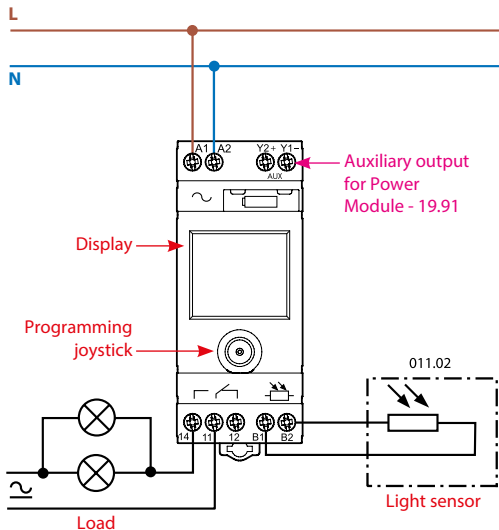
- Protection category: IP 54

Flush-mounted light sensor
Type 011.03



Protection category: IP 66/67

- Cadmium free
- Non polarized
- Double insulated with respect to light dependent relay supply





Type 19.91.9.012.4000

Power module 16 A

17.5 mm width

- 1 CO 16/30 A 250 V AC

- Supply voltage: DC

- 35 mm rail (EN 60715) mount

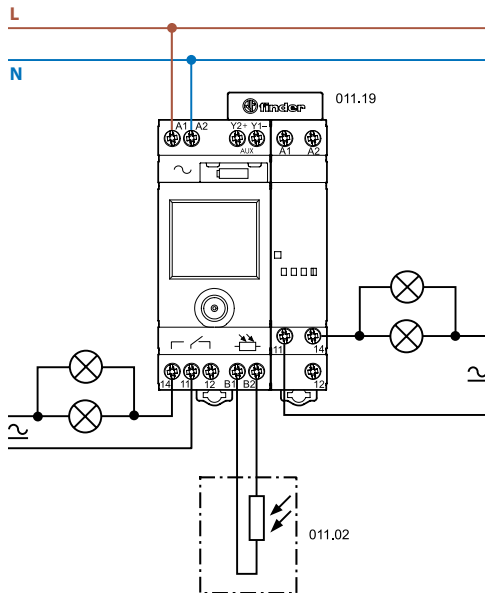
Accessories

2-pole connector Type 011.19



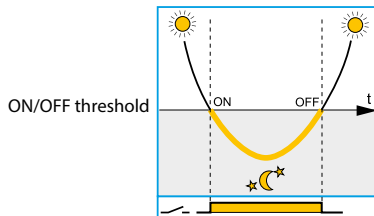
For direct connection of 11.91 auxiliary output (Y1-Y2) to 19.91 supply (A1-A2)

A solid state output at terminals Y1-Y2 is provided (rated 12 V DC, 80 mA 1 W max.): this can be used with the power module **19.91.9.012.4000** connected by the dedicated **011.19** connector.



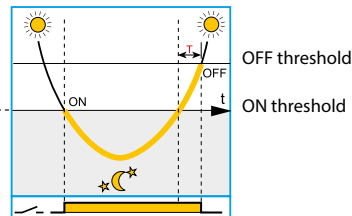
Advantage of the “Zero hysteresis” patented circuit:
ensures reliable switching without wasting energy

Type 11.41 “ZERO HYSTERESIS”
light dependent relays




Switch OFF level = Switch ON level.
Patented “Zero Hysteresis” circuitry
ensures reliable switching without
wasting energy.

Traditional
light dependent relays

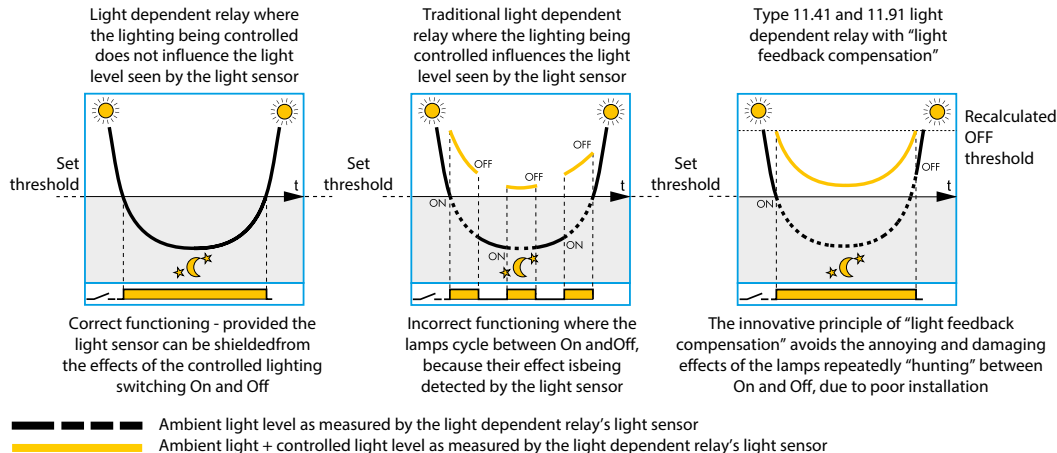


“Traditional” light dependent relays
incorporate switching hysteresis to
prevent malfunctioning or tripping.
This results in an unnecessary delay in
switching off, and a resulting waste of
energy (over period T).

 Brightness of the natural light

 The NO of the light dependent relay is closed (light is switched on)

Advantage of the "light feedback compensation" principle (Italian Patent)
avoids the effect of the lamps repeatedly "hunting" between On and Off, due to poor installation



Notes

1. It is good practice to try to achieve a correct installation where the light emitted from the lamp(s) does not influence the light level seen by the light sensor, although the "light feedback compensation" principle will help when this is not fully achievable. In this case it should be appreciated that the "light feedback compensation" principle may delay slightly the time of Switch Off - beyond the ideal.
2. The compensation principle is not effective where the combined effect of the ambient light and the controlled lighting exceeds a maximum value (200 lux for the 11.91, 160/2,000 lux for standard/high range of the 11.41).
3. The 11.41 and 11.91 types are compatible with gas discharge lamps that attain full output within 10 minutes, since the electronic circuit monitors lamps' light output over a 10 minute period to achieve a true assessment of its contribution to the overall lighting level.

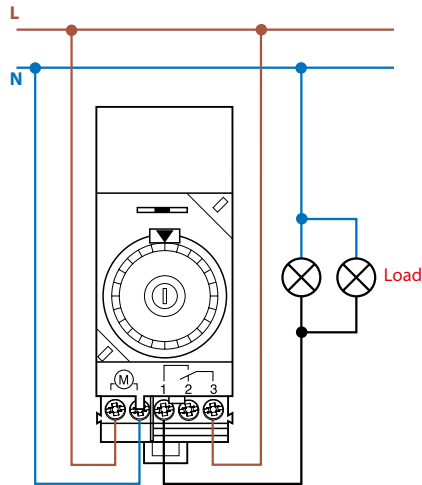


Type 12.01

Mechanical daily time switch

35.8 mm width

- 1 CO, 16 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount





Type 12.11

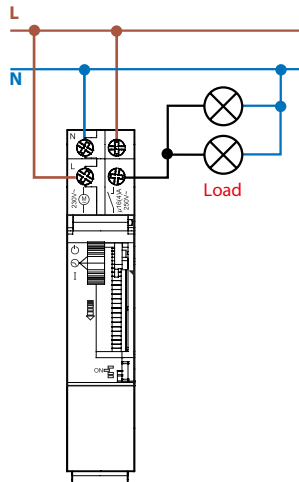
Mechanical daily time switch

17.6 mm width

- 1 NO, 16 A 250 V AC

- Supply voltage: AC

- 35 mm rail (EN 60715) mount



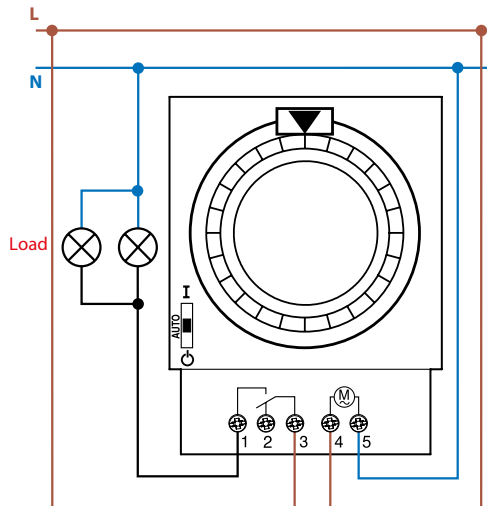


Type 12.31

Mechanical daily or weekly time switch

72x72 mm

- 1 CO, 16 A 250 V AC
- Supply voltage: AC
- Front panel mounting





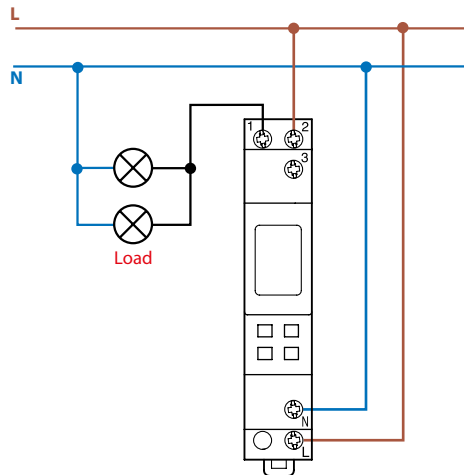
Type 12.71

Electronic digital weekly time switch,
17.6 mm width

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or AC/DC
- 35 mm rail (EN 60715) mount

Accessories

PC programming kit Type 012.90



Light up a city with

*Antonio Dibenedetto
Technical plant engineer
Ragusa, Sicily, Italy.*

Street lighting
controlled by
the Finder
**Type 12.A2
Astro timer**



12 Series Time Switches with NFC programming  

The first available time switches with integrated NFC technology,
programmable from your smartphone.

just your smartphone.

170 Finder
Finder 12 Series
Time Switches,
set-up with just
a smartphone



An innovation that makes life easier
for the installation professional.



finder[®]
SWITCH TO THE FUTURE



Type 12.51

**Digital (analogue-style) time switch,
daily/weekly programming**

35.8 mm width

- 1 CO, 16 A 250 V AC
- Supply voltage: 230 AC
- 35 mm rail (EN 60715) mount

Programmable from a smartphone using
NFC (Near Field Communication) connectivity.

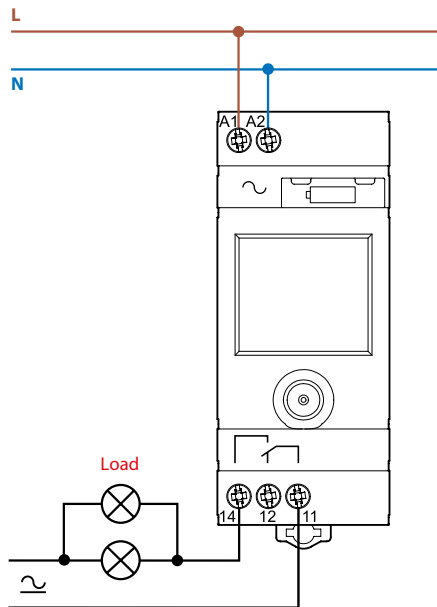


Finder Toolbox

New user App
for simple,
guided programming



Leave it to your smartphone
and programming your
time switch is done!

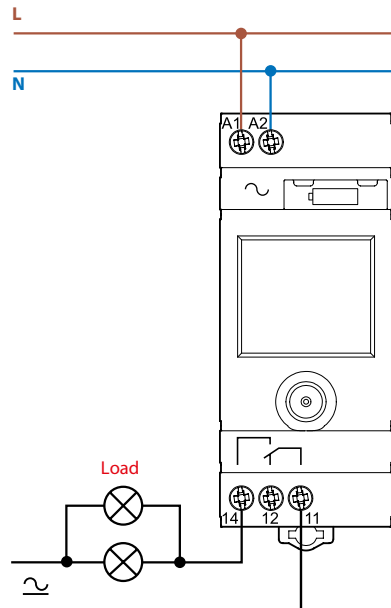
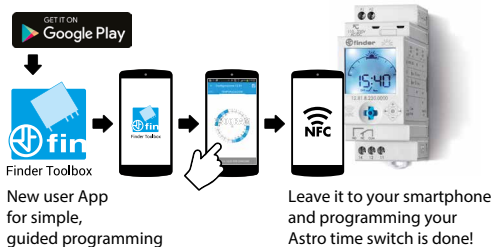




Type 12.81 - Digital Astro-switch

- Astro program: calculation of sunrise and sunset times through date, time and location coordinates
- Location coordinates easily settable for most European countries through post codes
- 35.8 mm width
- 1 CO, 16 A 250 V AC
- Supply voltage: 230 V AC
- 35 mm rail (EN 60715) mount

Programmable from a smartphone using NFC (Near Field Communication) connectivity.





Type 12.61
1 CO, 16A 250V AC



Type 12.62
2 CO, 16A 250V AC

Digital weekly time switch

35.8 mm width

- Supply voltage: 230 AC
- 35 mm rail (EN 60715) mount

Programmable from a smartphone using
NFC (Near Field Communication) connectivity.



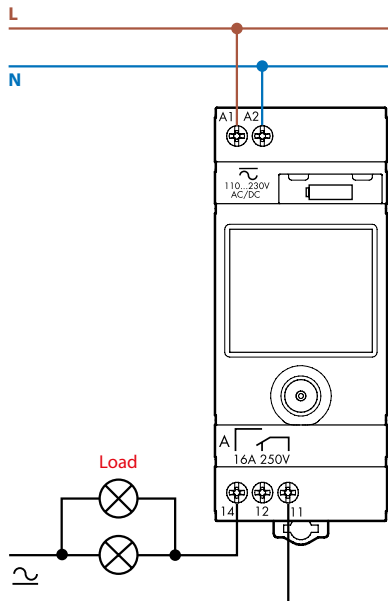
Finder Toolbox

New user App
for simple,
guided programming



Leave it to your smartphone
and programming your
time switch is done!

Wiring for Single Pole Type 12.61 (and Type 12.A1)





Type 12.A1

1 CO, 16A 250V AC



Type 12.A2

2 CO, 16A 250V AC

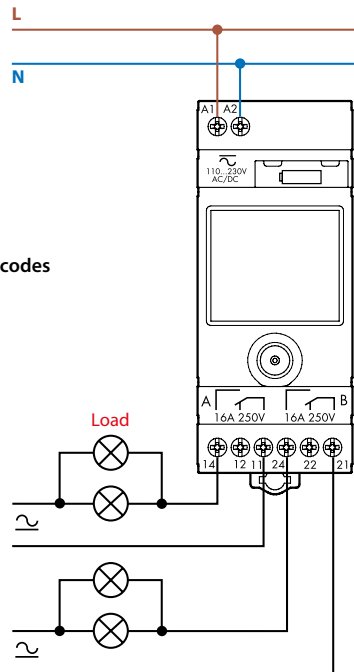
Weekly Astro time switch

- **Astro program:** calculation of sunrise and sunset times through date, time and location coordinates
- **Location coordinates easily set** for most European countries through post codes
- **35.8 mm width**
- Supply voltage: 230 AC
- 35 mm rail (EN 60715) mount

Programmable from a smartphone using NFC (Near Field Communication) connectivity.



Wiring for Double Pole Type 12.A2 (and Type 12.62)

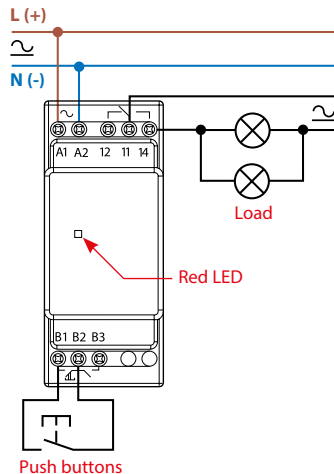




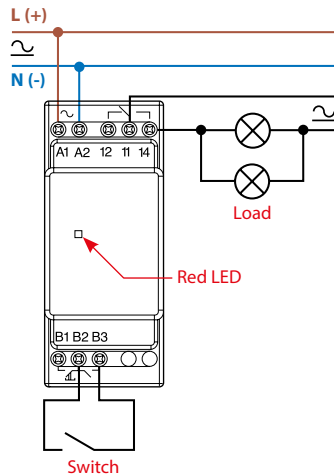
Type 13.01 Electronic step/monostable relay

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Step wiring diagram



Monostable wiring diagram



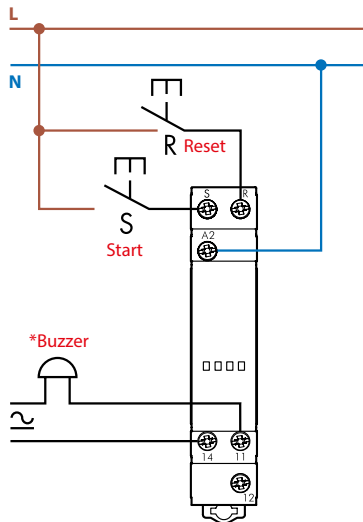


Type 13.11

Call & Reset Relay - 1 Pole

- 1 CO, 12 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

* If using a buzzer that is not continuously rated limit the energization period with an additional timer.



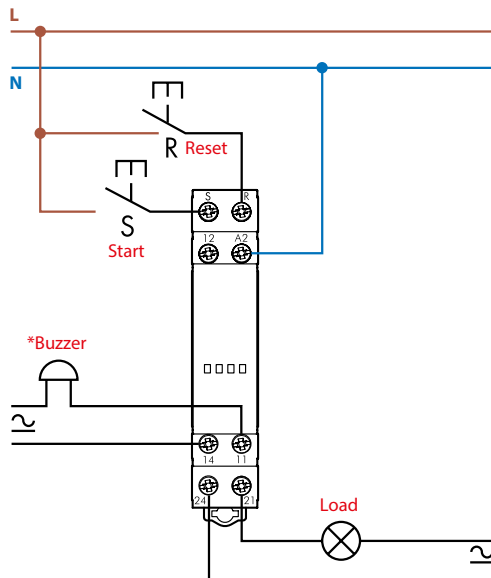


Type 13.12

Call & Reset Relay - 2 Pole

- 1 CO + 1 NO, 8 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

* If using a buzzer that is not continuously rated limit the energization period with an additional timer.

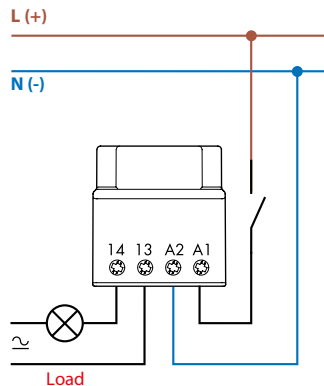




Type 13.31

Electromechanical monostable relay

- 1 NO, 12 A 250 V AC
- Supply voltage: AC or DC
- For mounting within residential switch boxes





Type 13.61.0.024.0000

Multifunction step/monostable relay with reset command

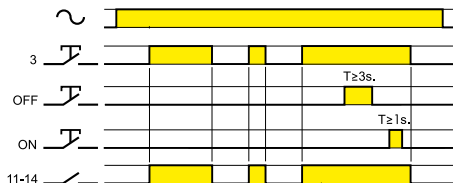
Reset feature, for centralized off command

Set feature, for centralized on command

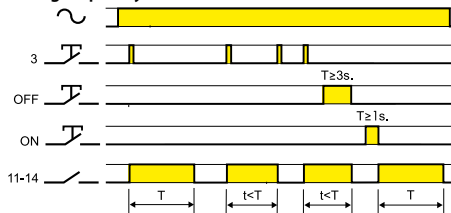
- 1 CO, 16 A 250 V AC
- Supply voltage: 12...24 V AC/DC
- 35 mm rail (EN 60715) mount

Function set through front selector:

(RM) Monostable



(IT) Timing step relay



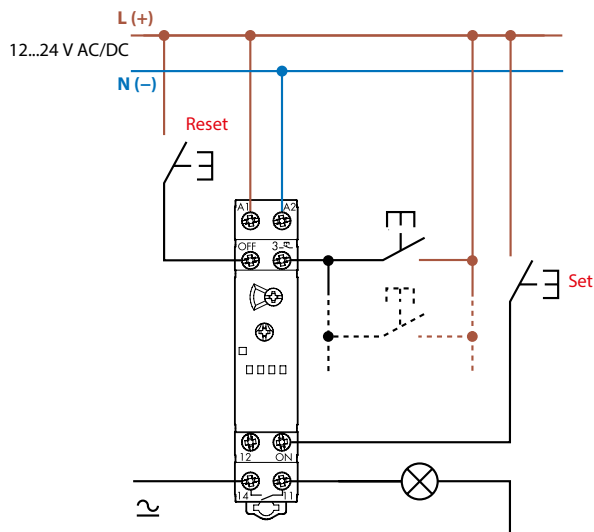
(RI) Step relay



Light ON



13.61.0.024.0000 - 4 wire connection





Type 13.61.8.230.000

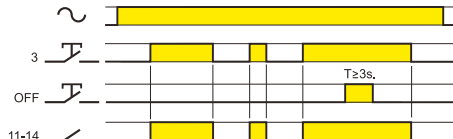
**Multifunction step/monostable relay
with reset command**

Reset feature, for centralized off command

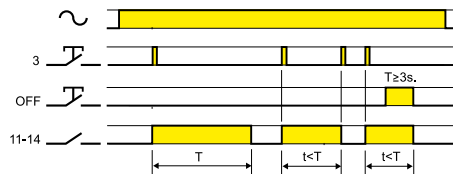
- 1 NO, 16 A 250 V AC
- Supply voltage: 110...240 V AC
- 35 mm rail (EN 60715) mount

Function set through front selector:

(RM) Monostable



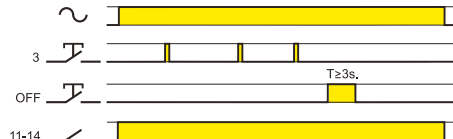
(IT) Timing step relay



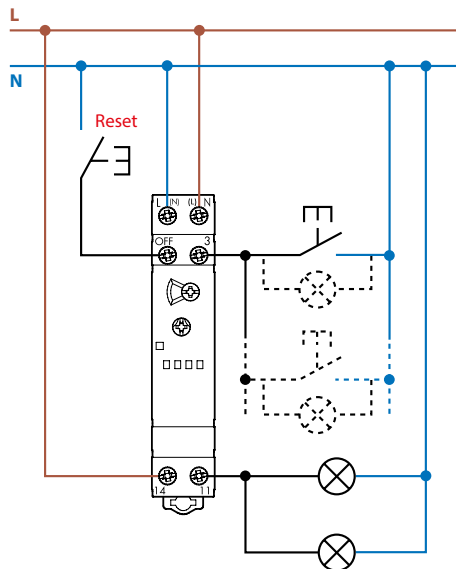
(RI) Step relay



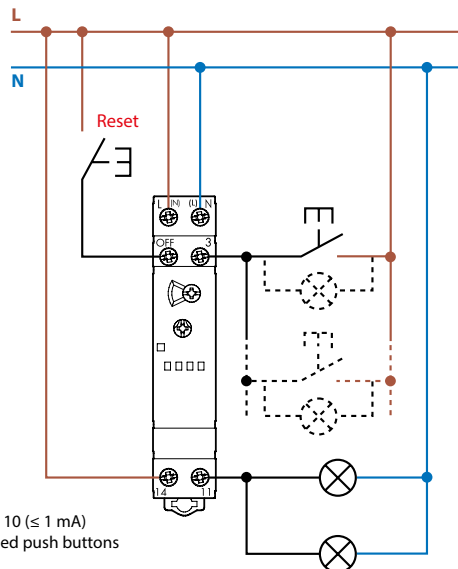
Light ON



13.61.8.230.0000 - 3 wire connection

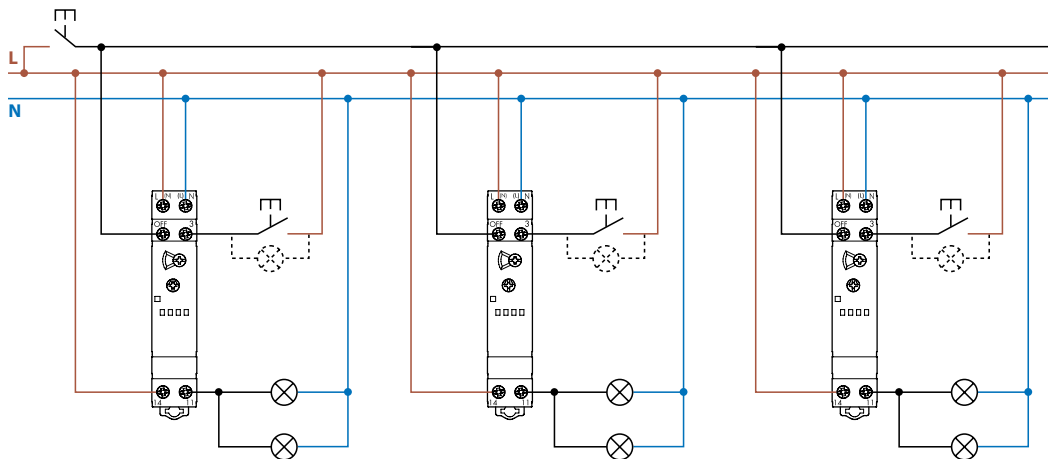


13.61.8.230.0000 - 4 wire connection



Max 10 (≤ 1 mA)
illuminated push buttons

Type 13.61.8.230.0000 - Examples of multiple 4 wire connection with centralized reset push button

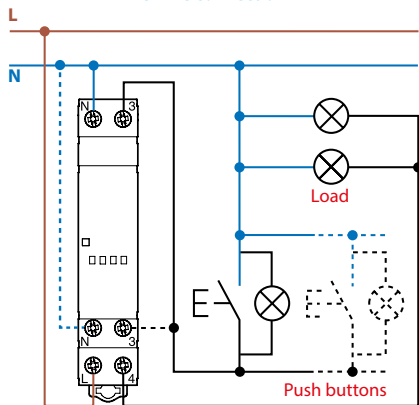




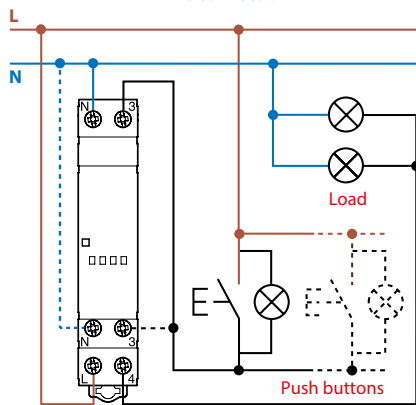
Type 13.81 - Electronic step relay

- 1 NO, 16 A 230 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

3 wire connection



4 wire connection





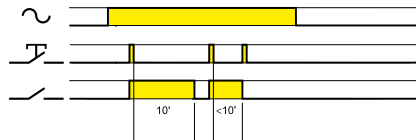
Type 13.91

Electronic step relay and timing step relay (10 minutes)

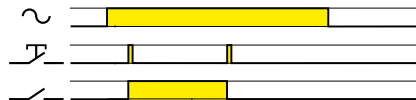
- 1 NO, 10 A 230 V AC
- Supply voltage: AC
- For mounting within residential switch boxes

Functions:

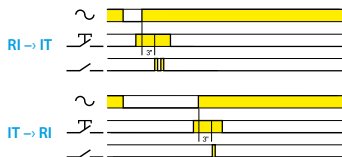
(IT) Timing step relay



(RI) Step relay

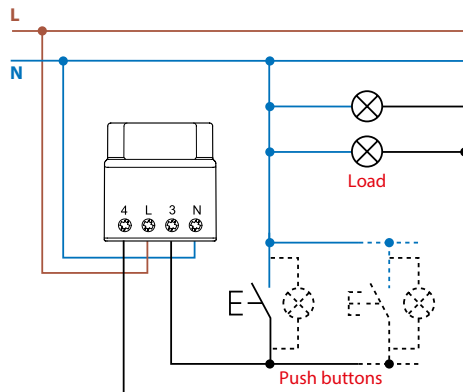


Operating mode setup for type 13.91

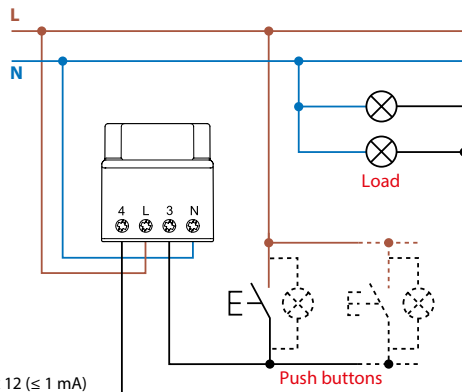


- Remove the supply voltage
 - Press the control button
 - Apply the supply to the relay, keeping the button closed.
- After 3 second, the light will flash twice to indicate the selection of the "IT" function, or flash once for "RI" function.

13.91 - 3 wire connection



13.91 - 4 wire connection



Max 12 (≤ 1 mA)
illuminated
push buttons

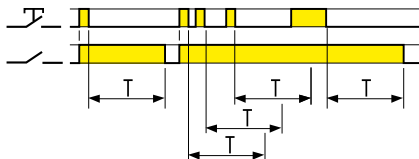


Type 14.01

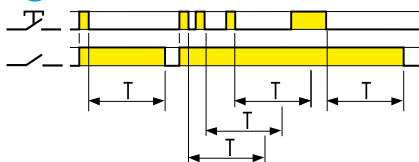
- 1 NO, 16 A 230 V AC
- Compatible with movement detectors 18 Series
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Function set through front selector:

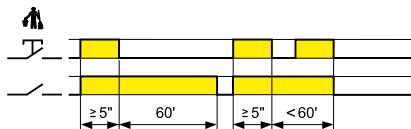
(BE) Staircase timer



(BE)

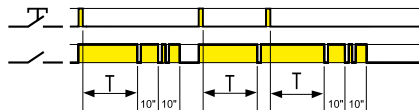


+

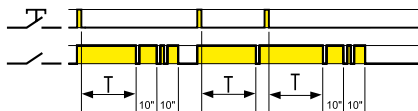


(ME) Staircase timer + Staircase maintenance

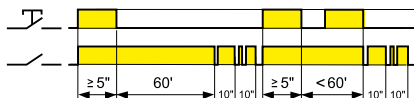
(BP) Staircase timer with early warning



(BP)

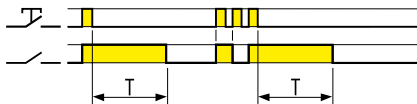


+

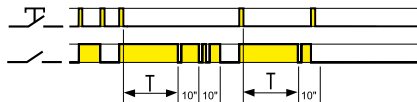


(MP) Staircase timer with early warning + Staircase maintenance

(IT) Timing step relay



(IP) Timing step relay with early warning



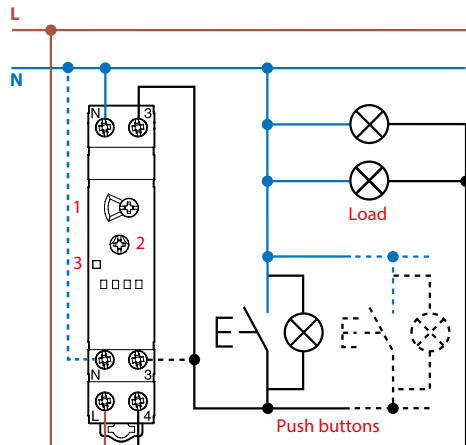
(RI) Step relay



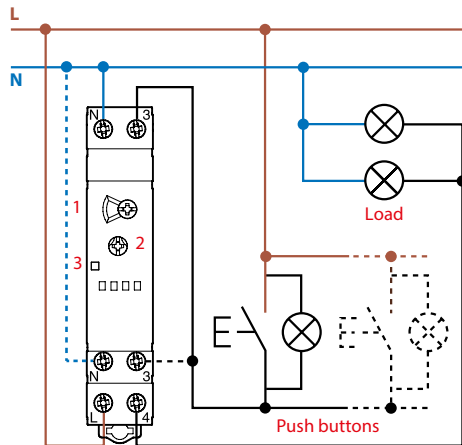
Light ON



14.01 - 3 wire connection



14.01 - 4 wire connection







- 1 = Function selector
- 2 = Time delay adjustment potentiometer
- 3 = LED



Type 14.71

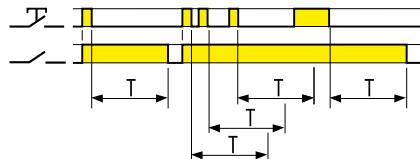
- 1 NO, 16 A 230 V AC
- Compatible with movement detectors 18 Series
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

3-function front selector:

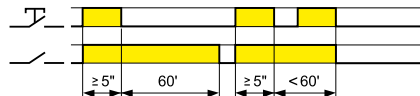
	<p>⌚ Staircase timer +</p> <p> Staircase maintenance</p>
	<p>⚙ Light ON function</p>
	<p>⌚ Staircase relay function (compatible with 18 Series movement detectors)</p>

Functions:

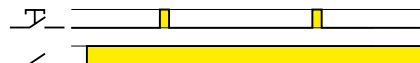
⌚ Staircase relay



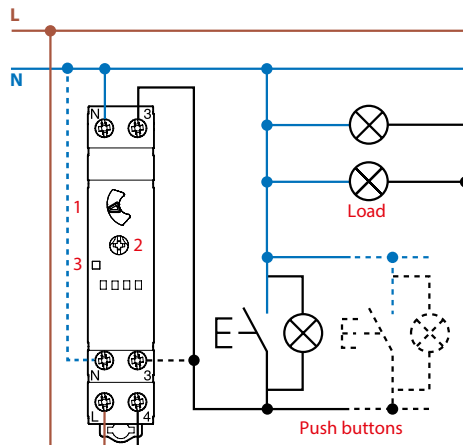
Staircase maintenance (combined with staircase relay function)



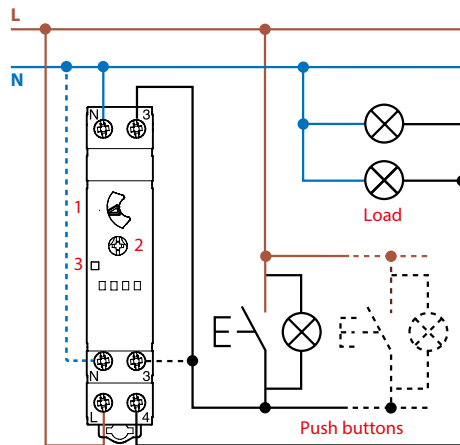
⚙ Light ON



14.71 - 3 wire connection



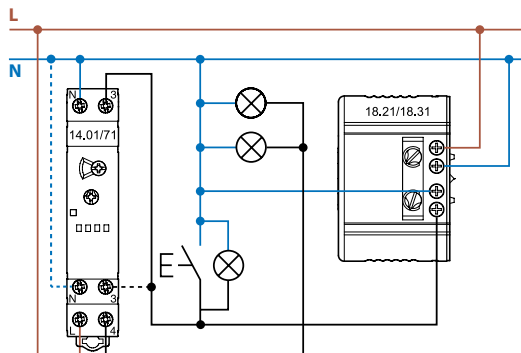
14.71 - 4 wire connection



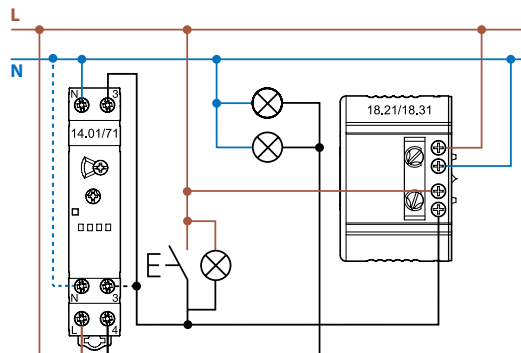
- 1 = Function selector
- 2 = Time delay adjustment potentiometer
- 3 = LED

Wiring diagrams - 14.01 or 14.71 without Staircase maintenance function, triggered by 18 Series PIR movement detector.

3 wire connection
(with 18.21.8.230.0300 or 18.31.8.230.0300 only)

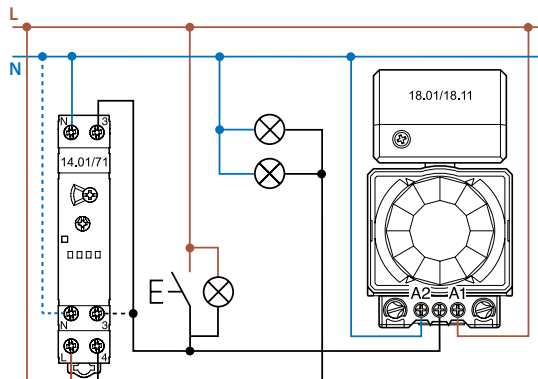


4 wire connection
(with 18.21.8.230.0300 or 18.31.8.230.0300 only)



Wiring diagrams - 14.01 or 14.71 without Staircase maintenance function, triggered by 18 Series PIR movement detector.

4 wire connection
(with 18.01.8.230.0000 or 18.11.8.230.0000 only)



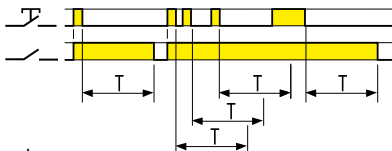


Type 14.81

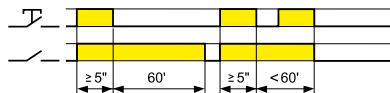
- 1 NO, 16 A 230 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Functions:

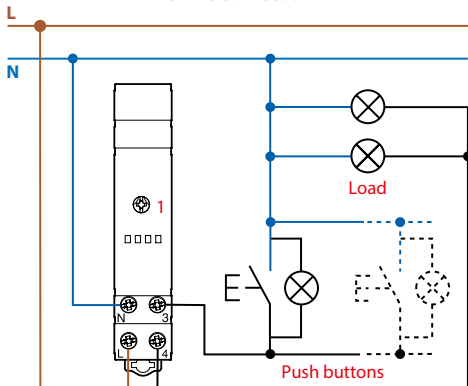
Staircase relay



"Staircase maintenance" function

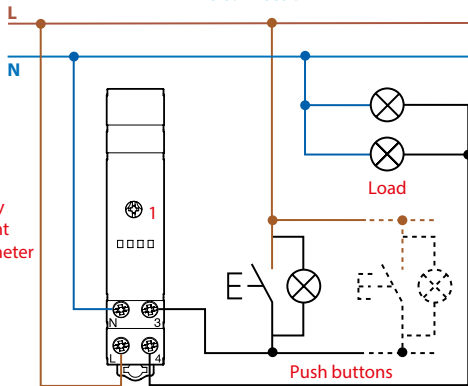


3 wire connection



1 = Time delay
adjustment
potentiometer

4 wire connection



(push button configuration required as per the Installation manual)

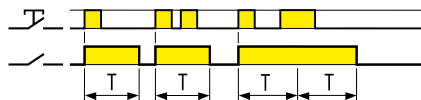


Type 14.91

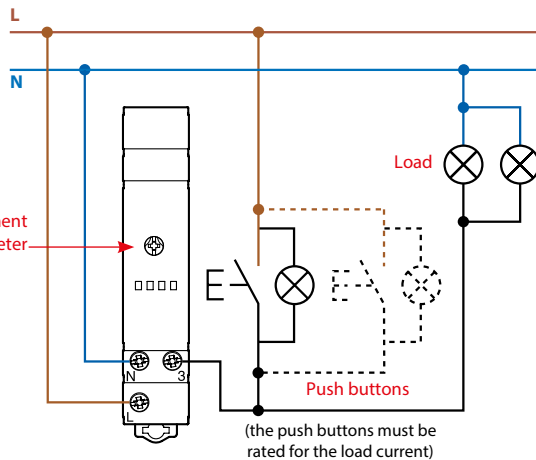
- 1 NO, 16 A 230 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Functions:

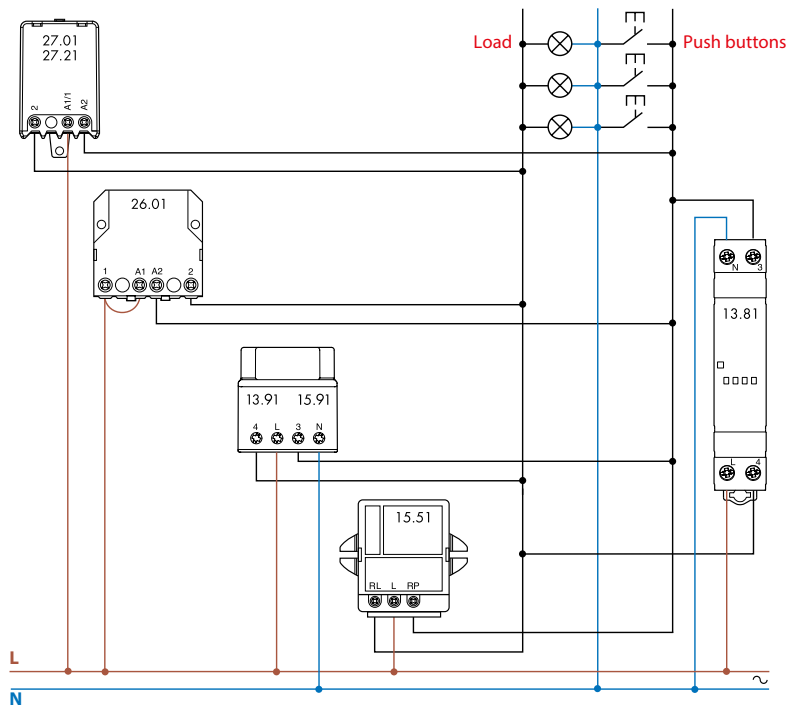
Signal ON pulse



Time delay adjustment potentiometer



For informations see:
[Type 13.81](#) - page 47
[Type 13.91](#) - page 48, 49
[Type 15.51](#) - page 64, 65
[Type 15.91](#) - page 68, 69
[Type 26.01](#) - page 106, 107
[Type 27.01](#) - page 110
[Type 27.21](#) - page 112





A simple,
flexible and
powerful
solution
for dimming

Master & Slave Dimmers - Types 15.10 and 15.11

The Master Dimmer produces a 0-10 V signal proportional to the required dimming level which, when connected to the terminals of the Slave Dimmers, will control the voltage applied to the lamps and therefore their brightness.

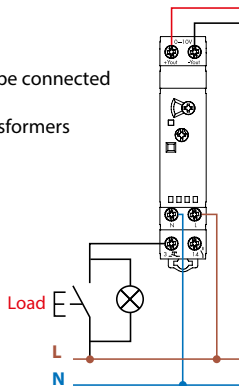


finder®
SWITCH TO THE FUTURE



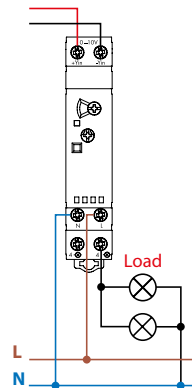
Type 15.10 - Master Dimmer

- 4 functions
- Up to 15 illuminated push buttons can be connected
- Supply voltage 110...230 V AC
- Can also control directly electronic transformers requiring at 0-10 V / 1-10 V input signal



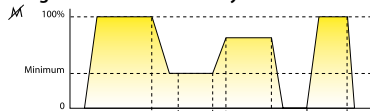
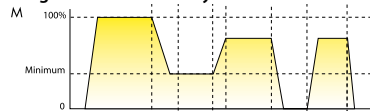
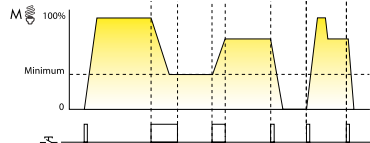
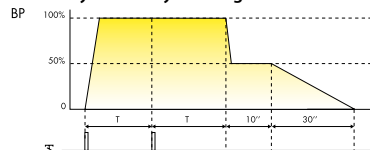
Type 15.11 - Slave Dimmer

- Slave Dimmers can be controlled by a Master Dimmer or by the 0-10 V output from a building management system (BMS), or by rotary 0-10 V regulators
- The maximum loads that can be switched are:
 - Halogen lamps: 400 W
 - Toroidal electromagnetic transformers for LV halogen: 400 W
 - Dimmable compact fluorescent uorescent (CFL): 100 W
 - Dimmable 230 V LED: 100 W
 - Dimmable electronic transformers for LV LED: 400 W
- Supply voltage 230 V AC



Type 15.10

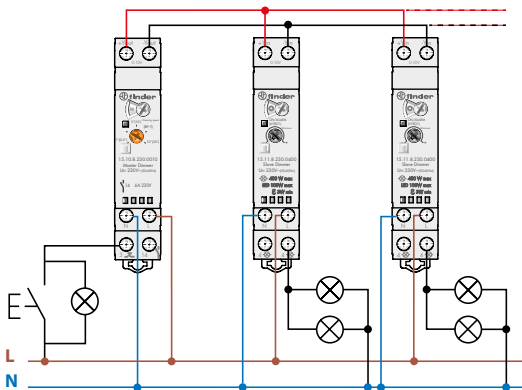
Functions selectable with front rotary selector:

(M) Operating mode without memory**(M) Operating mode with memory****(M) Operating mode with memory (for CFL Lamp)****(BP) Staircase relay with early warning****MASTER DIMMER TYPE 15.10 AND SLAVE DIMMER TYPE 15.11**

It is recommended that the Master controls from one to a maximum of 32 Slave units.

The push buttons (including illuminated push buttons Max. 15) serve as the ON/OFF (momentary push), or when pressed for a longer time they adjust the brightness level.

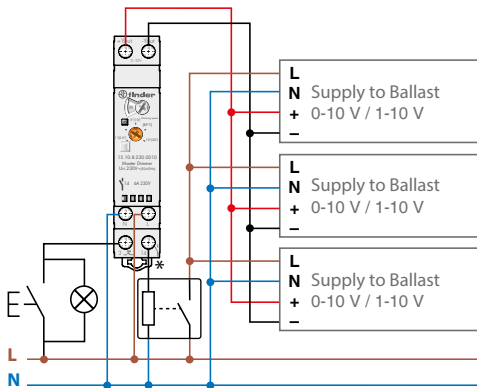
Each Slave can drive a different load type.



MASTER DIMMER + 0 - 10 V ELECTRONIC TRANSFORMER OR BALLAST

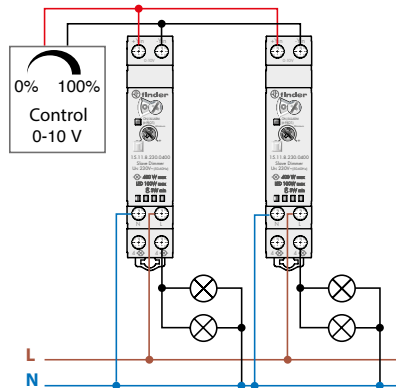
Using only the Master Dimmer it is possible to control electronic transformers or ballasts with a 0 - 10 V / 1 - 10 V input (observing correct polarity). For 1 - 10 V applications it is suggested to supply the Ballast Live from terminal 14. This will ensure that the supply to the Ballast is cut-off for a signal < 1 V.

Note: Check that the maximum Peak Current of the Ballast does not exceed the 30 A 230 V AC rating of terminal 14. Use a contactor or power relay to switch loads exceeding this value.



BMS 0 - 10 V OUTPUTS + SLAVE DIMMERS

In the case of Home Automation or Building Automation systems you can use just the Slave Dimmer Type 15.11 directly controlled by the 0 - 10 V output of the building management system (BMS), or by 0 - 10 V rotary regulators.





If the lighting load comprises low voltage halogen lamps fed through either electromagnetic or electronic transformers, then do not connect more than one transformer per 15.51 dimmer.

Type 15.51

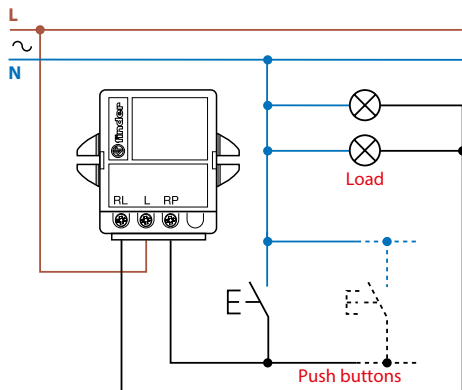
- Maximum lamp load 400 W 230 V AC
- Supply voltage: AC
- Panel mount

Operating mode setup

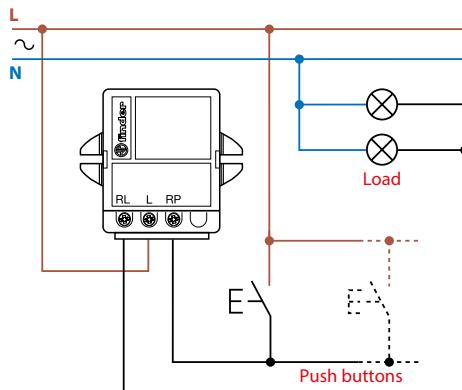
On 15.51 operating mode 1 or 3 (with memory) is preset, but it is possible to change it using the following sequence:

- remove the supply voltage;
 - press the control button;
 - apply the supply to the relay, keeping the button closed for 3 second;
 - on button release, the light will flash twice to indicate the selection of operating mode 2 or 4, or flash once for operating mode 1 or 3.
- Repeating the above steps will alternately change between operating modes.

3 wire connection

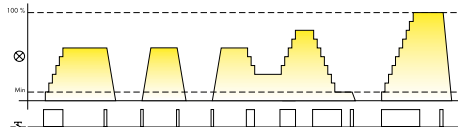


4 wire connection



Functions (Type 15.51.8.230.0400)

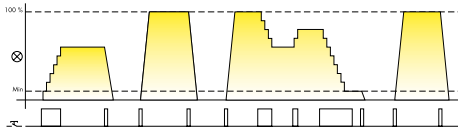
Operating mode 1 (with memory): the previous light level is memorized.



Long control pulse: The light level is progressively raised or lowered through a maximum of 10 incremental steps.

Short control pulse: Alternately switches between On and Off. When switching On, the light level assumes the value set during the previous On state.

Operating mode 2 (without memory): on switch off, the light level is not memorized.

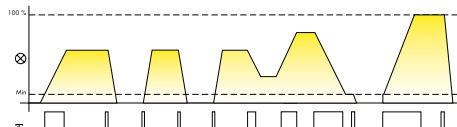


Long control pulse: The light level is progressively raised or lowered through a maximum of 10 incremental steps.

Short control pulse: Alternately switches On or Off between the maximum light level and the off state.

Functions (Type 15.51.8.230.0404)

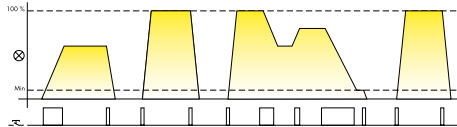
Operating mode 3 (with memory): the previous light level is memorized.



Long control pulse: The light level is progressively raised or lowered.

Short control pulse: Alternately switches between On and Off. When switching On, the light level assumes the value set during the previous On state.

Operating mode 4 (without memory): on switch off, the light level is not memorized.



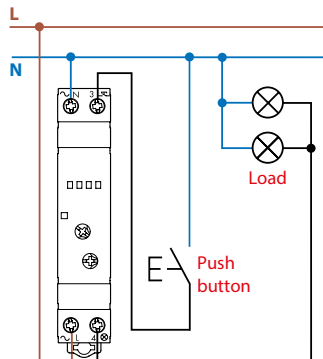
Long control pulse: The light level is progressively raised or lowered.

Short control pulse: Alternately switches On or Off between the maximum light level and the off state.

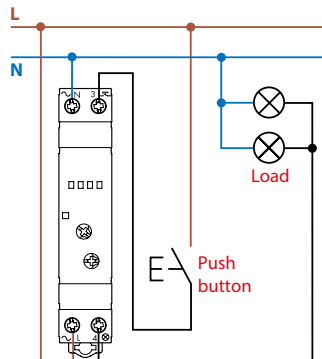
**Type 15.81**

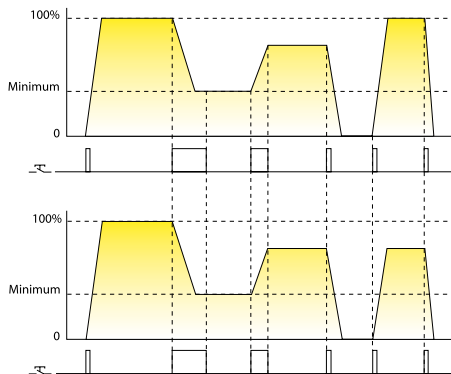
- Maximum lamp load 500 W 230 V AC
- Compatible with energy saving (CFL or LED) dimmable lamps and most types of transformer/ballast drivers
- Supply voltage: 230 V AC
- 35 mm rail (EN 60715) mount

3 wire connection



4 wire connection





Operating mode without memory: at switch-off, the light level is not memorized.










Long control pulse: The light level is progressively raised or lowered in linear way. The lowest value depend on the “minimum dimming level” regulator setting.

Short control pulse: Alternately switches between On and Off between the maximum light level and the off state.

Operating mode with memory: the previous light level is memorized.

Long control pulse: The light level is progressively raised or lowered in linear way. The lowest value dependent on the “minimum dimming level” regulator setting.

Short control pulse: Alternately switches between On and Off. When switching On, the light level assumes the value set during the previous On state.

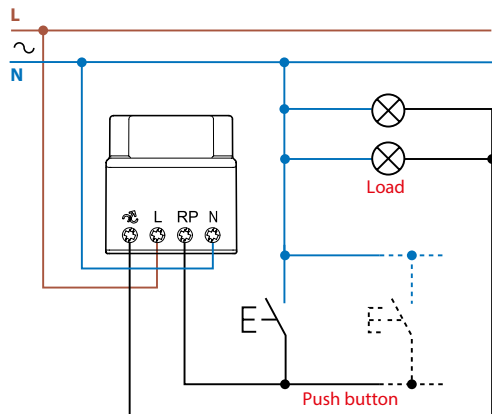
Type of load	Selector setting		Regulator setting
	With memory (M)	Without memory (M)	
<ul style="list-style-type: none"> Incandescent lamps 230 V halogen lamps 12/24 V halogen lamps with electronic transformer/ballast 			<p>It is suggested to set the “minimum dimming level” at the lowest value, so that the complete dimming range is available. But if it is necessary to avoid too low a level of illumination, a higher value can be set.</p> 
<ul style="list-style-type: none"> Dimmable compact fluorescent lamps (CFL) Dimmable LED lamps 			<p>It is suggested to initially set the “minimum dimming level” at an intermediate value and then if necessary, readjust for a level found to be compatible with the lamp being used.</p> 
<ul style="list-style-type: none"> 12/24 V halogen lamps with toroidal or E-core electromagnetic transformer 			<p>It is suggested to set the “minimum dimming level” at the lowest value, so that the complete dimming range is available. But if it is necessary to avoid too low a level of illumination, a higher value can be set.</p> 



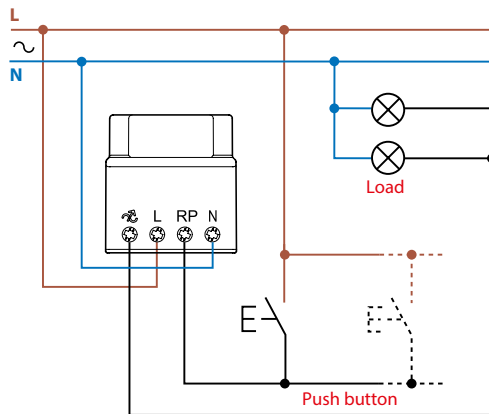
Type 15.91

- Power max.: 100 W 230 V AC
- Supply voltage: 230 V AC
- Suitable for residential wall box mounting

3 wire connection



4 wire connection



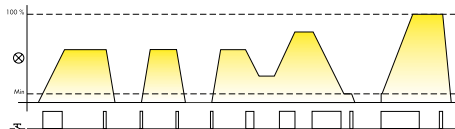
Operating mode setup

On 15.91 operating mode 4 (without memory) is preset, but it is possible to change it using the following sequence:

- remove the supply voltage;
- press the control button;
- apply the supply to the relay, keeping the button closed for 3 second;
- on button release, the light will flash twice to indicate the selection of operating mode 3, or flash once for operating mode 4. Repeating the above steps will alternately change between operating modes.

Functions (type 15.91.8.230.0000)

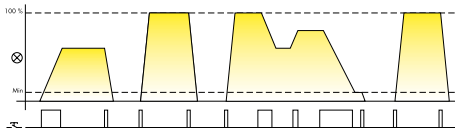
Operating mode 3 (with memory): the previous light level is memorized.



Long control pulse: The light level is progressively raised or lowered.

Short control pulse: Alternately switches between On and Off. When switching On, the light level assumes the value set during the previous On state.

Operating mode 4 (without memory): on switch off, the light level is not memorized.



Long control pulse: The light level is progressively raised or lowered.

Short control pulse: Alternately switches On or Off between the maximum light level and the off state.



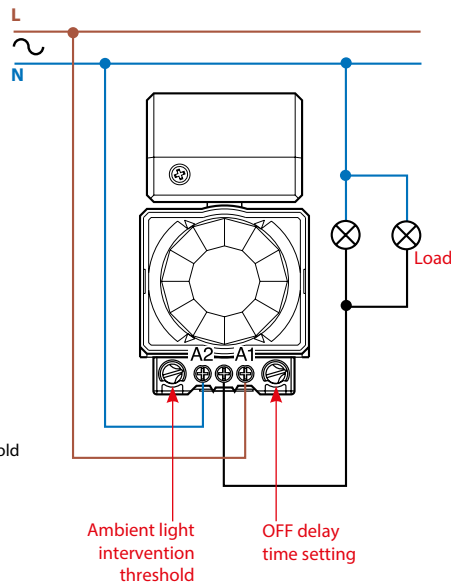
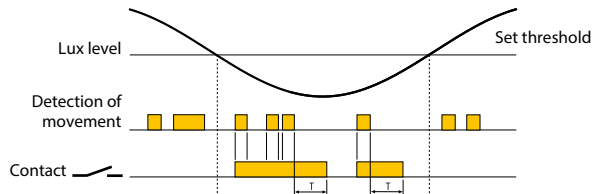
Type 18.01
Internal installations
Protection category IP 40



Type 18.11
External installations
Protection category IP 54

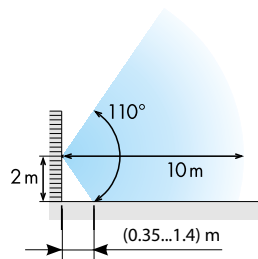
- 1 NO, 10 A 230 V AC
- Supply voltage: 120...230 V AC
- For wall mounting

The output relay will remain On for the pre-set time, following the last detection of movement.

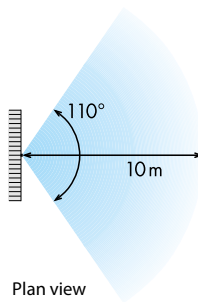


Sensing area

18.01, 18.11 - Wall mounting

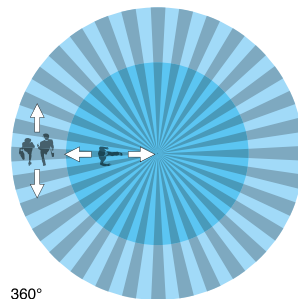
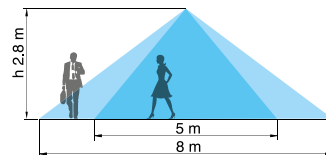


Side view



Plan view

18.01, 18.11 - Ceiling mounting





Type 18.21 Output connected to supply voltage
Type 18.21.x.xxx.0300 Output with potential free contact
 Surface mounting

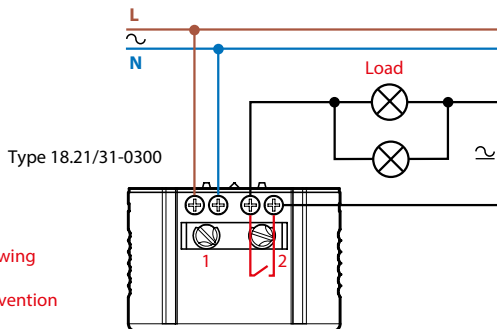
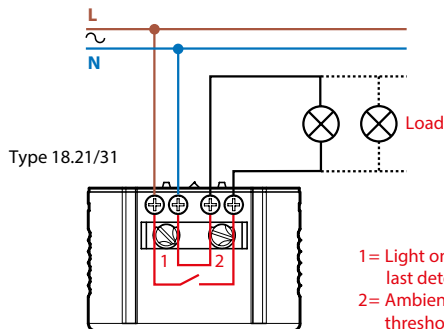


Type 18.31 Output connected to supply voltage
Type 18.31.x.xxx.0300 Output with potential free contact
 Recessed mounting
Type 18.31.x.xxx.0031 Recommended for applications with high ceilings (up to 6 meters)
 Light ON time after last detection (30 s...35 min)

Internal ceiling installation

Protection category IP40

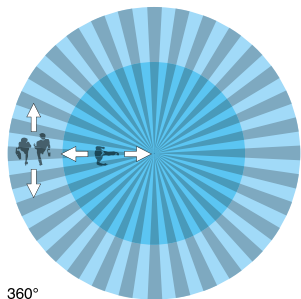
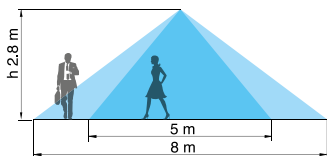
- 1 NO, 10 A 230 V AC
- Supply voltage: 120...230 V AC (for types 18.21, 18.31)
 24 V AC/DC (for types 18.21/31-0300 only)



Sensing area

18.21, 18.31

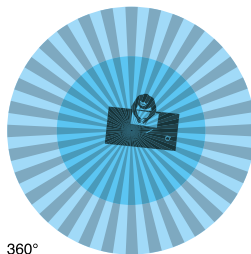
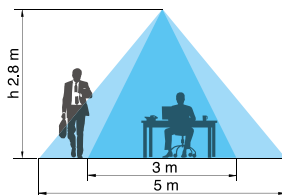
Ceiling mounting



360°

18.31...0031

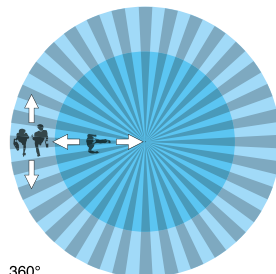
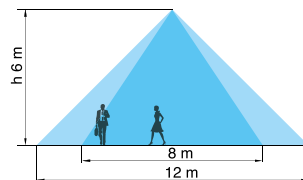
Internal ceiling installation,
surface mounting



360°

18.31...0031

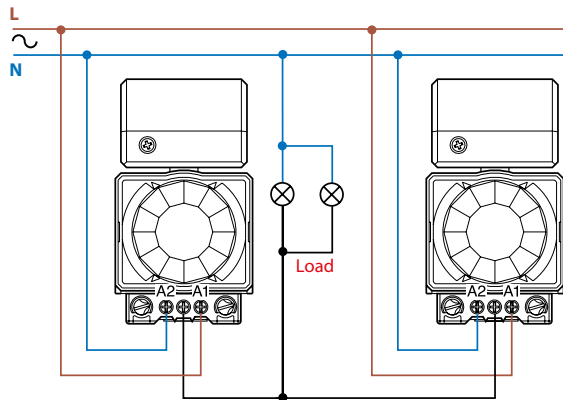
High ceiling installations



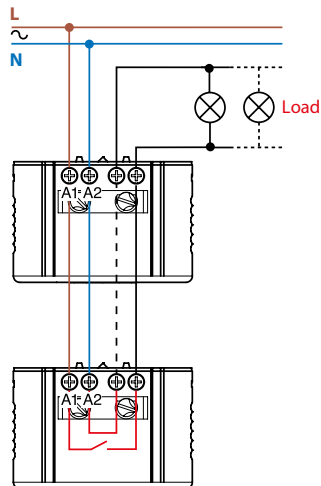
360°

Movement and presence detector

Wiring diagram - Parallel connection Type 18.01/11

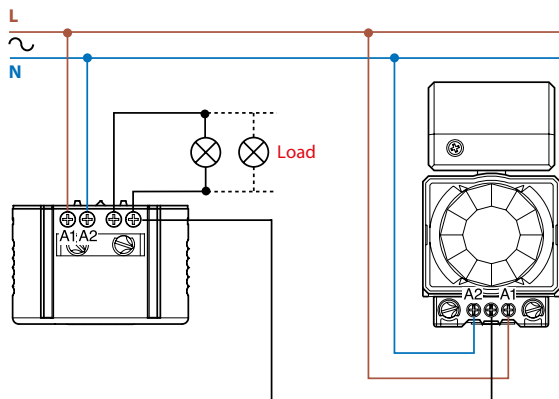


Wiring diagram
Parallel connection Type 18.21/31



Note: conform to the polarity indicated for Phase and Neutral

Wiring diagram - Parallel connection Type 18.01/11 and Type 18.21/31



Note: conform to the polarity indicated for Phase and Neutral

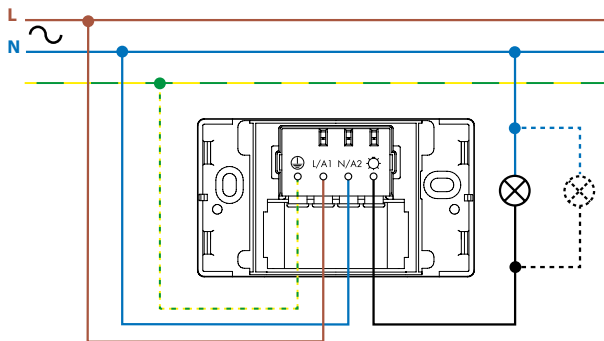


Type 18.A1

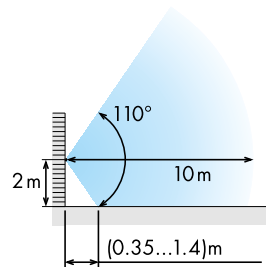
External installations

Protection category IP 55

- 1 NO, 10 A 230 V AC
- Supply voltage: 110...230 V AC
- Wall mounting



Wall mounting



180° horizontal rotation.
30° vertical rotation.



**Suspended ceiling mounting
and recess mounting version**



Surface version

Type 18.41

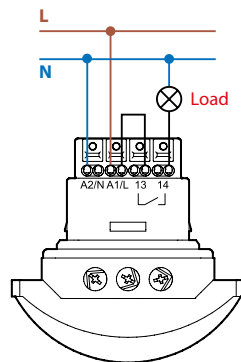
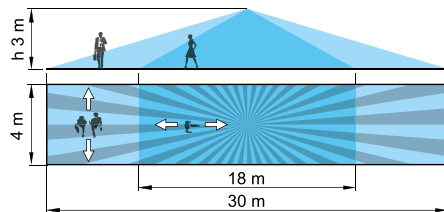
Specifically for corridors up to 30 meters in length

Applications: hotel and office corridors, transit areas

Internal ceiling installation

Protection category IP40

- 1 NO, 10 A 230 V AC
- Supply voltage: 110...230 V AC





**Suspended ceiling mounting
and recess mounting version**



Surface version

Type 18.51

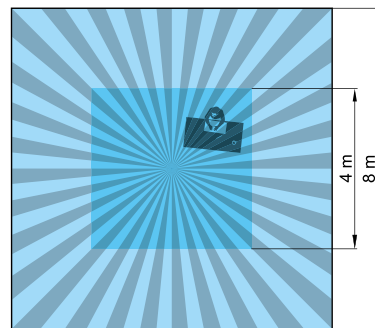
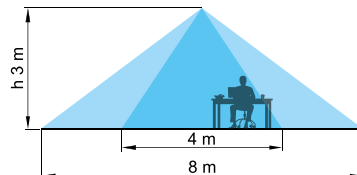
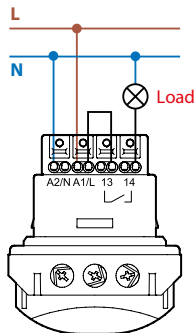
**High sensitivity and uniform
detection**

Applications: offices, schools,
zones of low activity

Internal ceiling installation

Protection category IP40

- 1 NO, 10 A 230 V AC
- Supply voltage: 110...230 V AC





**Suspended ceiling mounting
and recess mounting version**



Surface version

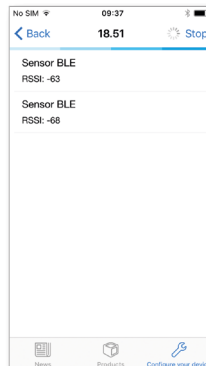
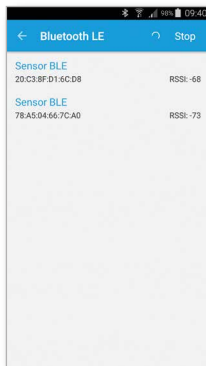
Type 18.51.8.230.B300
PIR movement and presence
detector with Bluetooth

Internal ceiling installation
Protection category IP40

- 1 NO, 10 A 230 V AC
- Supply voltage:
110...230 V AC

Through the use of Bluetooth LE (Low Energy) technology programming the detector's operating characteristics can be easily and conveniently done using an Android or iOS smartphone.

After installing the 18.51, simply download the Free **App Finder Toolbox** from Google and Apple's official stores and set all the required parameters.



Android, Google Play and the Google Play logo
are trademarks of Google Inc.
Apple is a trademark of Apple Inc. App Store
is a service mark of Apple Inc.



Suspended ceiling mounting
and recess mounting version

Type 18.5D

PIR Movement and presence detector with DALI. Three selectable functions.

Internal ceiling installation

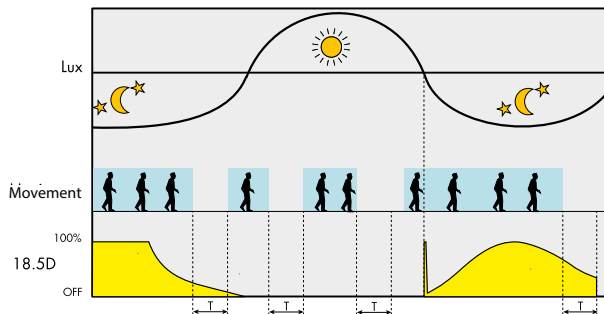
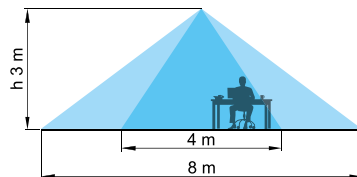
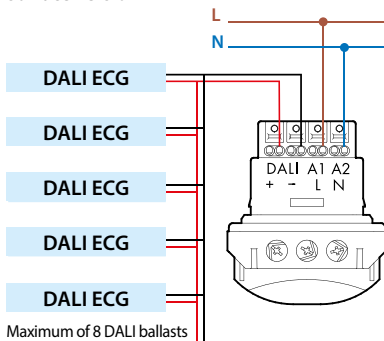
Protection category IP40

- 1 NO, 10 A 230 V AC

- Supply voltage: 110...230 V AC



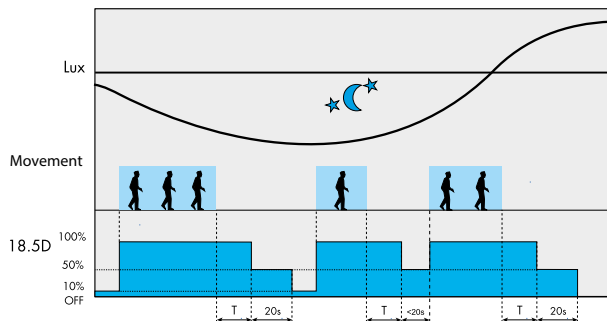
Surface version



Comfort - Daylight-linked constant light level control

Adjusts to maintain a constant brightness level considering the detection of movement and the level of daylight - increasing or decreasing the power of the artificial light as appropriate.

Suitable for small offices, classrooms or workplaces. This allows considerable energy saving while maintaining a comfortable level of illumination.

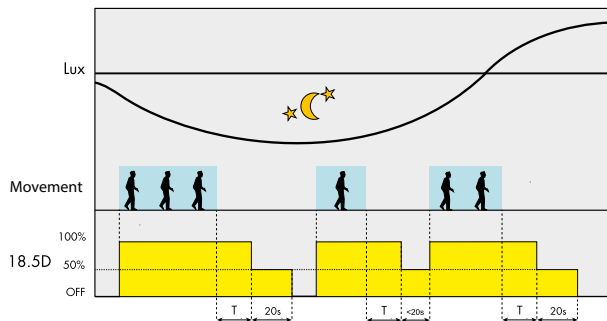


Courtesy

ON/OFF control with early warning + courtesy light level

If the brightness level is lower than the set value, artificial light is maintained at 10% power, guaranteeing a minimum level of illumination at all times. When movement is detected, the power of the lamps is raised to 100%. There is an early warning of any reduction from the 100% power level by a reduction to 50% for 20 seconds.

Suitable for common areas, lobbies, corridors, elevator zones.



Simplicity

ON/OFF control with early warning

Works as a simple movement detector, activating the lamps at 100% power. But provides an early warning of the next shutdown with a power reduction to 50% for 20 seconds.

Avoids a sudden total shutdown of lighting.



**Suspended ceiling mounting
and recess mounting version**



Surface version

Type 18.51.8.230.0040

Possibility to connect external
push-button to
force the output state.

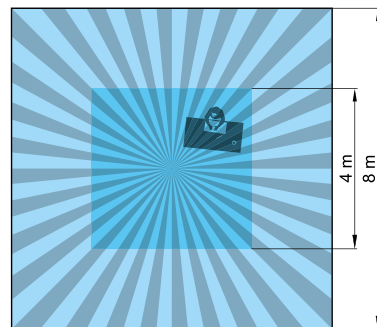
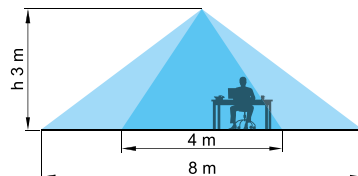
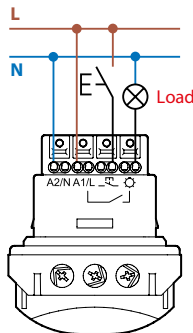
Dynamic light compensation

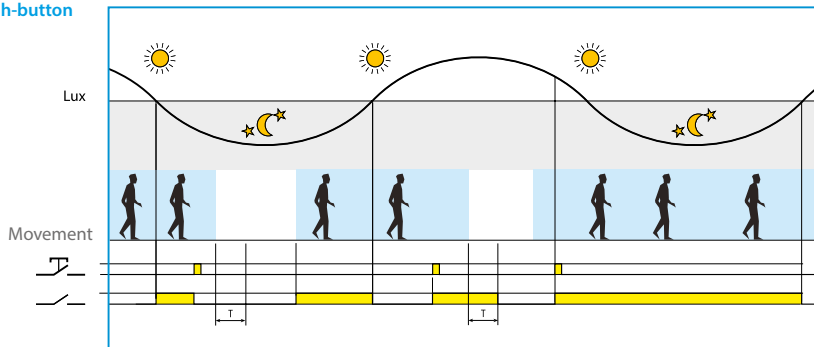
Applications: offices, schools,
zones of low activity

Internal ceiling installation

Protection category IP40

- 1 NO, 10 A 230 V AC
- Supply voltage: 110...230 V AC



Special function Type 18.51.8.230.0040**External push-button**

A control pulse on the push-button inverts the status of the output relay, until the timing after the last movement detected has elapsed.

Dynamic Light Compensation

By incorporating Finder's Patented "light feedback compensation" principle, the 18.51...0040 is able to calculate the artificial light contributed by the lamps controlled by the output relay. In effect, this means the 18.51...0040 is able to continuously monitor the natural ambient light level, even when the output is On. As a consequence, whenever the natural light level exceeds the threshold setting the output is forced Off.

This can significantly minimise the time the lighting is On, particularly where there is a high level of traffic - and cost savings can be considerable. This is an advance over other types of movement detectors, which are unable to identify the natural ambient light level when the output is On and so can only turn Off after the time delay that follows the last detected movement. In busy areas this may mean that the movement detector is being continuously re-triggered and maintained in the On state, even though the natural light level has long risen above the threshold.



Wall mounting

Type 18.61

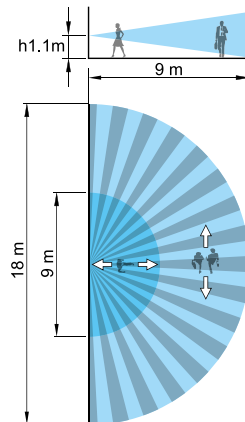
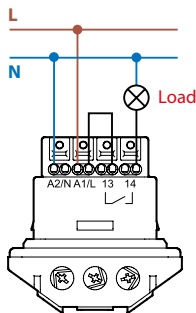
Wall mounting compatible with 60 mm box
and 2 or 3 module box

Wide angle of survey (180°)

Internal ceiling installation

Protection category IP40

- 1 NO, 10 A 230 V AC
- Supply voltage: 110...230 V AC



Light when
you need it,
wherever you
need it.



New generation of movement and presence detectors - 18 Series

For internal or external installations. Adjustable Light ON Time .
Adjustable ambient light intervention threshold. Push-in terminals.



finder[®]

SWITCH TO THE FUTURE

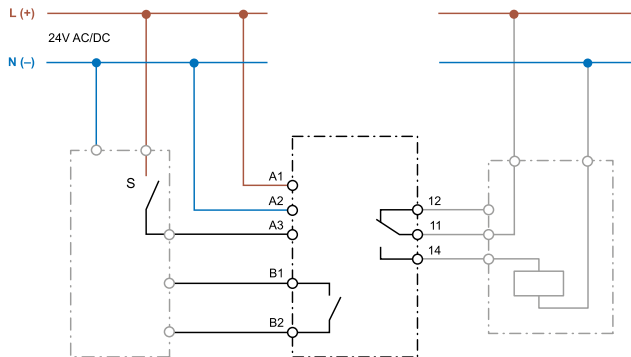


Type 19.21.0.024.0000 - Auto/Off/On output module 10 A

Feedback contact

11.2 mm width

- 1 CO, 10 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount





Type 19.41.0.024.0000 - Override module - Auto/Off/Hand

1 feedback output contact

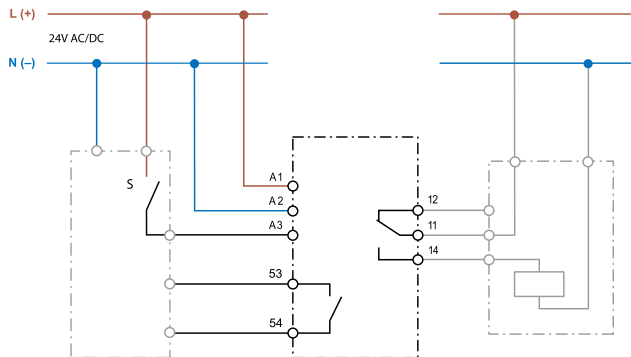
LED indicator

17.5 mm width

- 1 CO, 5 A 250 V AC

- Supply voltage: AC or DC

- 35 mm rail (EN 60715) mount





Type 19.42.0.024.0000 - Override module - Auto/Off/Low/High

Low and High output contacts - 1 feedback output contact

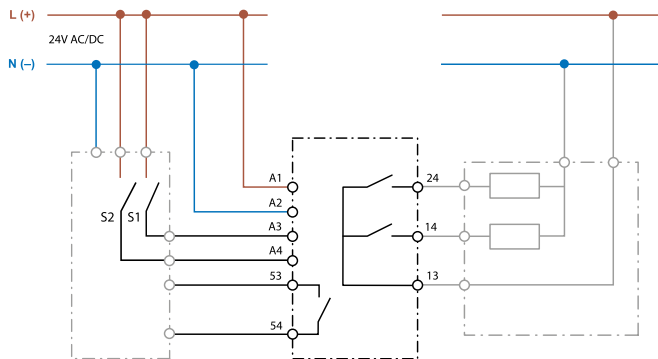
LED indicator

35 mm width

- 2 NO, 5 A 250 V AC

- Supply voltage: AC or DC

- 35 mm rail (EN 60715) mount





Type 19.50.0.024.0000 - Analogue override module - Auto/Hand (0...10)V

1 feedback output contact

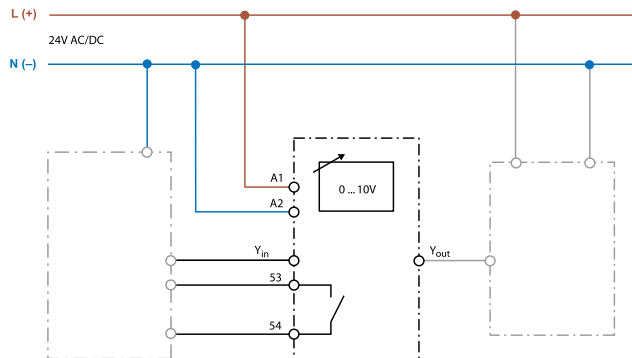
LED indicator

17.5 mm width

- 1 CO, 5 A 250 V AC

- Supply voltage: 24 V AC or DC

- 35 mm rail (EN 60715) mount



In the selector position A (Automatic) the 0...10 V signal at Yin is transferred through Yout, to the end process; in the selector position H (Hand) the 0...10 V value set by the module's regulator is transferred, through Yout, to the end process.



Type 1C.81.9.003.0107
White RAL 9010

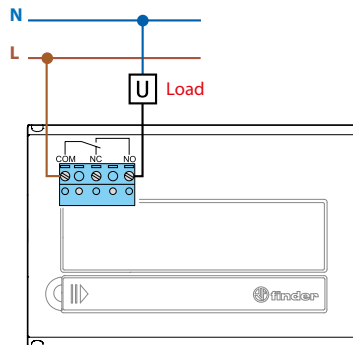


Type 1C.81.9.003.2107
Metallic Anthracite

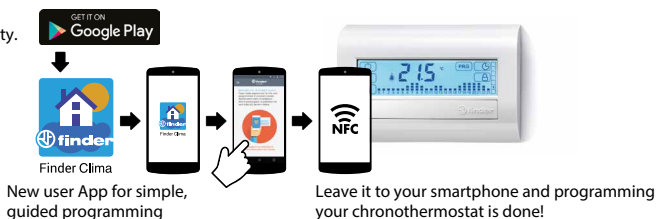
Chrono Touch Screen

Weekly Chronothermostat

- Display touch screen with ultra white LED backlighting
- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- ECO1 & ECO2 power-saving features, supervisory control and PIN code
- Minimum interval setting 30 minutes
- 3 programmable temperature thresholds
- Surface mounting over 3 module wall box



Programmable from a smartphone using
NFC (Near Field Communication) connectivity.





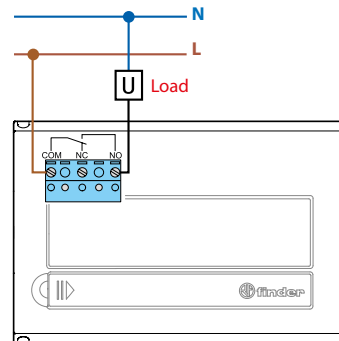
Type 1C.71.9003.0007
White



Type 1C.71.9003.2007
Black

Chrono Touch Basic **Weekly Chronothermostat**

- Display touch screen
- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- 3 programmable temperature levels
- Guided programming
- Principle functions:
 - Party program
 - Calibration
 - Manual Timed override with calendar setting
- Multi-function and multi-icon Touch Keys
- Temperature setting range 5...37 °C
- Surface mounting over 3 module wall box





Type 1C.61.9.003.0101
White RAL 9010



Type 1C.61.9.003.2101
Metallic Anthracite

Chrono Touch Slide

Chronothermostat "touch slide" with weekly function

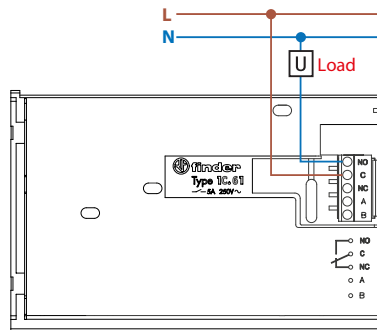
- Display with ultra white LED backlighting
- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- Calendar with automatic leap year & daylight - saving updates
- Summer/Winter switch
- 24 point for temperature setting
- The weekly function allows each day to be set to, automatic mode, hand mode, or OFF
- Minimum interval setting 15 minutes
- Input for remote control
- Surface mounting over 3 module wall box

Accessories

External temperature sensor
Type 01C.61



The 01C.61 is used to sense the temperature at a location external to the 1C.61 chronothermostat. The 1C.61 can either; display the external temperature (and regulate to its internal sensor), or display & regulate to the external sensor temperature. Protection category: IP 54.





Type 1C.51.9.003.0007
White

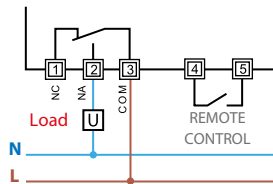


Type 1C.51.9.003.2007
Black

Chrono Touch Compact

Weekly Programmable thermostat for recessed box

- Display touch screen with ultra white LED backlighting
- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- Calendar with automatic leap year & daylight
- 3 programmable set temperatures
- 2 level security - simple touch screen blocking or full 3-digit PIN lock
- Surface mounting over 3 module wall box
- Compatible with most wall plates on the market:
 - ABB - series: Chiara, Mylos
 - Ave - series S44
 - BTicino - series: Axolute, Light, Light tech, Living, Livinglight, Matix
 - Adapter type 01C.51 for BTicino series Livinglight Air
 - Gewiss - series Chorus
 - Vimar - series: Eikon, Eikon Evo, Idea, Plana, Arkè





Type 1T.51.9.003.0000
White

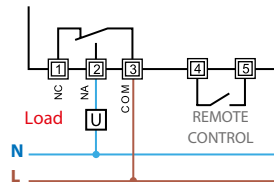


Type 1T.51.9.003.2000
Black

Thermo Touch Compact

Programmable thermostat for recessed box

- Touch display with bright backlighting
- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- Programmable with two operational temperature levels
- Functions: frost protection, pump anti-seizure and calibration functions
- Remote control input to change temperature or for switching On/Off
- Surface mounting over 3 module wall box
- Compatible with most wall plates on the market:
 - ABB - series: Chiara, Mylos
 - Ave - series S44
 - BTicino - series: Axolute, Light, Light tech, Living, Livinglight, Matix
 - Adapter type 01C.51 for BTicino series Livinglight Air
 - Gewiss - series Chorus
 - Vimar - series: Eikon, Eikon Evo, Idea, Plana, Arkè





Type 1T.31.9.003.0000
White

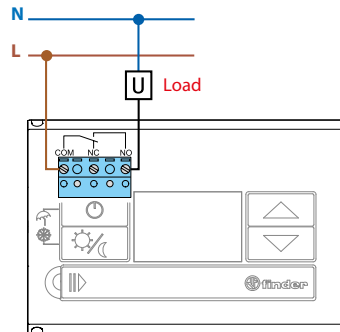


Type 1T.31.9.003.2000
Black

Thermo DuoSet

Digital room thermostat

- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- Independently set temperatures for Day and Night
- Functions: OFF (with Frost protection)/Summer/Winter
- Surface mounting over 3 module wall box





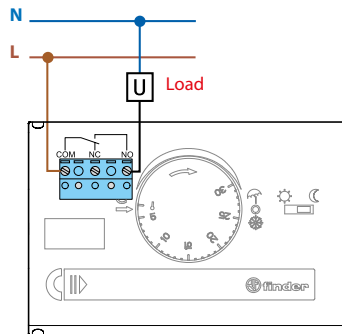
Type 1T.41.9.003.0000
White



Type 1T.41.9.003.2000
Black

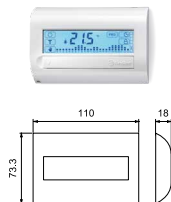
Thermo FastSet
Room thermostat

- 1 contact output 5 A/250 V AC
- Power supply: two alkaline 1.5 V AAA
- Temperature regulation (+5...+30)°C
- Functions: OFF (with Frost protection)/Summer/Winter
- Programming: Day/Night (set-back by -3 °C)
- Surface mounting over 3 module wall box

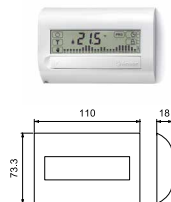


CHRONOTHERMOSTATS

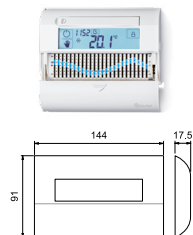
1C.81



1C.71



1C.61

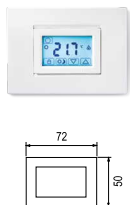


1C.51

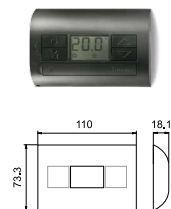


DIGITAL THERMOSTATS

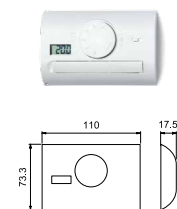
1T.51



1T.31



1T.41



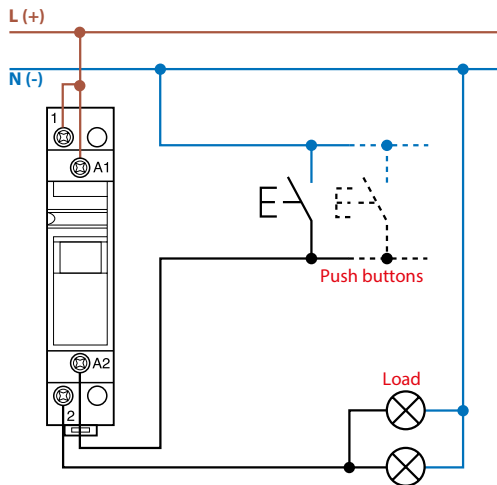


Type 20.21

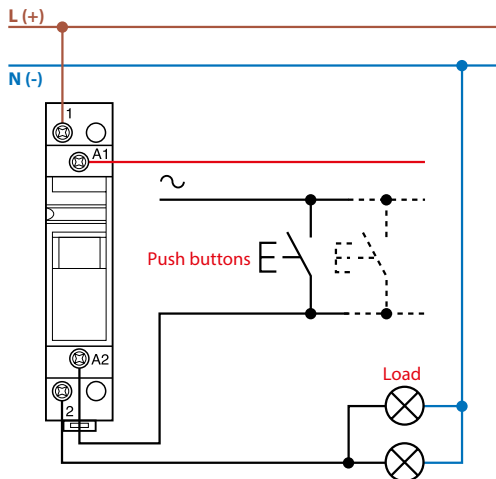
- 1 NO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Type	Number of steps	Sequence	
		1°	2°
20.21	2		

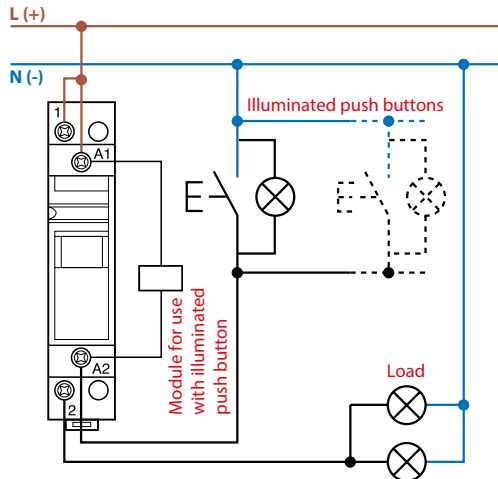
Wiring diagram – Single pole relay
Common supply to relay coil and load



Wiring diagram – Single pole relay
Low voltage command circuit



Wiring diagram – Single pole relay - Common supply
to relay coil and load with illuminated push buttons



Accessories

Module Type 026.00 for use with illuminated push buttons

Sealed construction, 7.5 cm insulated flexible wire termination.

This module is necessary when using between 1 and a maximum of 15 illuminated push buttons in the coil circuit (Each 1.5 mA max, 230 V AC). It must be connected in parallel to the coil of the relay.

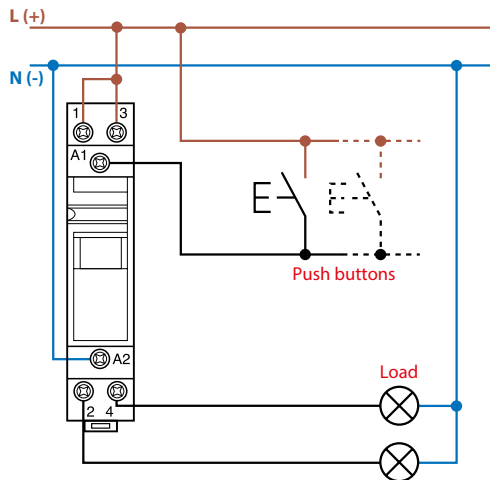


Type 20.22/23/24/26/28

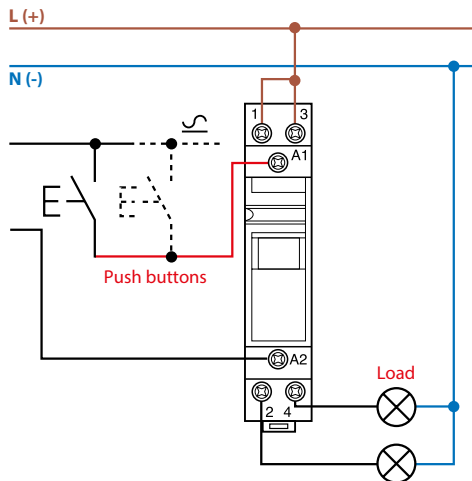
- 2 NO, 16 A 250 V AC
- 1 NO + 1 NC, 16 A 250 V AC (20.23 only)
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Type	Number of steps	Sequence			
		1°	2°	3°	4°
20.22	2				
20.23	2				
20.24	4				
20.26	3				
20.27	3				
20.28	4				

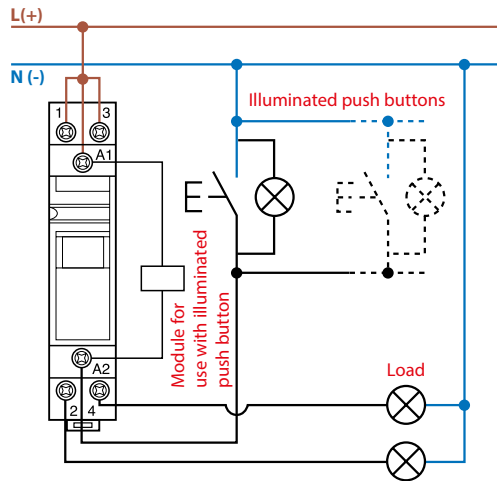
Wiring diagram – 2 pole relay
Common supply to relay coil and load



Wiring diagram – 2 pole relay
Low voltage command circuit



Wiring diagram – 2 pole relay - Common supply to
relay coil and load with illuminated push buttons



Accessories

Module for use with illuminated push button Type 026.00

Sealed construction, 7.5 cm insulated flexible wire termination.

This module is necessary when using between 1 and a maximum of 15 illuminated push buttons in the coil circuit (Each 1.5 mA max, 230 V AC). It must be connected in parallel to the coil of the relay.



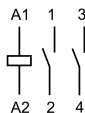
Type 22.32 Type 22.32 with Auxiliary contact module

Options: - 2NO or 1NO + 1NC or 2NC, 25 A 250 V AC

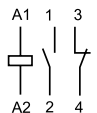
- 12; 24; 48; 60; 120; 230 V AC/DC

- without selector

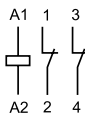
- 35 mm rail (EN 60715) mount



2 NO
(x3x0)



1 NO + 1 NC
(x5x0)



2 NC
(x4x0)

Accessories

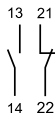
Auxiliary contact module Type 022.33



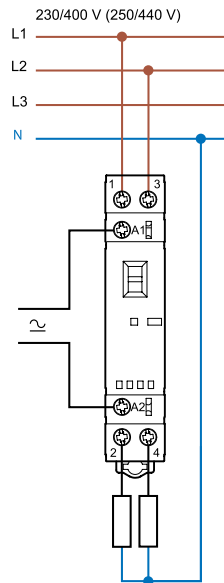
2 NO 6 A



Type 022.35



1NO+1NC 6 A

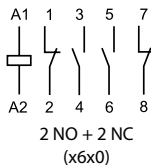
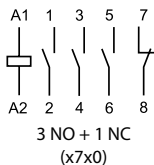
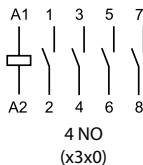




Type 22.34

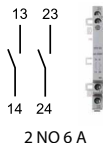
Type 22.34 Auxiliary contact module

- Options: - 4NO or 3NO + 1NC or 2NO + 2NC, 25 A 250 V AC
 - 12; 24; 48; 60; 120; 230 V AC/DC
 - without selector
 - 35 mm rail (EN 60715) mount

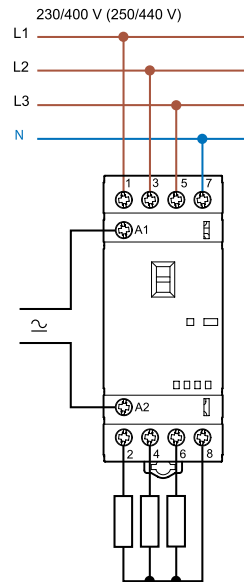
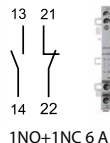


Accessories

Auxiliary contact module Type 022.33



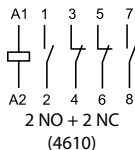
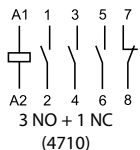
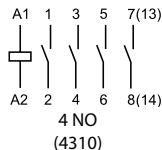
Type 022.35





Type 22.44

- 4 NO, 3 mm contact gap
(or 3NO + 1NC or 2NO + 2NC)
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount



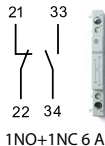
Accessories

Auxiliary contact module

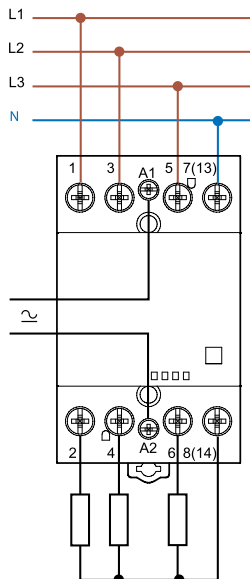
Type 022.63



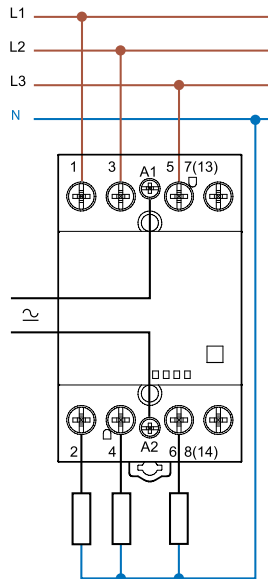
Type 022.65



Line and neutral switched



Line only switched

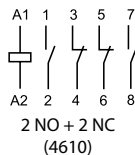
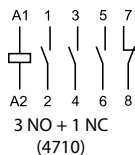
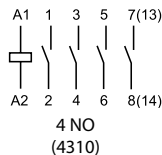




Type 22.64

Specifically intended: for high inrush current loads

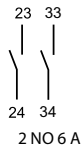
- 4 NO, 3 mm contact gap (or 3NO + 1NC or 2NO + 2NC)
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount



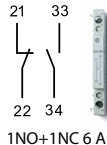
Accessories

Auxiliary contact module

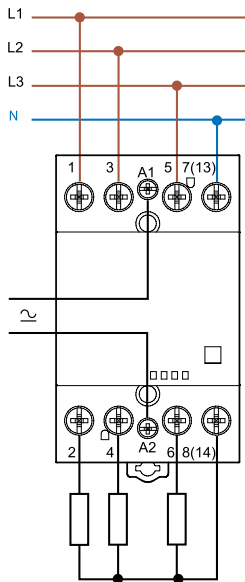
Type 022.63



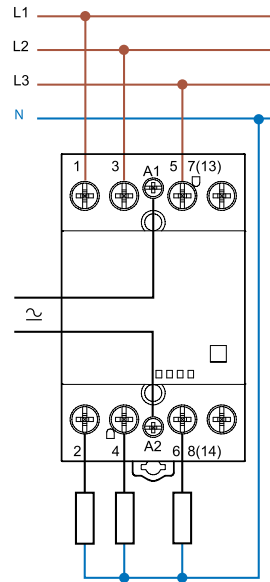
Type 022.65



Line and neutral switched



Line only switched



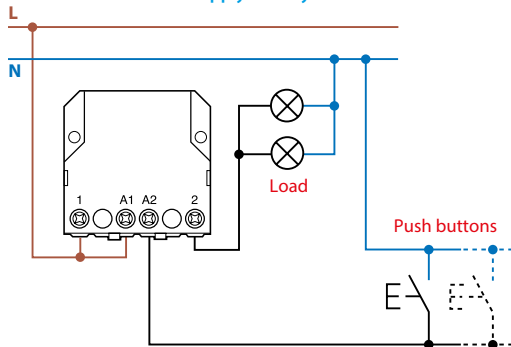


Type	Number of steps	Sequence	
		1°	2°
26.01	2		

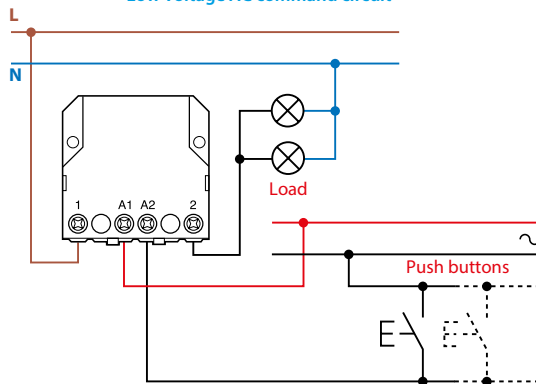
Type 26.01

- 1 NO, 10 A 250 V AC
- Supply voltage: AC
- Panel mount

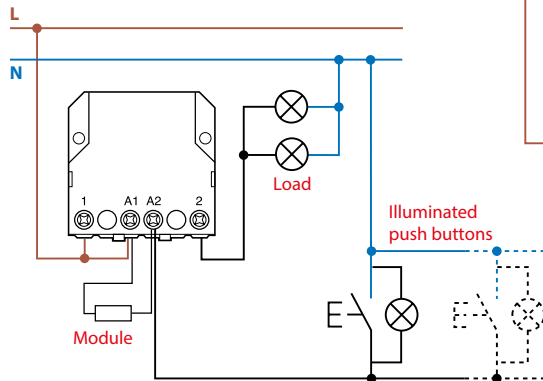
Wiring diagram – single pole relay
Common supply to relay coil and load



Wiring diagram - Single pole relay
Low voltage AC command circuit



Wiring diagram – Single pole relay
Common supply to relay coil and load
with illuminated push buttons

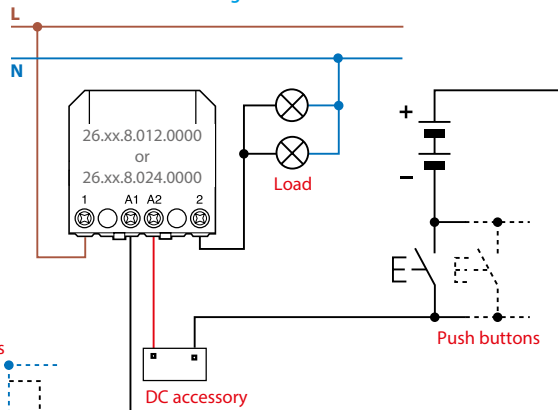


Accessories

Module for use with illuminated push button Type 026.00

Sealed construction, 7.5 cm insulated flexible wire termination. This module is necessary when using between 1 and a maximum of 15 illuminated push buttons in the coil circuit (Each 1.5 mA max, 230 V AC). It must be connected in parallel to the coil of the relay.

Wiring diagram – Single pole relay
Low voltage DC command circuit



Accessories - for 12 and 24 V DC control applications
(use with appropriate 12 or 24 V AC coil relay)

Type	026.9.012	026.9.024
Nominal voltage	12 V DC	24 V DC
Max temperature	+ 40°C	+ 40°C
Operating range	$(0.9 \dots 1.1) U_N$	



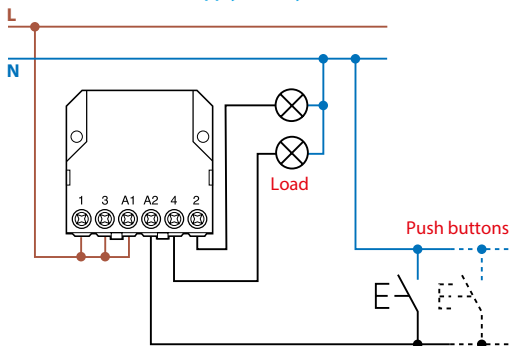
Type 26.02/03/04/06/08

- 2 NO, 10 A 250 V AC
- 1 NO + 1 NC, 10 A 250 V AC (26.03)
- Supply voltage: AC
- Panel mount

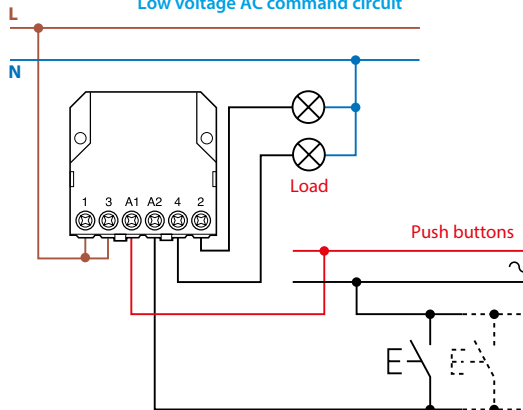
Type	Number of steps	Sequence			
		1°	2°	3°	4°
26.02	2				
26.03	2				

Type	Number of steps	Sequence			
		1°	2°	3°	4°
26.04	4				
26.06	3				
26.08	4				

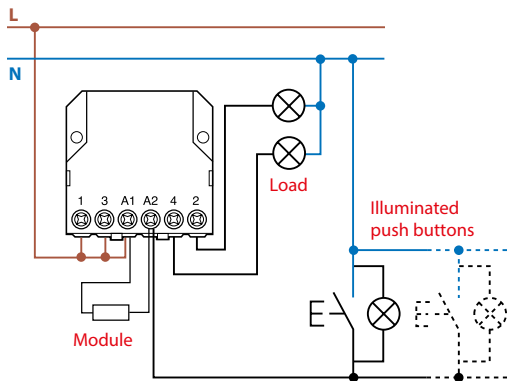
Wiring diagram – 2 pole relay
Common supply to relay coil and load



Wiring diagram - 2 pole relay
Low voltage AC command circuit



Wiring diagram – 2 pole relay
Common supply to relay coil and load
with illuminated push buttons

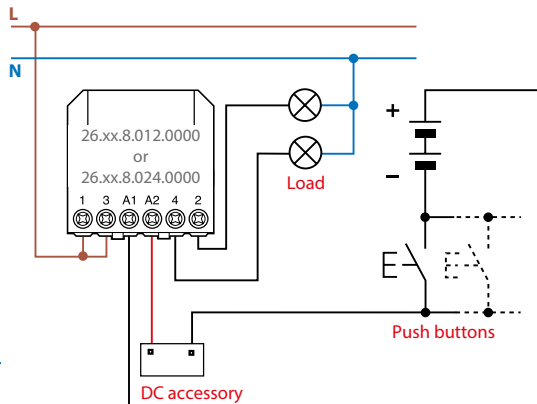


Accessories

Module for use with illuminated push button Type 026.00

Sealed construction, 7.5 cm insulated flexible wire termination. This module is necessary when using between 1 and a maximum of 15 illuminated push buttons in the coil circuit (Each 1.5 mA max, 230 V AC). It must be connected in parallel to the coil of the relay.



Wiring diagram – 2 pole relay



Accessories - for 12 and 24 V DC control applications
(use with appropriate 12 or 24 V AC coil relay)

Type	026.9.012	026.9.024
Nominal voltage	12 V DC	24 V DC
Max temperature	+ 40°C	+ 40°C
Operating range	(0.9...1.1)U _N	



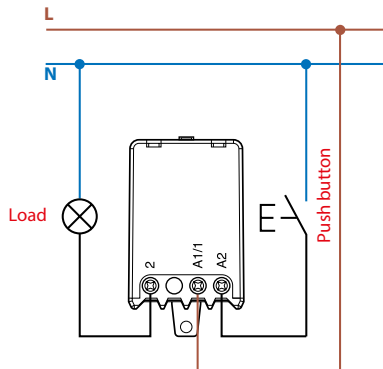
Type	Number of steps	Sequence	
		1°	2°
27.01	2		

Type 27.01

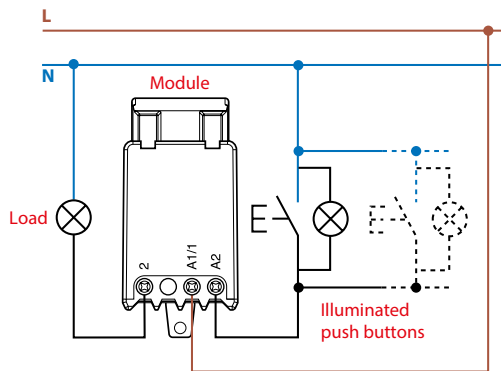
Connect up to 24 illuminated push buttons with the addition of module

- 1 NO, 10 A 230 V AC
- Supply voltage: AC
- Panel mount

Wiring diagram – Single pole relay
Common supply to relay coil and load



Wiring diagram - single pole relay
Common supply to relay coil and load
with illuminated push buttons



Accessories **Module for illuminated push buttons**

Type 027.00

This module is necessary if using up to a maximum of 24 illuminated push buttons (1 mA max, 230 V AC) in the switching input circuit. It must be plugged directly into the relay.





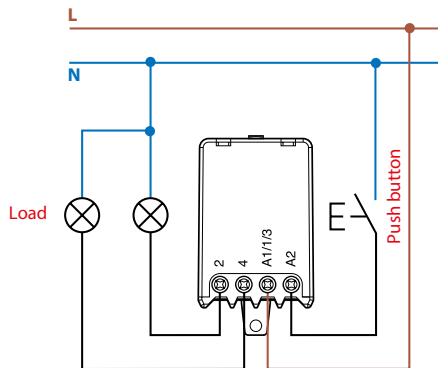
Type 27.05/06

Connect up to 24 illuminated push buttons with the addition of module

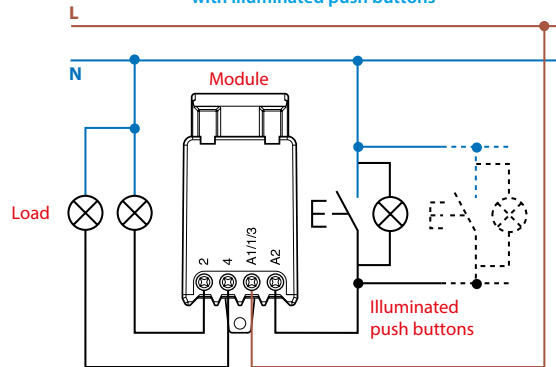
- 2 NO, 10 A 230 V AC
- Supply voltage: AC
- Panel mount

Type	Number of steps	Sequence			
		1°	2°	3°	4°
27.05	4				
27.06	3				

Wiring diagram – 2 pole relay
Common supply to relay coil and load



Wiring diagram - 2 pole relay
Common supply to relay coil and load
with illuminated push buttons





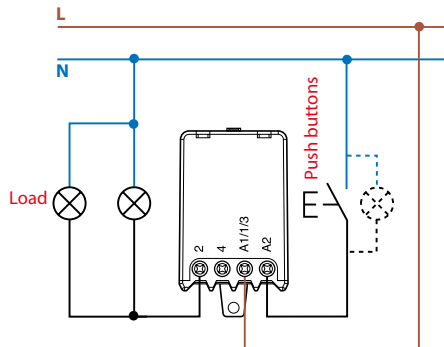


Type 27.21 EVO

Connect up to 15 illuminated push buttons (without additional module)

- incorporates coil power limiter to permit continuous coil energisation
- 1 contact, 10 A 230 V AC
- Supply voltage: AC
- Panel mount

Type	Number of steps	Sequence	
		1°	2°
27.21	2		



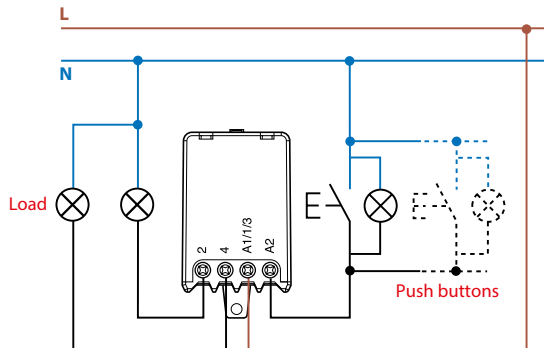


Type 27.25 EVO and 27.26 EVO

Connect up to 15 illuminated push buttons (without additional module)

- incorporates coil power limiter to permit continuous coil energisation
- 2 NO, 10 A 230 V AC
- Supply voltage: AC
- Panel mount

Type	Number of steps	Sequence			
		1°	2°	3°	4°
27.25	4				
27.26	3				





Push-in terminals

Type 4C.P2

- 2 CO, 8 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Accessories



8-way jumper link Type 097.58



2-way jumper link Type 097.52



2-way jumper link Type 097.42



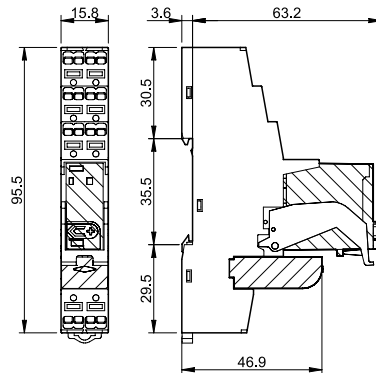
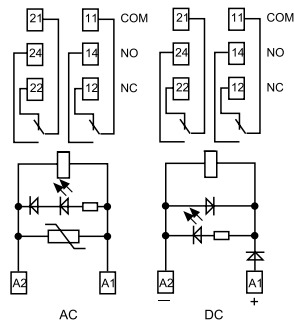
8-way jumper link Type 095.18



Marker tag holder Type 097.00



Sheet of marker tags (48 tags)
CEMBRE'S Thermal transfer printers, Type 060.48





Push-in terminals

Type 48.P5

- 2 CO, 8 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Accessories



8-way jumper link Type 097.58



2-way jumper link Type 097.52



2-way jumper link Type 097.42



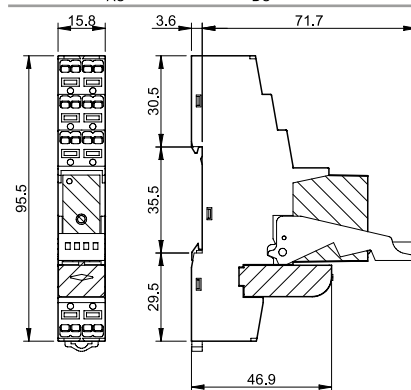
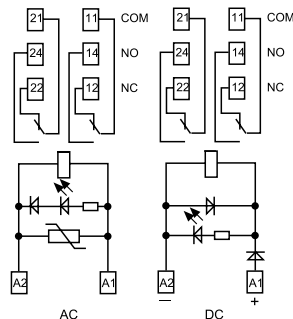
8-way jumper link Type 095.18



Marker tag holder Type 097.00



Sheet of marker tags (48 tags)
CEMBRE'S Thermal transfer printers, Type 060.48





Push-in terminals

Type 58.P4

- 4 CO, 8 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Accessories



8-way jumper link Type 097.58



2-way jumper link Type 097.52



2-way jumper link Type 097.42



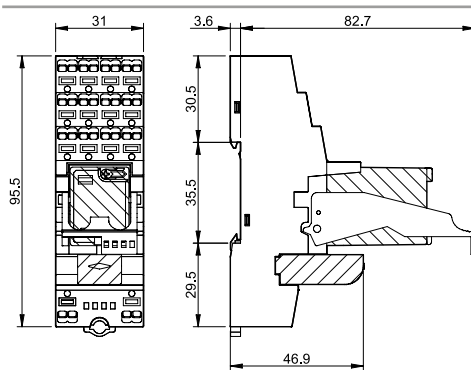
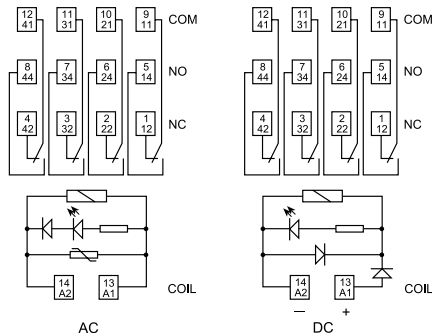
6-way jumper link Type 094.56



Marker tag holder Type 097.00



Sheet of marker tags (48 tags)
CEMBRE'S Thermal transfer printers, Type 060.48

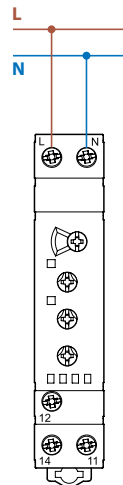
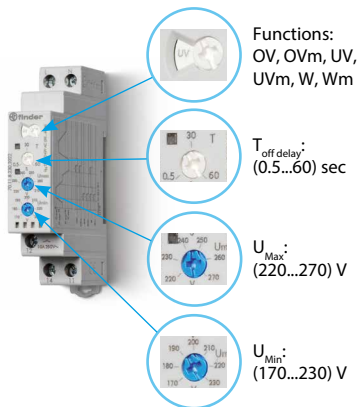




Type 70.11 - Single-phase (220...240 V) voltage monitoring:

- Undervoltage
- Overvoltage
- Window mode (overvoltage + undervoltage)
- Voltage fault memory selectable
- 1 CO, 10 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Front view: function selector and regulators



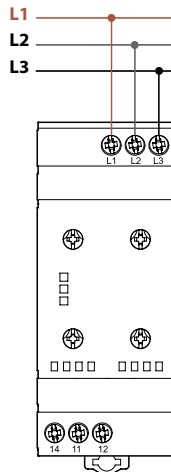
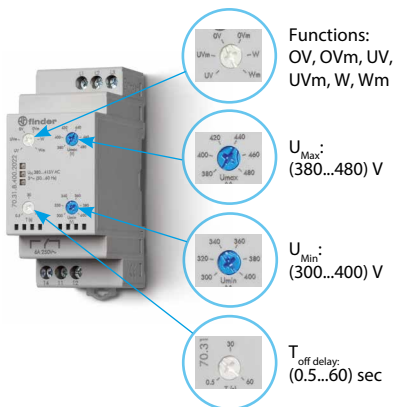


Type 70.31 - Three-phase (380...415 V) voltage monitoring:

- Undervoltage
- Overvoltage
- Window mode (overvoltage + undervoltage)
- Voltage fault memory selectable
- Phase loss
- Phase rotation

- 1 CO, 6 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Front view: function selector and regulators

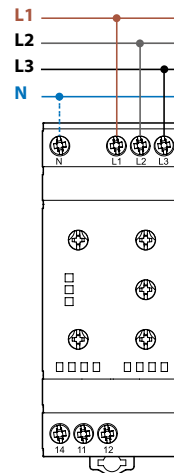
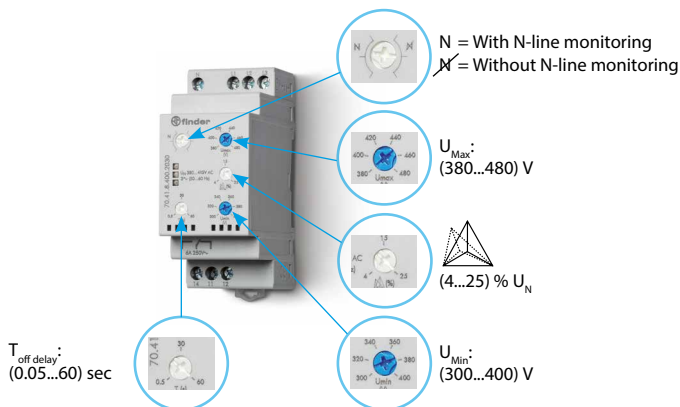




Type 70.41 - Three-phase (380...415 V, with or without neutral) voltage monitoring:

- Window mode (overvoltage + undervoltage)
 - Phase loss
 - Phase rotation
 - Asymmetry
 - Neutral loss selectable
- 1 CO, 6 A 250 V AC
 - Supply voltage: AC
 - 35 mm rail (EN 60715) mount

Front view: function selector and regulators



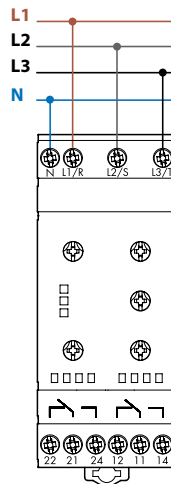
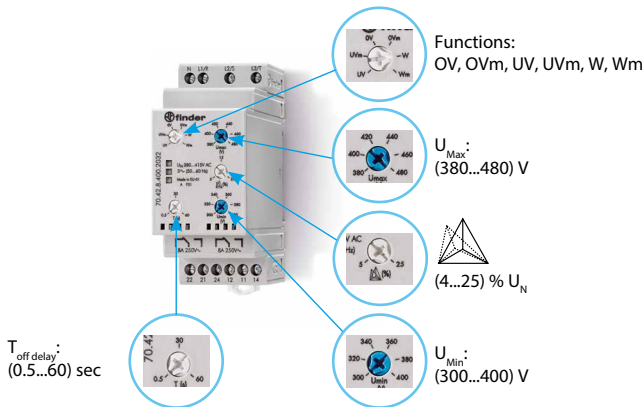


Type 70.42 - Three-phase (380...415 V, with neutral) voltage monitoring:

- Undervoltage
- Overvoltage
- Window mode (overvoltage + undervoltage)
- Phase loss
- Phase rotation
- Asymmetry
- Neutral loss selectable

- 2 CO, 8 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

Front view: function selector and regulators

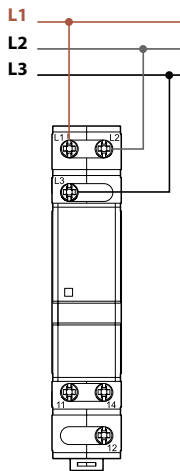




Type 70.61

Three-phase (208...480 V) voltage monitoring:

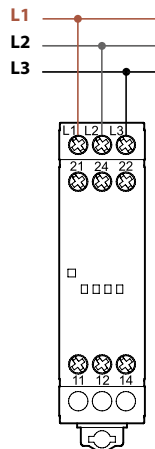
- Phase loss
- Phase rotation
- 1 CO, 6 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount

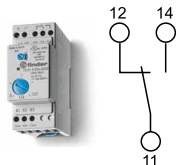


Type 70.62

Three-phase (208...480 V) voltage monitoring:

- Phase loss
- Phase rotation
- 2 CO, 8 A 250 V AC
- Supply voltage: AC
- 35 mm rail (EN 60715) mount





Type 72.01

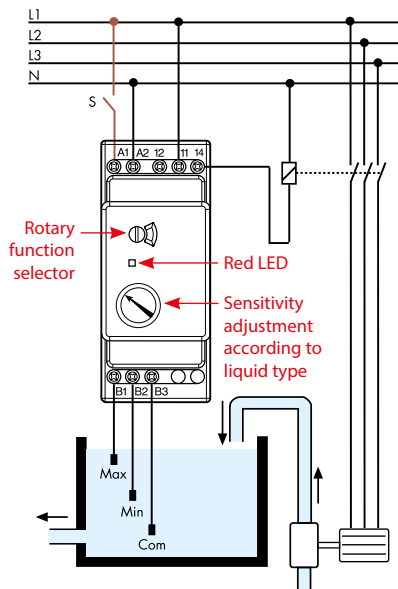
Adjustable sensitivity

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

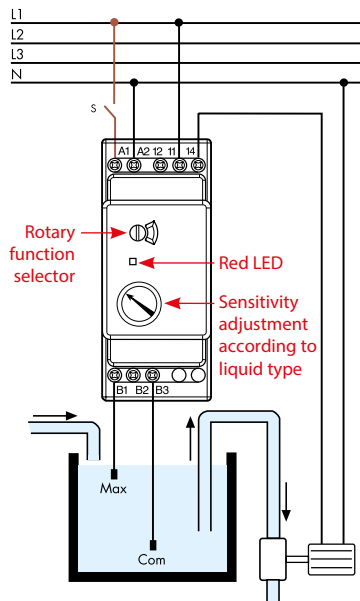
Functions

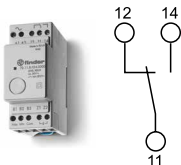
- FL = Level control by Filling, Long (7sec) run-on delay.
- EL = Level control by Emptying, Long (7sec) run-on delay
- FS = Level control by Filling, Short (0.5sec) run-on delay
- ES = Level control by Emptying, Short (0.5sec) run-on delay.

Wiring diagram with 3 electrodes
(Example: control by Filling.
See page 124)



Wiring diagram with 2 electrodes
(Example: control by Emptying.
See page 125)





Type 72.11

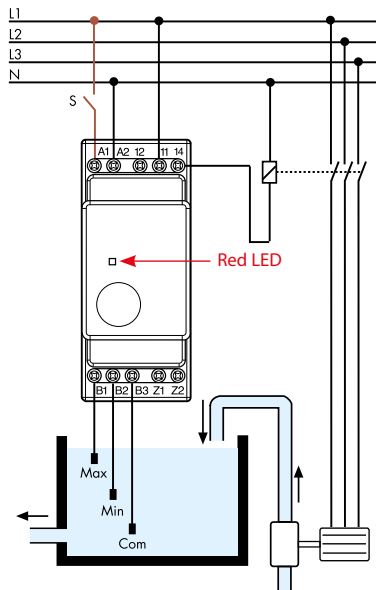
Fixed sensitivity

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

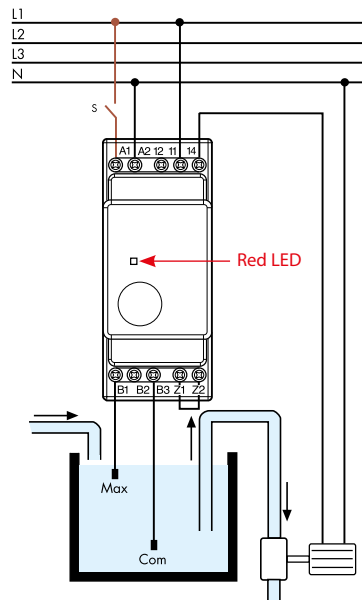
Functions

- F = Level control by Filling,
Z1-Z2 open.
Run-on time fixed at 1sec.
- E = Level control by Emptying,
Z1-Z2 linked.
Run-on time fixed at 1sec.

Wiring diagram with 3 electrodes
(Example: control by Filling.
See page 124)

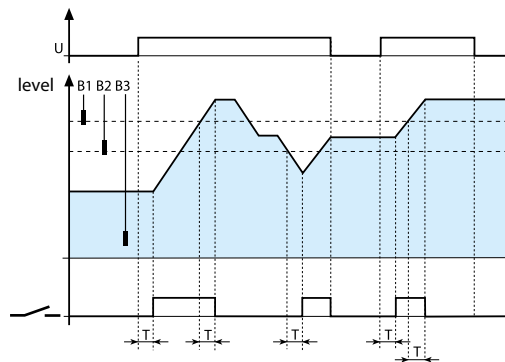


Wiring diagram with 2 electrodes
(Example: control by Emptying.
See page 125)

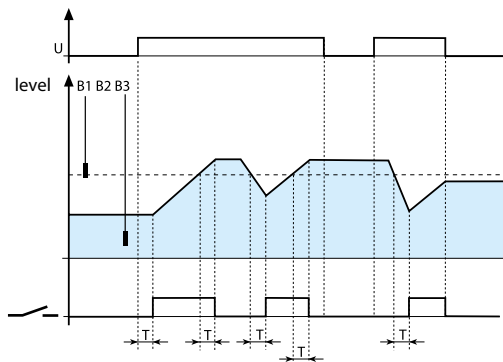


Filling functions

Example with 3 electrodes.

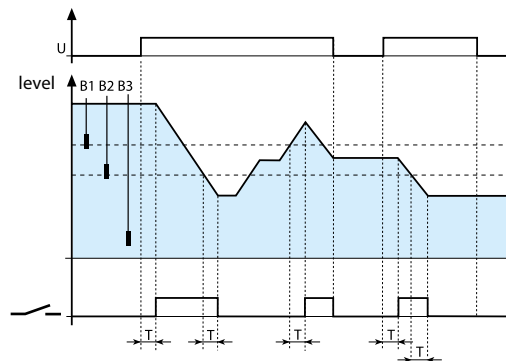


Example with 2 electrodes.

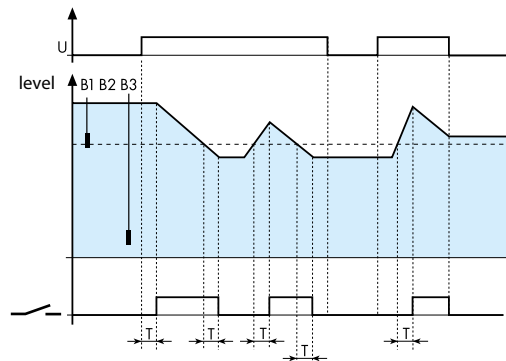


Emptying functions

Example with 3 electrodes.



Example with 2 electrodes.





Type 072.01.06 - Cable length: 6 m (1.5 mm²)

Type 072.01.15 - Cable length: 15 m (1.5 mm²)

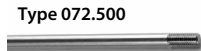
Suspended electrode for conductive liquids, complete with cable. Suitable for level monitoring in wells and reservoirs not under pressure. All materials used are compatible with food processing applications.



Type 072.11 - Floor water sensor, designed for the detection and reporting of the presence of floor surface water.



Type 072.51 - Electrode holder with two pole connector, one connected directly to the electrode and the second connected to the grounded installation thread. Suitable for metal tank with G3/8" linkage.



Type 072.500

Electrode
500 mm long



Type 072.501

Electrode connector.



Type 072.02.06

Cable length (blue colour): 6 m (1.5 mm²)

Electrode for swimming pools with high levels of chlorine, or in salt-water pools with high levels of salinity.



Type 072.31
Suspended electrode



Type 072.53
Electrode holder
with three poles



Type 072.503
Electrode separator



Level
control relays
for conductive
liquids

Types 72.01 and 72.11 are suitable for the level control of conductive liquids - either to a single level using 2 probes or between Minimum and Maximum levels using 3 probes.

Priority
change
relay

Type 72.42, special relay for alternating loads, for applications with pumps, compressors, air conditioning or refrigeration units.

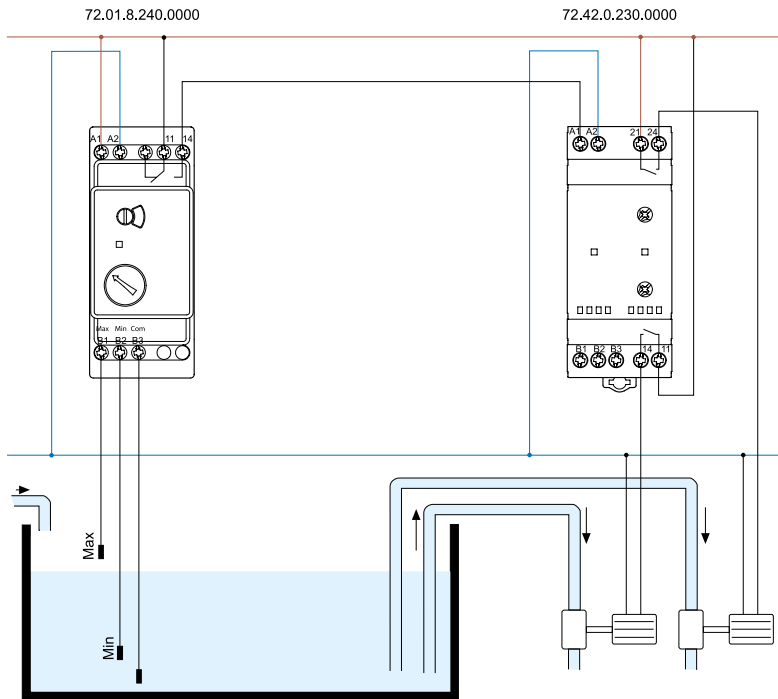


finder[®]

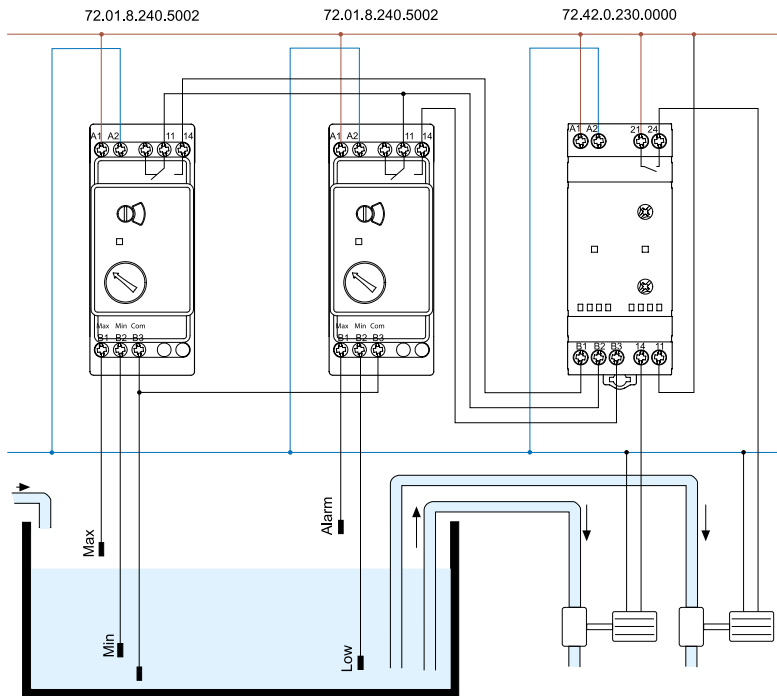
SWITCH TO THE FUTURE

(MI) Function example

This shows the 72.42 Priority change relay working in conjunction with a single 72.01 level controller. Under normal conditions the liquid level is expected to remain within the range shown as Min to Max. In this case the function of the 72.42 will be to alternate the duty between both pumps, to even wear across both pumps. There is no provision to run both pumps simultaneously.



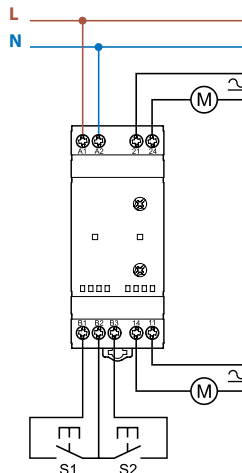
This shows the 72.42 Priority change relay working in conjunction with two 72.01 level controllers. Under normal conditions the liquid level is expected to remain within the range shown as Min to Max. In this case the function of the 72.42 will be to alternate the duty between both pumps, to even wear across both pumps. Should the liquid level rise above the Alarm level then the function of the 72.42 will call for the simultaneous operation of both pumps, by virtue of the signal to terminal B3 from the Alarm/Low level controller. Note: due to the low level of 72.42 control signals, it is suggested to use level controller 72.01.8.240.5002 because of its superior low load switching capability.



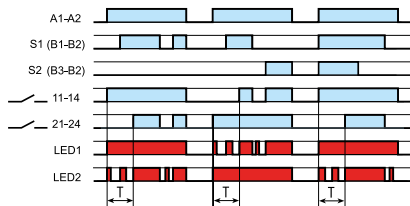


Type 72.42

- 2 independent NO output, 12 A 250 V AC
- Supply voltage: (110...240)V and 24 V AC/DC
- 35 mm rail (EN 60715) mount

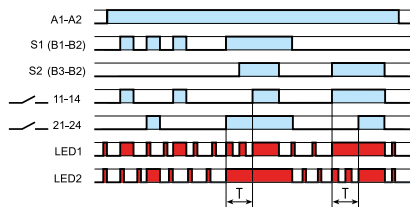


Functions



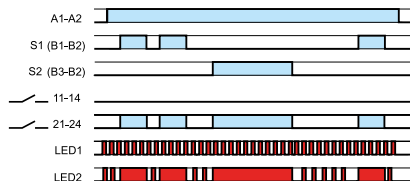
(MI) Outputs alternate on successive applications of supply voltage

- Application of the supply voltage to A1-A2 forces just one output contact to close, but the contact that closes will alternate between 11-14 and 21-24 on each successive application of the supply – ensuring even wear across both motors.
- The other output contact can be forced closed by the closure of either S1 or S2 - but to limit high current surges the other motor cannot start within T seconds of the first motor.



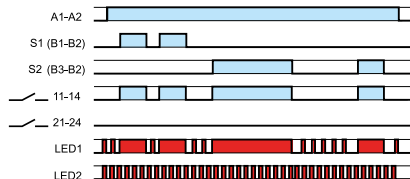
(ME) Outputs alternate according to control signal

- The supply voltage is permanently applied to A1-A2. When closed, S1 forces just one output contact to close. The contact that closes will alternate between 11-14 and 21-24 on each successive S1 closure - ensuring even wear across both motors.
- If closed, S2 forces both output contacts to close (irrespective of S1). However, to limit high current surges, both motors cannot start within T seconds of each other.



(M2) Output 2 (21-24) only

- Supply permanently applied to A1-A2.
- Closure of either S1 or S2 will close output contact 2 (21-24). Use when load 1 (11-14) is out of service.



(M1) Output 1 (11-14) only

- Supply permanently applied to A1-A2.
- Closure of either S1 or S2 will close output contact 1 (11-14). Use when load 2 (21-24) is out of service.



Type 72.A1

- Float switch with 2 watertight chambers, for grey water pumping and drainage systems
- Counterweight (300 g) with cable grip, included

Type 72.A1.0000.xx02

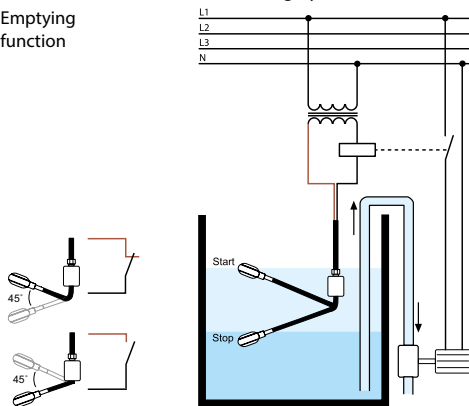
Float switch suitable for level regulation of potable water and liquid foodstuffs

Manufactured from metal and plastics certified to ACS (Attestation de Conformité Sanitaire).

- 1 CO 20 A 250 V AC

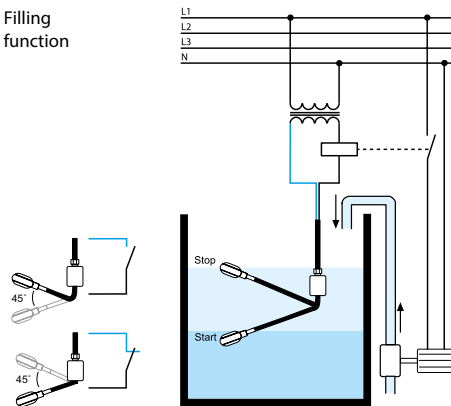
- Protection category: IP 68

Emptying function



When black and brown wires are used, the circuit opens when the float is down and closes when the float is up. In this case the blue/grey wire must be insulated.

Filling function



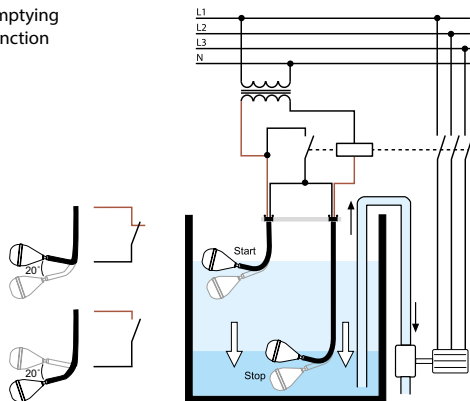
When black and blue/grey wires are used, the circuit opens when the float is up and closes when the float is down. In this case the brown wire must be insulated.



Type 72.B1

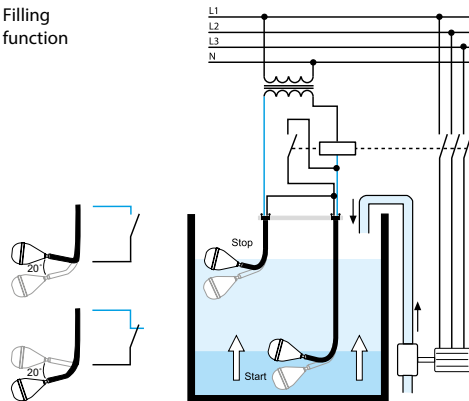
- Float switch with 3 watertight chambers, for dirty water systems, drainage plants and pumping stations
- Supplied with fixing kit
- 1 CO 20 A 250 V AC
- Protection category: IP 68

Emptying function



When black and brown wires are used, the circuit opens when the float is down and closes when the float is up. In this case the blue/grey wire must be insulated.

Filling function



When black and blue/grey wires are used, the circuit opens when the float is up and closes when the float is down. In this case the brown wire must be insulated.

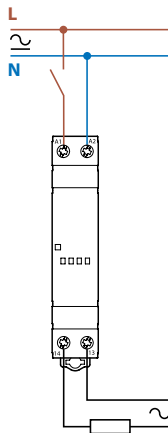


Type 77.01

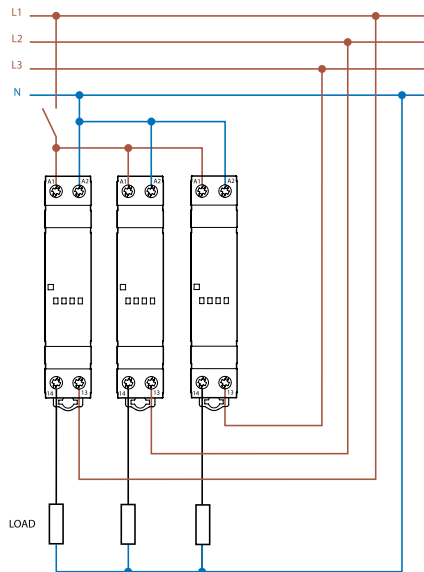
17.5 mm width

- 1 NO 5 A
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

Example of single-phase connection



Example of three-phase connection (with 3 x 77.01.8.230.8051)



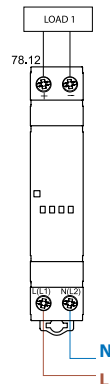


Type 78.12...2400
24 V DC, 12 W output



Type 78.12...1200
12 V DC, 12 W output

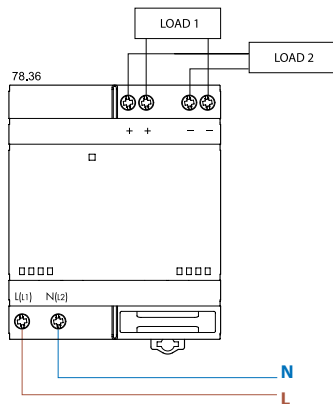
- Supply voltage: (110...240)V AC
220 V DC not polarized
- 35 mm rail (EN 60715) mount





Type 78.36

- 24 V DC, 36 W output
- Supply voltage: (110...240)V AC,
220 V DC not polarized
- 35 mm rail (EN 60715) mount





Type 78.50

Type 78.51

Suitable for
battery charging

12 V DC, 50 W output

- Supply voltage: (110...240)V AC
220 V DC not polarized
- 35 mm rail (EN 60715) mount

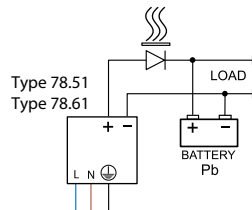
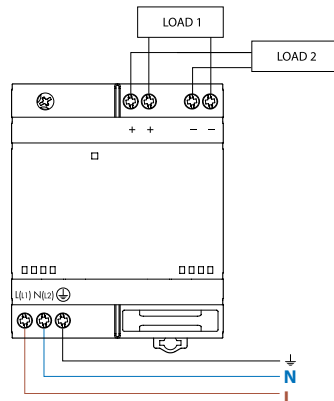


Type 78.60

Type 78.61

Suitable for
battery charging

24 V DC, 60 W output





Type 7E.23.8.230.0000 kWh + instantaneous W, V & A

Type 7E.23.8.230.0001 kWh only

Type 7E.23.8.230.0030 MID certified with M-Bus integrated interface

Type 7E.23.8.230.0210 MID certified with Modbus RS-485 integrated interface

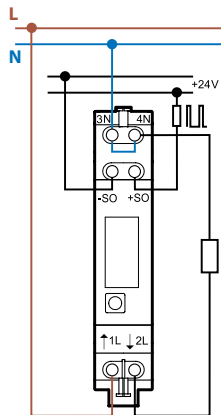
- Nominal current 5 A (32 A Maximum)
- 1-phase 230 V AC
- 17.5 mm width
- 35 mm rail (EN 60715) mount

Accessories

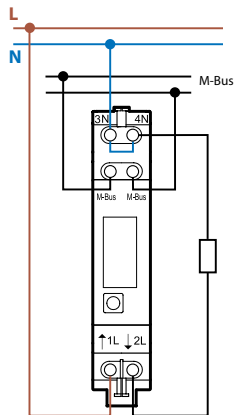
Terminal cover Type 07E.13



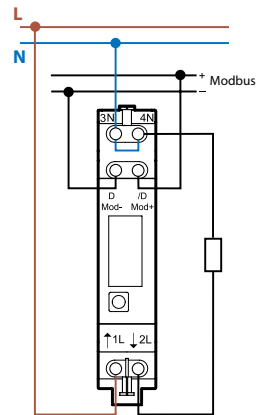
For the tamper-proof lead seal use 2 terminal covers.



Type 7E.23.8.230.0000
Type 7E.23.8.230.0001



Type 7E.23.8.230.0030



Type 7E.23.8.230.0210



- Nominal current 10 A (65 A Maximum)
- 3-phase
- Single and Dual tariff (Day and Night)
- 70 mm width
- 35 mm rail (EN 60715) mount

Accessories

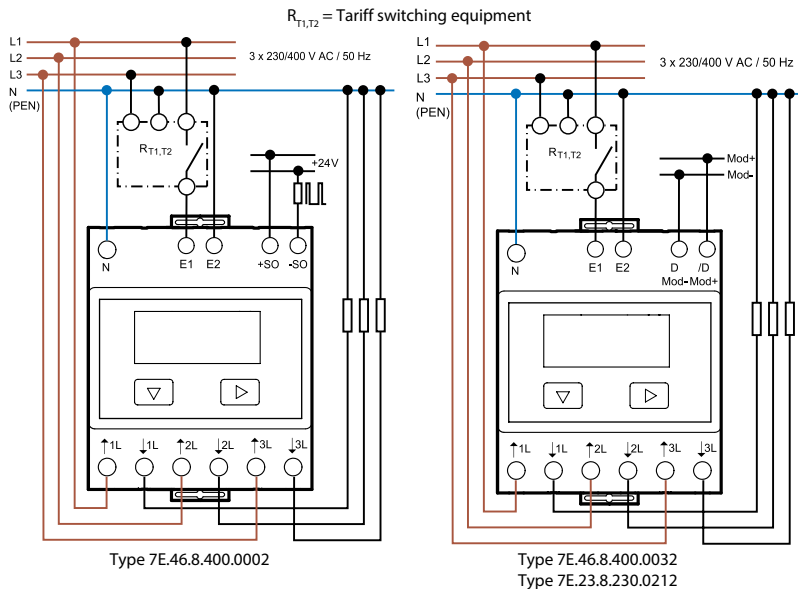
Terminal cover

Type 07E.16



For the tamper-proof lead seal use 4 terminal covers.

- Type 7E.46.8.400.0002 kWh + instantaneous W, V & A
- Type 7E.46.8.400.0032 MID certified with M-Bus integrated interface
- Type 7E.46.8.400.0212 MID certified with Modbus RS-485 integrated interface





- Nominal current 5 A (6 A Maximum)
- 3-phase
- Usable with current transformer up to 1,500 A
- 70 mm width
- 35 mm rail (EN 60715) mount

Accessories

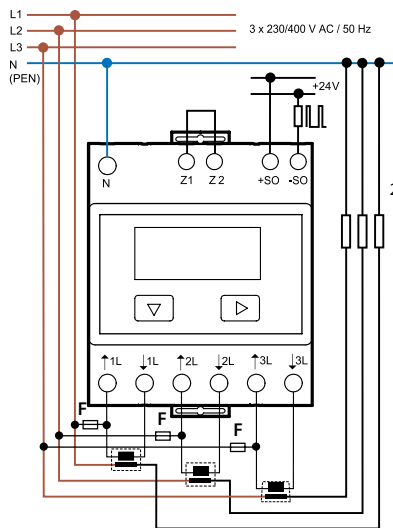
Terminal cover

Type 07E.16

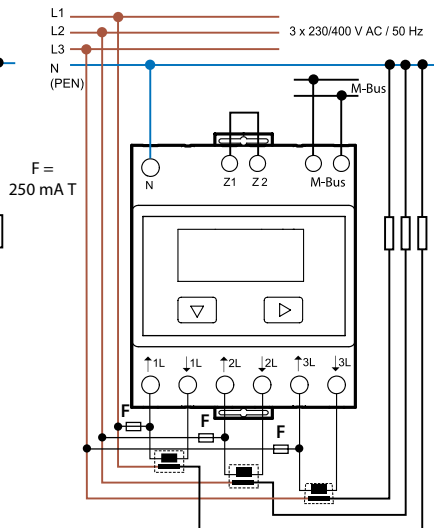


For the tamper-proof lead seal use 4 terminal covers.

- Type 7E.56.8.400.0000 kWh + instantaneous W, V & A
- Type 7E.56.8.400.0030 MID certified with M-Bus integrated interface
- Type 7E.56.8.400.0210 MID certified with Modbus RS-485 integrated interface



Type 7E.56.8.400.0000



Type 7E.46.8.400.0030
Type 7E.23.8.230.0210



Type 7E.12.8.230.0002

- Nominal current 10 A (25 A Maximum)
- 1-phase 230 V AC
- 35 mm width
- 35 mm rail (EN 60715) mount

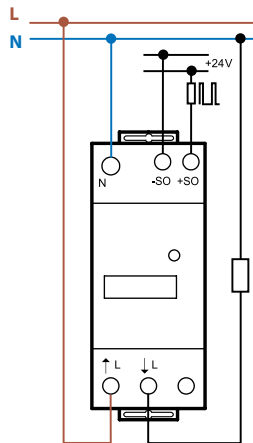
Accessories

Terminal cover

Type 07E.16



For the tamper-proof lead seal use 2 terminal covers.





Type 7E.13

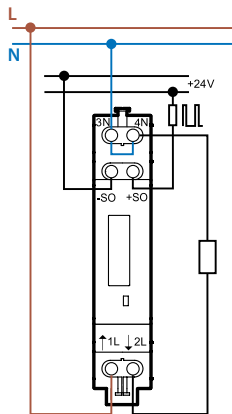
- Nominal current 5 A (32 A Maximum)
- 1-phase 230 V AC
- 17.5 mm width
- 35 mm rail (EN 60715) mount

Accessories

Terminal cover Type 07E.13



For the tamper-proof lead seal use 2 terminal covers.





Type 7E.16

- Nominal current 10 A (65 A Maximum)
- 1-phase 230 V AC
- 35 mm width
- 35 mm rail (EN 60715) mount

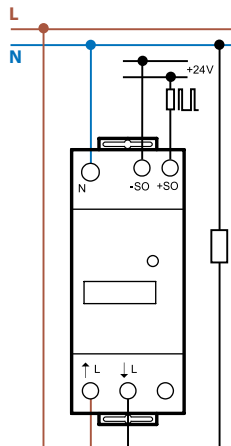
Accessories

Terminal cover

Type 07E.16



For the tamper-proof lead seal use 2 terminal covers.





Type 7E.36.8.400.0000

- Nominal current 10 A (65 A Maximum)
- 3-phase
- 70 mm width
- 35 mm rail (EN 60715) mount

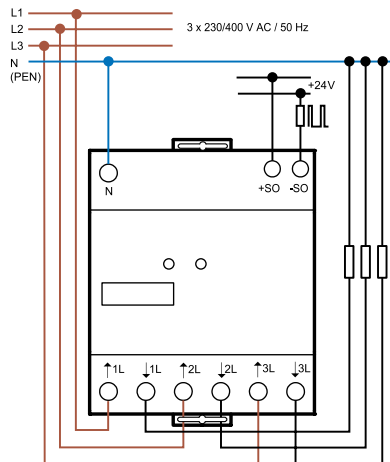
Accessories

Terminal cover

Type 07E.16



For the tamper-proof lead seal use 4 terminal covers.





Type 7E.36.8.400.0002

- Nominal current 10 A (65 A Maximum)
- 3-phase
- Dual tariff (Day and Night)
- 70 mm width
- 35 mm rail (EN 60715) mount

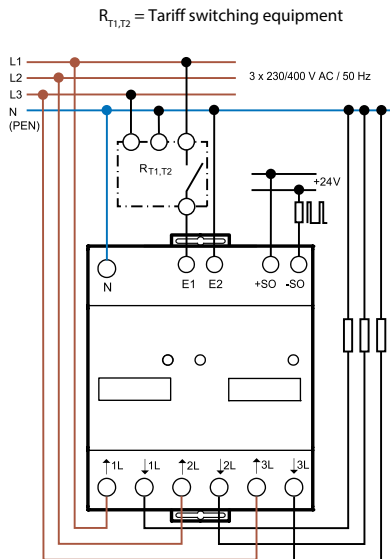
Accessories

Terminal cover

Type 07E.16



For the tamper-proof lead seal use 4 terminal covers.





Type 7P.02.8.260.1025 - SPD Type 1+2

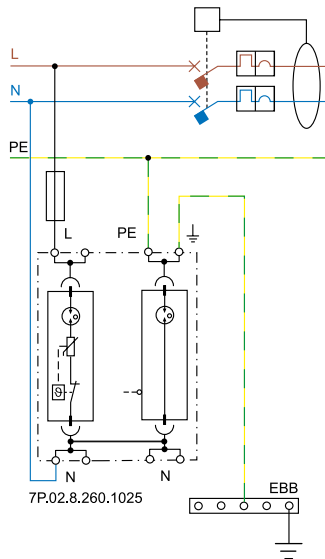
For single phase TT and TN-S system.

Varistor + GDT protection L-N + GDT protection N-PE.

According to EN 61 643-11.

- Visual fault and remote contact fault signalling varistor/GDT status, N-PE GDT presence
- Upside down mounting possible
- Replaceable modules
- Possibility of serial connection (V-shape)
- 35 mm rail (EN 60715) mount

TT-single phase system - SPD up-stream of RCD





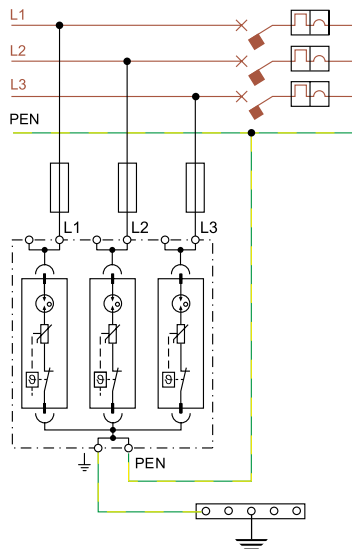
Type 7P.03.8.260.1025 - SPD Type 1+2
For three phase TN-C system without Neutral
(PEN conductor).

Varistor + GDT protection L1, L2, L3-PEN.

According to EN 61 643-11.

- Visual fault and remote contact fault signalling varistor/GDT status
- Upside down mounting possible
- Replaceable modules
- Possibility of serial connection (V-shape)
- 35 mm rail (EN 60715) mount

TN-C three phase system - SPD up-stream of RCD

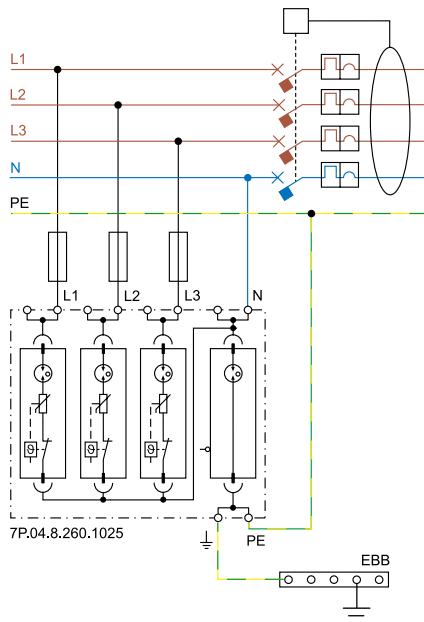




Type 7P.04.8.260.1025 - SPD Type 1+2
For three phase TT and TN-S system with Neutral.
Varistor + GDT protection L1, L2, L3-N +
spark gap protection N-PE
According to EN 61 643-11.

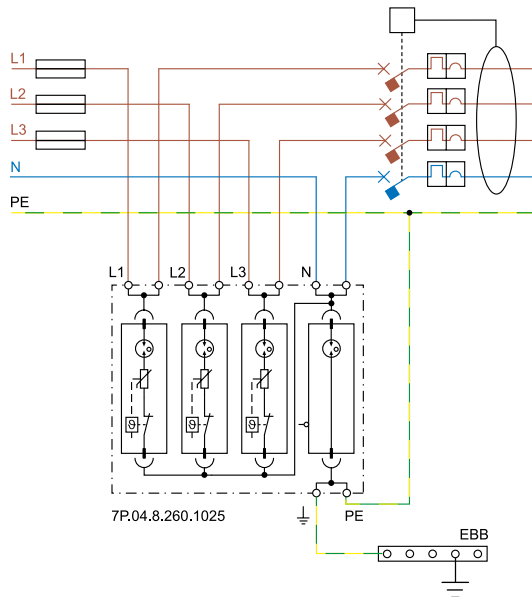
- Visual fault and remote contact fault signalling varistor/GDT status, N-PE GDT presence
- Upside down mounting possible
- Replaceable modules
- Possibility of serial connection (V-shape) example on next page
- 35 mm rail (EN 60715) mount

TT three phase system - SPD up-stream of RCD



Installation examples

TT three phase system - SPD up-stream of RCD
Wiring diagrams "V-shape" (fuse max = 125 A)

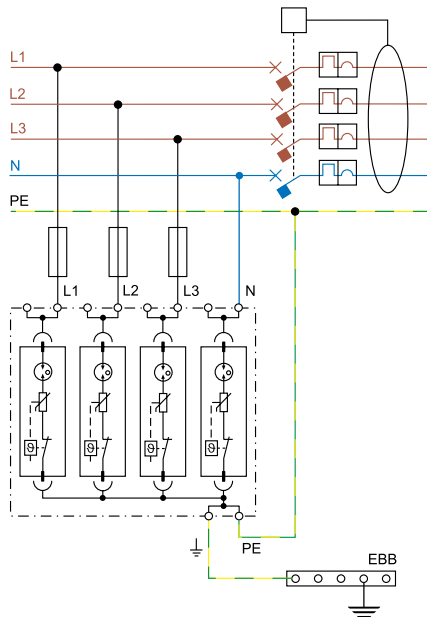




Type 7P.05.8.260.1025 - SPD Type 1+2
For three phase TN-S system with Neutral.
Varistor + GDT protection L1, L2, L3-N +
varistor + GDT protection N-PE
According to EN 61 643-11.

- Visual fault and remote contact fault signalling varistor/GDT status
- Upside down mounting possible
- Replaceable modules
- Possibility of serial connection (V-shape)
- 35 mm rail (EN 60715) mount

TT or TN-S three phase system - SPD up-stream of RCD

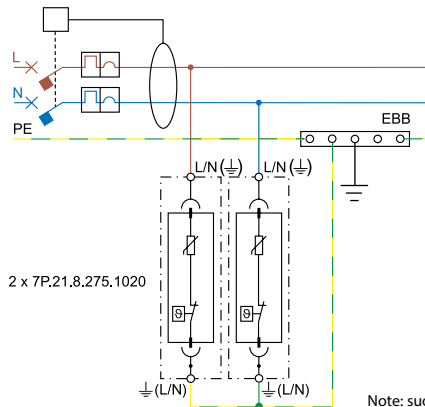


Installation examples



Type 7P.21.8.xxxx.x0xx
SPD Type 2, unipolar
Varistor protection +/- or L/N (GND);
-/+ or GND (L/N)

TT - TN-S single phase system
SPD down-stream of RDC



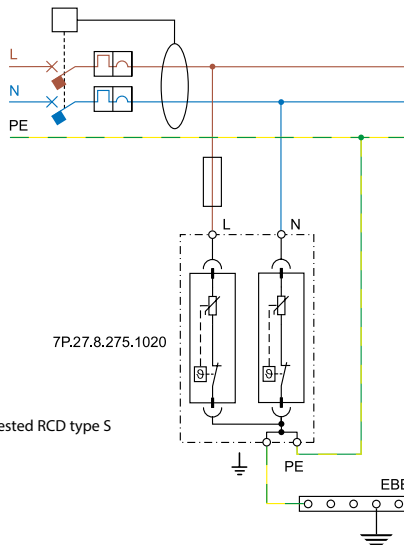
2 x 7P.21.8.275.1020

Note: suggested RCD type S



Type 7P.27.8.275.1020 - SPD Type 2
For single phase TN system with Neutral (TN-S)
Varistor protection L, N-PE

TN-S single phase system - SPD down-stream of RDC



7P.27.8.275.1020

According to
EN 61 643-11

- Surge arrester suitable for AC and DC systems to protect equipment against induced overvoltage or switching transients
- Replaceable modules
- Visual and optional remote connector for signalling of the varistor status
- 35 mm rail (EN 60715) mount

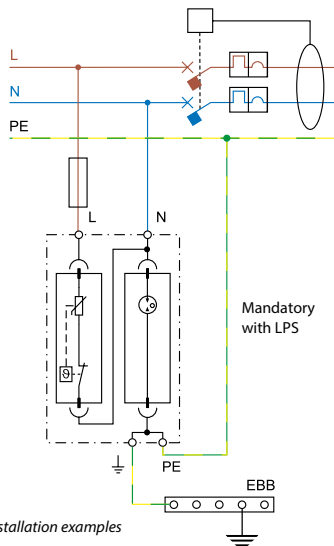


Type 7P.12.8.275.1012 - SPD Type 1+2
with high performance "Low Up"
Varistor protection L-N + spark gap protection
N-PE for single phase systems

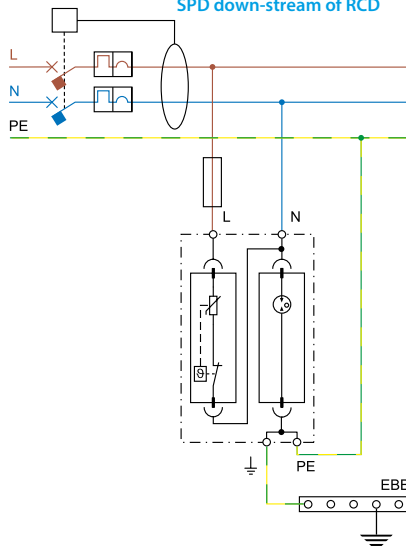


Type 7P.22.8.275.x020 - SPD Type 2
Varistor protection L-N +
spark gap protection N-PE

TT single phase system - SPD up-stream of RCD



TT or TN-S single phase system - SPD down-stream of RCD



According to EN 61 643-11.

- For single phase system with Neutral
- Replaceable modules
- Visual and optional remote connector for signalling of the varistor status
- 35 mm rail (EN 60715) mount

Installation examples



Type 7P.13.8.275.1012 - SPD Type 1+2
with high performance "Low Up"
Varistor protection L1, L2, L3-PEN

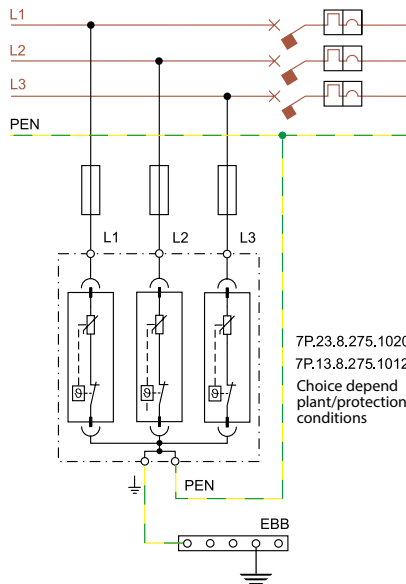


Type 7P.23.8.275.x020 - SPD Type 2
Varistor protection L1, L2, L3-PEN

According to EN 61 643-11

- For three phase system without Neutral (PEN conductor)
- Replaceable modules
- Visual and optional remote connector for signalling of the varistor status
- 35 mm rail (EN 60715) mount

TN-C three phase system - SPD up-stream of overcurrent protection



Installation examples

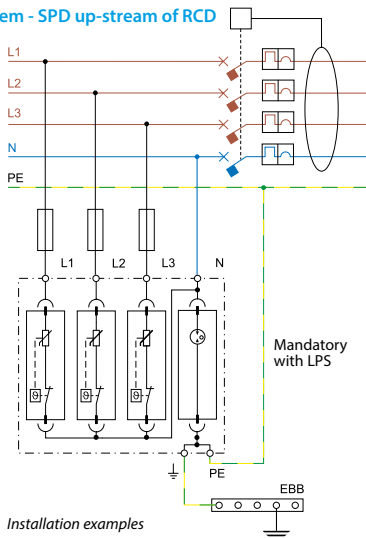


Type 7P.14.8.275.1012 - SPD Type 1+2
 with high performance "Low Up"
 Varistor protection L1, L2, L3-N +
 spark gap protection N-PE
 Non replaceable high discharge
 current spark gap



Type 7P.24.8.275.x020 - SPD Type 2
 Varistor protection L1, L2, L3 +
 spark gap protection N-PE
 Replaceable modules

TT three phase system - SPD up-stream of RCD

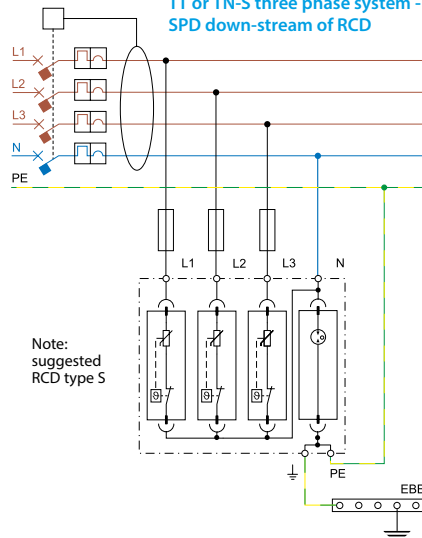


According to EN 61 643-11.

- For three phase system with Neutral
- Visual and remote signalling of varistor status
- 35 mm rail (EN 60715) mount

Installation examples

TT or TN-S three phase system - SPD down-stream of RCD





Type 7P.15.8.275.1012 - SPD Type 1+2
Varistor protection L1, L2, L3, N-PE

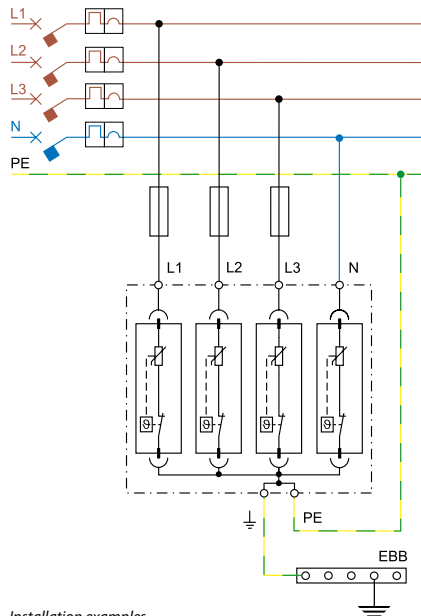


Type 7P.25.8.275.x020 - SPD Type 2
Varistor protection L1, L2, L3, N-PE

According to EN 61 643-11

- For three phase system with Neutral
- Visual and remote signalling of varistor status
- Replaceable varistor modules
- 35 mm rail (EN 60715) mount

TN-S three phase system - SPD down-stream of overcurrent protection



Installation examples



Type 7P.23.9.750.x020
for 750 V DC photovoltaic
systems*

Type 7P.23.9.000.x015
for 1020 V DC photovoltaic
systems*

Type 7P.23.9.200.1015
for 1200 V DC photovoltaic
systems*

SPD Type 2 - According to EN 50 539-11*

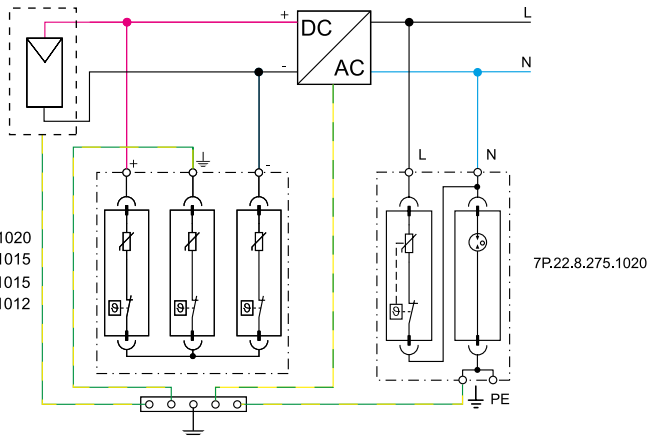
- Replaceable varistor modules
- Visual and optional remote connector for signalling of the varistor status
- 35 mm rail (EN 60715) mount



Type 7P.03.9.000.1012
SPD Type 1+2
for 1000 V DC photovoltaic
systems*

- For systems with LPS
- Replaceable varistor modules
- Visual and optional remote connector for signalling of the varistor status
- 35 mm rail (EN 60715) mount

Installation examples - photovoltaic



Choice of SPD dependent on plant/protection conditions



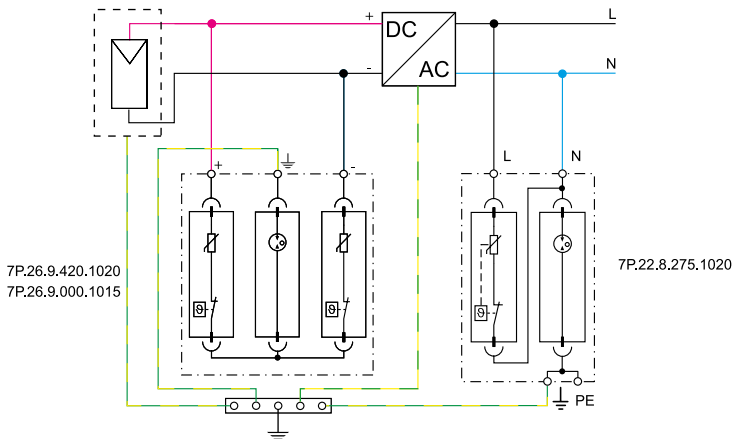
Type 7P.26.9.420.1020
SPD Type 2
 for 420 V DC photovoltaic
 systems*

Type 7P.26.9.000.x015
SPD Type 2
 for 1020 V DC photovoltaic
 systems*

According to EN 50 539-11*

- Replaceable modules
- Visual and remote signalling of varistor status
- 35 mm rail (EN 60715) mount

Installation examples - photovoltaic



Choice of SPD dependent on plant/protection conditions



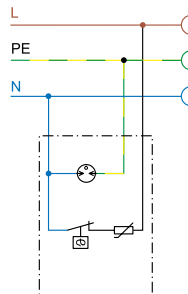
Type 7P.32.8.275.2003

SPD Type 3

Provides easy additional surge protection for existing 230 V sockets

- Protects electric and electronic equipment against pulse overvoltage (example: TV, Hi-Fi, PC ...)
- Acoustical (buzzing) signalling of varistor fault
- Combined varistor + spark-gap protection (avoiding earth leakage current)
- Small size
- For incorporation within socket outlets

TT or TN-S single phase system - incorporated in socket outlet

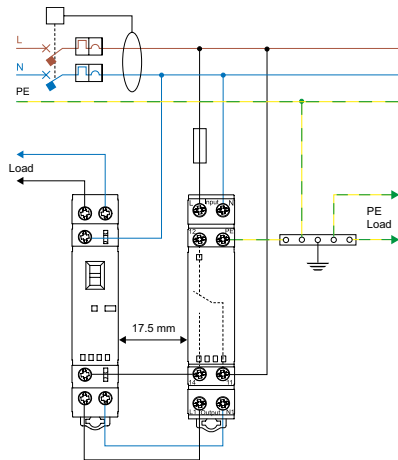




Type 7P.37.8.275.1003 – SPD Type 3 for TT and TN-S system (with Neutral)

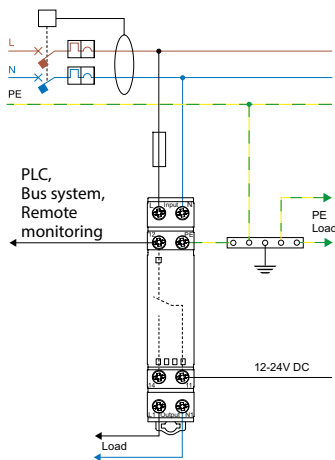
- L-N/N-PE protection
- Permits serial connection for optimized load protection up to 16 A
- Remote signaling of varistor status by integral change-over relay contact
- 35 mm rail (EN 60715) mount

TT or TN-S single phase system - SPD down-stream of RCD Serial connection



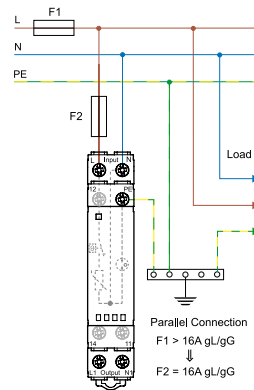
22.32.0.230.X440 7P.37.8.275.1003

TT or TN-S single phase system - SPD down-stream of RCD Serial connection + BUS line



7P.37.8.275.1003

TT, TN-S single phase system parallel connection

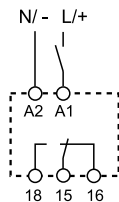


Parallel Connection
F1 > 16A gL/gG
↓
F2 = 16A gL/gG

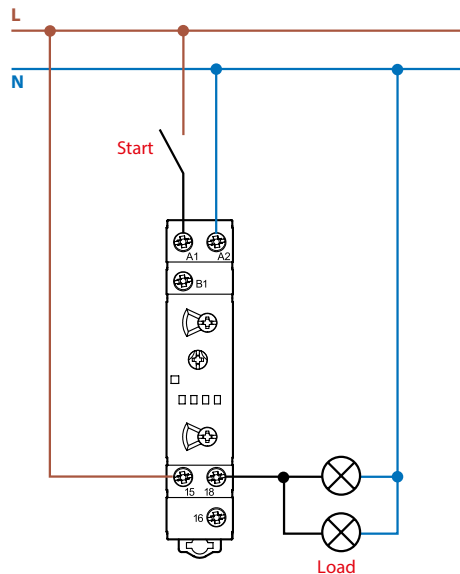


Type 80.01/11/21/61

- 1 CO, 16 A 250 V AC
- 1 CO, 8 A 250 V AC (80.61 only)
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount



Examples where: Timing function initiated by the application of supply voltage



Functions

U = Supply voltage

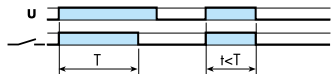
 = Output contact

Type 80.01, 80.11

**(AI) On-delay**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

Type 80.01, 80.21

**(DI) Interval**

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

Type 80.01

**(SW) Symmetrical flasher (starting pulse on)**

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

Type 80.61

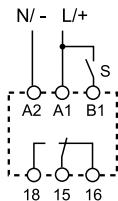
**(BI) Power off-delay (True off-delay)**

Apply power to timer (minimum 300ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.

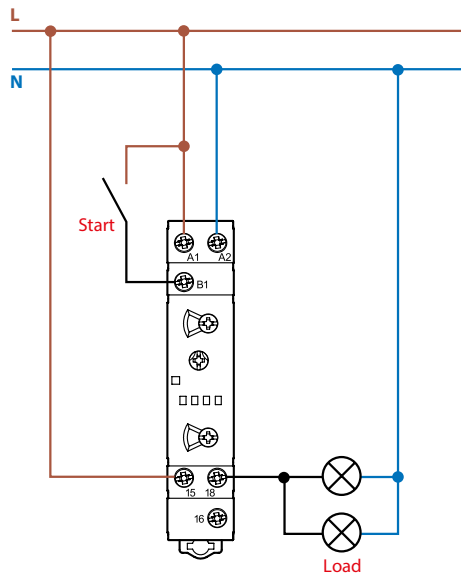


Type 80.01/41/91

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount



Timing function initiated by
start signal to terminal B1



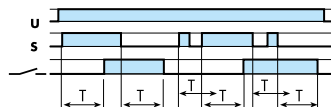
Functions

U = Supply voltage

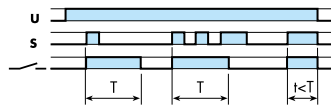
S = External Start

 = Output contact

Type 80.01

**(CE) On- and off-delay with control signal**

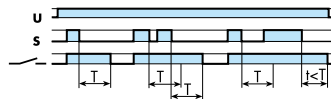
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.

**(DE) Interval with control signal on**

Power is permanently applied to the timer.

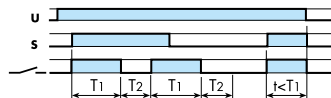
On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

Type 80.01, 80.41

**(BE) Off-delay with control signal**

Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

Type 80.91

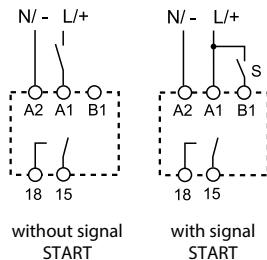
**(LE) Asymmetrical flasher (starting pulse on) with control signal**

Power is permanently applied to the timer.

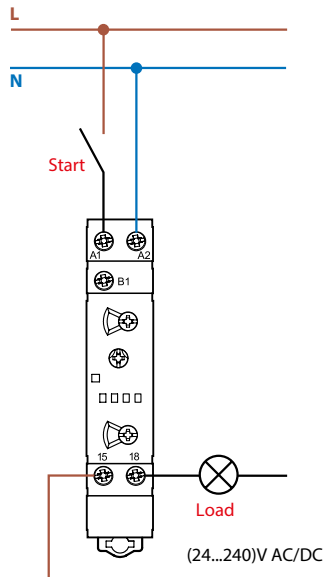
Closing Signal Switch (S) causes the output contacts to transfer immediately and cycle between ON (T1) and OFF (T2), until opened.



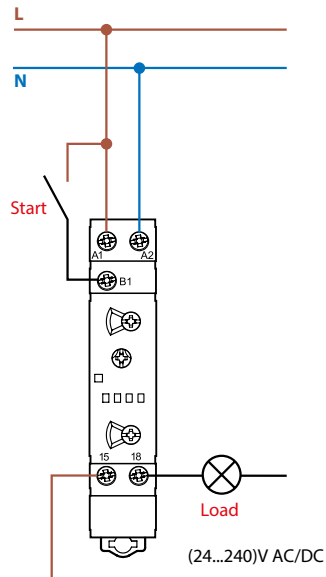
Type 80.71
Multi-function & Multi-voltage
Solid State output timer
 - 1 NO, 1 A (24...240)V AC/DC
 - Supply voltage: AC or DC
 - 35 mm rail (EN 60715) mount



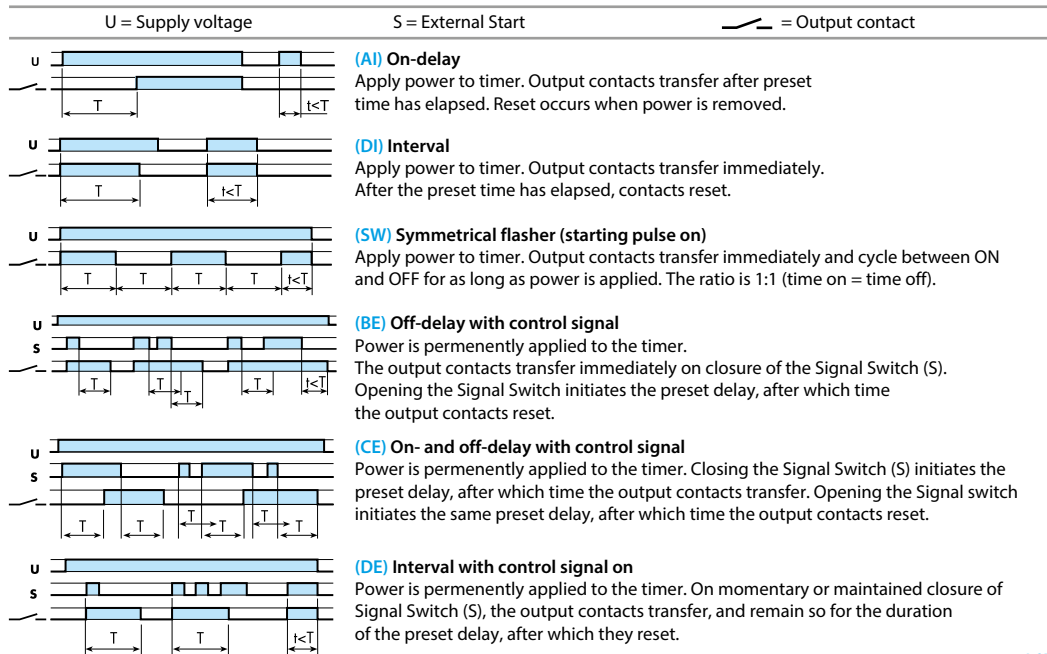
Timing function initiated by the
application of the supply voltage



Timing function initiated by start
signal to terminal B1



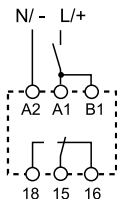
Functions





Type 80.91
Asymmetrical recycling timer -
ON start

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount



Functions

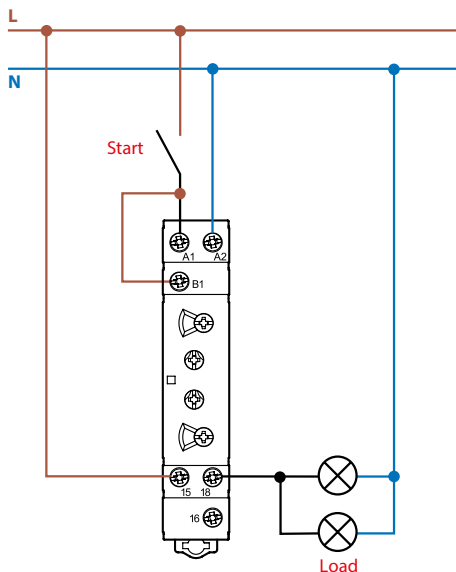
U = Supply voltage  = Output contact



(LI) Asymmetrical flasher (starting pulse on)

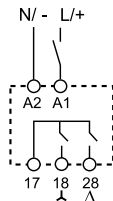
Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ON (T1) and OFF (T2) times are independently adjustable.

Timing function initiated by
the application of supply voltage

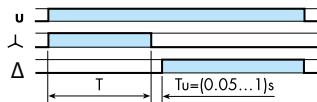


**Type 80.82****Star-Delta timer**

- 2 NO, 6 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount

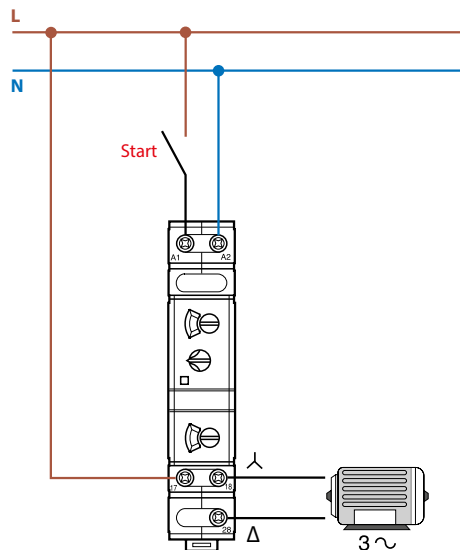
**Functions**

U = Supply voltage  = Output contact

**(SD) Star-delta**

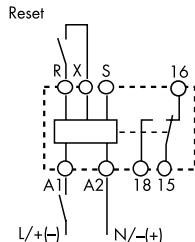
Apply power to timer. The star contact (人) closes immediately. After preset delay has elapsed the star contact (人) resets. After a further transfer time variable from (0.05...1)s the delta contact (Δ) closes and remains in that position, until reset on power off.

Timing function initiated by the application of supply voltage

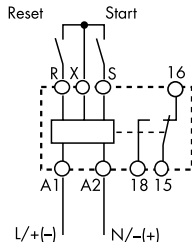


**Type 81.01****Multi-function and multi-voltage timer**

- 1 CO, 16 A 250 V AC
- Supply voltage: AC or DC
- 35 mm rail (EN 60715) mount







































Wiring diagram
(Supply START)

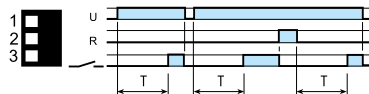


Wiring diagram
(Signal START)

Time range setting

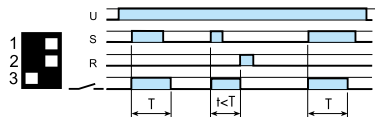
	(0.1...1)s	(1...10)s	(10...60)s	(1...10)min	(10...60)min	(1...10)h
1						
2						
3						
4						
5						
6						

NOTE: time range and function must be set before energising the timer.

RESET function (R)

Supply START; ON delay function

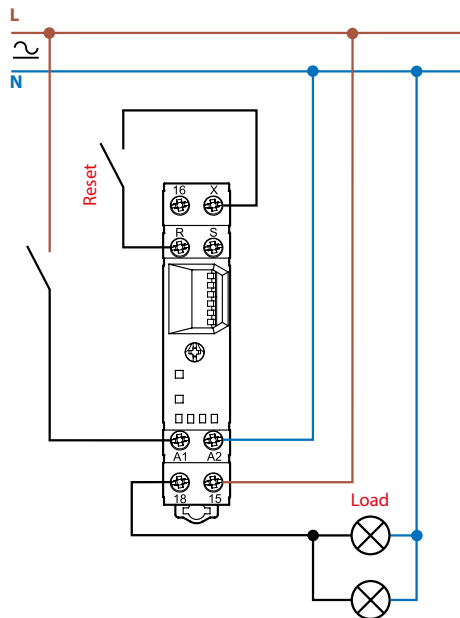
Closing the external reset switch immediately resets the timer. Opening the reset switch re-initiates the timing function.



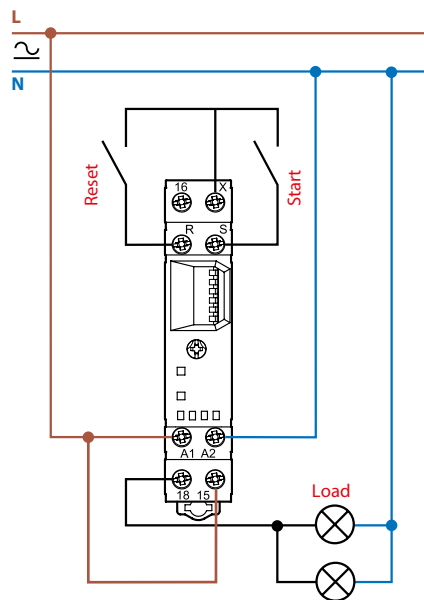
Signal START; ON pulse function.

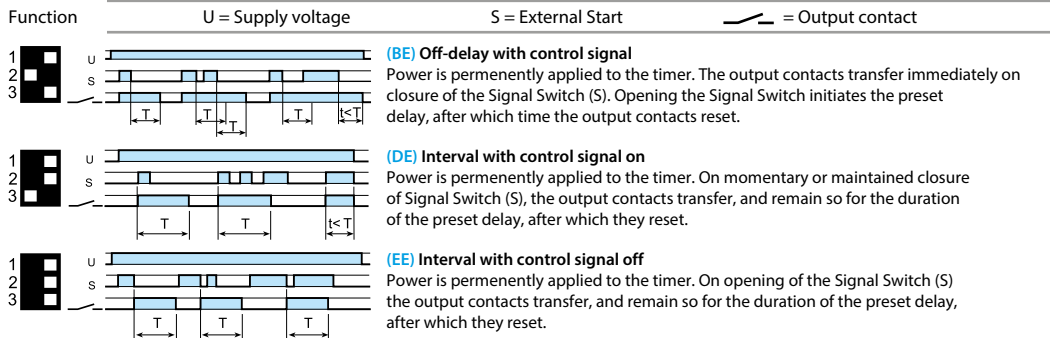
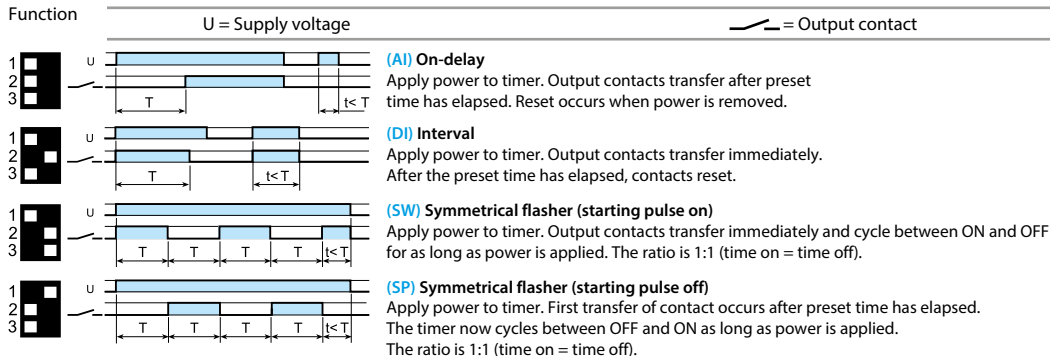
Closing the external reset switch terminates the interval time and resets the timer. To re-start, it is necessary to open the reset switch, before closing the signal START contact.

Application of the supply voltage initiates timing



Remote Start contact initiates timing







Digital Timer “Two in one”: two totally independent programmable channels, in a single product
2 CO 16 A

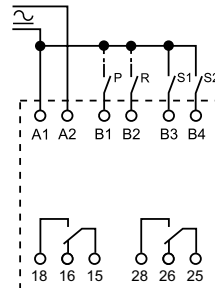
Type 84.02.0.230.0000

- Nominal voltage: 110...240 V AC/DC non-polarized)

Type 84.02.0.024.0000

- Nominal voltage: 12...24 V AC/DC non-polarized)

Programmable from a smartphone using
NFC (Near Field Communication) connectivity.

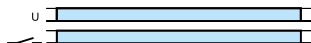


Function

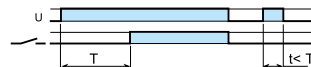
U = Supply voltage

 = Output contact
**(OFF) Relay OFF**

The output contact stays permanently open.

**(ON) Relay ON**

The output contact stays permanently closed.

**(AI) On-delay**

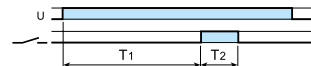
Apply power to timer. Output contact transfers after preset time has elapsed.

Reset occurs when power is removed.

**(DI) Interval**

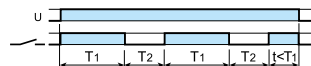
Apply power to timer. Output contact transfers immediately.

After the preset time has elapsed, contact resets

**(GI) Pulse delayed**

Apply power to timer. Output contact transfers after time T1 has elapsed.

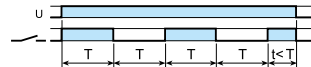
Reset occurs after T2 time.

**(LI) Asymmetrical flasher (starting pulse on)**

Apply power to timer. Output contact transfers immediately and cycle between ON and OFF for as long as power is applied. The ON and OFF times are independently adjustable.

**(PI) Asymmetrical flasher (starting pulse off)**

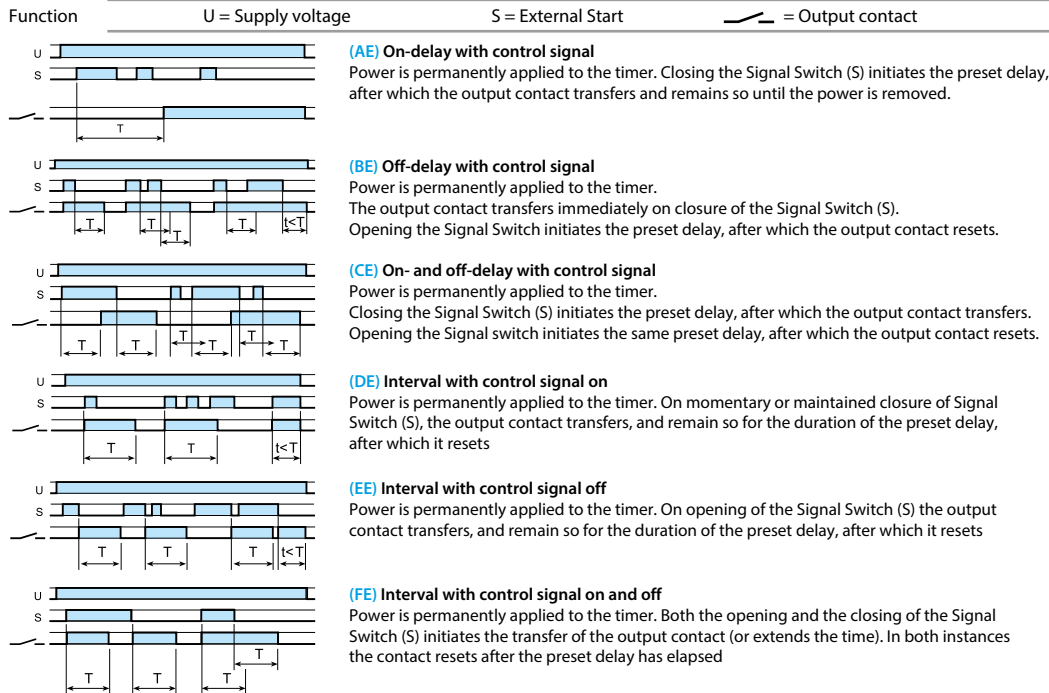
Apply power to timer. Output contact transfers after time T1 has elapsed and cycle between OFF and ON for as long as power is applied. The ON and OFF times are independently adjustable.

**(SW) Symmetrical flasher (starting pulse on)**

Apply power to timer. Output contact transfers immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

**(SP) Symmetrical flasher (starting pulse off)**

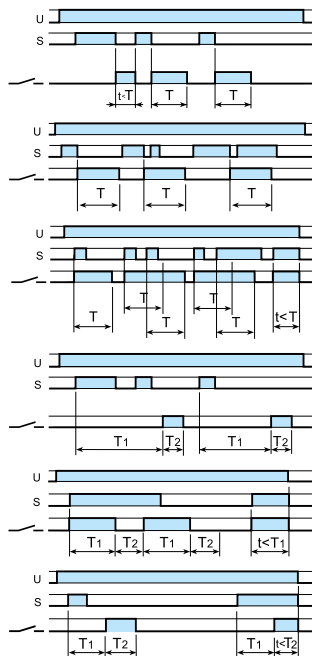
Apply power to timer. First transfer of contact occurs after preset time has elapsed. The timer now cycles between OFF and ON as long as power is applied. The ratio is 1:1 (time on = time off).



Function

U = Supply voltage

S = External Start

 = Output contact
**(EEa) Interval with control signal off (retriggerable)**

Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contact transfers, and remain so for the duration of the preset delay, after which it resets.

(EEb) Interval with control signal off

Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contact transfers, and remain so for the duration of the preset delay, after which it resets.

(WD) Watchdog (retriggerable interval with control signal on)

Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contact transfers, and remain so for the duration of the preset delay, after which it resets; subsequent closures of Signal Switch during the delay will extend the time. If the closure of the Signal Switch (S) is longer than the preset time (T) then the output contact resets.

(GE) Pulse delayed with control signal on

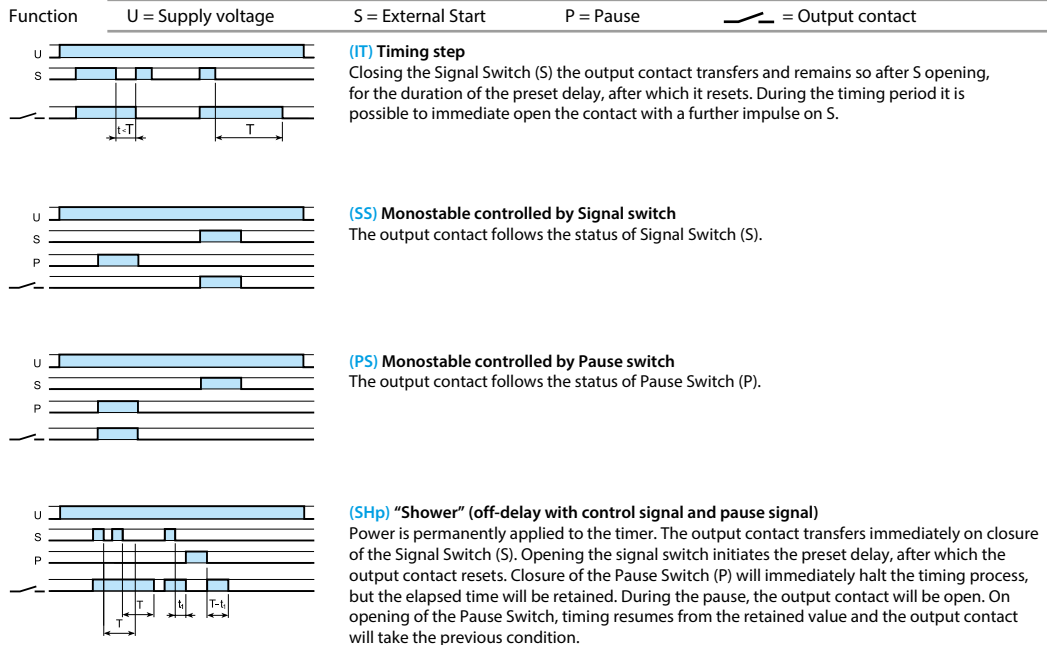
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates T_1 delay, after which the output contact transfers. Reset occurs after T_2 time.

(LE) Asymmetrical flasher (starting pulse on) with control signal

Power is permanently applied to the timer. Closing Signal Switch (S) causes the output contact to transfer immediately and cycle between ON and OFF, until opened.

(PE) Asymmetrical flasher (starting pulse off) with control signal

Power is permanently applied to the timer. Closing the Signal Switch (S) initiates delay T_1 after which the output contact transfers and continues to cycle between OFF and ON, until the Signal Switch is opened





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Rev. March 2017 - The Electricians' Guide - On-line updates

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