

Light dependent relays 12 - 16 A



Garden and
night lighting



Shop displays



Lighting for
parks



Streetlights
and car park
lighting



10
SERIES

Relays for automatic control of lighting according to the ambient light level

Integral light sensor

For pole or wall mounting

10.32 - 2 NO 16 A output contacts

10.41 - 1 NO 16 A output contact

- Double pole Live and Neutral switching possible with the 10.32
- Sensitivity adjustment from 1 to 80 lux
- Cadmium free contact material
- Cadmium free light sensor (IC photo diode)
- Electronic circuit - transformer isolated
- Italian Patent "light feedback compensation" innovative principle
Compatible with slow starting gas discharge lamps (up to 10 minutes)
- For the first 3 working cycles the delay time (On and Off) is reduced to zero in order to aid installation
- Available for supply 230 and 120 V AC (50/60 Hz)



- Double pole switching - 2 NO 16 A for Live and Neutral switching



- Single pole switching - 1 NO 16 A for Live switching

For outline drawing see page 8

Contact specification

| Contact configuration | | 2 NO (DPST-NO) | | 1 NO (SPST-NO) | |
|--|-----------|----------------------|-------|----------------------|-------|
| Rated current/Maximum peak current | A | 16/30 (120 A - 5 ms) | | 16/30 (120 A - 5 ms) | |
| Rated voltage/Maximum switching voltage | V AC | 120/— | 230/— | 120/— | 230/— |
| Rated load AC1 | VA | 1900 | 3700 | 1900 | 3700 |
| Rated load AC15 | VA | 400 | 750 | 400 | 750 |
| Rated current AC5a | A | — | 5 | — | 5 |
| Nominal lamp rating: | | | | | |
| 230 V incandescent/halogen W | | — | 2300 | — | 2000 |
| fluorescent tubes with electronic ballast W | | 600 | 1200 | 500 | 1000 |
| fluorescent tubes with electromagnetic ballast W | | 450 | 850 | 400 | 750 |
| CFL W | | 250 | 500 | 200 | 400 |
| 230 V LED W | | — | 500 | — | 400 |
| LV halogen or LED with electronic ballast W | | 250 | 500 | 200 | 400 |
| LV halogen or LED with electromagnetic ballast W | | 500 | 1000 | 400 | 800 |
| Minimum switching load | mW (V/mA) | 1000 (10/10) | | 1000 (10/10) | |
| Standard contact material | | AgSnO ₂ | | AgSnO ₂ | |

Supply specification

| | | | | | |
|-----------------------------------|-----------------|---------------------------|-----|---------------------------|-----|
| Nominal voltage (U _N) | V AC (50/60 Hz) | 120 | 230 | 120 | 230 |
| | V DC | — | | — | |
| Rated power AC/DC | VA (50 Hz)/W | 2/— | | 2/— | |
| Operating range | AC (50 Hz) | (0.8...1.1)U _N | | (0.8...1.1)U _N | |
| | DC | — | | — | |

Technical data

| | | | | | |
|--------------------------------------|--------|-----------------------|--|-----------------------|--|
| Electrical life at rated load in AC1 | cycles | 100 · 10 ³ | | 100 · 10 ³ | |
| Threshold setting | lx | 1...80 | | 1...80 | |
| Preset threshold | lx | 10 | | 10 | |
| Delay time: switching ON/OFF | s | 15/30 | | 15/30 | |
| Ambient temperature range | °C | -30...+70 | | -30...+70 | |
| Protection category | | IP 54 | | IP 54 | |

Approvals (according to type)



Relays for automatic control of lighting according to the ambient light level
Integral light sensor
For pole or wall mounting
10.42 - Two independent 16 A outputs with individual lux setting
10.51 - Miniature single 12 A 1 NO output
10.61 - Mounting on street light body

- Sensitivity adjustment from 1 to 80 lux
- Fixed sensitivity 10 lux ($\pm 20\%$) - (10.61 type)
- Cadmium free contact material
- Cadmium free light sensor (IC photo diode)
- Electronic circuit - transformer isolated (10.42 type)
- Italian Patent "light feedback compensation" innovative principle (10.51 type)
- For the first 3 working cycles the delay time (On and Off) is reduced to zero in order to aid installation
- Available for supply 230 and 120 V AC (50/60 Hz)
- Prewired with silicone wire, 500 mm length (10.61 type)

10.42


- Two independent outputs - 2 NO 16 A

10.51




- Single pole switching - 1 NO 12 A
- Miniature size

10.61


- Single pole switching - 1 NO 16 A

For outline drawing see page 8

Contact specification

| Contact configuration | | 2 NO (DPST-NO) | | 1 NO (SPST-NO) | | 1 NO (SPST-NO) | |
|--|-----------------|---|-------|---------------------------|-------|---|--|
| Rated current/Maximum peak current | A | 16/30 (120 A - 5 ms) | | 12/25 (80 A - 5 ms) | | 16/30 (120 A - 5 ms) | |
| Rated voltage/Maximum switching voltage | V AC | 120/— | 230/— | 120/— | 230/— | 230/— | |
| Rated load AC1 | VA | 1900 | 3700 | 1400 | 2760 | 3700 | |
| Rated load AC15 | VA | 400 | 750 | 300 | 600 | 750 | |
| Rated current AC5a | A | — | 5 | — | — | 5 | |
| Nominal lamp rating: | | | | | | | |
| 230 V incandescent/halogen W | | — | 2000 | — | 1200 | 2000 | |
| fluorescent tubes with electronic ballast W | | 500 | 1000 | 300 | 600 | 1000 | |
| fluorescent tubes with electromagnetic ballast W | | 400 | 750 | 200 | 400 | 750 | |
| CFL W | | 200 | 400 | 200 | 350 | 400 | |
| 230 V LED W | | — | 400 | — | 350 | 400 | |
| LV halogen or LED with electronic ballast W | | 200 | 400 | 200 | 350 | 400 | |
| LV halogen or LED with electromagnetic ballast W | | 400 | 800 | 300 | 600 | 800 | |
| Minimum switching load | mW (V/mA) | 1000 (10/10) | | 1000 (10/10) | | 1000 (10/10) | |
| Standard contact material | | AgSnO ₂ | | AgSnO ₂ | | AgSnO ₂ | |
| Supply specification | | | | | | | |
| Nominal voltage (U _N) | V AC (50/60 Hz) | 120 | 230 | 120 | 230 | 230 | |
| | V DC | — | | — | | — | |
| Rated power AC/DC | VA (50 Hz)/W | 2/— | | 1.5/— | | 2.5/— | |
| Operating range | AC (50 Hz) | (0.8...1.1)U _N | | (0.8...1.1)U _N | | (0.8...1.1)U _N | |
| | DC | — | | — | | — | |
| Technical data | | | | | | | |
| Electrical life at rated load in AC1 | cycles | 100 · 10 ³ | | 100 · 10 ³ | | 100 · 10 ³ | |
| Threshold setting | lx | 1...80 | | 1...80 | | 10 | |
| Preset threshold | lx | 10 | | 10 | | 10 | |
| Delay time: switching ON/OFF | s | 15/30 | | 15/30 | | 15/30 | |
| Ambient temperature range | °C | -30...+70 | | -30...+70 | | -30...+70 | |
| Protection category | | IP 54 | | IP 54 | | IP 54 | |
| Approvals (according to type) | |  | | | |  | |

Ordering information

Example: 10 series light dependent relay, 2 NO (DPST-NO) 16 A contact, screw terminal connections, 230 V AC supply.



Series _____
Type _____
 32 = Double output - 2 NO 16 A
 41 = Single output - 1 NO 16 A
 42 = Two independent outputs - 2 NO 16 A
 51 = Single output - 1 NO 12 A
 61 = Mounting on street light body - 1 NO 16 A

Supply voltage
 120 = 120 V
 230 = 230 V
Supply version
 8 = AC (50/60 Hz)

Technical data

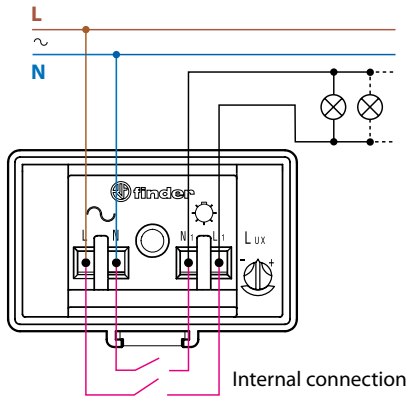
| Insulation | 10.32 / 41 / 42 | | 10.51 | | 10.61 | |
|---|-----------------|-----------------|-----------------|-----------------|------------------------------|--------------------|
| Dielectric strength between open contacts V AC | 1000 | | 1000 | | 1000 | |
| Conducted disturbance immunity | | | | | | |
| Surge (1.2/50 µs) on L and N (differential mode) kV | 4 | | 4 | | 6 | |
| Other data | | | | | | |
| Cable grip | Ø mm | (8.9...12) | | (7.5...9) | | — |
| Screw torque | Nm | 0.8 | | 0.8 | | — |
| Max. wire size | | solid cable | stranded cable | solid cable | stranded cable | — |
| | mm ² | 1 x 6 / 2 x 4 | 1 x 6 / 2 x 2.5 | 1 x 6 / 2 x 4 | 1 x 4 / 2 x 2.5 | — |
| | AWG | 1 x 10 / 2 x 12 | 1 x 10 / 2 x 14 | 1 x 10 / 2 x 12 | 1 x 12 / 2 x 14 | — |
| Output wires | | | | | | |
| Material | — | | — | | Silicone rubber UV resistant | |
| Size | mm ² | — | | — | | 1.5 |
| Length | mm | — | | — | | 500, ends-ferruled |
| Rated insulation voltage | kV | — | | — | | 0.6/1 |
| Max temperature | °C | — | | — | | 120 |

Functions

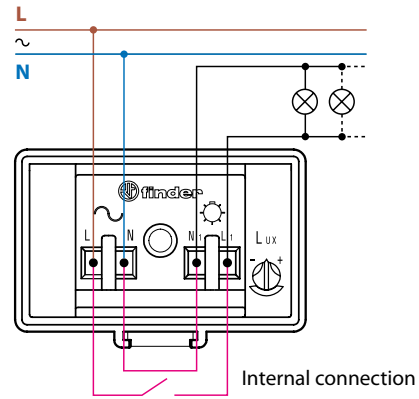
| LED* | 10.32 / 10.41 / 10.42 | | 10.51 | |
|------|-----------------------|------------------------------|----------------|------------------------------|
| | Supply voltage | NO output contact | Supply voltage | NO output contact |
| | OFF | Open | OFF or ON | Open |
| | ON | Open | ON | Closed |
| | ON | Open (Timing in Progress) | ON | Open (Timing in Progress) |
| | ON | Closed | — | — |

* The LED is located under the terminal cover, close to the Lux adjustment knob. It indicates the contact status and assists in the test and setting of the correct light threshold level.

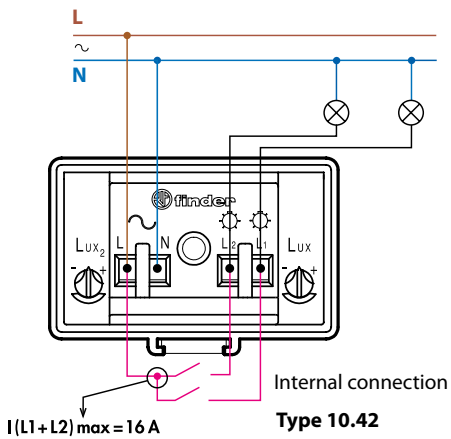
Wiring diagrams



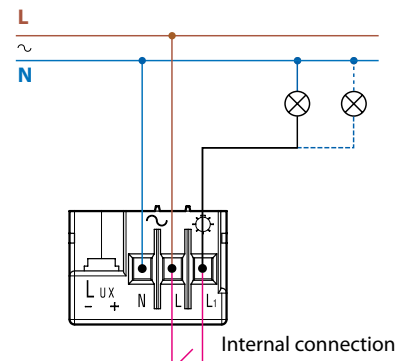
Type 10.32



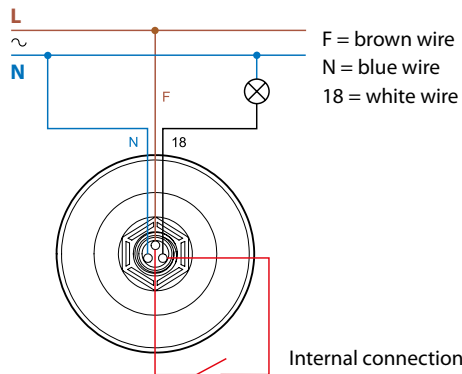
Type 10.41



Type 10.42



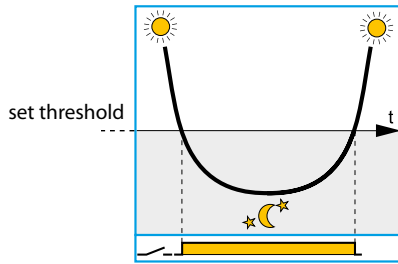
Type 10.51



Type 10.61

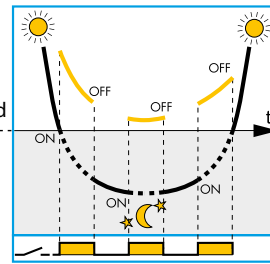
Advantage of the "light feedback compensation" principle

Light dependent relay where the lighting being controlled does not influence the light level seen by the light sensor



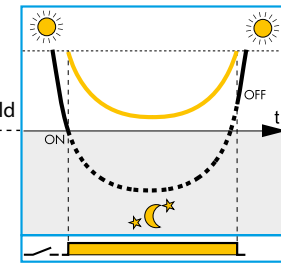
Correct functioning - provided the sensor can be shielded from the effects of the controlled lighting switching On and Off

Traditional light dependent relay where the lighting being controlled influences the light level seen by the light sensor



Incorrect functioning where the lamps cycle between On and Off, because their effect is being detected by the light sensor

Type 10.32, 10.41 and 10.51 light dependent relay with "light feedback compensation"



The innovative principle of "light feedback compensation" avoids the annoying and damaging effects of the lamps repeatedly "hunting" between On and Off, due to poor installation

recalculated OFF threshold

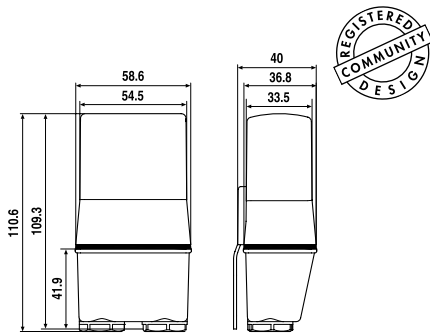
Ambient light level as measured by the light dependent relay's integral light sensor.
 Ambient light + controlled light level as measured by the light dependent relay's integral light sensor.

Notes

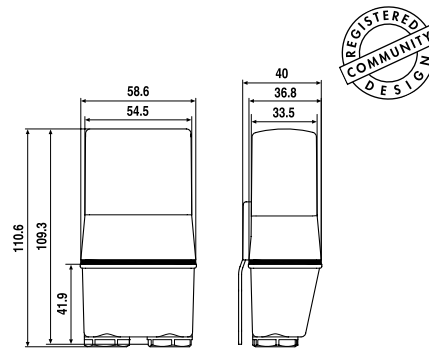
1. It is good practice to try to achieve a correct installation where the light emitted from the lamp(s) does not influence the light level seen by the sensor, although the "light feedback compensation" principle will help when this is not fully achievable. In this case it should be appreciated that 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.

Outline drawings

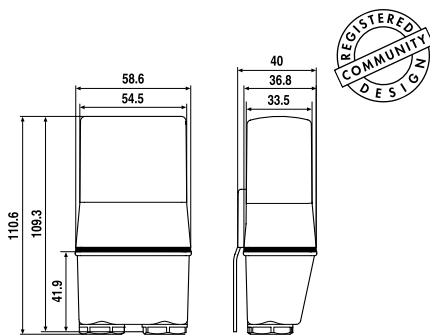
Type 10.32



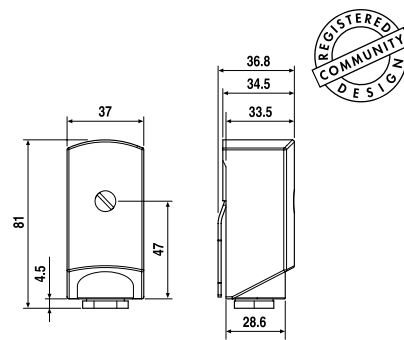
Type 10.41



Type 10.42



Type 10.51



Type 10.61

