F&F Filipowski L.P.
Konstantynowska 79/81, 95-200 Pabianice, POLAND
phone/fax (+48 42) 215 23 83 / (+48 42) 227 09 71
www.fif.com.pl; e-mail: biuro@fif.com.pl

DRL-12

Laser
distance sensor

5 902431 672960

Do not dispose of this device in the trash along with other waste!
According to the Law on Waste, electro coming from households free of charge and can give any amount to up to that end point of collection, as well as to store the occasion of the purchase of new equipment (in accordance with the principle of old-for-new, regardless of brand). Electro thrown in the trash or abandoned in nature, pose a threat to the environment and human health.

Purpose

The DRL-12 is a laser sensor designed to control lighting, especially in corridors and staircases. The principle of operation is to emit a light beam and measure the delay of returning light as a result of reflection from an obstacle. On this basis, it is possible to precisely determine the distance to the obstacle, which is then compared with the set detection range. If something appears at a distance of less than the set value, the light will be switched on. This solution is perfect for switching on lighting circuits for example on open stairs, where it is important that the sensor detects presence only on the stairs and ignores everything that happens outside.

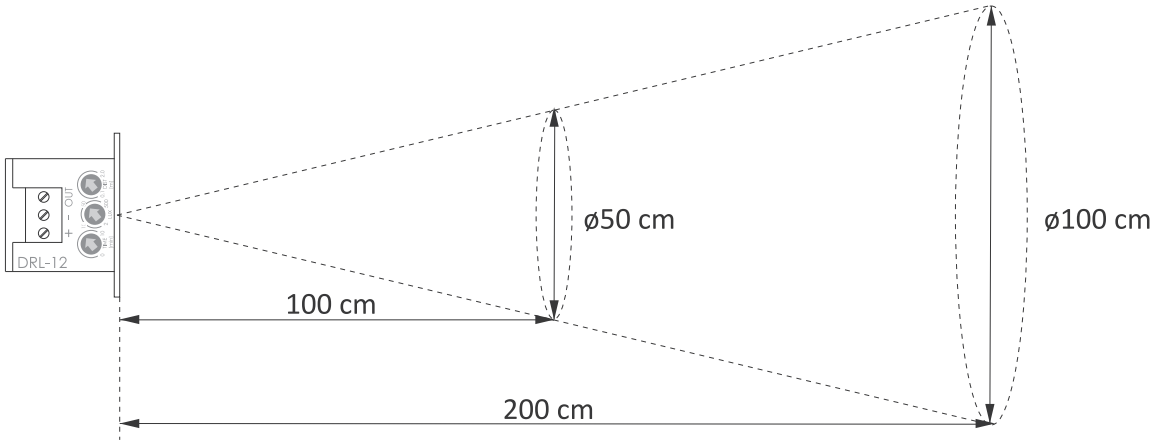
Features

» Laser distance sensor of the ToF (Time of Flight) type;
» The detection range can be smoothly adjusted in the range of 0.1 to 2 m;
» A brightness sensor that prevents the light from being switched on when the brightness level is high;
» Adjustable time of keeping the light on;
» Ability to directly control the 12/24 V lighting circuits (load capacity up to 4 A, which can be increased by connecting LED-AMP amplifiers);
» Soft start and soft shutdown feature available for controlled lighting circuits*;
» Ability to trigger AS-225 cascade controllers;
» Compact size, can be mounted in a ø35 mm box supplied with the sensor;
» LED indicating the operating status of the sensor;
» Thermal protection against exceeding the acceptable temperature inside the housing.

**) Soft start and soft shutdown of the lighting works when the support time is set to a value greater than zero and when dimmable light sources are connected to the sensor.*

Mounting

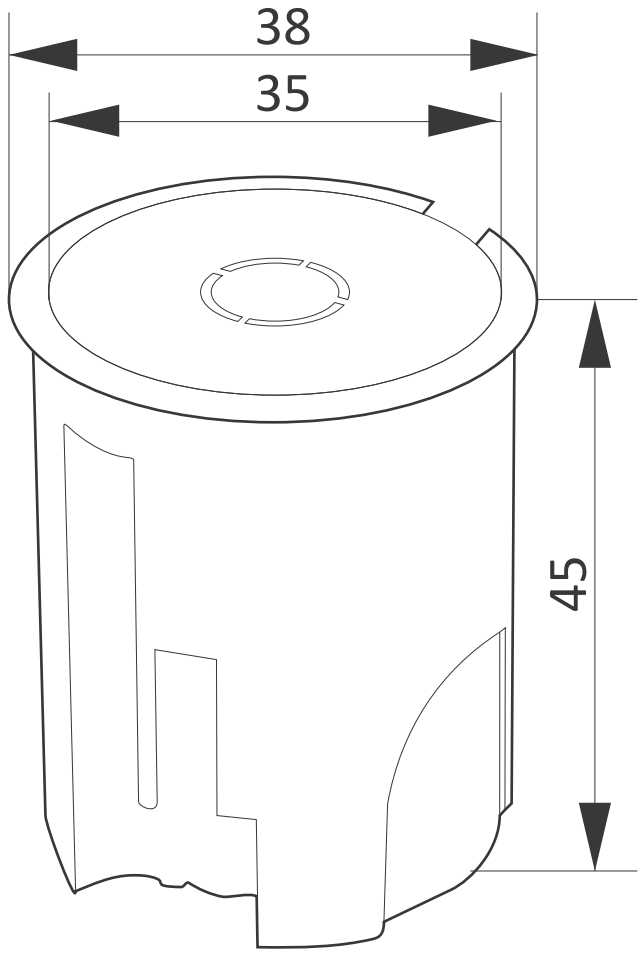
1. The location of the mounting of the sensor should be selected in such a way that no fixed obstacles such as floor, wall, staircase step, etc. can be found in the detection cone of the sensor at the assumed operating distance. The diameter of the detection cone, depending on the set operating distance, can be read from the following figure:



2. Do not mount the sensor with the front-facing a strong light source, as this may lead to incorrect operation of the distance and light intensity measurement system.
3. Do not mount sensors opposite each other or mirrors, as this can lead to unwanted sensor excitation.
4. To mount the sensor, it is necessary to make a hole with a diameter and depth that allow mounting the box delivered with the sensor (see picture below).

When mounting the box in the wall, keep the orientation of the box according to the markings located on the box cap.

Legend:
GÓRA – UP
POZIOM – LEVEL



5. Connect the power and control cables to the sensor according to the chosen wiring diagram.

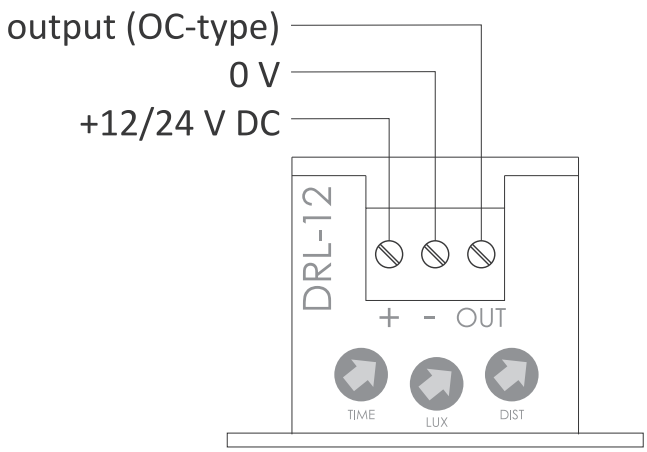
Due to the small size of the box, it is recommended to use cable type wires with the least cross-sections.

When selecting the cable cross-section in low-voltage installations, it is necessary to take into account the voltage drop on the cables related to the length and load of the cable.

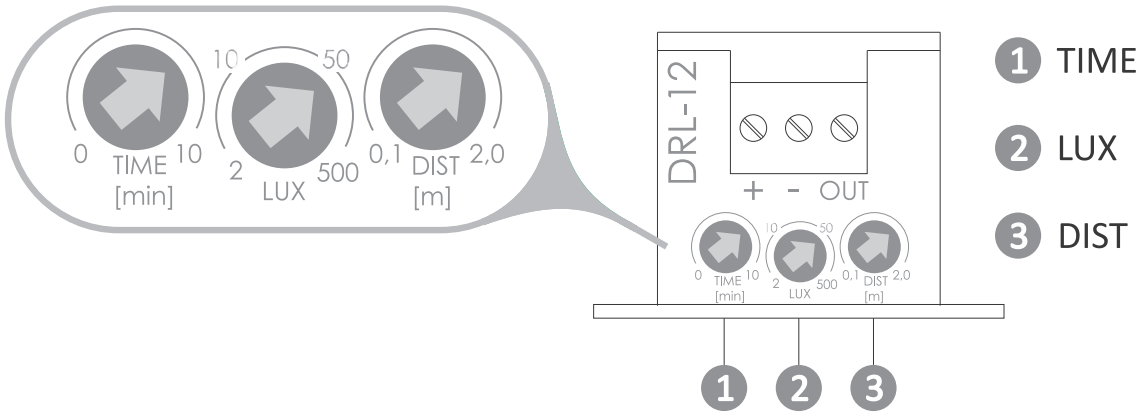
6. Install the sensor in the embedded box.

Description of control terminals

The sensor is designed for the voltage supply of 12/24 V DC. Connecting the 230 V mains voltage will destroy the device.



Settings (description of the knobs)

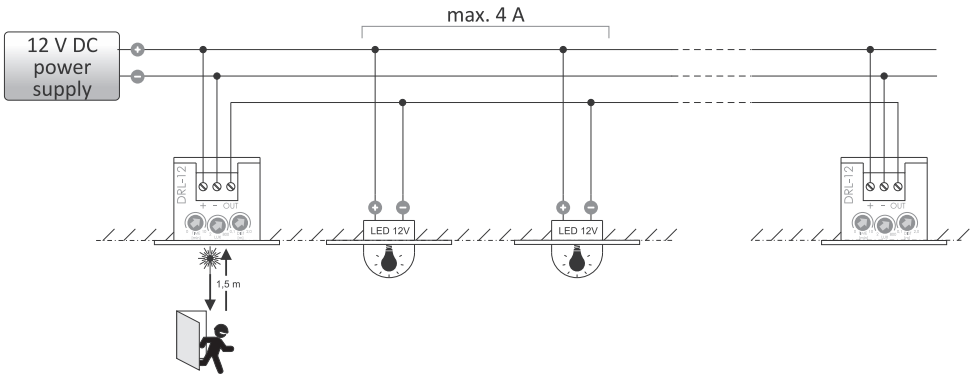


Knob	Range	Function
TIME	0÷10 min.	Lighting support time. The light will switch on when presence is detected in the detection area, the countdown time will start when there is no more obstacle in the detection area.
LUX	2÷500 lx	Brightness level setting. If the light intensity is lower than the value set by the knob, the light will switch on when the presence is detected in the detection area.
DIST	0.1÷2.0 m	Setting the sensor detection range. If an obstacle appears at a distance shorter than that set by the knob, the lighting will be switched on (if the illumination condition is also met).

When working with AS-225 controllers, set the **TIME** knob to a minimum value (0 min.).

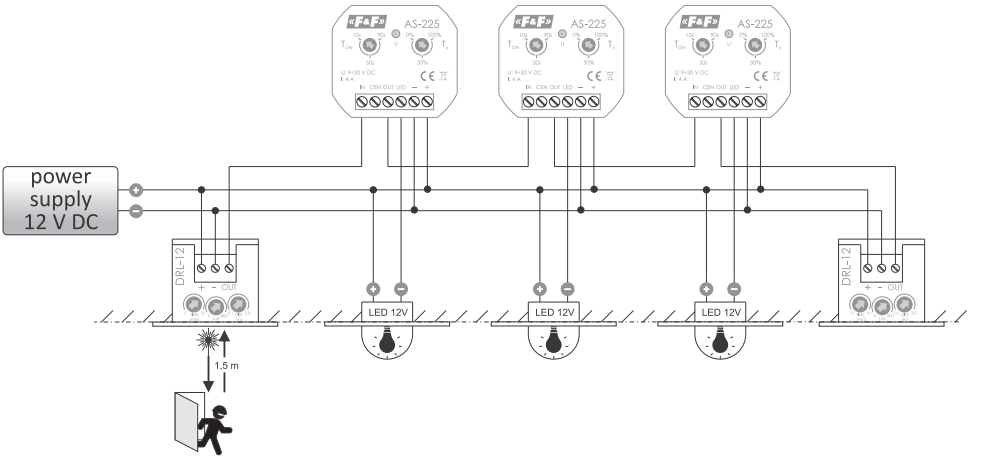
Connection diagram

Direct connection of staircase lighting



If it is necessary to control a load greater than 4 A, the LED-AMP-1P signal amplifiers (mounting in an installation box ø60) or LED-AMP-1D (mounting on a DIN rail) should be used. An example connection diagram can be found on the product sub-page at www.fif.com.pl

Connection of the AS-225 cascade controllers



Signalization

The DRL-12 sensor is equipped with an LED on the front of the device, which indicates the operating status of the device:

Sensor on standby, no obstacles in the detection area. The standby indication is active for the first minute after the unit is powered up.

An obstacle in the detection area has been detected. The light was not switched on because the brightness level was too high.

An obstacle in the detection area has been detected. The light is on.

Signalling that the acceptable temperature inside the sensor is exceeded. Sensor operation is blocked until the fault has been removed.

Too high temperature can be caused by connecting a too high load to the sensor.

The brightness level of the signal LED adjusts to the ambient brightness (high ambient brightness – high LED brightness level).

Technical data

power supply	9÷27 V DC
maximum load current (AC-1)	4 A
detection range (adjustable)	0.1÷2.0 m
brightness level (adjustable)	2÷500 lx
switch-on time (adjustable)	0÷10 min.
detection	
sensor	ToF laser sensor
wave length	940 nm
security	1st class
beam scattering	±18°
power consumption	0.3 W
terminal	2.5 mm² screw terminals
tightening torque	0.4 Nm
working temperature	-10÷45°C
dimensions	
external	45×45×1.5 mm
internal (box)	ø35 mm, depth= 45 mm
mounting	flush-mounted
protection level	IP40

Warranty

The F&F products are covered by a warranty of the 24 months from the date of purchase. Effective only with proof of purchase. Contact your dealer or directly with us.

CE declaration

F&F Filipowski L.P. declares that the device is in conformity with the essential requirements of The Low Voltage Directive (LVD) 2014/35/EU and the Electromagnetic Compatibility (EMC) Directive 2014/30/UE.
The CE Declaration of Conformity, along with the references to the standards in relation to which conformity is declared, can be found at www.fif.com.pl on the product page.


«F&F»