

Twilight switch MROK-16M

Description

The MROK-16M twilight switch is designed for automatic lighting control – most commonly switching on at dusk and off at dawn. **It is equipped with a high-quality photodiode with the characteristics of the human eye** (Hamamatsu, Japan). This ensures exceptional precision in variable lighting conditions. The device is suitable for controlling lighting in streets, advertisements, shop windows, and other outdoor objects. The hermetic housing (IP65) is made of self-extinguishing material, ensuring resistance to weather conditions. The activation threshold is adjustable from approximately 2 to 50 lux, and the response delay is 10-20 seconds, eliminating the impact of short-duration light pulses. The maximum load current is 16 A 250 V AC AC-1 (2.5 A 250 V AC AC-15).



Principle of operation

The device monitors light intensity and turns the lighting circuit on when it drops below the set threshold (dusk) and off when it rises (dawn). The threshold is adjusted using a knob located under the cap – during adjustment, a red LED illuminates the potentiometer, making it easier to set the correct point. Changing the on threshold causes a proportional shift in the off threshold, ensuring stable hysteresis. A response delay (10–20 seconds) prevents accidental switching due to brief changes in lighting. After completing the adjustment, the cap must be replaced to ensure the enclosure is sealed.

Load selection

- 1 category covers resistive loads, meaning those that do not generate significant inrush currents or have inductive properties. The situation is different for LED sources – each LED system contains a power supply, which can be built into the light source (e.g., an E27 LED bulb) or externally. When the power supply is turned on, the input capacitors charge, resulting in a very high, short-term surge current. In extreme cases, this current can reach values tens or even hundreds of times greater than the rated current – a phenomenon most often encountered in simple, inexpensive LED power supplies such as "cheap drivers." For example, a single 20W LED luminaire can experience a surge of 40–70 A lasting 1–2 ms, which, despite the luminaire's seemingly low power output, can fuse relay contacts.

Why don't we provide a table for selecting LED load for Pollin products?

The load generated by an LED depends on the internal design of the power supply and cannot be precisely estimated without detailed data from the power supply manufacturer. Commercially available designs vary significantly, making it impossible to determine a clear value, allowing only estimates with a greater or lesser margin of error. Therefore, special care must be taken when selecting contactors and relays for LED loads.

Suggestion for the installer

Use a reduction factor – **connect 5 to 10 times fewer luminaires to the contact than their rated power, and in the case of cheap LED sources even 15 to 30 times less** .

In larger installations, choose contactors or relays with a higher load capacity, preferably with a "zero-crossing" function, which can significantly reduce the effects of surge currents.

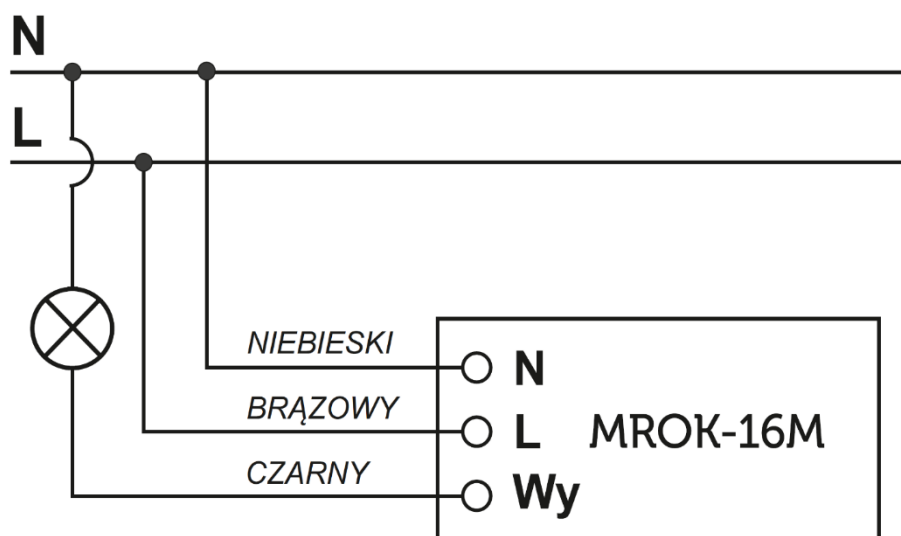
Technical data

Parameter name	Value
Rated supply voltage	230V AC
Operating temperature range	-25 to 50 °C
Max power consumption	3.7 VA
Number of relay outputs	1
Contact arrangement	Voltage output
Maximum load current AC-1	16A / 250V AC
Maximum load current AC-15	2.5A / 250V AC
Maximum LED load power	120 W
Trigger threshold	Adjustable approx. 2 to 50 Lux
Hysteresis	10 to 20 Lux
Delay in operation	10 to 20 seconds

Parameter name	Value
Case	Hermetic, made of self-extinguishing material, gray color
Degree of protection	IP65
Installation	Attachment to the ground (brackets)
Light sensor (photoelement)	A photodiode with the characteristics of the human eye
Threshold signaling	Red LED working instantly
Housing dimensions	59 x 50 x 23 mm
Single-wire conductor	-
Multi-stranded conductor (stranded wire) without ferrule	-
Stranded wire with square crimp sleeve	-
Tighten to maximum torque	-
Connection	0.5 m long connection cable

Full technical specifications are available on the website www.pollin.pl/do-pobrania or by scanning the QR code provided in the warranty and guarantee section.

Connection diagram



Installation

The MROK-16M twilight switch must be installed in accordance with applicable standards and regulations for electrical installations. The following guidelines are intended to ensure the installer's safety and the proper operation of the device:

1. **Authorizations** - The device may only be installed by a person with appropriate qualifications and authorizations to work on electrical installations.
2. **Disconnecting the power supply** - Before starting any work, it is essential to disconnect the power supply at the distribution board and make sure that the circuit is voltage-free (e.g. using a voltage indicator).
3. **Personal Protection** - The installer should use personal protective equipment such as electrically insulating gloves and safety glasses.
4. **Mechanical installation** - The device should be mounted on a flat surface. The MROK-16M twilight switch should be mounted vertically, with the cable facing down, and secured to the surface with two screws in a location that is not illuminated by the light source being switched or other lighting (except when the user wishes to detect artificial lighting).
5. **Connecting Wires** - Connections should be made according to the wiring diagram provided by the manufacturer. Ensure that terminals are tightened with the correct torque and that wires of the appropriate cross-section are used. Only one wire may be inserted into each terminal – regardless of whether it is solid or stranded with a crimped ferrule.
6. **Checking the connections** - After completing the installation, carefully check the correctness of all connections, make sure that the terminals are securely tightened and that there are no exposed wires that could cause a short circuit or a shock hazard.
7. **Restoring Power** - After completing the installation and inspection, turn on the power and check the operation of the device according to the instructions.
8. **Testing** - After assembly, verify the device's proper operation. To verify its operation, cover the entire device tightly, for example, with a cardboard box or a dark, thick cloth. Covering only the probe's "eye," for example, with a finger, is insufficient, as sunlight is very intense and penetrates the photoelement through the plastic housing and human skin.

No Modifications - Any modifications to the device or its components are prohibited. This may result in malfunctions and a safety hazard.

Warranty and guarantee – short information

The **warranty** applies to every purchaser, including consumers. Warranty claims should be directed to the seller from whom the purchase was made.

If a defect is found in the device, the customer has the right to choose: he or she can use the statutory warranty (in accordance with the provisions of the Civil Code) or the manufacturer's warranty.



Pollin Guarantee



Pollin devices are covered by a 10-year manufacturer's warranty – Zakład Elektroniczny POLLIN Wojciech Polak. The warranty applies only to devices purchased by businesses and covers material and manufacturing defects.

Warranty claims should be submitted by e-mail to: pollin@pollin.pl, in accordance with the procedure described in the full version of the document.

The warranty does not cover, among other things, mechanical damage, unauthorized modifications, installation by unqualified persons and natural wear and tear of consumables.

The full text of the warranty terms is available at: <https://pollin.pl/do-pobrania> or via the attached QR code.

Markings



This symbol on a device indicates that the used equipment should not be disposed of with other household waste. Used equipment should be taken to one of the designated electronic waste collection points or returned to the store when purchasing new equipment. Improper disposal of electronic waste poses a threat to the environment and human health.



The CE marking confirms that the product meets the essential requirements of all applicable European Union directives and regulations.



This marking indicates that installation, connection and all servicing of the device may only be performed by qualified personnel with electrical qualifications.

Technical support – the fastest help from Pollin experts

If you have any questions regarding the operation, configuration or installation of the device, **please contact us by email – this is the fastest way to obtain technical support**.

Send a message to: support@pollin.pl, describe the problem in detail and leave your contact number and the hours when we can call you.

Our engineers will review your request and make every effort to provide you with professional assistance as quickly as possible.



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