V. Repair and maintenance

All repairs of the TWILIGHT SWITCH TS-31-2-G.4 are performed by the manufacturer. The device does not require any maintenance. When the sensor becomes contaminated, clean it with a clean, damp cloth. The device does not require any additional maintenance.

VI. Warranty Card

The manufacturer guarantees the correct operation of the TS-31-2-G.4 TWILIGHT SWITCH. The warranty period is 36 months from the date of sale. The warranty is extended by the time of repair. Warranty repairs are performed by the manufacturer free of charge after the AUTOMAT is delivered to the manufacturer. Improper use of the device or independent modifications to it will void the warranty.

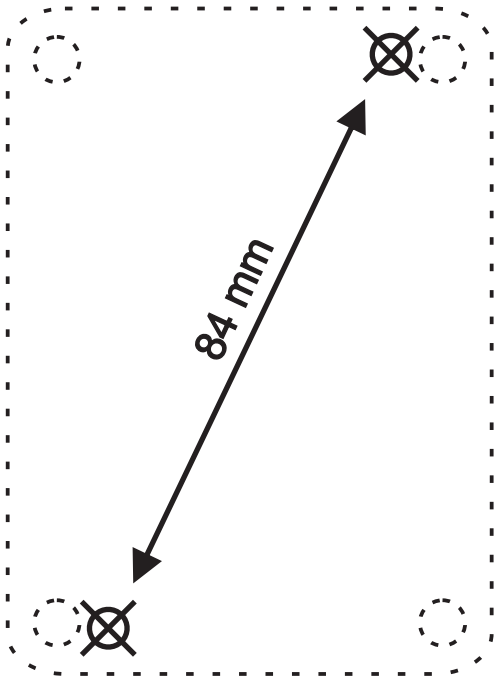

Fig.3.: Template for drilling holes for installing the TS-31-2-G.4 TWILIGHT SWITCH

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The TS-31-2-G.4 TWILIGHT SWITCH meets the requirements of the European Union Directives
- Directive LVD 2014/35/EU - Low Voltage Directive of 26 February 2014
- Directive EMC 2014/30/EU - Eletromagnetic Compatibility Directive of 26 February 2014

In order to protect the environment, do not throw away used electrical appliances and electronics together with municipal waste. Used equipment should be delivered to collection points for recycling free of charge. Any information on this can be obtained at sellers, distributors, manufacturer or on the Internet. The product's packaging is made of ecological materials. The PVC packaging tape will be used while stocks last.

MART

3-YEAR WARRANTY

CE

TWILIGHT SWITCH

type TS-31-2-G.4

User manual

I. Purpose

The TWILIGHT SWITCH TS-31-2-G.4 is designed to automatically turn on the receiver at a certain (set) light intensity and turn it off when the light intensity is twice as high, or vice versa (NO and NC contacts). It is used for receivers switched on and off at high illuminance (100 ..... 100,000lx). Mounting on a vertical surface, outdoors, in the sunlight. Protection degree IP65.

II. Features of TWILIGHT SWITCH TS-31-2-G. 4

>> high switching power 16A (4000 W) 250VAC, 16A (384 W) 24VDC

>> high inrush current (resistance to 100 A surge current)

>> freedom of connections:

> executive relay contacts (one normally open contact - NO, one normally closed contact - NC) galvanically separated, which allows connections in various configurations

>> precise logarithmic regulation:

> 100 ... 1,000 lx - standard, advertising on / off, etc.

> 1,000 ... 10,000 lx - range of switching on / off blinds, roller shutters, etc.

> 10,000 ... 100,000 lx - range of switching on / off of photovoltaic installations (solar), etc.

>> traffic light (LED) with operating status (fig. 2):

> LED-1 - indication of 230V supply voltage on terminals 1,2

> LED-2 - relay switching signalling - terminals 3,4,5 (short circuit 3,4, opening 4,5)

> LED-3 - internal signalling (without delay) of exceeding the set lighting threshold

> LED-4 - external relay switching indication (short circuit 3,4, opening 4,5)

>>. convenient installation:

> two stainless screws, with expansion bolts, for wall mounting (included)

> cover fixed with four stainless screws

> two PG-13.5 glands for cable entry.

A specialized relay is used in the TS-31-2-G.4 TWILIGHT SWITCH G2RL-1-E-HR by OMRON, designed to switch various lighting lamps. The special design enables effective switching of lamps with an inrush current of up to 100 A per pulse.

III. Assembly

The TS-31-2-G.4 TWILIGHT SWITCH can only be connected by a person authorized to operate electrical installations. Remember to choose the right protection.

The housing is adapted for easy and quick fixing to the surface with two screws (stainless screws with expansion plugs are included in the set).

Before installing the TWILIGHT SWITCH, remove the cover by unscrewing the four mounting screws. After removing the cover of TS-31-2-G.4 TWILIGHT SWITCH mounting clamps 1, 2, 3, 4, 5, description of electric wires connection and a knob for setting the activation threshold are available - Fig. 2

To facilitate the assembly, the manual includes a template that facilitates drilling the mounting holes - Fig. 3.

After installing the TS-31-2-G.4 TWILIGHT SWITCH on a vertical wall, do the following:

1.With the power supply disconnected, connect the wires in accordance with the instructions

2.switch on the supply voltage - LED-1 will light up at terminals 1, 2

> to check if it works properly, set the threshold using a screwdriver, and when it remains current illumination level is exceeded, LED-3 lights up (without delay). After about ..... 60s the executive relay will switch over, which will be signalled by LED-2 and LED-4

3. Using the scale, set the desired threshold value with the potentiometer knob, with a screwdriver attached

4.After checking, close the lid carefully with the four fixing screws,

5. check the operation of the TS-31-2-G.4 TWILIGHT SWITCH machine in real conditions and possibly correct the setting.

In order to limit the impact of temporary large changes in lighting e.g., car lamps, lightning, etc. on the operation of the AUTOMATIC, a delay of approx. 60s has been applied.

To check the operation of the TS-31-2-G.4 TWILIGHT SWITCH during the day, after its correct installation in accordance with the instructions, cover the sensor so that LED-3 lights up and wait approx. 60s until the TWILIGHT SWITCH turns on the receiver. When setting low values (100 lux), remember that on a sunny day, covering the sensor with your bare hand may not be sufficient. Then the TWILIGHT SWITCH should be covered more effectively.

The diagram of the TWILIGHT SWITCH operation is shown in Fig. 1.

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NOTE: Avoid installing the TS-31-2-G.4 TWILIGHT SWITCH directly in the light stream of the lamp, because lighting with the TS-31-2-G.4 TWILIGHT SWITCH lamp may interfere with operation - the lamp will turn on and off cyclically from evening until morning.

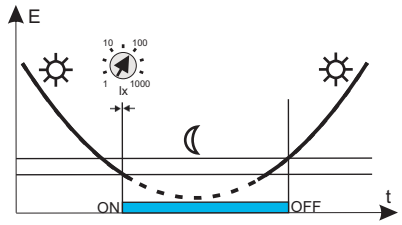

Fig. 1 .: Diagrams of the operation principles of the TS-31-2-G.4 TWILIGHT SWITCH.

IV. Technical data

Rated supply voltage LN	230V AC, + 10%, - 15%
Rated frequency	50Hz
Maximum load current (power):	
> resistive load	16A, AC1 (4 000 W)
> incandescent lamps	10A (2500 W)
> halogen lamps	8A (2000 W)
> fluorescent lamps	8A (2000 W)
> energy-saving lamps and LED	8A (2000 W)
Instantaneous inrush current	100A
Rated power consumption	1,1W
Executive contacts	1 x NO, 1 x NC
Logarithmic control range	100...1 000...10 000...100 000 lx
Hysteresis	$E_{OFF} = 2E_{ON}$
Switch-on and switch-off delay	30s (± 20%)
Mechanical durability	100 000 operations
Protection level	IP 65
Working temperature	-25...+50 °C
Dimensions	87 x 65(90) x 44 mm
Weight	100g
Connecting cable	2 x PG-13,5
Wall plugs (drill Φ 6mm)	6mm x 30 mm
Spacing mounting holes	84 mm
Working position	vertical
Meethod of assembly	surface mounted with two screws

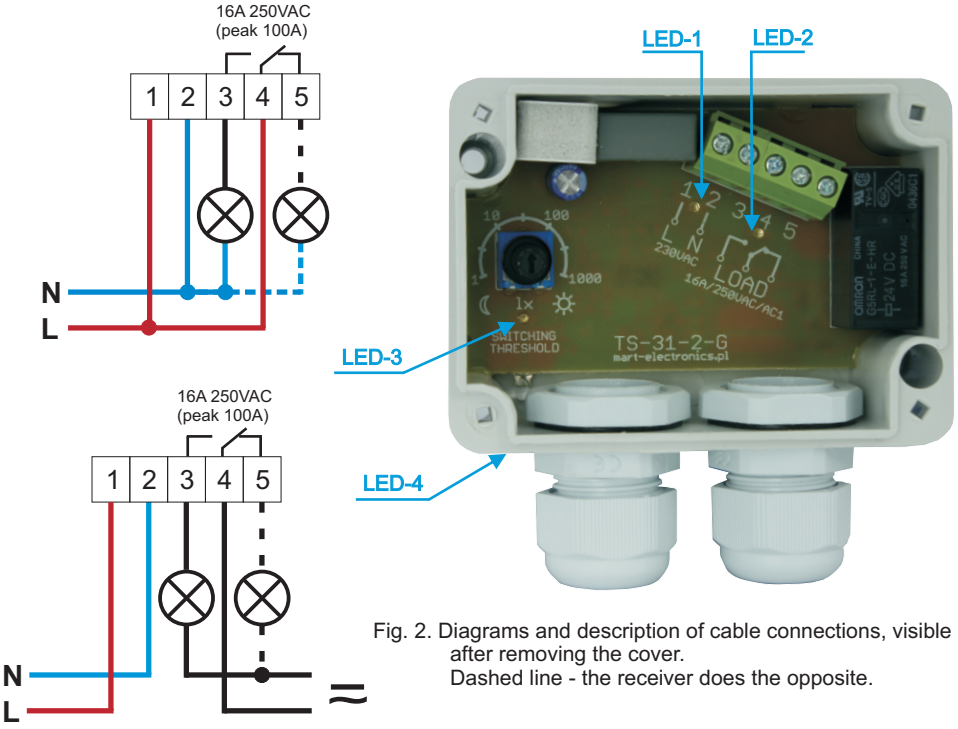

Fig. 2. Diagrams and description of cable connections, visible after removing the cover.
Dashed line - the receiver does the opposite.