12 VDC LIGHT DETECTOR I-4

TECHNICAL CHARACTERISTICS

Voltage... 12 V. D.C.
Minimum Consumption....................................... 5 mA.
Maximum Consumption...................................... 60 mA.
Maximum Load Accepted by the Relay............... 5 A.
Maximum Power Accepted by the Relay............. 1200 W.
Protection Against Polarity Inversion................... Yes.
Size............. .... 65 x 45 x 30 mm.

The I-04 light detector module, thanks to an incorporated detector, will activate the output when it will receive light. It allows to adjust the operating sensitivity.
It includes protection against polarity inversion, operating indicator led, connector to remove the external potentiometer as well as connection terminals.

OPERATING MODE

POWER SUPPLY : The I-4 circuit had to be supplied by a 12 VDC power supply correctly filtered. Do not use suppliers or rectifiers disturbing the module's operating. Then, we recommended you the FE-2 power supply which has been developed to perfectly answer to the circuit needs, or use a 12V battery for mobile applications.
Install a fuse and a switch has it is indicated on the schedule. Both are necessary for the module's protection as well as for your own safety, as it is required by the "CE" regulations.
Once consulted the outputs' power supply, you have to connect the positive and the negative of the power supply to the corresponding terminals indicated in the wiring map. Then, check that the assembly has been correctly done.

OPERATING : Following indications mentioned in the General Wiring Map, install the supplied probe to the Terminal indicated on the wiring map. If the assembly need cable superior than 30 cm, you had to use shielded cable. If the used cable is superior to 30cm, you have to use shielded cable and to connect the braid to the ground terminal. The total length of the wiring can not exceed 150 cm between probe and circuit, otherwise the module's operating mode could be altered.
Once circuit's connections done, you can supply the module. Then, you can see that when the probe receive light, the module activate the output, maintaining this state when it receives light. The Led will indicate you this state.
The I-4 module offers the possibility to adjust its sensitivity regarding the light level for its activation. You can determinate this sensitivity adjusting the potentiometer according to your needs. Placing the cursor to the minimum, the circuit will lose sensitivity and it will require more light to be activated. If you place the cursor to the maximum, the circuit will win sensitivity, requiring less light to be activated.
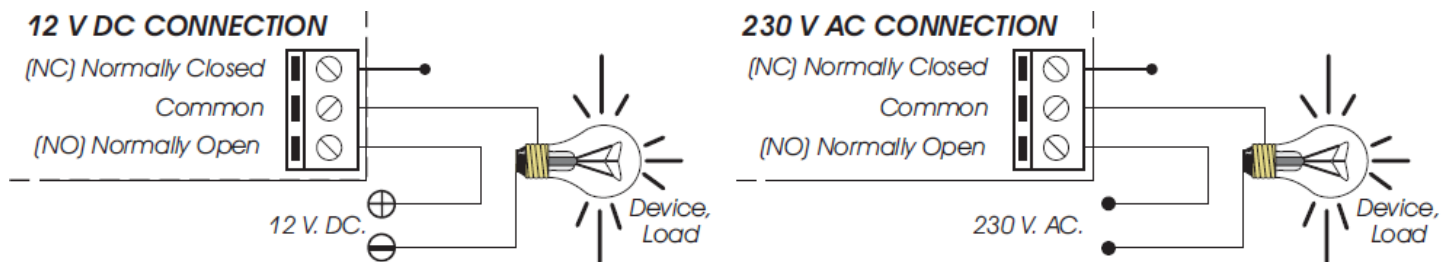If you wish to install the I-4 module at the exterior you had to fit the module into a waterproof .
The I-4 module offers the possibility to be used in reverse mode. To activate this function you have to remove the R6 resistor (with a value of 4K7) and to sold it again in the place indicated as R5.
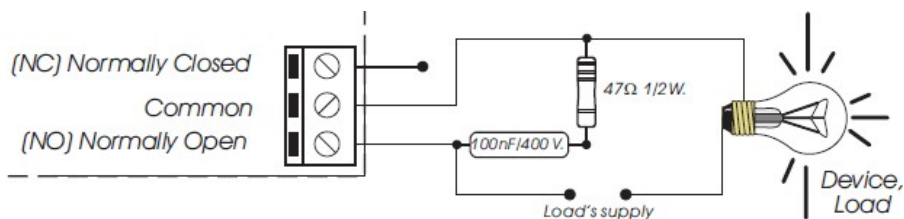
EXTERIOR INSTALLATION OF THE POTENTIOMETER : If you wish to remove or substitute the potentiometer inserted into the P.C.B by an exterior one, firstly you had to remove the potentiometer already placed on the PCB. Then, and as it is indicated in the drawing, you have to connect the terminals of the new potentiometer to the "J1" jumper and the cursor has to be installed on the central terminal. The potentiometer has to be 22 KW.

OUTPUT. CONNECTION OF THE LOAD : The output Module (I-4) is controlled by a relay, allowing any load until 5A. as maximum consumption. The relay has 3 output terminals the normally open at quiescent (NA), the normally closed at quiescent (NC) and the common. The operating mode of this mechanism is the same as a switch with two (2) terminals NA and common. For the inverse function you have to place the load between the NC and Common. On the drawing you can see the typical connection for a 12 V DC and 230 V AC operating modes. See paragraph "how to connect the load".

HOW TO CONNECT THE LOAD

12 V DC CONNECTION

(NC) Normally Closed
Common
(NO) Normally Open

12 V. DC.

Device, Load

230 V AC CONNECTION

(NC) Normally Closed
Common
(NO) Normally Open

230 V. AC.

Device, Load

INFORMATION ABOUT THE OUTPUT. During the operating mode and according to its load, it could happen a fluctuation or an incorrect working of the output. In such case, you have to install an anti-spark circuit between both contacts of the relay used in this connection, as it is indicated on the drawing.

(NC) Normally Closed
Common
(NO) Normally Open

47Ω 1/2 W.

100nF/400 V.

Load's supply

Device, Load

GENERAL WIRING MAP.

250 mA. Fuse

Mains Switch

230 V. AC. Mains

Transformer

0   230

0   15

Relay Output.

Common

NC   NA

Led O State

RELAY

Module I-4

Sensitivity Adjustment

Mín.   Máx.

Jumper ▢▢▢ J1

Power

Power supply

Input

15 V. AC.

Module FE-2

12 V. C.C.

Led

Sensor

CE

RoHS COMPLIANT

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