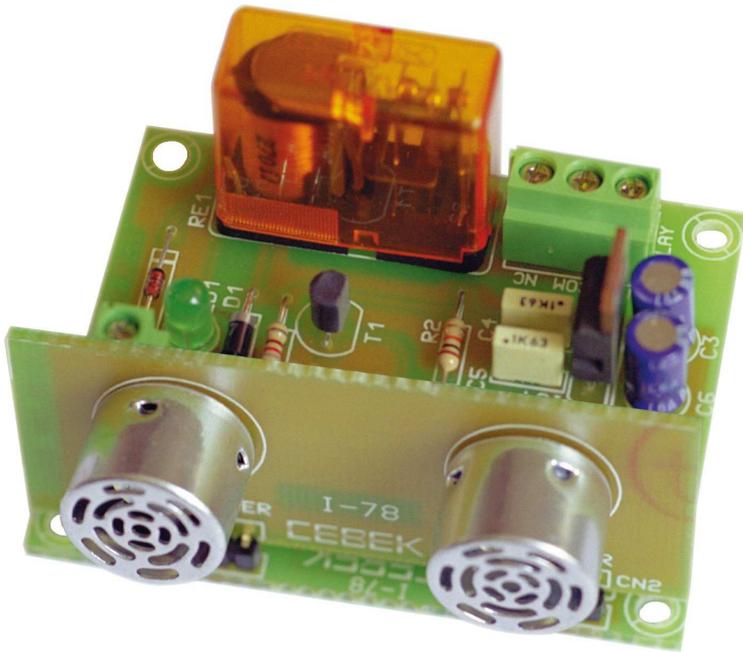




## MOVEMENT DETECTOR BY ULTRASOUND I-78



### TECHNICAL CHARACTERISTICS

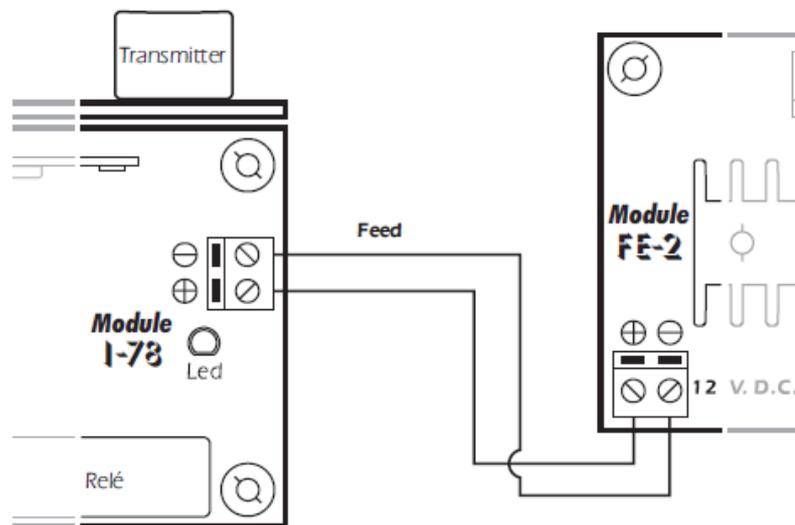
Voltage. ....	12 V. D.C.
Minimum Consumption. ....	10 mA.
Maximum Consumption. ....	80 mA.
Minimum detection distance. ....	10 mm.
Maximum detection distance. ....	2-2,5 m.
sizes. ....	66 x 65 x 35 mm.
Minimum movement speed. ....	200 msec.
Max. Load to apply to the output. ....	5 A.
Protection against inversion polarity, (P.I.P.). ..	Yes.

It detects movement done by any element or person placed into its action area. It allows adjusting the sensitivity through the potentiometer inserted into the circuit.  
It includes protection against inversion polarity, terminals connection and indicator LED.

**POWER SUPPLY.** The I-78 circuit had to be supplied by a 12 V DC power supply correctly filtered. We recommend you to use the FE-2 power supply which has been developed to perfectly answer to the circuit needs. 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. Connect the positive and the negative of the power supply to the respective positive and negative terminals of the module, indicated in the fig. 0 picture. The distance between the power supply and the module has to be as short as possible. Verify that the assembly is correct.

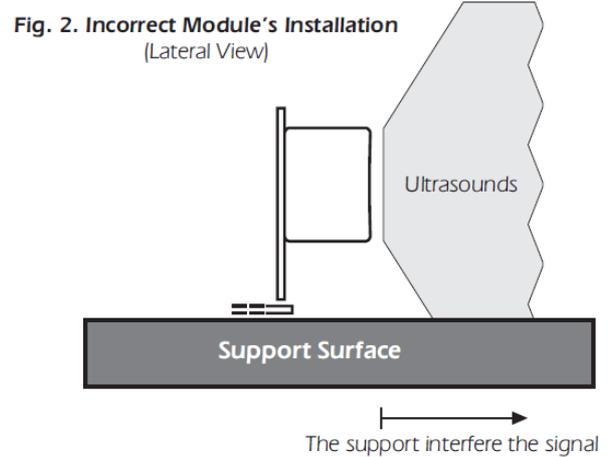
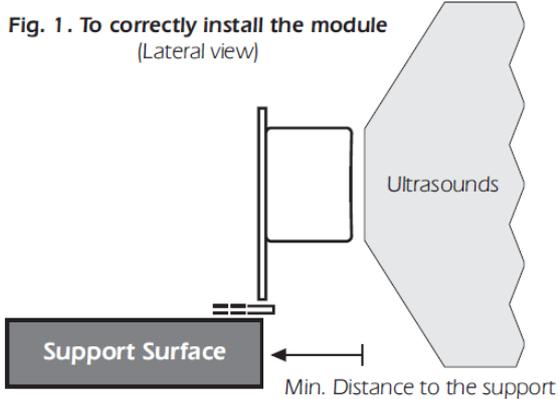
**Note.** Connections indicated as 230 VAC in the instructions manual, (draw & text), have to be connected to 110 VAC. in Americans countries. CebeK's Modules and/or transformers will be supplied with corresponding modifications for their connection in these countries.

Fig. 0. Module' s power supply



**INSTALLATION AND OPERTING MODE.** The I-78 has two ultrasounds capsules to generate a detection area. The emitter capsule (Transmitter) will generate a signal that bounce against any object placed in front of it and received by the receiver capsule (Receiver).

Objects and elements placed into the detection area won't be detected if they don't move. As soon as an object will move, or a new entry into the area, the output is activated and maintained in this state till the movement stops. To obtain the best performances from the module, you have to place it to allow the capsule to be out of the enclosure and out of the support where the module is fitted. . See fig. 1 and 2

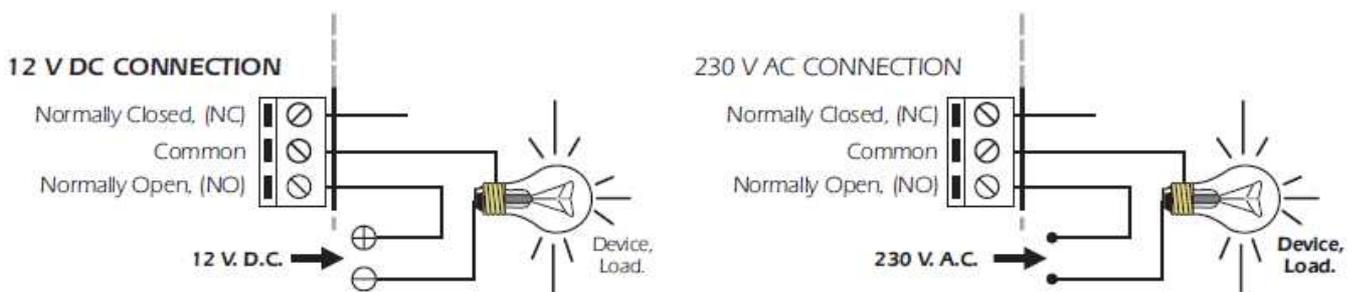


**SENSITIVITY ADJUSTMENT :** The maximum detection distance could be 2 or 2,5 meters, according to the size of the object to detect. For some applications it will be necessary that the module only detect a small area but for other applications, it has to use its maximum capability. To adjust this sensitivity, you have to rote the potentiometer of the circuit, indicated as "Gain".

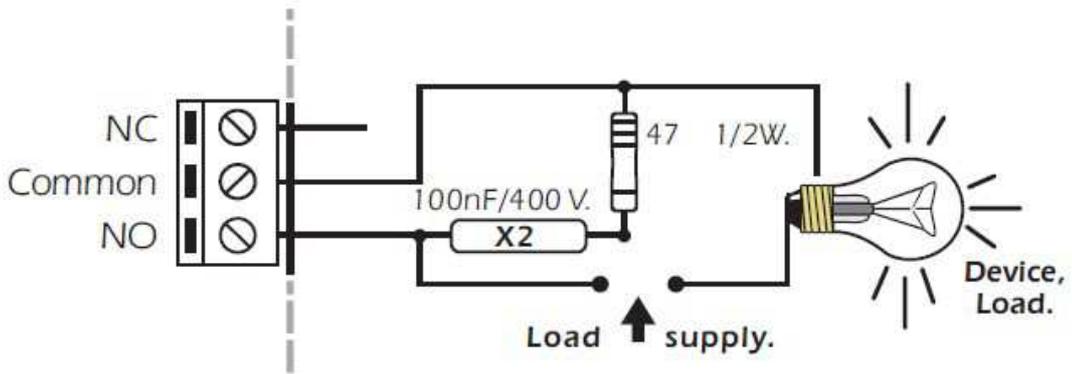
**DO NOT FORGET :** Do never remove capsules from the front PCB, to avoid damaging the module and automatically cancelling the warranty. Exceptionally, if you want to create a fence between emitter and receiver, amplifying and focusing the detection distance of the module, you have to carefully desold the emitter capsule, (transmitter), never the receiver, and use a cable with length inferior than 10 m.

Because of the intrinsic characteristics of the I-78 module, this one could not detect movements extremely slow or extremely fast.

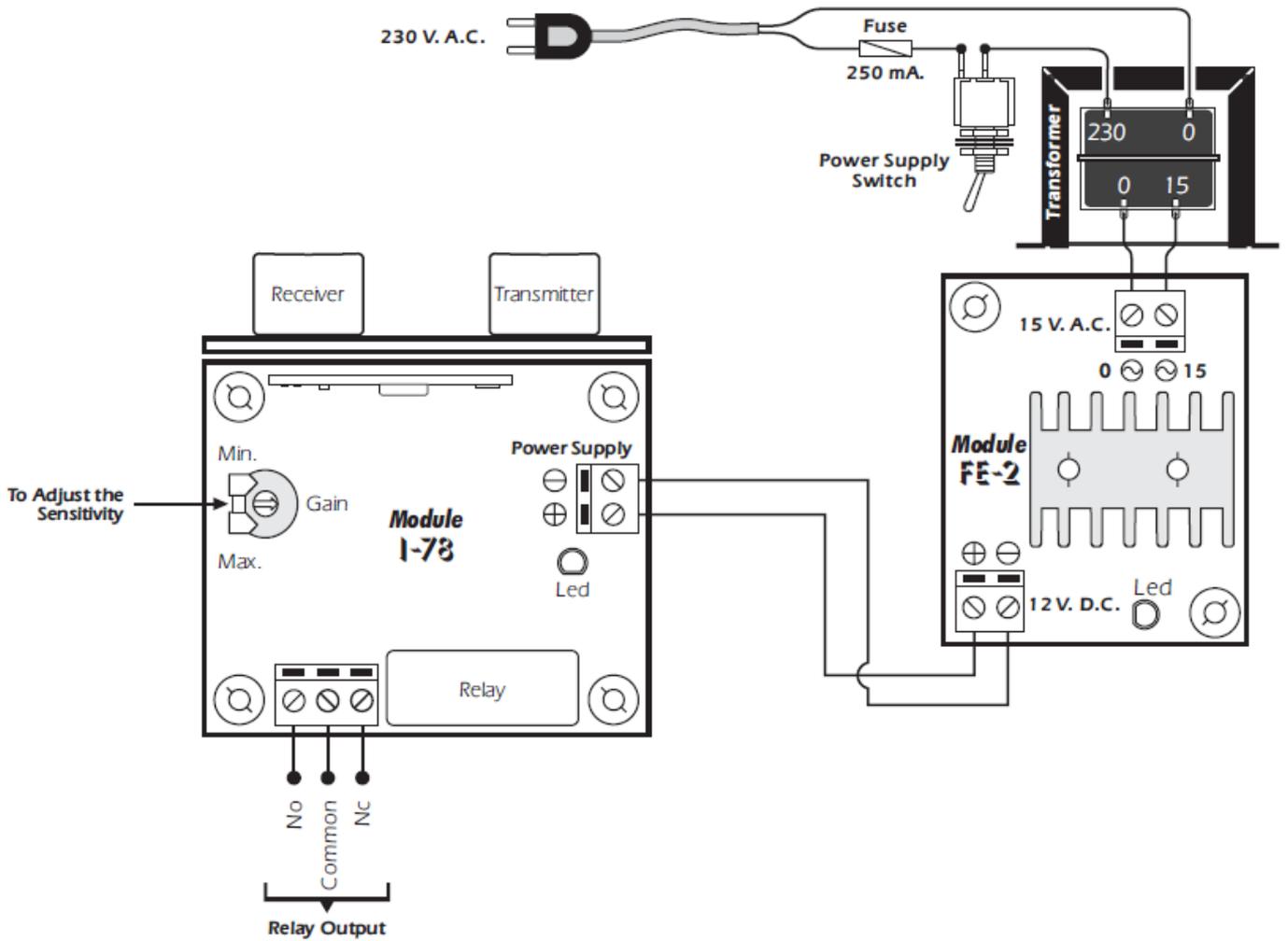
**Fig. 3. How to connect 12 V. DC and 230 V. AC. Module's output.**



**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 (100 nF/400V Type X2 Capacitor and 47W. ½ W resistor) between both contacts of the used relay, as it is indicated on the drawing. If the fluctuation or blink is controlled but not suppressed, you have to remove the resistor and maintain only the capacitor between two the contacts. If necessary, you could use different values, from 10 nF till 47 nF, but always with capacitors type X2.



**GENERAL WIRING MAP.**



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