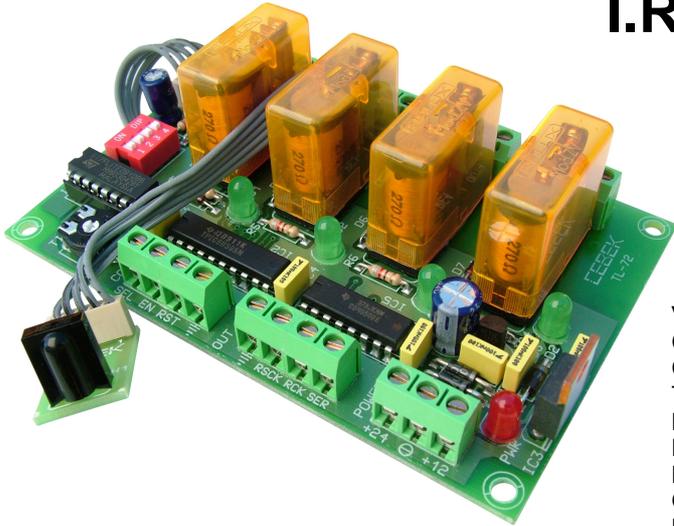




## I.R. RECEIVER OF 4 OUTPUTS TL-72



### TECHNICAL CHARACTERISTICS

Voltage.....	12/24V.DC.
Consumption Min / Max .....	20/240mA.
Contracts activation signal (SEL, EN, RST). ....	5V.DC. (Low).
Transceiver maximum distance.....	4.5 m.
Memory typical life .....	100.000cycles/100 years of retention.
Polarity reversal protection .....	power input.
Max. Plicable relay .....	250V / 5 A.
Operation of outputs .....	Monostable / Bistable / timers.
Measures motherboard .....	72 x 110 x 30 mm.
Sensor cable length .....	200mm

The TL-72 is an infrared receiver of four outputs, remote control fully compatible with Cebek infrared emitters. Program allows each output independently of the rest for operating single, double or timed, the latter with four adjustable time scales from 0.1 seconds to 2 minutes. Incorporates reset input. Supports Rail-din installation ref C-7568.

**POWER MODULE.** The circuit has two independent inputs with common negative power, a de12V.DC. and another 24V.DC. To operate the module input should be chosen or otherwise, in any case both at the same time.

Whether finally the circuit is powered at 12V, or 24V, the voltage used must be perfectly stable.

We recommend using a power source short-circuit with low ripple, like the FE-113 Cebek. In no case should be used simple feeders or rectifiers, which adversely affect the operation of these devices.

**NOTE.** To meet the CE must be inserted on the input supply network switch and a fuse. Both are necessary for the adequate protection of the equipment. See the documentation of the source.

**INSTALLATION.** The installation of the module should be located preferably in a sealed and ventilated, especially if the module is powered at 24V, avoiding any contact between the circuit and other metal objects. The computer can not be installed in places with high humidity, high temperatures, or with contact with liquids. All connections and a thorough reading of this documentation must be made before turn on the circuit.

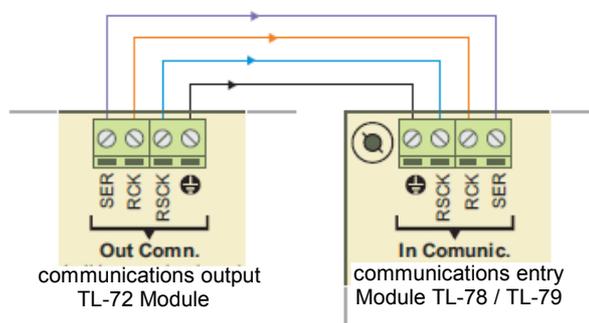
**WIRING.** The facility shall respect the polarity of the inputs, ensuring that each cable length as short as possible (SEL IN and SET). If the distance is greater than 50 cm should be used shielded cable, connect the shield to the screw for the ground symbol (negative). For incoming and outgoing communication, (SER, RCK RSKC and Mass), the length of each cable may not exceed 50 cm, whichever use shielded cable, using the grid to connect mass. In any case longer than 2 m can destabilize the correct operation of the entire module. The length of cable or photocell sensor module can not be expanded or modified.

The inputs are active low (0V). To excite them, can be used dry contacts such as switches, relays, switches, etc., or an external voltage signal 5V.DC In common with the circuit negative

**EXPANSION OF NUMBER OF OUTLETS.** The number of receiver outputs can be expanded up to a maximum of 12 by slave circuits TL-78, (4-output expansion), or TL-79, (8-output expansion).

Both modules receive the signal from the transmitter using the sensor main receiver. In this case, that such extension becomes effective must connect the terminals of the connection: SER, RCK RSKC and Mass of the receiver to the corresponding terminals on the terminal block of the plate In\_Comun slave. Note the following illustration).

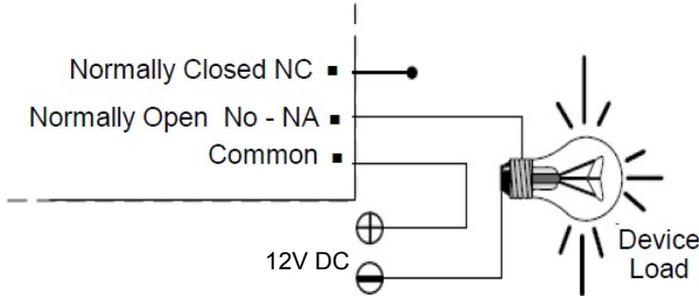
Figure 1 Connection between receiver and slave board



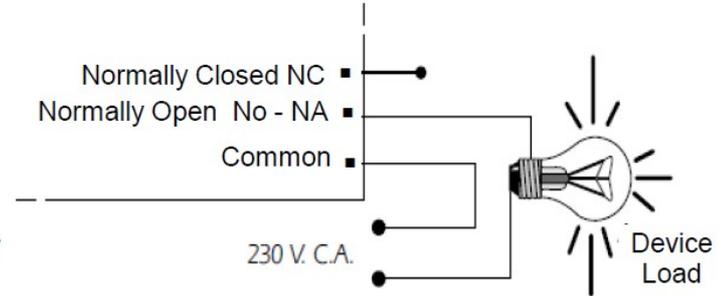
**RELAY connection. LOAD.** The module outputs using a relay device electrically isolated from the rest of the circuit that supports loads not exceeding 5A. The relay is a component that subminister tension, but its role is limited to give way or cutting the electrical flow that will be introduced through your contacts, just as happens in a common switch. Therefore, to supply the load through this device.

The relay has three output terminals: the rest normally open (NO), and the rest normally closed (NC). Install it between the Common and NO, as specified in the scheme of fig.1. Additionally, you can perform the inverse function, setting the load between the Common and the NC

**12V DC CONNECTION**



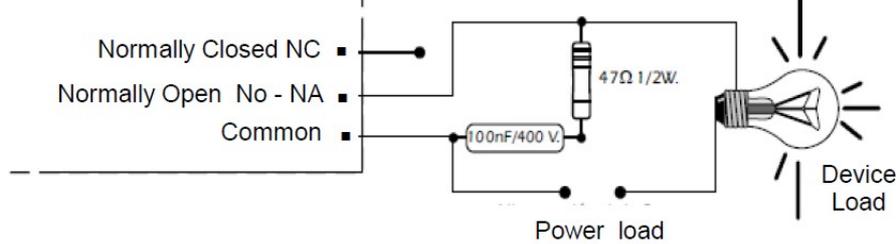
**230V CA CONNECTION**



**CONSIDERATIONS ON THE RELAY.** Especially with inductive loads, a relay output can produce a fluctuation rate, or an incorrect operation. If this happens, install anti-spark circuit between the two relay contacts used in the connection, which will ensure the absorption of peak current that causes the above problem.

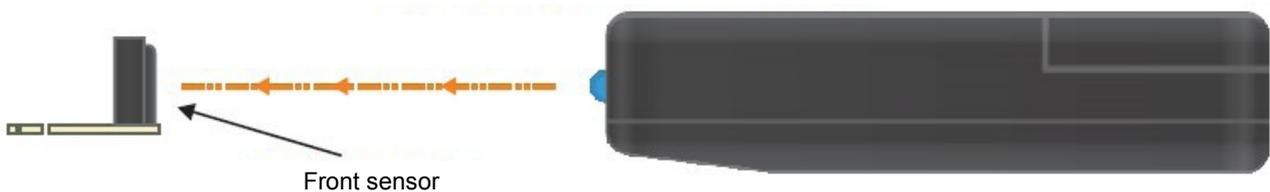
If the load connected to the relay circuit is powered at 230 V. I used a condenser 100nF/400 V. and resistor 47. ½ W. Observe Fig. 2. If the load is supplied at 12 or 24V, remove and install only the resistance between two contacts of the relay X2 type capacitor. You must test with values between 10nF and 47nF until the fluctuation disappears.

**230 V CA CONNECTION**



**Sensor installation.** The front of the sensor on the receiver should be exposed and oriented frontally towards the issuer. Due to the nature of the issuer itself, and the sensor detection cone receptor, can be played with the signal bouncing off the walls that are close to it. It must be remembered that it is an IR transmission It calls for a certain alignment between transmitter and receiver to produce the signal transfer

Figure 4 Alignment sender - receiver



**INDICATORS.** There are several LED indicators on the circuit, each of which can take the display of various functions.

**Led Pwr.** (Red). It remains lit while the module is powered.

**Led Rop.** (Red). Remain lit while the track is in programming mode, deactivated in the standard operating mode. Make a short flash memory to store settings for each output

**LED LD 1 to LD4.** (Greens). Lights while the corresponding output is activated, disconnecting at the same time it

**OPERATION.** The circuit allows individual operation of each output in timed mode, bistable or monostable. An output programmed as monostable will remain active only while orrespondiente lac button on the transmitter is pressed, releasing the output is disabled. By contrast, a bistable output configured to be activated and deactivated alternately by pressing the corresponding button on the transmitter. The timed output is activated at the same instant the transmitter button is closed, shut down automatically when the time elapsed was previously scheduled. If after the timeout, the transmitter button is still kept closed, the module will initiate a new timing cycle.

**Pressing together of several keys of the issuer.** The system I.R. transmitter / receiver only recognizes the same time pressing various keys of the issuer, when performed in hierarchical order from least to greatest. Thus, to activate the same time channels 1,2,3 and 4, you should first press the key 1, for then, still holding above, press the keys 2,3 and 4, in that order. The disconnection of these outputs will be produced as they were scheduled, except monostable ality, they will be disconnected at the same time when all keys are released transmitter

**Rest.** Regardless of the mode of operation of each output, can force a complete shutdown of all of them by an external control. Thus, while the entrance is kept closed RST (Reset) with respect to ground, the circuit will disable all outputs and inactive at any order of the issuer. When RST input is restored, the receiver will obey the orders of the issuer.

**PROGRAMMING.** The programming module can set individually for each output operation for a timed behavior, bistable or monostable.

During programming the circuit does not provide answers to any commands sent from the sender. However, the various outputs of the module will be activated as they are selected for their programming, to offer the user a visual indication on the relay being operated. For this reason must be disconnected, if deemed appropriate, the loads are installed in each outlet.

Access to programming mode is achieved by maintaining closed for 5 sec. input SEL (select) compared to negative or circuit ground. The receiver will indicate entry into this mode, the LED Rop and activating the first exit.

Then, each pulse on the entry, select the next exit. Upon reaching the last, the module internally continue jumping every pulse SEL to exit 12, coming back after this the first time.

Regardless of the number of outlets of the plate, the system can operate with a maximum of 12, (read Expanding the number of trips), so all operations are performed in accordance with this feature, the module still uses only a number lower.

Once positioned to shape the output, you must select the operating mode for the same. This will be determined by the position of dip switch 1 of the SET, as indicated by the following illustration

Figure 5 Programming Settings by dipset

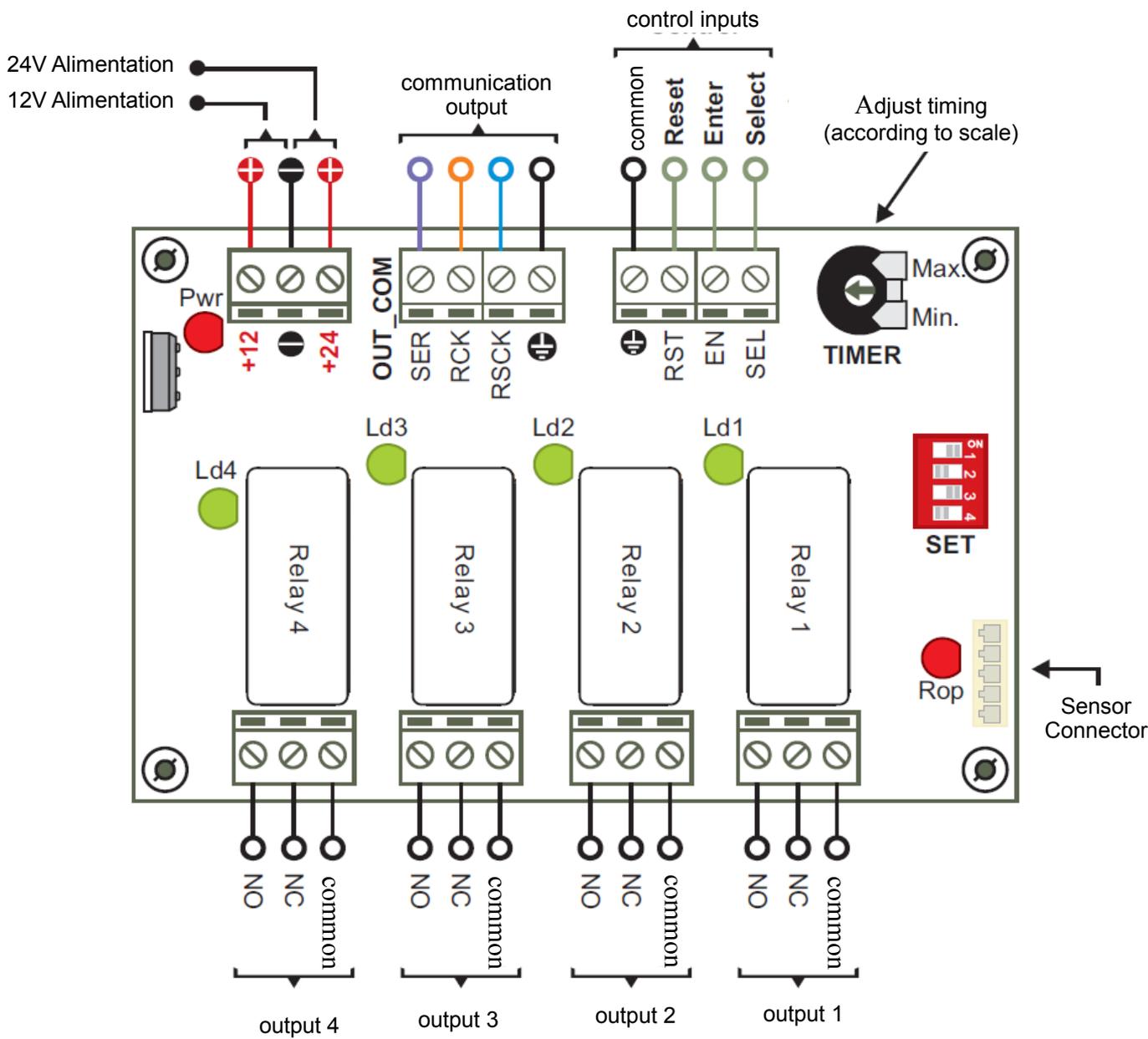
	SW4	SW3	SW2	SW1
monostable output →	-----	-----	Off	Off
Timed Out 0,1" a 12,9"). →	Off	Off	On	Off
Timed Out (30" a 55,5"). →	On	Off	On	Off
Timed Out (10" a 35,5"). →	Off	On	On	Off
Timed Out (60" a 2'2"). →	On	On	On	Off
bistable output →	-----	-----	Off	On

If you pick the timed mode, the switches 2, 3 and 4, in turn, distinguish between four ranges, the ranges of minimum and maximum time between which maneuver the pot "TIMER", and as it set, the module will thereof, the desired timestamp.

Finally, a brief pulse input on EN, (enter), configure the output to the timing or mode of operation selected, storing the data in a separate memory, which does not expire until it is replaced by a different configuration on the same output .

Scrolling through the various channels (outputs) does not imply any change in the programming of the same, always subject to a pulse of EN, (enter). To exit the programming mode sufficient to perform a reset, closing on RST input briefly knead.

**GENERAL WIRING MAP.**



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