CEBEK ELECTRONIC CIRCUITS

I-56

16 OUTPUTS SEQUENTIAL COMMAND

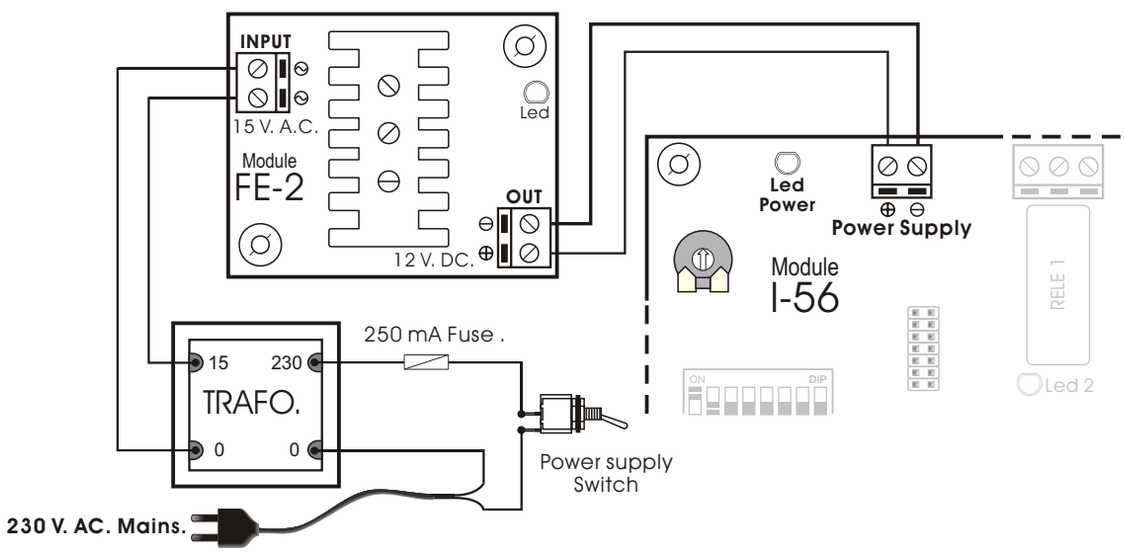
The I-56 module is a sequential command with 16 relay outputs. With each impulse, relays will be connected one after one, and disconnecting the previous one. You can go forward or backward and select which output when you reach it, will reset the module.
The sequence could be generated by external impulses through non potential switch or by internal impulses, using the internal oscillator. Incorporated on the module, or adding both (OR function).
It includes reset output, protection against polarity inversion, indicator output led and terminals to connect it.

TECHNICAL CHARACTERISTICS.

Voltage	12 V. D.C.
Minimum Consumption	75 mA.
Maximum Consumption	90 mA.
External Clock - input maxi. Frequency	25 Hz.
Internal Clock - Mini. Connection time by relay	0,3 Sec.
Internal Clock - Maxi. Connection time by relay	10 Minutes
Maximum Output Load By Relay	5 A.
Protection Against Polarity Inversion	Yes
Sizes	210 x 110 x 30 mm.

OPERATING MODE.

POWER SUPPLY. The I-56 circuit had to be supplied by a 12 VDC power supply.
Then, we recommended you the FE-2 power supply which has been developed to perfectly answer to the circuit needs or a 12 V batteries for mobile applications. Install a fuse and a switch as it is indicated in the drawing. Both are obligatory to guarantee a correct protection of the module as well as for your own safety as it is required by the "CE" marking.
Connect the positive of the power supply to the positive terminal indicated in the wiring map, then connect also the negative of the power supply to the negative terminal indicated in the circuit. Verify that the assembly has been correctly done.

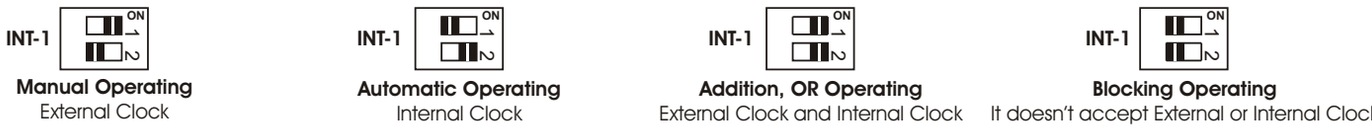


OPERATING. When you supply the module, the first output will be activated, after this one and with each supplied impulse the module will connect the next output, disconnecting the previous one.
The I-56 offers different operating modes according to the input impulses source. Exterior or manual, Internal or automatic, addition, or blocking operating modes.

OPERATING MODE.

Operating mode. See the general wiring map. The module has several switches indicated as INT-1. Thanks to the combination of thes switches you could select an operating mode: Automatic, Manual, Addition, or blocking.

Fig. 1. TO CONFIGURE I-56 OPERATING MODES.

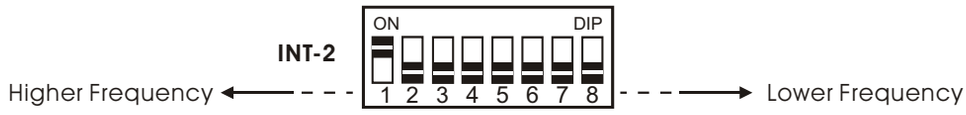


Blocking operating mode. In the blocking operating mode, the I-56 independently of the received impulses, external or internal, will be maintained fix on the last activated output. The single authorised function will the RESET.
To configure this mode, you have to place both witches (in the switch INT-1) in OFF position.

Manual operating mode. The manual operating mode allows to activate the module only when it will receive an external impulse.
Connect a push button to the terminal indicated as Un and Down (See General wiring map). If you have to connect a clock signal from an other device, you have to respect their polarity and verify that it is a 12 VDC signal and they share the same negative.
Once installed push buttons, cyclically and consecutively with each impulse relays will be connected one by one, previously disconnecting the anterior. According if you have done it on the Un or Down input, the rotation way will be forward or backward.
To configure this mode, you have to place (in the switch INT-1) the contact Nº1 in ON position and the contact Nº2 in OFF position.

Automatic operating mode. In the automatic operating mode, the I-56 uses the internal oscillator to automatically execute the operating sequence. This internal generation of impulses can be adjusted in time between impulses, (frequency). The module also allows a sequence with rotation forward (Un) or backward (Down).
To configure this mode, you have to place (in the switch INT-1) the contact Nº1 in OFF position and the contact Nº2 in ON position. See the picture.
Once the configuration of the automatic operating mode done, you have to select the speed (frequency), to generate automatic impulses. The module includes an adjustment potentiometer (RV1), and a dip switches composed by 8 units (INT-2), referenced as Time scale. Through the potentiometer you can select a higher or lower operating frequency according to your adjustment. The Dip Switches will allows you to divide this frequency into 8 different time scales.
Selecting one or other switch, you will obtain a higher or lower time between impulses. It is necessary, to allows the circuit to operate in automatic mode, to only select one of the 8 switches composing the INT-2; otherwise the module doesn't operate correctly.
To select the fastest time scale, with higher frequency, you have to place the switch 1 in ON position (the rest of switches have to be always in OFF position). To select the lowest time scale, with lower frequency, you have to place the switch 8 in ON position (the rest of switches have to be always in OFF position). The rest of switches will correspond to a different scale from 8 to 1 for higher speed or frequency, or from 1 to 8 for lower speed or frequency. Select the required one.
The selection of the sequence's rotation way will be done by an external impulse on terminals of corresponding inputs (Un=forward and Down=backward)

Fig. 2. TO SELECT TIMES SCALE. (Speed, Impulses Frequency).



RESET. See the general wiring map. Connect a push button to the terminal indicated as "Reset". Each time you press this push button and independently of the activated relay, the module will come back at the beginning of the sequence (to the first relay) until you stop to press the "reset" push button, and you supply a new impulse.

I-56

16 OUTPUTS SEQUENTIAL COMMAND

OPERATING MODE.

SEQUENCE RESTART. When the I-56 reaches the last output, automatically it will restart from the first.
If you wish the module immediately restarts when it reaches a determinate output, and not to wait to reach the last one, you can do it. The circuit is composed by 15 jumpers indicated as JP1,….., JP15 (to select the sequence restart), to allow you to configure this option. Each jumper corresponds to its output, corresponding JP1 to the output Nº1, JP2 to the output Nº2, etc….Up to output nº15.
Select the output you want the module immediately restarts when it reaches it. Close, shortcircuit or connect, both pins of the corresponding jumper. From this instant, when the I-56 module reaches the selected output, it will automatically "come back" to the first. Each jumper corresponds to an output for the count up (Un). If you wish to configure the count down sequence restart (Down), the assignation of the jumper to the outputs will be inverted.

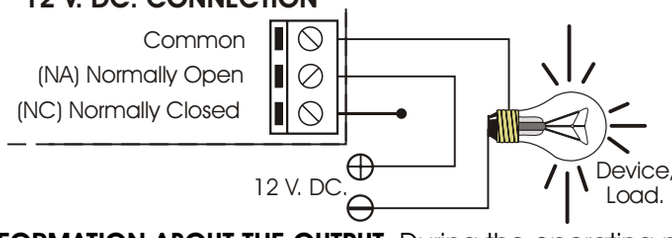
Fig. 3. TO SELECT A JUMPER.

DO NOT FORGET. Do never change the operating mode configuration or the times scale during an operating cycle. To do that, you have to firstly disconnect the power supply form the module, then you can do necessary modifications and once finish all required modifications, you have to connect again the power supply.
In the push buttons installation, you have to avoid to use too long cables. For length superior to 30 cm, you have to a shielded cable and to connect the braid to the ground. The total length has always to be inferior to 150cm.

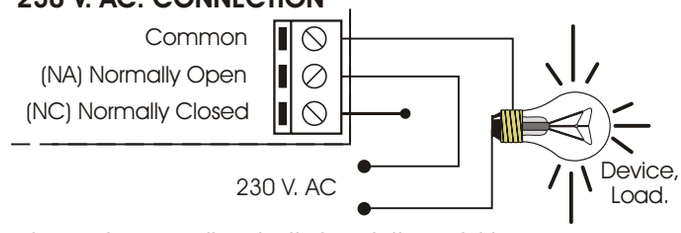
OUTPUT. CONNECTION OF THE LOAD. The output Module (I-56) is controlled by a relay, allowing any load until 5 A. as maximum consumption. The relay has 3 output terminals the normally open at quiescent (NA), the normally closed at quiescent (NC) and the common. The operating of this mechanism is the same as a switch with two (2) terminals NA and common. To obtain the reverse operating, you have to connect between the NC and the common In the Output connection paragraph, you could appreciate the typical connection for a devices operating at 12 VDC and to operate at 230 VAC. See "how to connect the load" paragraph.

HOW TO CONNECT THE LOAD.

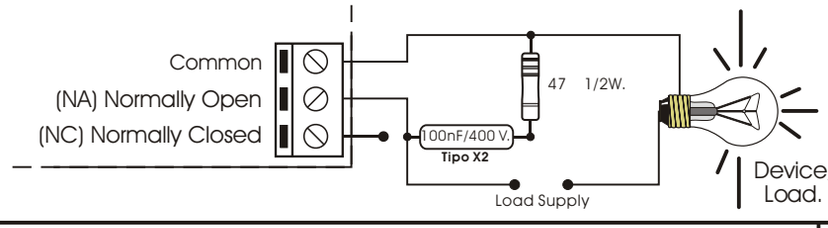
12 V. DC. CONNECTION



230 V. AC. CONNECTION



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.



TECHNICAL SUPPORT and INFORMATION.

For any questions or more information:
By Fax. (24h.) +34.93.432.29.95 **By Mail:** C/ Quetzal, 17-21, Entlo. 2º (08014) BARCELONA - SPAIN.
By E-Mail: sat@cebek.com
Keep you invoice. For any repairing could you send this with module. Else, the module will lost the warranty.

OPERATING MODE.