CEBEK® TL-23 4 CHANNELS FLIP-FLOP R.F. RECEIVER.

ELECTRONIC CIRCUITS

The TL-23 is a R.F remote control receiver able to recognise the signal from Cebek TL-20 and TL-21 emitters, connecting the corresponding output
You could configure your own security code (between 13.122 possibilities). It includesmicro-switches to select the code, indicator leds and output to connect an extension

TECHNICAL CHARACTERISTICS.

Voltage.	12 V. D.C.
Minimum Consumption.	5 mA.
Maximum Consumption.	65 mA.
Operating Frequency.	433,92 MHz.
Antenna length.	130 mm.
Maximum Output Load byrelay.	5 A.
Protection against inversionpolarity, (P.I.P.).	Yes.
Sizes.	119 x 97 x 30mm.

POWER SUPPLY and OUTPUT CONNECTION.

The TL-23 circuit had to besupplied by a 12 VDC powersupply correctly filtered. We recommend you to use the FE-2power supply which has been developed to perfectly answer to the circuit needs. Install a fuse and a switch has itis 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 ofthe 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, beforeto activate the switch supplying the module. Connect other connections as it is indicated hereafter.
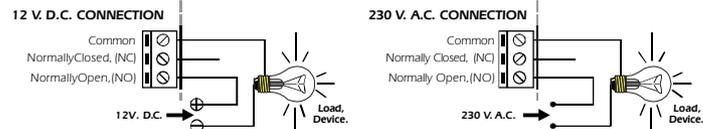**Note.** Connections indicated as 230 VAC in the wiring map have to be connected to 110 VAC. in Americans countries. Cebek's Modules and/or transformers will besupplied with corresponding modifications for their connectioninthesecountries.

ANTENNA INSTALLATION. To obtain a maximum and clear reception, you have to install an exterior antenna. You can use a telescopical antenna like antenna for radio receivers, our accessory is C-0509, or any metallic bar with an exact length of 130 mm.
The cable between antenna and module had to be shielded and inferior than 25 cm.Connect the negative terminal to the ground and the braid to the inputantenna indicated with the ground symbol.See the paragraph: "General Wiring Map".

OUTPUT CONNECTION. LOAD. The TL-23 output is controlled by a relay, and accepts any device up to 5 A. The relay is not a component supplying voltage but its function is limited to accept or deny the voltage passage like a standard switch. For this reason, you have to supply the load throughthiscomponent.
The relay has three output terminals: The normally open quiescent (NO), the normallyclosed quiescent (NC) and the common. Install it between the Common and the NO in accordance with the next schematic. For the inverse function you have to placethe load between the NC and Common.

12 V. D.C. CONNECTION

Common
NormallyClosed, (NC)
NormallyOpen,(NO)

12V. D.C.

Load, Device.

230 V. A.C. CONNECTION

Common
Normally Closed, (NC)
Normally Open,(NO)

230 V. A.C.

Load, Device.

INFORMATION ABOUT THE OUTPUT. During the operating mode and according to its load, it could happen a fluctuation or an incorrectworking of the output.
In such case, you have to install an anti-spark circuit, (100nF/400 V Capacitor Type X2 and 47? . ½ W. resistor) between both contacts of the used relay, as it is indicated on the drawing.

Common
NC
NO

47? 1/2W.
100nF/400V.
X2

Load, Device.

Load's PowerSupply.

OPERATING MODE.

SECURITY CODE CONFIGURATION. All CEBEK remote control works with a frequency adjusted a t 433.92 MHz. For this reason, they include micro-switches composed by 8 trinary switches allowing to configure a security code between 13.122 possibilities, for each module. Then, your module will be different from others, even if they offer same characteristics.
The security code that you will select for your receiver has to be the same than the emitter one, otherwise there is no communication between them.
Each switch composing the micro-switches battery could be placed according three different positions: "-", "0" and "+". You have to modify the switches position that you have received in order to select you personal code.

TO ASSIGN A CHANNEL NUMBER. Independently ofthe security code, each channel or output has to be assigned to the emitter button which will control it.
In the TL-20 and TL-21 manual instruction, each push button is identified with a number. Thanks to the 4 switches battery corresponding to each output, you could selectthe push button number, which will activate each channel.

The number selection on the corresponding battery or DIP that you wish to configure is done in binary, thanks to the 4 switches corresponding to the output that you wish to configure. If you place any of these four switches in ON position, itbinary value will be "1" and if you place it inOFF position its binary value will be "0".
On the Fig N°3, you can see the correspondence between decimal numbers from 0 till 8 with their respective binary codes.
Configure each DIP with the wished push button number, doing the corresponding binary combination. Don't doany different combination thandescribed one in the Fig-. 3,otherwise you could indicatea misunderstanding number for the module.
It is no necessary to assignpush button numbers in order with each output, neither to assign a different number to each output. If you wish you can use the same push button number for several channels, controlling consequently them, with a single push button.

Fig. 2. Switches' Binary Value according to their position.

ON 1 ➔ Equivalent to 0.

ON 1 ➔ Equivalent to 1.

Fig. 3. Correspondence Decimal - Binary.

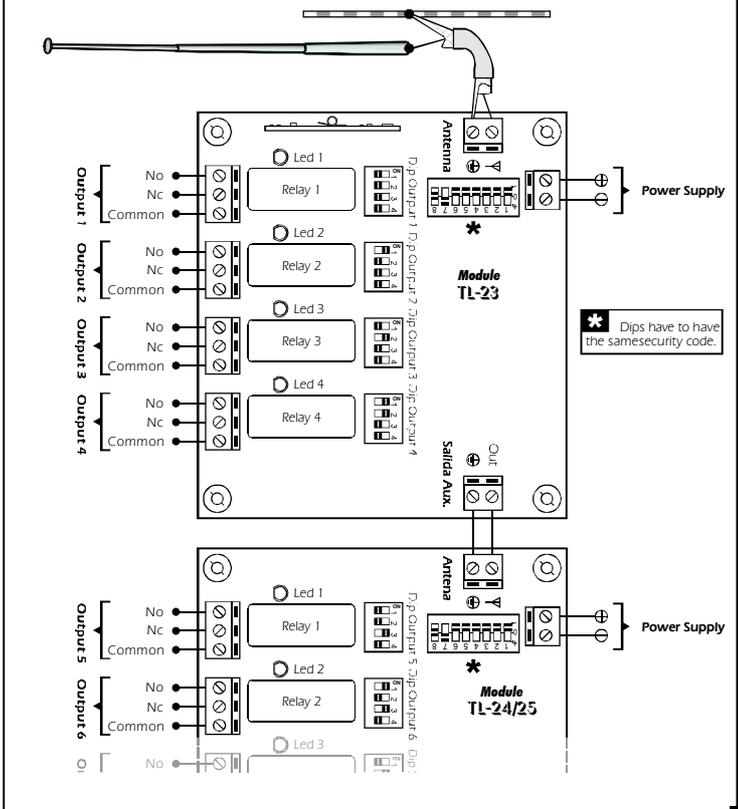| Switches	1	2	3	4
PushButtonN°1 ➔	0	0	0	0
PushButtonN°2 ➔	1	0	0	0
PushButtonN°3 ➔	0	1	0	0
PushButtonN°4 ➔	1	1	0	0
PushButtonN°5 ➔	0	0	1	0
PushButtonN°6 ➔	1	0	1	0
PushButtonN°7 ➔	0	1	1	0
PushButtonN°8 ➔	1	1	1	0

(*). If you use theTL-21 emitter.

OPERATING MODE. After the security code selection, the push button numbers assignation for each output, and all receivers connections done, you could supply the module.
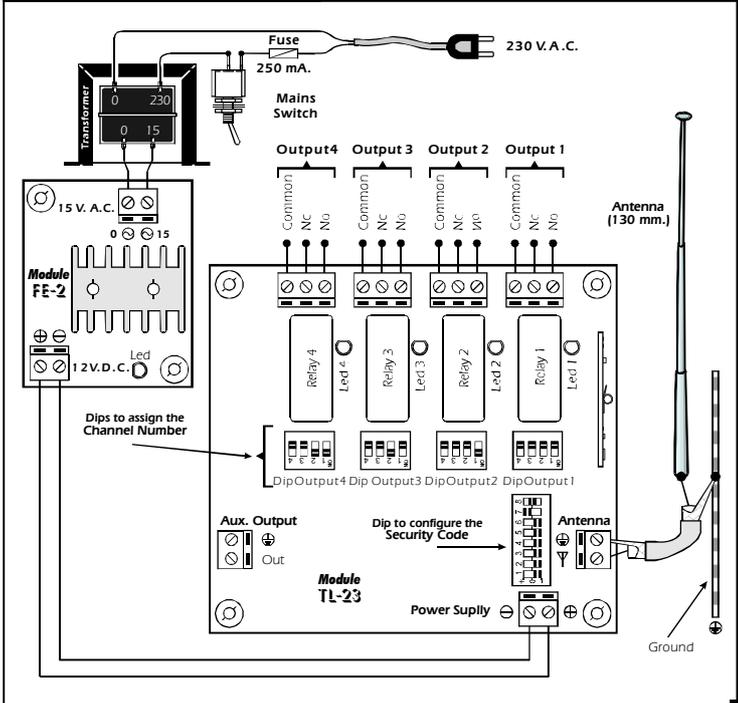When you press a push button on the emitter, its assigned output will be connected till you press again the same button; then the output will be disconnected. If you wish to activate several outputs,you have to do it one after another.

THE SYSTEM'S EXTENSION.

The TL-23 module allows an extension up to 4 moreoutput to become an 8-output receiver. You can use the TL-24 module, 4 standard outputs extension (no Flip-Flop) or the TL-25 module, 4 Flip-Flop outputs extension.
Read the instruction manual corresponding to the wished module, where it is specified how to do connections. Nevertheless, on the following drawing, you could see how to connect a TL-23 module and a TL-24 or TL-25.

Output 1 — No / Nc / Common — Led 1 — Relay 1
Output 2 — No / Nc / Common — Led 2 — Relay 2
Output 3 — No / Nc / Common — Led 3 — Relay 3
Output 4 — No / Nc / Common — Led 4 — Relay 4

Antena — Power Supply — Module TL-23

Salida Aux. — Out

✱ Dips have to have the samesecurity code.

Output 5 — No / Nc / Common — Led 1 — Relay 1
Output 6 — No / Nc / Common — Led 2 — Relay 2
— Led 3

Antena — Power Supply — Module TL-24/25

GENERAL WIRING MAP.

Fuse 250 mA.
230 V. A.C.
Transformer 0 230 / 0 15
Mains Switch

Output4 Output 3 Output 2 Output 1
Common Nc No (each)

Module FE-2
15 V. A.C. 0 0 15
12 V. D.C. Led

Relay 4 Led 4 / Relay 3 Led 3 / Relay 2 Led 2 / Relay 1 Led 1

Dips to assign the Channel Number
DipOutput4 Dip Output3 DipOutput2 DipOutput1

Aux. Output — Out
Dip to configure the Security Code
Antenna
Module TL-23
Power Suply

Antenna (130 mm.)
Ground

TECHNICAL CONSULTATIONS.

If you have any doubt, you could contact your wholesaler or our Technical Department.
- E-Mail, **sat@cebek.com** | **Fax**. 34.93.432.29.95 | by mail. P.O. Box. 23455 - 08080 Barcelona - Spain.
- **Keep the invoice of this module.** For any repair, the corresponding invoice had to be added. If the invoiceis not presented together wish this module, the module's warranty will be automatically cancelled.

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