

Counter Up/Down from zero up to a selected number, or inversely, from a selected number up to zero and with a maximum capacity to count Up/Down 9999 or 999999 units according to the model. They incorporate a memory to recover the last counted number, in case of fall of electrical supply. They include a relay for activation depending on the selected number and they include front panel.

TECHNICAL CHARACTERISTICS

Power Supply: 12 / 24 V .D.C.
 Maximum Consumption: 100 mA.
 Relay of a switched circuit: 250 V. / 5 A. maximum.
 Relay activation: When it reaches the selected number / Till the selected number is reached.
 Count Up/Down: Cyclic, (CD-5= 9999), (CD-6= 999999), max. units.
 Control Input Signal: Closing contacts without power or 5 V. D.C., (low level).
 Max. input frequency: (100 Hz. / 4 KHz).
 Displaying: Red Digits 0,5", (13,5 mm.).
 Net Weight: (CD-5 = 70 gr.), (CD-6 = 80 gr.).
 Width x Deep: 42 x 40 mm. Length: (CD-5 = 100 mm.), (CD6 = 130 mm.).
 Operating temperature: -25 °C up to +55 °C.
 Rules: 89/336/CEE Electromagnetic Compatibility and its 32/31/CEE and 93/68/CEE modifications. RoHS free.

INSTALLATION

Power Supply.

The counter includes two independent supply inputs, one at 12 V DC and one at 24 V DC. Respecting the polarity you have to apply one or other voltage to the corresponding input. DO never apply both voltages at the same time.
 We recommend you to use a 12 V DC short circuitable power supply, with a low ripple level, as Ceбек ref. FE-503 or FE-103. Do never use basic power supply or rectifiers to avoid to negatively affect the correct operating mode of these devices.

Note: Install a fuse and a switch between the mains and the module as it is indicated on the drawing. Both are necessary for the module's protection as well as for your own safety, as it is required by the "CE" regulations.

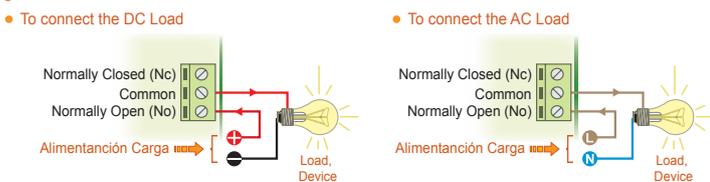
Control Inputs

The module includes 5 control inputs. The length of the used cable in any of them as to be as short as possible. If the distance is superior to 50 cm, it will be necessary to use shielded cable, connecting the braid to the corresponding terminal indicated by the ground symbol. In any case the maximum length will have to prevent in each one from being superior to 2 m.
 The inputs' activation is done when you close the corresponding terminal with the common negative terminal indicated by the ground symbol.
 The activation can be also done through an external voltage signal. This signal has to be of 5 V DC, perfectly stabilized, with the negative connected to the common negative of the circuit, terminal with the ground symbol. The activation will happen while the sign is equal to 0 V.

Relay connection

The relay connection must not be considered as an output, it does not supply voltage. Electrically insulated from the rest of the circuit, its function is to open or to close its contacts to allow or to interrupt the electrical signal flow, like a standard switch on a bulb.
 The relay is composed by three terminals: the Common, the normally open (NO), and the normally closed, (NC).
 Whereas one of two power cables of the load must be directly connected to it, the other one has to be inserted through relays contacts, typically between Common and NO, as it is specified in the drawing fig. 1, in order to internally allow the relay accept or deny the cable electrical flow.

Fig. 1. How to connect the load.



Do not forget.

Specially with inductive loads, a relay output can produce a fluctuation, intermittence, or an incorrect operating mode. If this happens, it will be necessary to install an anti-spark circuit between both contacts of the relay used in the connection, to guarantee the absorption of the current peak generated by the mentioned problem. See the fig. 2.

If the load connected to the relay of the circuit is supplied by 230 V. you have to apply 100 nF/400V Type X2 Capacitor and 47W. ½ W resistor.
 If the load is supplied by 12 or 24 V, the installation will only contemplate the X2 capacitor, without the resistor. You have to test several between 10 nF and 47 nF until the fluctuation disappears.

Fig. 2. Filtro anti-fluctuaciones del relé.



Do not forget for the installation.

Do never remove or separate both circuits that compose the module, his connection must be kept as it has been supplied from factory. If you don't respect this point, the module will be damaged and the warranty cancelled.
 The installation has to be preferably done into a box, an enclosure or rack well ventilated.
 The device must not be installed in places with high wet level, high temperatures, or with possibility to be in contact with liquids.
 The contact between the circuit and metallic objects like bracelets, chains, etc...has to be avoided.

OPERATING MODE

Operating modes.

There are two operating modes for the module, the Programming mode where operating parameters are configured, and the Operative mode where it acts like a counter Up/Down.

OPERATING

Programming.

There are 4 programmable screens /parameters, Selected number, Start and End, INput Frequency filter and Relay connection mode.
 The entry in programming mode is only obtained if you maintain pressed the Enter when you activate the module's feed. After approximately 3 seconds, the first programming parameter will appear, reducing the display lighting, condition that will be maintained while the programming mode is used.
 Changes on each screen are done closing the Up or Down inputs or pressing the corresponding keys. If they are maintained closed, the increase or decrease will be done at higher speed.
 The change of the following screen and programming parameter is done each time the Enter push button is pressed, with the same parameters modification process, using Up and Down.
 The recording process is done activating/closing the Trigger Input, then the circuit recovers the operating mode. The modifications recording is done on all programming parameters, independently if they have not been or not modified.
 The programming exit without change is done after a quiescent period superior to 20 sec., closing Reset Input or deactivating the power supply.

Selected number. Parameter that indicates to the circuit the maximum number of operation or stop. (Check the operating mode and selection number possibility = zero).

Start and End. Selecting "U", the counter will start from the selected number and stop once the zero is reached. Selecting "u", the circuit will start the counting from zero and stop once the selected number is reached.

Input Filter. The input will accept a maximum input frequency of 100 Hz. Or of 4 KHz depending on if this parameter is positioned to zero, or to one.

Relay Connection Mode. Selecting " Out | - ", the relay activation will be done when the counter reaches the preselected number, (the selected number in count up or zero in countdown). Selecting " Out - | ", the relay activation will be done while the preselected number is reached.

Operative mode.

The beginning of the count up/down will start from zero or from the selected number according to the module's programming. The circuit will count up or count down depending on impulses (clock) Introduction, across the Up or Down input. (Up and Down push-buttons must be connected in parallel with these above mentioned inputs and therefore they also can increase or decrease the count independently of the impulses in the corresponding input).
 The count up/down will be stopped when the number in the display corresponds to the selected number or equal to zero, (programming parameter), indicated by the display through a continued blinking.

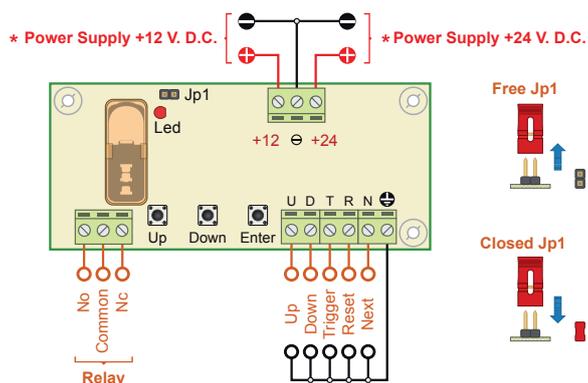
To unblock the circuit and to continue to count up / down without erasing the displayed number, you have to activate the Next input. At the opposite, to unblock the counter up/down, coming back to the start number, you have to activate Reset input.

Relay. Independently of the programmed operating mode, the relay will only obey to the programming, if it is externally enabled. The activation will be done while the Trigger input is maintained activated, being indicated in the display through the lighting of the last digit, (units). It will remain deactivated and inoperative if the above mentioned input is opened.

Recovery after feed stop.

If JP1 is closed, the module will recover and display the last number recorded by the counter up/down before its power supply disconnection . If you don't need this function, you have to maintain free both JP1 pins.

WIRING MAP CD-5 / CD-6



* You have to use one of these feed input. Do never use both at the same time.

WARRANTY and TECHNICAL INCIDENTS

Warranty.

All ceбек modules have a total warranty of 3 years as concern components and labour man.
 All damage, error or mistake due to problems independent from the circuit, connection, installation or operating mode, as well as wrong handling are not included in this warranty. More over it will be necessary the purchase invoice of this module for any claim.

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