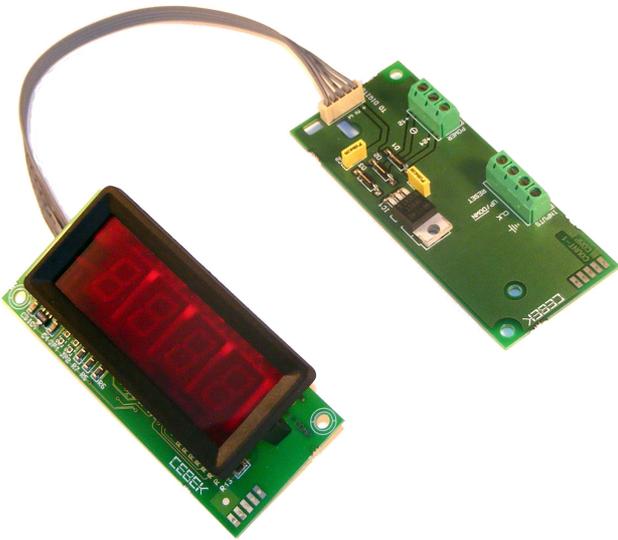




# cebek<sup>®</sup>

## DIGITAL COUNTER Up/Down CD-3



### TECHNICAL CHARACTERISTICS

Voltage.....	12/24 V.DC.
Protection against Priority Inversion.....	Voltage Input.
Inputs activation.....	Contacts Closure/Low level,(5V.D.C.).
Minimum /Maximum Consumption.....	65/82 Ma.
Maxi. Input frequency.....	125Hz /1Khz.
Count capacity.....	9999 units
Module Dimensions/Digit Size.....	100x42x30mm./0,5"

Up/Down cyclic counter with Reset input and anti-rebounds filter. It allows to control inputs by closing contacts, through free voltage devices or through TTL signals.

The capacity to count is for 4 digits and the display size will vary according the model.

**INSTALLATION AND POWER SUPPLY :** The module's installation has to be preferably done into an enclosure or a rack correctly ventilated, especially if you want to supply the module at 24V, avoiding any contact between the circuit and other metallic objects.

Do not install the device in place with humidity, high temperatures or with the possibility to be in contact with liquids.

It is not recommended to supply the module before to finish its installation. Please, you have to carefully read the rest of this instruction manual.

For the installation wiring, you have to respect the inputs polarity, and the cable length as to be as short as possible for CLOCK, UP/DOWN, and RESET. If the length is superior to 50 cm, you have to use shielded cable and to connect the braid to the corresponding screw with the ground symbol (negative). For all cases, the maximum length is 2m; with a superior length, you can destabilize the correct operating mode of the module. Inputs are activated at low level (0V). To excite them, you can use free voltage contacts, like push buttons, relays, switches, etc...or an external voltage signal of 5V. DC with the negative common connected to the circuit.

**POWER SUPPLY :** The circuit offers two independent power supply inputs with negative common, one at 12 VDC and one at 24 VDC. For the module operating mode, you have to select one of both inputs and never both at the same time.

If you select to supply the module at 12V or 24V, the used voltage has to be correctly filtered and stabilized. For this reason, we recommend you to use the FE-113 short-circuitable power supply with a low ripple level, which has been developed to perfectly answer to the circuit needs. Do never use rectifiers or basic power supplies to avoid to seriously damage the module.

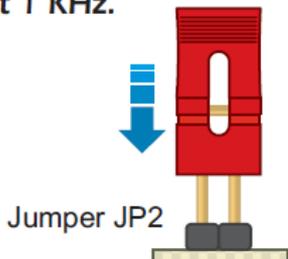
**NOTE :** To be in accordance with "CE" regulations, you have to install a fuse and a switch as it is indicated on the wiring map. Both are necessary for the module's protection as well as for your own safety. Verify that the assembly is correct.

**CLOCK INPUT :** When you connect it to the terminal indicated as ground, (or when an applied 5V DC signal falls to 0), it will increase or reduce the display register, according to the situation of the Up/Down contact. In order to avoid signal rebounds input or false impulses, from the factory, the circuit uses a filter for a maximum operating frequency of 125 Hz.

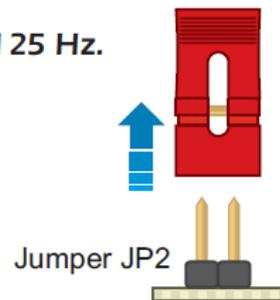
For applications where the clock signal comes from oscillators or stable devices, and requiring to work with a higher frequency, you can increase the internal filter up to 1KHz, closing the JP2 jumper of the display .If you leave it open, the maximum operating frequency will be again 125Hz.  
 Do never remove the JP1 Jumper ;this one as always to be maintained closed for a correct operating mode of circuit's internal functions.

**Fig. 1. Selection of a clock input filter.**

● Filter at 1 KHz.

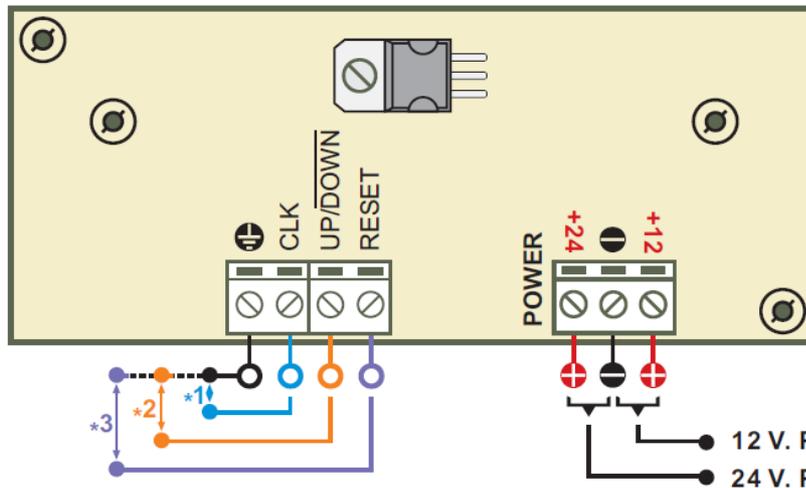


● Filter at 125 Hz.



**UP/DOWN INPUT** : If you leave it open or connected at 5V DC, (Up function) , each impulse in Clock will increase the count registered on the display. At the opposite, if you connect the input to the common ground terminal 0V (Down function), each impulse in clock will subtract one unit from the register of the display.  
**RESET INPUT** : If you maintain it closed regarding the ground, the circuit will reset the display and stop the impulses entrance.

**GENERAL WIRING MAP.**



- \*1. Impulses Input.
- \*2. Up / Down count.
- \*3. Reset Input.

12 V. Power Supply  
 24 V. Power Supply



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