



# VISUALIZED DIGITAL PERIOD COUNTER

Type:  
**GFM40**

PROGRAMMABLE DIGITAL VISUALIZATOR OF ROTATIONS WITH 4 DIGITS, WITH INPUT SUITABLE FOR MONO DIRCTIONAL COUNTING.

The period counter model **GFM40** is used to display rotational or linear speeds or counting referred to a pre selected time base. All the common types of controls are available using five different programmable operations.

It reads signals coming form electromechanical and logical contacts, proximity switches and encoder.

It finds application like RPM meter, tachometer, speed meter, productions meter etc.



## MAIN FEATURES

- Frontal keyboard in polycarbonate (antiscratch, antioil, antacid).
- IP65 protection degree
- Accessible parameters with key software
- Removable terminals connection.
- Execution DIN 48 x 48.
- Recessed assembly.
- Special retaining brackets.





## PROGRAMMABLE PARAMETERS

- Multiplier Factor
- Divisor Factor
- Time Base
- Display Reset Time
- Display Adjournment Time
- Input for Electromechanical or Logic Contacts
- Programmable Reset Key
- Programmable Decimal Point

## TECHNICAL FEATURES

- |  |   |
|--|---|
| • POWER SUPPLY IN ALTERNATE CURRENT              | : 230 Vac (50 / 60 Hz).   |
| • POWER SUPPLY IN DIRECT CURRENT                 | : 24 Vdc  |
| • POWER SUPPLY TOLERANCE                         | : +10% - 15%.   |
| • ABSORPTION                                     | : 2 W - 3 VA.   |
| • OPERATING TEMPERATURE                          | : -5 °C + 55 °C.  |
| • CLIMATIC CONDITIONS                            | : U.R. 95 % a 40 °C (without condensate).   |
| • COUNTER AND TOTALIZER VISUALIZATION            | : 4 digits, display high 11mm.  |
| • MULTIPLICATION FACTOR OF THE INPULSES IN INPUT | : programmable from 1 to 10000.   |
| • DIVISOR FACTOR OF THE INPULSES IN INPUT        | : programmable from 1 to 10000.   |
| • TIME BASE                                      | : Programmable between 1 / 60 / 3600.   |
| • INPUT TYPE                                     | : suitable for electromechanical contacts, amplified proximity and encoder, NPN and PNP |
| • MAXIMUM COUNT FREQUENCY                        | : up to 25 KHz with Duty Cycle=50%.   |
| • MINIMUM TIME FOR INPULSES COUNT                | : 0,25 mSec.  |
| • CUT OFF FREQUENCY FOR ELECTROMECHANICAL INPUTS | : about 30 Hz.  |
| • AUXILIARY INPUT SUPPLY                         | : 24 Vdc - 80 mA available on terminals.  |
| • PROGRAMMED DATA MEMORY                         | : Static (no battery)   |

## DESCRIPTION OF THE FRONTAL KEYBOARD

 <b>WHITE</b>	In programming phase it moves the cursor of the figure towards left of a step, than at the beginning it is on the right side first one on the. At the end it resumes from the first one to right.
 <b>WHITE</b>	The key ' <b>UP ARROW</b> ' in normal operating phase visualizes the totalizer of impulses. In programming phase it increases the value of the blinking figure.
 <b>WHITE</b>	The key ' <b>PRG</b> ' pressed for 2 sec. allows to enter in the programming phase, visualizing on display C.0000. In the programming phase, pressing key 'PRG' impulsively, it exits from the programming phase. The instrument exits automatically from the programming phase, 60 sec. after the pressure of the last key.
 <b>RED</b>	The key ' <b>ENT/RES</b> ' in normal phase of counting has the 'RESET' function, with the modalities to it attributed in the programming phase. In programming phase it confirms and memorizes the visualized data and passes to the successive function. If it has arrived to list end it resumes from the beginning.

## INPUTS / OUTPUTS DESCRIPTION - E SERIES

<b>AC POWER SUPPLY</b> (inputs 1-2)	AC Power Supply Input of the instrument; it can be to 24 - 110 - 230 VAC in according to demand.
<b>DPOWER SUPPLY</b> (inputs 3-4)	DC Power Supply Input of the instrument; input 3 (-), input 4 (+).
<b>24 VDC - 80mA</b> (inputs 12-13)	24 VDC - 80 mA auxiliary Power Supply that the instrument supply to feed the Encoder and proximity amplified.
<b>PRI</b> (input 10)	Input used for the polarization of the count and command inputs : connecting the PRI output to input 3 it configures the instrument in Negative logic (NPN), connecting the PRI output to input 4 it configures the instrument in Positive logic (PNP).
<b>INPUT</b> (input 11)	Input of count adapted for electromechanical and logical contacts, encoder and 3 wires proximity amplified, configurable in Positive (PNP) and Negative (NPN) logic through PRI input (10).

## INPUTS / OUTPUTS DESCRIPTION - Z SERIES

<b>AC/DC POWER SUPPLY</b> (inputs 2 - 10)	AC or DC Power Supply Input of the instrument; it can be to 24 - 110 - 230 VAC or 12 - 24 VDC in according to demand.
<b>24 VDC - 80mA</b> (inputs 7 - 8)	24 VDC - 80 mA auxiliary Power Supply that the instrument supply to feed the Encoder and proximity amplified.
<b>PRI</b> (input 9)	Input used for the polarization of the count and command inputs : connecting the PRI output to input 8 it configures the instrument in Negative logic (NPN), connecting the PRI output to input 7 it configures the instrument in Positive logic (PNP).
<b>INPUT</b> (input 5)	Input of count adapted for electromechanical and logical contacts, encoder and 3 wires proximity amplified, configurable in Positive (PNP) and Negative (NPN) logic through PRI input (9).

## PROGRAMMING OF THE OPERATION PARAMETERS

The programmable parameters are divided in two groups and protect with a 4 figures code.

In order to approach the programming, proceed in the following way:

- Press key **PRG** for about 2 sec. On the display appears:

Cod
000

**GROUP 1** : in order to approach the parameters of group 1, insert code **101** and press **ENT**

F.M
000 :

**F.M. = 4 digits multiplier** , programmable from 1 to 10000. This parameter allows to multiply the number of the input impulses, showing them on the display in an other format. If it programmed = 0 it means programmed 10000.

**Attention:** the variation of the value of the multiplying modifies automatically the value of the count and the totalizer.

F.d
000 :

**F.d. = 4 digits divisor** , programmable from 1 to 10000. This parameter allows to divide the number of the input impulses, showing them on the display in an other format. If it programmed = 0 it means programmed 10000.

**Attention:** the variation of the value of the multiplying modifies automatically the value of the count and the totalizer.

b.t.
60

**b.t. = Time Base.**

This programming allows to select in which time base shows on the display the measure in input. There are three scales:

**1 = Time Base: seconds**, measure visualization in seconds (ex. Meters/seconds)

**60 = Time Base: minutes**, measure visualization in minutes (ex. Liters/minutes)

**3600 = Time Base: hours**, measure visualization in hours (ex. Bottles/hour)

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When the device is switched on and when there are no impulses in its input, the device visualize 4 horizontal bars.

Pressing the key the totalizer of impulses will be visualized for 5 sec.

tot.
99999

The totalizer visualizes all the impulses that the instrument counts from its input IN1.

It can be resetted through frontal key RES only or from RESET input when it is visualized on the display.

## PROGRAMMING OF THE OPERATION PARAMETERS

The programmable parameters are divided in two groups and protect with a 4 figures code.

In order to approach the programming, proceed in the following way:

- Press key **PRG** for about 2 sec. On the display appears:

Cod
000

**GROUP 2** : in order to approach the parameters of GROUP 2, insert code **020** and press **ENT**

t.d. 01
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**t.d. = Updating time of the display.**  
This parameter allows to program the delay time of the data adjournment on the display. It's programmable between 0 (instantaneous) and 9,9 sec

In F
In S

**Input Fast - Slow.**  
This programming allows to set the count input to read signals coming from electromechanical contacts (relays, switches etc.) or from logical signals like proximity switches transistor and encoder.  
**In = F.** sets the input to read digital signals up to 28 KHz.  
**In = S.** sets the input to read electromechanical signals up to 25 Hz.

rSou
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**Operation of the RESET Key;** this programming enable and disable the RESET working of the frontal RES key during the operation, as in the following modes:  
**RS.on.** = executes the RESET of the visualized parameter  
**RS.of.** = RESET working of the RES key excluded.

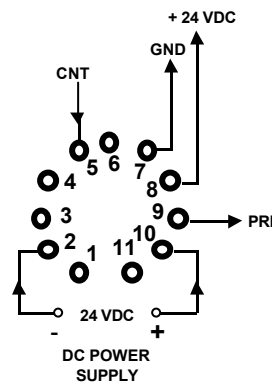
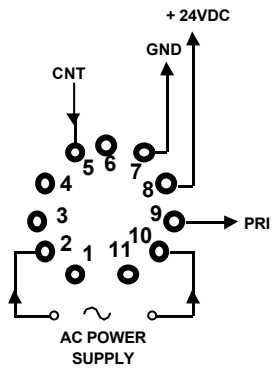
dP. 0
dP. 4

**d.P. = Programming of the Decimal Point**  
This programming allows to add a decimal point to the visualization on the 4 digits, in order to obtain counts with various resolutions.  
**d.p. = 0** Decimal Point excluded; visualization 9999  
**d.p. = 1** Decimal Point on the second display from right; visualization 999,9  
**d.p. = 2** Decimal Point on the third party display from right; visualization 99,99  
**d.p. = 3** Decimal Point on the fourth display from right; visualization 9,999  
**d.p. = 4** Floating Point.

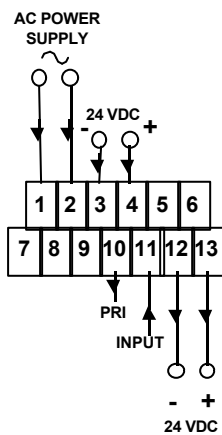
AP. P.
AP. r.

**A.P. = Activation mode of the programmed parameters.**  
With this programming is possible to activate the executed programmings directly to the exit of the programming or, when exited of the programming, after a RESET (with frontal key or from rear input).  
**A.P. = P.** Activation of the parameters to the exit of the programming.  
**A.P. = r.** Activation of the parameters to the exit of the programming after a RESET.

## Z SERIES - CONNECTIONS

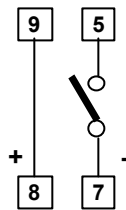


## Z SERIES - CONNECTIONS

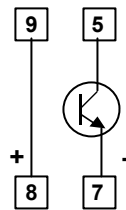


## Z SERIES - INPUT SIGNALS

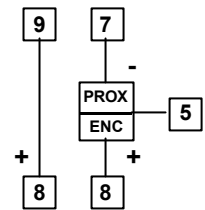
### NPN



INPUT FOR NPN CONTACT

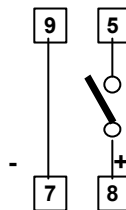


INPUT FOR NPN LOGIC

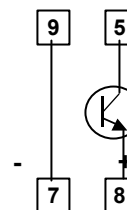


INPUT FOR PROXIMITY AND ENCODER AMPLIFIED 24 VDC

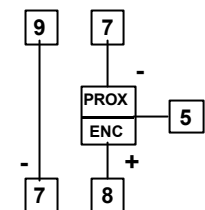
### PNP



INPUT FOR PNP CONTACT



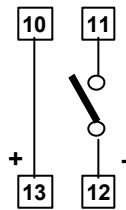
INPUT FOR PNP LOGIC



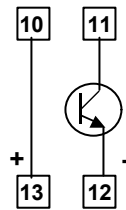
INPUT FOR PROXIMITY AND ENCODER AMPLIFIED 24 VDC

## E SERIES - INPUT SIGNALS

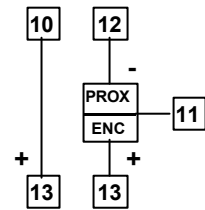
### NPN



INPUT FOR NPN CONTACT

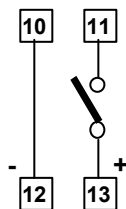


INPUT FOR NPN LOGIC

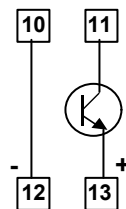


INPUT FOR PROXIMITY AND ENCODER AMPLIFIED 24 VDC

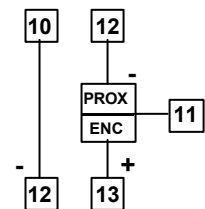
### PNP



INPUT FOR PNP CONTACT



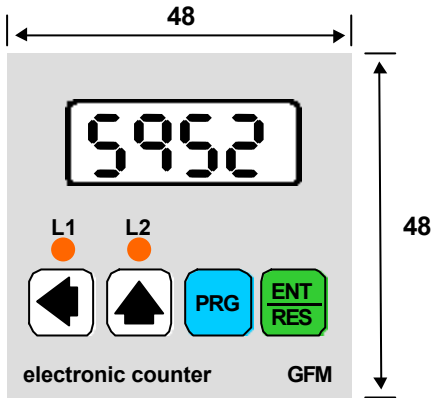
INPUT FOR PNP LOGIC



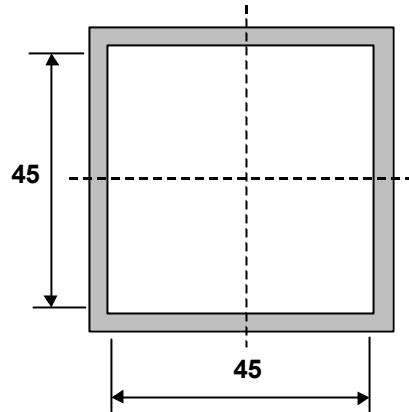
INPUT FOR PROXIMITY AND ENCODER AMPLIFIED 24 VDC

**OVERALL DIMENSIONS (mm)**

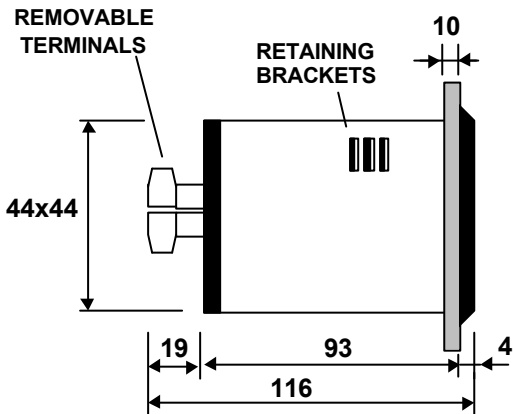
**FRONT**



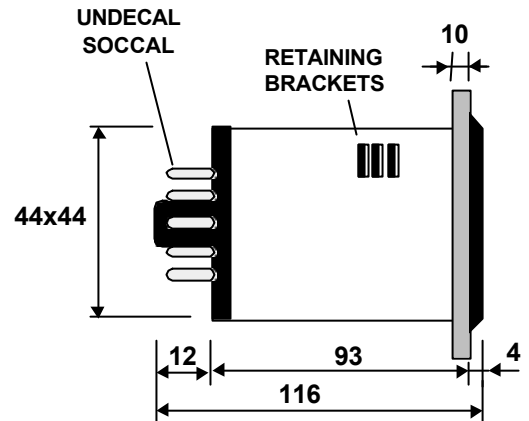
**DRILL TEMPLATE**



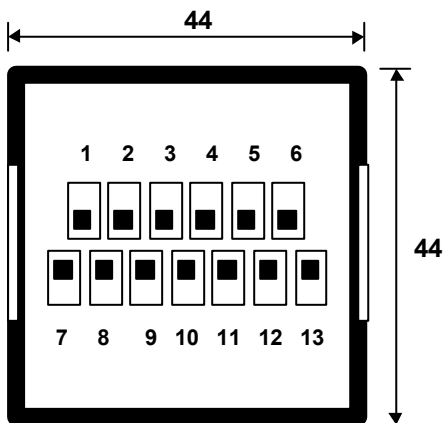
**E SERIES SIDE**



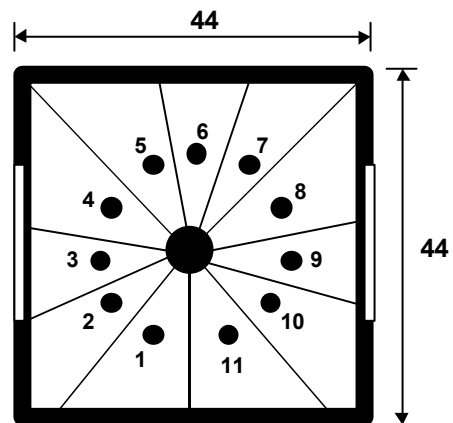
**Z SERIES SIDE**



**E SERIES REAR**



**Z SERIES REAR**



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