528 Series

Electronic Time Meter with 2 Timers

Type series 528

1. Description

- 6digit time meter, resetable
- LED-Display with 8 mm high characters and very high luminosity
- Display range 0..999999 with leading zero blanking.
- Programming of time functions and operating parameters via the setting keys. During programming the display guides the user with text prompts.
- Supply voltage 10..30 VDC
- Programmable features:
  Input polarity (npn or pnp)
  Max. Start/Stop response frequency (30Hz or 10kHz)
  Input mode (both time meters in common)
  Operating mode (both time meters in common)
  Reset mode for time meter 1 and/or 2:
  electrical
  manual
  manual and electrical
  no reset

2. Inputs

INP A
Stop input (depending on chosen input mode)

INP B

Start/Stop or gate input (depending on chosen input mode)

RESET

One dynamic reset input and red reset key. Can be programmed for each timer separately.

3. Setting of the parameters

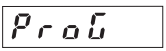
3.1 Selecting the displayed value

By pressing the right key, it can be chosen whether the current value of time meter 1 or time meter 2 is displayed.

Pressing the right key once the current function („time1" or „time2") is displayed for 2 seconds. If within this period the right key is pressed again, the current function is changed. The display shows the new current function a short time.

3. 2 Setting the operating parameters

a. Hold down both keys on front panel and switch on the supply voltage.
b. The display shows
c. After releasing the keys the display alternates



between menu title and coressponding menu item at a frequency of 0.5 Hz. After any key is pressed down, only the menu item is displayed.
d. Pressing the right key, the menu item will be switched to next value.
e. Hold down the left key and press the right key to enter and switch to the next menu title.
f. After programming the last menu item, the programming routine will be left and the new values will be stored by switching the menu item to „YES". If you chose „NO", the programming routine will be passed through once again.

4. Programming routine

Programmable parameters are shown in succession. After one pass, the device is fully programmed.
In each case the first shown item is the factory preset.

4.1 Input polarity

npn: switching to 0 V

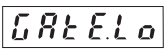
pnp: switching to +V (4-30)

4.2 Activating the 30 Hz filter

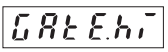
Start/Stop responce 50u seconds

Start/Stop responce 16 miliseconds

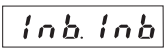
4.3 Input mode time meter



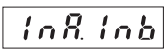
Start/Stop via INP B. Timing while INP B (gate) inactive or open



Start/Stop via INP B. Timing while INP B (gate) active (High level at pnp; Low level at npn)

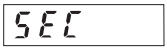


Timing will be started and stopped via INP B (LOW-HIGH edge at pnp; HIGH-LOW edge at npn). Every active edge changes the timer status.



Timing will be started via INP A, stopped via INP B (LOW-HIGH edge at pnp; HIGH-LOW edge at npn).

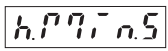
4.4 Operating mode (Both units)



Timing in s (resolution depending on position of the decimal point*)

Timing in min. (resolution depending on position of the decimal point*)

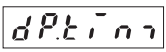
Timing in h (resolution depending on position of the decimal point*)



Timing in h:min:s (decimal point will be ignored)

*0, 0.1, 0.01, 0.001 means: Counting in 0, 0.1, 0.01, 0.001 units of time

4.5 Decimal point (Also sets resolution)

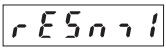


The decimal point indicates the number of decimal places.(Both units)

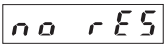
0 no decimal place

0.0 one decimal place
0.00 two decimal places
0.000 three decimal places

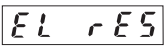
4.6 Reset mode time meter 1



manual reset (red key) and electrical reset



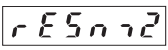
no reset (red key and reset input locked)



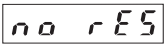
electrical reset only

manual reset only

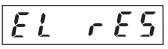
4.7 Reset mode time meter 2



manual reset (red key) and electrical reset



no reset (red key and reset input locked)

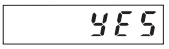


electrical reset only

manual reset only

4.8 End of programming

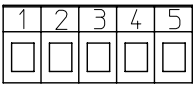
Programming routine will be passed through once again. All parameters can be checked.



Programming routine will be left and the new parameters will be stored. Afterwards the device is ready to use.

5. Connections

1 10-30 VDC
2 0 V (GND)
3 INP A
4 INP B
5 RESET



6. Technical data

Supply voltage:
10...30 VDC

Max. current consumption:
50 mA

Display:
6digit LED-Display, 8 mm high characters

Polarity of input signals:
programmable for both common inputs (npn or pnp)

Input resistance: appr. 10 kohm

Count frequency: 10 kHz can be damped to 30 Hz

Min. pulse length of the control inputs: 5 ms

Input sensitivity:
Low: 0 to 1 VDC
High: 4 to 30 VDC

Pulse shape: variable (Schmitt Trigger characteristic)

Data retention:
via EEPROM 1x10^6 memory cycles or 10 years

Noise immunity:
EN 50081-2; EN 55011 class B; EN 50082-2

Ambient temperature: +14°F...+122°F (-10 °C...+50 °C)

Storage temperature: -13°F...+158°F (-25 °C...+70 °C)

Weight: appr. 1.76 oz.(50 g)

Protection: IP 65 (front)

Cleaning:
The front of the unit is only to be cleaned with a soft wet (water !) cloth.

7. Dimensions:

W = 1.88“ (48mm) H = .944“ (24mm) D = 2.32“ (59mm)

8. Cutout:

W = 1.78“ (45.2mm) H = .876“ (22.3mm)

With adaptor: W = 1.97“ (50mm) H = 0.99“ (25mm)

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