

# 528 Series

## Electronic Time Meter with 2 Timers

### 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 (nnp or npn)  
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

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

Prog

between menu title and corresponding menu item at a frequency of 0.5 Hz. After any key is pressed down, only the menu item is displayed.

- Pressing the right key, the menu item will be switched to next value.
- Hold down the left key and press the right key to enter and switch to the next menu title.

- 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

InPOL

nPn

nnp: switching to 0 V

PnP

nnp: switching to +V (4-30)

#### 4.2 Activating the 30 Hz filter

FILTEr

hi

Start/Stop response  
50u seconds

Lo

Start/Stop response  
16 milliseconds

#### 4.3 Input mode time meter

StArT

GAteELo

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

GAteEhi

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

Inb.Inb

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

InA.Inb

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

#### 4.4 Operating mode (Both units)

mode

SEC

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

min

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

hour

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

h.min:s

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)

dp. n

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

0

0 no decimal place

0.000

0.0 one decimal place

0.00 two decimal places

0.000 three decimal places

#### 4.6 Reset mode time meter 1

reset 1

parallel

manual reset (red key) and electrical reset

no reset

no reset (red key and reset input locked)

EL reset

electrical reset only

parallel reset

manual reset only

#### 4.7 Reset mode time meter 2

reset 2

parallel

manual reset (red key) and electrical reset

no reset

no reset (red key and reset input locked)

EL reset

electrical reset only

parallel reset

manual reset only

#### 4.8 End of programming

EndPro

no

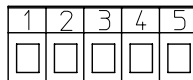
Programming routine will be passed through once again. All parameters can be checked.

YES

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

### 5. Connections

- 10-30 VDC
- 0 V (GND)
- INP A
- INP B
- 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<sup>6</sup> 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)