

LABOR – ASTER

INDUSTRIAL AUTOMATION



TWO-WIRE CURRENT SETTING UNIT type ZD

- Supplied by 4...20mA line current
- Configurable scale of indication range
“indication in physical units”
- Range of setting current 3,0...21,5mA
- 8 programmable memory setting cells
- Converter resolution 12 bits
- LCD indicator with backlight
4 digits 12mm

APPLICATION :

Current line setting unit **ZD** is designed to inflict current 4÷20mA flowing in the loop. Device can work as passive signal 4÷20mA adjuster in a circuit powered e.g. by a driver or regulator or be used for checking and running automatic systems simulating two-wire converter.

The setting unit is powered from 4÷20mA current loop without requiring additional power supply. Set current can be displayed in mA or in any physical units according to a scale programmed by the user (e.g. 0...100%). The setting unit has eight non-volatile memory cells. Typically the setting unit is in board housing. On customer request it can be mounted on special clips (fig. 2b) so it can be installed on rail TS35.

BASIC TECHNICAL PARAMETERS :

Input signal	- 3.00 ... 21.50mA (any polarization of connection to the terminals 1, 2)
Supply voltage on ZD unit terminals	- 6...36V DC
Indication	- any programmable in range -999 ... 9999
Indicator with backlight	- LCD 4 digits, 13mm



Accuracy class	- 0.1% ± 1 on the last digit
Resolution	- 0.025%
Temperature drift	- 0.005% / °C
Error due to supply voltage change	- 0.005% / V
Setting saving	- 8 non-volatile memory cells
Display operation cycle	- 0.25s (refreshing 4 times /sec)
Housing	- board IP54 72 x 72 x 61mm panel size 68 x 68mm
Operating temperature	- -20 ... +50°C
Relative humidity	- 0 ... 90%
Safety requirements LVD	- PN-EN 61010-1:2002
EMC requirements	- PN-EN 61000-6-1 - PN-EN 61000-6-3

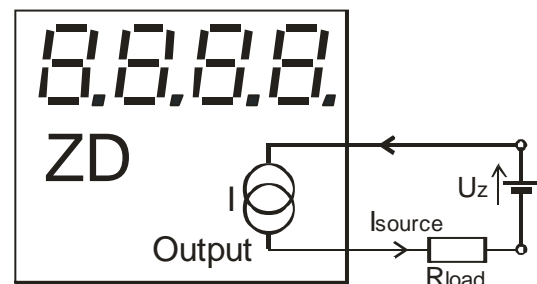


Fig. 1. How to connect ZD setting unit

FUNCTIONAL DESCRIPTION:

The setting unit allows to choose the value of flowing current in the line by one of the buttons which are representing memory cells with saving settings **P1...P4** (long pressing of **P1** button is cell **P5**, **P2**→**P6**, **P3**→**P7**, **P4**→**P8**) or smooth control of the current by **▲▼** buttons. The setting unit controls the current flowing in the line and exceeding the error between this current and internal control measurement current signal (check point 4. on page 2) by 0.4% is indicated by blinking of the display. It usually means that the supply voltage on the terminals is too low or line resistance is too high.

Functions included in the program are given below. In programming mode **P4** button causes undo in the program by one step. The setting unit comes back to the basic state after 60 seconds after pressing any button.

1) Programming memory cells:

- set the value of the current which you like to save by ▲ ▼ buttons;
- press **OK** button;
- with ▲ ▼ buttons choose a memory cell (**P1...P8**) in which you want to save the value of the current;
- confirm by **OK** button.

2) Display test:

- press **MENU** button;
- press **P1** button – all segments of the display will light up until any button is pressed;

3) Calibration (the device is factory calibrated, the user can perform calibration but it is not recommended):

- to calibrate the beginning (the end) of the range current of the value 4.00mA (20.00mA) should be set by ▲ ▼ buttons;
- press **MENU** button;
- press **P2** button;
- choose **Lo (Hi)** by ▲ ▼ buttons and confirm with **OK** button – on the display will be message **Lo ? (Hi ?)**;
- again confirm with **OK** button – on the display will start counting down from 32 after which the device will come back to basic state (no coming back indicates failure of the calibration).

4) Displaying control measurement:

- press **MENU** button;
- press **P3** button – internal control measurement signal in programmed scale (check last paragraph on page 1) will display.

5) Parameters P0...P4 on the display:

- press **MENU** button;
- by ▲ ▼ buttons choose on the display one of the parameters (**P0...P4**);
- confirm by **OK** button;
- a) parameter **P0** – location of the dot and setting the beginning of the range of the scale:
 - by ▲ ▼ buttons choose location of the dot;
 - confirm by **OK** button;
 - by ▲ ▼ buttons set the value of the four digits on the display starting from the youngest (from the right side) and confirm each with **OK** button;
- b) parameter **P1** – setting the end of the range of the scale:
 - by ▲ ▼ buttons set the value of the four digits on the display starting from the youngest (from the right side) and confirm each with **OK** button;
- c) parameter **P2** – resetting the scale to the factory set (4.00...20.00):
 - confirm by **OK** button;
- d) parameter **P3** – turning on / off backlight of the display:
 - confirm by **OK** button.

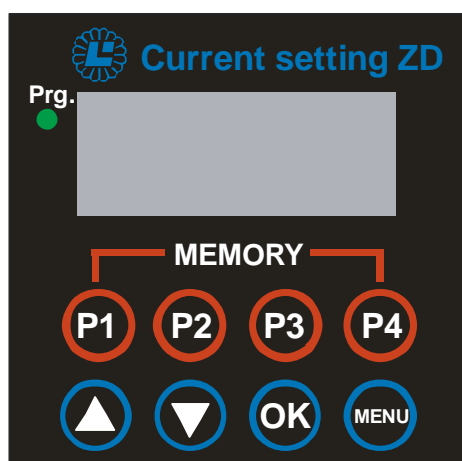


Fig. 2a. Front panel view of the board setting unit

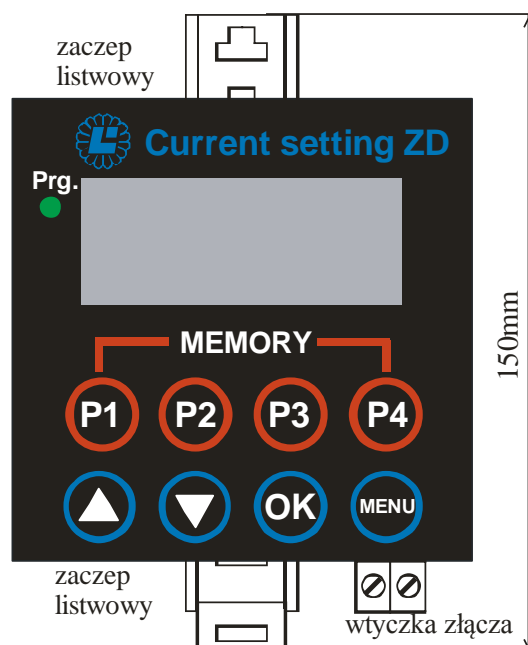


Fig. 2b. Front panel view of the rail setting unit

HOW TO ORDER: **ZD-T** – setting unit in board housing

ZD-L – setting unit in rail housing (there will be special clips on TS35 rail)

Production and distribution:

LABOR – ASTER

Poland, 04 – 218 Warsaw, ul. Czechowicka 19

tel. (22) 610 71 80 ; 610.89.45; fax. (22) 610.89.48.

e-mail: biuro@laboraster.pl ; labor@labor-automatyka.pl ; [http:// www.labor-automatyka.pl](http://www.labor-automatyka.pl)

The manufacturer reserves the right to make changes to the product

Issue 02/2016