



Operating Principle

The model TDP-... plug-in display is a universal local display suitable for use with various transmitters. The transmitter must be fitted with an analogue output and a connector in accordance with DIN 43 650. Type TDP-2000 can be delivered for use in hazardous areas. The plug-in display is simply plugged in between the connector and socket; it is then ready for operation. The plug-in display is user programmable. Scaling, the position of the decimal point, gate time and switch point may be set with two keys. The menu steps are output to the LED display field.

Mechanical Connection

The plug-in display is simply plugged in between the connector and the socket, it is then ready for operation. The mounting screw must be replaced with the longer screw that is part of the delivery scope. The seals must be located between the sensor/TDP and TDP/sensor. The indicating unit can be rotated in 90° steps.

Beneath the LED-display a dimension-band can be mounted.

Electrical Connection

Connect the plug-in display as shown in the wiring diagram.

Connector assignment

Auxiliary power (TDP-1001)

The auxiliary power (typically 24VDC) must be greater than

	TDP-1001
PIN 1	+V _S /S+
PIN 2	GND/S-
PIN 3	Switch out

the voltage drop across the sensor, the voltage drop across the display (5 V) and any other voltage losses (additional evaluation, cable losses).

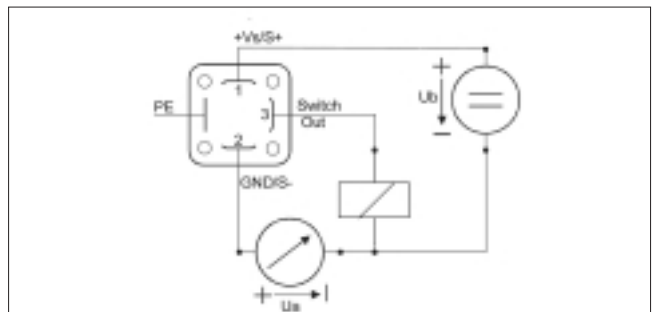
$$U_b \geq U_s + (U_a) + 5V$$

(U_s = voltage drop across sensor)

Switching output (TDP-1001)

The operating voltage U_b at PIN 3 is connected through via a PNP-transistor when reaching the switching threshold. The max. current load constitutes 90 mA.

Connection example TDP-1001



Adjusting the Display



For adjustment, the 4 Phillips screws of the display should be unscrewed and the cover removed.

- A ⇒ Downward and selection of menu items
- B ⇒ Upward and selection menu items
- A+B ⇒ Enter menu selection for adjustment or to exit acknowledge setting

Decimal Point

Press key B until: is displayed.

Press A+B to enter adjustment menu:

Press B or A for up and down:

Press A+B to acknowledge setting and return to menu item "dP"

Zero-Point (value to be displayed for 4 mA)

Press key B until: is displayed.

Press A+B to enter adjustment menu: for example: (0 bar)

Press B or A for up and down

Press A+B to acknowledge setting and return to menu item "2P"

Span (value to be displayed for 20 mA)

Press key B until: is displayed.

Press A+B to enter adjustment menu:

Press B or A for up and down: (for example: 60 bar)

Press A+B to acknowledge setting and return to menu item "EP"

Damping

Press key B until: is displayed.

Press A+B to enter adjustment menu: (min. = 0.3 s; max. = 20.0 s)

Press B or A for up and down: (for example: 1,5 sec)

Press A+B to acknowledge setting and return to menu item "F i L t"

Range Exceeded (indication of less than 4 mA or greater than 20 mA)

Indicates "H i" if the upper limit or "L 0" if the lower limit is exceeded

Press key B until: is displayed.

Press A+B to enter adjustment menu: message disabled

Press B or A for up and down: message enabled

Press A+B to acknowledge setting and return to menu item "H i L 0"

Indication: "H i" = Upper range exceeded, "L 0" = Lower range exceeded

Attention:

When the "H i L 0" indication is disabled, error code "Er06" is displayed if the scale range (-1999 to +9999) is exceeded.

Switching Point (model: TDP-1001)

Press key B until: is displayed.

Press A+B to enter adjustment menu:

Press B or A for up and down (20 bar)

Press A+B to acknowledge setting and return to menu item "5P t"

Attention: The standard hysteresis is the adjusted switching point minus 3 digits (first digit resp. first position right). On customer's request the hysteresis can be factory-set.

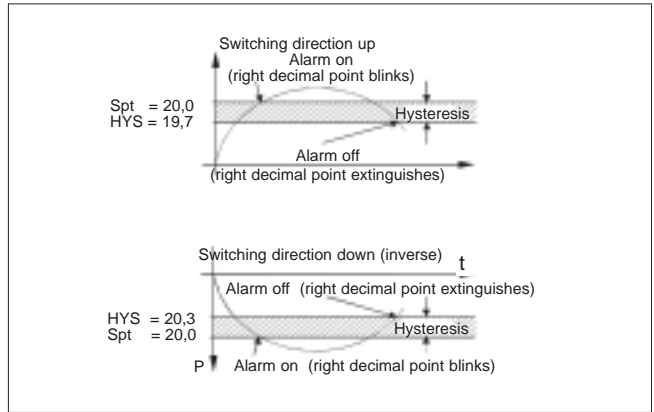
Switching direction (model TDP-1001)

Press key B until: d r r - is displayed.

Press A+B to enter adjustment menu: - - d n
(hysteresis via switching point, inverse)

Press B or A for up and down - - U P
(hysteresis below switching point)

Press A+B to acknowledge setting and return to menu item "d ir"



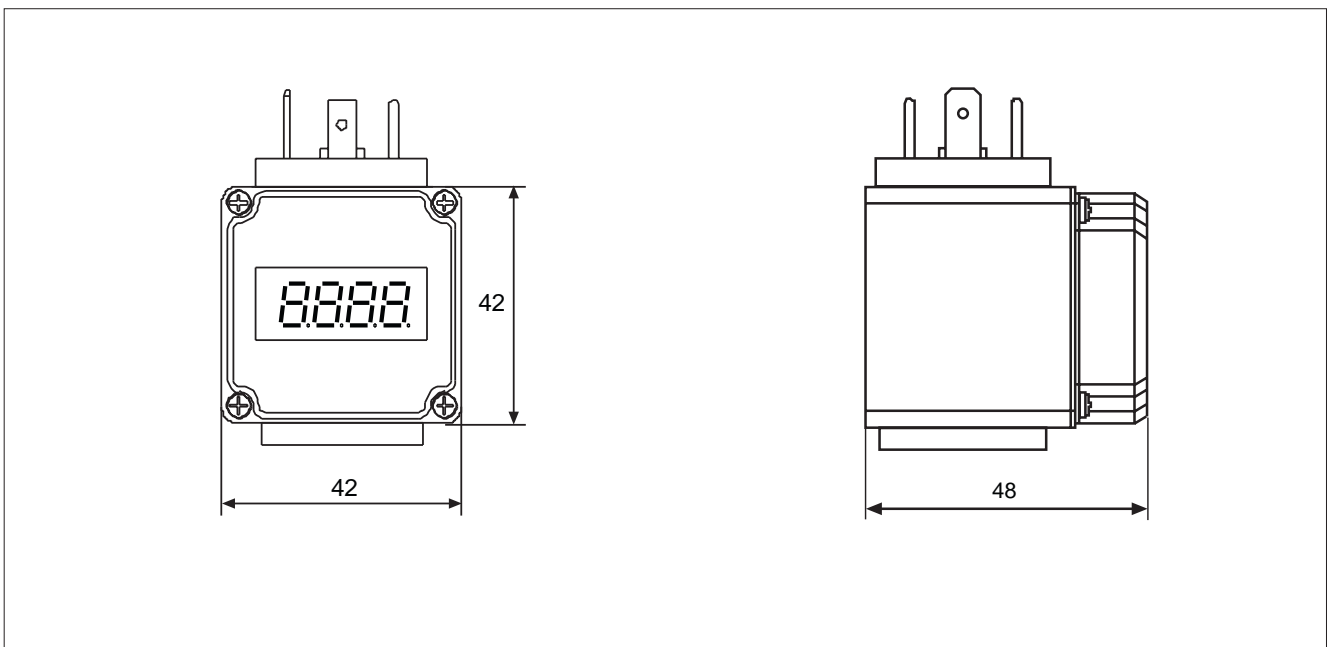
Return to Measuring Mode

Depending on the selected menu point, press key A or B from one to eight times.

TECHNICAL INFORMATION

Display:	4-digit red LED display, Digit height: 7.62 mm Programmable decimal point setting
Indicating range:	-1999 to +9999
Accuracy:	0.2% of span \pm 1 digit
Electrical connection:	To transmitters with 4–20 mA output 2- or 3-wire and plug acc. DIN 43 650, polarised
Sensor supply:	not required, self-supply loop powered
Voltage drop:	\leq 5 V (acc. load: max. 250 Ω)
Max. current load:	max. 60 mA
Conversion rate:	Three measurements/s,
Gate time:	0.3-20 s (adjustable)
Data back-up:	Non-volatile EEPROM
Error message:	HI: overrange LO: underflow
Programming:	With two keys, menu-assisted, scaling of indication, decimal point, gate time, error message switch point (TDP-1001)
Protection:	IP 65
Temperature influence on display:	0.01% / $^{\circ}$ C
Storage temperature:	-30...+80 $^{\circ}$ C
Ambient temperature:	0...+60 $^{\circ}$ C
Housing material:	Polyamide Pa6 GF30, light orange Front window made of PMMA red
Switching output Open Collector:	PNP, max. current load 90 mA


DIMENSIONS



ORDERING INFORMATION

DESCRIPTION	
plug-in display with open collector	1001
plug-in display Ex II 2GEEEx ib IIC T4	2000

TDP



Declaration of Conformance

Plug-In Display Model: TDP-...

is in conformity with the standards noted below:

DIN EN 50081-2 1994-03

DIN EN 50082-2 1996-02

Also the following EWG guidelines are fulfilled:

89/336 EEC

EMC Directive

For Declaration of Conformance certificate, please contact GEFTRAN spa

Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein. The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EWG-machine guidelines.

Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition. Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Plug-In Display model: TDP-1.../TDP-2...
- Operating Instructions

Regulation Use

Any use of the Plug-In Display, model: TDP-..., which exceeds the manufacturer's specification may invalidate its warranty. Therefore any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice