HD 2601V.1
HD 2601V.2

Installation and connections

Fig. 1 shows the typical configuration: the display is inserted between the transmitter (8) and the DIN43650 female connector (1).

The display has two keys: one externally accessible (5) used for data display: current measurement, maximum, minimum and average values, timer; the internal key (9) is accessible only after removing the cover, and is used together with the external key for programming.

In box (3) over the display window, the unit of measurement label can be applied.

The card supporting the display and relevant cover can be rotated at 90° pitches by unscrewing the 4 screws at the corners.

Fig. 2 and 3 illustrate the electrical connections of the single model HD2601V.1 and the dual model HD2601V.2.

Vdc represents the direct current power source.
RL, RL1 e RL2 are the devices inserted in the current loop (PLC, recorder,…).
In the HD2601V.1 model, Rd represents the load connected to the open-collector digital output.
NOTE on Fig. 2: if a relay coil is controlled, insert a diode protecting the device's output.

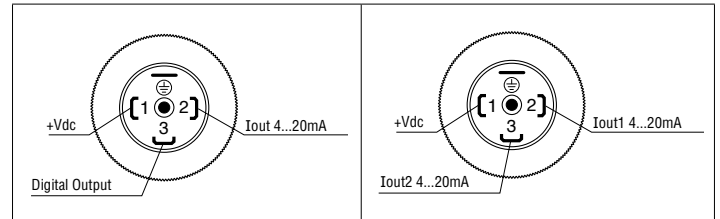The numbers 1, 2 and 3 refer to the information on the instrument's connector:

Fig.4 - HD2601V.1   **Fig.5** - HD2601V.2

To proceed with the electrical connections, open the connector by removing the screw (6) as shown in the Fig. 6:

Remove the gasket (1). Unscrew the fairlead (5) and take off the gasket (4). Use a screwdriver to pry and take off the connecting terminal (2). Make the connections as shown in the Fig. 7 and 8: if present, the shielded cable braid must be connected to the earth terminal.
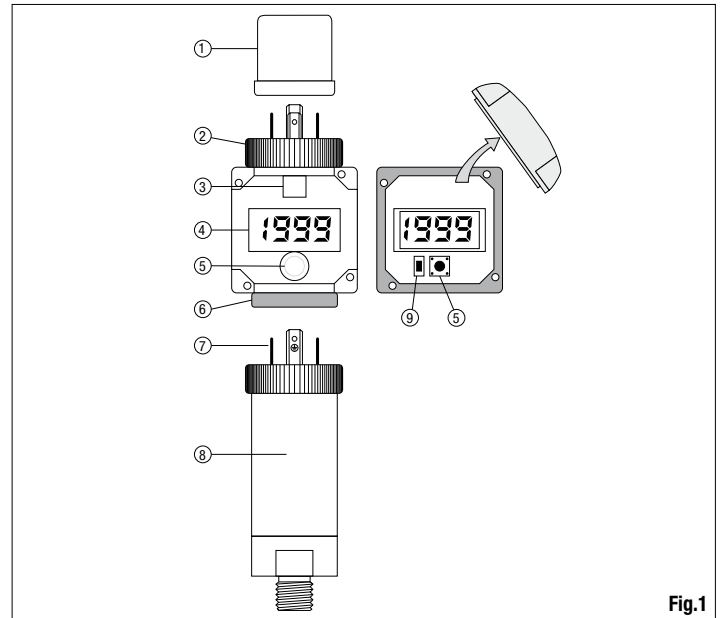Once the connections are made, close the connector.

HD 2601V.1, HD 2601V.2
4…20MA TRANSMITTER DISPLAYS WITH DIN43650 CONNECTOR

The HD2601V.1 is a 4...20mA passive transmitter display with DIN43650 connector; the HD2601V.2 model is fitted with two independent dual-output transmitter viewers. The display is inserted between transmitter and connector. Power is supplied by the 4...20mA current loop.

The snap-in display can be programmed by the user. Two keys can be used to set scale factors, decimal point position, display update time, maximum, minimum and average values display, time passed after turn-on, open-collector digital output parameters of the single display version.

The programmable parameters are saved into a permanent memory and are not erased when power is disconnected.

All device functions are continuously monitored by an integral diagnostic system. In the single model HD2601V.1, the open-collector digital output can control a digital device or a relay coil.

The instrument display can be rotated at 90° or overturned to fit different installation conditions.
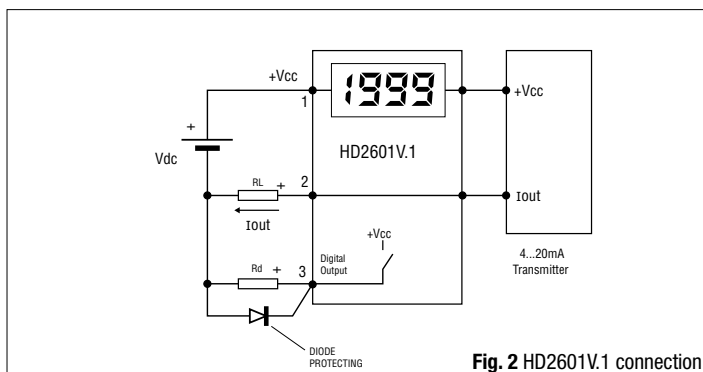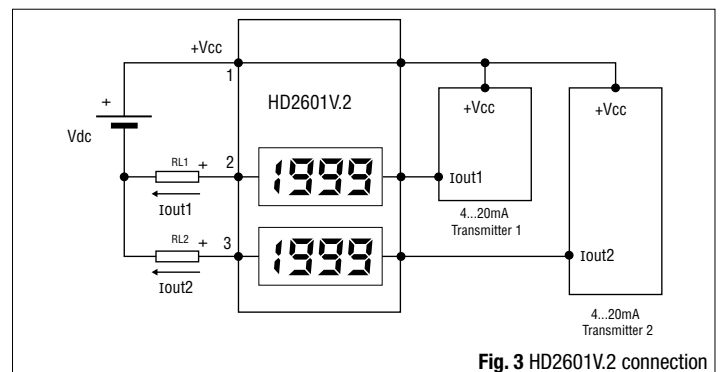
Fig.1

Fig. 2 HD2601V.1 connection
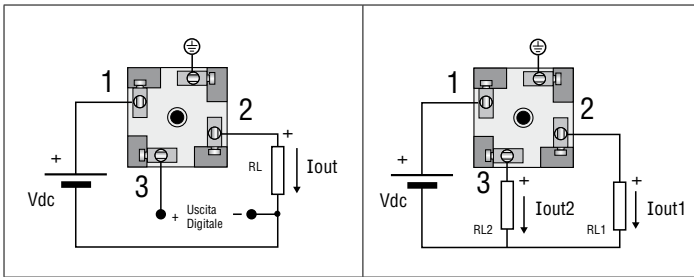
Fig. 3 HD2601V.2 connection

Humidity

Fig. 7 - HD2601V.1
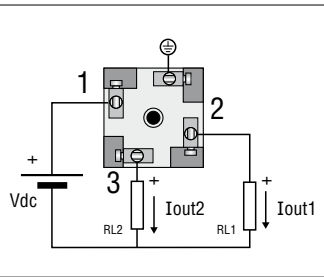Electrical connections of the connecting terminal

Fig. 8 - HD2601V.2
Electrical connections of the connecting terminal

The display is now ready for use: proceed with the programming of the scale factors.

Maximum load
The **RL maximum load** applicable to the 4...20mA loop, after insertion of the display, can be calculated as follows (see Fig. 2 and 3):

$$RL\text{max} = \frac{Vdc - (Vtx + 6)}{0,022}$$

Vdc is the direct voltage, **Vtx** is the voltage drop on the transmitter (shown in the relevant technical characteristics).

Display
By pressing the external key (5) (see Fig. 1) it is possible to display, in sequence, the maximum, minimum and average of the captured measurements since the last reset (Record function), and the time passed since the last reset (Timer function).
The controls to reset the Record and Reset functions are independent.
The following table shows, in the same order, the indications provided by the display when repeatedly pressing the external key (5). The sequence starts from measurement mode:

Display indication	Notes
Current measurement	
"HIGH" message	It means "HIGH"
Maximum value	
"Lou" message	It means "LOW"
Minimum value	
"Aug" message	It means "AVERAGE"
Average value	
Y ##	## shows the years
d ##	## shows the days
H ##	## shows the hours
n ##	## shows the minutes
S ##	## shows the seconds
"MEAS"	returns to normal measurement
Current measurement	

To reset the Record (MAX, MIN and AVG) values, keep the external key pressed (5) for about 10 seconds until the display indicates "CLr" (CLEAR).
To reset the timer use the RST (RESET) function in the menu: for the details see the chapter dedicated to programming.

Programming
In order to program the display, the internal key needs to be accessed: unscrew the four screws in the corners of the display face-plate. The internal key (INT) is shown in Fig. 1 by number (9), the external key (EXT) by number (5).
Using the INT key the various menu items are scrolled. Use EXT to access the displayed item. Within the menu item, the two keys are used to increase or decrease the current information. To confirm the entered value press simultaneously the two keys.
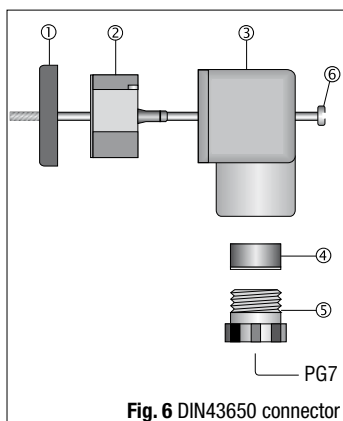To exit the menu, press INT and scroll all the items.

Fig. 6 DIN43650 connector

Menu Item	Description
dP	Selection of the decimal point position
ZP 4	Top scale value associated to the 4mA current
EP20	Bottom scale value associated to the 20mA current
filt	Sets the averaging filter on the measurement: this filter calculates the average current of the values captured. The instrument captures 4 measurements per second: one each 0.25s. By setting filt=0.25s no average is performed; with filt=5.00s the moving average is calculated on the last 20 samples. It is possible to set the intermediate values from 0.25s to 5.00s with 0.25s pitches.
HILO	If HILO=YES the display shows "Lo" if the current drops under the minimum threshold 4mA, and "HI" if the current raises over 20mA. If HILO=NO the display continues even outside the limits without showing any alarm.
S Fu (*)	Digital output (only HD2601V.1). By selecting YES the output is enabled, pressing NO the output is disabled.
S Pt (*)	Sets the digital output tripping point (see Fig. 9).
HYSt (*)	Sets the hysteresis width for digital output switching (see Fig. 9).
dir (*)	Sets the digital output tripping direction (see Fig. 9).
rst	Sets the timer to zero.

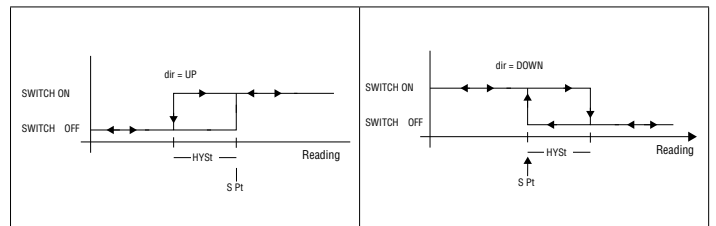(*) This function is available only for the HD2601V.1 model.

Fig. 9 Description of the Digital Output function

Technical characteristics

Display	4 digit LED, 7.6mm high. The decimal point position can be programmed.
Display range	-1999…+9999
Power	Power supplied by the 4…20mA current loop
Maximum voltage drop	6Vdc
Accuracy	0.2% of span ± 1 digit
Temperature drift	0.01%/°C
RL load resistance	RLmax = [Vdc-(Vtx + 6)] / 0,022
Speed of conversion	4 measurements per second
Electrical connections	DIN43650 connector
Parameter settings memory	Permanent
Programming	Using two keys (5 - 9), one internal
Display filter	Moving average that can be set from 1 (no average) to 20 samples
Error messages	HI = current over 20mA - LO = current under 4mA
Protection degree	IP65
Functioning temperature	-10…+80°C

Technical characteristics of the HD2601V.1 model digital output

Type of output	Open collector, ground output
Maximum current	100mA
Maximum reverse voltage	30Vdc

ORDERING CODES
HD2601V.1: Configurable sandwich LED indicator, plug-on, for transmitters with DIN 43650 connector and 4÷20 mA output, (i.e. HD2004T).
HD2601V.2: Configurable sandwich dual LED indicator, plug-on, for transmitters with DIN 43650 connector and 4÷20 mA outputs, (i.e. HD9008TR.K).

HD2601V.1

HD2601V.2