CRN TECNOPART, S.A.
Sant Roc 30
08340 VILASSAR DE MAR (Barcelona)
Tel 902 404 748 - 937 591 484 Fax 937 591 547
e-mail:crn@crntp.com http:// www.crntecnopart.com

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HD 2004T.. Y HD 20V4T..
PASSIVE PRESSURE TRANSMITTERS
WITH DIN 43650 CONNECTOR

HD 2004T and HD 20V4T are microprocessor pressure transmitters, with current output (4÷20 mA) the first and voltage output (0÷5V, 1÷5V or 0÷10V). The sensitive element consists of a jumper of piezoresistive resistors deposited on a ceramic membrane. At the variation of pressure, the bending of this membrane causes a linear and proportional variation of the bridge resistances. The stainless steel case (30 mm diam.) includes both the sensor and the electronics.
For the connection to the pressure there will be a part threaded ¼ "BSP and a tax on container for a key 27 mm. For the electrical connection is present on the side, a male connector pin Faston three or four (depending on model) with the corresponding female socket and PG7 cable gland to DIN 43650.

TECHNICAL SPECIFICATIONS

Output signal Current	4...20 mA (HD 2004T...)
Voltage	0...5V (HD 20V4T... **1**), 1...5V (HD 20V4T... **2**), 0...10V (HD 20V4T... **3**)
Pressure range	**1, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400 and 600 bar absolute** **1, 2.5, 4, 6, 10, 16, 25, 40, 60 bar relative**
Overpressure limit Up to250 bar	Twice the rated value
400 bar nominal	750 bar
600 bar nominal	750 bar
Sensor	Piezoresistive
Material in contact with the measuring fluid	Alumina
Fluid in contact with the diaphragm	Gas or líquids
Operating temperature	-30...+80°C
Power supply voltage	10...30Vdc (15...30Vdc for models having 0...10Vdc output)
Zero point adjustment and FS	± 10% using three keys Up, Down and Enter
Accuracy (linearity, hysteresis and repeatability	δ ±0.4%F.S.
Gain sensitivity to temperature changes (@ 25°C)	≤ ±0.008%F.S. between 0 and 70°C ≤ ±0.012%F.S. between -30°C and 0°C and between 70°C and 80°C
Zero sensitivity to temperature changes (@ 25°C)	≤ ±0.04%F.S.
Connection to plant under pressure	1/4"BSP male
Electrical connection	3/4 -pole faston male connector + DIN 43650 female connector (outlet)
Housing	AISI 304 stainless steel
Size	Ø 30x90 mm (included DIN 43650 connector
Weight	190 g
Load resistance for HD 2004T models... (see Fig.2)	R_{Lmax} = 636 & a 24 Vdc R_{Lmax} = (Vcc-10) / 22mA
Load resistance for HD 20V4T models	$R_L \geq 10K$
Response time	1 sec. (Time required to achieve the 63% of the final variation)

Installation and connections
HD 2004T... and HD 20V4T... transmitters can be installed in any position. Open
the female connector to make the electrical connections (see fig.3).

Transmitter Calibration
The transmitter output is factory-calibrated, thus no user's operation is generally requested.
Current output transmitters supply 4 mA on the upper scale and 20mA at full scale;
0...5V, 1...5V and 0...10V voltage output transmitters generate 0V or 1V at upper scale pressure and 5V or 10V at full scale pressure.

If the user wants to change these values (within a range of ± 10%), you must use the following instruments:
• a pressure gauge with full scale appropriate;
• a voltage value between 10 and 30Vdc;
• a precision ammeter 25 mA full scale or a voltmeter with an appropriate scale (minimum 5.5 or 11V depending on model).

Procedure
1) Connect the HD 2004T ... 20V4T or HD ... pressure generator using, if necessary, appropriate accessories.
2) Remove plastic cap placed at the base of the transmitter without turning the spade connector (see fig.5).
Behind the plastic sleeve is the calibration circuit with the keys and the LED, as shown in Figure 6.
3) Make electrical connections as shown in fig.7 and insert the connector into the transmitter.
4) Use the pressure of the beginning of the scale, for the first calibration point, press the ENTER key:
Programming LED lights to indicate it is
undertaking the first calibration of the transmitter.
5) Use the ▲ and ▼ to adjust the output to the desired value.
6) Confirm the information by operating the ENTER key:
Programming LED turns off.
To calibrate the value of the second calibration point in current or voltage of the top of the scale, repeat steps from 4) to 6) by applying pressure
upper scale.
7) Close the ring making sure the ground terminal into its headquarters and is in contact with the metal mass of the transmitter: the calibration procedure is
finished

Notes
A) To prevent the storage of incorrect data, the HD Series transmitters and HD 2004T ... 20V4T ... equipped with a security system that will detect
automatically during the calibration procedure without providing any data changes in memory, if between the keypress and the next, left to spend more than 45 seconds.
B) The HD Series transmitters and HD 2004T 20V4T ... .. automatically interpreted as pressure applied pressure to the start of the scale if this is within
15% of the nominal pressure, as pressure from the top of the scale if it is above 40% of the nominal pressure transmitter.

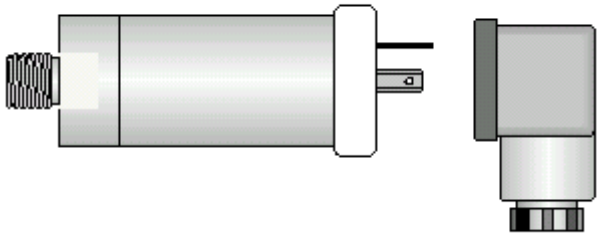


Fig.1 HD 2004T transmitter with DIN 43650 connector

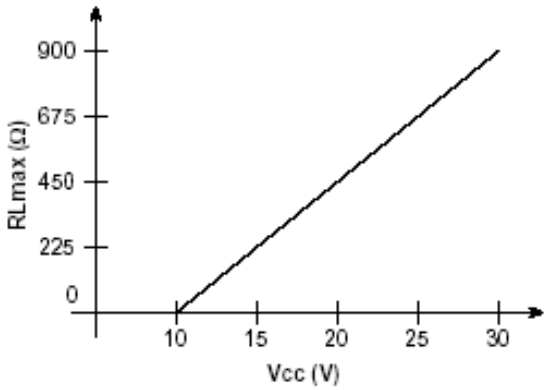


Fig.2 4...20 mA output load resistance according to the power supply voltage.

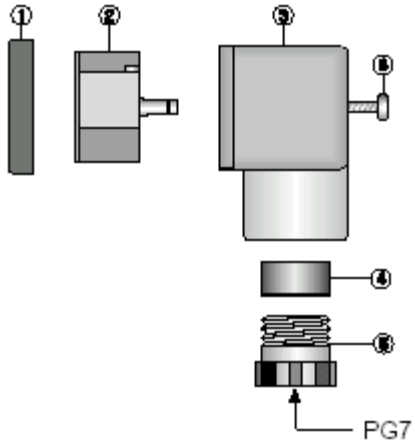
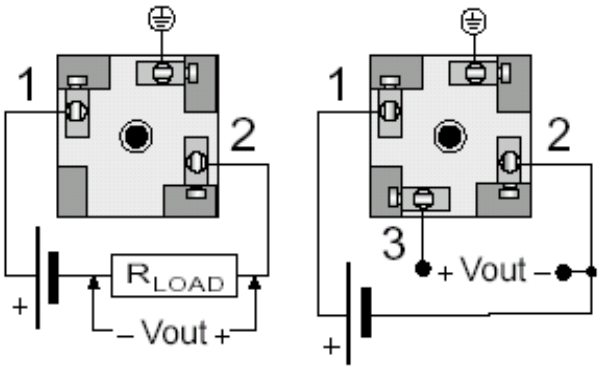


Fig 3
Connector
DIN 43650

Remove the board 1. Unscrew the packing 5 and remove the gasket 4. Use a screwdriver to pry out the basis of the terminals 2. making connections as shown in Figure 4: the ground terminal is connected when there is, pin shielded cable. After making connections, closing the container. Install the HD 2004T ... 20V4T or HD ... :
Transmitters have a threaded male fitting 1 / 4 "BSP. During assembly care should be taken with respect to the pressure tightness of the union; use accessories that are needed.
Apply to the transmitter connector and tighten with the screw 6

Warnings The pressure transmitter has a male threaded ¼" BSP. During installation, take special care to the pressure resistance of the junction. Use any appropriate seals



Current output Voltage output

Fig.4 DIN 43650 connector: electrical connections

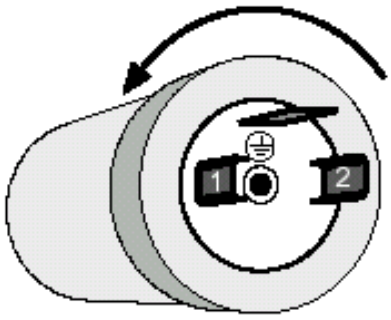


Fig 5

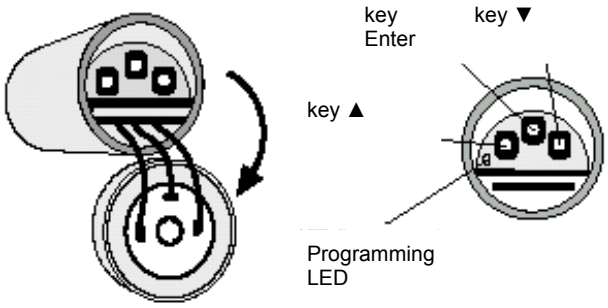
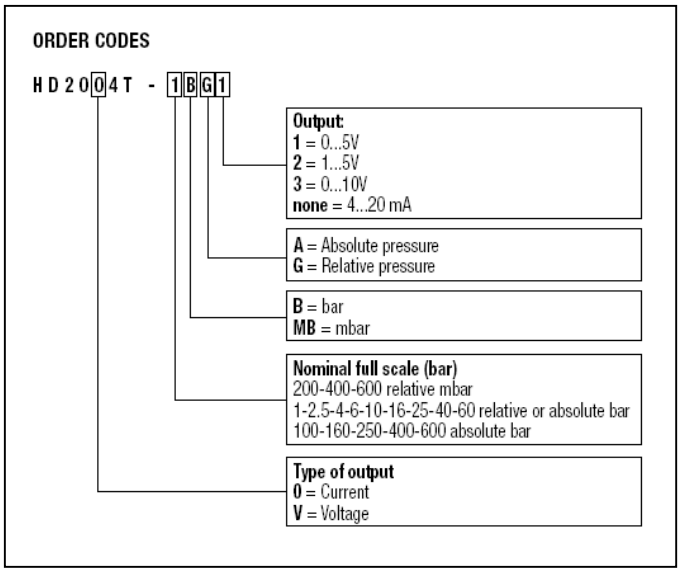
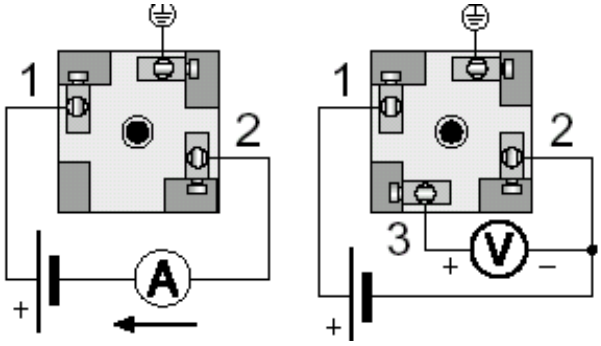


Fig 6 Description keys and programming LED





Current output Voltage output

Fig 7

CONSTRUCTION PROGRAM

FONDO ESCALA	RELATIVE Ref.: atmospheric pressure	ABSOLUTE Ref.: vacuum	ABSOLUTE Ref.: 1 bar s.g.
1 bar	HD 20...4T- 1 BG...	HD 20...4T- 1 BA...	
2.5 bar	HD 20...4T- 2 B5G...	HD 20...4T- 2 B5A...	
4 bar	HD 20...4T- 4 BA...	HD 20...4T- 4 BG...	
6 bar	HD 20...4T- 6 BG...	HD 20...4T- 4 BA...	
10 bar	HD 20...4T- 10 BG...	HD 20...4T- 10 BA...	
16 bar	HD 20...4T- 16 BG...	HD 20...4T- 16 BA...	
25 bar	HD 20...4T- 25 BG...	HD 20...4T- 25 BA...	
40 bar	HD 20...4T- 40 BG...	HD 20...4T- 40 BA...	
60 bar	HD 20...4T- 60 BG...	HD 20...4T- 60 BA...	
100 bar			HD 20...4T- 100 BA...
160 bar			HD 20...4T- 160 BA...
250 bar			HD 20...4T- 250 BA...
400 bar			HD 20...4T- 400 BA...
600 bar			HD 20...4T- 600 BA...

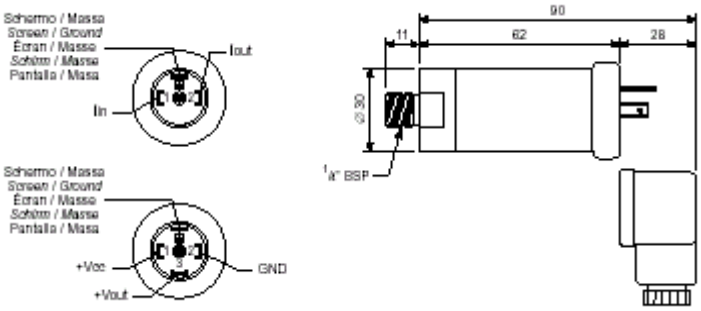


Fig 8 Dimensions in mm.

Great attention must be placed in the installation of transmitters in the pressure vessel or piping. Attention must be paid to the choice of full scale flow rate for an error, in addition to permanently damage the transmitter, can cause personal injuries and property also severe. Always insert, before the first transmitter, a key stop and make sure that the plant will not occur abnormal and unexpected peaks or surges of fluid under pressure.

CE CONFORMITY

Safety	EN61010-1 level 3
Electrostatic discharges	EN61000-4-2 level 3
Electrical fast transient	EN61000-4-4 level 3
High Energy Transient	EN61000-4-5 levell 3
Voltage variations	EN6100-4-11
EMI Susceptibility	IEC1000-4-3 1oV/m
EMI Emission	EN55020 class B

SIT CALIBRATION CENTRE N° 124