



### HD 9408T BARO, HD 9408TR BARO, HD 9908T BARO BAROMETRIC TRANSMITTERS

**HD 9408T BARO, HD 9408TR BARO** and **HD 9908T BARO** are analog output electronic barometers. They use a piezo resistive sensor element which gives extremely accurate and stable measurement of the atmospheric pressure and assures excellent repeatability, low hysteresis and very good temperature stability. The output signal of the sensor is conditioned to provide a voltage or a current output linearly proportional to the barometric pressure. The transmitters are ready as they have been calibrated at the factory. A zero adjustments potentiometer is available for offset to station elevation.

**HD9408T BARO** requires a continuous dc power supply, its low power consumption (< 4 mA) makes it ideal for portable and remote battery or solar powered applications. It is available in different kinds of analog output: 0-1 Vdc, 0-5 Vdc (1-5 Vdc, 1-6 Vdc on request) or 4-20 mA (two wires).

**HD 9408TR BARO** offers superior temperature performance: the internal circuitry allows the sensor to work at constant temperature so that it achieves

accurate temperature compensation over the whole range from -40°C to +60°C. **HD 9408TR BARO** requires a continuous dc power supply and a differential cabling connection to achieve best results. It is available in different output versions: 0-1 Vdc, 0-5 Vdc (1-5 Vdc, 1-6 Vdc on request).

**HD 9908T BARO**, unlike the other models, is equipped with a display showing the pressure measurements, an analog output 0-20 mA, 4-20 mA, 0-1 V and 0-5 V (0-10 V on request) configurable by the customer and with an ON/OFF relay output with programmable alarm threshold.

**HD 9908T BARO** requires a 24 Vac (or 230 Vac on request) power supply.

**HD 9408T BARO, HD 9408TR BARO** and **HD 9908T BARO** are low cost and excellent performance solutions for meteorological applications, environmental monitoring systems, metrological and environmental data logging, altitude applications, barometric pressure compensation in the performance of internal combustion engine, cleanroom barometric pressure compensation, testing of vehicle emissions.

#### HOUSING AND INSTALLATION

In all models the sensor electronics are housed in a sturdy MACROLON with IP67 protection. Opening the lid holes are available that allow you to secure the base of the transmitter directly to a panel or a wall. The measurement accuracy is independent of the position of the transmitter. However, it is advisable to mount the transmitter so that the sensor is facing down to reduce dust and dirt on the filter. If the installation is in an open environment is recommended to use a special static port to minimize errors caused by the wind flow on the input pressure.

#### CONNECTION DIAGRAM AND OPERATION

- Make the power connections for the HD 9908T BARO.
- Make the connections for the relay output, the relay contact is free.
- Select the analog output 0-20 mA, 4-20 mA, 0-1 V, 0-5 V by means of the jumper.
- Switch on the instrument, press the PUSH button and turn the SET trimmer to set the desired threshold value between 800 and 1100 mbar; the set value is shown on the LCD display.
- Using the trimmer  $\square$ , set the desired HYS (=hysteresis) value between 5 and 50 mbar.
- The instrument will now indicate the barometric pressure; HI led, LO led or ALARM led and ALARM relay will switch on if one the following cases occurs (see table 1).

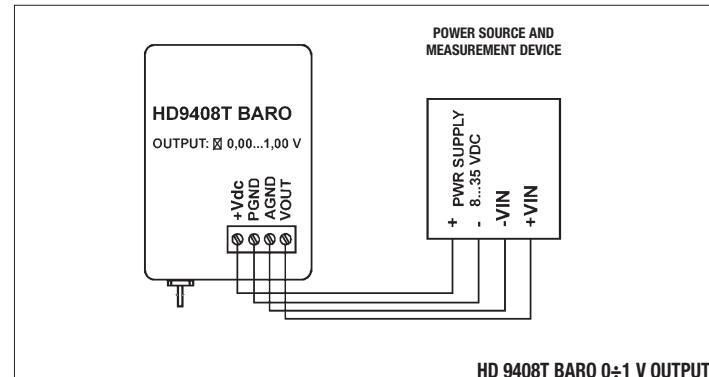
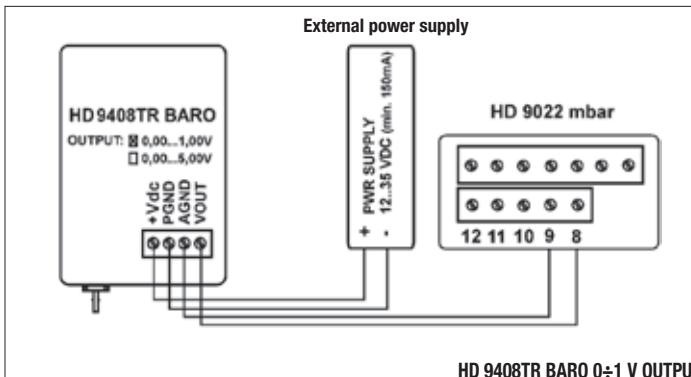
NOTE: the ALARM led comes on to indicate that the relay is energized and the contact is closed.

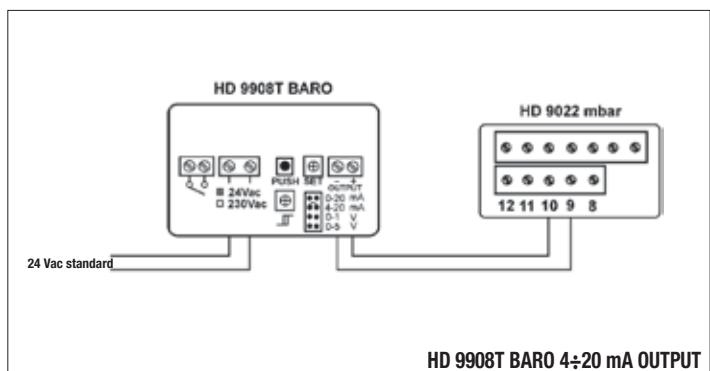
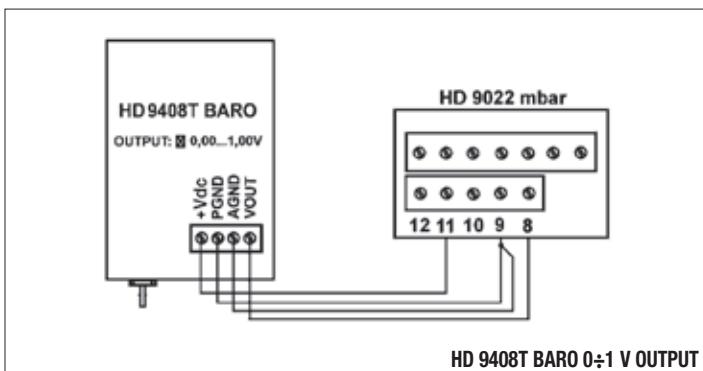
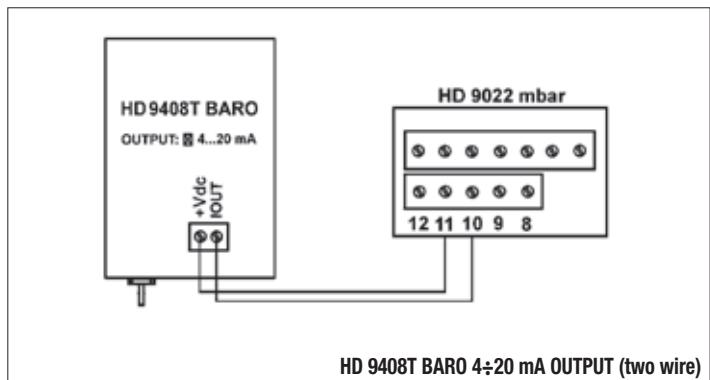
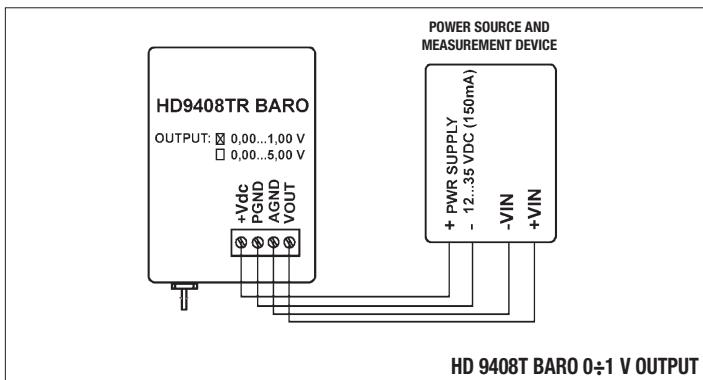
- Once installation is completed, check that the cover is tightly closed; the same applies to the grommets.

NOTE: the ALARM led comes on to indicate that the relay is energized and the contact is closed.

- Once installation is completed, check that the cover is tightly closed; the same applies to the grommets.

TABLE 1	HI	LO	LED ALARM
MEASURE > SET, MEASURE < SET + HYS	ON	OFF	OFF
MEASURE > SET, MEASURE > SET + HYS	ON	OFF	ON
MEASURE < SET, MEASURE > SET - HYS	OFF	ON	OFF
MEASURE < SET, MEASURE < SET - HYS	OFF	ON	ON





	HD9408T BARO	HD9408TR BARO	HD9908T BARO
Sensor type	Piezoresistive diaphragm		
Measuring range	800 ÷ 1100 mbar / 600 ÷ 1100 mbar on request		
Analog output	0 ÷ 1 Vdc standard; 0 ÷ 5 Vdc, 1 ÷ 6 Vdc and 4 ÷ 20 mA (two wires) on request	0 ÷ 1 Vdc standard; 0 ÷ 5 Vdc, 1 ÷ 5 Vdc and 1 ÷ 6 Vdc on request	0 ÷ 20 mA, 4 ÷ 20 mA, 0 ÷ 1 V and 0 ÷ 5 V (0 ÷ 10 V on request), configurable by means of a jumper.
Accuracy	± 0.5 mbar, @ 20°C	± 0.5 mbar, @ 20°C	Display: ± 1 mbar, @20°C Analog output: ± 0.8 mbar, @ 20°C
Resolution	Infinite	Infinite	Display: 1 mbar Analog output: Infinite
Thermal effects	< 1% F.S. zero; < 1% F.S., span over -20°C to +60°C (-4° to 140°F)	± 0.8 mbar over -40°C to +60°C (-40° to 40°F)	< 1% F.S. zero, < 1% F.S. span over -20°C to +60°C (-4° to 140°F)
Long term stability	< 0.25 % F.S. over 6 months at 20°C	< 0.2 % F.S. over 6 months at 20°C	< 0.25 % F.S. over 6 months at 20°C
Turn on time	1 sec. to 99% of full scale reading	5 min @ 24 Vdc supply to 99% of full scale reading	5 sec. to 99% of full scale reading
Response time	< 200 ms after pressure stabilization		
Relay contact output	Absent	Absent	3A/230 Vac resistive load
Set point	Absent	Absent	Configurable from 800 to 1100 mbar
Supply Voltage	8 ÷ 35 Vdc	12 ÷ 35 Vdc	24 Vac ±10% (230 Vac on request)
Supply current	< 4 mA	25 mA @ 20°C, 24 Vdc (warm-up 120 mA)	1VA
Operating Temperature	-30 ÷ +60°C	-40 ÷ +60°C	-20 ÷ +60°C
Media compatibility	Air and dry gases only		
Overload pressure	2 bar - 30 PSI		

#### ORDERING CODE

**HD9408T BARO** 800÷1100mbar barometric transmitter output 0÷1Vdc. Upon request output: 0÷5Vdc, 1÷5Vdc, 1÷6Vdc, 4÷20mA. Working temperature range -30°C ÷ +60°C.

**HD9408TR BARO** 800÷1100mbar barometric transmitter output 0÷1Vdc. Upon request output 0÷5Vdc, 1÷5Vdc. Temperature working range -40°C ÷ +60°C, heated sensor

**HD9908T BARO** 800÷1100mbar digital barometric transmitter with LCD indication. Outputs: 0÷20mA, 4÷20mA, 0÷1Vdc, 0÷5Vdc. Working temperature range -20°C ÷ +60°C.

