HD 797T


HYGROTRANSMITTER
HD 797T
RANGE: 10% R.H...95% R.H.
OUTPUT: 4mA ≙ 0% R.H.
20mA ≙ 100% R.H.
POWER SUPPLY: 9...40 VDC
OPERATING TEMPERATURE:
Sensor 0 ÷ 60 °C
Electronics –5...+50 °C

PASSIVE HYGROTRANSMITTER

HYGROTRANSMITTER HD 797 T

- Capacitive humidity sensor
- Output 4 ÷ 20 mA (two-wire connection)
- Power supply 9 Vdc ... 40 Vdc
- Interchangeable transmitters (that is sensor and electronics)

Model HD 797 T is an enbloc relative humidity transmitter. The sensor is fitted at the end of a plastic tube and is protected against dust by a filter.

SENSOR

The humidity sensor is a condenser the dielectric of which is a hygroscopic polymer. As the dielectric constant for water is around 80, a strong variation of capacity is obtained with the variation of the humidity content of this polymer. The particular advantage of this type of sensor are good linearity, insensitivity to temperature variations, brief response time and long life. **When using check the compatibility of the sensor with the atmosphere in which it is inserted.** The sensor has a temporary lack of precision if condensation forms on its surface (the value transmitted is higher than the actual value due to an increase of its real capacity).

SIGNAL TRANSMISSION

The electronic circuit is designed in such a way that there is a linear increase of the absorbed current as humidity increases. In this way it is possible to feed the transmitter through the same two wires on which the signal is transmitted. The supply voltage may vary between 9 Vdc and 40 Vdc. The resistance of the connection wires does not influence precision, since the signal transmitted is a current and not a voltage. In the presence of cables transmitting strong currents or machines that provoke electromagnetic disturbances, the transmitter connection cables must be laid in a separate channel or at a certain distance so that the disturbances are screened.

INSTALLATION

Precision of measurement does not depend on the position of the transmitter. However it is advisable to fit the transmitter in such a way that the sensor is facing downwards so as to minimize the accumulation of dust on the filter. The transmitter must not be installed in the immediate vicinity of a source of heat, as the heating of the air leads to a decrease of the relative humidity (with the same amount of water vapour present) close to doors or draughts.

ASSEMBLY

The electronics are housed in a sturdy plastic container (degree of protection IP 67). When the lid is opened two holes are accessible which allow the base of the transmitter to be fixed directly to the wall. The position of the holes is 50 x 108 mm. For the electric connection there are a cable clamp and two terminals that can take leads with a diameter of up to 3 mm.

TECHNICAL DATA

Relative humidity

Measuring range:	10% R.H.... 95% R.H.
Precision:	R.H. 10% ... 80% ±3% R.H. R.H. 80% ... 95% +5/-4% R.H.
Temperature influence:	< ± 0.04% °C
Sensor working temperature:	0°C ... 60°C, temporarily for brief periods up to 70°C
Electronics working temperature:	-5°C ... +50°C
Measuring range:	4 mA ≙ 0% R.H., 20 mA ≙ 100% R.H.
Response time at 63% variation:	without filter: 6 seconds with filter: 3 minutes

The HD 797 T may be connected to the following DELTA OHM panel instruments:

HD 4049: Relative humidity ON/OFF regulator 4 ÷ 20 mA. 4 mA ≙ 0% R.H., 20 mA ≙ 100% R.H.

HD 9022: Microprocessor indicator with thresholds that may be programmed and configured by the user. Power supply 24 V 50 Hz. Input 0÷20 mA, 4÷20 mA, 0÷1 V, 0÷10 V.

ORDER CODE

HD797T: R.H. transmitter output 4÷20mA
HD75: saturated salt solution 75% R.H with adapter M 12x1
HD33: saturated salt solution 33% R.H with adapter M 12x1
HD11: saturated salt solution 11% R.H with adapter M 12x1

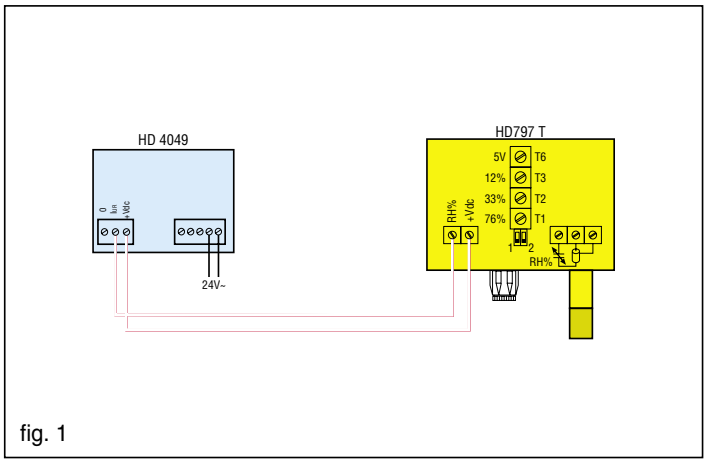

fig. 1

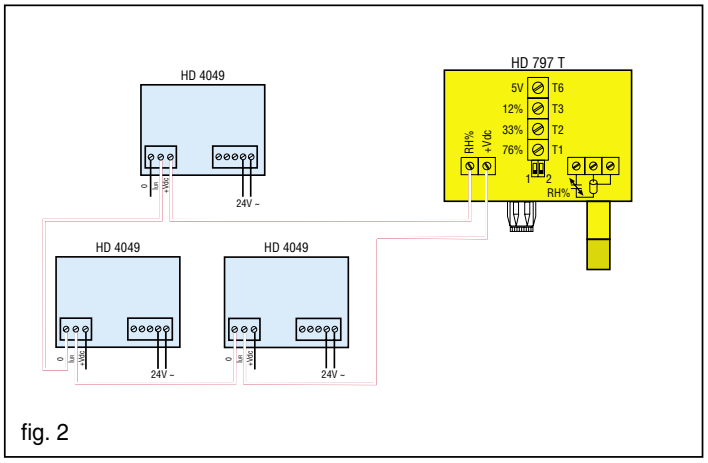

fig. 2

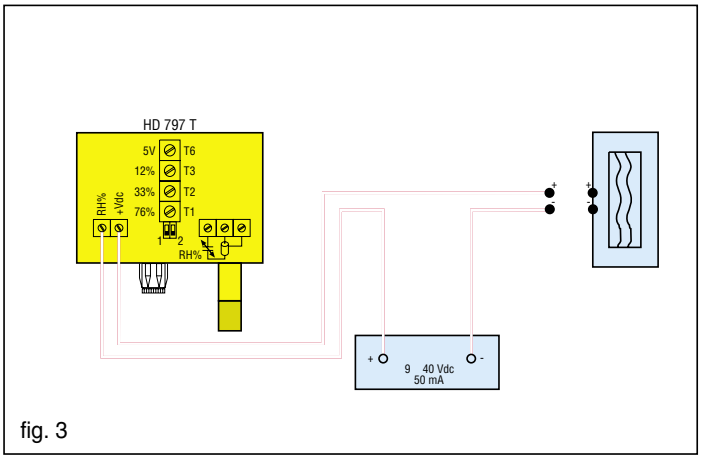

fig. 3

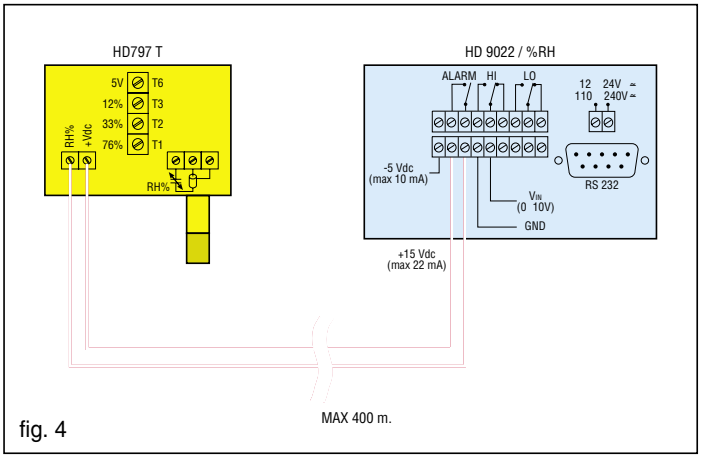

fig. 4