INTRODUCTION

The Relative Humidity and Temperature Transmitters RHT-WM and RHT-DM convert these two physical units into two isolated, highly stable and interference free 4 to 20 miliamp signals.

Power is provided in a two-wire configuration where the same pair of wires that bring energy to the circuit carry the signal to the measuring device.

The sensors are mounted on the probe tip and are protected by a sinthered filter cover.

CHARACTERISTICS

Relative Humidity Circuit

- Output: 4 to 20mA for 0 to 100% relative humidity;
- Power supply: 12 to 30 Vdc;
- Exatidão: ±2,8%RH de 0 a 100%RH a 25°C
- Repetitivity: ±0,5%RH
- Linearity error: ±0,5%RH
- Hysteresis erro: ±1,2%RH
- Stability: ±1%RH típico a 50%RH em 5 anos.
- Humidity measurement temperature drift:

RH (compensated) = RH (measured) / (1,0546 - 0,00216 * T)
RH in %
T in °C

- Time Constant: 15 seconds in still air;
- Operating Temperature: -20°C to 80°C;

The built-in humidity sensor may be damaged or loose calibration if exposed to chemically active environments such as: Ammonia hydroxide, Acetone, Ethanol, Methanol, Formaldehyde, Benzene, Toluene e Xylene.

Temperature Circuit

- Output: 4 to 20mA for the temperatura indicated on the side label;
- Power supply: 12 to 30 Vdc;
- Sensor: Pt100;
- Total acuracy: ±0.25°C;

The inner side of the cover contains a label with all relevant characteristics as power supply voltage, output type, working range, etc.

INSTALLATION

The DM (Duct Mount) model transmitter is installed with a flange. This flange is first screwed onto the duct wall and the probe is then inserted into the flange. After defining the probe depth a lateral screw on the flange will fix lock it in place.

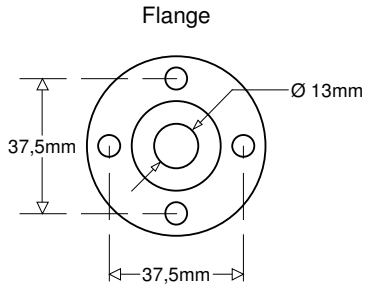

Figure 01 - Flange on model DM.

The WM (Wall Mount) transmitter is mounted onto a wall by means of two fixing points of the base as shown in figure 02:

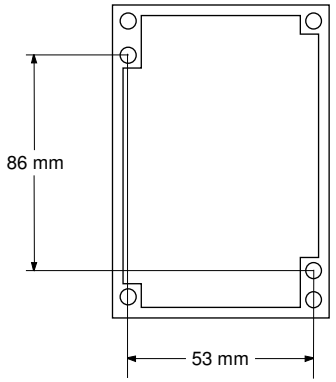

Figure 02 – Two fixing points on model WM.

SPECIAL CARE

The filter cap on the tip of the probe is made of synthered polypropilene and allows relatively free circulation of air and misture molecules.

Special care must be ensured to avoid mechanical shocks to the filter as it might crack or break.

CONNECTIONS

Notice that each independent transmitters (RH and Temp.) need two-wire connection to a power source (12Vdc to 30Vdc). Th 20mA measuring signal flows through the same two wires taki signal to the measuring device.

The power cable passes through the cable gland and is attached screw connector according to the instructions on the inner side box cover.

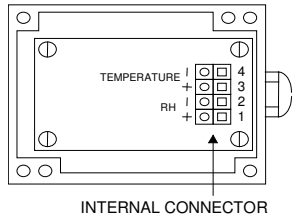

Figure 03 – Electrical connections. Internal view.

The figure below shows a typical electrical diagram of two mea circuits connected to one RH and Temp transmitter.

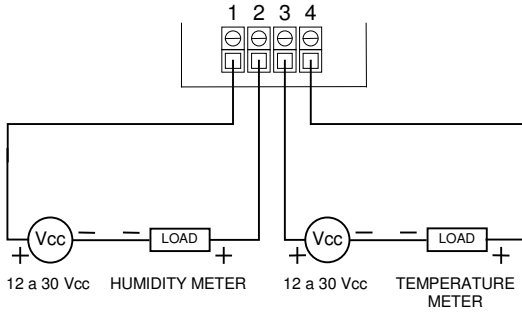

Figure 04 – Connections diagram.

The maximum LOAD resitance plus the wires resistance c calculate as follows:

$$LOAD = \frac{Vdc - 12}{0.02}\Omega$$

Where **Vdc** is the voltage of the power supply.

Manual Code:50002

RELATIVE HUMIDITY
AND
TEMPERATURE

TRANSMITTER

RH & TEMP - WM/DM

OPERATION MANUAL

Manual Code:5000230 V2

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