

INSTALLATION

The **TEMP-DM** (Duct Mount) model transmitter should be installed with a flange. This flange is first screwed onto the duct wall and the transmitter probe is then inserted into the flange central hole and locked. Figure 04 below shows flange dimensions and holes. Available in stainless steel or polyamide 6.6.

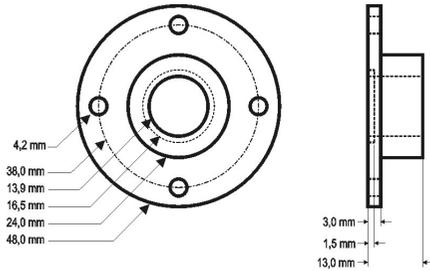


Figure 04 – Mounting flange for TEMP-DM.

The probe is made in stainless steel, with standard lengths of 150 mm and 250 mm.

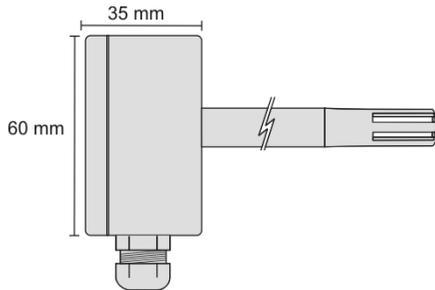


Figure 05 - Model **TEMP/DM** dimensions.

The model **TEMP-WM** (Wall Mount) was designed to be mounted directly onto a wall. With the cover off, the user can access the 2 fixing points and the signal connector, as shown in Figure 06. The transmitter sensor capsule must be placed faced down in order to assure the specified accuracy and protection level.

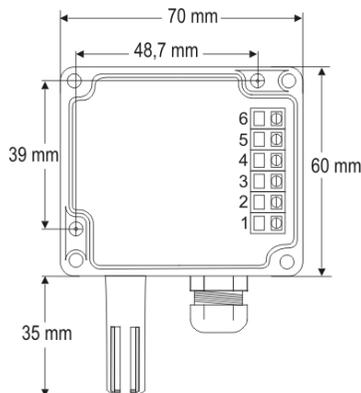


Figure 06 – **TEMP/WM** fixing holes and housing dimensions.

ELECTRICAL CONNECTIONS

The transmitter can be ordered as 4-20 mA current output or 0 to 10 Vdc voltage output. The output signal is defined on purchase and cannot be later changed.

Figures 08 and 09 show the required electrical connections

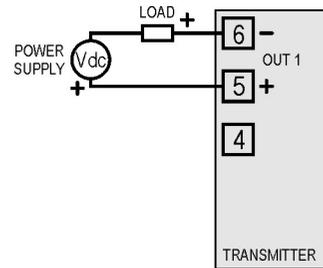


Figure 07 – 4-20 mA connections

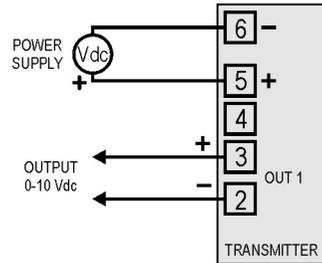


Figure 08 – 0-10 VDC connections

LOAD represents the output signal measurement equipment (controller, register, etc).

The connection wires go inside the transmitter through to the cable gland mounted in the transmitter case.

TEMPERATURE TRANSMITTER

TEMP-WM and TEMP-DM

OPERATING MANUAL



www.novusautomation.com

WARRANTY

NOVUS Electronics provides the original purchaser of this instrument a one (1) year warranty against defects in material and workmanship under the following terms:

- The one year warranty begins on the day of shipment as stated on the sales bill.
- During the warranty period all costs of material and labor will be free of charge provided that the instrument does not show any evidence of misuse.
- For maintenance, return the instrument with a copy of the sales bill to our factory. All transportation and insurance costs should be covered by the owner of the equipment.
- Should any sign of electrical or mechanical shock, abuse, bad handling or misuse be evident the warranty voids and maintenance costs will be charged.

INSTALLATION RECOMMENDATIONS

- Conductors of small electrical signals must be distant from activation or high-tension/current conductors, preferably passing through grounded conduits.
- A specific electrical power supply network should be provided for instruments use only
- In controlling and monitoring applications, possible consequences of any system failure must be considered in advance.
- RC filters (47 R and 100 nF, serial) in inductor charges (contactors, solenoids, etc.) are recommended.

PRESENTATION

The Temperature Transmitter TEMP-WM and TEMP-DM are microprocessed-based instruments that incorporate high-accurate and stable sensors whose information is converted to linear 4-20 mA or 0-10 Vdc.

As they are microprocessed equipment, they can be totally configured through the communication interface TxConfig and TxConfig software.

The TEMP-WM model is intended for wall mounting. The TEMP-DM comes with a probe tip for duct or wall mounting.

SPECIFICATIONS

Accuracy: 0,5 °C @ 25 °C (1.6 °C for the entire measurement range);
Range: Configurable between -50 and 120 °C; (see **Operating limits**);
Default: 0 to 100 °C

Operating limits:

TEMP-WM: Electronic circuit: -20 to +65 °C
TEMP-DM: Electronic circuit: -20 to +65 °C
Sensor and probe: -40 to +100 °C

Note: For temperatures above 65 °C or below -20 °C, a maximum of 50% of the probe length (TEMP-DM) should be exposed to this temperature, to avoid conducting extreme temperatures to the electronic module.

Response time: up to 30 seconds in slow moving air.

Power supply: 4-20 mA model: 12 Vdc to 30 Vdc
0-10 V model: 18 to 30 Vdc

Outputs: 4-20 mA or 20-4 mA current, 2-wire loop power supply
0-10 Vdc voltage (optional).

Output resolution: 4-20 mA model: 0.006 mA
0-10 V model: 0.003 V

Output Load (RL): 4-20 mA model: $RL \text{ (Ohms max)} = (Vdc - 12) / 0.02$
let Vdc = Loop power supply (12 to 30 Vdc)
0-10 V model: $RL \text{ (min)} = 10 \text{ kOhms}$

Reverse polarity protection: YES

Protection: Electronic circuit case - IP65; Sensors capsule: IP40

Cable entrance: Compress fitting PG7;

Sensor, output and power supply are not electrically isolated.

IMPORTANT NOTE:

A etiqueta de identificação, fixada junto ao corpo do transmissor, informar as características próprias deste modelo.

No accuracy improvement results from narrowing the range for the 4-20 mA output. For example, the specified accuracy will be achieved for a transmitter configured to a -50 to 100 °C or to a 20 to 40 °C range.

Shall any error occur in the measures taken by the sensor, they can be corrected with the TxConfig software. The TxConfig interface can be connected to the transmitter even connected to the process and under operation. See Figure 03 and Zero Correction field in the main screen of the TxConfig software.

CONFIGURATION

If the default configuration or the ordered configuration satisfies the application, then no further configuration is necessary and the transmitter is ready to be used. If a new setting is desired, this can be accomplished by the **TxConfig** and sent to the transmitter through the TxConfig interface.

The TxConfig Interface and Software compose the Transmitter Configuration Kit, which can be purchased separately. The latest release of this software can be downloaded from our web site. To install, run the **Tx_setup.exe** and follow the instructions.

Serial port configuration errors may occur when other software are sharing the same serial port. Close all serial port applications prior to using the TxConfig software.

The TxConfig interface cable is 1.5m long. One extremity is connected to the transmitter. The other extremity has a female connector DB9, which must be connected to the serial port available in the PC.

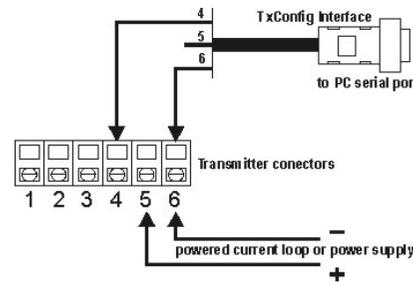


Figure 01 – Connections of theTxConfig Interface - Loop powered or power supply

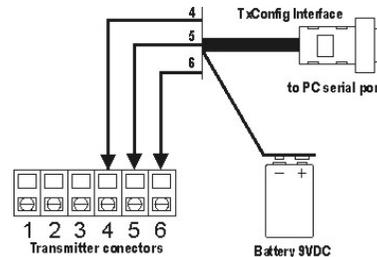


Figure 02 – Connections of theTxConfig Interface - 9 Vdc battery power

The transmitter requires to be powered during configuration. The TxConfig interface provides powering, however this depends on the PC used. To assure proper communication, it is recommended to apply external power to the transmitter. A 9V battery connected to the battery socket in the TxConfig interface extremity can be used to power the transmitter during the configuration. Another option is to run the transmitter configuration when it is already connected to the process, using the same power that powers the process. See Figures 01 and 02.

After making such connections, users must run the **TxConfig** software and, if necessary, use the Help to configure the transmitter. Figure 03 shows the TxConfig software main screen.

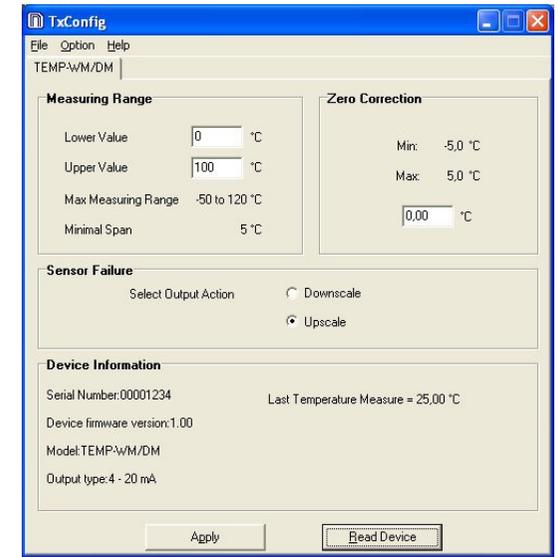


Figura 03 – Main window of TxConfig software

The fields in the screen mean:

- Measuring range:** Defines the beginning and the end of the temperature range.
Lower Value: sets the value of the input signal associated to the 4 mA output.
Upper Value: sets the value of the input signal that will correspond to the 20 mA output.
Zero Correction: Allows for small sensor corrections.
- Sensor Failure Detection:** establishes the transmitter output behavior (upscale or down-scale) in the presence of a sensor fail. When Minimum is selected, the output current is < 4 mA (down-scale), typically used for refrigeration. When Maximum is selected, the output current is > mA (up-scale), typically used in heating systems.
- Device Information:** Transmitter identification data. These information must be informed when the user contact us.
- Read Device:** Brings to the screen the current transmitter parameters configuration.
- Send configuration:** Sends a new configuration to the transmitter.

Note: The factory default configuration is (unless otherwise specified or ordered):

- Temperature span 0 to 100 °C;
- 0 °C of zero correction;
- Upscale when sensor fails;