

## 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. Fig. 5 below shows flange dimensions and holes. Available in stainless steel or polyamide 6.6.

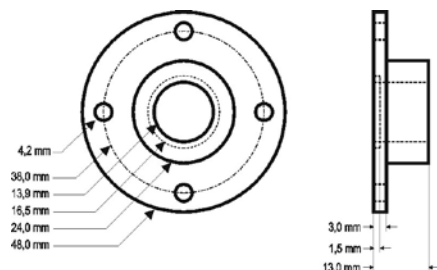


Fig. 4 - Mounting flange for TEMP-DM.

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

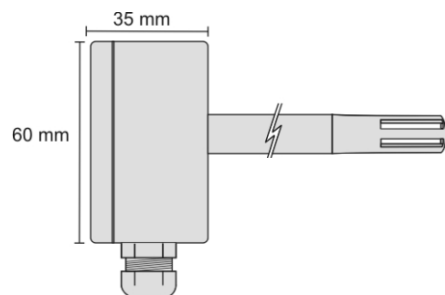


Fig. 5 - Model TEMP-DM dimensions.

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 Fig. 7. The transmitter sensor capsule must be placed **faced down** in order to assure the specified accuracy and protection level.

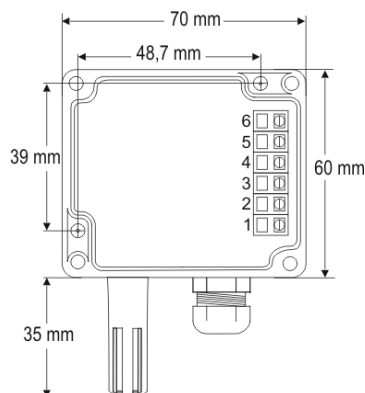


Fig. 7 - TEMP-WM fixing holes and housing dimensions.

## ELECTRICAL CONNECTIONS

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

Fig. 8 and 9 show the required electrical connections.

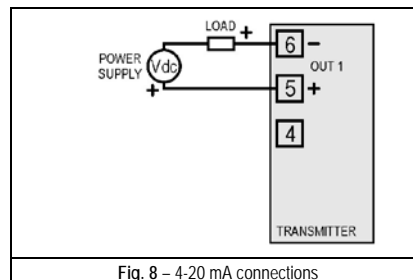


Fig. 8 - 4-20 mA connections

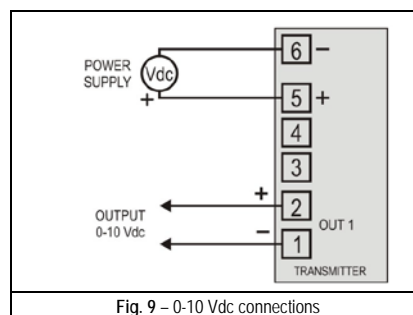


Fig. 9 - 0-10 Vdc connections

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.

## 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.

# TEMPERATURE TRANSMITTER TEMP-WM AND TEMP-DM OPERATING MANUAL



**NOVUS**  
We Measure, We Control, We Record

Man 5000262 V1.0x D

## WARRANTY

Warranty conditions are available on our web site  
[www.novusautomation.com/warranty](http://www.novusautomation.com/warranty).

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 / 15 mA max.
- Outputs: 4-20 mA or 20-4 mA current, 2-wire *loop* power supply  
0-10 Vdc voltage / 2 mA max.
- Output Load (RL): 4-20 mA model:  $RL\ (Ohms\ max.) = (Vdc - 12) / 0.02$   
let Vdc = Loop power supply (12 to 30 Vdc)  
0-10 Vdc model: 2 mA max.
- Output Resolution: 4-20 mA: 0.006 mA  
0-10 Vdc: 0.003 V

- Reverse resolution: 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:

An identification label, on the transmitter body, shows the characteristics of this model.

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 Fig. 3 and Zero Correction field in the main screen of the TxConfig software.

It is possible that some temporary oscillations occur on the transmitter output when it is powered on and some changes are applied on its configuration.

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.

The TxConfig interface connects the transmitter to the PC, as shown in Fig. 1 and 2. There are two types of interface: TxConfig-RS232 and TxConfig-USB.

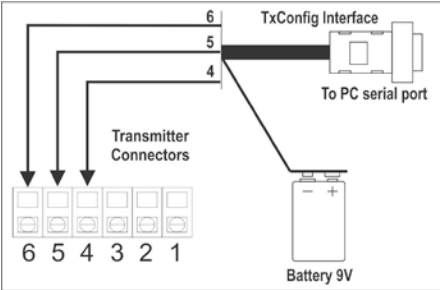


Fig. 1 – TxConfig Interface connections model RS232

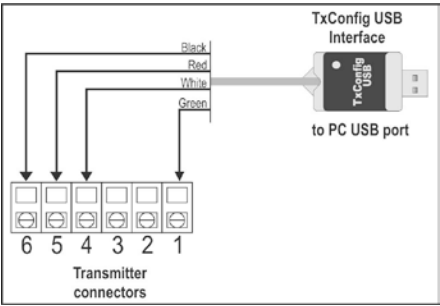


Fig. 2 – TxConfig Interface USB connections

Once the connection is accomplished, the software shows the configuration options of the transmitter model attached. Access the *Help* for usage instructions.

The TxConfig screen is shown in Fig. 3.

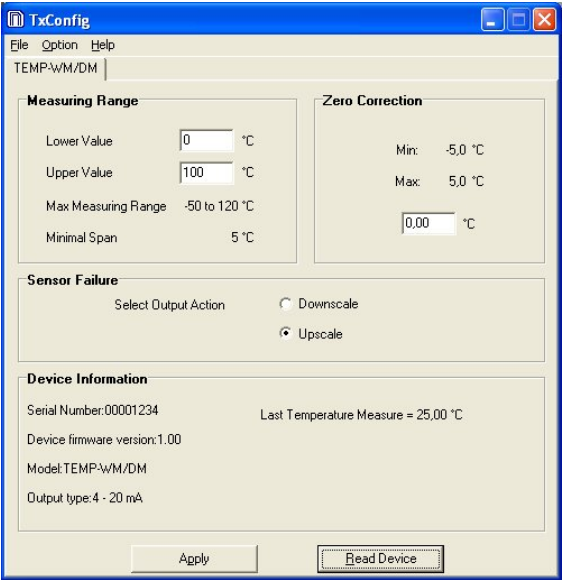


Fig. 3 – Main window of TxConfig software

- The fields in the screen mean:
- Measuring Range:** Defines the output scale for the input sensor. Program here the measurement **Lower Value** and the **Upper Value**.  
When the lower limit is defined with a value higher than the High Limit the output current operates from 20 to 4 mA.  
The values configured in these fields can not be beyond the sensor measuring range. The minimal span value has to be observed as well.
  - Sensor Failure:** 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 > 4 mA (up-scale), typically used in heating systems.
  - Zero Correction:** Allows for small sensor corrections.
  - Apply:** 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.
- During configuration, the transmitter needs to be electrically powered. TxConfig USB interface can provide the power to the transmitter, but this also depends on the used computer hardware.
- The TxConfig-RS232 interface, however, requires an auxiliary supply for guarantee reliable communication with the computer. An external 9V battery can be used for this purpose (Fig. 1). An alternative is to configure the transmitter while it is in operation; this way, the needed energy is supplied by the current loop. See Fig. 4.

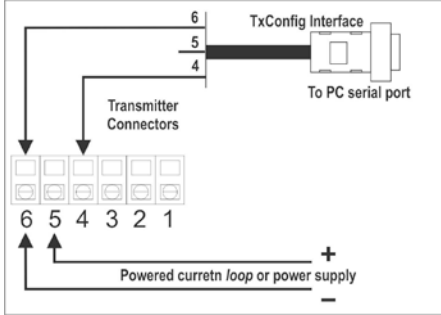


Fig. 4 – TxConfig Interface connections - Powered current loop or power supply

The TxConfig interfaces contain dedicated circuitry for proper communication between transmitters and computer. Always make use of the TxConfig interfaces for configuration purposes; otherwise the transmitters may get damaged, voiding the warranty.

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.