FOSTEN
AUTOMATION

F500-TTR Head Mount

Power Supply : 24 v

F500TTR

HEAD MOUNT F500TTR
TEMPERATURE TRANSMITTER

HART
COMMUNICATION PROTOCOL

INDEX

1. GENERAL DESCRIPTION

The HEAD MOUNT **F500TTR** Temperature Transmitter is designed to be used in industrial environments, offering reliable, accurate and stable measurement. Using microprocessed technology, it accepts configuration via PC computer, allowing the selection of the input sensor, measurement range and calibration in a simplified way.

2. MAIN APPLICATIONS

- Sugar and Alcohol
- Fertilizers
- Chemistry
- Food and Beverages
- Petrochemical
- Pharmaceutical
- Energy
- Plastic
- Among others

3. TECHNICAL CHARACTERISTICS

The following are the main technical characteristics of the Head Mount **F500-TTR** Temperature Transmitter.

Types	RTD, TC, Ohm, mV
Exit sign	4 to 20 mA
Communication Protocol	Hart
Feeding	9 to 32 Vcc, without polarity – 12 mA
Operation temperature	-40 °C to 85 °C
Stability	0,01°C (RTD), 0,1°C (E J K N T), 0,2°C (B R S)
Precision	0,1°C (RTD), 0,5°C (E J K N T), 1°C (B R S)

4. DIMENSIONAL
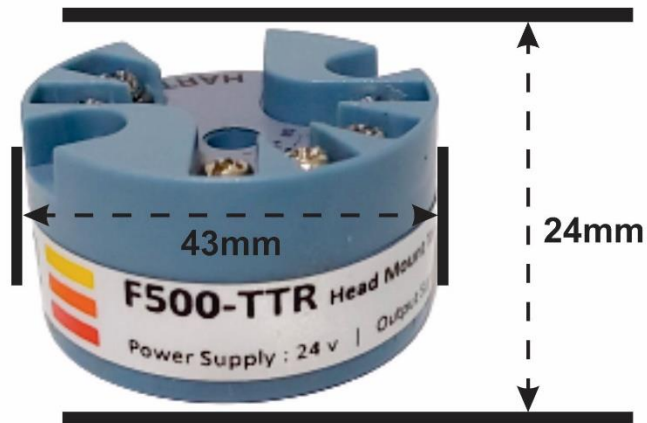
5. TYPES OF CONNECTIONS

The following are the different types of connections that can be used for the Head Mount **F500-TTR** Temperature Transmitter.
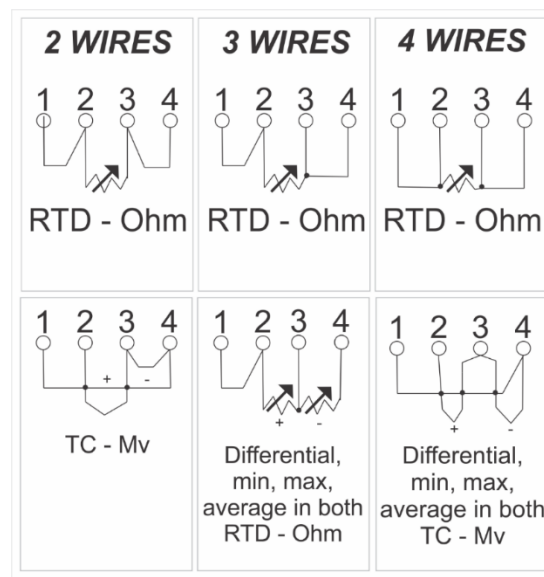
6. SALE CODES

Below we have the sale codes for purchasing:

PRODUCT						
F500TTR		: Head Mount Temperature Transmitter				
.		**COMMUNICATION PROTOCOL**				
.		H	: 4 to 20 mA Hart			
.		.	**SENSOR TYPE**			
.		.	1	: RTD - PT100	C	: Thermocouple - Type K
.		.	2	: RTD - PT50	D	: Thermocouple - Type N
.		.	3	: RTD - PT200	E	: Thermocouple - Type R
.		.	4	: RTD - PT500	F	: Thermocouple - Type T
.		.	5	: RTD - PT1000	G	: Thermocouple - Type DIN L
.		.	6	: RTD - COBRE	H	: Thermocouple - Type U
.		.	7	: RTD - NIQUEL (Ni120)	I	: Thermocouple - Type W5RE26
.		.	8	: RTD - OHMS (R)	J	: Thermocouple - Type GOST L
.		.	9	: Termopar - Tipo E	K	: Thermocouple - mV - 120 to 120
.		.	A	: Termopar - Tipo J	L	: Thermocouple - mV - 1000 to 1000
.		.	B	: Termopar - Tipo B		
.		.	.			
F500TTR		**H**	**1**			

7. CONFIGURATION VIA SOFTWARE

The **F500**TTR line transmitters are configured using the Hart Config Tool software, which is free and available on the website. A Hart communication interface of any model/manufacturer is required.

Hart Interface

Windows
Notebook, PC
Ou Tablet

F500-TTR Head Mount
Power Supply : 24 v
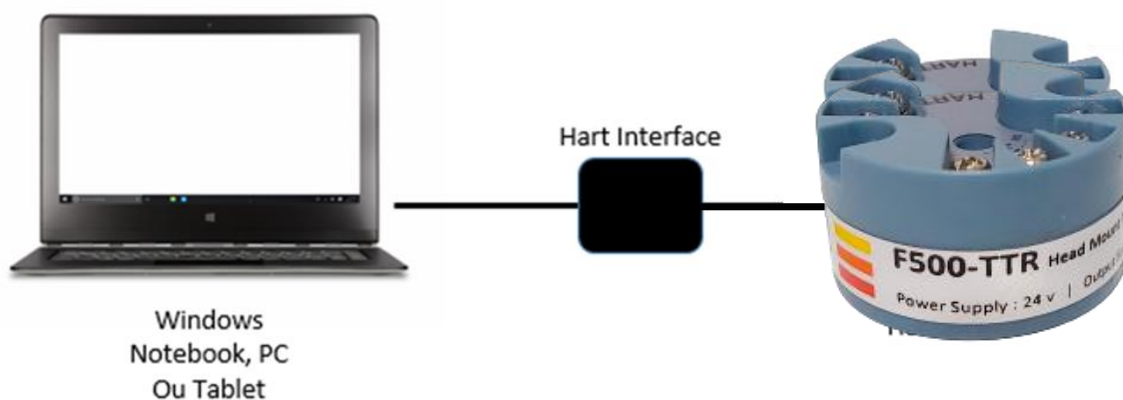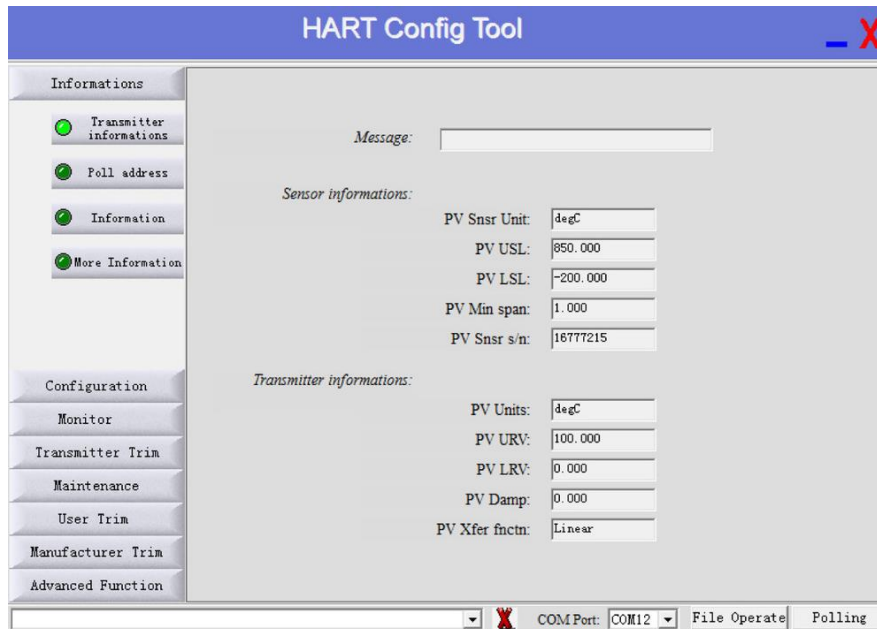
7.1 CONNECTING THE INSTRUMENT

Make sure the instrument and the Hart interface are turned on. Access the Hart Config Tool software and click on the "Polling 0" button in the lower right corner.

IMPORTANT

If necessary, a resistor must be connected in series with the positive pole of the instrument.

By choosing the "Information" button, all the information contained in the instrument will appear

Informations	
🟢 Transmitter informations	
🟢 Poll address	
🟢 Informations	
🟢 More Informations	

Message: ??????????????????????????????

Sensor informations:

PV Snsr Unit:	degC
PV USL:	850.000
PV LSL:	-200.000
PV Min span:	0.010
PV Snsr s/n:	16777215

Transmitter informations:

PV Units:	degC
PV URV:	850.000
PV LRV:	-200.000
PV Damp:	1.000
PV Xfer fnctn:	Linear

Configuration
Monitor
Transmitter Cali.
Transmitter Test
User Cali.
Advanced Function

COM: COM1 | File | Polling | Polling 0

7.2. WORK RANGE

To adjust the working range, just choose the "Configuration" button.
In the sub-option "Range", the minimum and maximum ranges will be displayed ("Sensor Information" box) and then the working range in which the instrument is configured ("Output Range" box).

To change this range and adjust it, just select the LRV (low temperature or minimum value) and URV (high temperature or maximum value) boxes. Making change, click the "Write" button to confirm and save.

7.3. DAMP AND DISPLAY INDICATION OPTIONS

To adjust options such as Damping, choose the "Configuration" button and then the sub-option "Output".
On the next screen that opens, choose the options for Damp and linear function in the "Output Characteristics" box.
In the table below, select the desired one for Display 1 and Display 2.

7.4. WRITING AND ALARM PROTECTION

To enable the writing protection, preventing allowed changes to the configuration already made and saved in the memory of the instrument, simply choose the "Configuration" button and the sub-option: "Fault Protection".

On this same screen, there is also the possibility of setting the alarm, in which you can select an option for very low or very high current to send an alarm signal.

7.5. MONITORING VARIABLES

Choose the "Monitor" button and the "Process Variable" sub-option. A screen will be available in which the variables can be selected to be monitored and displayed in a graph.
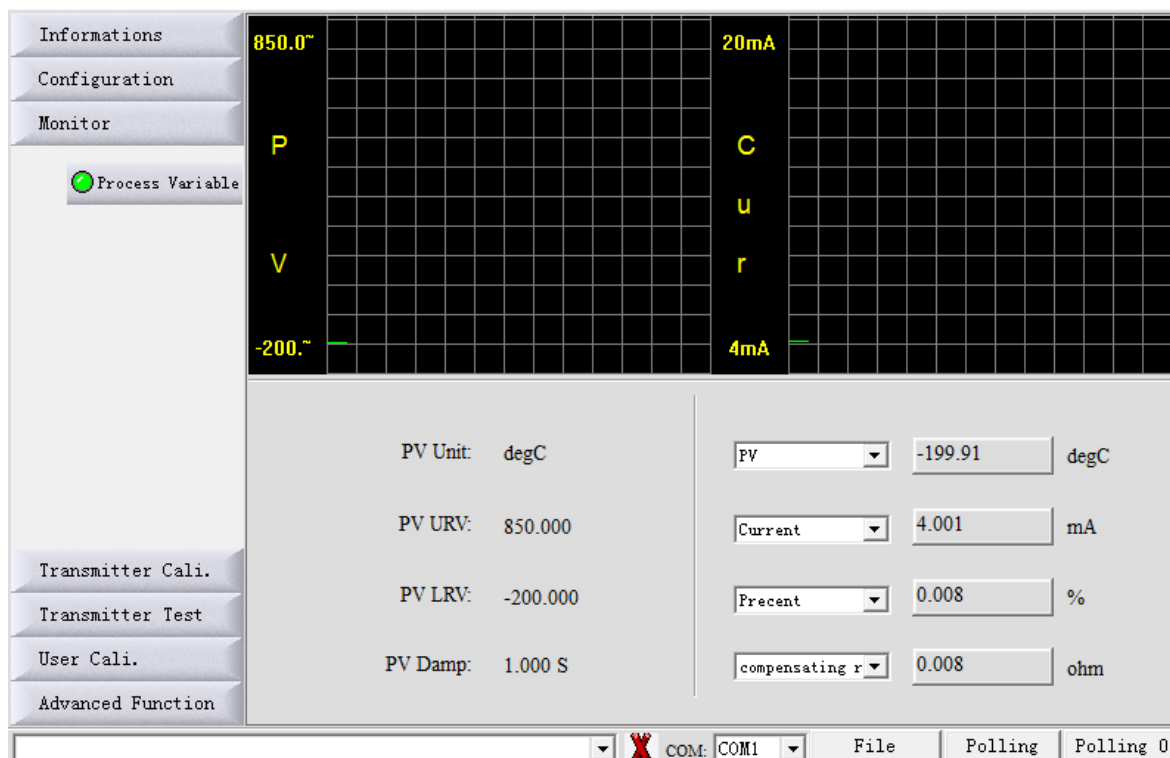
7.6. CURRENT TRIM AND LOOP

Choose the "Transmitter Cali" button and the "D/A Cali" sub-option to perform the current trim (4 to 20 mA), using a multimeter as a reference. To perform a simulation and test with various current values, see the options in the "Current Loop Test" table.
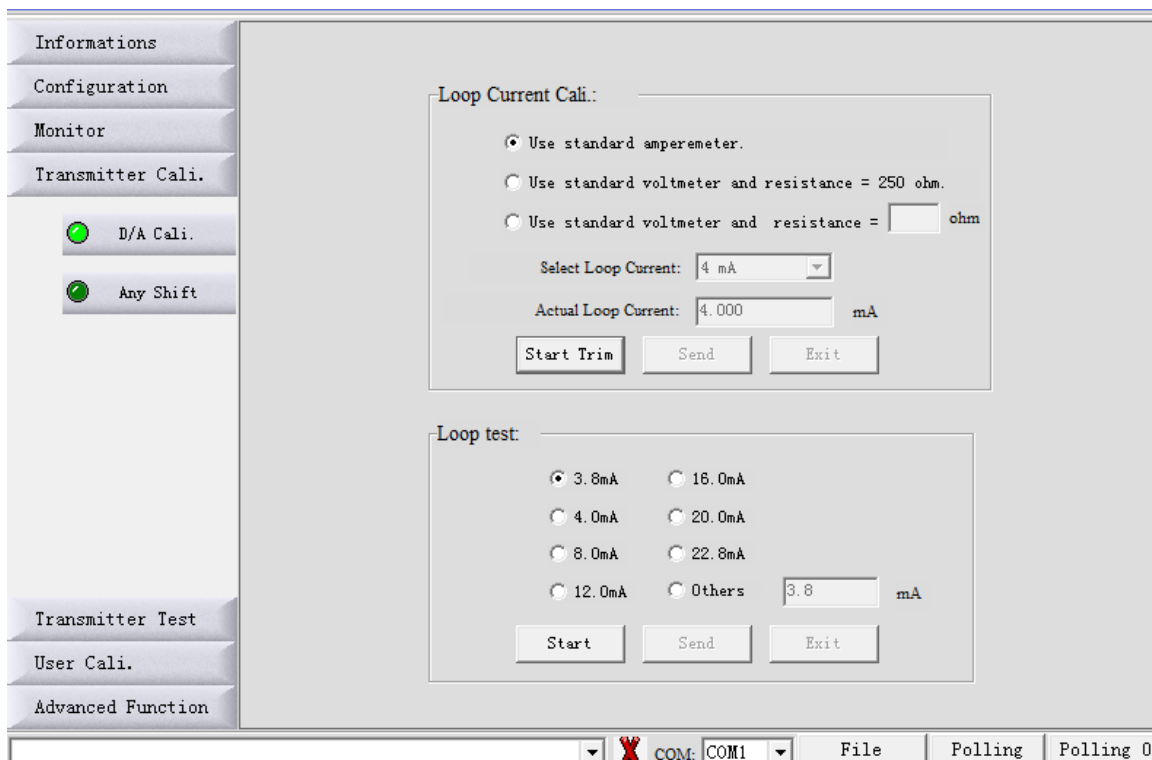
7.7. CALIBRATION UNTIL 5 POINTS

To carry out the calibration of the temperature transmitter, it will be necessary to have as a reference a resistance generator in Ohms to change the resistance, or a generator to change the current or millivolts.
Choose the "User Cali" button. and in the frame that opens, choose in the "Trim Point:" box: the number of points at which you want to calibrate it.

After selecting the number of points at which you want to calibrate your transmitter, click on the "Equal division" button, which will distribute the points to be trimmed and adjusted. It will automatically distribute and equalize the points according to the requested number.

Using the resistance generator in Ohms as a reference, or another calibrator that makes the change within the range that you want to perform the point-to-point calibration, always click on the "Collect" button for each point performed. After making all the points, choose the "Write" button to record the calibration performed and the points generated.

7.8 CHANGING THE TYPE OF SENSOR AND THE QUANTITY OF WIRE

To change the type of sensor you are going to use, be it thermocouple (TC) or PT100 (RTD), choose the "Advanced Function" button and the sub-option "Sensor Setup", it will make the Sensor Type options (RTD and TC) available.
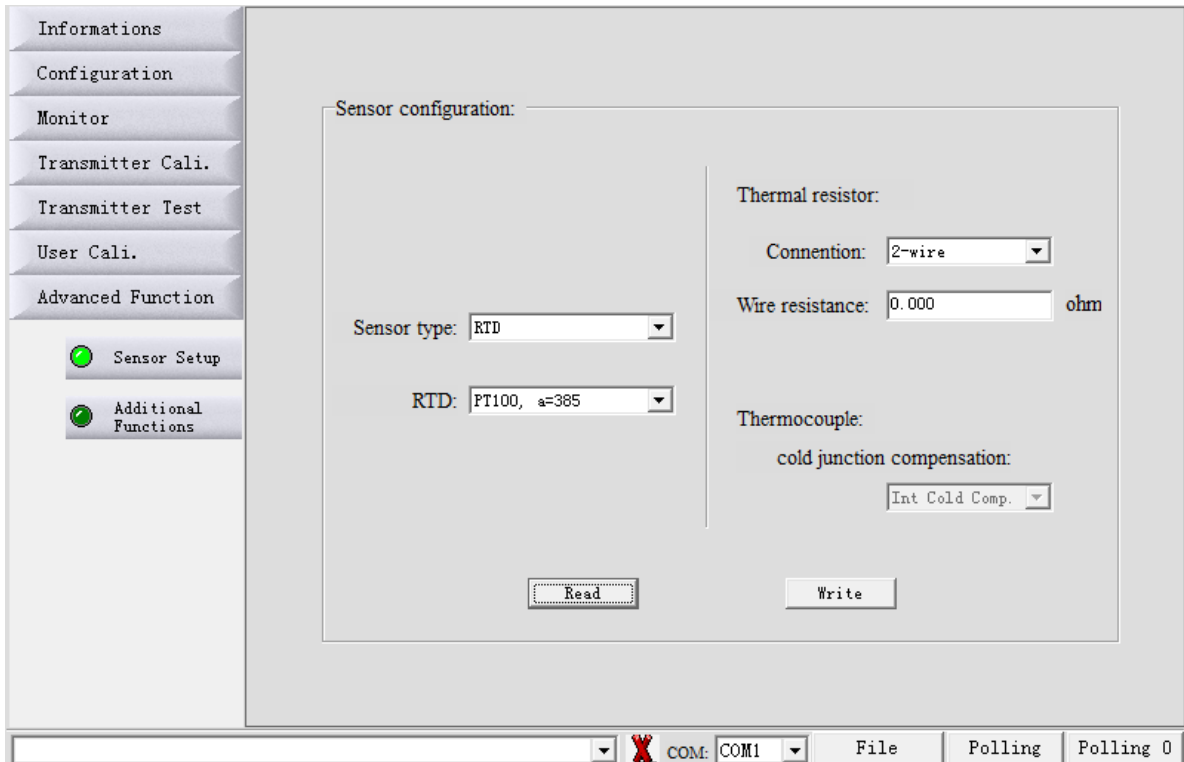

On this same screen you can also choose the number of wires for your PT100 or thermocouple, being able to change the options contained in the "Connention" box in the "Thermal Resistor" box.

Selecting the RTD option (PT100) in the box, it will provide the available options below.
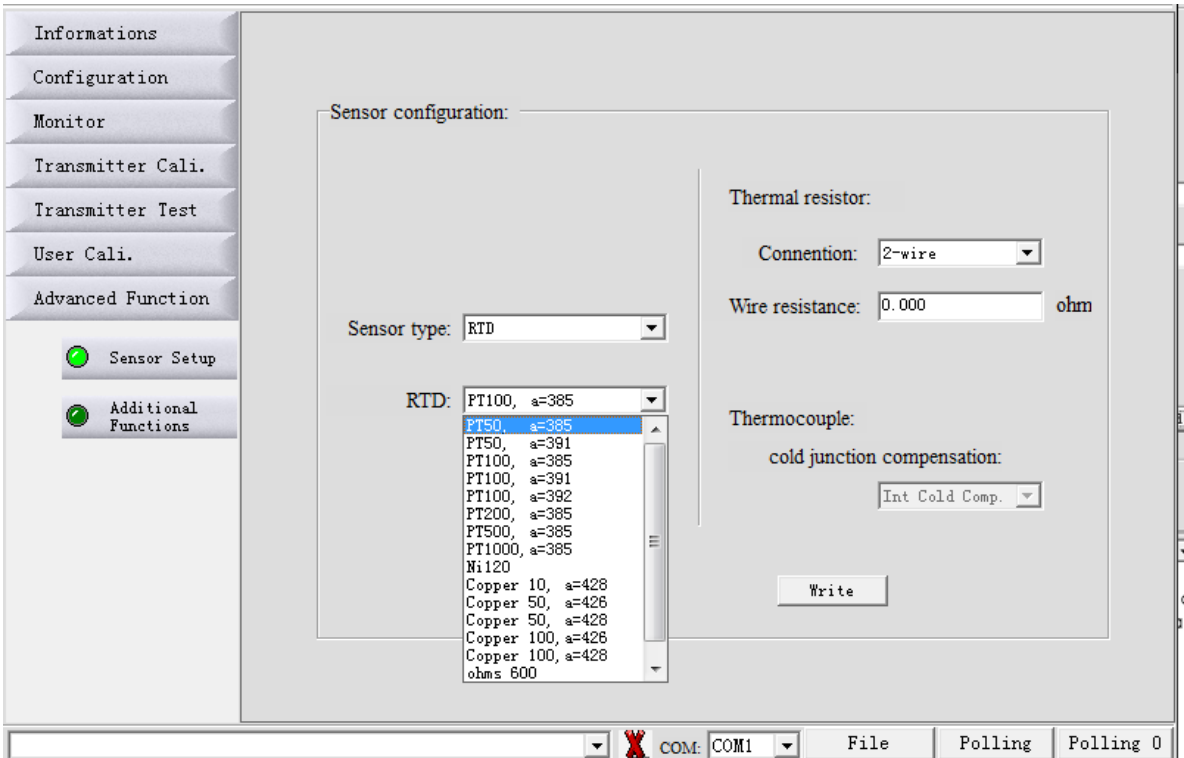
Selecting the TC (Thermocouple) option, it will provide the available options in the box below.
Remembering that in the TC option, it also releases the Junction compensation option.
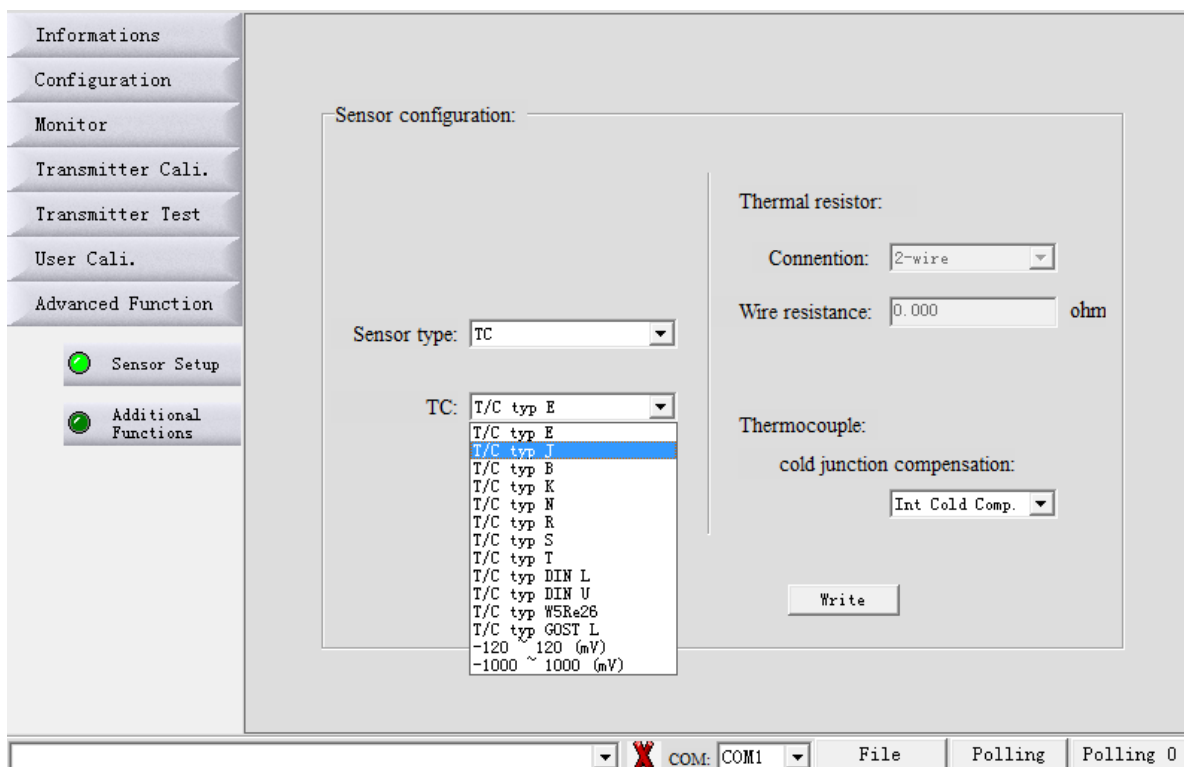
Whenever selected and made the change as desired, then choose the "Write" button to save.

8. WARRANTY

The Head Mount **F500-TTR** Temperature Transmitter has a 12 month warranty.
Such warranty becomes invalid once the following situations are detected:

- Incorrect installation of the instrument
- Use in inappropriate applications
- Mechanical damage by impacts

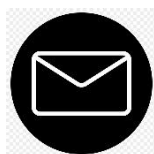Electrical damage as a result of damage from other instruments in the industrial plant.

VERSION JAN 2022 - 00

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