



# NP640

## RELATIVE PRESSURE TRANSMITTER – INSTRUCTIONS MANUAL – V1.0x I

### PRESENTATION

NP640 positive relative pressure transmitter are robust and reliable devices suitable for industrial applications. Its great differential lies in the fact that it is possible to set its operating range easily and quickly. With the aid of software, you have access to various information about the transmitter and can define the most suitable configuration for your process.

### PRECAUTION

Before operating the transmitter, you should carefully read the specifications and instructions for use. In case of damage caused by incorrect operation or misuse, the warranty becomes null and void. The installation must be carried out by a specialized professional. The power supply to the electronic instruments must come from a proper instrumentation network.

### UNPACKING

After unpacking, besides the transmitter, you should find:

- An installation and operation guide.
- A sealed electrical connector.
- A screw to attach the connector to the transmitter.

### IDENTIFICATION

The identification label is attached to the body of the transmitter. On this label, you will find information that allows you to recognize the device.

The figure below shows the identification label and details its information:

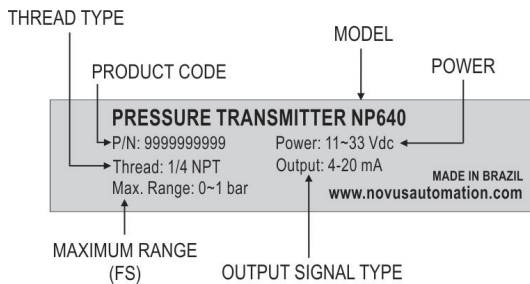


Figure 1 – Transmitter identification

### SPECIFICATIONS

#### Reference Conditions:

Environment 23 °C ± 3 °C, 24 V supply, 250 Ω load. Vertical position (pressure connection down). Atmospheric pressure: 1015 ± 30 mbar.

#### Measure Type:

≤ 10 bar: Positive relative pressure.

≥ 16 bar: Sealed relative pressure with 1 bar reference pressure.

#### Maximum Range (Max. Range) (\*):

Measurement Ranges	Over Pressure	Burst Pressure
0.1 MPa (1 bar / 14.50 psi)	2 times the value of the maximum measurement range	5 times the upper value of the measurement range
0.4 MPa (4 bar / 58.02 psi)		
1 MPa (10 bar / 145.04 psi)		
1.6 MPa (16 bar / 232.06 psi)		
2.5 MPa (25 bar / 362.59 psi)		
4 MPa (40 bar / 580.15 psi)		
6 MPa (60 bar / 870.20 psi)	4 times the upper value of the measurement range	
10 MPa (100 bar / 1450.38 psi)		
16 MPa (160 bar / 2320.60 psi)		
25 MPa (250 bar / 3625.94 psi)	1.5 times the value of the maximum measurement range	3 times the upper value of the measurement range
40 MPa (400 bar / 5801.51 psi)		

Table 1 – Maximum measurement ranges

(\*): Information available on the product identification label.

#### Rangeability:

3:1, set by software.

#### Measurement Accuracy:

< ±0.25 % of the maximum range (Max. Range)

Including linearity, hysteresis, and repeatability under reference conditions.

**Attention:** For ranges with sealed relative measurement, errors proportional to the ambient pressure may occur when the altitude is different from sea level. You can easily compensate for these errors by using the Zero Correction function.

#### Long-term Stability:

< ± 0.3 % of the maximum range / year

#### Durability:

> 10 million cycles.

#### Thermal Maximum Deviation:

< ±0.05 % of the maximum range / °C

Including zero deviations and span.

#### Mounting Position Influence:

< 0.001% of the maximum range / °C

**Resolution:**

< 0.02 % of the maximum range.

**Output Signal (Output):**

Electric current, 4-20 mA, 2 wires.

Meets NAMUR NE-43 recommendation.

Maximum current: < 21.5 mA.

**Power Supply (Power):**

11 to 33 Vdc

Internal protection against reversal polarity of voltage supply.

**Maximum Load (RL):**

$$RL = (V_{cc} - 11) / 20 \text{ mA } (\Omega)$$

Where: Vcc = Voltage supply

**Protection Degree:**

IP65

**Electrical Connection:**

Connector for Type A valves (DIN EN 175301-803), IP65.

Conductor 1.5 mm<sup>2</sup> (max.) and cables between 6 and 8 mm in diameter.

**Operating Temperature:**

-20 to 70 °C / -4 to 158 °F

**Medium Temperature:**

-20 to 100 °C / -4 to 212 °F

**Storage Temperature:**

-40 to 100 °C / -40 to 212 °F

**Dynamic Response:**

< 30 ms

**Process Connection (Thread):**

¼ NPT; ½ NPT; ½ BSP, G ¼ (\* )

**Sensor Features:**

Polysilicon Piezoresistive (silicone oil filled)

**Transmitter Metal Housing:**

Stainless 316

**Wetted parts:**

Sensor, stainless steel 316

Metal Connection, stainless steel 316

**Compatibility:** Any gas or liquid compatible with the constituent materials of the wetted parts.

**Certification:** CE, UKCA

**Installation Recommendations**

- Input signal conductors should run through the plant separately from output and supply conductors. If possible, in grounded conduits.
- The electronic instruments power supply must come from a proper instrumentation network.
- It is mandatory the use of RC FILTERS (electrical noise suppressors) in contactor coils, solenoids, etc.
- To improve the stability, immunity, and safety of the measurement, it is recommended to use the system grounding.

**CONFIGURATION**

To use the device in its factory configuration, no intervention is necessary. It can be installed immediately.

To configure it, use the Transmitter Configuration Kit. This kit includes the **TxConfig-II** software, distributed free of charge on **NOVUS** website, and the **TxConfig-USB-DIN43650** interface, which can be purchased in our distribution and reseller network.

To install the **TxConfig-II** software, run the setup file **TxConfigIISetup.exe** and follow the installer instructions.

The **TxConfig** interface must be connected to the transmitter, as shown in the figure below. The interface provides the power supply necessary for the transmitter configuration operation.

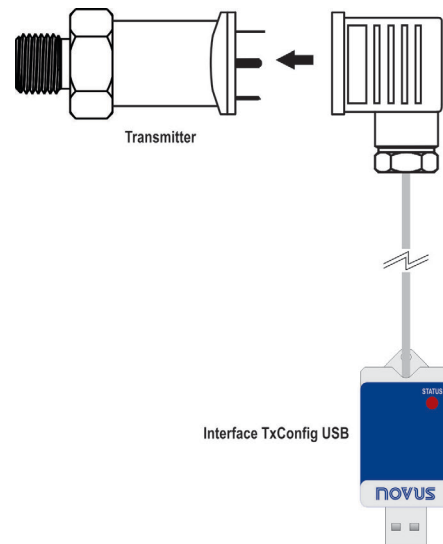


Figure 3 – TxConfig-USB connection

**ELECTRICAL CONNECTIONS**

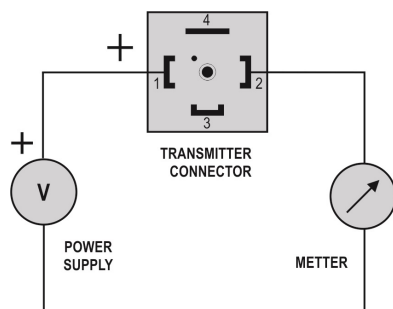


Figure 2 – Electrical Connections

For troubleshooting, visit our FAQ at [www.novusautomation.com](http://www.novusautomation.com).

## SOFTWARE CONFIGURATION

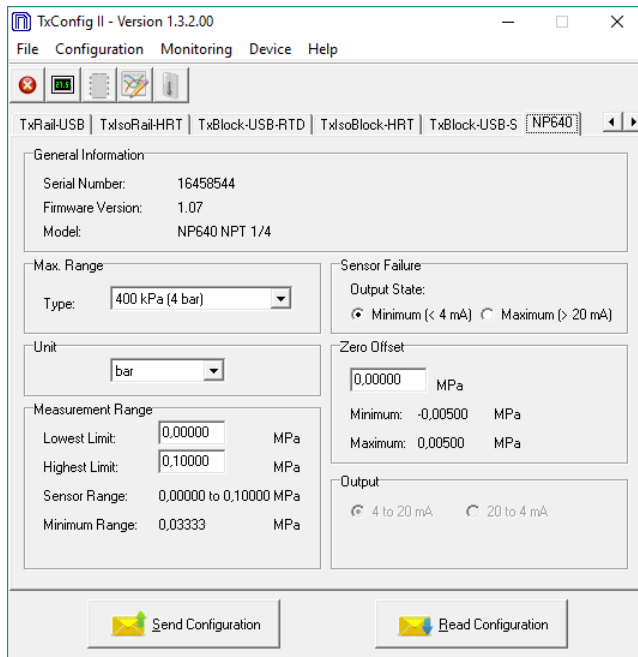


Figure 4 – TxConfig II software main screen

When you run the **TxConfig-II** software, it will automatically recognize the transmitter and will display the following fields:

#### 1. General Information:

This field contains data that identifies the transmitter. For consultation, this information should be submitted to the manufacturer.

#### 2. Unit:

Definition of the pressure unit adopted in the measurement range definition fields.

#### 3. Measurement Range:

Definition of the measurement range adopted by the transmitter.

**Lower Limit:** Target pressure value for 4 mA current.

**Upper Limit:** Target pressure value for 20 mA current.

**Minimum Range:** It is not possible to set a span lower than the **Minimum Range** value indicated below in this same field.

#### 4. Sensor Failure:

Establishes the behavior of the current output when the transmitter malfunctions:

**Minimum:** Output current goes to < 4 mA.

**Maximum:** Output current goes to > 20 mA.

#### 5. Zero Offset:

When no pressure is applied, corrects for small deviations in the transmitter output current.

#### 6. Send Configuration:

Sends the configuration made. Once sent, the configuration will be immediately adopted by the transmitter.

#### 7. Read Configuration:

Reads the transmitter setup. The screen will display the current setting, which you can change.

## DIMENSIONS

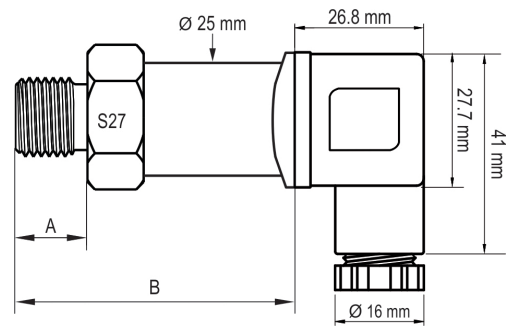


Figure 5 – Transmitter dimensions (\*\*)

THREAD	A (mm)	B (mm)	WEIGHT (g)
NPT ¼	15.5	62.9	135
NPT ½	20.0	67.2	166
BSP ½	14.0	61.0	145
G ¼	14.0	61.0	129

Table 2 – Dimensions

(\*\*) Previous versions (2020) have other measurements.

## WARRANTY

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