1295 Morningside Avenue, Unit 16-18
Scarborough, ON M1B 4Z4 Canada
Phone: 416-261-4865 Fax: 416-261-7879
www.scigiene.com



NP640

RELATIVE PRESSURE TRANSMITTER GUIDE – V1.1x A

1. INTRODUCTION

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.

Using **SigNow** or **TxConfig II** software or the **SigNow** app, you have access to several information about the transmitter and can define the most suitable configuration for your process.

2. 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. The installation must be performed by a specialized professional.

The power supply for the electronic instruments must come from a proper instrumentation network.

2.1 UNPACKING

After unpacking, besides the transmitter, you should find:

• An installation and operation guide.

3. 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:

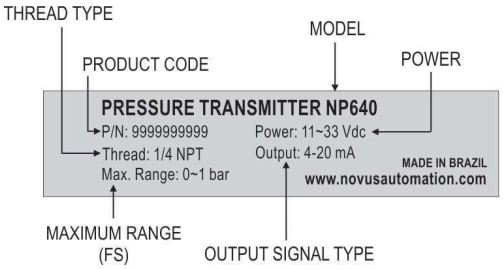


Figure 1 – Transmitter identification

4. 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 RANGE	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)		4 times the upper value of the measurement range
6 MPa (60 bar / 870.20 psi)		
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 % Max. 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:

Electrical current, 4-20 mA, 2 wires.

Meets NAMUR NE-43 recommendation.

Maximum current: < 21.5 mA.

Power Supply:

11 to 33 Vdc

Internal protection against reversal polarity of voltage supply.

Maximum load (RL):

RL = (Vdc - 11) / 20 mA (Ω).

Where: Vdc = Voltage supply.

Protection index:

IP65

Electrical connection:

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

Conductor 1.5 mm² (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 (-4 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:

316 Stainless Steel.

Wetted parts:

Sensor, 316 Stainless Steel.

Metal connection, 316 Stainless Steel.

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

Certification: CE, UKCA.

5. ELECTRICAL CONNECTIONS

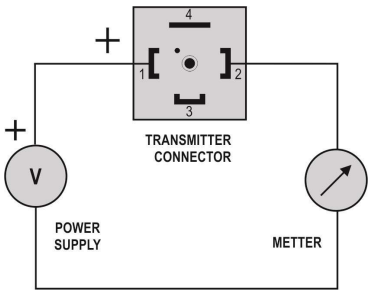


Figure 2 – Electrical connections

5.1 INSTALLATION RECOMMENDATIONS

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

6. SOFTWARE AND APP

When using the transmitter with the factory setting, no intervention is required. The installation can be performed immediately.

When you need to change the configuration of the equipment, you should use **SigNow** software, **TxConfig II** software, or the **SigNow** app.

To configure the equipment through any of the software, you must connect the **TxConfig-USB-DIN43650** Configuration Interface (purchased from the manufacturer or its authorized representatives) to the USB port of the computer used and run the selected software, as shown in **Figure 3**:

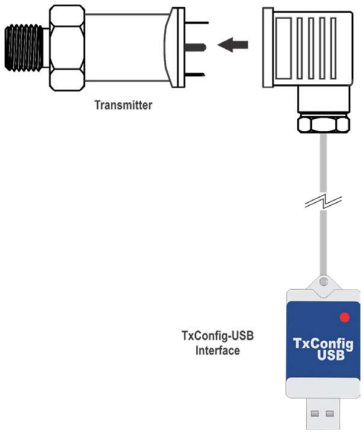


Figure 3 – TxConfig-USB-DIN43650 Connection

To configure the device via the SigNow app, you need to use an OTG cable with the **TxConfig-USB-DIN43650** Configuration Interface and proceed with the recognition process (see SMARTPHONE CONNECTIONS chapter).

On **scigiene** website, you can download the configuration software for free. To install it, simply run the file ***SigNowSetup.exe*** or the file ***TxConfigIISetup.exe*** and follow the instructions in the installer.

The **SigNow** setup application can be downloaded for free from *Google Play Store*.

6.1 SIGNOW SOFTWARE

When running the **SigNow** software and connecting to the device, the following screen will appear:

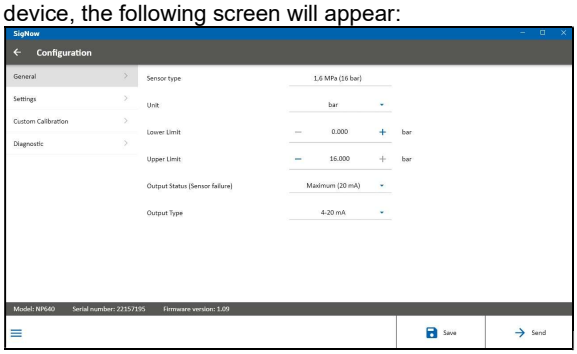


Figure 4 – SigNow configuration screen

The bottom part of the screen displays information about the equipment, such as name, serial number, and firmware version.

The configuration screen is divided into 3 sections: General, Settings, Custom Calibration, and Diagnostic.

In the General (see above) and Settings screen, you can configure the device by setting values and information for the following parameters:

1. **Sensor type:** This field displays information about the sensor type. See **Table 1**.
2. **Pressure unit:** It allows you to define the pressure unit to be adopted in the measurement range definition fields.
3. **User range lower limit:** It allows you to define the lower limit of the measurement range to be adopted by the transmitter.
4. **User range upper limit:** It allows you to define the upper limit of the measurement range to be adopted by the transmitter.
5. **Sensor failure:** It allows you to establish the behavior of the current output when the transmitter malfunctions.

   Minimum: The output current goes to < 4 mA.

   Maximum: The output current goes to > 20 mA.
6. **Output type:** It allows you to define the output type to be used.
7. **Zero offset:** When there is no pressure applied, it allows to correct any small deviations in the transmitter output current.

In the **SigNow** manual, available on **Scigiene** website, you can find more information about the buttons and the diagnostic process.

6.2 TXCONFIG II SOFTWARE

When running the **TxConfig II** software and connecting to the device, the following screen will appear:

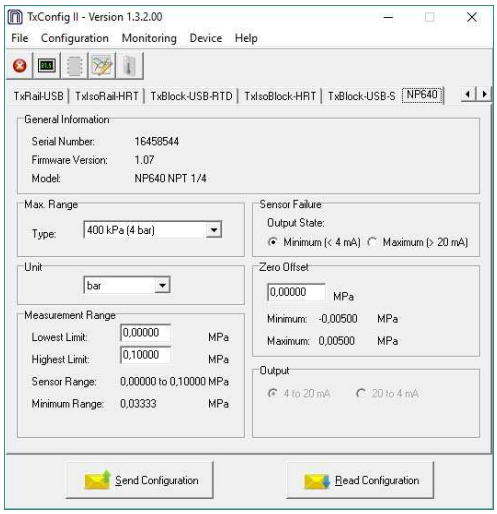


Figure 5 – TxConfig II software main screen

The fields in the screen mean:

1. **General Information:** This field contains data that identifies the transmitter. For consultation, this information should be submitted to the manufacturer.
2. **Pressure unit:** It allows you to define the pressure unit to be adopted in the measurement range definition fields.
3. **Measurement range:** It allows you to define the measurement range to be adopted by the transmitter.

   Lower limit: Value of the desired pressure for the 4-mA current.

   Upper limit: Value of the desired pressure for the 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:** It allows you to establish the behavior of the current output when the transmitter malfunctions.

   Minimum: The output current goes to < 4 mA.

   Maximum: The output current goes to > 20 mA.

5. **Zero offset:** When there is no pressure applied, it allows to correct any small deviations in the transmitter output current.
6. **Send configuration:** It allows you to send a new configuration. Once sent, the configuration will be immediately adopted.
7. **Read configuration:** It allows you to read the transmitter configuration. The screen will display the current setting, which you can change.

⚠	**When using firmware version V1.1x, you should use version 13503 of the TxConfig II software.** **The firmware version of the equipment can be checked in the software itself, in the General Information section, as shown in the figure above.**

6.3 SIGNOW APP

When using an OTG cable and the **TxConfig-USB-DIN43650**
Configuration Interface to connect the equipment to your smartphone and run the **SigNow** app (see SMARTPHONE CONNECTIONS chapter), you must first enable the use of **TxConfig-USB-DIN43650**. The interface will act as an intermediary for the connection:

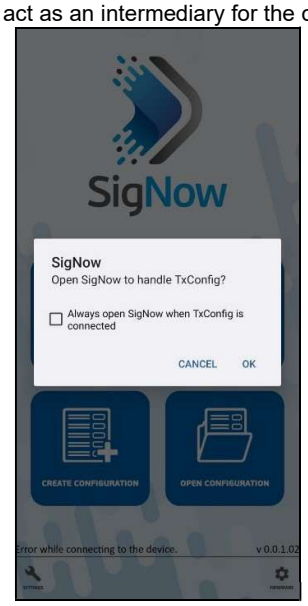


Figure 6 – Using **TxConfig-USB-DIN43650**

After that, the app will recognize the equipment and show the main screen:



Figure 7 – Main screen

Just click the **Configuration** button to show the main screen of **NP640** Configuration section:



Figure 8 – Information screen

This screen shows information about the equipment, such as name, serial number, and firmware version.

When you open the **Config** section, you can configure the parameters displayed in the SIGNOW SOFTWARE section.

In the **SigNow** manual, available on **scigiene** website, you can find more information about the buttons and the diagnostic process.

7. SMARTPHONE CONNECTIONS

Smartphones with *On the Go* (OTG) technology can be directly connected to the device via the USB input. Using the **TxConfigUSB-DIN43650** Configuration Interface, it is possible to recognize and configure **NP640** by running the **SigNow** app.

To do this, as shown in **Figure 9**, you need to observe how to connect the OTG cable to the equipment:

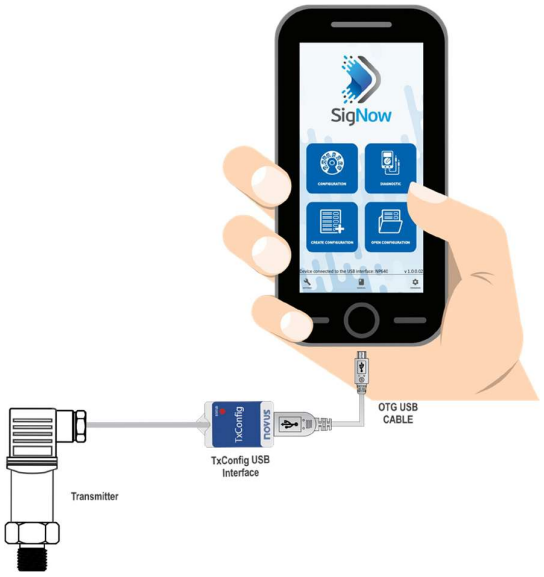


Figure 9 – OTG Cable

If you position the cable end incorrectly, it is possible that the device will not be recognized by the application.

8. DIMENSIONS

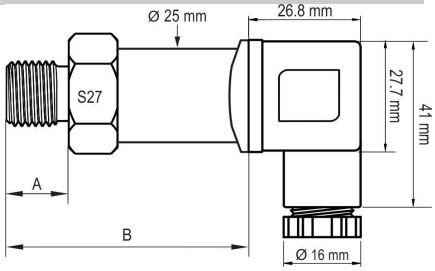


Figure 10 – Transmitter dimensions (**)

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.

9. WARRANTY

Warranty conditions are available on our website www,Scigiene.com