

Pressure Transmitters SX series



II 1GD Ex ia IIC Ex iaD 20 T6/T5/T4 T85°C/T100°C/T135°C

II 1/2GD Ex ia IIC Ex iaD 20 T6/T5/T4 T85°C/T100°C/T135°C

Directive

ATEX 94/9/CE

CENELEC Standards

EN 60079-0: 2004

prEN 60079-11: 2006

EN 60079-26: 2004

EN 61241-0: 2004

prEN 61241-11: 2005

IMPORTANT – READ CAREFULLY

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1.1 Important information

Read this instruction manual carefully before installing and commissioning the unit. Keep it in a safe place, where it is accessible to users at any time.

The safety of any instrument results from the careful selection of the model and installation in the system, as well as from compliance with the maintenance procedures drawn up by the manufacturer.

The persons tasked with the selection, installation and maintenance must be able to recognise the conditions that have a negative impact on the instrument's ability to perform its function and which may lead to premature breakage or failure. Therefore, qualified, trained technicians are to be employed for carrying out the procedures laid down in the plant regulations.

Incorrect use may result in damage to the instrument, and possibly cause breakage or damage to personnel or the plant.

In order to correctly select the functional and constructive characteristics of the instruments, we recommend consulting the most up-to-date version of the catalogue data sheets, available on-line at the website <http://www.nuovafima.com>

The user is entirely responsible for ensuring correct installation and maintenance.

1.2 Function

The pressure transmitter is used to transform an input pressure into an electrical 4 - 20 mA output signal. The electrical signal changes in proportion to the input pressure applied.

1.3 Application

The SX series of pressure transmitters are used for measuring the pressure of liquid and gas fluids, and are suitable for use in places in which there is a risk of explosion.

Ambient and process temperatures must be within the limits stated on the tag.

1.4 Classification

II 1GD Ex ia IIC Ex iaD 20	T6 (T85°C) @ Ta ≤ 60°C T5 (T100°C) @ Ta ≤ 80°C T4 (T135°C) @ Ta ≤ 100°C
II 1/2GD Ex ia IIC Ex iaD 20	T6 (T85°C) @ Ta ≤ 60°C T5 (T100°C) @ Ta ≤ 80°C T4 (T135°C) @ Ta ≤ 100°C

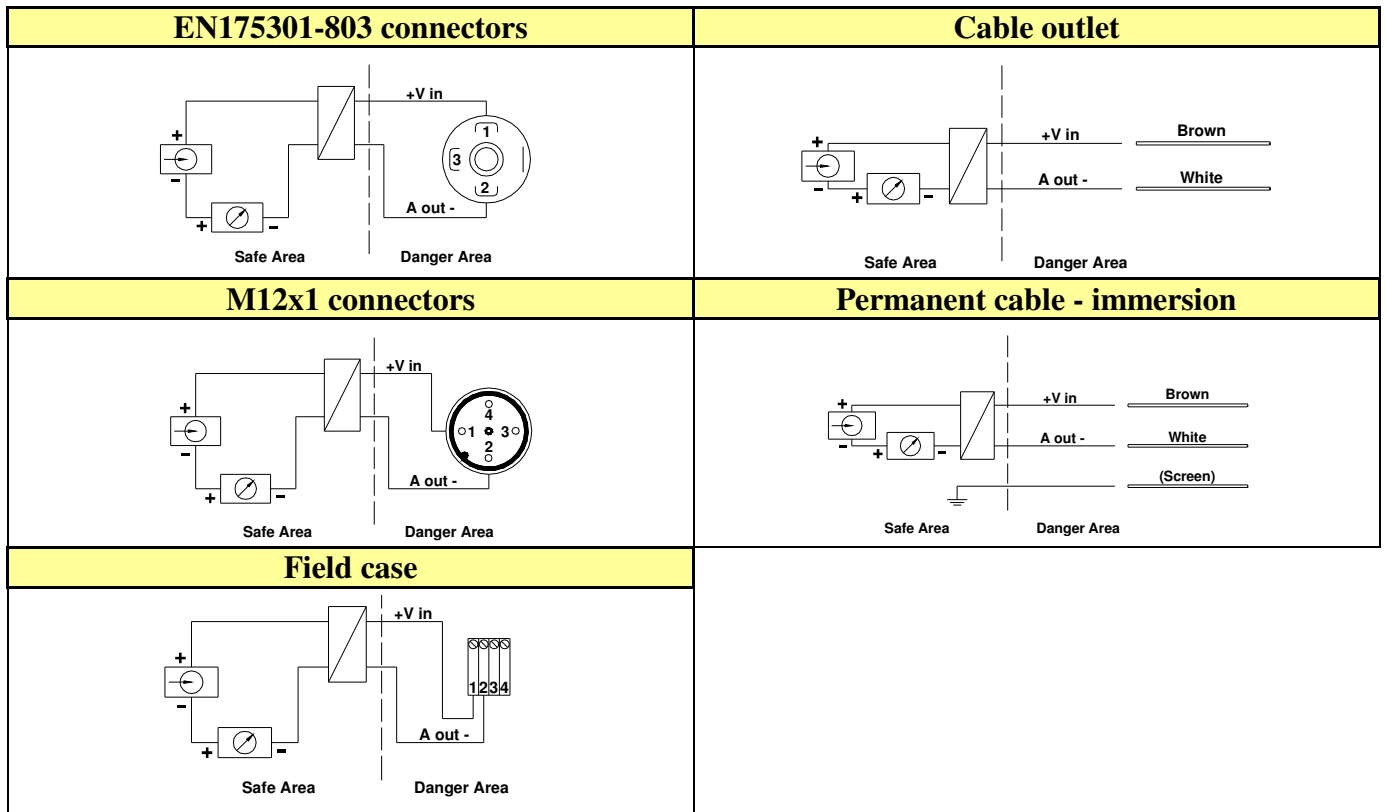
1.5 Electrical characteristics

Power supply voltage	(8)10 – 30 V
Output	4 – 20 mA
Ui (maximum voltage):	30 Vdc
Ii (maximum current):	100 mA
Pi (maximum power):	1 W
Ci (equivalent internal capacity):	19 nF
Ci (equivalent internal capacity + permanent cable):	19 nF + 0.2 nF/m
Li (equivalent internal inductance):	~ 0
Li (equivalent internal inductance + permanent cable):	~ 0 + 2 μH/m

() For some configurations the minimum power supply voltage is 8 V.

1.6 Electrical connection

Wiring diagrams



The transmitter's metal case must always be connected to the earth using the threaded connector for the process, in order to protect it against fluctuations due to electromagnetic fields and electrostatic charges. If this cannot be done, connect the transmitter to earth using the connector and the shield on the cable.

1.7 Safety instructions

The transmitter must be connected to an Associated piece of Equipment (Diode safety barrier or Galvanic insulator) with an [Ex ia] or [Ex ib] execution, complying with the maximum voltage (U_i), current (I_i), and power (P_i), and taking into consideration the internal capacity (C_i) and inductance (L_i) values, indicated in the "Nominal Characteristics". If the barrier has an "ib" protection level, the entire system should be at an "ib" level suitable only for not inflammable fluids.

The transmitters must be installed in compliance with the European Standard EN 60079-14 (current edition) and maintenance operations must be carried out according to the requirements of the European standard EN 60079-17 (current edition); Every Intrinsic Safety transmitter must be included in the *Document Describing the System* (EN 60079-14 and EN 60079-25).

1.8 Commissioning

Before an electrical safety structure is commissioned within a plant or a system, the user must check that it complies with the design data and is installed correctly.

Check that the Associated Equipment called for in the relevant *Document Describing the System* is connected to each transmitter.

Tighten the threaded portion of the transmitter, applying a torque (max 50 Nm) using a suitable spanner on the hexagonal part of the process connector, without applying force to the casing with your hands or pipe wrench.

Remove the connector as shown in figure 1 and connect the cable as shown in figure 2.

Refit the connector, complete with all its gaskets, to guarantee the declared IP protection level, and fix it to the transmitter.

The IP protection according to EN 60529-1:1992 is assured only if the female connector, complete with the cable connection, is assembled to the instrument and all the components are assembled correctly.



Figure 1 – Exploded view of the connector

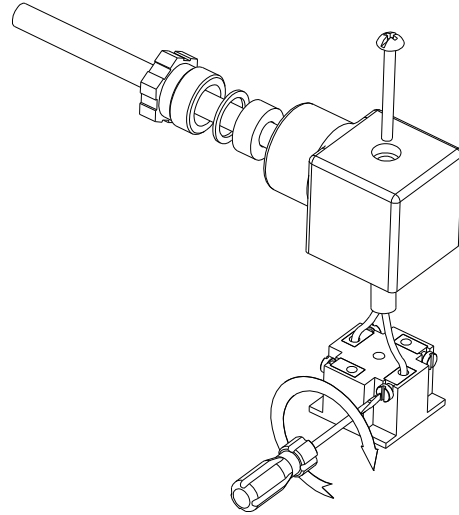


Figure 2 – Connecting the wires

1.9 Resetting and maintenance

For the versions available, the zero and the scale span can be adjusted as follows:

- Removing the connector (see figure 1)
- Setting the zero (Z)
- Setting the span (S)

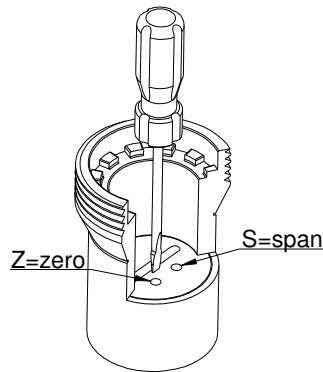


Figure 3 - Setting

Maintenance operations are to be entrusted to duly qualified personnel that are trained on the specific characteristics of the equipment and the Intrinsic safety technique, and they are to comply fully with the provisions of the EN 60079-17 European standard (current edition).

The SX series of transmitters is “*maintenance free*”. The resetting cycle depends on the application they are used for.

Suggested setting frequency: 1 year.

If a fault occurs, contact NUOVA FIMA S.p.A.

Using transmitters that have been subjected to work not explicitly authorised by NUOVA FIMA S.p.A. relieves the Company of any and all responsibility and causes the contractual guarantee to become null and void.