

Use Instructions

PRESSURE TRANSMITTER SX SERIES



II 1GD Ex ia IIC T6 Ex ia III C T85°C

II 1/2GD Ex ia IIC T6 Ex ia III C T85°C

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8.1.1 General information

Read this instructions manual carefully before installing and commissioning the unit. Keep it in a safe place and reachable by users at any time.

The instrument works in safe conditions when selected and installed correctly in the system and when rules concerning the product as well as the maintenance procedures established by the manufacturer are respected.

The staff charged with the selection, installation and maintenance of the instrument must be able to recognize the conditions that may negatively affect the instrument ability to work and which may lead to premature breakage. The staff should, therefore, be technically qualified and properly trained, and should perform the procedures established by the plant regulations.

Directive requirements	Reference to Standards	
ATEX 2014/34/EU	CEI EN 60079-0	CEI EN 60079-11
	CEI EN 60079-26	UNI EN 1127-1

8.1.2 Function

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

8.1.3 Application

SX series pressure transmitters are used for measuring pressure of liquid and gas fluids, and are suitable for use in places where the risk of an explosion is real. Ambient and process temperatures should be within the limits stated on the tag.

8.1.4 Classification

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

8.1.5 Electrical features

Power supply voltage: (8)10 ... 30 V
Output: 4 ... 20 mA
Ui (maximum voltage): 30 Vdc
Ii (maximum voltage): 100 mA
Pi (maximum voltage): 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

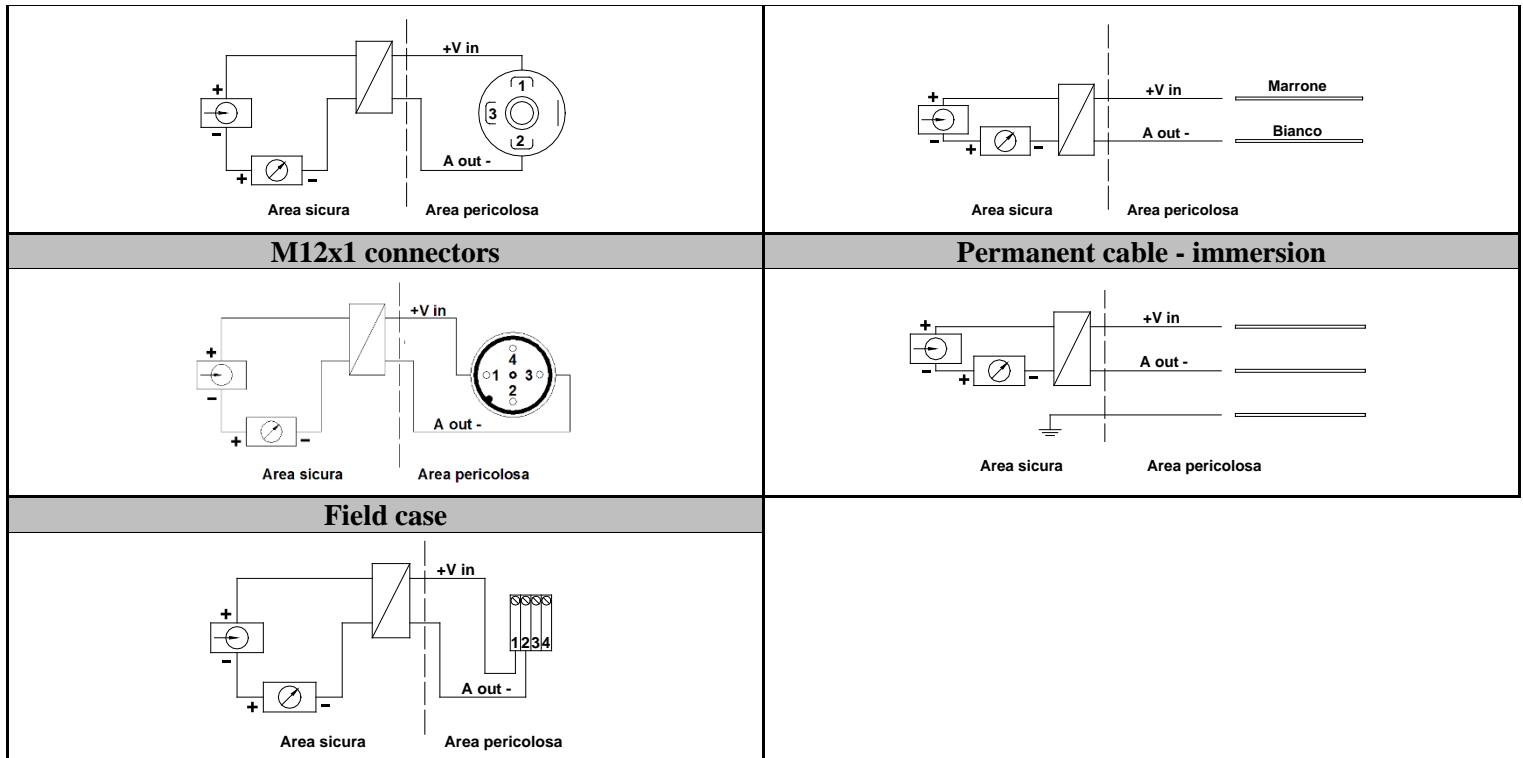
() For some configurations the minimum power supply voltage is 8 V.

8.1.6 Electrical connection

Wiring diagrams

EN175301-803 connectors

Cable outlet



The transmitter metal case must always be connected to the ground using the process connector thread in order to protect it against fluctuations due to electromagnetic fields and electrostatic charges. If this is not possible, connect the transmitter to the ground using the connector and the shield on the cable.

8.1.7 Safety instructions

The transmitter should be connected to an Associated piece of Equipment (Diode safety barrier or Galvanic insulator) through a [Ex ia] or a [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 is provided with an “ib” protection level, the entire system should be at an “ib” level suitable for not inflammable fluids only.

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

8.1.8 Commissioning

Before an electrical safe construction is commissioned within a plant or a system, its compliance with the drawing data and the quality of installation should be checked. The Associated Equipment required by the relevant *Document Describing the System* should be connected to each transmitter correctly.

The threaded part of the transmitter should be tightened by applying a torque (max 50 Nm) on the hexagonal part of the process connector using a suitable spanner, without forcing the case by your hands or a pipe wrench. Then the connector should be removed as shown in figure 1 and the cable should be connected as shown in figure 2. The connector and all its gaskets should be remounted and fastened to the transmitter to guarantee the declared IP protection level.

The IP grade according to standard CEI EN 60529 is guaranteed only if the female connector equipped with a connection cable is mounted on the instrument and all the other components are assembled correctly.

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Figure 1 - Exploded view of the connector

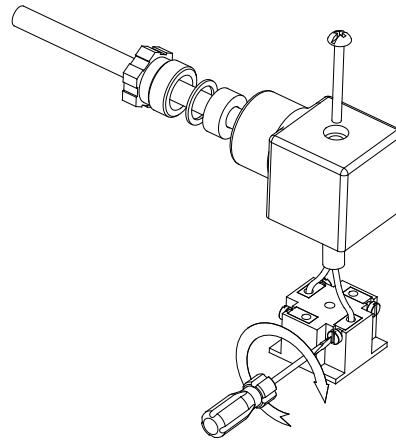


Figure 2 - Connecting the wires

8.1.9 Reset and maintenance

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

- Remove the connector (see figure 1)
- Set the zero (Z)
- Set the span (S)

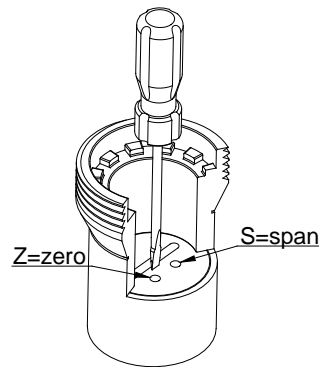


Figura 3 - Setting

Maintenance operations should be performed by duly qualified and properly trained personnel about the specific characteristics of the equipment and the Intrinsic safety technique complying fully with the requirements of the CEI EN 60079-17 European standard (current edition).

The SX series transmitter is “*maintenance free*”. The resetting procedure depends on the application they are used for.

Suggested setting course: 1 year. Should any failure occur, please contact NUOVA FIMA S.r.l.

NUOVA FIMA S.r.l. will not be responsible for any unauthorized use of Transmitters. The guarantee would be considered as null and void.

DICHIARAZIONE UE DI CONFORMITÀ EU DECLARATION OF CONFORMITY

NUOVA FIMA s.r.l. dichiara sotto la propria responsabilità che i seguenti strumenti
NUOVA FIMA s.r.l. declares on its sole responsibility that the following instruments

Trasmettitori di Pressione serie SX Pressure Transmitters SX series

sono conformi ai requisiti delle Direttive e sono marcati **CE** - *fulfill the requirements of the Directives and they are marked with the symbol CE*

- 2014/68/UE (PED)⁽¹⁾
- 2014/34/UE (ATEX)⁽²⁾
- 2014/30/UE (EMC)⁽³⁾
- 2011/65/CE (RoHS)

- (1) Gli strumenti con sovrappressione applicabile ≤ 200 bar (massima pressione ammissibile - PS) sono progettati e fabbricati secondo criteri di buona prassi costruttiva, in accordo con l'articolo 4, par.3 della direttiva. Gli strumenti con sovrappressione applicabile > 200 bar (massima pressione ammissibile - PS) in aggiunta, sono classificati in CATEGORIA I e sottoposti a valutazione della conformità secondo il Modulo A – Controllo di fabbricazione interno.

Instruments with allowable overpressure value ≤ 200 bar (maximum allowable pressure – PS) are designed and manufactured in accordance with sound engineering practice, according to article 4, par. 3 of the directive.

Instruments with allowable overpressure value > 200 bar (maximum allowable pressure – PS) are also classified with CATEGORY I and subjected to the conformity assessment procedure according to Module A - Internal production control.

- (2) Gli strumenti sono marcati - *Instruments are marked as follows:*



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

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e sono conformi alle norme – *and they comply with standards*

- EN 60079-0:2018
- EN 60079-11:2012
- EN 60079-26:2015

Hanno la certificazione di tipo 0425 ATEX 2635 relativa al Fascicolo Tecnico TF 4 rev.2, e la sorveglianza sulla produzione ha la certificazione N° 1591 rilasciate dall'Organismo Notificato ICIM S.p.A. N° 0425.

Instruments are certified with certification type 0425 ATEX 2635 related to the Technical File TF 4 rev.2, and the surveillance of production is certified with certification N° 1591 issued by the Notified Body ICIM S.p.A. N° 0425.

- (3) Gli strumenti sono conformi alla norma – *Instruments comply with standard*

- EN 61326-1:2013

Il controllo della fabbricazione interna degli strumenti è assicurato dal Sistema Qualità secondo ISO 9001 operante in azienda e certificato da ICIM SpA.

The control of the instruments internal manufacturing is guaranteed by the Quality System according to ISO 9001 of the factory, certified by ICIM SpA.

NUOVA FIMA

Responsabile ATEX-ATEX Responsible

F.Zaveri

Invorio, 07.06.2022