TRST ISSUED FOR MODIFICATION DATE APPROVED MODIFICATION DATE APPROVED ABB S.p.A ADDED SHEET FOR CL1 DIV2 12/11/2021 Copyrights reserved Reproduction or distribution outside the $\ensuremath{\mathsf{GR}}\xspace \ensuremath{\mathsf{DUP}}\xspace$ forbidden without written permission. over the installation. The entity concept criteria are as follows: The intrinsically safe devices, other than barriers, must not be source of power Entity concept Ex ia IIC T4 Class I Zone 0 AEx ia IIC T4 CL I, Div 1 Gr A, B, C, D T4 Ex ia IIIC T135°C PXX100 Pressure Transmitter Intrinsically safe Vmax = 30 Vdc Ci = 3,7 nFPmax = 1Wlmax = 100 mALi = 0 uHAPPLICATION WITH AND WITHOUT HMI APPLICATION WITH AND WITHOUT HMI Protection

PXX100 Zone 20/21 AEx ia IIIC T135°C Da/Db / Ex ia IIIC T135°C Da/Db Pressure Transmitter CL I , Zone 0 AEx ia IIC T4 Ga / Ex ia IIC T4 Ga For Cable see table HAZARDOUS (CLASSIFIED) LOCATION -40°C up to +75°C -40°C up to +85°C T amb CL II, Div 1, Gr E, F, G, 120°C CL I, Div 1, Gr A, B, C, D T4 Table for cable Cables suitable for 85°C Cable type in Hazloc UNCLASSIFIED Safety Barrier + ٠ **∠** 0 0 4 LOCATION \bullet \bullet

Power Supply

Pi = 1W li = 100 mAUi = 30 Vdc

Li = 0 uHCi = 3,7 nF

Process

Max.

Zone 20/21 AEx ia IIIC T135°C CL II, Div 1 Gr E, F, G 120°C >85°C ≤120°C temperature ≤ 120°C ≤ 85°C Amb. 85°C 85°C 75°C Temp.

Equipment which is CSA approved for intrinsic safety may be connected to barriers based on the ENTITY CONCEPT. This concept permit interconnection of approved transmitters, meters and other devices in combinations which have not been specifically examined by CSA, provided that the agency's criteria are met. The combination is then intrinsically safe if the entity concept is acceptable to the authority having jurisdiction

The maximum voltage (Vmax or Ui) and current (Imax or Ii), and power (Pmax or Pi) which the device can receive and remain intrinsically safe, must be equal or greater than the voltage (Voc or Vt or Uo) and current (Isc or It or Io) and power (Po) which can be delivered by the barrier.

The sum of the maximum unprotected capacitance (Ci) for each intrinsically device and the interconnecting wiring must be less than the capacitance (Ca or Co) which can be safely connected to the barrier.

Canadian Electrical Code Part 1

Operating Manual OI/PGX/PAX100-EN Rev.C Free download from www.abb.com/measurement

National Electrical Code ANSI/NFPA 70

- ISA RP 12.06.01

Installation shall be in according with:

Substitution of components may impair intrinsic safety.

disconnect power before servicing

To prevent ignition of flammable atmosphere

anically isolated barrier or

Um = 250 V

User repair is not permitted.

WARNING:

The sum of the maximum unprotected inductance (Li) for each intrinsically safe device and the interconnecting wiring must be less than the inductance (La or Lo) which can be safely connected to the barrier..

The max entity parameters of PXX100 are indicated in this drawing

The entity parameters of barriers are provided by the barrier manufacturer

Special conditions for use:

in any equipment intrinsic safe installation. The SIL version of PXX100 pressure transmitter wich is identified by "NL" being included model designation is not capable of passing a 500V r.m.s. dielectric strength test in accordance to clause 10.3 of IEC60079-11:2011 between its Intrinsically safe circuit and its enclosure. This shall be considered

The PXX100 with HMI option may either be marked for use in explosive gas atmospheres only, or be marked for use in both explosive gas atmosphere and explosive dust atmosphere. Therefore, when an HMI version of the PXX100 is to be installed in an explosive dust atmosphere the user / installer shall check the certification marking on the equipment to confirm its suitability for installation in an explosive dust atmosphere.

When a PXX100 with HMI option is for use in an explosive dust atmosphere, the installation shall be such that the window of the equipment shall not exposed to a high risk of mechanical danger.

Intrinsically safe gallintrinsically safe ear $Voc = \le 30 \text{ Vdc}$ $Isc = \le 100 \text{ mA}$ $Ca = \ge Ccable + 3,7 nF$ $La = \ge Lcable$ Po = ≤ 1W La/Ra = ≥ La/Racable thed / grounded barrier Po = ≤ 1W Co = ≥ Ccable + 3,7 nF Lo = ≥ Lcable Lo/Ro = ≥ Lo/Rocable $Uo = \le 30 \text{ Vdc}$ lo = ≤ 100 mA

manufacturer's installation drawing, instruction and certificates The safety barrier shall be installed in according to the

the earth ground must be less then 1 ohm. The resistance between the intrinsically safe ground and

Intrinsically safe	CONTROL DRAWING DH3275	PXX100
afe	DH3275	

SHEET 1 of 2 DRAWING N°

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FIRST ISSUED FOR:			ABB	REV. MODIFICATION E			E	DATE	AF	PROVE		
MODIFICATION		E	DATE	APPROVED								
ADDED SHEET FOR	CL1 DIV2		12/11/2021		ABB S.p.A							
					Copyrights reserved Reproduction or distribution outside the GROUP forbidden without written permission.							_
	Special conditions for use: The PXX100 with HMI option may either be marked for use in explosive gas atmospheres only, or be marked for use in both explosive gas atmosphere and explosive dust atmosphere. Therefore, when an HMI version of the PXX100 is to be installed in an explosive dust atmosphere the user / installer shall check the certification marking on the equipment to confirm its suitability for installation in an explosive dust atmosphere. When a PXX100 with HMI option is for use in an explosive dust atmosphere, the installation shall be such that the window of the equipment shall not exposed to a high risk of mechanical danger.			Protection CCLI, Div 2 Gr A, B, C, D T4 CCLI, Div 2 Gr A, B, C, D T4 CCLI, Div 2 Gr A, B, C, D T4 CCLI, Div 2 Gr A, B, C, D T4 S 120°C RMAX. Amb. Temp. CLI, Div 2 Gr A, B, C, D T4 S 120°C RMAX. Amb. Temp. CLI, Div 2 Gr A, B, C, D T4 S 120°C RMAX. Amb. Temp. CLI, Div 2 Gr A, B, C, D T4 S 120°C RMAX. Amb. Temp. Amb. Temp. Amb. Temp. Amb. Temp. CLI, Div 2 Gr A, B, C, D T4 S 120°C RMAX. Amb. Temp. Am		APPLICATION WITH AND WITHOUT HMI	Ci = 3,7 nF Li = 0 uH	Vmax = 30 Vdc				
	in of the PXX11 in of the user / inser the user / insert to consider to consider to consider to consider to for use in all be such that a high risk of the consider to consider the consideration of t	nay either be m ly, or be marke			sion z nazardous sion z nazardous ce can receive an enceive an enceive an ent (Isc or It or Io) (CI) for each devote safely connecte cand the safely connecte ci, and Li for the s La or Lo for the s	CONCEPT: Incept is very simely wiring parameter of power process of power	≤ 120°C	Process temperature	AND WITHO	Ci = 3,7 nF Li = 0 uH	I ransmitter Non Incendive NIF W	:
DATE SCALE	OO is to be install of staller shall of firm its suitab firm its suitab an explosive the window mechanical d	harked for use id for use in b atmosphere			in demain non-in demain non-in demain non-in which can be covice and the interest ted to the source interconnecting d to the source PXX100 transrource of power	T: very similar to the entity concept expery similar to the entity concept experience of power provided that the appropriar is acceptable to the authority having parameters suitable ve Field Wiring parameters suitable.	85°C	Max. Amb. Temp.	CT HMI		VE NITW	!

HAZARDOUS (CLASSIFIED) LOCATION INSTALLATION ACCORDING TO NON-INCENDIVE FIE CL I, Div 2, Gr A, B, C, D T4 UNCLASSIFIED Safety Barrier + **4** ω ω **4** LOCATION LD WIRING CONCEPT \bullet \bullet \bullet

Power Supply

, Div 2 Gr A, B, C, D T4 APPLICATION WITH AND WITHOUT HMI temperature ≤ 120°C Max. Amb. Temp. 85°C

PXX100



NCENDIVE FIELD WIRING CONCEPT:

tected inductance (Li) for each device and the interconnecting wiring must be less than the ance (La or Lo) which can be safely connected to the source of power. The Non-incendive Field Wiring leters Vmax or Ui, Imax or Ii, Ci, and Li for the PXX100 transmitter are listed before. The parameters connected to appropriated sources of power provided that the appropriated criteria are met. symbination is then safe if the concept is acceptable to the authority having jurisdiction over installation. iteria are as follows: There must be one source of power. The source may be an intrinsic safety barrier or on-incendive Field Wiring concept is very similar to the entity concept except it allowes devices approved on-incendive Component Field Wiring parameters to be installed in Class I Division 2 hazardous locations tance (Ca or Co) which can be safely connected to the source of power.The sum of the maximum ∋ (Voc or Vt or Uo) and current (Isc or It or Io) which can be delivered by the source of power.The sum of the um unprotected capacitance (Ci) for each device and the interconnecting wiring must be less than the : (Imax or II), which the device can receive and remain non-incendive, must be equal to or greater than the components located in Division 2 hazardous locations. The maximum voltage (Vmax or Ui) and be a device marked with Non-incendive Field Wiring parameters suitable for connection to non-incendive

WARNING:

disconnect power before servicing To prevent ignition of flammable atmosphere,

User repair is not permitted.

Installation shall be in according with:

- ISA RP 12.06.01
- National Electrical Code ANSI/NFPA 70
- Canadian Electrical Code Part 1
- Operating Manual OI/PGX/PAX100-EN Rev.C Free download from www.abb.com/measurement

ANIFW earthed / grounded barrier

Co = ≥ Ccable + 3,7 nF

Ca = ≥ Ccable + 3,7 nF

La = ≥ Lcable

Um = 250 V $Voc = \le 30 Vdc$

Lo = ≥ Lcab

ō

Lo/Ro = ≥ Lo/Rocable

La/Ra = ≥ La/Racable

Uo = ≤ 30 Vdc Um = 250 V ANIFW galvanically isolated barrier or

•

Um = 250 V

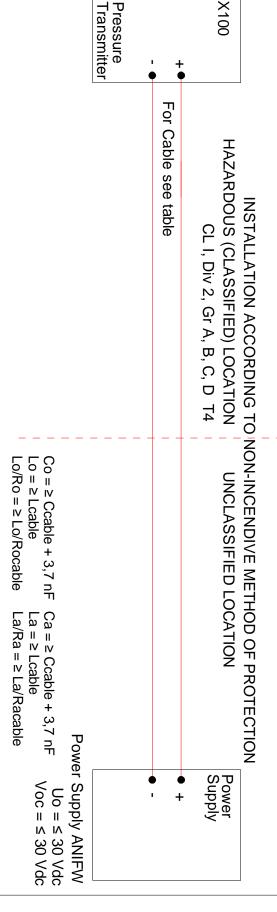
Substitution of components may impair non incendivemethod of protection.

GENERAL NOTES FOR NON-INCENDIVE LOOPS:

manufacturer's installation drawing, instruction and certificates

The safety barrier shall be installed in according to the

- WARNING EXPLOSION HAZARD SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I DIVISION 2.
 TRANSMITTERS GROUND MUST BE AT SAME POTENTIAL AS
- BARRIER GROUND.



21-Apr-2020

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NON Incendive CL1 Div2 NIFW

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DRAWING DH3275

PXX100

DRAWING N° SHEET 2 of 2

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