

EU Declaration of Conformity – PMX/PRX Series Preamplifiers

Manufacturer: Motion Sensors, Inc., 786 Pitts Chapel Road, Elizabeth City, NC 27909

Equipment: Intrinsically Safe preamplifiers

Designation/Model: PMX-xxx-y and PRX-xxx-y

NOTE: “xxx” or “xxx” in Model number may be any combination of numbers and characters representing specific options. “y” in Model Number will be either a -1, -2, -3, -4 or -5 indicating the pulse output type and Hazardous Location rating.

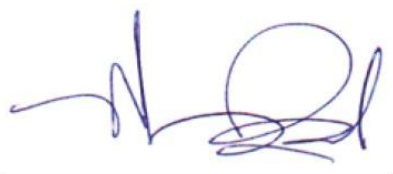
Marking: MOTION SENSORS INC
ELIZABETH CITY, NC 27909
YYY-XXX
SERIAL #: YEAR OF CONSTRUCTION:
Ex II 1 G
Ex ia IIC T4 (Tamb: -40°C to 51°C)
Ex ia IIC T2 (Tamb: -40°C to 125°C)
Ex ia IIA T4 (Tamb: -40°C to 51°C)
Ex ia IIA T2 (Tamb: -40°C to 125°C)
LCIE 03 ATEX 6286 X
IECEX LCIE 14.0024 X
Ui≤...V, li≤...mA, Pi≤...W, Ci≤...uF, Li≤...mH*
Uo≤...V, lo≤...mA, Po≤...W, Co≤...uF, Lo≤...mH*

*See specific part drawing for entity parameter values

This declaration of conformity is issued under the sole responsibility of the manufacturer. The object of the declaration is in conformity with the relevant Union harmonisation Legislation. We hereby declare that the product, which is subject of this declaration, is in conformity with the following standards:

ATEX	ATEX Directive 2014/34/EU: Equipment and protective systems intended for use in potentially explosive atmospheres. <i>Applicable Standards: BS EN IEC 60079-0:2018*; EN 60079-11:2012</i>	EU-Type Examination Certificate: LCIE 03 ATEX 6286 X
CSA w/NRTL/C	Applicable CSA Requirements: CSA Std. C22.2 No. 142-M1987, CAN/CSA-E79-11-95, UL Std No. 916, UL Std No. 913	CSA-Type Examination Certificate: 1102298 LR105990-3
IECEX	IEC Certification for Explosive Atmospheres. <i>Applicable Standards: BS EN IEC 60079-0:2018*; IEC 60079-11: 2011</i>	IECEX Certificate of Conformity: IECEX LCIE 14.0024 X
2014/30/EU	Electromagnetic Compatibility <i>Applicable Standards: EN 61000-6-3 (2007), EN 61000-6-2 (2005)</i>	

*MSI has performed internal assessments for EN 60079-0:2012+A11-2013 to BS EN IEC 60079-0:2018 revision and IEC 60079-0: 2011 + IS1:2013 to BS EN IEC 60079-0:2018 revision; there is no impact upon product.

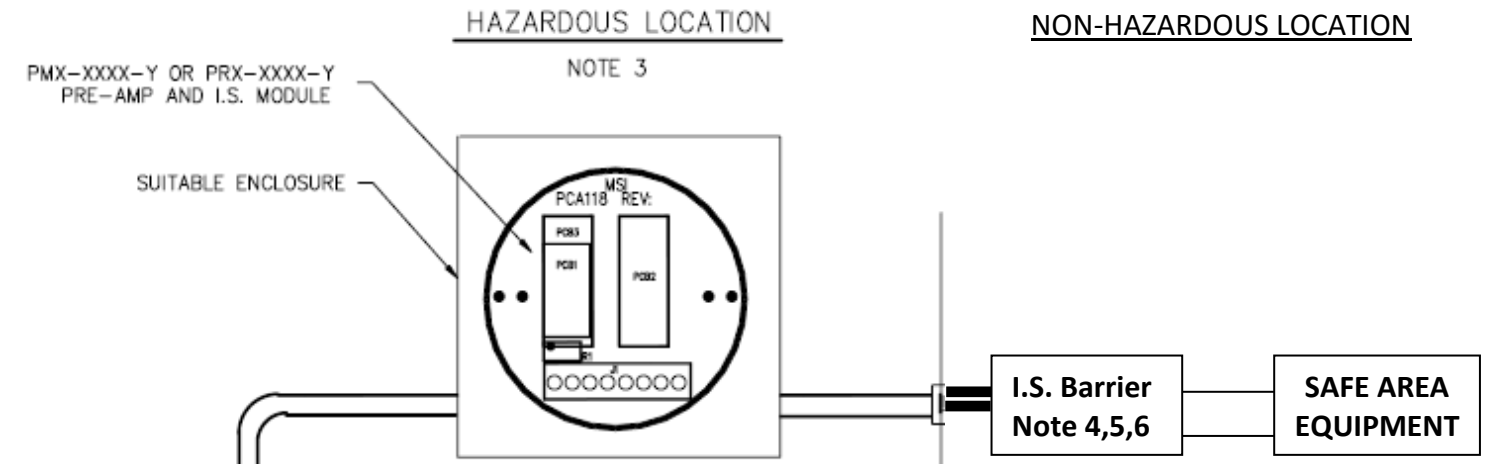


Marcy Bergman Pritchard
President
Motion Sensors, Inc.

SIGNED: 10/17/19

EU-Type Examination Certificate & IECEX Certificate issued by:
Laboratoire Central Des Industries Electriques
Avenue du General-Leclerc 33
F-92266 Fontenay-aux-Roses
(Notified Body Number: 0081)

CSA-Type Examination Certification issued by:
Canadian Standards Association
Toronto, ON Canada



Notes:

1. For CSA-NRTL Installations: Installation should be in accordance with ANSI/ISA RP12.6 "Installation of Intrinsically Safe Systems for Hazardous Locations" and the National Electric Code (ANSI/NFPA 70). For ATEX Installations: Installation should be in accordance with ATEX Directive for Installation of Intrinsically Safe systems in hazardous locations and in accordance with the relevant local Electric Codes.
2. For CSA Installations: Install in accordance with Canadian Electric Code Part 1. For ATEX Installations: Install in accordance with the relevant local Electric Code.
3. Detached pre-amps are suitable for Hazardous locations Class I, Zone 0 and Class I, Division 1 (Groups as noted depended on the model). For Class II, or Class III locations, the pre-amp must be installed in an approved Class II/III enclosure. For ATEX installations, preamps are suitable for use in Ex ia IIC or IIB hazardous locations, where Exia is defined as Intrinsically Safe/Securite Intrinseque. A suitable enclosure is defined as a metal enclosure with an IP20 rating. For non-metallic enclosures, electrostatic build-up should be avoided. Refer to EN60079-0:2006 Section 7.3
4. For entity installations, select a CSA or ATEX certified barrier that satisfies the following:

$$U_i/V_{max} \geq U_o/V_{oc}; \quad C_i + C_{cable} \leq C_a/C_o$$

$$L_i/I_{max} \geq L_o/I_{sc}; \quad L_i + L_{cable} \leq L_a/L_o$$
5. For entity installations, select a CSA or ATEX certified pickup coil that satisfies the following:

$$U_i/V_{max} \geq U_o/V_{oc}; \quad C_i + C_{cable} \leq C_a/C_o$$

$$L_i/I_{max} \geq L_o/I_{sc}; \quad L_i + L_{cable} \leq L_a/L_o$$
6. For system installations, use two CSA or ATEX certified single channel barriers or one dual channel barrier where each channel has parameters of 28 Vdc (Max) and 600 ohms (Min), such as MTL-778 or Stahl 9002/77-280-094-00.
7. Barriers must be installed in accordance with manufacturer's instructions.
8. Exia is defined as intrinsically safe/securite intrinseque.

Certified Motion Sensors PC45-XXX or RF10-XXX Intrinsically Safe Pickup

NOTE: The preamplifier can also be installed directly mounted to the pickup coil. Refer to drawing ST-A-1298 Sheet 3 for details

Special Conditions for Safe Use

The preamplifiers are intrinsically safe electrical equipment and can be used in potentially explosive atmospheres. The input terminal block can be only connected to certified intrinsically safe equipment and the combination must be compatible with intrinsic safety rules and the electrical parameters in the below table. Install pre-amplifiers as per control drawing ST-A-1298-5, ST-A-1298-7, ST-A-1298-8, ST-A-1298-9, ST-A-1298-11, ST-A-1298-12.

CSA Entity Parameters

Class/Group (CSA)	Part Numbers	Electrical Parameters
Class 1, Zone 0 Group IIC/Class 1, DIV 1, Group A,B,C,D	PMX-XXXX-1, PMX-XXXX-2, PRX-XXXX-1, PRX-XXXX-2	Parameters to I.S. Barrier: $U_i/V_{max}=30V_{dc}$; $I_i/I_{max}=200mA$; $C_i/C_i=0\mu F$; $L_i/L_i = 0.5mH$ Parameters to Pickup Coil: $U_o/V_{oc}=5.9V_{dc}$; $I_o/I_{sc}=64mA$; $C_o/C_a=1.0\mu F$; $L_o/L_a=3.5mH$
Class 1, Zone 0 Group IIA/Class 1, DIV 1, Group D	PMX-XXXX-3, PMX-XXXX-4, PRX-XXXX-3, PRX-XXXX-4, PRX-XXXX-5, PMX-XXXX-5	Parameters to I.S. Barrier: $U_i/V_{max}=30V_{dc}$; $I_i/I_{max}=190mA$; $C_i/C_i=0\mu F$; $L_i/L_i = 0.5mH$ Parameters to Pickup Coil: $U_o/V_{oc}=10.5V_{dc}$; $I_o/I_{sc}=190mA$; $C_o/C_a=4.0\mu F$; $L_o/L_a=1.5mH$

ATEX Entity Parameters

NOTE: Electrical specification U, I, P of the materials which could be associated to the pickup will not exceed any of the following values

Part Numbers	Group	Electrical Parameters
PMX-XXXX-1, PMX-XXXX-2, PRX-XXXX-1, PRX-XXXX-2	IIC	$U_i = 30V$; $I_i = 200mA$; $P_i = 0.75W$; $C_i = 0$; $L_i = 0.5mH$ $U_o=5.9V$; $I_o = 64mA$; $C_o = 1\mu F$; $L_o = 3.5 mH$
PMX-XXXX-3, PMX-XXXX-4, PRX-XXXX-3, PRX-XXXX-4, PRX-XXXX-5, PMX-XXXX-5	IIA	$U_i = 30V$; $I_i = 190mA$; $P_i = 2.55W$; $C_i = 0$; $L_i = 0.5mH$ $U_o=10.5V$; $I_o = 190mA$; $C_o = 4\mu F$; $L_o = 1.5 mH$

Maximum Ambient Temperature:

The maximum ambient temperature of the preamplifiers is in accordance with the following temperature classes. Note: Refer to individual product specification sheet for temperature capabilities of specific model being used.

ATEX Certified Group IIC and IIA:

T2	T4
-40°C to +125°C	-40°C to +51°C

CSA Certified Group IIC:

T2	T4
-40°C to +125°C	-40°C to +51°C

CSA Certified Group IIA:

T2	T4
-40°C to +100°C	-40°C to +51°C

Marking:

The amplified series of pickups and preamplifiers shall be marked with either CSA or ATEX identification, or a combination label, as applicable and shall be identified by the part number, date code (AA BB), and Lot Identification number (YYYYYY).

WARNING: Do not separate when energized.