IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx LCIE 14.0024X**

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Certificate history:
Issue 0 (2014-07-09)

Status: **Current**

Issue No: 1

Date of Issue: 2023-01-23

Applicant: **MOTION SENSORS Inc.**
Pitts Chapel Road
Elizabeth City
NC 27909
United States of America

Equipment: **Intrinsically safe pickup coils : PC45xxx, RF10-xxx, DMX-xxx-y, DRX-xxx-y, HX-xxx-y, HDX-xxx-y, HNX-xxx-y, MRX-xxx-y, MRDX-xxx-y**

Optional accessory:

Type of Protection: **ia**

Marking: Ex ia IIC or IIB T6 to T3 Ga, Ex ia IIC or IIA T4 or T2 Ga

IECEx LCIE 14.0024 X
see attachment

Approved for issue on behalf of the IECEx Certification Body: **Julien Gauthier**

Position: **Certification Officer**

Signature: (for printed version)

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92266 FONTENAY AUX ROSES

Date: (for printed version) 2023-01-23

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

IECEx Certificate of Conformity

Certificate No.: **IECEx LCIE 14.0024X**

Date of issue: 2023-01-23 Issue No: 1

Manufacturer: **MOTION SENSORS Inc.**
Pitts Chapel Road
Elizabeth City
NC 27909
United States of America

Manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

FR/LCIE/ExTR14.0026/00 FR/LCIE/ExTR22.0090/00

Quality Assessment Report:

FR/LCI/QAR10.0010/11

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Magnetic sensor: The device consists of a steel enclosure containing a certified magnetic sensor associated with an intrinsic safety electronic board and a pre-amplifier electronic board.

Preamplifier : The device consists of a box containing one or two encapsulated intrinsic safety electronic boards and one or two encapsulated preamplifier electronic boards mounted on an encapsulated electronic board. It can be connected to certified magnetic sensors.

See attachment for full description.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See attachment.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Normative update according to IEC 60079-0:Ed.7.0 standard.

Annex:

Annex 01 to Certificate LCIE 14.0024X issue 01.pdf

Annex 01 to Certificate
IECEx LCIE 14.0024X issue 01

FULL EQUIPMENT DESCRIPTION

PC45-xxx and RF10-xxx series:

The detection coils of the PC45-xxx and RF10-xxx series consist of a coil placed around a magnetic core.

DMX-xxx-y, DRX-xxx-y, HX-xxx-y, HDX-xxx-y, HNX-xxx-y, MRX-xxx-y and MRDX-xxx-y:

The device consists of a steel enclosure containing a magnetic sensor associated with an intrinsic safety electronic board and a pre-amplifier electronic board.

PMX-xxx-y and PRX-xxx-y :

The device consists of a box containing one or two encapsulated intrinsic safety electronic boards and one or two encapsulated preamplifier electronic boards mounted on an encapsulated electronic board. It can be connected to to any other certified sensor.

MARKING

PC45-xxx and RF10-xxx:

Motion Sensors Inc.
Address : ….
Type : PC45xxx or RF10-xxx (1)
Serial number : …
Year of construction : …
Ex ia IIC or IIB T6 to T3 Ga (2)
IECEx LCIE 14.0024X
*U*i ≤ …V, *I*i ≤ …mA, *P*i ≤ …W, *C*i ≤ … µF, *L*i ≤ …mH (3)
(1)completed with the model
(2)see the temperature classification
(3)completed in function of the model

DMX-xxx-y or DRX-xxx-y or HX-xxx-y or HDX-xxx-y or HNX-xxx-y or MRX-xxx-y or MRDX-xxx-y or PMX-xxxx-y or PRX-xxx-y :

Motion Sensors Inc.
Address : ….
Type : DMX-xxx-y or DRX-xxx-y or HX-xxx-y or HDX-xxx-y or HNX-xxx-y or MRX-xxx-y or MRDX-xxx-y or PMX-xxxx-y or PRX-xxx-y (1)
Serial number : …
Year of construction : …
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)
IECEx LCIE 14.0024X
*U*i ≤ …V, *I*i ≤ …mA, *P*i ≤ …W, *C*i ≤ … µF, *L*i ≤ …mH (2)
*U*o ≤ …V, *I*o ≤ …mA, *P*o ≤ …W, *C*o ≤ … µF, *L*o ≤ …mH (2)
(1)completed with the model
(2)completed in function of the model

RANGE DETAILS

PC45-xxx and RF10-xxx:

xxx = is a unique number that is assigned for each model without impact on the intrinsic safety of the equipment.

DMX-xxx-y, DRX-xxx-y, HX-xxx-y, HDX-xxx-y,HNX-xxx-y, MRX-xxx-y, MRDX-xxx-y :

xxx = is a unique number that is assigned for each model without impact on the intrinsic safety of the equipment.

y = design the model, gas group and corresponding entity parameters. y can be 1, 2, 3, 4 or 5.

PMX-xxx-y, PRX-xxx-y :

xxx = is a unique number that is assigned for each model without impact on the intrinsic safety of the equipment.

y = design the model, gas group and corresponding entity parameters. y can be 1, 2, 3, 4 or 5.

RATINGS

Model	Gas group	Electrical parameters
RF10-xxx	IIC	Ui = 30V, Ii = 160, Pi = 0.75W, Ci = 0, Li = 1.2mH
RF10-xxx	IIB	Ui = 30V, Ii = 300, Pi = 15W, Ci = 0, Li = 1.2mH
PC45-xxx	IIC	Ui = 30V, Ii = 300, Pi = 0.75W, Ci = 0, Li = 0mH
DMX-xxx-1, DMX-xxx-2, DRX-xxx-1, DRX-xxx-2, MRX-xxx-1, MRX-xxx-2, MRDX-xxx-1, MRDX-xxx-2, HX-xxx-1, HR-xxx-2, HDX-xxx-1, HDDX-xxx-2, HNX-xxx-1, HNX-xxx-2	IIC	Ui = 30V, Ii = 200mA, Pi = 0.75W, Ci = 0, Li = 0.5mH
DMX-xxx-3, DMX-xxx-4, DMX-xxx-5, DRX-xxx-3, DRX-xxx-4, DRX-xxx-5, MRX-xxx-3, MRX-xxx-4, MRDX-xxx-3, MRDX-xxx-4, HX-xxx-3, HR-xxx-4, HDX-xxx-3, HDDX-xxx-4, HNX-xxx-3, HNX-xxx-4	IIA	Ui = 30V, Ii = 190mA, Pi = 2.55W, Ci = 0, Li = 0.5mH
PMX-xxxx-1, PMX-xxxx-2, PRX-xxxx-1, PRX-xxxx-2	IIC	Ui = 30V, Ii = 200mA, Pi = 0.75W, Ci = 0, Li = 0.5mH Uo = 5.9V, Io = 64mA, Co = 1µF, Lo = 3.5mH
PMX-xxxx-3, PMX-xxxx-4, PMX-xxxx-5, PRX-xxxx-3, PRX-xxxx-4, PRX-xxxx-5	IIA	Ui = 30V, Ii = 190mA, Pi = 2.55W, Ci = 0, Li = 0.5mH Uo = 10.5V, Io = 190mA, Co = 4µF, Lo = 1.5mH

FULL CONDITIONS OF CERTIFICATION

PC45-xxx and RF10-xxx:

a) Ambient temperature range: -50°C to +175°C.
b) The device may only be connected to certified intrinsically safe equipment. These associations must meet the requirements of IEC 60079-25.
c) Temperature classification:

Temperature class	T6	T5	T4	T3
Maximum ambient temperature	+80°C	+95°C	+130°C	+175°C

DMX-xxx-y or DRX-xxx-y or HX-xxx-y or HDX-xxx-y or HNX-xxx-y or MRX-xxx-y or MRDX-xxx-y or PMX-xxxx-y or PRX-xxx-y :

a) Ambient temperature range: -40°C to +125°C.
b) The device may only be connected to certified intrinsically safe equipment. These associations must meet the requirements of IEC 60079-25.
c) Install pickups as per control drawing ST-A-1298-6 and ST-A-1298-10.
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.
d) Temperature classification:

Classe de temperature /*Temperature class*	T4	T2
Température ambiante maximale /*Maximum ambient temperature*	+51°C	+125°C

ROUTINE TESTS

None.