



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx SIR 18.0048X

Issue No: 0

Certificate history:

Issue No. 0 (2018-08-03)

Status: **Current**

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Date of Issue: **2018-08-03**

Applicant: **Automation Products Group**
1025 West 1700 North
Logan
Utah 84321
United States of America

Equipment: **MNU-IS series sensors**

Optional accessory:

Type of Protection: **Intrinsically Safe**

Marking:

Ex ia IIB T4 Ga
Ta = -30°C to +60°C

Approved for issue on behalf of the IECEx
Certification Body:

C Ellaby

M. R. A. CRAIG

Deputy Certification Manager

Position:

Signature:

(for printed version)

[Handwritten Signature]

Date:

2018-08-03

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





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Manufacturer: **Automation Products Group**
1025 West 1700 North
Logan
Utah 84321
United States of America

Additional Manufacturing location(s):

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 apparatus 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 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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

*This Certificate **does not** indicate compliance with electrical 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 Report:

[GB/SIR/ExTR18.0127/00](#)

Quality Assessment Report:

[NL/DEK/QAR13.0027/03](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MNU-IS series sensors utilizes standard Modbus RTU protocol (RS-485). The MNU-IS is designed to work as a slave device. The MNU-IS ultrasonic sensors transmit an ultrasonic sound pulse generated by a piezo ceramic transducer and waits for the echo to come back. The on board processor calculates the distance based on the time of flight of the return echo with respect to the speed of sound through air. The sensors provide non-contact measurements at distances from 1 to 40 feet. An on-board thermistor allows for temperature compensation. Information is communicated to the user via RS-485 Modbus RTU communications.

Refer to the Annexe for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.

Annex:

[IECEx SIR 18.0048X Issue 0 Annexe.pdf](#)

Annexe to: IECEx SIR 18.0058X Issue 0
Applicant: Automation Products Group
Apparatus: MNU-IS series sensors



The product comprises a plastic enclosure that houses a PCB, piezo-transducer, and internal wiring. The entire internal construction is fully encapsulated. The enclosure type and piezo-transducer range are defined by the model configurator code, as defined below.

MNU-IS-abcd-efg-hi-xxxx-xxxx where the designations for abcd-efg-hi-xxxx-xxxx are as outlined below.

- a – 2, 3, 5, 6, 7, or 8
- b – 1, or 4
- c – 0, 1, 2, 3, or 4
- d – 4, 5, 6, or 7
- e – A, B, C, D, or N
- f – a number up to four digits
- g – A, B, C, D, or M
- h – 0, 1, 2, or 3
- i – D or N
- XXXX – Customer Specification
- XXXX – Software Specification

The following configurator options are relevant to the IS certification:

Configurator code "a" represents the range of measurement of the equipment, which corresponds technically to the piezo-transducer that is used.

Configurator code	Option	Description
a – Range	2	1-25 ft. (30mm, 69Khz piezo-transducer)
	3	1.5-40 ft. (51mm, 43Khz piezo-transducer)
	5	4-79 in. (12mm, 143Khz piezo-transducer)
	6	1-25 ft. (30mm, 69Khz piezo-transducer)
	7	6-144 in. (19mm, 90Khz piezo-transducer)
	8	5-144 in. (19mm, 81Khz piezo-transducer)

Configurator code "c" represents the housing option.

Configurator code	Option	Description
c – Housing	0	2 in. Kynar plastic Cup
	1	Plastic Valox PBT 1" NPT Mnt
	2	Plastic Valox PBT 2" NPT Mnt
	3	Plastic Valox PBT 3" NPT Mnt
	4	Plastic Valox PBT 2" NPT Mnt – recessed sensor

Configurator code "e" represents the type of cable or receptacle to be used.

Configurator code	Option	Description
e – Cable	A	Input cable. See dwg 9005134A.
	B	Input cable. See dwg 9005134A.
	C	Input cable. See dwg 9005134A.
	D	Input cable. See dwg 9005134A.

Annexe to: IECEx SIR 18.0058X Issue 0
Applicant: Automation Products Group
Apparatus: MNU-IS series sensors



The following configurator codes are not safety related:

Configurator code	Option	Description
b	1, 4	Lid interface threads for conduit.
d	4, 5, 6, or 7	Filter Options
f	XXXX	Length of cable
g	A, B, C, D, or M	Cable Seal
h	0, 1, 2, or 3	Shield
i	D or N	Dampener
XXXX	XXXX	Customer Specification
XXXX	XXXX	Software Specification

The entity parameters are:

For Model MNU-IS-5b1d-efg-hi: $U_i = 28 \text{ V}$, $I_i = 299 \text{ mA}$, $P_i = 0.585 \text{ W}$
 $C_i = 0.365 \text{ uF}$, $L_i = 0.228 \text{ uH}$

For all other models: $U_i = 28 \text{ V}$, $I_i = 299 \text{ mA}$, $P_i = 1.2 \text{ W}$
 $C_i = 0.365 \text{ uF}$, $L_i = 0.228 \text{ uH}$

Specific Conditions of Use

- i. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.