



# 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](http://www.iecex.com)

|                     |                                                                                                                       |             |                                                                              |
|---------------------|-----------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------|
| Certificate No.:    | <b>IECEx SIR 18.0076X</b>                                                                                             | Page 1 of 4 | <u>Certificate history:</u>                                                  |
| Status:             | <b>Current</b>                                                                                                        | Issue No: 2 | <a href="#">Issue 1 (2019-05-03)</a><br><a href="#">Issue 0 (2019-03-26)</a> |
| Date of Issue:      | 2019-08-23                                                                                                            |             |                                                                              |
| Applicant:          | <b>Automation Products Group Inc.</b><br>1025 West 1700 North<br>Logan, Utah 84321<br><b>United States of America</b> |             |                                                                              |
| Equipment:          | <b>Modbus Network Display, MDI-940d0-fg-hi-j-k-l</b>                                                                  |             |                                                                              |
| Optional accessory: |                                                                                                                       |             |                                                                              |
| Type of Protection: | <b>Intrinsic Safety</b>                                                                                               |             |                                                                              |
| Marking:            | <b>Ex ib [ia Ga] IIB 142°C (T3) Gb</b><br><b>Ta = -30°C to +85°C</b><br><br><b>IP66</b>                               |             |                                                                              |

Approved for issue on behalf of the IECEx  
Certification Body:

**N Jones**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

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.
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Certificate issued by:

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

**sira**  
CERTIFICATION





# IECEx Certificate of Conformity

Certificate No.: **IECEx SIR 18.0076X**

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Date of issue: 2019-08-23

Issue No: 2

Manufacturer: **Automation Products Group Inc.**  
1025 West 1700 North  
Logan, Utah 84321  
**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 60079-0:2011](#) 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 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:

[GB/SIR/ExTR19.0094/00](#)

[GB/SIR/ExTR19.0126/00](#)

[GB/SIR/ExTR19.0222/00](#)

Quality Assessment Report:

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



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Date of issue: 2019-08-23

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Modbus Network Display (MDI) is an Intrinsically Safe Display unit housed within an aluminium pressure die-casting IP66 enclosure having a viewing window, to be used in a Class I Zone 1 Hazardous Location. The MDI is Intrinsically Safe when connected to and approved IS barrier and it provides output power to the separately-approved model MPI Magnetostrictive probe, for use in Class I, Zone 0 Hazardous Location. MODBUS RS485 and switch Inputs from a third-party controller to the MDI must be provided through an approved IS barrier.

Refer to the Annex for additional information.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to the Annex.



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Certificate No.: **IECEx SIR 18.0076X**

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Date of issue: 2019-08-23

Issue No: 2

## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, issue 2, recognises the following change: refer to the certificate annex to view a comprehensive history:

- i. Update general assembly document 9005430 from rev A to rev B to include: LCD, Battery Holder PN 200194, and Battery Cover PN 200196.
- ii. Introduction of Conformal coating instructions document 9005726 A.

## Annex:

[IECEx SIR 18.0076X Issue 2 Annexe.pdf](#)

**Annexe to:** IECEx SIR 18.0076X Issue 2

**Applicant:** Automation Products Group Inc.

**Apparatus:** Modbus Network Display, MDI-940d0-fg-hi-j-k-l



## Equipment

The Modbus Network Display (MDI) is an Intrinsically Safe Display unit housed within an aluminium pressure die-casting IP66 enclosure having a viewing window, to be used in a Class I Zone 1 Hazardous Location. The MDI is Intrinsically Safe when connected to and approved IS barrier and it provides output power to the separately-approved model MPI Magnetostrictive probe, for use in Class I, Zone 0 Hazardous Location. MODBUS RS485 and switch Inputs from a third-party controller to the MDI must be provided through an approved IS barrier.

The unit is also battery powered, by three - 3.6V AA size Lithium Thionyl Batteries, that have been tested for intrinsic safety at the maximum ambient of 85°C. The Printed Circuit Board is conformal coated. The Remote button input to the circuit board is intrinsically safe. The RS485 outputs are intrinsically safe.

The Input parameters through the approved IS Barrier are:

Ui = 12V; Ii = 30 mA; Pi = 100 mW; Ci = 0.33 uF; Li = 0 mH.

The Output parameters are:

Uo = 12V; Io = 136 mA; Po = 809 mW; Co = 0.65 uF; Lo = 7.7 mH.

MDI IS Model Configuration Code:

**MDI-940d0-fg-hi-j-k-l**

The following configurator options are relevant to the IS certification:

| Configurator code    | Option         | Description                                                     |
|----------------------|----------------|-----------------------------------------------------------------|
|                      | 9              | BATTERIES – 3 x AA 3.6V Lithium                                 |
|                      | 4              | MODBUS RTU, IS Rated                                            |
|                      | 0              | NO RELAYS                                                       |
| d – Enclosure        | 2              | 3" AL (1/2-14 NPT Cable Entry)                                  |
|                      | 3              | 4" AL (3/4-14 NPT Cable Entry)                                  |
|                      | 0              | Mounting / Cover                                                |
| f                    | 1              | Main Connection Location                                        |
| g – Cable connection | 2              | 4-PIN M12 MALE CONNECTOR                                        |
|                      | 5              | 4-PIN M12 FEMALE CONNECTOR                                      |
|                      | C              | CABLE W/FLYING LEADS, SPECIFY LENGTH IN FEET                    |
|                      | M              | CABLE W/CONNECTOR, SPECIFY LENGTH IN FEET                       |
| h                    | 0              | Aux connection location                                         |
| i – Cable connection | 0              | NOT USED                                                        |
|                      | 2              | 4-PIN M12 MALE CONNECTOR                                        |
|                      | 5              | 4-PIN M12 FEMALE CONNECTOR                                      |
|                      | C              | CABLE W/FLYING LEADS, SPECIFY LENGTH IN FEET                    |
|                      | M              | CABLE W/CONNECTOR, SPECIFY LENGTH IN FEET                       |
| j                    | 0              | Backlight                                                       |
| k                    | Not Applicable | This manufacturer's option is not covered by this certification |
| l                    | Not Applicable | This manufacturer's option is not covered by this certification |

Note: Configurator codes F, H, J, K and L are not safety related.

The equipment has been assessed as IP66 in accordance with IEC 60529; testing was not performed in accordance with the pre-conditioning requirements of EN 60079-0.

**Date:** 23 August 2019

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Form 9530 Issue 1

**Sira Certification Service**

Unit 6 Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900  
Email: [ukinfo@csagroup.org](mailto:ukinfo@csagroup.org)  
Web: [www.csagroupuk.org](http://www.csagroupuk.org)

**Annexe to:** IECEx SIR 18.0076X Issue 2  
**Applicant:** Automation Products Group Inc.  
**Apparatus:** Modbus Network Display, MDI-940d0-fg-hi-j-k-l

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## Specific Conditions of Use

1. Install per Doc # 9005447.
2. Use only three-SAFT model LS14500 or three-Xeno model XL-060F battery cells.
3. Do not replace batteries when an explosive atmosphere is present.
4. The enclosure is manufactured from aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.

## Full Certificate change history

### Issue 1

1. Model number revised from "MND-940d0f-g-h-i-j-k-l" to "MDI-940d0-fg-hi-j-k-l"; Marking, Nameplate and Equipment Description revised to include the new Model Code options.
2. Certification Code was corrected from "Ex ib IIB T3 (142°C) Gb" to "Ex ib [ia Ga] IIB 142°C (T3) Gb" to appropriately comply with clause 29 of 60079-0; Marking and Nameplate revised to include the corrected Certification Code.
3. IP66 rating added to marking; Marking, Nameplate and Equipment Description revised to include IP66.
4. Equipment Description revised to include corrections to product description.
5. Introduction of Specific Condition of Use referencing "The enclosure is manufactured from aluminium."

### Issue 2

1. Update general assembly document 9005430 from rev A to rev B to include: LCD, Battery Holder PN 200194, and Battery Cover PN 200196.
2. Introduction of Conformal coating instructions document 9005726 A.