

# EU TYPE-EXAMINATION CERTIFICATE

## EU type-examination Certificate (Module B)



1. **Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)**
2. **EU type examination certificate Nr**      **ITS18ATEX203437X R.0**
3. **Product:**      Models MS27XXE & MS28XXE corrosion monitors
4. **Manufacturer:**      Metal Samples Company      **Applicant:**      Metal Samples Company  
    (a Division of Alabama Specialty Products, inc.)      (a Division of Alabama Specialty Products, inc.)
5. **Address:**      152 Metal Samples Road      **Address:**      152 Metal Samples Road  
    Munford, AL 36268      Munford, AL 36268  
    USA      USA
6. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
7. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.  
     The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. 105051048DAL-003-CR
8. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.
9. If the sign X is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.
10. This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
11. The marking of the product shall include the following:



II 2 (1) G Ex db [ia Ga] IIC T6...T4 Gb  
 II 2 (1) D Ex tb [ia Da] IIIC T75°C Db  
 -40°C ≤ Tamb ≤ +70°C

10 June 2024

**Certificate issue date**



**Todd L. Relyea**  
 Certification Officer  
 Intertek Italia S.p.A. (NB 2575)



PDR N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

**Intertek Italia S.p.A.** Via Miglioli, 2/A - 20063 Cernusco sul Naviglio, Milano - Italy

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### 13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

The MS27XXE and MS28XXE are remote monitoring equipment which measure the corrosion rate of metallic pipe through resistive probe. The equipment models utilize identical construction and differ with respect to the manufacturer loaded firmware. The equipment utilizes a certified cylindrical flameproof enclosure.

The enclosure has two entries into its base, one to permit power entry and one for the intrinsically safe probe output. The following entity parameters relate to the equipment:

#### Power Input J1

| Designation | Related Um |
|-------------|------------|
| J1 Pin 1    | 30V        |
| J1 Pin 2    | 0V         |
| J1 Pin 3    | 6V         |
| J1 Pin 4    | 6V         |
| J1 Pin 5    | 0V         |

#### Intrinsically safe parameters for J3 (combined)

| Designation | Related Parameter |
|-------------|-------------------|
| Uo:         | 5.115V            |
| Io:         | 0.344A            |
| Po:         | 0.44W             |
| Co:         | 0.5μF             |
| Lo:         | 35μH              |

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

### 14. DRAWINGS AND DOCUMENTS

| Technical Documents:   |              |             |         |            |
|--|--------------|-------------|---------|------------|
| Title:   | Drawing No.: | Rev. Level: | Sheets: | Date:      |
| Circuit Diagram - High Resolution ER Transmitter Digital Board (RS485)isolated         | EXCDB-000034 | 0           | 1       | 03/09/2018 |
| Circuit Diagram - High Resolution ER TransmitterPower Board(RS485) Isolated            | EXCDB-000035 | 0           | 1       | 05/10/18   |
| Circuit Diagram - ER Measurement Board Type -II  | EXCDB-000023 | 0           | 1       | 03/8/17    |
| Bill of Materials - High Resolution ER Transmitter Digital Board(RS485) Isolated       | EXBOM-000034 | A           | 2       | 06/10/2022 |
| *Bill of Materials - High Resolution ER Transmitter Power Board(RS485) Isolated        | EXBOM-000035 | A           | 2       | 06/10/2022 |
| *Bill of Materials - Measurement Board Type- II  | EXBOM-000023 | B           | 3       | 06/10/2022 |
| PCB Fabrication Drawing - High Resolution ER Transmitter Digital Board (RS485)isolated | EXPCB-000034 | 0           | 12      | 04/10/2018 |
| PCB Fabrication Drawing - High Resolution ER Transmitter Power Board(RS485) Isolated   | EXPCB-000035 | 0           | 10      | 05/10/2018 |
| PCB Fabrication Drawing - ER Measurement Board Type -II                                | EXPCB-000023 | A           | 12      | 05/03/18   |



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| Technical Documents:   |              |             |         |            |
|--|--------------|-------------|---------|------------|
| Title:   | Drawing No.: | Rev. Level: | Sheets: | Date:      |
| Assembly Drawing - High Resolution ER Transmitter Digital Board (RS485)isolated                    | EXET1907     | 0           | 1       | 04/10/2018 |
| Assembly Drawing - High Resolution ER Transmitter Power Board(RS485) Isolated                      | EXET1920     | 0           | 1       | 05/10/2018 |
| Assembly Drawing - ER Measurement Board Type -II   | EXET1607     | A           | 1       | 05/03/2018 |
| *ER Transmitter (RS-485) EX ASSEMBLY MODEL NO.: MS27XX/MS28XX                                      | EXMDB-010553 | B           | 2       | 2022-05-04 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL XIHDCX2/XIHXDCX2 Exd INSTRUMENTS           | EXMDB-011029 | A           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING ADALET MIDSIZE ENCLOSURE MODEL NO.: XIHFCX2/XIHMFCX2 Exd INSTRUMENTS | EXMDB-011030 | A           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING SS IME ENCLOSURE, MODEL: 8092TM-05, Exd INSTRUMENTS                  | EXMDB-011196 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING SS ADALET ENCLOSURE, MODEL: XIHNSFCX, Exd INSTRUMENTS                | EXMDB-011197 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL IME ENCLOSURE, MODEL: 8092XX-XX, Exd INSTRUMENTS                  | EXMDB-011198 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING SS ADALET ENCLOSURE, MODEL: XIHNSDCX, Exd INSTRUMENTS                | EXMDB-011202 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHXMFCX2/XIHMFCX2 Exd INSTRUMENTS    | EXMDB-011203 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHMDCX/XIHMDCX2 Exd INSTRUMENTS      | EXMDB-011204 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHLFCX Exd INSTRUMENTS               | EXMDB-011205 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHLDCX Exd INSTRUMENTS               | EXMDB-011206 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHMDGCX Exd INSTRUMENTS              | EXMDB-011207 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING AL ADALET ENCLOSURE MODEL NO.: XIHLDGCX Exd INSTRUMENTS              | EXMDB-011208 | 0           | 1       | 2022-07-11 |
| *CROSS-SECTIONAL AREA DRAWING SS ADALET ENCLOSURE MODEL NO.: XIHNSFGCX Exd INSTRUMENTS             | EXMDB-011209 | 0           | 1       | 2022-07-11 |
| ER TRANSMITTER (RS-485) EX MODEL BOARD ASSEMBLY ISOLATED   | EXET1994     | 0           | 1       | 2018-04-13 |
| *HAZARDOUS AREA LABEL - MS2701E & MS2801E ER TRANSMITTER   | EXMDB-011194 | 0           | 1       | 04/22/2022 |



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| Technical Documents:  |              |             |         |            |
|---|--------------|-------------|---------|------------|
| Title:  | Drawing No.: | Rev. Level: | Sheets: | Date:      |
| *Control Drawing - MS2701E / MS2801E High Resolution ER RS485 Transmitter ( Multi Drop) | EXWDB-000094 | E           | 1       | 08/08/2022 |
| MS2701E/ MS2801E Hazardous Area Certification Details                                   | EXDOC-000015 | 0           | 1       | 05/08/2018 |
| User Manual - MS2700E High Resolution ER RS485 Transmitter                              |              | G           | 22      | 05/29/2018 |
| User Manual - MS2801E High Resolution ER RS485 Transmitter                              |              | I           | 22      | 05/29/2018 |

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

### 15. SPECIFIC CONDITIONS OF USE

- Equipment has been assessed for connection to a simple resistive probe produced from either tracking or wiring. The Temperature Classification in which the equipment may be used is dependent upon the probe connected. The equipment may be used in Temperature Classification T6 providing one of the following conditions is met:

- a) The equipment probe is a simple device produced from wire with a diameter of 0.1mm or higher
- b) The equipment probe is a simple device produced from tracking with a width of 0.3mm or higher

If these parameters cannot be verified, a generic probe can be used with the equipment in Temperature Classification T4 providing it is a simple device produced from wiring or tracking and does not contain any discrete components or resistances.

- All cable glands, blanking elements and thread adapters used with the equipment shall be suitable certified Ex db and Ex tb parts, providing a degree of protection of IP66 and be suitable for use in an ambient temperature range of -40°C to +75°C.No more than one Hazardous area reducer shall be used on any entry.
- External non-metallic materials pose a potential electrostatic charging hazard. Refer to the manufacturers' instruction manual for details on the mitigation of electrostatic charging.

### 16. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

The relevant Essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 1050510486DAL-003-CR dated February 2023.

### 17. ROUTINE (FACTORY) TESTS

N/A, no routine tests required.



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### 18. DETAIL OF CERTIFICATE CHANGES

#### **R.0 (G105051048 Date April 2023)**

1. Initial release by Intertek Italia S.p.A. NB 2575 based on the assessment performed on April 2023 and on the certificate legal ownership transferred from Intertek Testing & Certification Ltd. (NB 0359); the same issued original certificate number is used.
2. Update to label to permit a variable NB number following CE mark.
3. Addition of alternate pre-certified enclosures to equipment certificate.
4. Minor updates to bill of materials to amend typology errors. These are limited to incorrect entry of model numbers and do not affect the previous intrinsic safety assessment.
  - A. EXBOM-000035 - Fuse F1 – Alternate component specified
  - B. EXBOM-000034 - Additional manufacturers added for non-critical components
5. Minor updates to controlled drawings to fix typology errors.
6. Update to latest iteration of IEC 60079-0.