

EU-Type Examination Certificate



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1. **EU-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**
3. **EU-Type Examination Certificate Number: ITS18ATEX203437X Issue 0**
4. **Product:** MS2701E High Resolution ER Transmitter, MS2801E Ultra Resolution ER Transmitter
5. **Manufacturer:** Metal Samples Company
(a Division of Alabama Specialty Products, inc.)
6. **Address:** 152 Metal Samples Rd, Munford, AL 36268, USA
7. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
8. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Intertek Report Ref 103101841DAL-007-CR dated June 2018.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012 + A11 2013, EN 60079-1:2014 and EN 60079-11:2012 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Safe Use specified in the Schedule to this certificate.
11. 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.
12. 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 T80°C Db
-40°C ≤ Tamb ≤ +70°C

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Kevin J. Wolf
Certification Officer
28 June 2018



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13. Description of Equipment or Protective System

The MS2701E and MS2801E are remote monitoring equipment which measure the corrosion rate of metallic pipe through resistive probe. The equipment utilizes a cylindrical enclosure with approximate dimensions of either 11cm diameter and 10cm height or 11cm diameter and 14cm height. Both enclosures are certified parts assessed under DEMKO 07 ATEX 0622294U.

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:	0.5 μ F
Lo:	35 μ H

14. Report Number

Intertek Report Ref: 103101841DAL-007-CR dated June 2018



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15. Special Conditions of Certification

(a). Specific Conditions of Safe Use

- Equipment has been assessed for connection to a simple resistive probe produced from either wiring or a metallic sheet metal mounted onto an epoxy substrate (which has been approximated to tracking). 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 the following conditions are met as applicable:
 - 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 may 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.

- Equipment has been assessed for connection to a simple resistive probe produced from either wiring or a metallic sheet metal mounted onto an epoxy substrate (which has been approximated to tracking). The equipment may be used in Group III environments with a maximum surface temperature of T80°C providing the following conditions are met as applicable:
 - 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
- 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.
- The resistive probe has been considered as simple apparatus. The probe shall maintain the following minimum parameters in accordance with Clause 5.7 of IEC 60079-11:
 - a) The probe circuitry shall maintain a dielectric strength of 500V between its terminals and the equipment frame.
 - b) Where non-metallic materials are used in the construction of the external enclosure the probe shall be installed in accordance with the guidance for mitigation of electrostatic charging contained within the manufacturer's instruction manual
 - c) Where metallic materials are used in the construction of the external enclosure it shall be ensured that the materials do not contain more than 7,5 % in total of magnesium, titanium and zirconium.

(b). Conditions of Manufacture - Routine Tests

- N/A, no routine tests apply.

16. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report Ref: 103101841DAL-008-EHSR dated June 2018.

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17. Drawings and Documents

Drawing name:	Drawing No.	Issue	Pages	Date
Circuit Diagram - High Resolution ER Transmitter Digital Board (RS485)isolated	EXCDB-000034	0	1	03/09/2018
Circuit Diagram - High Resolution ER Transmitter Power Board(RS485) Isolated	EXCDB-000035	0	1	05/10/2018
Circuit Diagram - ER Measurement Board Type -II	EXCDB-000023	0	1	03/08/17
Bill of Materials - High Resolution ER Transmitter Digital Board(RS485) Isolated	EXBOM-000034	0	2	03/10/2018
Bill of Materials - High Resolution ER Transmitter Power Board(RS485) Isolated	EXBOM-000035	0	2	05/03/2018
Bill of Materials - Measurement Board Type- II	EXBOM-000023	A	2	05/10/2018
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
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	A	1	2018-04-12
CROSS-SECTIONAL AREA CALCULATIONS TALL COVER(ET0444) MODEL NO:MS27XXE/MS28XXE	EXMDB-011029	0	1	2018-06-19
CROSS-SECTIONAL AREA DRAWING ADALET MIDSIZE ENCLOSURE NO:MS27XXE/MS28XXE	EXMDB-011030	0	1	2018-06-20
ER TRANSMITTER (RS-485) EX MODEL BOARD ASSEMBLY ISOLATED	EXET1994	0	1	2018-04-13
MS2701E ER Transmitter Hazardous Area Label	EXET1474	D	1	04/03/2018
MS2801E ER Transmitter Hazardous Area Label	EXET1475	D	1	04/03/2018
Control Drawing - MS2701E / MS2801E High Resolution ER RS485 Transmitter (Multi Drop)	EXWDB-000094	D	1	05/10/2018
MS2701E/ MS2801E Hazardous Area Certification Details	EXDOC-000015	0	1	05/08/2018

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