

1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** FM15ATEX0043X

4 **Equipment or protective system:** 1616 Wireless UT Node
(Type Reference and Name)

5 **Name of Applicant:** MISTRAS Group Inc.

6 **Address of Applicant:** 195 Clarksville Road
Princeton Junction, NJ 08550
United States of America

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3051800 dated 29th February 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012, and EN 60529:1992+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 1 G Ex ia IIC T4 Ga Ta = -55°C to +70°C

Martin Crowe
Certification Manager, FM Approvals Europe Ltd.

Issue date: 15th September 2022

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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F ATEX 020 (Dec/2020)



SCHEDULE



Member of the FM Global Group

to EU-Type Examination Certificate No. FM15ATEX0043X

13 Description of Equipment or Protective System:

The 1616 UT Node is a pulser/receiver used for making material thickness measurements. It is used in conjunction with any combination of up to four single-crystal or dual-crystal transducers. The 1616 UT Node is powered from a 7.2V (nominal) battery, and sends out triggering pulses to the transducers, typically twice per day. Each transducer senses the thickness of the medium it is connected to, and converts it into an electrical signal which is sent back to the 1616.

The 1616's enclosure material is aluminum, while the transducer enclosures are made of stainless steel. The equipment enclosures provide a degree of protection of IP66.

The Model code is as follows:

1616-5015. Wireless UT Thickness Node.

ISSUT5M-XX-YY-5015, with XX = S or TC, YY= 3 or 5. Transducer.

ISDUTXXM-5015, with XX = 2 or 5. Transducer.

HSM-X-YYY, with X = T or N, and Y = T, N, H or C, and ZZ = delay line length (≥ 10). Transducer.

14 Specific Conditions of Use:

1. Do not remove cover, replace batteries, fuse or plug-in module unless the area is known to be free of ignitable gas vapors. Only battery type MISTRAS E950-0036 shall be used.
2. To avoid electrostatic discharge, cleaning must only be performed with a damp cloth.
3. The enclosure contains aluminium and is considered a potential risk of ignition by impact or friction. Care must be taken during installation to prevent impact or friction.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

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18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
10 th March 2016	Original Issue.
01 st November 2016	<u>Supplement 1:</u> Report Reference: RR207159 dated 26 th October 2016. Description of the Change: Minor design changes and updated certificate to the EU format.
30 th March 2017	<u>Supplement 2:</u> Report Reference: Revision Report RR209028 dated 27 th March 2017. Description of the Change: Minor design and document changes.
03 rd January 2018	<u>Supplement 3:</u> Report Reference: Revision Report RR212400 dated 27 th December 2017. Description of the Change: Minor product changes and documentation update.
19 th January 2018	<u>Supplement 4:</u> Report Reference: Revision Report RR212589 dated 12 th January 2018. Description of the Change: Minor documentation update.
12 th July 2018	<u>Supplement 5:</u> Report Reference: PR450202 dated 2 nd July 2018. Description of the Change: Addition of transducer model #HSM-X-YYZ.
13 th November 2018	<u>Supplement 6:</u> Report Reference: Revision Report RR216365 dated 31 st October 2018. Description of the Change: Corrected drawing number in the CDL.
09 th April 2019	<u>Supplement 7:</u> Report Reference: Revision Report RR217611 dated 13 th March 2019. Description of the Change: Minor design changes and document changes. Certificate transferred from FM Approvals Ltd., Notified Body no. 1725, to FM Approvals Europe Ltd., Notified Body no. 2809.
19 th April 2021	<u>Supplement 8:</u> Report Reference: Revision Report RR227641 dated 15 th April 2021. Description of the Change: Minor design changes not affecting compliance.
28 th May 2021	<u>Supplement 9:</u> Report Reference: Revision Report RR228236 dated 27 th May 2021. Description of the Change: Minor design change not affecting compliance.
24 th August 2021	<u>Supplement 10:</u> Report Reference: Revision Report RR228931 dated 23 rd August 2021. Description of the Change: The fuse rating is reduced from 125 mA to 100 mA. The maximum ambient temperature is increased from +55°C to +70°C. The standard EN 60079-0:2012+A11:2013 is updated to EN IEC 60079-0:2018. Label and manual updated to show QAN NB number as 2809. Other minor design and drawing changes not affecting compliance.
15 th September 2022	<u>Supplement 11:</u> Report Reference: Revision Report RR234238 dated 13 th September 2022. Description of the Change: Minor drawing changes not affecting compliance.

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Blueprint Report

Mistras Group Inc (1000002320)

Class No 3610

Original Project I.D. 3051800

Certificate I.D. FM15ATEX0043X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
1616-1000	3	1616 Wireless Thickness Node User's Manual	RR228931
1616-1506	4	Label	RR228931
1616-1513	0	Label, Product Name, Junction, UT Node	RR217611
1616-1516	1	Label, Code Compliance, Junction, UT Node	RR228931
1616-2010	7	Gerber files (Main board)	RR228931
1616-2011	7	Wireless UT Node Drill/Fabrication Drawing	RR228931
1616-2014(BOM)	7B	Wireless UT Node (Bill of Materials)	RR234238
1616-2014(assy)	7B	Wireless UT Node, Assembly Drawing	RR234238
1616-3010	7B	Wireless UT Node Top Level Schematic	RR234238
1616-3040	0	High Temperature UT Transducer Schematic	3051800
1616-3050	0	Wireless UT Node Transducer ISDUTXXM (Schematic)	3051800
1616-4002	0	Extension, Cable, Thermocouple, UT Thickness	RR217611
1616-4003-X	0	Extension, Cable, Coax, UT Thickness	RR217611
1616-4004-YYZ	0	Standalone, Cable, Thermocouple, UT Thickness	RR217611
1616-5011-5	0	Label, Warning	3051800
1616-5011-7	1	Label, Product ID, Wireless UT Node	RR228931
1616-5012-2G	0	Label, Product ID, Ext, Junction, UT Node	RR217611
1616-5015	5	Assembly, Wireless UT Thickness Node	RR228931
1616-5345	0	Assembly, Ext, Junction Box, UT Thickness	RR217611
1616-6000	4	Wireless UT Thickness Node Control Drawing	RR228931
610-0183	1	Gerber files (Radio board)	3051800
615-0183	1	Fabrication drawing, Radio board	3051800
700-0201(BOM)	03A	BOM, Radio board	RR216365
705-0183	1	Assembly drawing, Radio board	3051800
710-0201(schematic)	03	LTP5900IPC-WHMA PCA Schematic	3051800
HSM-X-YYZ	08A	MISTRAS HSM Schedule Drawing	RR217611
ISDUTXXM-5015	2	Assembly, ISDUTXXM (XX = 2 or 5)	RR209028
ISSUT5M-HT-XX-YY-5015	2	Assembly, ISSUT5M-HT-XX-YY-5015 (XX = TC or S, YY = 3 or 5)	RR209028