

# CERTIFICATE OF CONFORMITY



420-0004-547	ISSUE	1		
	EDO NO.	5-17-111		
Sht. of 3	APPD			
	SGA			
APPD BY				
DATE				

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

- 2. **Certificate No:** FM16US0417X
- 3. **Equipment:** TLS 4-20mA Tank Level System  
**(Type Reference and Name)**
- 4. **Name of Listing Company:** AMETEK Drexelbrook
- 5. **Address of Listing Company:** 205 Keith Valley Rd  
Horsham, PA 19044  
USA

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

3061460 dated 25<sup>th</sup> April 2017

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2011, FM Class 3610:2015, FM Class 3611:2004, FM Class 3615:2006,  
FM Class 3616:2011, FM Class 3810:2005, ANSI/ISA 12.27.01:2003, ANSI/ISA 60079-0:2013,  
ANSI/ISA 60079-1:2015, ANSI/ISA 60079-11:2012, ANSI/ISA 60079-26:2011, ANSI/ISA 60079-31:2015,  
ANSI/IEC 60529:2004, ANSI/NEMA 250:2003

- 8. 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.
- 9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
- 10. **Equipment Ratings:**

Intrinsically Safe and Explosionproof for Class I, Division 1, Groups C & D, hazardous (classified) locations, Intrinsically Safe for Class I, Zone 0 & 1, Group IIB hazardous (classified) locations; Nonincendive for use in Class I, Division 2, Groups A, B, C, & D hazardous locations; Dust-Ignitionproof for Class II, III, Division 1, Groups E, F, G hazardous (classified) locations with an indoor / outdoor Type 4, 4X and an Ingress protection of IP67.

**Certificate issued by:**

*J.E. Marquedant*  
 \_\_\_\_\_  
 J.E. Marquedant  
 Manager, Electrical Systems

25 April 2017  
 \_\_\_\_\_  
 Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
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# SCHEDULE



Member of the FM Global Group

US Certificate Of Conformity No: FM16US0417X

11. The marking of the equipment shall include:

Explosionproof Class I, Division 1, Groups C, D, T4  
 Intrinsically Safe Class I, Division 1, Groups C, D, T4  
 Nonincendive Class I, Division 2, Groups A, B, C, D, T4  
 Dust-Ignitionproof Class II, III, Division 1, Groups E, F, G, T4  
 Class I, Zone 0/1 AEx ia/db Group IIB, T4  
 Class I, Zone 0 AEx ia Group IIB, T4  
 -40°C < Ta < +70°C  
 Type 4, 4X, IP67

12. **Description of Equipment:**

**General** - The TLS Dual 4-20mA Tank Level System (TLS) is a system with Dual 4-20mA Hart Digital outputs for measuring Total Liquid Level, Liquid Level Interfaces, Temperature and System Diagnostics for use with a magnetostrictive level sensor. The system is equipped with either stainless steel or flexible probes. The electronics consist of a power supply module and intrinsically safe probe interface barrier module, which provides intrinsically safe outputs to the probe. An optional 4-button display is available for users to access the menu, which is either installed in the TLS System or the Digital Stik probe. The electronics are housed in an explosion-proof / flameproof dual compartment enclosure. The dual compartment enclosure consists of a Viewport Cover for the optional display, or Base and Lid Covers with threads of a M105 X 2 6g/6H thread form. The dual enclosures are separated by an inter-compartment lead-seal that uses Stycast 2651-40 with Catalyst 9 from Emerson and Cuming with a minimum cemented joint length of 12.7 mm. The sensor connections are made through and the two the entries into the field wiring compartment are M20 X 1.5 6H or 3/4 -14 NPT. The probe assembly and dual enclosure is separated by The Coupling/Cylindrical Seal Assembly. The Coupling/Cylindrical Seal Assembly contains a Male 3/4 inch NPT connection and one female 3/4 inch connection. The probe assembly and dual enclosure is separated by a cylindrical seal. The Coupling/Cylindrical Seal Assembly contains a Male 3/4 inch NPT connection and one female 3/4 inch connection. The probe assembly and dual enclosure is separated by the Coupling/Cylindrical Seal Assembly and optional Dual Seal or Coupling/Cylindrical Seal Assembly.

**Operating Temperature Range** - The TLS 4-20mA Tank Level System has an operating temperature range of -40°C to +70°C.

**Ratings** - The TLS 4-20mA Tank Level System has the following Entity Parameters:

Vmax = 30V; Imax = 140mA; Pi = 1W; Ci = 0; Li = 0

**M a b c d e. 316SS Rigid TLS Dual 4-20mA Tank Level System**

Entity Parameters:

Vmax = 30V; Imax = 140mA; Pi = 1W; Ci = 0; Li = 0

a = Output: 2, 3.

b = Housing: 3, 4, 5, or 6.

c = Dual Seal: X, 1.

d = Material: B, S, or F.

e = 17 characters not affecting safety.

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# SCHEDULE



Member of the FM Global Group

US Certificate Of Conformity No: FM16US0417X

***M a b c V d. UltraFlex TLS Dual 4-20mA Tank Level System.***

Entity Parameters:

Vmax = 30V; Imax = 140mA; Pi = 1W; Ci = 0; Li = 0

a = Output: 2, 3.

b = Housing: 3, 4, 5, or 6.

c = Dual Seal: X, 1.

d = 17 characters not affecting safety.

**13. Specific Conditions of Use:**

1. The enclosure contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.
2. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
3. The enclosure contains non-metallic enclosure parts. To prevent the risk of electrostatic sparking, the non-metallic surface should be cleaned with a damp cloth.
4. The O-ring material should not be subjected to environmental conditions which may adversely affect the partition wall.
5. The User shall permanently mark the protection type chosen. Once the type of protection has been marked it shall not be changed.

**14. Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

**15. Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

**16. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
25 <sup>th</sup> April 2017	Original Issue.

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