

# CERTIFICATE OF CONFORMITY



- HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
- Certificate No:** FM17US0113X
- Equipment:** KT Series Digital Level Transmitter  
**(Type Reference and Name)** KT Series Analog Level Transmitter
- Name of Listing Company:** Kenco Engineering
- Address of Listing Company:** 10001 E 54<sup>th</sup> Street  
Tulsa, Oklahoma  
74146  
USA
- The examination and test results are recorded in confidential report number:  
3061773 dated 5<sup>th</sup> July 2017
- 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 3610:2010, FM Class 3810:2005,  
ANSI/ISA 60079-0:2013, ANSI/ISA 60079-11:2014, ANSI/IEC 60529:2004
- 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.
- 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.
- Equipment Ratings:**  
Intrinsically Safe for Class I, Division 1, Groups A, B, C, D, Hazardous (Classified) Locations and Intrinsically Safe for Class I, Zone 0 and Zone 1, Group IIC hazardous (classified) locations. T4; -50°C≤Ta≤71°C; Entity; IP65; in accordance with drawings 651543-11 and 651544-11.

## Certificate issued by:

J.E. Marquedant  
Manager, Electrical Systems

5 July 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  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE



US Certificate Of Conformity No: FM17US0113X

11. The marking of the equipment shall include:

**KT Series Digital Level Transmitter**

Class I Division 1, Groups A, B, C, D; T4 Ta = -50°C to +71°C – 651543-11  
Class I, Zone 0/1, AEx ia IIC; T4 Ta = -50°C to +71°C; 651543-11 Entity, IP65

**KT Series Analog Level Transmitter**

Class I Division 1, Groups A, B, C, D; T4 Ta = -50°C to +71°C – 651544-11  
Class I, Zone 0/1, AEx ia IIC; T4 Ta = -50°C to +71°C; 651544-11 Entity, IP65

12. **Description of Equipment:**

**General** - KT Series Transmitters are used for continuous measurement of liquid product level or its interface with other liquids and their temperatures in containers (tanks) using magnetostrictive technology. The KT Series Digital Transmitter has digital outputs and converts the readings into digital coded signals for transmission over asynchronous interfaces. The KT Series Analog Transmitter is a loop powered 4-20mA transmitter and converts the measurements into analog currents with the ability to communicate over a HART interface.

**Construction** – KT Transmitters are offered with a number of different options including housing (stainless steel or aluminum), length, mounting and connection options. Electronically, KT Transmitters are offered in two versions, Digital and Analog.

**Ratings** - The ambient operating temperature range of KT Series Transmitters is -50°C to 71°C.

**KT Series Digital Level Transmitter**

Entity Parameters:

Supply:  $U_i = 28\text{ V}$ ,  $I_i = 100\text{ mA}$ ,  $C_i = 0\text{ }\mu\text{F}$ ,  $L_i = 0\text{ mH}$ ,  $P_i = 700\text{ mW}$   
Rx/Tx-:  $U_i = 8.6\text{ V}$ ,  $I_i = 10\text{ mA}$ ,  $C_i = 0\text{ }\mu\text{F}$ ,  $L_i = 0\text{ mH}$ ,  $P_i = 21.5\text{ mW}$   
Rx/Tx+:  $U_i = 8.6\text{ V}$ ,  $I_i = 10\text{ mA}$ ,  $C_i = 0\text{ }\mu\text{F}$ ,  $L_i = 0\text{ mH}$ ,  $P_i = 21.5\text{ mW}$

**KT Series Analog Level Transmitter**

Entity Parameters:

Loop 1:  $U_i = 28\text{ V}$ ,  $I_i = 120\text{ mA}$ ,  $C_i = 0\text{ }\mu\text{F}$ ,  $L_i = 5\text{ uH}$ ,  $P_i = 840\text{ mW}$   
Loop 2:  $U_i = 28\text{ V}$ ,  $I_i = 120\text{ mA}$ ,  $C_i = 0\text{ }\mu\text{F}$ ,  $L_i = 5\text{ uH}$ ,  $P_i = 840\text{ mW}$

13. **Specific Conditions of Use:**

1. The apparatus enclosure contains aluminum and is considered to constitute 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. The maximum permitted ambient temperature of the KT Series Transmitter is 71 °C. To avoid the effects of process temperature and other thermal effects care shall be taken to ensure the surrounding ambient and the ambient inside the transmitter housing does not exceed 71°C.
3. Some models contains non-metallic enclosure parts, to prevent the risk of electrostatic sparking the non-metallic surface should only be cleaned with a damp cloth.

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

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

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmaprovals.com](mailto:information@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)

# SCHEDULE



US Certificate Of Conformity No: FM17US0113X

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
5 <sup>th</sup> July 2017	Original Issue.

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

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmaprovals.com](mailto:information@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)