

1 EC-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 94/9/EC

3 EC-Type Examination Certificate No: FM14ATEX0068X

4 Equipment or protective system: Level Plus Digital/Analog Level Transmitters
(Type Reference and Name)

5 Name of Applicant: MTS Systems Corp Sensors Division

6 Address of Applicant: 3001 Sheldon Dr
Cary NC 27513
USA

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 Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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:

3051777 dated 29th January 2015

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 60079-0: 2012, EN 60079-11: 2012, EN 60529:1991 + A1:2000

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 EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. 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 1/2G Ex ia IIC/ T4 Ta = -50 to 71°C;



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Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 04th February 2016

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SCHEDULE

to EC-Type Examination Certificate No. FM14ATEX0068X

13 Description of Equipment or Protective System:

The LP Series transmitters are used for the continuous measurement of liquid product level or its interface with other liquids and their temperatures in containers (tanks) using magnetostrictive technology. Magnetostrictive transmitters precisely sense the position of an external float by applying an interrogation pulse to a waveguide medium. This current pulse causes a magnetic field to instantly surround the waveguide. The magnet installed within the float also creates a magnetic field which is used in turn to calculate the precise location of the float.

The LP Series transmitters are offered with a number of different options including housing, lengths, mounting and connection options, but electronically the LP Series transmitters includes only two versions, the Level Plus Digital Level Transmitter and Level Plus Analog Level Transmitter. The Level Plus Digital Level Transmitter has digital outputs and converts the readings into digitally coded signals for transmission over asynchronous interfaces. The digital output is designed to work in single master-multiple slave bus system using an RS 485/EIA 485 physical layer interface.

The Level Plus Analog Level Transmitter with analog interface is a loop powered 4-20mA transmitter and converts the measurements into analog currents with the ability to communicate over a HART interface. The analog output contains up to two 4-20 mA current loops, where the device is self-powered from Loop1. Loop2 is galvanically isolated from Loop 1.

Level Plus Digital Level Transmitters. (Tank Slayer, RefineME, SoClean, Chambered)

II 1/2G Ex ia IIC/ T4 Ta = -50 to 71°C; 651543-3 Entity; IP65,

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+: $U_i = 8.6\text{ V}$, $I_i = 10\text{ mA}$, $C_i = 0\text{ }\mu\text{F}$, $L_i = 0\text{ mH}$, $P_i = 21.5\text{ mW}$

Level Plus Analog Level Transmitters. (Tank Slayer, RefineME, SoClean, Chambered)

II 1/2G Ex ia IIC/ T4 Ta = -50 to 71°C; 651544-3 Entity; IP65

Entity Parameters:

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

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

14 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. (When installed in a Ga Approval)
2. The maximum permitted ambient temperature of the Level Plus Digital/Analog Level 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 contain non-metallic enclosure parts, to prevent the risk of electrostatic sparking the non-metallic surface should only be cleaned with a damp cloth.

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.

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SCHEDULE

to EC-Type Examination Certificate No. FM14ATEX0068X

16 Test and Assessment Procedure and Conditions:

This EC-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 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 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.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
17 th February 2015	Original Issue.
22 nd June 2015	<u>Supplement 1:</u> Report Reference - RR201245 dated 15 th June 2015. Description of the Change: Minor drawing revisions.
04 th February 2016	<u>Supplement 2:</u> Report Reference - RR203284 dated 2 nd February 2016. Description of the Change: Minor changes to parts and documentation.

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