



防爆合格证

证号: GYJ17.1505X

由 MTS Systems Corporation Sensors Division
(地址: 3001 Sheldon Drive, Cary, NC 27513, USA)

制造的产品:

名 称 磁致伸缩液位变送器

型号规格 LP系列

防爆标志 Ex ia II C T4 Ga/Gb

产品标准 /

图样编号 651543-1, 651543-2, 651543-3, 651544-1, 651544-2, 651544-3

经图样及技术文件的审查和样品检验,确认上述产品符合 GB 3836.1-2010、GB 3836.4-2010、GB 3836.20-2010 标准,特颁发此证。

本证书有效期: 2017年12月4日至2022年12月3日

- 备注
1. 安全使用注意事项见本证书附件。
 2. 证书编号后缀“X”表明产品具有安全使用特殊条件,内容见本证书附件。
 3. 型号规格说明见本证书附件。
 4. 本安电气参数见本证书附件。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期二〇一七年十二月四日

本证书仅对与认可文件和样品一致的产品有效。



EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert NO.GYJ17.1505X

This is to certify that the product

Level Plus Digital Level Transmitters Level Plus Analog
Level Transmitters

manufactured by MTS Systems Corporation Sensors Division

(Address:3001 Sheldon Drive, Cary, NC 27513, USA)

which model is LP series

Ex marking Ex ia IIC T4 Ga/Gb

product standard /

drawing number 651543-1, 651543-2, 651543-3, 651544-1, 651544-2, 651544-3

has been inspected and certified by NEPSI, and that it conforms
to GB 3836.1-2010,GB 3836.4-2010,GB 3836.20-2010

This Approval shall remain in force until 2022.12.03

Remarks 1.Conditions for safe use are specified in the attachment to this certificate.
2.Symbol "X" placed after the certification number denotes specific conditions of use,
which are specified in the attachment to this certificate.
3.Model designation is specified in the attachment to this certificate.
4.Intrinsic safety parameters specified in the attachment to this certificate.

Director

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

Issued Date 2017.12.04

This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

(GYJ17.1505X)

(Attachment I)

Attachment I to GYJ17.1505X

LP series Level Plus Level Transmitter, manufactured by MTS Systems Corporation Sensors Division, has been certified by National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI). The Level Plus Level Transmitter accords with following standards:

GB3836.1-2010 Explosive atmospheres-Part 1: Equipment – General requirements

GB3836.4-2010 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety “i”

GB3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga
Level Plus Level Transmitter has the Ex marking Ex ia II C T4 Ga/Gb.

The certified type codes are as following:

LP **a b c d e f g h i j k l m n o p**, in which:

a indicates unit, which could be T (Tank Slayer), R (RefineME), C (Chambered) or S (SoClean).

b indicates output, which could be 1~7.

c indicates housing type, which could be A, B, C, D, E, L, Y, G or H.

d indicates electronics mounting, which could be 1, 3, 4, 5, 6, 7 or 8.

e indicates sensor pipe, which could be B, C, D, E, F, M, N, P, S, R or Y.

f indicates material of construction (wetted parts), which could be 1, 2, 3 or A.

g indicates process connection type, which could be 1, 2, 3, 4, 5, 6, 7, 8, A, B, C, D or Z.

h indicates process connection size, which could be A, B, C, D, E, F, G, H, J or X.

i indicates number of DT'S (Digital Thermometer), which could be 0, 1, 5, K, M, P or X.

j indicates DT placement, which could be F, C, B or X.

k indicates notified body, which could be N.

l indicates protection method, which could be I.

m indicates gas group, which could be 1, 2 or 3.

n indicates unit of measure, which could be F, M or U.

o indicates length (no decimal places), which could be XXX.XXin, XXX.XXft or XX.XXXmm.

p indicates special, which could be S, E, R or F.

Note: See instruction manual for detail specification of each code.

1. Special conditions for safe use

The suffix "X" placed after the certificate number indicates that this product is subject to special conditions for safe use:

- 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 aprroval)
- 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 inside the transmitter housing does not exceed 71 °C.
- 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.

2. Conditions for safe use

2.1 The ambient temperature range is -50 °C ~ +71 °C.

2.2 The intrinsic safety parameters are as following:

- Level Plus Digital Level Transmitter

Supply: $U_i=28V$	$I_i=100mA$	$P_i=0.7W$	$C_i \approx \mu F$	$L_i \approx 0mH$
Rx/Tx-: $U_i=8.6V$	$I_i=10mA$	$P_i=21.5mW$	$C_i \approx \mu F$	$L_i \approx 0mH$
Rx/Tx+: $U_i=8.6V$	$I_i=10mA$	$P_i=21.5mW$	$C_i \approx \mu F$	$L_i \approx 0mH$

- Level Plus Analog Level Transmitter

LOOP1: $U_i=28V$	$I_i=120mA$	$P_i=840mW$	$C_i \approx \mu F$	$L_i=5\mu H$
LOOP2: $U_i=28V$	$I_i=120mA$	$P_i=840mW$	$C_i \approx \mu F$	$L_i=5\mu H$

2.3 The Level Plus Level Transmitter must be used together with safety barriers to form an intrinsic safety system thus can be used in hazardous locations. The wiring and installation must fulfil the requirements from instruction manuals of the Level Plus Level Transmitter and chosen safety barriers.

2.4 The connection cable between the transmitter and associated apparatus should be two-core shielded cable with insulating sheath. The shielding layer should be grounded in safe area and insulated from the enclosure..

2.5 Forbid end user to change the configuration to ensure the equipment's explosion protection performance.

2.6 When installation, use and maintenance of Level Plus Level Transmitter, observe following standards:

GB3836.13-2013 "Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation"

GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)"

GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)"

GB3836.18-2010 "Explosive atmospheres - Part 18: Intrinsically safe system"

GB50257-2014 "Code for construction and acceptance of electric equipment on fire and explosion hazard electrical equipment installation engineering"

3. Manufacturer's Responsibility

3.1 Special condition for safe use specified above should be included in the instruction manual.

3.2 Manufacturing should be done according to the documentation approved by NEPSI.

National Supervision and Inspection Center
for Explosion Protection and Safety of Instrumentation

2017.12.04



国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

(GYJ17.1505X)

(Attachment I)

GYJ17.1505X防爆合格证附件 I

由MTS Systems Corporation Sensors Division生产的LP系列磁致伸缩液位变送器（以下简称变送器），经国家级仪器仪表防爆安全监督检验站（NEPSI）检验，符合以下国家标准的规定：

GB3836.1-2010 爆炸性环境 第1部分：设备 通用要求

GB3836.4-2010 爆炸性环境 第4部分：由本质安全型“i”保护的设备

GB3836.20-2010 爆炸性环境 第20部分：设备保护级别（EPL）为Ga级的设备产品防爆标志为Ex ia II C T4 Ga/Gb，防爆合格证号为GYJ17.1505X。

本次认可的产品型号为LP **a b c d e f g h i j k l m n o p**，其中：

a代表变送器类型，可为T（Tank Slayer），R（RefineME），C（Chambered）或S（SoClean）；

b代表输出信号，可为1~7任意数字；

c代表外壳类型，可为A、B、C、D、E、L、Y、G或H；

d代表电气安装方式，可为1、3、4、5、6、7或8；

e代表测量管，可为B、C、D、E、F、M、N、P、S、R或Y；

f代表接液部件材质，可为1、2、3或A；

g代表过程连接类型，可为1~8或A、B、C、D、Z中任意数字或字母；

h代表过程连接口径，可为A、B、C、D、E、F、G、H、J或X；

i代表数字式温度计数量，可为0、1、5、K、M、P或X；

j代表数字式温度计布置，可为F、C、B或X；

k代表认证机构，为N；

l代表保护类型，为I；

m代表适用气体组别，可为1、2或3；

n代表测量单位，可为F、M或U；

o代表测量管长度，可为XXX.XXin、XXX.XXft或XX.XXmm（实际表示时不含小数点）；

p代表特殊选项，可为S、E、R或F。

注：上述代码所代表具体意义详见使用说明书。

一、产品安全使用特殊条件

防爆合格证编号后的X表示其安全使用特殊条件，具体如下：

- 当变送器外壳为轻金属材质且应用于设备保护级别（EPL）为Ga级的爆炸性气体危险场所时，其安装方式应可防止冲击或摩擦产生的点燃危险。
- 当变送器外壳为非金属材质或带有非金属部件且应用于爆炸性气体危险场所时，应严禁干擦以防静电积累危险。
- 变送器的最高使用环境温度为+71℃，在爆炸性气体危险场所使用时应注意过程介质温度及其他可能外部热源影响，以防最高使用环境温度超过限值。

二、产品使用注意事项

1. 变送器的使用环境温度范围为-50℃~+71℃。

2. 变送器的本质安全参数如下：

2.1 数字式变送器：

- 电源（端子+24V, GND）

$U_i=28V$ $I_i=100mA$ $P_i=0.7W$ $C_i\approx0\mu F$ $L_i\approx0mH$

- 通讯（端子Rx/Tx-, GND）

$U_i=8.6V$ $I_i=10mA$ $P_i=21.5mW$ $C_i\approx0\mu F$ $L_i\approx0mH$

- 通讯（端子Rx/Tx+, GND）

$U_i=8.6V$ $I_i=10mA$ $P_i=21.5mW$ $C_i\approx0\mu F$ $L_i\approx0mH$

2.2 模拟式变送器：

- LOOP1（端子LOOP1+, LOOP1-）

$U_i=28V$ $I_i=120mA$ $P_i=840mW$ $C_i\approx0\mu F$ $L_i=5\mu H$

- LOOP2（端子LOOP2+, LOOP2-）

$U_i=28V$ $I_i=120mA$ $P_i=840mW$ $C_i\approx0\mu F$ $L_i=5\mu H$

3. 变送器必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于现场存在爆炸性气体混合物的危险场所。其系统接线必须同时遵守产品和所配关联设备的使用说明书要求，接线端子不得接错。

4. 变送器与关联设备的连接电缆应为带绝缘护套的屏蔽电缆，其屏蔽层应接地。

5. 用户不得自行随意更换该产品的电气零部件，应会同产品制造商共同解决运行中出现的故障，以免影响防爆性能和损坏现象的发生。



6. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013 “爆炸性环境 第13部分：设备的修理、检修、修复和改造”、GB3836.15-2000 “爆炸性气体环境用电气设备 第15部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006 “爆炸性气体环境用电气设备 第16部分：电气装置的检查和维护（煤矿除外）”、GB3836.18-2010 “爆炸性环境 第18部分：本质安全系统” 及GB50257-2014 “电气装置安装工程 爆炸和火灾危险环境电气装置施工及验收规范”的有关规定。

三、 制造厂责任

1. 产品制造厂必须将上述使用注意事项纳入该产品的使用说明书中。
2. 制造厂必须严格按照NEPSI认可的文件资料生产。

国家级仪器仪表防爆安全监督检验站
二〇一七年十二月四日