

防爆合格证

证号: GYJ18.1360X

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 d IIB+H₂ T3~T6 Ga/Gb

产品标准 /

图样编号 651552-3, 651553-3, 651552-7, 651553-7

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 3836.2-2010、GB 3836.20-2010 标准, 特颁发此证。

本证书有效期: 2018年7月30日至2023年7月29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. 产品外壳防护等级: IP65。

站长



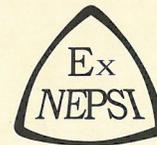
国家级仪器仪表防爆安全监督检验站
颁发日期二〇一八年七月三十日

本证书仅对与认可文件和样品一致的产品有效。

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EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert NO.GYJ18.1360X

This is to certify that the product

Level Plus Transmitters

manufactured by MTS Systems Corporation Sensors Division

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

which model is LP series

Ex marking Ex d IIB+H₂ T3~T6 Ga/Gb

product standard /

drawing number 651552-3, 651553-3, 651552-7, 651553-7

has been inspected and certified by NEPSI, and that it conforms
to GB 3836.1-2010,GB 3836.2-2010,GB 3836.20-2010

This Approval shall remain in force until 2023.07.29

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. IP code: IP65.

Director

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

Issued Date 2018.07.30



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

(GYJ18.1360X)

(Attachment I)

GYJ18.1360X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

GB3836.2-2010 爆炸性环境 第2部分：由隔爆外壳“d”保护的的设备

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 d II B+H₂ T3~T6 Ga/Gb，防爆合格证号为GYJ18.1360X。

本次认可的产品型号如下：

Tank SLAYER, LPT **abcdefghijklmno**, 其中：

a代表输出信号，可为1、2、5、7、M或D；

b代表外壳类型，可为D、E或L；

c代表电气安装方式，可为1；

d代表测量管，可为M、N、P或S；

e代表接液部件材质，可为1；

f代表过程连接类型，可为1、2、6、7、8、A、B、C、D、E或X；

g代表过程连接口径，可为B、C、D、E、F、G、H、J或X；

h代表数字式温度计数量，可为0、1、5、K、M或P；

i代表数字式温度计布置，可为F、C、B或X；

j代表认证机构，为N；

k代表保护类型，为F；

l代表适用气体组别，可为4；

m代表测量单位，可为F、M或U；

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

o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。

RefineME, LPR **abcdefghijklmno**, 其中:

a代表输出信号, 可为1、2、5、7、M或D;

b代表外壳类型, 可为D、E或L;

c代表电气安装方式, 可为1;

d代表测量管, 可为B、R或Y;

e代表接液部件材质, 可为1、3或A;

f代表过程连接类型, 可为1、2、6、7、8、A、B、C、D、X或Z;

g代表过程连接口径, 可为A、C、D、E、F、G、H、J或X;

h代表数字式温度计数量, 可为0、1、5、K、M或P;

i代表数字式温度计布置, 可为F、C、B或X;

j代表认证机构, 为N;

k代表保护类型, 为F;

l代表适用气体组别, 可为4;

m代表测量单位, 可为F、M或U;

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

o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。

SoCLEAN, LPS **abcdefghijklmno**, 其中:

a代表输出信号, 可为1、2、5、7、M或D;

b代表外壳类型, 可为D、E或L;

c代表电气安装方式, 可为1;

d代表测量管, 可为C、D、E或F;

e代表接液部件材质, 可为1、2或3;

f代表过程连接类型, 可为1、2、4、5、6、7、8、A、B、C、D、X或Z;

g代表过程连接口径, 可为A、C、D、E、F、G、J或X;

h代表数字式温度计数量, 可为0、1、5、K、M或P;

i代表数字式温度计布置, 可为F、C、B或X;

j代表认证机构, 为N;

k代表保护类型, 为F;

l代表适用气体组别, 可为4;

m代表测量单位，可为F、M或U；

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

o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。

CHAMBERED, LPC **a b c d e f g h i j k l m n o**, 其中：

a代表输出信号，可为3、4、6、D或M；

b代表外壳类型，可为D、E或L；

c代表电气安装方式，可为3、4、5、6、7或8；

d代表测量管，可为B、R或Y；

e代表接液部件材质，可为1或3；

f代表过程连接类型，可为X（无）；

g代表过程连接口径，可为X（无）；

h代表数字式温度计数量，可为0、1、5、K、M或P；

i代表数字式温度计布置，可为F、C、B或X；

j代表认证机构，为N；

k代表保护类型，为F；

l代表适用气体组别，可为4；

m代表测量单位，可为F、M或U；

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

o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：

LPT系列变送器

- 产品外壳及过程连接带有非金属部件，为避免静电火花产生，仅可使用湿布清洁产品非金属部件。产品表面喷漆，在低湿度情况下（相对湿度≤30%）有可能积累静电电荷从而成为点燃源。应注意避免喷漆表面沾染污物、灰尘或油渍。仅可使用湿布清洁产品喷漆表面。

- 产品所采用的电缆，其耐热温度需至少高于最高使用环境温度5℃。
- 为了维持IP65的防护等级，需使用特氟龙胶带（3层）或者管涂料。请参照安装用说明书。
- 设备可以安装在EPL Ga区域和相对危险性较低的EPL Gb区域之间的分界位置上，在这种应用中，过程连接应安装在EPL Ga区域，变送器表头应安装在EPL Gb区域中。请参照安装用说明书。
- 产品所使用的柔性管的最小弯曲直径为381毫米（15英寸）。
- 不得维修隔爆接合面。
- 产品温度组别，过程温度范围及使用环境温度范围的关系如下：
 - T3: 过程温度范围为-40℃至150℃
 - T4: 过程温度范围为-40℃至130℃
 - T5: 过程温度范围为-40℃至100℃
 - T4: 过程温度范围为-40℃至85℃
- 当在现场液位计时，必须确保电子头与压力挡块的环境温度范围在-40℃到+71℃范围内。

LPR, LPS, LPC系列变送器

- 产品外壳及过程连接带有非金属部件，为避免静电火花产生，仅可使用湿布清洁产品非金属部件。产品表面喷漆，在低湿度情况下（相对湿度≤30%）有可能积累静电电荷从而成为点燃源。应注意避免喷漆表面沾染污物、灰尘或油渍。仅可使用湿布清洁产品喷漆表面。
- 产品所采用的电缆，其耐热温度需至少高于最高使用环境温度5℃。
- 为了维持IP65的防护等级，需使用特氟龙胶带（3层）或者管涂料。请参照安装用说明书。
- 设备可以安装在EPL Ga区域和相对危险性较低的EPL Gb区域之间的分界位置上，在这种应用中，过程连接应安装在EPL Ga区域，变送器表头应安装在EPL Gb区域中。请参照安装用说明书。
- 不得维修隔爆接合面。
- 产品温度组别，过程温度范围及使用环境温度范围的关系如下：
 - T3: 过程温度范围为-40℃至150℃
 - T4: 过程温度范围为-40℃至130℃

T5: 过程温度范围为-40℃至100℃

T6: 过程温度范围为-40℃至85℃

$-40^{\circ}\text{C} \leq T_a \leq 71^{\circ}\text{C}$

- 当在现场液位计时，必须确保电子头与压力挡块的环境温度范围在-40℃到+71℃范围内。

二、 产品使用注意事项

1. 变送器设有接地端子，用户在安装使用时应可靠接地。
2. 现场使用和维护变送器时，必须遵守如下警告语：
 - “警告：有爆炸性气体时请勿打开”
 - “警告：潜在静电电荷危险-见使用说明书”。
3. 变送器的电缆引入口须配用经国家授权的检验机构认可、符合GB3836.1-2010、GB3836.2-2010、防爆等级为Ex d II C Gb、且螺纹规格为3/4-14 NPT或M20X1.5-6g的电缆引入装置或封堵件，啮合扣数至少为5扣。冗余电缆引入口须采用封堵件有效封堵。
4. 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。
5. 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”、GB/T3836.15-2017“爆炸性环境 第15部分：电气装置的设计、选型和安装”、GB/T3836.16-2017“爆炸性环境 第16部分：电气装置的检查与维护”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

二〇一八年七月三十日



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

(GYJ18.1360X)

(Attachment I)

Attachment I to GYJ18.1360X

LP series Level Plus 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 Transmitter accords with following standards:

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

GB3836.2-2010 Explosive atmospheres-Part 2: Equipment protection by flameproof enclosures “d”

GB3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga

Level Plus Level Transmitter has the Ex marking Ex d II B+H₂ T3~T6 Ga/Gb.

The certificate number is GYJ18.1360X.

The certified type codes are as following:

Tank SLAYER Level Plus Transmitters, LPT **abcdefghijklmno**, in which:

a indicates output, which could be 1, 2, 5, 7, M or D.

b indicates housing type, which could be D, E or L.

c indicates electronics mounting, which could be 1.

d indicates sensor pipe, which could be M, N, P or S.

e indicates material of construction (wetted parts), which could be 1.

f indicates process connection type, which could be 1, 2, 6, 7, 8, A, B, C, D, E or X.

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

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

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

j indicates notified body, which could be N.

k indicates protection method, which could be F.

l indicates gas group, which could be 4.

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

n indicates length (no decimal places), which could be XXX.XXin, XXX.XXft or XXXXXmm.

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

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

RefineME Level Plus Transmitters, LPR **abcdefghijklmno**, in which:

a indicates output, which could be 1, 2, 5, 7, M or D.

b indicates housing type, which could be D, E or L.

c indicates electronics mounting, which could be 1.

d indicates sensor pipe, which could be B, R or Y.

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

f indicates process connection type, which could be 1, 2, 6, 7, 8, A, B, C, D, X or Z.

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

- h** indicates number of DT'S (Ditigal Thermometer), which could be 0, 1, 5, K, M or P.
- i** indicates DT placement, which could be F, C, B or X.
- j** indicates notified body, which could be N.
- k** indicates protection method, which could be F.
- l** indicates gas group, which could be 4.
- m** indicates unit of measure, which could be F, M or U.
- n** indicates length (no decimal places), which could be XXX.XXin, XXX.XXft or XXXXXmm.
- o** indicates special, which could be S, E, R or F.

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

SoCLEAN Level Plus Transmitters, LPS **abcdefghijklmnop**, in which:

- a** indicates output, which could be 1, 2, 5, 7, M or D.
- b** indicates housing type, which could be D, E or L.
- c** indicates electronics mounting, which could be 1.
- d** indicates sensor pipe, which could be C, D, E or F.
- e** indicates material of construction (wetted parts), which could be 1, 2 or 3.
- f** indicates process connection type, which could be 1, 2, 4, 5, 6, 7, 8, A, B, C, D, X or Z.
- g** indicates process connection size, which could be A, C, D, E, F, G, J or X.
- h** indicates number of DT'S (Ditigal Thermometer), which could be 0, 1, 5, K, M or P.
- i** indicates DT placement, which could be F, C, B or X.
- j** indicates notified body, which could be N.
- k** indicates protection method, which could be F.
- l** indicates gas group, which could be 4.
- m** indicates unit of measure, which could be F, M or U.
- n** indicates length (no decimal places), which could be XXX.XXin, XXX.XXft or XXXXXmm.
- o** indicates special, which could be S, E, R or F.

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

CHAMBERED Level Plus Transmitters, LPR **abcdefghijklmnop**, in which:

- a** indicates output, which could be 3, 4, 6, D or M.
- b** indicates housing type, which could be D, E or L.
- c** indicates electronics mounting, which could be 3, 4, 5, 6, 7 or 8.
- d** indicates sensor pipe, which could be B, R or Y.
- e** indicates material of construction (wetted parts), which could be 1 or 3.
- f** indicates process connection type, which could be X (None).
- g** indicates process connection size, which could be X (None).
- h** indicates number of DT'S (Ditigal Thermometer), which could be 0, 1, 5, K, M or P.
- i** indicates DT placement, which could be F, C, B or X.
- j** indicates notified body, which could be N.
- k** indicates protection method, which could be F.
- l** indicates gas group, which could be 4.
- m** indicates unit of measure, which could be F, M or U.



n indicates length (no decimal places), which could be XXX.XXin, XXX.XXft or XXXXXmm.

o 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:

LPT Transmitters

- The equipment contains non-metallic enclosure and process parts, to prevent the risk of electrostatic sparking, the non-metallic surface should be cleaned with a damp cloth. Painted surface of the equipment may store electrostatic charge and become a source of ignition in applications with a low relative humidity $\leq 30\%$ relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust or oil. Cleaning of the painted surface should only be done with a damp cloth.
- Cables shall be rated $> 5^{\circ}\text{C}$ above maximum ambient temperature.
- To maintain the ingress protection rating of IP65, Teflon tape (3 wraps) or pipe dope shall be used. Refer to Installation Instructions.
- The equipment can be installed in the boundary wall between an EPL Ga area and the less hazardous area, EPL Gb. In this configuration, the process connection is installed in EPL Ga, while the transmitter housing is installed in EPL Gb. Refer to Installation Instructions.
- Flexible gauges have a minimum bend diameter of 381mm (15 inches).
- Flamepaths not for repair.
- The application temperature class, process temperature range and ambient temperature range of the equipment is as follows:
 - T3 with Process Temperature Range of -40°C to 150°C
 - T4 with Process Temperature Range of -40°C to 135°C
 - T5 with Process Temperature Range of -40°C to 100°C
 - T6 with Process Temperature Range of -40°C to 85°C $-40^{\circ}\text{C} \leq T_a \leq +71^{\circ}\text{C}$
- When mounting on a magnetic level gauge make sure the electronic head and pressure barrier do not exceed the ambient temperature range of -40°C to $+71^{\circ}\text{C}$.

LPR, LPS, LPC Transmitters

- The equipment contains non-metallic enclosure and process parts, to prevent the risk of electrostatic sparking, the non-metallic surface should be cleaned with a damp cloth. Painted surface of the equipment may store electrostatic charge and become a source of ignition in applications with a low relative humidity $\leq 30\%$ relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust or oil. Cleaning of the painted surface should only be done with a damp cloth.
- Cables shall be rated $> 5^{\circ}\text{C}$ above maximum ambient temperature.
- To maintain the ingress protection rating of IP65, Teflon tape (3 wraps) or pipe dope shall be used. Refer to Installation Instructions.

- The equipment can be installed in the boundary wall between an EPL Ga area and the less hazardous area, EPL Gb. In this configuration, the process connection is installed in EPL Ga, while the transmitter housing is installed in EPL Gb. Refer to Installation Instructions.
- Flamepaths not for repair.
- The application temperature class, process temperature range and ambient temperature range of the equipment is as follows:
 - T3 with Process Temperature Range of -40°C to 150°C
 - T4 with Process Temperature Range of -40°C to 135°C
 - T5 with Process Temperature Range of -40°C to 100°C
 - T6 with Process Temperature Range of -40°C to 85°C
$$-40^{\circ}\text{C} \leq T_a \leq +71^{\circ}\text{C}$$
- When mounting on a magnetic level gauge make sure the electronic head and pressure barrier do not exceed the ambient temperature range of -40°C to +71°C.

2. Conditions for safe use

2.1 The external earth connection facility shall be connected reliably.

2.2 Obey the warning:

- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
- POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS

2.3 3/4-14NPT or M20X1.5-6g Cable entry and/or blanking element, certified by notified body with type of protection Ex d IIC Gb in accordance with GB3836.1-2010 and GB3836.2-2010, should be applied when installation in hazardous location. The IP code should be IP65, redundancy cable entry should be closed by blanking element.

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

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

GB 3836.13-2013 "Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation"

GB/T 3836.15-2017 "Explosive atmospheres - Part 15: Electrical installations design, selection and erection"

GB/T 3836.16-2017 "Explosive atmospheres - Part 16: Electrical installations inspection and maintenance"

GB 50257-2014 "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

2018.07.30