



# EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert No. GYJ071232X

This is to certify that the product

Sensor

manufactured by Micro Motion, Inc.  
(Address: Boulder, Co. 80301, USA)

which model is T Series

Ex marking Ex ib II B/II CT1~T6

product standard /

drawing number /

has been inspected and certified by NEPSI, and that it conforms  
to GB3836.1 - 2000, GB3836.4 - 2000

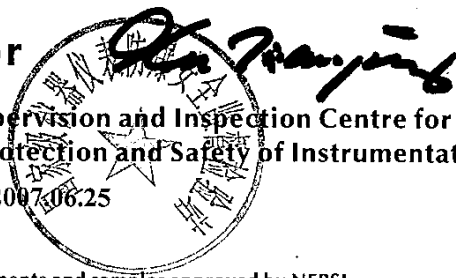
This Approval shall remain in force until 2012.06.24

- Remarks**
1. This certificate also cover the Sensor with the same type that manufactured by Emerson Process Management Co., Ltd. (Address: No.1277, Xin Jin Qiao Rd., Pudong).
  2. When the sign "X" is placed after the certificate number, it indicates that the sensor is subject to special conditions for safe use specified in the attachment to this certificate.
  3. Type details, Temperature classification, Intrinsically safe parameters and Special requirements for safe use specified are shown in the attachment to this certificate.

Director

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

Issued Date 2007.06.25



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

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# 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

(GYJ071232X)

(Attachment I)

### Attachment I

(Translation)

Sensors, type T series, manufactured by Micro Motion, Inc. or by Emerson Process Management Co., Ltd., have been approved by National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation (NEPSI) in accordance with the following standards:

GB3836.1-2000 Electrical apparatus for explosive gas atmospheres

Part 1: General requirements

GB3836.4-2000 Electrical apparatus for explosive gas atmospheres

Part 4: Intrinsic safety "i"

Sensors are approved with explosion marking of Ex ib II B/II C T1~T6, the certificate number is GYJ071232X.

The types to this certificate are as below:

T 1 2 3 4 P 5

1 code: Number for type of sensor, include 025, 050, 075, 100 or 150;

2 code: Options, without influence on explosion protection;

3 code: Electrical interface, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, F, D, E, R, H, S, Q, S, V, W or Y;

4 code: Conduit connections;

5 code: Options, without influence on explosion protection.

### I. SPECIAL CONDITIONS FOR SAFE USE

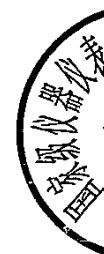
There are relations between type, electronic interface and the Ex Marking as following

1.1 For sensors with an integrally mounted core processor type 700 series or type 800 series are valid:

T010□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T050□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T075□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T100□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T150□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II BT1~T5

1.2 For sensors with 9-wire junction box connected to transmitter are valid:

T010□(R/H/S)□P□	Ex ib II CT1~T6
T050□(R/H/S)□P□	Ex ib II CT1~T6
T075□(R/H/S)□P□	Ex ib II CT1~T6
T100□(R/H/S)□P□	Ex ib II CT1~T6
T150□(R/H/S)□P□	Ex ib II BT1~T6



1.3 For sensors with an integral mounted transmitter type 1700 series or type 2700 series are valid:

Sensor	Transmitter	
	<input type="checkbox"/> 700 <input type="checkbox"/> 1 (1 or 2) series	<input type="checkbox"/> 700 <input type="checkbox"/> 1 (3, 4 or 5) series
T010 <input type="checkbox"/> (C/F) <input type="checkbox"/> P <input type="checkbox"/>	Ex ib II B+H <sub>2</sub> T1~T5	Ex ib II CT1~T5
T025 <input type="checkbox"/> (C/F) <input type="checkbox"/> P <input type="checkbox"/>		
T050 <input type="checkbox"/> (C/F) <input type="checkbox"/> P <input type="checkbox"/>		
T100 <input type="checkbox"/> (C/F) <input type="checkbox"/> P <input type="checkbox"/>		
T150 <input type="checkbox"/> (C/F) <input type="checkbox"/> P <input type="checkbox"/>	Ex ib II BT1~T5	Ex ib II BT1~T5

## II. SPECIAL REQUIREMENTS

2.1 Intrinsically safe parameters:

2.1.1 For Electrical interface code with R, H or S:

2.1.1.1 Drive circuit (terminals 1-2 or wires red-brown):

Code	Max. input voltage U <sub>i</sub> (V)	Max. input current I <sub>i</sub> (A)	Max. input Power P <sub>i</sub> (W)	Max. internal parameter	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025	11.4V	2.45	2.54	0	4.65
050					4.65
075					9.8
100					10.5
150					11.6

2.1.1.2 Pick-off coil (terminals 5-9 and 6-8 or wires green-white and blue-grey)

Code	Max. input voltage U <sub>i</sub> (V)	Max. input current I <sub>i</sub> (A)	Max. input Power P <sub>i</sub> (W)	Max. internal parameter	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025	30V	0.101	0.75	0	12.5
050					12.5
075					13.1
100					13.1
150					13.1

2.1.1.3 Temperature circuits (terminals 3,4 and 7 or wires orange, yellow and violet):

Code	Max. input voltage U <sub>i</sub> (V)	Max. input current I <sub>i</sub> (A)	Max. input Power P <sub>i</sub> (W)	Max. internal parameter	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025	30V	0.101	0.75	0	0
050					
075					
100					
150					

2.1.2 For Electrical interface code with 2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y (terminals: 1-4):

Code	Max. input voltage $U_i$ (V)	Max. input current $I_i$ (A)	Max. input Power $P_i$ (W)	Max. internal parameter	
				$C_i$ (nF)	$L_i$ (mH)
025 050 075 100 150	17.3V	0.484	2.1	2.2	30

2.1.3 Intrinsically safe parameters of the sensors for electrical interface code with C or F shall see GYJ071176.

2.2 The relations between type, ambient temperature( $T_a$ ), medium temperature( $T_m$ ) and the temperature class are as following:

Sensor type	$T_a$ (°C)	$T_m$ (°C)	Temperature class	Remark
T□□ (R/H/S) □P□	-40~48	-40~48	T6	/
	-40~55	-40~63	T5	
	-40~55	-40~98	T4	
	-40~55	-40~150	T3~T1	
T□□ (2~9/A/B/D/E/Q/V/W/Y) □P□	-40~55	-40~63	T5	/
	-40~55	-40~98	T4	/
	-40~55	-40~150	T3~T1	When $T_m$ changes from 118 °C to 150 °C, $T_a$ shall be 0.16 °C reduced for per 1 °C increment of $T_m$
T□□ (C/F) □P□	-40~55	-40~63	T5	/
	-40~55	-40~98	T4	/
	-40~55	-40~150	T3~T1	When $T_m$ changes from 118 °C to 150 °C, $T_a$ shall be 0.16 °C reduced for per 1 °C increment of $T_m$

2.3 Users are forbidden to change the configuration to ensure the explosion protection performance of the equipment. Any faults shall be settled with experts from the manufacturer.

2.4 During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual, GB3836.13-1997 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)", GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)", and GB50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".

### III. MANUFACTURER'S RESPONSIBILITY

- 3.1 The instruction manual shall include all the clauses mentioned above.
- 3.2 The manufacturer shall exactly conform to the documents approved by NEPSI.
- 3.3 The nameplate shall include the following:
  - 3.3.1 Intrinsically safe parameters or specification.
  - 3.3.2 The permissible range of ambient temperature
  - 3.3.3 Identification of NEPSI.
  - 3.3.4 Certificate No.
  - 3.3.5 Ex Marking

National Supervision and Inspection Centre  
For Explosion Protection and Safety of Instrumentation  
June 25, 2007





# 防爆合格证

证号：GYJ071232X

由 美国高准公司  
(地址：Boulder, Co. 80301, USA)

制造的产品：

名 称 传感器

型号规格 T系列

防爆标志 Ex ib II B/II CT1~T6

产品标准 /

图样编号 /

经图样及技术文件的审查和样品检验，确认上述产品符合 GB3836.1 - 2000、GB3836.4 - 2000 标准，特颁发此证。有效期自颁发日期起伍年内有效。

备注

1. 本证书同时适用于由艾默生过程控制有限公司(地址：浦东新金桥路 1277 号)组装生产的相同型号传感器。
2. 防爆合格证号后缀“X”表示使用时有特殊要求，见本合格证附件。
3. 认可产品型号、温度组别、本安参数和产品使用注意事项见本合格证附件。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期 二〇〇七年六月二十五日



本证书仅对与认可文件和样品一致的产品有效。

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# 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

(GYJ071232X)

(Attachment I)

## GYJ071232X防爆合格证附件 I

由美国高准公司或艾默生过程控制有限公司送检的T系列传感器，经国家级仪器仪表防爆安全监督检验站(NEPSI)检验，符合GB3836.1-2000“爆炸性气体环境用电气设备 第1部分：通用要求”和GB3836.4-2000“爆炸性气体环境用电气设备 第4部分：本质安全型“i””防爆标准规定的要求，产品防爆标志为Ex ib II B/II CT1~T6，防爆合格证号为GYJ071232X。

本证书认可产品的具体型号如下：

T 1 2 3 4 P 5

1 代码：传感器类型，包括025、050、075、100、150；

2 代码：内容与防爆性能无关；

3 代码：代表电气接口，包括2、3、4、5、6、7、8、9、A、B、C、F、D、E、R、H、S、Q、V、W或Y；

4 代码：代表导管连接方式；

5 代码：内容与防爆性能无关。

### 一、产品使用特殊要求

产品型号、电气连接方式与防爆标志之间的对应关系：

1. 以一体式安装方式与700型和800型核心处理器配接：

T010□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T050□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T075□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T100□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II CT1~T5
T150□(2~9/A/B/D/E/Q/V/W/Y)□P□	Ex ib II BT1~T5

2. 以经过9芯接线盒的安装方式与变送器配接：

T010□(R/H/S)□P□	Ex ib II CT1~T6
T050□(R/H/S)□P□	Ex ib II CT1~T6
T075□(R/H/S)□P□	Ex ib II CT1~T6
T100□(R/H/S)□P□	Ex ib II CT1~T6
T150□(R/H/S)□P□	Ex ib II BT1~T6

3. 以一体式安装方式与1700或2700系列变送器配接:

传感器	变送器	
	□700□1(1,2)系列	□700□1(3、4或5)系列
T010□(C/F) □P□ T025□(C/F) □P□ T050□(C/F) □P□ T100□(C/F) □P□	Ex ib II B+H <sub>2</sub> T1~T5	Ex ib II CT1~T5
T150□(C/F) □P□	Ex ib II BT1~T5	Ex ib II BT1~T5

## 二、产品使用注意事项

1、传感器本安参数:

1.1 传感器电气接口代码为R、H或S时:

1.1.1 驱动线圈电路(端子: 1-2 或 红-棕)

□代码	最高输入电压 U <sub>i</sub> (V)	最大输入电流 I <sub>i</sub> (A)	最大输入功率 P <sub>i</sub> (W)	最大内部等效参数	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025	11.4V	2.45	2.54	0	4.65
050					4.65
075					9.8
100					10.5
150					11.6

1.1.2 检测线圈电路(端子: 5-9和6-8 或 绿-白和蓝-灰)

□代码	最高输入电压 U <sub>i</sub> (V)	最大输入电流 I <sub>i</sub> (A)	最大输入功率 P <sub>i</sub> (W)	最大内部等效参数	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025	30V	0.101	0.75	0	12.5
050					12.5
075					13.1
100					13.1
150					13.1

1.1.3 温度传感器电路(端子: 3-4-7 或 橙-黄-紫罗兰)

□代码	最高输入电压 U <sub>i</sub> (V)	最大输入电流 I <sub>i</sub> (A)	最大输入功率 P <sub>i</sub> (W)	最大内部等效参数	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
025 050 075 100 150	30V	0.101	0.75	0	0



1.2 传感器电气接口代码为2~9、A、B、D、E、Q、V、W、Y时(端子: 1-4):

①代码	最高输入电压 $U_i$ (V)	最大输入电流 $I_i$ (A)	最大输入功率 $P_i$ (W)	最大内部等效参数	
				$C_i$ (nF)	$L_i$ ( $\mu$ H)
025 050 075 100 150	17.3V	0.484	2.1	2.2	30

1.3 传感器电气接口代码为C、F时的本安参数见防爆合格证GYJ071176。

2. 产品型号、使用环境温度 ( $T_a$ )、测量介质温度 ( $T_m$ ) 和温度组别的对应关系如下:

产品型号	$T_a$ (°C)	$T_m$ (°C)	温度组别	备注
T□□ (R/H/S) □P□	-40~48	-40~48	T6	/
	-40~55	-40~63	T5	
	-40~55	-40~98	T4	
	-40~55	-40~150	T3~T1	
T□□ (2~9/A/B/D/E/Q/V/W/Y) □P□	-40~55	-40~63	T5	/
	-40~55	-40~98	T4	/
	-40~55	-40~150	T3~T1	$T_m$ 从118°C到150°C时, 每增加1°C, $T_a$ 减少0.16°C
T□□ (C/F) □P□	-40~55	-40~63	T5	/
	-40~55	-40~98	T4	/
	-40~55	-40~150	T3~T1	$T_m$ 从118°C到150°C时, 每增加1°C, $T_a$ 减少0.16°C

3. 用户不得自行更换该产品的零部件, 应会同产品制造商共同解决运行中出现的故障, 以杜绝损坏现象的发生。

4. 产品的安装、使用和维护应同时遵守产品说明书、GB3836.13-1997"爆炸性气体环境用电气设备 第13部分: 爆炸性气体环境用电气设备的检修"、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)"和GB50257-1996"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使用说明书；
2. 制造厂必须严格按照NEPSI认可的文件资料生产；
3. 产品铭牌中必须包括下列内容：
  - 3.1 产品的本安参数或说明；
  - 3.2 使用环境温度；
  - 3.3 NEPSI认可标志；
  - 3.4 防爆合格证号；
  - 3.5 防爆标志。



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