



SITIiAS
Worldwide Access

防爆合格证

证 号: GYJ22.1798X

制 造 商 恩德斯+豪斯公司

(地址: Via Martin Luther King 7, Pessano con Bornago (MI), Italy)

产 品 名 称 多点温度计

型 号 规 格 TMS21 系列

防 爆 标 志 Ex ia II C T1...T6 Ga/Gb
Ex ia III C T85°C...T450°C Db

产 品 标 准 /

图 样 编 号 10000009517

经图样及技术文件的审查和样品检验, 确认上述产品符合下列标准:

GB/T 3836.1-2021, GB/T 3836.4-2021, GB 3836.20-2010

特颁发此证。

本证书有效期: 2022 年 07 月 05 日 至 2027 年 07 月 04 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。
 5. 本证书同时适用于恩德斯豪斯温度仪表(苏州)有限公司(地址: 苏州工业园区江田里路31号)生产的同型号产品。



批 准

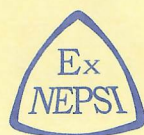
上海仪器仪表自控系统检验测试所有限公司
国家级仪器仪表防爆安全监督检验站
颁发日期二〇二二年七月五日

本证书仅对与认可文件和样品一致的产品有效。

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EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert No. GYJ22.1798X

Manufacturer	Endress + Hauser Wetzer GmbH + Co. KG (Address: Via Martin Luther King 7, Pessano con Bornago (MI), Italy)
Product	Multipoint Thermometer
Model	TMS21 Series
Ex marking	Ex ia IIC T1...T6 Ga/Gb Ex ia IIIC T85°C...T450°C Db
Product standard	/
Drawing number	10000009517

The product was found to comply with the following standard(s):

GB/T 3836.1-2021, GB/T 3836.4-2021, GB 3836.20-2010

Valid until: 2027.07.04

Remarks

1. Conditions for safe use are specified in the attachment(s) to this certificate.
2. Symbol "X" placed after the certification number denotes specific conditions of use, which are specified in the attachment(s) to this certificate.
3. Model designation is specified in the attachment(s) to this certificate.
4. Intrinsic safety parameters specified in the attachment(s) to this certificate.
5. This certificate is also applicable for the product with the same type manufactured by Endress+Hauser Wetzer (Suzhou) Co., Ltd. (address: No. 31 Jiang Tian Li Lu, Suzhou Industrial Park).



Approval

Shanghai Inspection and Testing Institute of
Instruments and Automation Systems Co., Ltd.
National Supervision and Inspection Center for
Explosion Protection and Safety of Instrumentation
Date of issue 2022.07.05

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



(GYJ22.1798X)

(Attachment I)

GYJ22.1798X防爆合格证附件 I

由恩德斯+豪斯公司/恩德斯豪斯温度仪表（苏州）有限公司生产的TMS21系列多点温度计，经检验符合下列标准：

GB/T 3836.1-2021 爆炸性环境 第1部分：设备 通用要求

GB/T 3836.4-2021 爆炸性环境 第4部分：由本质安全型“i”保护的的设备

GB 3836.20-2010 爆炸性环境 第20部分：设备保护等级（EPL）为Ga级的设备

产品防爆标志Ex ia II C T1...T6 Ga/Gb, Ex ia IIIC T85℃...T450℃ Db, 防爆合格证号 GYJ22.1798X。

本证书认可的产品型号规格如下：

TMS21-A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P-Q-R-S-T-U-V-W-X-Y-Z-ZA-ZB-ZC-ZD-ZE

其中，**A**表示防爆认证，可为AD=IECEX认证防爆型式Ex ia

AE=ATEX IECEX认证防爆型式Ex ia

NA=NEPSI认证防爆型式Ex ia;

B表示温度计套管设计;

C表示温度计套管材质，可为A, B, C, D, E, 多种可选;

D表示，加强管厚度，软管厚度，温度计套管直径，最小厚度，可为

A=8mm,n.a,3.2mm,(0.2mm≤Th≤1mm)

C=12.7mm,n.a,8mm,(Th≥1mm)

D=15mm,n.a,9.5mm,(Th≥1mm)

I=1/2"(12.7mm),n.a,1/4"(6.35mm), (Th≥1mm)

K=8mm,n.a,6mm,(0.2mm≤Th≤1mm)

L=12.7mm,n.a,6mm,(Th≥1mm)

E表示温度计套管长度 **M**，可为 X=英寸(L+LE≤1968 英寸)

8=毫米(L+LE≤50000 毫米);

F表示软管长度 **H**;

G表示过程连接件;

H表示过程连接件材质，可为B, C, D, E, 多种可选;

I表示传感器类型，测量范围;

J表示标准/等级;

K表示传感器的执行;

L表示测量点数量：8个（2-20）;

M表示测量点的分布;

N表示第一个测量点的位置 LMP1;

O表示最后一个测量点的位置 LMPn;

P电缆引入口（软管直径），可为

A=M32(DN 29)

B=M40(DN 36)

C=M50(DN 48);

- Q** 表示延长电缆材料，测量范围：D MFA sheath，-200℃ ~ +250℃；
- R** 表示软管电缆长度 **A**，可为 **X=英寸**($L+LE\leq1968$ 英寸)
8=毫米($L+LE\leq50000$ 毫米)；
- S** 表示 TSP 的版本；
- T** 表示电气连接（变送器）；
- U** 表示电气连接数量；
- V** 表示变送器/部件的认证型号；
- W** 表示工作状态；
- X** 表示测试，证书，声明；
- Y** 表示附加选项；
- Z** 表示标定/评估；
- ZA** 表示标定点；
- ZB** 表示外壳材质，可选接线盒；
- ZC** 表示电缆输出端子外壳(可选接线盒)；
- ZD** 表示电缆输出端子外壳数量；
- ZE** 表示标志。

一、产品安全使用特殊条件

产品防爆合格证号后缀“X”表示产品有安全使用特殊要求，具体内容如下：

- 1、当设备安装在符合EPL Ga和EPL Gb要求之间的区域，TMS21的安装方式应符合GB 3836.20-2010的要求。
- 2、设备的隔板壁厚小于1mm处，材料不得承受可能对隔板产生不利影响的环境条件。
- 3、产品过程温度范围，使用环境温度范围和温度组别及最高表面温度的关系：

传感器元件/类型 K,J,N,E	过程温度范围Tp (对于套管)	环境温度范围Ta (对于密封护套)	温度组别/最高表面 温度
	-50℃～+440℃	-50℃～+100℃	T1/T450℃
	-50℃～+290℃	-50℃～+100℃	T2/T300℃
	-50℃～+195℃	-50℃～+100℃	T3/T200℃
	-50℃～+130℃	-50℃～+100℃	T4/T135℃
	-50℃～+95℃	-50℃～+95℃	T5/T100℃
	-50℃～+80℃	-50℃～+80℃	T6/T85℃

安装时应保证密封护套、套管、接头处的安装点的最高环境温度满足对应温度组别的环境温度要求。且当环境温度高于+70℃时，使用的配件工作温度范围应该比环境温度高5K。

二、产品使用注意事项

- 1、产品本安电气参数：
- 防爆型式为Ex ia II C和Ex ia IIIC的TMS21系列多点温度计应该连接2～20个已经认证的本安电路。每个输入电路的参数如下：
- Ui=9V, Ii=26mA, Pi=0.05W, Li=0.5μH, Ci=10nF
- 2、产品应配用经防爆检验认可的、符合GB/T 3836.1-2021和GB/T 3836.4-2021的规定
的接线盒及配件，设备和接线盒之间应等电位连接。
- 3、设备的传感器不与外壳隔离，电路应采用电隔离的本质安全设备供电。

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、GB/T 3836.13-2021 “爆炸性环境 第13部分：设备的修理、检修、修复和改造”、GB/T 3836.15-2017 “爆炸性环境 第15部分：电气装置的设计、选型和安装”、GB/T 3836.16-2017 “爆炸性环境 第16部分：电气装置的检查与维护” GB/T 3836.18-2017 “爆炸性环境 第18部分：本质安全电气系统”、GB 50257-2014 “电气设备安装工程爆炸和火灾危险环境电气装置施工及验收规范”及GB 15577-2018 “粉尘防爆安全规程”的有关规定。

三、制造厂责任

1、产品制造厂必须将上述产品安全使用特殊条件和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。

上海仪器仪表自控系统检验测试所有限公司
国家级仪器仪表防爆安全监督检验站
二〇二二年七月五日



(GYJ22.1798X)

(AttachmentI)

Attachment I to GYJ22.1798X

1. Description

TMS21 series Multipoint Thermometer, manufactured by Endress+Hauser Wetzer GmbH + Co.KG/

Endress+Hauser Wetzer(Suzhou) Co.,Ltd., accords with following standards:

GB/T 3836.1-2021 Explosive atmospheres-Part 1: Equipment-General requirements

GB/T 3836.4-2021 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety “i”

GB 3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga

The Ex marking is Ex ia II C T1...T6 Ga/Gb, Ex ia IIIC T85°C...T450°C Db, its certificate number is GYJ22.1798X.

Type approved in this certificate is detailed as below:

TMS21-**A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P-Q-R-S-T-U-V-W-X-Y-Z-ZA-ZB-ZC-ZD-ZE**

A Approval:

AD IECEx Approval Ex ia

AE ATEX IECEx Approval Ex ia

NA NEPSI Approval Ex ia;

B Thermowell Design - Not safety relevant;

C Thermowell Material: option A, B, C, D, E, various type of still;

D Reinforcement-; Flex-; Thermowell Diam.; Min. Thickness:

A=8mm,n.a,3.2mm,(0.2mm≤Th≤1mm)

C=12.7mm,n.a,8mm,(Th≥1mm)

D=15mm,n.a,9.5mm,(Th≥1mm)

I=1/2"(12.7mm) ,n.a,1/4"(6.35mm), (Th≥1mm)

K=8mm,n.a,6mm,(0.2mm≤Th≤1mm)

L=12.7mm,n.a,6mm,(Th≥1mm);

E Thermowell Length **M**:

X.....inch(L+LE≤1968inch)

8.....mm (L+LE≤50000mm);

F Flexible Length **H** - Not safety relevant;

G Process Connection - Not safety relevant;

H Process Connection Material: option B, C, D, E, various type of still;

I Sensor Type; Measuring Range - Not safety relevant;

J Standard/Class - Not safety relevant;

K Sensor Execution - Not safety relevant;

L Number of Measurement Points: 8 piece (2-20);

M Measurement Point Distribution - Not safety relevant;

N First Point Location LMP1 - Not safety relevant;

O Last Point Location LMPn - Not safety relevant;

P Cable Gland (Flexible Conduit Diameter):

A=M32(DN 29)

B=M40(DN 36)

C=M50(DN 48);

Q Extension Cable Material, Meas. Range: **D** MFA sheath, -200°C ~ +250°C;

R Flexible Conduit Cable Length **A**:

X.....inch(L+LE≤1968inch)

8.....mm (L+LE≤50000mm);

S Version According to TSP - Not safety relevant;

T Electrical Connection (transmitters) - Not safety relevant;

U Quantity Electrical Connection - Not safety relevant;

V Approval Type Transmitter/Components - Not safety relevant;

W Service - Not safety relevant;

X Test, Certificate, Declaration - Not safety relevant;

Y Additional Option - Not safety relevant;

Z Calibration/Evaluation - Not safety relevant;

ZA Calibration Points - Not safety relevant;

ZB Housing Material; Approval: (optional junction box) - Not safety relevant;

ZC Cable Output Terminal Housing (optional junction box) - Not safety relevant;

ZD Quantity Cable Output Terminal Housing - Not safety relevant;

ZE Marking - Not safety relevant.

2. 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, that is:

2.1 If the equipment is mounted between an area requiring EPL Ga and an area with EPL Gb, the TMS21 shall be installed in a way that process connection meets the requirements of GB 3836.20-2010.

2.2 For construction variants where the thickness of this wall is less than 1 mm, the user shall ensure that the equipment is not subject to environmental conditions that may adversely affect the partition wall.

2.3 The relationship between process temperature, ambient temperature, temperature class and maximum surface temperature is shown as follows:

Sensor Element/Type: K, J, N, E	Maximum allowed process temperature Tp (for thermowell)	Maximum allowed ambient temperature Ta (for main bushing)	Temperature class / Maximum surface temperature
	-50°C ~ +440°C	-50°C ~ +100°C	T1/T450°C
	-50°C ~ +290°C	-50°C ~ +100°C	T2/T300°C
	-50°C ~ +195°C	-50°C ~ +100°C	T3/T200°C
	-50°C ~ +130°C	-50°C ~ +100°C	T4/T135°C
	-50°C ~ +95°C	-50°C ~ +95°C	T5/T100°C
	-50°C ~ +80°C	-50°C ~ +80°C	T6/T85°C

It is installer responsibility to guarantee that the maximum ambient temperature at the installation point of main bushing, flexible conduit and glands meet the requirement of the above form. For ambient temperatures above +70°C, shall be used accessories with an operational temperature at least +5 K higher than the surrounding environment.

3. Conditions for Safe Use

3.1 Intrinsic safety electrical data:

For TMS21 the type of protection Ex ia IIC and Ex ia IIIC shall be connected from 2 up to 20 certified intrinsically safe circuits. Electrical parameters of each input circuit are the followings:

$U_i=9V$, $I_i=26mA$, $P_i=0.05W$, $L_i=0.5\mu H$, $C_i=10nF$.

3.2 The connection of TMS21 with a junction box shall not invalidate the type of protection of the latter and the junction box and its accessories shall be certified according to GB/T 3836 relevant standard series. The equipment and the final junction box shall be connected equipotentially to each other.

3.3 The sensors of the equipment are not isolated from the enclosure, therefore, the circuits shall be powered by intrinsically safe equipment galvanically isolated.

3.4 The user shall not change the configuration in order to maintain/ensure the explosion protection performance of this product. Any change may impair safety.

3.5 For installation, use and maintenance of this product, the end user should observe the instruction manual and the following standards:

GB/T 3836.13-2021 "Explosive atmospheres- Part 13:Equipment repair,overhaul,reclamation and modification".

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/T 3836.18-2017 "Explosive atmospheres- Part 18:Intrinsically safe electrical systems".

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

GB15577-2018 "Safety regulations for dust explosion prevention and protection".

4. Manufacturer's Responsibility

4.1 Conditions for safe use and special conditions for safe use, as specified above, should be included in the documentation the user is provided with.

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

Shanghai Inspection and Testing Institute of
Instruments and Automation Systems Co., Ltd.
National Supervision and Inspection Center for
Explosion Protection and Safety of Instrumentation

2022.07.05