



防爆合格证

证 号: GYJ25.1275X

制 造 商 恩德斯豪斯温度仪表(苏州)有限公司

(地址: 江苏省苏州市苏州工业园区江田里路 31 号)

产 品 名 称 过程测控仪/测控仪

型 号 规 格 RU48/FMA90 系列

防 爆 标 志 [Ex ia Ga] IIC, [Ex ia Da] IIIC

产 品 标 准 /

图 样 编 号 10000012801, 10000012802, 10000013482

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

特颁发此证。

本证书有效期: 2025 年 10 月 15 日至 2030 年 10 月 14 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 Endress+Hauser Wetzler GmbH+Co. KG (地址: Obere Wank 1, 87484 Nesselwang, Germany) 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 五 年 十 月 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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EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert No. GYJ25.1275X

Manufacturer	Endress+Hauser Wetzer(Suzhou)Co.,Ltd. (Address:No.31 Jiang-Tian-Li-Lu,Suzhou Industrial Park,Suzhou,Jiangsu Province)
Product	Process indicator/Control Unit
Model	RU48/FMA90 Series
Ex marking	[Ex ia Ga] IIC, [Ex ia Da] IIIC
Product standard	/
Drawing number	10000012801, 10000012802, 10000013482

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

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

Valid until: 2030.10.14

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:
- 3.Model designation is specified in the attachment(s) to this certificate.
- 4.Intrinsically safe parameters are 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 GmbH+Co. KG (address: Obere Wank 1,87484 Nesselwang,Germany).

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 2025.10.15

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

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(GYJ25.1275X)

(Attachment I)

GYJ25.1275X 防爆合格证附件 I

由恩德斯豪斯温度仪表(苏州)有限公司生产的RU48/FMA90系列过程测控仪/测控仪, 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

产品防爆标志[Ex ia Ga] IIC, [Ex ia Da] IIIC, 防爆合格证号 GYJ25.1275X。

本证书认可的型号规格如下:

RU48 – **aa b c d e f g h i** *****

FMA90 – **aa b c d e f g h i** *****

aa 认证代码:

NA=NEPSI [Ex ia Ga] IIC, [Ex ia Da] IIIC;

b 供电电源:

1= 100-230 VAC (额定) 或 85VAC – 253VAC (扩展),

2= 10.5-32 VDC;

c 应用包, 可为 1, 2, 与防爆性能无关;

d 外壳:

A= 导轨安装, Polycarbonate, IP20,

B= 面板安装, Polycarbonate, 前盖 IP65, 后盖 IP20, 96x96,

C= 现场安装, Polycarbonate, IP65 NEMA4x,

D= 现场安装, Aluminium, IP65 NEMA4x;

e 显示, 操作, 可为 1, 2, 3, 4, 与防爆性能无关;

f 传感器连接, 模拟输出:

1= 1x 4-20mA/HART 输入; 1x 4-20mA 输出,

2= 2x 4-20mA/HART 输入; 2x 4-20mA 输出;

g 继电器, 输出, 可为 1, 5, 与防爆性能无关;

h 数字输出; 开关输出, 可为 A, B, 与防爆性能无关;

i 通讯, 可为 A, B, C, D, 与防爆性能无关;

*代表与防爆性能无关选项, 详见产品使用说明书。

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、DIN/Panel versions应根据使用环境装配到防护等级不低于IP20的外壳中。
- 2、非金属外壳应配备与环境条件和防护等级要求相匹配的合适电缆引入装置。
- 3、产品使用环境温度与产品类别、外壳防护等级的关系如下:

产品类别	Panel Version	DIN Version	Field Unit (Polymeric housing)
使用环境温度范围	-35°C~+60°C	-40°C~+60°C	-35°C~+60°C
外壳防护等级	IP65 (正面)	IP20	IP65

二、产品使用注意事项

1、产品包含 1 块CPU板、1 块电源/继电器板、1 块总线板以及最多 2 块IO板。与 I.S 传感器的连接具有以下实体参数:

Analog Input circuit (Sensor connections) – Terminals 11, 12, 13 & 21, 22, 23(Optional)

$U_o = 27.3 \text{ Vdc}$, $I_o = 84.1 \text{ mA}$, $P_o = 574 \text{ mW}$, $C_i = 0$, $L_i = 0$

仅有电容或电感时的最大外部参数:

EPL	Lo	Co
Ex ia IIC	1.7mH	65nF
Ex ia IIB	25mH	551nF
Ex ia IIA	47mH	1790nF

注: 以上表格中最大外部电容 (Co) 和电感 (Lo) 数值使用时应注意下列要求:

- 对于仅含分布电感和电容的电路, 例如电缆的分布电容和电感, 允许的最大外部电容和电感数值为表格允许值;
- 当外部电路 (不包括电缆) 中含有最大为表格允许值1%以下的电感或表格容许值1%以下的电容时, 允许的最大外部电容和电感数值为表格允许值;
- 当外部电路 (不包括电缆) 的电感和电容均大于表格容许值的1%时, 允许的最大外

部电容和电感数值为表格允许值的50%。

外部电路（包括电缆）减少后的电容，对于ⅡA类和ⅡB类不应大于1 μF，对于ⅡC类不应大于600nF。

同时具有电容和电感的最大外部参数：

EPL	Lo	Co
Ex ia IIC	0.5mH	0.065 μ F
Ex ia IIB	2mH	0.390 μ F
Ex ia IIA	20mH	1.3 μ F

2、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。

3、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 3836.15-2024“爆炸性环境 第15部分：电气装置设计、选型、安装规范”、GB 3836.16-2024“爆炸性环境 第16部分：电气装置检查与维护规范”、GB/T3836.18-2024“爆炸性环境 第18部分：本质安全电气系统”及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”

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
二〇二五年十月十五日



(GYJ25.1275X)

(Attachment I)

Attachment I to GYJ25.1275X

1. Description

RU48/FMA90 Series Process indicator/Control Unit, manufactured by Endress+Hauser Wetzler(Suzhou)Co.,Ltd., has been certified 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”

The Ex marking is [Ex ia Ga] IIC, [Ex ia Da] IIIC, its certificate number is GYJ25.1275X.

Type approved in this certificate is:

RU48 – **a a b c d e f g h i** *****

FMA90 – **a a b c d e f g h i** *****

a a Approval code :

NA=NEPSI [Ex ia Ga] IIC, [Ex ia Da] IIIC ;

b Power Supply :

1= 100-230 VAC (Nominal) or 85VAC – 253VAC (extended),

2= 10.5-32 VDC;

c Application Package:1,2, not Ex-relevant;

d Housing:

A= DIN rail mounting, Polycarbonate, IP20,

B= Panel mounting, Polycarbonate, front IP65, rear side IP20,96x96,

C= Field mounting, Polycarbonate, IP65 NEMA4x,

D= Field mounting, Aluminium, IP65 NEMA4x;

e Display, Operating:1,2,3,4, not Ex-relevant;

f Sensor Connection, Analog Output:

1= 1x 4-20mA/HART input; 1x 4-20mA output,

2= 2x 4-20mA/HART input; 2x 4-20mA output;

g Relay, Output:1,5, not Ex-relevant;

h Digital Input; Switch Output:A,B, not Ex-relevant;

i Communication:A,B,C,D, not Ex-relevant;

*represents options are not Ex-relevant, refer to the instruction manual for the details.

2. Special Conditions for Safe Use

The suffix “X” placed after the certificate indicates that the product is subject to special conditions for safe use specified as follows:

2.1 The DIN/Panel versions shall be installed in a suitable enclosure (IP20 minimum) or higher based on the

environmental conditions of the end application and acceptable to the Authority having.

2.2 The non-metallic enclosure shall be fitted with suitable cable entry devices compatible with the environmental conditions and Ingress protection level required.

2.3 The relation between ambient temperature range and product category,IP rating:

product category	Panel Version	DIN Version	Field Unit (Polymeric housing)
ambient temperature range	-35℃ ~ +60℃	-40℃ ~ +60℃	-35℃ ~ +60℃
IP rating	IP65(front)	IP20	IP65

3. Conditions for Safe Use

3.1 The electronics assembly consists of 1 CPU board, 1 Power/relay board, 1 bus board, and up to 2 IO boards.

The connections to the I.S sensors have the following entity parameters:

Analog Input circuit (Sensor connections) – Terminals 11, 12, 13 & 21, 22, 23(Optional)

$U_o = 27.3 \text{ Vdc}$, $I_o = 84.1 \text{ mA}$, $P_o = 574 \text{ mW}$, $C_i = 0$, $L_i = 0$

Maximum connection values for single appearance:

EPL	Lo	Co
Ex ia IIC	1.7mH	65nF
Ex ia IIB	25mH	551nF
Ex ia IIA	47mH	1790nF

Note: When using the maximum external capacitance (Co) and inductance (Lo) values in the above table, the following requirements should be followed:

- For circuits consisting only of distributed inductors and capacitors, such as the distributed capacitance and inductance of cables, the maximum allowable values of external capacitance and inductance are those specified in the table.
- If the total L_i of the external circuit (excluding the cable) is $< 1\%$ of the L_o value or the total C_i of the external circuit (excluding the cable) is $< 1\%$ of the C_o value the maximum allowable values for external capacitance and inductance are those specified in the table.
- If the total L_i of the external circuit (excluding the cable) $\geq 1\%$ of the L_o value and the total C_i of the external circuit (excluding the cable) $\geq 1\%$ of the C_o value, the values of L_o and C_o given in above table shall be reduced to 50 %.

The reduced capacitance of the external circuit (including cable) shall not be greater than $1 \mu\text{F}$ for Groups IIA, and IIB and 600 nF for Group IIC.

Maximum combined values:

EPL	Lo	Co
Ex ia IIC	0.5mH	$0.065 \mu\text{F}$
Ex ia IIB	2mH	$0.390 \mu\text{F}$
Ex ia IIA	20mH	$1.3 \mu\text{F}$

3.2The user shall not change the configuration in order to maintain/ensure the explosion protection performance of the equipment. Any change may impair safety.

3.3 For installation, use and maintenance of the product, the end user shall observe the instruction manual and the following standards:

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

GB 3836.15-2024 "Explosive atmospheres-Part 15: Specification of electrical installations design, selection and erection".

GB 3836.16-2024 "Explosive atmospheres-Part 16: Specification of electrical installations inspection and maintenance".

GB/T 3836.18-2024 "Explosive atmospheres-Part 18: Intrinsically safe electrical systems".

GB 50257-2014 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".

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
2025.10.15