防爆合格证

证　号：GYJ21.1304X

制　造　商　恩德斯豪斯公司

(地址：Hauptstrasse 1, D-79689 Maulburg, Germany)

产品名称　导波雷达物位计

型号规格　Levelflex FMP5X 系列

防爆标志　见本证书附件

产品标准　/

图样编号　960009468-C, 960009212, 960009214-B, 960009217-B, 960009833, 960009222-A, 960009229-A, 960009227-A

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 3836.2-2021,GB/T 3836.3-2021,GB/T 3836.4-2021, GB/T 3836.31-2021

特颁发此证。

本证书有效期：2021 年 07 月 12 日 至 2026 年 07 月 11 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. 电气安全参数见本证书附件。
5. 本证书同时适用于其它制造地生产的同型号产品，见本证书附件。
6. [更改 1]：防爆标志、检测标准和型号规格代码更新。2023 年 11 月 20 日签发。

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 二〇二一 年 七 月 十二 日

本证书仅对与认可文件和样品一致的产品有效。

地址：上海市漕宝路103号　网址：www.nepsi.org.cn　电话：+86 21 64368180
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EXPLOSION PROTECTION
CERTIFICATE OF CONFORMITY

Cert No. GYJ21.1304X

Manufacturer	**Endress+Hauser SE+Co. KG** **(Address: Hauptstrasse 1, D-79689 Maulburg, Germany)**
Product	**Guided Radar Level Transmitter**
Model	**Levelflex FMP5X Series**
Ex marking	**Specified in the attachment**
Product standard	**/**
Drawing number	**960009468-C, 960009212, 960009214-B, 960009217-B, 960009833, 960009222-A, 960009229-A, 960009227-A**

The product was found to comply with the following standard(s):
GB/T 3836.1-2021,GB/T 3836.2-2021,GB/T 3836.3-2021,GB/T 3836.4-2021, GB/T 3836.31-2021

Valid until: 2026.07.11

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 to this certificate.
3.Model designation is specified in the attachment(s) to this certificate.
4.Safe parameters specified in the attachment(s) to this certificate.
5.This certificate is also applicable for the product with the same type manufactured by addtional manufacturing locations, specified in the attachment(s) to this certificate.
6..[Variation I]: Modified the Ex marking, Ex standards & model code. Issued on 2023.11.20.

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 2021.07.12

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

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GYJ21.1304X防爆合格证附件Ⅱ

由恩德斯豪斯公司生产的Levelflex aFMP5b-cc d e f g hh ii jjj**+#型导波雷达物位计，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 3836.2-2021 爆炸性环境 第2部分：由隔爆外壳“d”保护的设备
GB/T 3836.3-2021 爆炸性环境 第3部分：由本增安型“e”保护的设备
GB/T 3836.4-2021 爆炸性环境 第4部分：由本质安全型“i”保护的设备
GB/T 3836.31-2021爆炸性环境 第31部分: 由防粉尘点燃外壳“t”保护的设备
产品防爆标志如下，防爆合格证号GYJ21.1304X。
本证书认可的产品型号规格如下：
Levelflex aFMP5b-cc d e f g hh ii jjj**+#
其中：a表示型号，代码为空缺或O；
b表示探头型号，代码为0、1、2、3、4、5、6或7；
cc表示认证代码，代码为NA（Ex ia Ⅱ C T6...T1 Ga）
NB（Ex ia Ⅱ C T6...T1 Ga/Gb）
NC（Ex ia/db [ia Ga] Ⅱ C T6...T1 Ga/Gb）
NG（Ex ec Ⅱ C T6...T1 Gc）1)
NH（Ex ic Ⅱ C T6...T1 Gc）1)
N2（Ex ia Ⅱ C T6...T1 Ga/Gb Ex ia IIIC T85℃ Da/Db）
N3（Ex ia/db [ia Ga] Ⅱ C T6...T1 Ga/Gb
Ex ta/tb IIIC T85℃ Da/Db 1)）
d表示I/O接口，代码为A = 2-wire; 4~20mA HART
B = 2-wire; 4~20mA HART, PFS (status output)
C = 2-wire; 4~20mA HART + 4~20mA
E = 2-wire; Foundation fieldbus, PFS (status output)
G = 2-wire; Profibus PA, PFS (status output)
K = 4-wire; 90~253Vac, 4~20mA HART
L = 4-wire; 10.4~48Vdc, 4~20mA HART
e表示显示/操作，代码为A = 无显示
C、E = 内部显示
L、M、N = 外部显示
Y = 特殊要求（与防爆无关）
f表示外壳；
g表示电缆引入装置；
hh表示探头技术规格；

*ii*表示密封；

*jjj*表示过程连接；

**表示备选信息；

#表示附加信息。

详见产品使用说明书。

注[1]：当代码*e*=L、M或N时，防爆标志为

NG = Ex ec [ia Ga] Ⅱ C T6…T1 Gc （仅当*d* = B、C、E、G、K或L）

NH = Ex ic [ia Ga] Ⅱ C T6…T1 Gc （仅当*d* = B、C、E或G）

N3 = Ex ia/db [ia Ga] Ⅱ C T6…T1 Ga/Gb

Ex ta/tb [ia Da] ⅢC T85℃ Da/Db

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、涉及隔爆接合面的维修须联系产品制造商。

2、产品外壳塑料表面应采取措施以防产生静电火花危险。

3、铝合金外壳产品在设备保护级别要求EPL Ga场所使用时应防止由于冲击或摩擦引起的点燃危险。

二、产品使用注意事项

1、产品外壳设有接地端子，用户在安装使用时应可靠接地。

2、产品隔爆腔在使用维护时，应严格遵守“断电源后开盖”的原则。

3、隔爆型产品的接线腔电缆引入口须配用经防爆检验认可的、防爆标志为Ex db Ⅱ C Gb的电缆引入装置或封堵件。

4、产品电子外壳的使用环境温度为：-50℃～+80℃；

介质温度范围取决于产品探头的技术规格，不同型号产品的使用环境温度、介质温度、温度组别和最高表面温度T*的关系详见E＋H公司为产品所附的安全使用手册（XA文件），具体参见下列文件号：

防爆型式	I/O 接口	XA 文件号
Ex ia	A/B/C	XA00634F / XA02245F
	E/G	XA00640F / XA02253F
Ex ia/db [ia Ga]	A/B/C/K/L	XA00636F / XA02248F
	E/G	XA00642F / XA02256F
Ex ec/ Ex ic	A/B/C/K/L	XA00635F / XA02247F
	E/G	XA00641F / XA02255F
Ex ia IIC/ Ex ia IIIC	A/B/C	XA00638F / XA02251F
	E/G	XA00644F / XA02259F
Ex ia/db [ia Ga]/ Ex ta/tb	A/B/C/K/L	XA00639F / XA02252F
	E/G	XA00645F / XA02260F

5、电气参数：

5.1 本安型：

认可代码	I/O 接口		防爆型式	电气参数/最大值	
	代码	输出类型		电源/输出（端子1, 2）	电源/输出（端子3, 4）
NA, NB N2	A	4~20mA HART	Ex ia IIC/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 12nF L_i = 0mH	/
NH			Ex ic IIC	U_i = 35V, I_i = N/A [1] P_i = N/A, C_i = 12nF L_i = 0mH	/
NA, NB N2	B	4~20mA HART + PFS	Ex ia IIC/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 5nF L_i = 0mH	U_i = 30V, I_i = 300mA P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH
NH			Ex ic IIC	U_i = 35V, I_i = N/A [1] P_i = N/A, C_i = 5nF L_i = 0mH	U_i = 35V, I_i = N/A [1] P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH
NA, NB N2	C	4~20mA HART + 4~20mA	Ex ia IIC/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 30nF L_i = 0mH	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 30nF L_i = 0mH
NH			Ex ic IIC	U_i = 30V, I_i = N/A [1] P_i = N/A, C_i = 30nF L_i = 0mH	U_i = 30V, I_i = N/A [1] P_i = N/A, C_i = 30nF L_i = 0mH
NA, NB N2	G, E	Profibus PA + PFS Foundation Fieldbus + PFS	Ex ia IIC/ Ex ia IIIC	FISCO: U_i = 17.5V, I_i = 550mA P_i = 5.5W, C_i = 5nF, L_i = 10μH or U_i = 30V, I_i = 300mA, P_i = 1.2W C_i = 5nF, L_i = 10μH	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 6nF L_i = 0mH
NH			Ex ic IIC	FISCO: U_i = 17.5V, I_i = N/A [1] P_i = N/A, C_i = 5nF, L_i = 10μH or U_i = 32V, I_i = N/A [1] P_i = N/A, C_i = 5nF, L_i = 10μH	U_i = 35V, I_i = 300mA P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH

5.2 非本安型：

认可代码	I/O 接口		防爆型式	电气参数/最大值	
	代码	输出类型		电源/输出（端子1, 2）	电源/输出（端子3, 4）
NC, N3 N3 NG	A	4~20mA HART	Ex db IIC Ex ta/tb Ex ec IIC	U_N = 35V 4), I_{max} = 22mA P_N = 0.7W U_m = 250Vac	/
NC, N3 N3 NG	B	4~20mA HART + PFS	Ex db IIC Ex ta/tb Ex ec IIC	U_N = 35V 4), I_{max} = 22mA P_N = 0.7W U_m = 250Vac	U_N = 35V 4) P_N = 0.7W U_m = 250Vac
NC, N3 N3 NG	C	4~20mA HART + 4~20mA	Ex db IIC Ex ta/tb Ex ec IIC	U_N = 10.4~30V 4) I_{max} = 22mA P_N = 0.7W U_m = 250Vac	U_N = 10.4~30V 4) I_{max} = 22mA P_N = 0.7W U_m = 250Vac
NC, N3 N3 NG	G, E	Profibus PA + PFS Foundation Fieldbus + PFS	Ex db IIC Ex ta/tb Ex ec IIC	U_N = 9~32V 4) P_N = 880mW U_m = 250Vac	U_N = 10.4~35V 4) P_N = 0.7W/0.85W/1W 2) U_m = 250Vac
NC, N3 N3 NG	K	4-wire ac, 4~20mA HART	Ex db IIC Ex tb Ex ec IIC	90~253Vac 4) 50/60Hz U_m = 250Vac I_{max} = 160mA P_N = 1540mW	U_N = 22V 4) I_{max} = 22mA U_m = 250Vac
NC, N3 N3 NG	L	4-wire dc, 4~20mA HART	Ex db IIC Ex tb Ex ec IIC	10.4~48Vdc 4) U_m = 250Vac I_{max} = 300mA P_N = 1328mW	U_N = 22V 4) I_{max} = 22mA U_m = 250Vac

注：1) 电流输出控制，$I_N \leq 25mA$

2) P_i或P_N值不同，产品表面温度不同（参见第4条）

4) 参数包括了10%的电源波动

5.3 外部显示：

连接FHX50或其它经认证的本安显示仪表

U_o = 7.3V I_o = 157mA P_o = 362mW C_o = 388nF L_o = 149μH

$C_c \leq 125nF$ $L_c \leq 149\mu H$

当本安接口使用

U_o = 7.3V I_o = 327mA P_o = 800mW U_i = 7.3V C_i = 0nF L_i = 0mH

当非本安接口使用

U_N = 6.5V

5.4 外部设备接口：

当本安接口使用

U_o=7.3V I_o=100mA P_o=160mW U_i = 7.3V C_i=0nF L_i=0mH

当非本安接口使用

U_N = 6.5V

6、本安型产品（包括本质安全型粉尘产品）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爆炸性气体/粉尘环境。其系统接线必须同时遵守本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。产品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。

7、产品在粉尘环境使用维护时，应定期采取清洁措施，以防止表面积聚粉尘。

8、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。

9、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 3836.16-2022“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。

10、本证书附件同时适用于以下制造商生产的同型号产品：

Endress+Hauser (Suzhou) Automation Instrumentation Co., Ltd. (address: Su Hong Zhong Lu No.491, Suzhou-SIP, China)

Endress+Hauser (USA) Automation Instrumentation Inc. (address: 2340 Endress Place, Greenwood, Indiana 46143, USA)

Endress+Hauser (India) Automation Instrumentation Pvt. Ltd. (address: M-192, MIDC, Waluj, Aurangabad-431136, India)

Endress+Hauser (Brasil), Instrumentação e Automação Ltda., (Avenida Antonio Sesti, 600, Itatiba/SP, Brasil)

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、产品铭牌中应至少包括下列内容：

a) NEPSI认可标志（见防爆合格证书）

b) 产品防爆标志
c) 防爆合格证号
d) 使用环境温度
e）介质温度范围
f）产品电气参数

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

二〇二三年十一月二十日

注：本附件是对2021年7月12日签发的附件Ⅰ的更新。

Attachment Ⅱ to GYJ21.1304X
(translation)

1. Description

Level Transmitter typed Levelflex aFMP5b-cc d e f g hh ii jjj**+#, manufactured by Endress+Hauser SE+Co.KG, has been certified and accords with following standards:

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

GB/T 3836.2-2021 Explosive atmospheres-Part 2: Equipment protection by flameproof enclosure"d"

GB/T 3836.3-2021 Explosive atmospheres-Part 3: Equipment protection by increased safety "e"

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

GB/T 3836.31-2021 Explosive atmospheres- Part 31: Equipment dust ignition protection by enclosure "t"

The Ex marking is shown as following, its certificate number is GYJ21.1304X.

The order code of the approved product is detailed as below:

Levelflex aFMP5b-cc d e f g hh ii jjj**+#

a indicates product type, including blank or O;

b indicates probe type, including 0, 1, 2, 3, 4, 5, 6 or 7;

cc indicates NEPSI approval code, including NA (Ex ia Ⅱ C T6...T1 Ga)
NB (Ex ia Ⅱ C T6...T1 Ga/Gb)
NC (Ex ia/db [ia Ga] Ⅱ C T6...T1 Ga/Gb)
NG (Ex ec Ⅱ C T6...T1 Gc) 1)
NH (Ex ic Ⅱ C T6...T1 Gc) 1)
N2 (Ex ia Ⅱ C T6...T1 Ga/Gb Ex ia IIIC T85℃ Da/Db)
N3 (Ex ia/db [ia Ga] Ⅱ C T6...T1 Ga/Gb
Ex ta/tb IIIC T85℃ Da/Db 1))

d indicates I/O interface, including A = 2-wire; 4~20mA HART
B = 2-wire; 4~20mA HART, PFS (status output)
C = 2-wire; 4~20mA HART + 4~20mA
E = 2-wire; Foundation fieldbus, PFS (status output)
G = 2-wire; Profibus PA, PFS (status output)
K = 4-wire; 90~253Vac, 4~20mA HART
L = 4-wire; 10.4~48Vdc, 4~20mA HART

e indicates display, operation, including A = No display
C, E = Internal display
L, M, N = Provision for connection of external display
Y = Special version, not safety relevant

f indicates enclosure, any single number or letter;

g indicates cable gland, any single number or letter;
hh indicates probe specification, any double numbers or letters;
ii indicates seal, any double numbers or letters;
jjj indicates process connection, any triple numbers or letters;
** indicates option;
# indicates additional options.
For the details, see the instruction manual.
Note [1]: Marking is changed to the following when option *e* = L, M or N
NG = Ex ec [ia Ga] II C T6...T1 Gc (only when *d* = B, C, E, G, K or L)
NH = Ex ic [ia Ga] II C T6...T1 Gc (only when *d* = B, C, E or G)
N3 = Ex ia/db [ia Ga] II C T6...T1 Ga/Gb Ex ta/tb [ia Da] IIIC T85℃ Da/Db

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 For flameproof product, for information on the dimensions of the flameproof joints contact the manufacturer.
2.2 Avoid electrostatic charging of the plastic surface in case.
2.3 To avoid an ignition hazard due to mechanical impact or friction when the product with aluminum housing is installed at the area required as EPL Ga.

3. Conditions for Safe Use

3.1 The external earth connection facility shall be connected reliably.
3.2 When the product with type of protection flameproof, any maintenance shall be performed only when the warning "Do not open when energized" is observed.
3.3 When the product with type of protection flameproof, suitable certified cable glands or blanking plugs for unused holes with Ex marking "Ex db II C Gb" shall be used and correctly installed (for the terminal compartment).
3.4 Ambient temperature at the electronics enclosure: -50℃～+80℃;

The process temperature range, depending on the probe specifications and the relation between ambient temperature, process temperature and temperature class and maximum surface temperature T for the different models of this product is listed in the Safety Instructions, provided by E+H together with the equipment. Refer to the documents numbers:

Type of protection	I/O interface	XA drawing number
Ex ia	A/B/C	XA00634F / XA02245F
	E/G	XA00640F / XA02253F
Ex ia/db [ia Ga]	A/B/C/K/L	XA00636F / XA02248F
	E/G	XA00642F / XA02256F
Ex ec/ Ex ic	A/B/C/K/L	XA00635F / XA02247F
	E/G	XA00641F / XA02255F

Ex ia IIC/Ex ia IIIC	A/B/C	XA00638F / XA02251F
	E/G	XA00644F / XA02259F
Ex ia/db [ia Ga]/ Ex ta/tb	A/B/C/K/L	XA00639F / XA02252F
	E/G	XA00645F / XA02260F

3.5 Electric data:

3.5.1 Intrinsically safe versions

Approval code	I/O interface		Type of protection	Electrical data/maximum values	
	Code	Mode (functional)		Supply/output (terminals 1 and 2)	Supply/output (terminals 3 and 4)
NA, NB N2	A	4~20mA HART	Ex ia Ⅱ C/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 12nF L_i = 0mH	/
NH			Ex ic Ⅱ C	U_i = 35V, I_i = N/A [1] P_i = N/A, C_i = 12nF L_i = 0mH	/
NA, NB N2	B	4~20mA HART + PFS	Ex ia Ⅱ C/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 5nF L_i = 0mH	U_i = 30V, I_i = 300mA P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH
NH			Ex ic Ⅱ C	U_i = 35V, I_i = N/A [1] P_i = N/A, C_i = 5nF L_i = 0mH	U_i = 35V, I_i = N/A [1] P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH
NA, NB N2	C	4~20mA HART + 4~20mA	Ex ia Ⅱ C/ Ex ia IIIC	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 30nF L_i = 0mH	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 30nF L_i = 0mH
NH			Ex ic Ⅱ C	U_i = 30V, I_i = N/A [1] P_i = N/A, C_i = 30nF L_i = 0mH	U_i = 30V, I_i = N/A [1] P_i = N/A, C_i = 30nF L_i = 0mH

Approval code	I/O interface		Type of protection	Electrical data/maximum values	
	Code	Mode (functional)		Supply/output (terminals 1 and 2)	Supply/output (terminals 3 and 4)
NA, NB N2	G, E	Profibus PA+PFS Foundation Fieldbus +PFS	Ex ia Ⅱ C/ Ex ia IIIC	FISCO: U_i = 17.5V, I_i = 550mA P_i = 5.5W, C_i = 5nF, L_i = 10μH or U_i = 30V, I_i = 300mA, P_i = 1.2W C_i = 5nF, L_i = 10μH	U_i = 30V, I_i = 300mA P_i = 1W, C_i = 6nF L_i = 0mH
NH			Ex ic Ⅱ C	FISCO: U_i = 17.5V, I_i = N/A [1] P_i = N/A, C_i = 5nF, L_i = 10μH or U_i = 32V, I_i = N/A [1] P_i = N/A, C_i = 5nF, L_i = 10μH	U_i = 35V, I_i = 300mA P_i = 0.7W/0.85W/1W [2] C_i = 6nF L_i = 0mH

3.5.2 Non-intrinsically safe versions

Approval code	I/O interface		Type of protection	Electrical data/maximum values	
	Code	Mode (functional)		Supply/output (terminals 1 and 2)	Supply/output (terminals 3 and 4)
NC, N3	A	4~20mA HART	Ex db Ⅱ C	U_N = 35V [4], I_{max} = 22mA P_N = 0.7W U_m = 250Vac	/
N3			Ex ta/tb		
NG			Ex ec Ⅱ C		
NC, N3	B	4~20mA HART + PFS	Ex db Ⅱ C	U_N = 35V [4], I_{max} = 22mA P_N = 0.7W U_m = 250Vac	U_N = 35V [4] P_N = 0.7W U_m = 250Vac
N3			Ex ta/tb		
NG			Ex ec Ⅱ C		
NC, N3	C	4~20mA HART + 4~20mA	Ex db Ⅱ C	U_N = 10.4~30V [4] I_{max} = 22mA P_N = 0.7W U_m = 250Vac	U_N = 10.4~30V [4] I_{max} = 22mA P_N = 0.7W U_m = 250Vac
N3			Ex ta/tb		
NG			Ex ec Ⅱ C		
NC, N3	G, E	Profibus PA+PFS Foundation Fieldbus +PFS	Ex db Ⅱ C	U_N = 9~32V [4] P_N = 880mW U_m = 250Vac	U_N = 10.4~35V [4] P_N = 0.7W/0.85W/1W [2] U_m = 250Vac
N3			Ex ta/tb		
NG			Ex ec Ⅱ C		
NC, N3	K	4-wire ac, 4~20mA HART	Ex db Ⅱ C	90~253Vac [4] 50/60Hz U_m = 250Vac I_{max} = 160mA P_N = 1540mW	U_N = 22V [4] I_{max} = 22mA U_m = 250Vac
N3			Ex tb		
NG			Ex ec Ⅱ C		
NC, N3	L	4-wire dc, 4~20mA HART	Ex db Ⅱ C	10.4~48Vdc [4] U_m = 250Vac I_{max} = 300mA P_N = 1328mW	U_N = 22V [4] I_{max} = 22mA U_m = 250Vac
N3			Ex tb		
NG			Ex ec Ⅱ C		

Note:[1] Current controlled output, $I_N \leqslant 25mA$

[2] Different values of P_i or P_N resulting in different surface temperature values (refer to 3.4, thermal data)

[4] Specifies maximum value, which includes 10% safety margin for typical power line variations

3.5.3 External display connector

prepared for connection of FHX50 or any other suitable display in type of protection intrinsic safety

U_o = 7.3V I_o = 157mA P_o = 362mW C_o = 388nF L_o = 149 μH $C_c \leqslant 125nF$ $L_c \leqslant 149$ μH

if used as interface in type of protection intrinsic safety

U_o = 7.3V I_o = 327mA P_o = 800mW; U_i = 7.3V C_i = 0nF L_i = 0mH

if used as non-intrinsically safe interface

U_N = 6.5V

3.5.4 Service connector

if used as interface in type of protection intrinsic safety

U_o = 7.3V I_o = 100mA P_o = 160mW; U_i = 7.3V C_i = 0nF L_i = 0mH

if used as non-intrinsically safe interface

U_N = 6.5V

3.6 The product in type of protection intrinsic safety should be used in explosive gas atmospheres/combustible dust atmospheres together with approved associated apparatus, follow the instruction manual of this product and associated apparatus when connecting the wiring. Connect the wiring terminals correctly. Connecting cable between this product and associated apparatus should be insulated screen cable; connect the cable screen functionally to earth ground.

3.7 Clean the surface of this product termly when using in combustible dust atmosphere.

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

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

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

GB/T 3836.13-2021 "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 3836.16-2022 "Explosive atmospheres- Part 16:Electrical installations inspection and maintenance".

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

GB 15577-2018 "Safety regulations for dust explosion prevention and protection". (Only if installed in dust hazardous areas)

3.10 This attachment is also applicable for the product with the same type manufactured by following manufacturing locations:

Endress+Hauser (Suzhou) Automation Instrumentation Co., Ltd. (address: Su Hong Zhong Lu No.491, Suzhou-SIP, China)

Endress+Hauser (USA) Automation Instrumentation Inc. (address: 2340 Endress Place, Greenwood, Indiana 46143, USA)

Endress+Hauser (India) Automation Instrumentation Pvt. Ltd. (address: M-192, MIDC, Waluj, Aurangabad-431136, India)

Endress+Hauser (Brasil), Instrumentação e Automação Ltda., (Avenida Antonio Sesti, 600, Itatiba/SP, Brasil)

4. Manufacturer's Responsibility

4.1 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.

4.3 Nameplate should at least include these contents listed below:

1) NEPSI logo

2) Ex marking

3) certificate number

4) ambient temperature range

5) medium temperature range

6) Safety parameters

In case the nameplate does not provide enough space, information can be given in the manual, provided the nameplate shows a link to the appropriate documentation.

Shanghai Inspection and Testing Institute of
Instruments and Automation Systems Co., Ltd.
National Supervision and Inspection Center for
Explosion Protection and Safety of Instrumentation
2023.11.20

Note: This attachment is the amendment to the attachment Ⅰ issued on 2021.07.12.