



# 防爆合格证

证号: GYJ17.1366X

由 恩德斯+豪斯公司

制造的产品:

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

名称 罐旁指示仪

型号规格 NRF8x系列

防爆标志 Ex d [ia Ga] II C T6 Gb

产品标准 /

图样编号 960017490, 960017763

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 3836.4-2010、GB 3836.20-2010 标准, 特颁发此证。

本证书有效期: 2017年10月20日至2022年10月19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. 本证书同时适用于恩德斯豪斯(苏州)自动化仪表有限公司(地址: 苏州工业园区苏虹中路491号)生产的同型号产品。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期二〇一七年十月二十日



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.GYJ17.1366X

This is to certify that the product

**Tank Side Monitor**

manufactured by **Endress + Hauser GmbH + Co. KG**

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

which model is **NRF8x Series**

Ex marking **Ex d [ia Ga]IIC T6 Gb**

product standard /

drawing number **960017490, 960017763**

has been inspected and certified by NEPSI, and that it conforms to **GB 3836.1-2010,GB 3836.2-2010,GB 3836.4-2010,GB 3836.20-2010**

This Approval shall remain in force until **2022.10.19**

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

**Director**



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

Issued Date **2017.10.30**

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

(GYJ17.1366X)

(Attachment I)

## GYJ17.1366X防爆合格证附件 I

由恩德斯+豪斯公司生产的NRF8x系列罐旁指示仪，经国家级仪器仪表防爆安全监督检验站(NEPSI)检验，符合下列标准：

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

GB3836.4-2010 爆炸性环境 第4部分：由本质安全型“i”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级的的设备  
产品防爆标志为Ex d [ia Ga] II C T6 Gb，防爆合格证号为GYJ17.1366X。

本证书认可的产品具体型号规格如下：

NRF80-**a b c d e f g h i**+(options)

其中：**a** 表示防爆认证代码，可为NA；

**b** 表示端子类型，可为1、2或9；

**c** 表示电源，可为B或D；

**d** 表示初级输出，可为E1；

**e** 表示次级输出模拟量I/O，空缺（NRF80无此选项）；

**f** 表示次级输出数字量I/O，可为Y9；

**g** 表示外壳型式，可为AC或BC；

**h** 表示电缆口规格，可为A、B、E或F；

**i** 表示精度/重量/计量认证；

options表示附加信息，与安全性能无关。

NRF81-**a b c d e f g h i**+(options)

其中：**a** 表示防爆认证代码，可为NA；

**b** 表示端子类型，可为1、2或9；

**c** 表示电源，可为B或D；

**d** 表示初级输出，可为A1、B1、C1、E1、G1、H1或Y9；

**e** 表示次级输出模拟量I/O，可为A1、A2、B1、B2、C2、X0或Y9；

**f** 表示次级输出数字量I/O，可为A1、A2、A3、B1、B2、B3、E1、E2、

E3、X0或Y9；

**g** 表示外壳型式，可为AC或BC；

**h** 表示电缆口规格，可为A、B、E或F；

**i** 表示精度/重量/计量认证；

options表示附加信息，与安全性能无关。

具体含义详见产品规格说明书。



## 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，内容如下：

- 1、涉及隔爆接合面的维修须联系产品制造商。
- 2、当环境温度 $\geq 50^{\circ}\text{C}$ 时，应采用耐热 $\geq 85^{\circ}\text{C}$ 的连接电缆。
- 3、产品非金属表面、塑料标签、金属标牌应采取适当措施，以防产生静电火花危险。

## 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、产品的使用环境温度范围为 $-40^{\circ}\text{C}\sim+60^{\circ}\text{C}$ 。
- 3、产品电缆引入口须配用经防爆检验认可、符合GB3836.1-2010和GB3836.2-2010标准、防爆等级为Ex d II C Gb的电缆引入装置或封堵件；选用的电缆引入装置和封堵件应与产品的使用条件相适应。产品装配后，外壳防护等级应满足GB4208-2008规定的IP66/68。

### 4、产品电气参数：

#### 4.1 电源电压

85V~264V AC 或24V~62V AC/DC。

#### 4.2 本安参数

Module	4~20 mA HART	Remote display
TRC[10]	$U_o = 29\text{V}$ , $I_o = 110\text{mA}$ , $P_o = 700\text{mW}$ , $C_o = 65\text{nF}$ , $L_o = 2.9\text{mH}$	$U_o = 3.9\text{V}$ , $I_o = 500\text{mA}$ , $P_o = 230\text{mW}$ , $C_o = 99\mu\text{F}$ , $L_o = 140\mu\text{H}$

Module	24V & RTD	4~20 mA HART
TRC[20]	Terminals 4-5 (24V): $U_o = 29\text{V}$ , $I_o = 108\text{mA}$ , $P_o = 776\text{mW}$ , $C_o = 63\text{nF}$ , $L_o = 3.0\text{mH}$ Terminals 5-8 (RTD): $U_o = 29\text{V}$ , $I_o = 36\text{mA}$ , $P_o = 263\text{mW}$ , $C_o = 64\text{nF}$ , $L_o = 26\text{mH}$	Terminals 2-3 (Active): $U_o = 29\text{V}$ , $I_o = 106\text{mA}$ , $P_o = 760\text{mW}$ , $C_o = 63\text{nF}$ , $L_o = 3.1\text{mH}$ Terminals 1-2 (Passive): $U_i = 29\text{V}$ , $I_i = 106\text{mA}$ , $P_i = 760\text{mW}$ , $C_i = 11\text{nF}$ , $L_i = 0$

- 5、产品在现场使用和维护时必须遵守“断电源后开盖”的原则。

6、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。

7、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”、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）”、GB3836.18-2010“爆炸性环境 第18部分：本质安全系统”及GB50257-2014“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”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) 安全电气参数
  - f) “断电源后开盖”警告语

国家级仪器仪表防爆安全监督检验站

二〇一七年十月二十日



# 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

(GYJ17.1366X)

(Attachment I)

## Attachment I to GYJ17.1366X (translation)

### 1. Description

NRF8x series tank side monitor, manufactured by Endress+Hauser GmbH+Co.KG, has been certified by National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI). This type of product 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 enclosure"d"

GB3836.4-2010 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety"i"

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

The Ex marking is Ex d [Ia Ga] II C T6 Gb, its certificate number is GYJ17.1366X.

Type approved in this certificate is shown as following:

FMG80-**a b c d e f g h i**+(options)

**a** indicates NEPSI approval code, including NA;

**b** indicates terminal type, including 1, 2 or 9;

**c** indicates power supply, including B or D;

**d** indicates primary output, including E1;

**e** indicates secondary I/O analog, here blank (No option for NRF80);

**f** indicates secondary I/O digital Ex d, including Y9;

**g** indicates housing, including AC or BC;

**h** indicates electrical connection, including A, B, E or F;

**i** indicates accuracy/weight/measure approval;

options have no relevant for safety.

Refer to instruction manual for the details.

FMG81-**a b c d e f g h i**+(options)

**a** indicates NEPSI approval code, including NA;

**b** indicates terminal type, including 1, 2 or 9;

**c** indicates power supply, including B or D;

**d** indicates primary output, including A1, B1, C1, E1, G1, H1 or Y9;

**e** indicates secondary I/O analog, including A1, A2, B1, B2, C2, X0 or Y9;



**i** indicates secondary I/O digital Ex d, including A1, A2, A3, B1, B2, B3, E1, E2, E3, X0 or Y9;

**g** indicates housing, including AC or BC;

**h** indicates electrical connection, including A, B, E or F;

**j** indicates accuracy/weight/measure approval;

options have no relevant for safety.

Refer to instruction manual for the details.

### 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 information on the dimensions of the flameproof joints contact the manufacturer.

2.2 Use heat resisting cables rated  $\geq 85^{\circ}\text{C}$  for ambient temperature  $\geq 50^{\circ}\text{C}$ .

2.3 Precautions shall be taken to minimize the risk from electrostatic discharge of non-conductive coating, non-metallic labels and isolated metal tags applied to the enclosure.

### 3. Conditions for Safe Use

3.1 The external earth connection facility should be connected reliably.

3.2 The allowed ambient temperature range is  $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$ .

3.3 Suitable certified cable glands or blinding plugs for unused holes approved by ExTL according to GB3836.1-2010 and GB3836.2-2010 with Ex marking "Ex d II C Gb" shall be used and correctly installed; The cable glands and blinding plugs to be used shall suitable for the product working conditions. After installation, the degree of protection of enclosure should be IP66/68 according to GB4208-2008.

#### 3.4 Electrical data

##### 3.4.1 Power supply

85V - 264V AC or 24V - 62V AC/DC.

##### 3.4.2 Intrinsically safe outputs

Module	4~20 mA HART	Remote display
TRC[10]	Uo = 29V, Io = 110mA, Po = 700mW, Co = 65nF, Lo = 2.9mH	Uo = 3.9V, Io = 500mA, Po = 230mW, Co = 99μF, Lo = 140μH

Module	24V & RTD	4~20 mA HART
TRC[20]	Terminals 4-5 (24V): Uo = 29V, Io = 108mA, Po = 776mW, Co = 63nF, Lo = 3.0mH Terminals 5-8 (RTD): Uo = 29V, Io = 36mA, Po = 263mW, Co = 64nF, Lo = 26mH	Terminals 2-3 (Active): Uo = 29V, Io = 106mA, Po = 760mW, Co = 63nF, Lo = 3.1mH Terminals 1-2 (Passive): Ui = 29V, Ii = 106mA, Pi = 760mW, Ci = 11nF, Li = 0





3.5 Any maintenance shall be performed only when the warning of "Do not open while the circuit is alive" is observed.

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

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

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

GB3836.13-2013 "Explosive atmospheres- Part 13:Equipment repair, overhaul and reclamation".

GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres- Part 15:Electrical installations in hazardous area (other than mines)".

GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres- Part 16:Inspection and maintenance of electrical installation (other than mines)".


GB3836.18-2010 "Explosive atmospheres-Part 18: Intrinsically safe system".

#### 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) safety parameters
- 6) warning of "Do not open while the circuit is alive"

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

2017.10.20

