# 防爆合格证

证　号：GYJ20.1615

制　造　商　恩德斯豪斯公司

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

产品名称　限位信号转换器

型号规格　Nivotester FTW325 系列

防爆标志　[Ex ia Ga]ⅡC

产品标准　/

图样编号　960532-0000A

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：2020 年 12 月 02 日 至 2025 年 12 月 01 日

备注

1. 安全使用注意事项见本证书附件。
2. 型号规格说明见本证书附件。
3. 安全电气参数见本证书附件。
4. 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。
5. [更改 1]：产品名称、型号表述、检测标准更新。2023 年 1 月 31 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

颁发日期二〇二〇　年　十二　月　二　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. GYJ20.1615**

| | |
|---|---|
| **Manufacturer** | **Endress+Hauser SE+Co.KG** (Address: Hauptstrasse 1, D-79689 Maulburg, Germany) |
| **Product** | **Detection device** |
| **Model** | **Nivotester FTW325 series** |
| **Ex marking** | **[Ex ia Ga]IIC** |
| **Product standard** | **/** |
| **Drawing number** | **960532-0000A** |

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

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

**Valid until: 2025.12.01**

**Remarks**

1.Conditions for safe use are specified in the attachment(s) to this certificate.
2.Model designation is specified in the attachment(s) to this certificate.
3.Safety parameters specified in the attachment(s) to this certificate.
4.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)
5.[Variation I]: Product name, model description & Ex standards were changed. Issued on 2023.01.31.

**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 2020.12.02**

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

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# GYJ20.1615防爆合格证附件Ⅱ

由恩德斯豪斯公司生产的Nivotester FTW325系列限位信号转换器，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”保护的设备

产品防爆标志为[Ex ia Ga]ⅡC，防爆合格证号为GYJ20.1615。

本证书认可的产品型号规格如下：

Nivotester FTW325-12a1A+b

其中，a表示电源，可为A（85~253VAC）或B（20~30VAC/20~60VDC）；

b表示挂牌，可为1（Tagging）或者空白。

## 一、产品使用注意事项

1、产品只能安装在安全场所。

2、产品使用环境温度：-20℃~+60℃（独立安装）；-20℃~+50℃（并列安装）。

3、产品电气参数如下：

3.1 电源电路（端子1-2）

FTW325-12A1A+b 85~253VAC

FTW325-12B1A+b 20~30VAC

20~60VDC

$U_m$=253VAC

3.2 继电器电路（端子4-6和15-17）

| | | |
|---|---|---|
| 开关电压 | 250VAC | 40VDC |
| 开关电流 | 2A | 2A |
| 功率（cosφ≤0.7） | ≤500VA | ≤80W |

3.3 本安输出电路

最大传感器回路（端子9-7）：

$U_o$=13.8V $I_o$=9.3mA $P_o$=70mW $R_i$=3.3kΩ

最小传感器回路（端子8-7）：

$U_o$=13.8V $I_o$=6.2mA $P_o$=46mW $R_i$=4.9kΩ

传感器回路总和（端子8,9-7）：

$U_o$=13.8V $I_o$=15.5mA $P_o$=116mW

| Ex ia IIC | | Ex ia IIB | |
|---|---|---|---|
| $L_o$[mH] | $C_o$[nF] | $L_o$[mH] | $C_o$[μF] |
| 0 | 760 | 0 | 4.9 |
| 0.5 | 730 | 1 | 3 |
| 1 | 610 | 2 | 2.8 |
| 5 | 410 | 5 | 2.1 |
| 100 | 0 | 100 | 0 |

Master/Slave回路（端子10-7）：

$U_o$=12.9V $I_o$=6.2mA $P_o$=46mW $R_i$=4.9kΩ

连接另一模块的Master/Slave回路，总电流12.5mA

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”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”的有关规定。

## 二、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：

1）NEPSI认可标志 （见防爆合格证书）

2）产品防爆标志

3）防爆合格证号

4）环境温度范围

5）安全电气参数

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

二〇二三年一月三十一日

注：本附件是对2020年12月2日签发的附件Ⅰ的更新。

# Attachment Ⅱ to GYJ20.1615
# (translation)

## 1. Description

Detection device typed Nivotester FTW325, manufactured by Endres+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 3836.4-2021 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety"i"

The Ex marking is [Ex ia Ga] Ⅱ C, its certificate number is GYJ20.1615.

Type approved in this certificate is shown as below:

Nivotester FTW325-12*a*1A+*b*

*a* indicates power supply, including A (85~253VAC) ot B (20~30VAC/20~60VDC),

*b* indicates tagging, including 1 (Tagging) or blank.

## 2. Conditions for Safe Use

2.1 This product can only be installed at the safe area.

2.2 Ambient temperature range of this product:

-20℃~+60℃ (stand-alone mounting); -20℃~+50℃ (row mounting).

2.3 Electrical parameters:

2.3.1 Power supply circuit (terminals 1-2)

FTW325-12A1A+*b* 85~253VAC

FTW325-12B1A+*b* 20~30VAC

20~60VDC

Um＝253VAC

2.3.2 Relay circuits (terminals 4-6 and 15-17)

| | | |
|---|---|---|
| Rated voltage | 250VAC | 40VDC |
| Rated current | 2A | 2A |
| Rated power（cos Φ ≤0.7） | ≤500VA | ≤80W |

2.3.3 Intrinsically safe output circuits

Max. probe circuit (terminals 9-7)

Uo＝13.8V Io＝9.3mA Po＝70mW Ri＝3.3k Ω

Min. probe circuit (terminals 8-7)

Uo＝13.8V Io＝6.2mA Po＝46mW Ri＝4.9kΩ

Sum of max. probe and min. probe circuit (terminals 8, 9-7)

Uo＝13.8V Io＝15.5mA Po＝116mW

| Ex ia IIC | | Ex ia IIB | |
|---|---|---|---|
| $L_o$[mH] | $C_o$[nF] | $L_o$[mH] | $C_o$[μF] |
| 0 | 760 | 0 | 4.9 |
| 0.5 | 730 | 1 | 3 |
| 1 | 610 | 2 | 2.8 |
| 5 | 410 | 5 | 2.1 |
| 100 | 0 | 100 | 0 |

Master/Slave circuit (terminals 10-7)

Uo＝12.9V Io＝6.2mA Po＝46mW Ri＝4.9kΩ

For connection of a master/slave circuit of another module, sum of current 12.5mA

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

2.5 For installation, use and maintenance of this product, the end user shall 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 ,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".

## 3. Manufacturer's Responsibility

3.1 Conditions for safe use, as specified above, should be included in the documentation the user is provided with.

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

3.3 Any modification affecting the explosion protection performance as shown in the documentation approved by NEPSI should not be done, except after NEPSI's reapproval.

3.4 Nameplate should at least show the following

3.4.1 NEPSI logo Ex NEPSI

3.4.2 Ex marking

3.4.3 Certificate number

3.4.4 Ambient temperature range

3.4.5 Electric data

Shanghai Inspection and Testing Institute of
Instruments and Automation Systems Co., Ltd.
National Supervision and Inspection Center for
Explosion Protection and Safety of Instrumentation
2023.01.31

Note: This attachment is the amendment to the attachment Ⅰ issued on 2020.12.02.