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# EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert No. GYJ21.1327X

**Manufacturer** Festo SE & Co. KG  
(Address: Ruiter Strasse 82, 73734 Esslingen, Germany)

**Product** Solenoid Coil

**Model** VACN-N-K1-1-EX4-M、VACN-N-K1-16B-EX4-M、  
VACN-N-K1-3A-EX4-M、VACN-N-K1-1-10-EX4-M

**Ex marking** Ex mb IIC T6 Gb, Ex mb IIIC T80°C Db

**Product standard** /

**Drawing number** 108-030-0246

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

GB/T 3836.1-2021, GB/T 3836.9-2021

**Valid until:** 2026.05.25

**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. Safety parameters specified in the attachment(s) to this certificate.
4. [Variation I]: Update the Ex marking & standards; add product model designation. Issued on 2023.07.31.



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 2021.05.26

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

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# 防爆合格证

证 号: GYJ21.1327X

制 造 商 Festo SE & Co. KG

(地址: Ruiter Strasse 82, 73734 Esslingen, Germany)

产 品 名 称 电磁线圈

型 号 规 格 VACN-N-K1-1-EX4-M、VACN-N-K1-16B-EX4-M、  
VACN-N-K1-3A-EX4-M、VACN-N-K1-1-10-EX4-M

防 爆 标 志 Ex mb II C T6 Gb, Ex mb III C T80°C Db

产 品 标 准 /

图 样 编 号 108-030-0246

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 3836.9-2021

特颁发此证。

本证书有效期: 2021 年 05 月 26 日 至 2026 年 05 月 25 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. 安全电气参数见本证书附件。
4. [更改 I]: 防爆标志、检测标准更新; 扩展同一单元中产品型号。2023 年 7 月 31 日签发。



本证书仅对与认可文件和样品一致的产品有效。

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(GYJ21.1327X)

(Attachment II)

## GYJ21.1327X防爆合格证附件 II

由Festo SE & Co. KG生产的VACN-N-K1-1-EX4-M、VACN-N-K1-16B-EX4-M、VACN-N-K1-3A-EX4-M、VACN-N-K1-1-10-EX4-M型电磁线圈，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 3836.9-2021 爆炸性环境 第9部分：由浇封型“m”保护的设备

产品防爆标志Ex mb II C T6 Gb, Ex mbIIIC T80°C Db, 防爆合格证号GYJ21.1327X。

### 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、产品在危险区域安装使用时，需要在输入端串联额定电压高于或等于电磁线圈额定输入电压，分断能力至少为1500A的保险丝，同时该保险丝须安装在安全区。
- 2、产品供电为直流输入时，允许直流纹波电压和电流，最大不能超过额定值的20%。
- 3、产品使用环境温度：密集式安装：-20°C~+40°C  
单体式安装：-20°C~+50°C

### 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、产品电气参数如下：

|        |                                        |
|--------|----------------------------------------|
| 型号     | VACN-N-K1-1-EX4-M、VACN-N-K1-1-10-EX4-M |
| 电源类型   | 直流（DC）                                 |
| 额定电压   | 24V                                    |
| 额定电流   | 109mA                                  |
| 最大额定功率 | 2.5W                                   |

|        |                     |
|--------|---------------------|
| 型号     | VACN-N-K1-16B-EX4-M |
| 电源类型   | 交流（AC, 50~60Hz）     |
| 额定电压   | 110V                |
| 额定电流   | 22mA                |
| 最大额定功率 | 2.3W                |

|        |                    |
|--------|--------------------|
| 型号     | VACN-N-K1-3A-EX4-M |
| 电源类型   | 交流（AC, 50~60Hz）    |
| 额定电压   | 230V               |
| 额定电流   | 9mA                |
| 最大额定功率 | 2.3W               |



- 3、产品外壳防护等级至少为IP65 (GB/T 4208-2017)。
- 4、产品在现场使用和维护时必须遵守“断电源后开盖”的原则。
- 5、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。
- 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、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 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使用注意事项纳入产品使用说明书或相关技术文件中;
- 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) 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  
二〇二三年七月三十一日

注:本附件是对2021年5月26日签发的附件 I 的更新。



(GYJ21.1327X)

(Attachment II)

## Attachment II to GYJ21.1327X (translation)

### 1. Description

Solenoid Coil typed VACN-N-K1-1-EX4-M, VACN-N-K1-16B-EX4-M, VACN-N-K1-3A-EX4-M, VACN-N-K1-1-10-EX4-M, manufactured by Festo 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 3836.9-2021 Explosive atmospheres-Part 9: Equipment protection by encapsulation "i"

The Ex marking is Ex mb II C T6 Gb, Ex mbIIIC T80°C Db, its certificate number is GYJ21.1327X.

### 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 A fuse corresponding to the device's rating current (max.  $3 \times I_B$ , according to IEC/EN 60127-2) or, respectively, a motor protective switch with short circuit and thermal rapid release (corresponding to the rating current) has to be connected in series to each solenoid.

2.2 A maximum permissible ripple of 20% is valid for all magnets of direct-current design.

2.3 The ambient temperature range:

Group mounting:  $-20^{\circ}\text{C} \sim +40^{\circ}\text{C}$

Single mounting:  $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$

### 3. Conditions for Safe Use

3.1 The external earth connection facility should be connected reliably.

3.2 Electrical data:

|                           |                                        |
|---------------------------|----------------------------------------|
| Type designation          | VACN-N-K1-1-EX4-M、VACN-N-K1-1-10-EX4-M |
| Type of current           | direct current                         |
| Nominal voltage           | 24V                                    |
| Nominal current           | 109mA                                  |
| Steady-state active power | 2.5W                                   |

|                           |                               |
|---------------------------|-------------------------------|
| Type designation          | VACN-N-K1-16B-EX4-M           |
| Type of current           | alternating current (50~60Hz) |
| Nominal voltage           | 110V                          |
| Nominal current           | 22mA                          |
| Steady-state active power | 2.3W                          |



|                           |                               |
|---------------------------|-------------------------------|
| Type designation          | VACN-N-K1-3A-EX4-M            |
| Type of current           | alternating current (50~60Hz) |
| Nominal voltage           | 230V                          |
| Nominal current           | 9mA                           |
| Steady-state active power | 2.3W                          |

- 3.3 Degree of protection of this product is at least IP65 (according to GB/T 4208-2017).
- 3.4 Any maintenance shall be performed only when the warning of "Do not open when energized" is observed.
- 3.5 Clean the surface of this product termly when using in combustibile dust atmosphere.
- 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:
- 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 15577-2018 "Safety regulations for dust explosion prevention and protection". (Only if installed in dust hazardous areas).

#### 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) electrical 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  
2023.07.31

Note: This attachment is the amendment to the attachment I issued on 2021.05.26.