



SITIAs
Worldwide Access

防爆合格证

证 号: GYJ21.3324

制 造 商 恩德斯豪斯公司

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

产 品 名 称 固体音叉限位开关

型 号 规 格 Soliphant M FTM50/51/52 系列

防 爆 标 志 见本证书附件

产 品 标 准 /

图 样 编 号 960006804、960007566

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, GB/T 3836.31-2021

特颁发此证。

本证书有效期: 2021 年 10 月 20 日 至 2026 年 10 月 19 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. 电气安全参数见本证书附件。
 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 I]: 防爆标准、防爆标志更新。2022 年 6 月 22 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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SitiAs
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EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert No. GYJ21.3324

Manufacturer	Endress+Hauser SE + Co.KG (Address: Hauptstrasse 1, D-79689 Maulburg, Germany)
Product	Level Switch
Model	Soliphant M FTM50/51/52 series
Ex marking	Specified in the attachment
Product standard	/
Drawing number	960006804、960007566

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

GB/T 3836.1-2021,GB/T 3836.4-2021,GB/T 3836.31-2021

Valid until: 2026.10.19

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.Safe 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.[VariationI]:Update Ex standards, Ex marking. Signed on 2022.06.22.



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 2021.10.20

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

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(GYJ21.3324)

(Attachment II)

GYJ21.3324防爆合格证附件 II

由恩德斯豪斯公司生产的Soliphant M FTM50/51/52系列固体音叉限位开关，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

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

产品防爆标志见下述描述，防爆合格证号为GYJ21.3324。

本次认可的产品具体型号规格如下：

FTM50-**a bb c d e f g h i j****+ #

FTM51-**a bb c d e f g h i j****+ #

FTM52-**a bb c d e f g h i j****+ #

其中，**a**表示认证代码，可为8；

bb表示过程连接（任意两位数字或字母），与防爆无关；

c表示材质/接液表面（任意数字或字母），与防爆无关；

d表示总长度（任意数字或字母），与防爆无关；

e表示电子插件，可为1 (FEM51; 2-wire 19~253VAC),

2 (FEM52; 3-wire PNP 10~55VDC),

4 (FEM54; relay DPDT, 19~253VAC/55VDC),

5 (FEM55; 8/16mA, 11~35VDC);

f表示传感器类型（分离型电缆最长17m），可为

A（一体型），

D、E（电缆，分体型），

G、H（铠装电缆，分体型）；

g表示外壳，可为3（F17铝合金），

5（F13铝合金），

6（F27不锈钢），

7（F15不锈钢），

H（T13铝合金）；

h表示电缆口规格，可为2（M20），

3（½NPT），

4（G½），

7（¾NPT）；

i表示附加信息1，可为A（无选项），

G（玻璃视窗盖），

其它字母或数字（与防爆无关）；

■表示附加信息2（介质温度相关），可为
FTM 50/51: A (无选项),
C (EN10204-3.1 材质 (接液部件), 检验证明书),
D, E (介质温度≤150℃),
J, K (介质温度≤230℃),
F, H (介质温度≤280℃),
Y (介质温度≤300℃),
FTM 52: 无选项 (介质温度≤80℃)。
**+#表示备选信息和其他附加信息（与安全性能无关）。

一体型防爆标志 (**■**=A)

型号	代码	防爆标志	介质温度	环境温度
FTM50	■ =A, C, D, E	Ex ta/tbIIIC T160℃ Da/Db	-50℃~+150℃	-50℃~+60℃
FTM51	■ =F, H	Ex ta/tbIIIC T290℃ Da/Db	-50℃~+280℃	-50℃~+60℃
	■ =J, K	Ex ta/tbIIIC T240℃ Da/Db	-50℃~+230℃	-50℃~+60℃
	■ =Y	Ex ta/tbIIIC T310℃ Da/Db	-50℃~+300℃	-50℃~+60℃
FTM52	■ =A	Ex ta/tb [ia Da]IIIC T83℃ Da/Db	-40℃~+80℃	-40℃~+60℃

分体型外壳防爆标志 (**■**=D, E, G, H)

型号	防爆标志	环境温度
FTM50	Ex tb [ia Da]IIIC T83℃ Db	-50℃~+60℃
FTM51		
FTM52		

分体型传感器防爆标志 (**■**=D, E, G, H)

型号	代码	防爆标志	介质温度	环境温度
FTM50	■ =A, C, D, E	Ex iaIIIC T160℃ Da/Db	-50℃~+150℃	-50℃~+80℃
FTM51	■ =F, H	Ex iaIIIC T290℃ Da/Db Ex iaIIIC T ₂₀₀ 160℃ Da	-50℃~+280℃	-50℃~+80℃
	■ =J, K	Ex iaIIIC T240℃ Da/Db Ex iaIIIC T ₂₀₀ 240℃ Da	-50℃~+230℃	-50℃~+80℃
	■ =Y	Ex iaIIIC T310℃ Da/Db Ex iaIIIC T ₂₀₀ 310℃ Da	-50℃~+300℃	-50℃~+80℃
FTM52	■ =A	Ex iaIIIC T90℃ Da/Db Ex iaIIIC T ₂₀₀ 90℃ Da	-40℃~+80℃	-40℃~+80℃

一、产品使用注意事项

1、产品外壳设有接地端子，用户在使用时应可靠接地。

2、产品电气参数如下：

电子插件	电源	输出
FEM51	19~253VAC, 50/60Hz, max. 1W Um = 253VAC	max. 350mA
FEM52	10~55VDC, max. 0.86W Um = 253VAC	max. 350mA
FEM54	19~253VAC, 50/60Hz, max. 1.5W 19~55VDC, max. 1.5W Um = 253VAC	max. 6A
FEM55	11~35VDC, 8/16mA, max. 0.6W Um = 253VAC	8/16mA

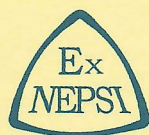
- 3、产品贴附的铭牌、带非导电涂层传感器的表面，应采取措施以防产生静电火花危险。
- 4、产品的电缆引入口须选用合适的电缆引入装置，冗余口须用封堵件进行封堵；安装后，产品外壳防护等级不得低于GB/T 4208-2017规定的IP6X。选用的连接电缆、电缆引入装置或封堵件应与产品工作条件相适应。
- 5、用户不得自行随意更换该产品的电气零部件，应会同产品制造商共同解决运行中出现的故障，以免影响防爆性能和损坏现象的发生。
- 6、产品的安装、使用和维护应同时遵守产品使用说明书、GB/T 3836.13-2021 “爆炸性环境 第13部分：设备的修理、检修、修复和改造”、GB/T 3836.15-2017 “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”、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。

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：
 - 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

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
二〇二二年六月二十二日

注：本附件是对2021年10月20日签发的附件 I 的更新。



(GYJ21.3324)

(Attachment II)

Attachment II to GYJ21.3324 (translation)

1. Description

Soliphant M FTM50/51/52 series Level Switch, 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 3836.4-2021 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 below, its certificate number is GYJ21.3324.

Type approved is as following:

FTM50-**a b b c d e f g h i j*****+#

FTM51-**a b b c d e f g h i j*****+#

FTM52-**a b b c d e f g h i j*****+#

a indicates approval type, including 8;

bb indicates process connection, any double number or letter with no Ex relevant;

c indicates material/ process connected surface, any single number or letter with no Ex relevant;

d indicates overall length, any single number or letter with no Ex relevant;

e indicates electronic insert, including 1 (FEM51; 2-wire 19~253VAC),
2 (FEM52; 3-wire PNP 10~55VDC),
4 (FEM54; relay DPDT, 19~253VAC/55VDC),
5 (FEM55; 8/16mA, 11~35VDC);

f indicates type of probe, different remote cable length (max. 17m),
including A (compact),

D, E (cable, separate enclosure),

G, H (cable, armoured, separate enclosure);

g indicates enclosure, including 3 (F17 Alu),

5 (F13 Alu),

6 (F27 SS),

7 (F15 SS),

H (T13 Alu);

h indicates cable entry, including 2 (M20), 3 (½NPT), 4 (G½) or 7 (¾NPT);

i indicates additional option 1, including A (option not selected),

G (glass window cover),

any single number or letter (not relevant for Ex performance);

I indicates additional option 2 (process temperature related),

FTM 50/51: A (not selected),

C (EN10204-3.1 material (wetted parts), inspection certificate),

D, E (process temperature $\leq 150^{\circ}\text{C}$),

J, K (process temperature $\leq 230^{\circ}\text{C}$),

F, H (process temperature $\leq 280^{\circ}\text{C}$),

Y (process temperature $\leq 300^{\circ}\text{C}$),

FTM 52: no additional options (process temperature $\leq 80^{\circ}\text{C}$).

**+# indicates options + additional options, not relevant for safety.

Marking on compact device (**I**=A)

type	order code	Ex marking	medium temperature	ambient temperature
FTM50	I =A, C, D, E	Ex ta/tb III C T160°C Da/Db	-50°C~+150°C	-50°C~+60°C
FTM51	I =F, H	Ex ta/tb III C T290°C Da/Db	-50°C~+280°C	-50°C~+60°C
	I =J, K	Ex ta/tb III C T240°C Da/Db	-50°C~+230°C	-50°C~+60°C
	I =Y	Ex ta/tb III C T310°C Da/Db	-50°C~+300°C	-50°C~+60°C
FTM52	I =A	Ex ta/tb [ia Da] III C T83°C Da/Db	-40°C~+80°C	-40°C~+60°C

Marking on remote enclosure (**I**=D, E, G, H)

type	Ex marking	ambient temperature
FTM50 FTM51 FTM52	Ex tb [ia Da] III C T83°C Db	-50°C~+60°C

Marking on remote probe (**I**=D, E, G, H)

type	order code	Ex marking	medium temperature	ambient temperature
FTM50 FTM51	I =A, C, D, E	Ex ia III C T160°C Da/Db Ex ia III C T ₂₀₀ 160°C Da	-50°C~+150°C	-50°C~+80°C
	I =F, H	Ex ia III C T290°C Da/Db Ex ia III C T ₂₀₀ 290°C Da	-50°C~+280°C	-50°C~+80°C
	I =J, K	Ex ia III C T240°C Da/Db Ex ia III C T ₂₀₀ 240°C Da	-50°C~+230°C	-50°C~+80°C
	I =Y	Ex ia III C T310°C Da/Db Ex ia III C T ₂₀₀ 310°C Da	-50°C~+300°C	-50°C~+80°C
FTM52	I =A	Ex ia III C T90°C Da/Db Ex ia III C T ₂₀₀ 90°C Da	-40°C~+80°C	-40°C~+80°C

2. Conditions for Safe Use

2.1 The external earth connection facility shall be connected reliably.

2.2 Electrical data:

Electronic insert	Power supply	Output
FEM51	19~253VAC, 50/60Hz, max. 1W Um = 253VAC	max. 350mA
FEM52	10~55VDC, max. 0.86W Um = 253VAC	max. 350mA
FEM54	19~253VAC, 50/60Hz, max. 1.5W 19~55VDC, max. 1.5W Um = 253VAC	max. 6A
FEM55	11~35VDC, 8/16mA, max. 0.6W Um = 253VAC	8/16mA

2.3 Electrostatic charging of the adhesive nameplates and on sensors provided with a non-conductive coating shall be avoided, see manufacturer instructions.

2.4 The device shall provide a degree of ingress protection of at least IP6X according to GB/T 4208-2017 after suitable cable gland and blind plug are correctly installed. The connection cable, cable glands and blanking plugs to be used shall be suitable for the product working conditions.

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

2.6 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".

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

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 Marking should show the following

3.3.1 NEPSI logo



3.3.2 Type of explosion protection

3.3.3 Certificate number

3.3.4 Ambient temperature range

3.3.5 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
2022.06.22

Note: This attachment is the amendment to the attachment I issued on 2021.10.20.