



## ES/EM 97 (V)

### 使用说明书 / 位置开关

### Instructions for use / Position switch



#### 中文

译自原版使用说明书

目标群体: 合格和授权人员。

#### 供货范围

个设备, 个执行器 (W型除外),  
使用说明书, 纸箱

#### 正确使用

该设备用于安全电路中, 用于根据EN ISO 14119 (EN 1088) 1型和EN 60947-5-1监控可移动保护设备的位置。确保正确的整体功能是设备或机器制造商的责任。请勿改建或更改设备。

#### 安装、组装和拆卸



#### 危险

带电部件可能导致电击。仅在断电时连接设备。仅在断电时断开设备的连接。

将设备安装在平坦的表面上。请勿将设备用作机械挡块。使用的位置是任意的。在安装过程中请确保即使发生故障也不能移动设备。保护设备免受未经授权的操作, 例如使用一次性安全螺钉。安装设备时, 请考虑EN ISO 14119, 特别是5.1至5.4的要求! 遵守标准EN ISO 12100和EN ISO 14120的指示以及CE Code (CSA C22.1) 或 NEC的要求。

#### 使用与操作



#### 小心

电气过载会加热设备表面。灼伤危险! 遵守许可的电气负载 (请参阅技术数据)。

#### 维护和修理

#### 提示

只允许专业人员维修有故障的设备。为此, 专业人员必须使用steute的原厂备件。否则, 设备可能会遭受无法弥补的功能损失。

按如下所示定期维护设备:

1. 检查执行器是否易于操作。
2. 去除污垢。
3. 检查电缆入口和连接。

#### 清洁



#### 小心

如果外壳盖损坏或未正确关闭, 带电部件可能会导致电击。确保盖子没有损坏且已正确关闭。



#### 小心

如果忽视防护等级, 带电部件可能会导致电击。清洁时请遵守防护等级。

- 用湿布清洁时: 使用水或温和的、非腐蚀性的、不易刮擦的清洁剂。
- 禁止使用有腐蚀性的清洁剂或溶剂。

#### 废弃产品的处理

- 遵守国家、地方和法律有关废弃产品处理的规定。
- 分别回收每种材料。

#### 生产日期

#### Production date

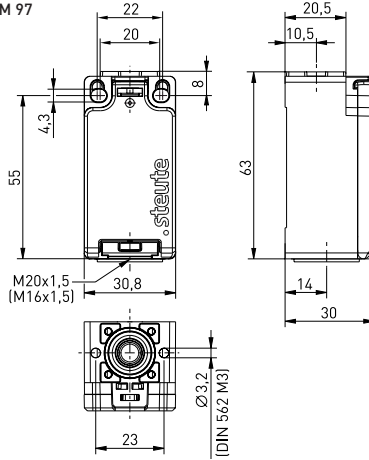
生产日期 3J5 => (日历周) 35 / 2024

Production date 3J5 => CW 35 / 2024

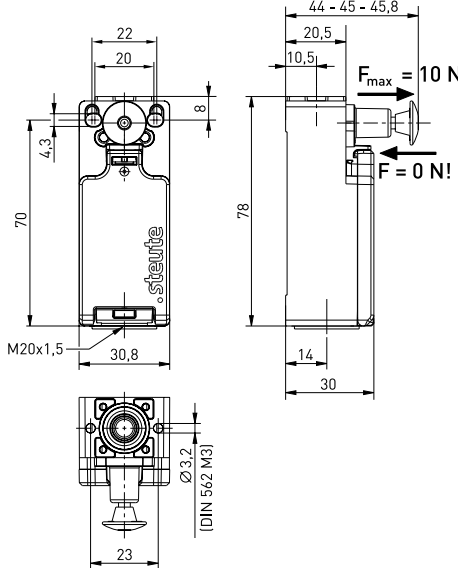
J	2024	K	2025	L	2026
M	2027	N	2028	O	2029

#### 外形尺寸 Dimensions

ES/EM 97

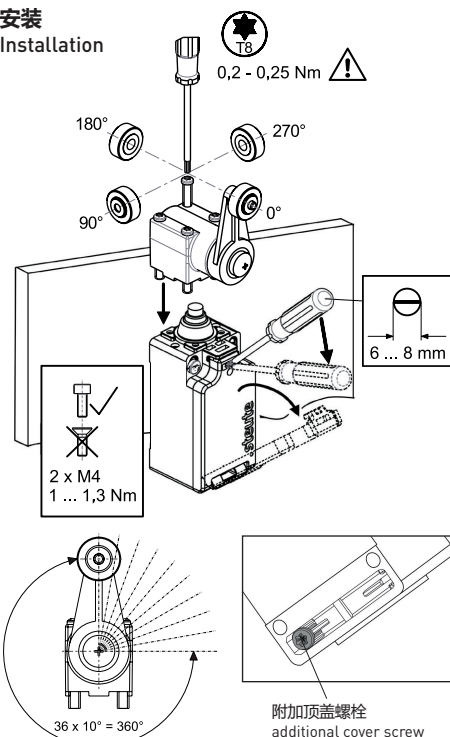


ES/EM 97 V



#### 安装

#### Installation



#### English

Translation of the original instructions for use.

Target group: qualified and authorized personnel.

#### Scope of delivery

Device, actuator (except version W),  
instructions for use, packaging.

#### Intended use

The device is used in safety circuits to monitor the position of mobile safety guards to EN ISO 14119 [EN 1088] type 1 and EN 60947-5-1. It is the responsibility of the manufacturer of a plant or machine to guarantee the correct general function. Neither reconstruct nor alter the device.

#### Installation, mounting and dismantling



#### DANGER

Live parts can lead to **electric shock**. Connect the device only when it is de-energized. Disconnect the device only when it is de-energized.

Install the device on an even surface. Do not use the device as a mechanical endstop. Any mounting position is possible. Ensure that the device cannot be moved from its position. Ensure this in case of failure, too. For protection against unauthorized manipulation, use e.g. one way safety screws. When installing the device, observe the requirements of EN ISO 14119, especially the sections 5.1 to 5.4! Observe the instructions in the standards EN ISO 12100 and EN ISO 14120 and, if applicable, the CE Code (CSA C22.1) or NEC requirements.

#### Application and operation



#### CAUTION

Electrical overload can heat the surface of the device. **Danger of burns!** Observe permissible electrical load [see technical data].

#### Maintenance and repair

#### NOTICE

Only qualified personnel may repair defective devices. The qualified personnel must use original spare parts from steute. Otherwise the device may suffer irreparable loss of function.

Service the device regularly as follows:

1. Check the actuator for easy operation.
2. Remove all dirt particles.
3. Check the sealing of the cable or conduit connections.

#### Cleaning



#### CAUTION

If the enclosure cover is damaged or not closed properly, live parts can cause an **electric shock**. Make sure that the cover is undamaged and correctly closed.



#### CAUTION

If the protection class is not observed, live parts can cause an **electric shock**. Observe the degree of protection when cleaning.

- In case of damp cleaning: use water or mild, non-scratching, non-chafing cleaners.
- Do not use aggressive cleaners or solvents.

#### Disposal

- Observe national, local and legal regulations concerning disposal.
- Recycle each material separately.



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#### 触点 Contacts

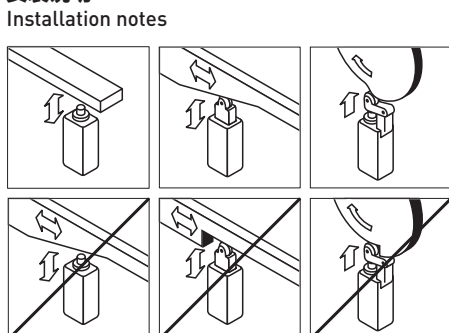
EM 97 ... -11	Zb	⊖	
ES 97 ... -11	Zb	⊖	
ES 97 ... -11U	Zb	⊖	
ES 97 ... -20	Zb	⊖	
ES 97 ... -02	Zb	⊖	
ES 97 ... -03 P		⊖	

#### 安装执行器 Installing the actuators

$V_{max} = 0,5 \text{ m/s}$

W	R	RL
$\alpha < 30^\circ$	$\alpha < 30^\circ$	$\alpha < 15^\circ$
WH, WHKR, WHKD, WHM, WHLM	WPH, WPHM	D
D50	DD, DF	DS
TK, TKK, TL	WHKM	SB

#### 安装说明 Installation notes



#### 中文

##### 技术数据

**应用标准**  
EN 60947-5-1; EN ISO 13849-1; EN ISO 14119 (对于⊖); V型: EN 60947-5-5

**机壳**  
热塑性塑料, 玻璃纤维增强的。防震。自熄灭 UL 94-V0

**开关类型**  
符合EN 14119的类型1 没有编码

**防护等级**  
IP66, IP67, IP69\*\* 符合 IEC/EN 60529

**切换系统**  
缓动 或瞬时作用

**连接类型**  
螺丝接线端子, 建议0.5 Nm, 最大0.8 Nm (7 lbs-in), Pozidriv 2

**连接横截面**  
0,34 ... 2,5 mm<sup>2</sup> (包括导体套圈)

**电缆入口**  
M20 x 1,5\*; (M16 x 1,5)\*

**B<sub>10d</sub> (10% 额定负载)**  
≤ 2000 万次, 具体取决于执行器

**T<sub>M</sub>**  
最长20年

**U<sub>imp</sub>**  
6 kV

**U<sub>i</sub>**  
500 V

**I<sub>the</sub>**  
10 A

**使用类别**  
AC-15; DC-13

**U<sub>e</sub>/I<sub>e</sub>**  
24 V-10 A/120 V-6 A/400 V-4 A DC; 24 V-6A/125 V-0,55 A/250 V-0,4 A

**最小电气负载:** 5 V/10 mA

**10 A gG/gL熔断器**

**1000 A**

**最大 1.800/h**

**≤ 1000 万次开闭周期, 具体取决于执行器**

**环境温度**  
-30 °C... +70 °C

**名称**  
UK C<sub>US</sub>

\* 仅用于电缆接头  
\*\* 按照要求

#### English

##### Technical data

**Applied standards**  
EN 60947-5-1; EN ISO 13849-1; EN ISO 14119 (for ⊖); type V: EN 60947-5-5

**Enclosure**  
thermoplastic, fibreglass-reinforced, shockproof, self-extinguishing UL 94-V0

**Switch type**  
no coding

**Coding level**  
type 1 to EN 14119

**Degree of protection**  
IP66, IP67, IP69\*\* to IEC/EN 60529

**Switching system**  
slow or snap action

**Connection**  
screw connection terminals, recommended 0.5 Nm, max. 0.8 Nm (7 lbs-in), Pozidriv 2

**Cable cross-section**  
0.34 ... 2.5 mm<sup>2</sup> (incl. conductor ferrules)

**Cable entry**  
M20 x 1.5\*; (M16 x 1.5)\*

**Cable entry B<sub>10d</sub> (10% nominal load)**  
≤ 20 million depending on actuator

**T<sub>M</sub>**  
max. 20 years

**U<sub>imp</sub>**  
6 kV

**U<sub>i</sub>**  
500 V

**I<sub>the</sub>**  
10 A

**Utilisation category**  
AC-15; DC-13

**U<sub>e</sub>/I<sub>e</sub>**  
AC: 24 V-10 A/120 V-6 A/400 V-4 A DC: 24 V-6A/125 V-0.55 A/250 V-0.4 A; Minimum electrical load: 5 V/10 mA

**Short-circuit protection**  
10 A gG/gL fuse

**Conditional short-circuit current**  
1,000 A

**Operation cycles**  
max. 1,800/h

**Mechanical life**  
≤ 10 million operations depending on actuator

**Ambient temperature Designation**  
-30°C... +70°C

UK C<sub>US</sub>

\* for cable glands only  
\*\* on request

#### Importer for United Kingdom

forTop Automation & Energy Control UK Ltd  
Malvern Hills Science Park  
Geraldine Road  
WR14 3SZ Malvern, Worcestershire  
United Kingdom  
www.4top.co.uk

#### 有关可用语言的信息

##### Information on available languages

- [bg] При поискване Вие ще получите тази асамблея, а също и връзката ръчно майчиния си език.
- [cs] Na požádání obdržíte tento návod na montáž a připojení také v jazyce vaší země.
- [da] På anmodning kan De også rekvirere denne montage- og tilslutningsvejledning på deres eget sprog.
- [de] Auf Anfrage erhalten Sie diese Betriebsanleitung auch in Ihrer Landessprache.
- [el] Εφόσον το ζητήσετε λαμβάνετε αυτές τις οδηγίες τοποθέτησης και σύνδεσης και στην γλώσσα της χώρας σας.
- [en] These instructions for use are also available in your national language on request.
- [es] Estas instrucciones de montaje y conexionado se pueden solicitar en su idioma.
- [et] Soovi korral on see installimis- ja ühendusjuhend saadaval ka teie riigikeeles.
- [fi] Pyydettäessä asennus- ja kytkentäohjeet on saatavana myös sinun omalla äidinkiellällä.
- [fr] La notice d'instruction est disponible sur demande, dans votre langue nationale.
- [ga] Arna iarraidh sin gheobhaidh tú na treoracha tionóil agus na treorach seo i do theanga féin.
- [hr] Na zahtjev ćete dobiti ova uputstva za montažu i priključenje i na svom jeziku.
- [hu] Egyeztetés után, kérésére, ezt a szerelési- és csatlakoztatási leírást, biztosítjuk az Ön anyanyelvén is.
- [it] Questa istruzione di collegamento e montaggio è inoltre disponibile nella vostra lingua su richiesta.
- [lt] Jei jums reikėtų šios įdiegimo ir pajungimo instrukcijos valstybine kalba, teiraukitės pardavėjo.
- [lv] Šo montāžas un pieslēgšanas instrukciju pēc pieprasījuma varat saņemt arī savas valsts valodā.
- [mt] Dan il-manwal dwar il-montaġġ u konnessjonijiet huwa disponibbli wkoll fil-lingwa tieghek.
- [nl] Op aanvraag kunt u deze montage- en installatiehandleiding ook in uw taal verkrijgen.
- [pl] Niniejsza instrukcja montażu i podłączenia jest dostępna na życzenie w języku polskim.
- [pt] Instruções de ligação e montagem podem ser disponibilizadas em outros idiomas também - consulte-nos.
- [ro] La cererea dumneavoastră, vă trimitem instrucțiunile de folosire și instrucțiunile de montaj și în limba română.
- [sk] Na vyžiadanie obdržíte tento návod na montáž a pripojenie takisto v jazyku vašej krajiny.
- [sl] Na zahtevo boste dobili ta navodila za montažo in priklop tudi v vašem domačem jeziku.
- [sv] Den här monterings- och elinstallation instruktionen finns även tillgänglig på ditt nationella språk efter förfrågan.
- [zh] 应要求也可提供您本国语言的使用说明书。

EU-KONFORMITÄTSERKÄR / EU DECLARATION OF CONFORMITY	
Art und Bezeichnung der Betriebsmittel / Type and name of equipment:	ES 97 ... / EM 97 ... position switch (with safety function) / position switch (with safety function)
Beschreibung des Betriebsmittels / Description of the component:	Positionsschalter (mit Sicherheitsfunktion) / position switch (with safety function)
Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart der genannten Richtlinie entsprechen. We hereby declare that the above mentioned electrical equipment conforms to the named directive.	
Relevante EG-Richtlinie / Relevant EC directive	Angewandte harmonisierte Normen / Applied harmonised standards
2006/42/EG Maschinenrichtlinie* / 2006/42/EC Machinery Directive*	EN 60947-5-1:2017; EN ISO 14119; EN 60947-5-5:1997+A1:2005+A11:2013+A2:2017
2014/35/EU Niederspannungsrichtlinie** / 2014/35/EU Low Voltage Directive**	EN 60947-5-1:2017
Weitere angewandte EU-Richtlinien / Additionally applied EU directives	Harmensierte Normen / Harmonised standards
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN 60947-1:2007+A1:2011+A2:2014 not applicable to EN 60947-1:2007+A1:2011+A2:2014
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018
*Geräte mit Zwangssöffnung ⊕	**Geräte ohne Zwangssöffnung
*Devices with a positive break ⊕	**Devices without a positive break
Verantwortlich technische Dokumentation / Responsible for technical documentation:	Rechtsverbindliche Unterschrift, James Zhang (Geschäftsführer) / Legally binding signature, James Zhang (Managing Director)
Shanghai, 11. Mai 2022 / 11 May, 2022	
Ort und Datum der Ausstellung / Place and date of issue	
steute Electrical Components (Shanghai) Co., Ltd. 245 XinJunhuan Road, Building D, Room 203, PuJiang Town, Minhang District, 201114 Shanghai, China	
UK DECLARATION OF CONFORMITY	
Type and name of equipment:	ES 97 ... / EM 97 ... position switch (with safety function)
Description of the component:	position switch (with safety function)
We hereby declare that the above mentioned electrical equipment conforms to the named directive.	
Relevant UK directive	Applied harmonised/designated standards
Supply of Machinery (Safety) Regulations 2008*	EN 60947-5-1:2017; EN ISO 14119; EN 60947-5-5:1997+A1:2005+A11:2013+A2:2017
Electrical Equipment (Safety) Regulations 2016**	EN 60947-5-1:2017
Additionally applied UK directives	Harmonised/designated standards
Electromagnetic Compatibility Regulations 2016	not applicable to EN 60947-1:2007+A1:2011+A2:2014
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	EN IEC 63000:2018
*Devices with a positive break ⊕	**Devices without a positive break
Responsible for technical documentation:	Legally binding signature, James Zhang (Managing Director)
Shanghai, 11 May, 2022	
Place and date of issue	
steute Electrical Components (Shanghai) Co., Ltd. 245 XinJunhuan Road, Building D, Room 203, PuJiang Town, Minhang District, 201114 Shanghai, China	