

Correct use

Position switches series NG are used for positioning and controlling machines and in industrial installations.

The built-in switching element with snap-action function has an NO and an NC contact with double gap and electrically isolated switching bridge (direct opening travel 2 x 0.6 mm).

Correct use includes compliance with the relevant requirements for installation and operation, in particular

- ▶ EN 60204-1
- ▶ EN ISO 12100

Incorrect use

Position switches with switching element ES510 (snap-action switching contact not positively driven) must not be used in safety circuits.

Mounting

- ⚠ Mounting must be performed only by authorized personnel.
- ⚠ The position switches must not be used as a mechanical end stop.

The actuator (arm) can be positively mounted to the actuating shaft.

The square drives on the actuator and actuating shaft must engage with each other (see Figure 2a). Continuously adjustable fastening is possible (interference fit, see Figure 2b).

To ensure correct operation, the trip dog must move the actuator at least 1 mm or 5° beyond the operating point (see Figure 5 Travel diagrams).

Position switches must be attached and, if necessary, protected in such a way that predictable damage can be avoided.

It must be ensured that position switches are accessible for maintenance and function tests.

Important!

- ▶ To prevent the actuating element from bouncing, the dog must run out gradually (see Figure 1).

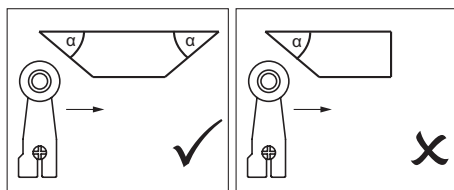


Figure 1: Dog shape

Adjustment options

Vertical actuator adjustment

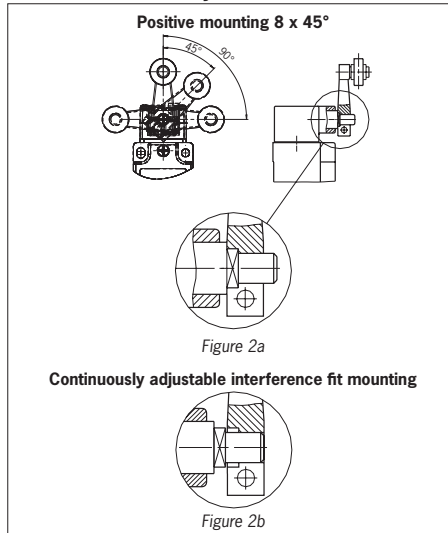


Figure 2: Vertical actuator adjustment

Horizontal adjustment 4 x 90°

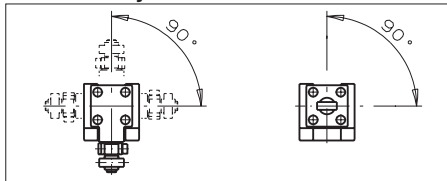


Figure 3: Horizontal adjustment

Changing the switching direction with lever arm actuation

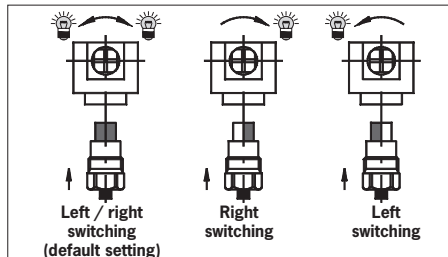


Figure 4: Changing the switching direction

Electrical connection

- ⚠ Electrical connection must be performed only by authorized personnel.
- ⚠ When choosing the insulation material and wire for the connections, pay attention to the over-temperature in the housing (depending on the operating conditions)!

▶ Version NG1... (cable entry)

- ▶ Fit cable gland M20x1.5 with appropriate degree of protection.
- ▶ Conductor cross-section 0.34 ... 1.5 mm².
- ▶ For terminal assignment, see Figure 10.
- ▶ Tighten screws for connections to the switching elements to 1 Nm.
- ▶ Check that the cable entry is sealed.
- ▶ Close switch cover and tighten screws to 1.2 Nm.

▶ Version NG2... (plug connector SR6)

- ▶ Conductor cross-section 0.5 ... 1.5 mm².
- ▶ For connector assignment, see Figure 10a.

▶ Version NG2... (plug connector M12/SVM5)

- ▶ Conductor cross-section 0.34 mm².
- ▶ For connector assignment, see Figure 10b.

Setup

Function test

- ▶ Actuate plunger or lever arm and check the switching function.

Inspection and service

No servicing is required.

Inspection of the following is necessary to ensure trouble-free long-term operation:

- ▶ correct switching function
- ▶ secure mounting of all components
- ▶ damage, heavy contamination, dirt and wear
- ▶ sealing of cable entry
- ▶ loose cable connections or plug connectors.

Info: The year of manufacture can be seen in the bottom, right corner of the type label.

Exclusion of liability and warranty

In case of failure to comply with the conditions for correct use stated above, or if the safety regulations are not followed, or if any servicing is not performed as required, liability will be excluded and the warranty void.

Notes about US

For NG2:

For use and applications as per the requirements of , a class 2 power supply or a class 2 transformer according to UL1310 or UL1585 must be used.

Connection cables for position switches installed at the place of use must be separated from all moving and permanently installed cables and un-insulated active elements of other parts of the system that operate at a voltage of over 150 V. A constant clearance of 50.8 mm must be maintained. This does not apply if the moving cables are equipped with suitable insulation materials that possess an identical or higher dielectric strength compared to the other relevant parts of the system.

For NG1:

For use and applications as per the requirements of , copper wire 60/75 °C is to be used.

EU declaration of conformity

The declaration of conformity is part of the operating instructions, and it is included as a separate sheet with the unit.

The original EU declaration of conformity can also be found at: www.euchner.com

Service

If servicing is required, please contact:

EUCHNER GmbH + Co. KG
Kohlhammerstraße 16
70771 Leinfelden-Echterdingen

Service telephone:

+49 711 7597-500

Fax:

+49 711 753316

E-mail:

support@euchner.de

Internet:

www.euchner.com

Technical data

Parameter	Value	
Housing material	Anodized die-cast alloy	
Degree of protection	NG1... cable entry NG2... plug connector SR6 NG2... plug connector M12/SVM5	
	IP67	IP65
Mech. life	30 x 10 ⁶ operating cycles	
Ambient temperature	-25 ... +80 °C	
Degree of contamination (external, according to EN 60947-1)	3 (industrial)	
Installation orientation	Any	
Approach speed, max. [m/min]	HB HS/SB/SM VB VS RK WO/KO/DO RG/RS/RL/FO 300 60 120 30 50 10 20	
Approach speed, min. [m/min]	HB/HS WO/KO/RS/RK/RL/DO FO/VB/VS/SB/SM 0.1 0.01 0.5	
Actuation frequency	7,000/h (HB/HS = 10,000/h; FO = 6,000/h)	
Actuating force at 20 °C	15 N	
Contact material	Silver alloy, gold flashed	
	NG1...	NG2...
Connection	Cable entry M20 x 1.5	Plug connector
Conductor cross-section (flexible/rigid)	0.34 ... 1.5 mm ² 0.34 ... 0.75 mm ² with LED indicator	SR6: 0.5 ... 1.5 mm ²
	NG1...M/NG2...SR6	NZ2...SVM5
Rated insulation voltage	U _i = 250 V	U _i = 50 V
Rated impulse withstand voltage	U _{imp} = 2.5 kV	U _{imp} = 1.5 kV
Conditional short-circuit current	100 A	
Operating voltage for optional LED indicator	L060 12 - 60 V AC/DC	L110 110 V AC ±15 % L220 230 V AC ±15 %
Rated data switching element	ES510	
Switching principle	Snap-action contact elements	
Utilization category acc. to EN 60947-5-1	Cable entry	Plug connector SR6¹⁾ Plug connector SVM5
AC-12	I _e 10 A U _e 230 V	-
AC-15	I _e 6 A U _e 230 V	I _e 6 A U _e 230 V I _e 4 A U _e 30 V
DC-13	I _e 6 A U _e 24 V	I _e 6 A U _e 24 V I _e 4 A U _e 24 V
Short circuit protection (control circuit fuse) acc. to IEC 60269-1 ¹⁾	See utilization category	6 A gG 4 A gG
Conventional thermal current I _{th} ¹⁾		6 A 4 A
Switching current, min. at switching voltage		10 mA DC 24 V
1) Limitation for NG2... at ambient temperature > 70 ... 80 °C		
		NG2...SR6
Utilization category acc. to EN 60947-5-1	AC-15 DC-13	I _e 2 A U _e 230 V I _e 2 A U _e 24 V
Short circuit protection (control circuit fuse) acc. to IEC 60269-1		2 A gG
Conventional thermal current I _{th}		2 A

