



Position switch ES 98 / EM 98

Features/Options:

- Metal enclosure
- Design to EN 50041
- ES 98: Slow action $\ominus$, change-over contact or 2 NC contacts or change-over contact with overlapping or 2 NC/1 NO contact or 1 NC/2 NO contact with double break
- EM 98: Snap action, 2 NC/1 NO contact or 1 NC/2 NO contact with double break
- Actuator can be repositioned by 4 x 90°
- Ex version available
- Version for low temperatures down to -40 °C with high degree of protection IP 66 available - see chapter [/ ES 98 / EM 98 -40°C IP66 Extreme >](#)
- Version for high temperatures up to +90 °C with high degree of protection IP 69K available - see chapter [/ ES 98 / EM 98 +90°C IP69K Extreme >](#)

Technical data

Standards	EN ISO 13849-1; EN 60947-5-1; EN ISO 14119
Enclosure	aluminium die-cast, powder-coated
Switch type	type 1
Coding level	no coding
Degree of protection	IP 67 to IEC/EN 60529
Contact material	silver
Switching system	slow or snap action, positive break NC contacts $\ominus$
Switching elements	change-over contact or 2 NC contacts or change-over contact with overlapping or 2 NC/1 NO contact or 1 NC/2 NO contact with double break Zb, galvanically separated contact bridges
Connection	screw connection terminals
Cable cross-section	2 contacts: max. 2.5 mm ² , 3 contacts: max. 1.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
B _{10d} (10 % Load)	2 million
T _M	max. 20 years
U _{imp}	4 kV
U _i	400 V
I _{the}	2 contacts: 6 A, 3 contacts: 1.5 A
I _e /U _e	2 contacts: 6 A/250 VAC; 0.25 A/230 VDC 3 contacts: 1.5 A/230 VAC; 0.27 A/250 VDC
Utilisation category	AC-15; DC-13
Max. fuse rating	2 contacts: 6 A gG/gN fuse, 3 contacts: 1.5 A gG/gN fuse



Position switch ES 98 / EM 98

Technical data

Mechanical life > 1 million operations

Operation cycles 1800/h

Ambient temperature -20 °C ... +80 °C

Approvals



Ordering details



Plunger

* with safety function

Type

ES 98-11
ES 98-02
ES 98-11U
ES 98-12
ES 98-21

EM 98-12
EM 98-21

Material no.

1188439
1309737
on request
1190283
1190284



Roller plunger R

* with safety function

Type

ES 98 R-11
ES 98 R-02
ES 98 R-11U
ES 98 R-12
ES 98 R-21

EM 98 R-12
EM 98 R-21

Material no.

1188445
1309801
on request
1190285
1190286



Roller lever H

* with safety function

Type

ES 98 H-11
ES 98 H-02
ES 98 H-11U
ES 98 H-12
ES 98 H-21

EM 98 H-12
EM 98 H-21

Material no.

1190317
1309890
on request
1190315
1190318

1190319
1190320



Position switch ES 98 / EM 98

Ordering details



Parallel roller lever PH

* with safety function

Type
ES 98 PH-11
ES 98 PH-02
ES 98 PH-11U
ES 98 PH-12
ES 98 PH-21

EM 98 PH-12
EM 98 PH-21

Material no.
1216263
1310021
on request
1307298
1309206

1316024
1316101



Rocking lever D

* with safety function

Type
ES 98 D-11
ES 98 D-02
ES 98 D-11U
ES 98 D-12
ES 98 D-21

EM 98 D-12
EM 98 D-21

Material no.
1189646
1310082
on request
1190288
1190289

1190311
1190312



Long rocking lever DL

* with safety function

Type
ES 98 DL-11
ES 98 DL-02
ES 98 DL-11U
ES 98 DL-12
ES 98 DL-21

EM 98 DL-12
EM 98 DL-21

Material no.
1189905
1311070
on request
1309396
1309332

1316641
1316726



Adjustable rocking lever DS

Type
ES 98 DS-11
ES 98 DS-02
ES 98 DS-11U
ES 98 DS-12
ES 98 DS-21

EM 98 DS-12
EM 98 DS-21

Material no.
1190290
1311195
on request
1190291
1190306

1190313
1190314



Position switch ES 98 / EM 98

Ordering details



Rod lever DD

Type
ES 98 DD-11
ES 98 DD-02
ES 98 DD-11U
ES 98 DD-12
ES 98 DD-21

Material no.
1216177
1311314
on request
1311378
1311458

EM 98 DD-12
EM 98 DD-21

1475538
on request



Spring rod with plastic tip TK

Type
ES 98 TK-11
ES 98 TK-02
ES 98 TK-12
ES 98 TK-21

Material no.
1190101
1311554
1221172
1309632

EM 98 TK-12
EM 98 TK-21

1218367
1311678