

Ex position switches with/without safety function

// Series Ex 97

Features/Options

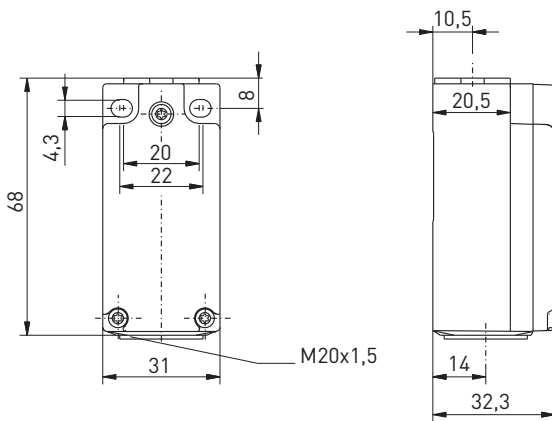
- Ex zone 1 and 21
- Thermoplastic enclosure
- Design according to EN 50047
- Wiring compartment
- Double insulated ☐
- Available with overlapping contacts
- Actuator heads can be repositioned in 4 x 90° steps
- Angle of offset roller lever can be adjusted in 10° steps
- With gold-plated contacts available on request
- Special version only for dust Ex zone 22 available

// EX 97



Technical data

Standards	EN 60947-5-1; EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-14, EN 60079-31; EN ISO 13849-1; EN ISO 14119
Enclosure	glass-fibre reinforced, shock-proof thermoplastic, self-extinguishing UL 94-V0 type 1
Switch type	no coding
Coding level	Type 8080/1 ...
Degree of protection	IP 67, IP 66 or IP 69 to IEC/EN 60529
Contact material	silver, nickel-plated
Switching system	slow or snap action, positive break NC contact ⊖
Switching elements	1 NC/1 NO, 2 NC or 1 NC/1 NO contact with contact overlapping, type Zb screw connection terminals
Connection	max. 1.5 mm ² (incl. conductor ferrules)
Cable section	1 x M20 x 1.5
B_{10d} (10 % load)	2 million
T_M	max. 20 years
I_e	max. 2 A or 4 A
U_e	max. 500 VAC, 2Ö: max. 400 VAC, max. 250 VAC for unequal potential
Utilisation category	AC-15
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	-60 °C ... +55 °C max. 4 A, +60 °C max. 2 A
Mechanical life	> 1 million operations
Impact energy	max. 7 J
Ex marking	⊕ II 2G Ex de IIC T5 Gb, II 2D Ex tb IIIC T80°C Db IP67 IECEx Ex de IIC T5 Gb, Ex tb IIIC T80°C Db
Approvals	DMT 01 ATEX E 118, IECEx BVS 14.0018X EAC, IEC, cULus



Type code

Ex 97 WH-11-60°C

Cold-resistant down to -60 °C
 Contact type 10/15, (-02, -11U)
 Actuator H (R, D, DS, etc. ...)
 Collar
 Series
 Ex certified component

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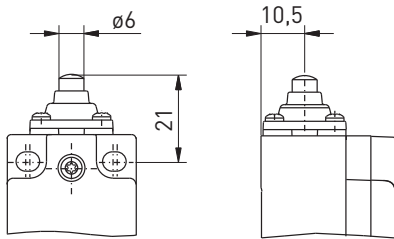
Features/Options

- Actuator type B to EN 50047
- Actuator with collar

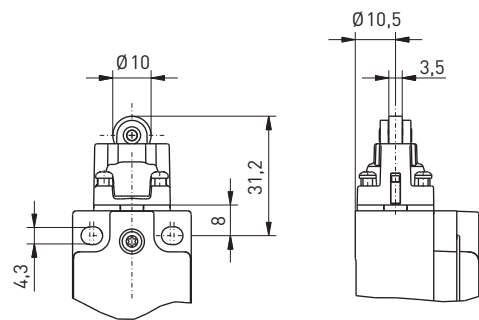
Features/Options

- Actuator type C to EN 50047
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps

// Plunger W



// Roller plunger R



Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 W-11 1430318 ✓ 	Ex ES 97 W-11 1292311 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 W-11U on request
2 NC contacts Material number		Ex ES 97 W-02 1430320

Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 95 R-11 1430872 ✓ 	Ex ES 97 R-11 1336578 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 R UE on request
2 NC contacts Material number		Ex ES 97 R 20 1430395



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Features/Options

- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps

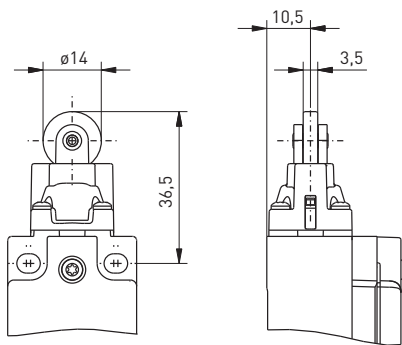
Features/Options

- Actuating speed 0.5 m/s with an actuating angle of a = 40° and b = 25°
- Actuator type E to EN 50047
- Actuator with collar
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps

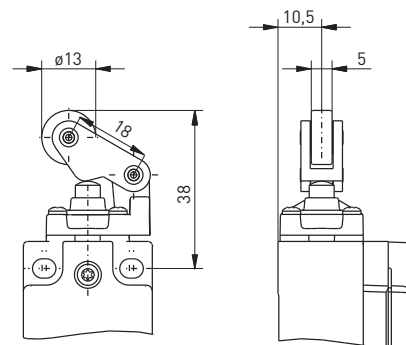
Note

Actuation from left should be avoided since this reduces the mechanical life of the position switch.

// Long roller plunger RL



// Roller lever with collar WH



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Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 RL-11 1431037	Ex ES 97 RL-11 1336619 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 RL-11U on request
2 NC contacts Material number		Ex ES 97 RL-02 1430443

Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 WH-11 1431110 ✓	Ex ES 97 WH-11 1336662 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 WH-11U on request
2 NC contacts Material number		Ex ES 97 WH-02 1430485

✓ in stock



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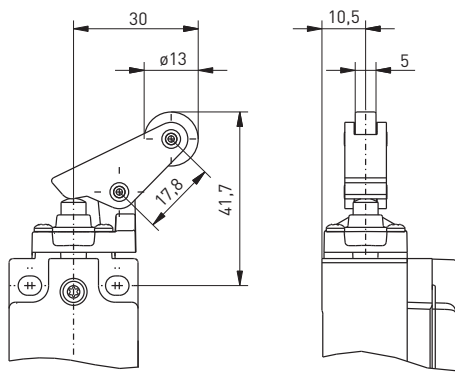
Features/Options

- Actuating speed 0.5 m/s with an actuating angle of $\alpha = 30^\circ$
- Actuation parallel to switch from below
- Actuator with collar
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps

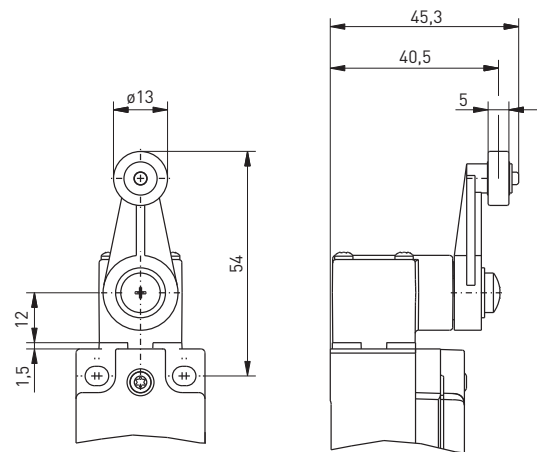
Features/Options

- Lever angle adjustable in 10° steps
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps

// Parallel roller lever with collar WPH



// Rocking lever D



Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 WPH-11 1431162	Ex ES 97 WPH-11 1336702 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 WPH-11U on request
2 NC contacts Material number		Ex ES 97 WPH-02 1430536

Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 D-11 1431213 ✓	Ex ES 97 D-11 1336746 ✓
1 NC/1 NO contact with overlapping Material number		Ex ES 97 D-11U on request
2 NC contacts Material number		Ex ES 97 D-02 1430584 ✓



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// Series Ex 97, actuators

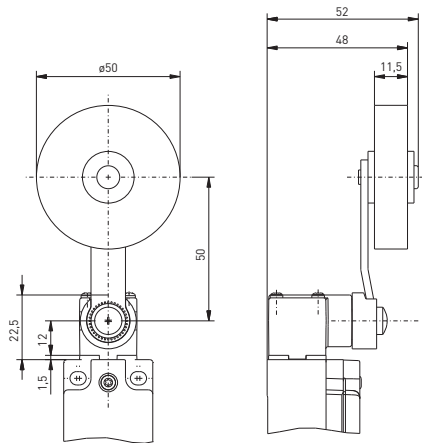
Features/Options

- Rubber roller
- Lever angle adjustable in 10° steps
- Actuator heads can be repositioned in 4 x 90° steps

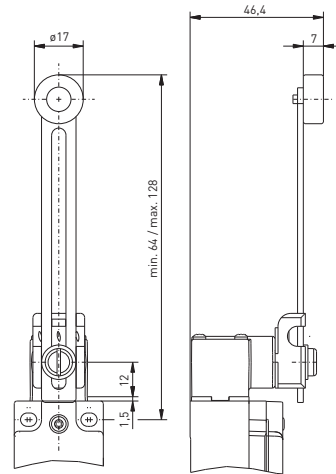
Features/Options

- No safety switch!
- Lever angle adjustable in 10° steps
- Length of roller lever adjustable
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned in 4 x 90° steps
- Metal roller available on request

// Roller lever with rubber roller D50



// Adjustable-length roller lever DS



Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 D50-11 1431266 65° 30° 0° 30° 65° 23-24 11-12 23-24 11-12 45,5° 11° 11° 45,5°	Ex ES 97 D50-11 1404832 65° 42° 0° 42° 65° 13-14 21-22 41° 29,5° 29,5° 41°
1 NC/1 NO contact with overlapping Material number		Ex ES 97 D50-11U on request 65° 29,5° 0° 29,5° 65° 13-14 21-22 53° 39,5° 39,5° 53°
2 NC contacts Material number		Ex 95 D 20 1430640 65° 42° 0° 42° 65° 11-12 21-22 28,5° 28,5°

Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 DS-11 1431346 ✓ 65° 30° 0° 30° 65° 23-24 11-12 23-24 11-12 11° 11°	Ex ES 97 DS-11 1336789 ✓ 65° 42° 0° 42° 65° 13-14 21-22 29,5° 29,5°
1 NC/1 NO contact overlapping Material number		Ex ES 97 DS-11U with on request 65° 29,5° 0° 29,5° 65° 13-14 21-22 39,5° 39,5°
2 NC contacts Material number		Ex ES 97 DS-02 1430692 ✓ 65° 0° 65° 11-12 21-22 28,5° 28,5°

✓ in stock



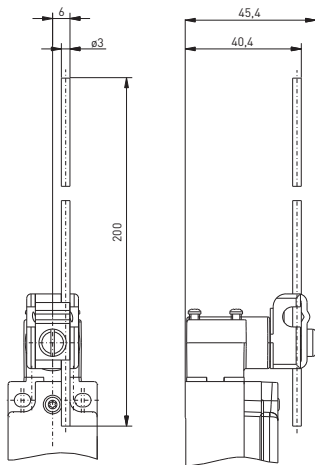
Features/Options

- No safety switch!
- Lever angle adjustable in 10° steps
- Actuator heads can be repositioned in 4 x 90° steps

Features/Options

- No safety switch!
- Wear-resistant thermoplastic rod
- Spring rod can be actuated from any direction

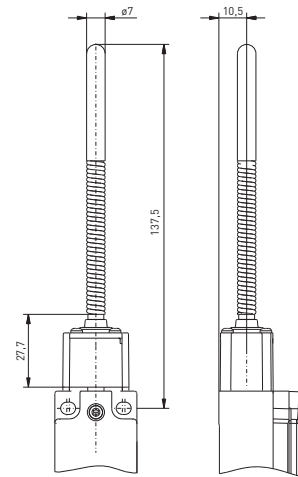
// Spring lever DD



Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 DD-11 1431494 ✓ 65° 30° 0° 30° 65° 23-24 11-12 23-24 11-12 11° 11°	Ex ES 97 DD-11 1336834 ✓ 65° 42° 0° 42° 65° 13-14 21-22 29,5° 29,5°
1 NC/1 NO contact with overlapping Material number		Ex ES 97 DD-11U on request 65° 29,5° 0° 29,5° 65° 13-14 21-22 39,5° 39,5°
2 NC contacts Material number		Ex ES 97 DD-02 1430751 65° 0° 65° 11-12 21-22 28,5° 28,5°

// Spring rod with plastic tip TK



Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 TK-11 1336295 ✓ 0 16 30 23-24 11-12 23-24 11-12 4,5	Ex ES 97 TK-11 1415038 ✓ 0 11,5 25 13-14 21-22 6
2 NC contacts Material number		Ex ES 97 TK-02 1430809 0 25 11-12 21-22 6



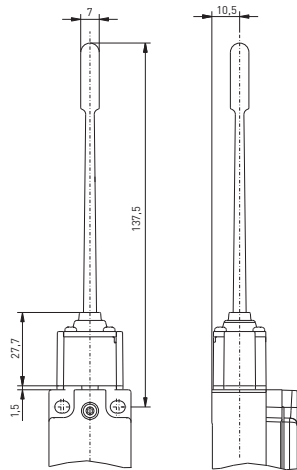
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Features/Options

- No safety switch!
- Wear-resistant thermoplastic rod
- Spring rod can be actuated from any direction
- Return of TKK spring rod actuator is restricted at temperatures < -20° C

// Plastic spring rod TKK



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Contact variants: switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact Material number	Ex EM 97 TKK-11 1450769 ✓ 	Ex ES 97 TKK-11 1451424
2 NC contacts Material number		Ex ES 97 TKK-02 on request

