

Position Switches

Series 8060



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11078E00

- > Enclosures of type of protection "Increased safety"
- > Dimensions and characteristic values according to EN 50047
- > Replaceable contact in flameproof enclosure
- > Positive opening contacts
- > Category 1 safety position switch with a variable system of actuators
- > All inserts may be displaced by 4 x 90°
- > Contacts with:
 - Snap-action contact
 - Slow-action contact
 - Make before break slow-action contact
- > Possible as version with unconnected cable end



E4

Position switches are used to monitor the position of moving parts of machines and systems. They can be used in safety circuits as the device satisfies the standard EN 60947-5-1 (VDE 0660 Part 200) and the normally closed contacts are positive opening contacts. The switching element and the actuating element of category 1 safety switches form a constructional and functional unit. As a result of the galvanic isolation of the moving contacts, the position switch is suitable for switching various potentials.








	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 8060A

Position Switches

Series 8060

Selection Table

Version	Actuator	Order number	Weight kg
 09387E00	Roller plunger Roller of moulded material	8060/1-.-RS	0.073
 09388E00	Roller lever plunger, form E Roller of moulded material	8060/1-.-AR	0.074
 09393E00	Angled roller lever Roller of moulded material	8060/1-.-WR	0.074
 09389E00	Swivelling roller lever, form A Roller of moulded material	8060/1-.-R	0.085
 09390E00	Adjustable roller lever Roller of moulded material Roller rod of stainless steel	8060/1-.-V	0.104
 09391E00	Actuating rod Rod of moulded material No positive opening, not suitable for safety circuits	8060/1-.-H	0.097
 09392E00	Spring-rod actuator Spring of stainless steel Only for use with snap-action contact! No positive opening, not suitable for safety circuits	8060/1-2-F	0.085

Order Number Supplement

Switching function	1 NC + 1 NO	Slow-action contact	8060/1-1-...
	2 NC	Slow-action contact	8060/1-3-...
	2 NO	Slow-action contact	8060/1-4-...
	1 NC + 1 NO	Slow-action contact, make before break	8060/1-5-...
	1 NC + 1 NO	Snap-action contact, with spring	8060/1-2-...
		Version with unconnected cable end	8060/1-.-.-.-K

Note The actuators enclosed are not mounted

Position Switches

Series 8060



Explosion Protection

Marking

IECEX	
Gas explosion protection	Ex de IIC T6
Dust explosion protection	Ex tD A21 IP65 T80°C
Europe (ATEX)	
Gas explosion protection	⊕ II 2 G Ex de IIC T6
Dust explosion protection	⊕ II 2 D Ex tD A21 IP65 T80°C

Certificates

IECEX	IECEX PTB 06.0091
Europe (ATEX)	
Gas explosion protection	PTB 01 ATEX 1052
Dust explosion protection	PTB 01 ATEX 1052
Other certificates	Canada (CSA), Kazakhstan (JSC), Russia (CTB), Belarus (Gospromnadzor), Ukraine (IECVE)

Technical Data

Electrical data

Rated operational voltage U_e	8060/1-1		8060/1-3	
	8060/1-2		8060/1-4	
Rated operational current I_e	max. 500 V		max. 400 V	
	max. 250 V		max. 250 V	
Switching capacity	max. 10 A		max. 10 A	
	max. 10 A		max. 10 A	
Rated insulation voltage	550 V		550 V	
	6 kV		6 kV	
Rated impulse withstand voltage	10 A gG		10 A gG	
	10 A gG		10 A gG	

Ambient conditions

Operating temperature range	- 20 ... + 50 °C (10 A) - 20 ... + 70 °C (6 A)
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Mechanical data

maximum switching frequency	max. 6000 operations/h
Degree of protection	IP65
Enclosure material	Polyamide, glass fibre reinforced, black
Mechanical shock resistance	Snap-action contact: 2 g Slow-action contact: 20 g

Mounting / Installation

Cable glands	8161/5-M20-13
Connection	at the bottom of the enclosure: 1 x M20 x 1.5
	With cable glands 8161: For plastic sheathed cable 4 x 2.5 mm ² (diameter 6 ... 13 mm); recommended 4 x 1.5 mm ²
Terminals	With mounted connecting cable: Plastic sheathed cable HK-SO-X05VV-F-OZ 4 x 1.5 mm, cable length 6 m
	1 x 2.5 mm ² or 2 x 1 mm ² , single-wire / finely-stranded
Tightening torque	Screw terminals: max. 0.4 Nm
	Cover screws: max. 0.7 Nm
	Connection thread: 2.3 Nm (M20 x 1.5)
	Pressure screw: 1.5 Nm (M20 x 1.5)

E4

Position Switches

Series 8060

Technical Data

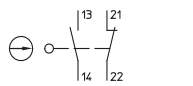
Contact

Version

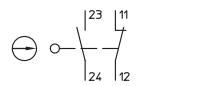
Slow-action contact

Snap-action contact

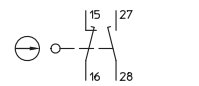
Slow-action contact, make before break



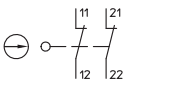
8060/1-1 08667E00



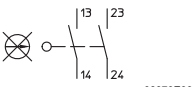
8060/1-2 08668E00



8060/1-5 08675E00



8060/1-3 08669E00



8060/1-4 08670E00

Attention:
The positive opening function \ominus depends on the actuator used

Contact arrangement

Contact opening

Contacts

Service life

mechanical

electrical

Enclosure contact

2-pole, galvanically isolated, with double break action
 ≥ 1.5 mm (isolating distance ≥ 3 mm)

Silver-nickel

max. 10^6 operations

max. 10^6 operations

Polyamide, glass fibre reinforced

Technical Data

Operation, operating speed, contact travel or angle

Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed \rightarrow = Direction of operation () = Connection for device with unconnected cable end</p>	<p>\ominus = Positive opening</p>	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p>	
Roller plunger 8060/1- . -RS	<p>08084E00</p> <p>Lateral operation: V = 1.0 m/s</p>	<p>07695E00 07696E00 07697E00 07698E00</p>	<p>In stroke direction</p> <p>8060/1-1: 07705E01</p> <p>8060/1-2: 07722E01</p> <p>8060/1-3: 07706E01</p> <p>8060/1-4: 07707E01</p>	14 N

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Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed → = Direction of operation () = Connection of device with unconnected cable end</p> <p>Operation in stroke direction: V = 1.0 m/s</p>	<p>⊕ = Positive opening</p>	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p> <p>8060/1-5: </p>	
Roller lever plunger, form E 8060/1- . -AR			<p>Movement of the roller in stroke direction of the plunger after plunger starts moving</p> <p>8060/1-1: </p> <p>8060/1-2: </p> <p>8060/1-3: </p>	12 N
Roller lever plunger, form E 8060/1- . -AR	V = 1.0 m/s		<p>Movement of the roller in stroke direction of the plunger after plunger starts moving</p> <p>8060/1-4: </p> <p>8060/1-5: </p>	12 N
Angled roller lever 8060/1- . -WR			<p>Movement of the roller vertically to stroke direction of the plunger after plunger starts moving</p>	12 N

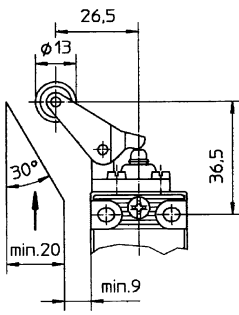
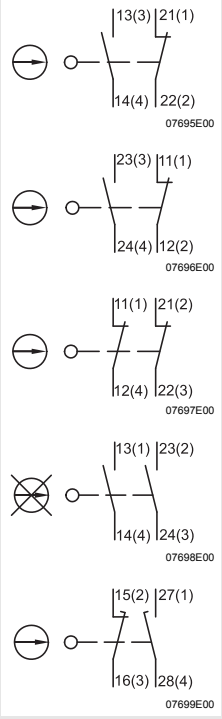
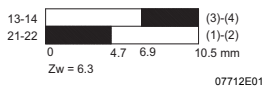
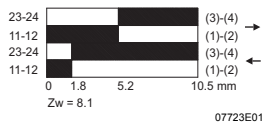
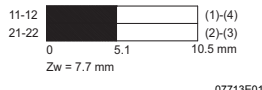
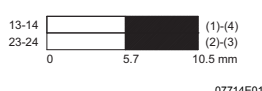
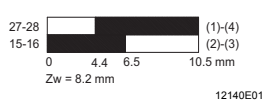
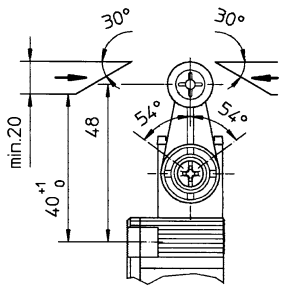
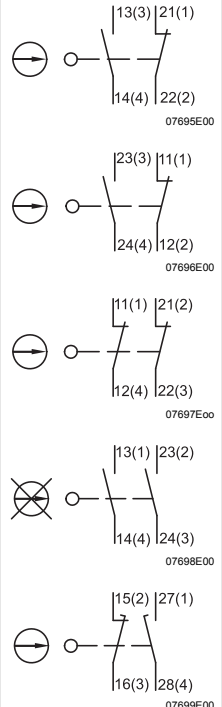
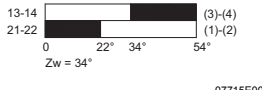
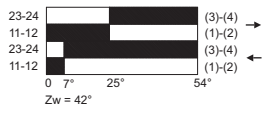
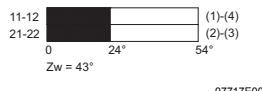
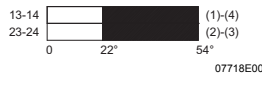
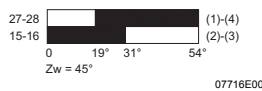
E4

Position Switches

Series 8060

Technical Data

Operation, operating speed, contact travel or angle

Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end</p>	<p>⊕ = Positive opening</p>	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p>	
	 <p>V = 1.0 m/s</p>		<p>8060/1-1:</p>  <p>8060/1-2:</p>  <p>8060/1-3:</p>  <p>8060/1-4:</p>  <p>8060/1-5:</p> 	
Swivelling roller lever, form A 8060/1- . -R	 <p>V = 1.5 m/s</p>		<p>8060/1-1:</p>  <p>8060/1-2:</p>  <p>8060/1-3:</p>  <p>8060/1-4:</p>  <p>8060/1-5:</p> 	0.3 Nm

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Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end</p>	<p>⊕ = Positive opening</p>	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p>	
Adjustable roller lever 8060/1- . -V	<p>V = 1.5 m/s</p>		<p>8060/1-1: 13-14 (3)-(4), 21-22 (1)-(2), Zw = 34° (0, 22°, 34°, 54°) 07715E00</p> <p>8060/1-2: 23-24 (3)-(4), 11-12 (1)-(2), 23-24 (3)-(4), 11-12 (1)-(2), Zw = 42° (0, 7°, 25°, 54°) 07725E00</p> <p>8060/1-3: 11-12 (1)-(4), 21-22 (2)-(3), Zw = 43° (0, 24°, 54°) 07717E00</p> <p>8060/1-4: 13-14 (1)-(4), 23-24 (2)-(3), Zw = 44° (0, 22°, 54°) 07718E00</p> <p>8060/1-5: 27-28 (1)-(4), 15-16 (2)-(3), Zw = 45° (0, 19°, 31°, 54°) 07716E00</p>	0.3 Nm
Actuating rod 8060/1- . -H	<p>V = 1.5 m/s</p>		<p>8060/1-1: 13-14 (3)-(4), 21-22 (1)-(2), Zw = 34° (0, 22°, 34°, 54°) 07719E00</p> <p>8060/1-2: 23-24 (3)-(4), 11-12 (1)-(2), 23-24 (3)-(4), 11-12 (1)-(2), Zw = 42° (0, 7°, 25°, 54°) 07726E00</p> <p>8060/1-3: 11-12 (1)-(4), 21-22 (2)-(3), Zw = 43° (0, 25°, 54°) 07721E00</p> <p>8060/1-4: 13-14 (1)-(4), 23-24 (2)-(3), Zw = 44° (0, 22°, 54°) 07718E00</p> <p>8060/1-5: 27-28 (1)-(4), 15-16 (2)-(3), Zw = 45° (0, 19°, 31°, 54°) 07720E00</p>	0.3 Nm

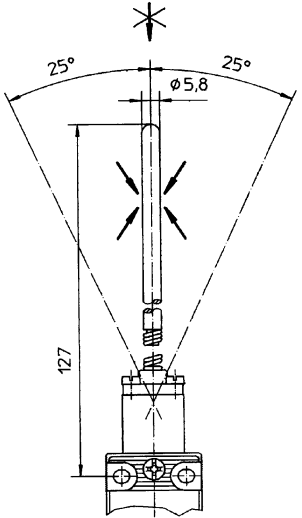
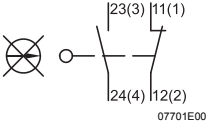
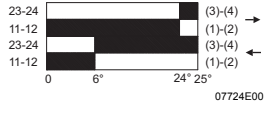
E4

Position Switches





Series 8060

Technical Data

Operation, operating speed, contact travel or angle

Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end</p>	⊖ = Positive opening	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p>	
	No positive opening, not suitable for safety circuits			
Spring-rod actuator 8060/1-2-F	 <p>No positive opening, not suitable for safety circuits</p>	 <p>07701E00</p>	<p>Only for use with snap-action contact!</p> <p>8060/1-2:</p>  <p>07724E00</p>	--

Accessories and Spare Parts

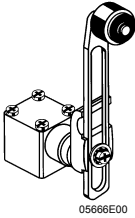
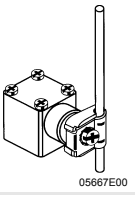
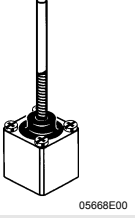

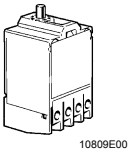
Designation	Illustration	Description	Order number	Weight kg	
Actuator	 05663E00	Roller plunger	8060/1-0-RS	131254	0.019
	 05664E00	Roller lever plunger, form E	8060/1-0-AR	131257	0.020
	 05669E00	Angled roller lever	8060/1-0-WR	131272	0.021
	 05665E00	Swivelling roller lever, form A	8060/1-0-R	131260	0.034

Position Switches

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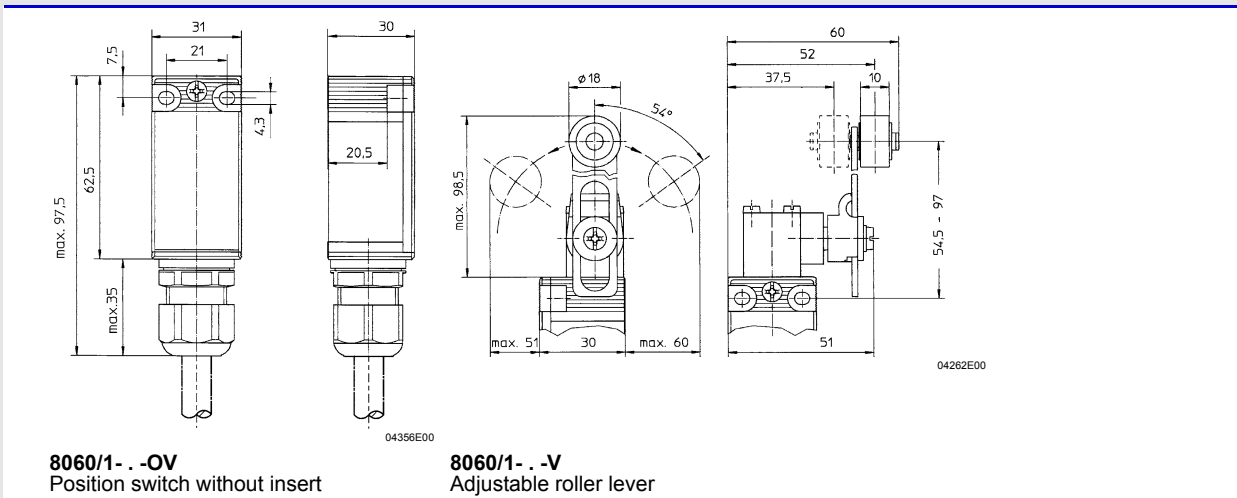


Accessories and Spare Parts

Designation	Illustration	Description	Order number	Weight kg		
Actuator	 05666E00	Adjustable roller lever	8060/1-0-V	131263	0.052	
	 05667E00	Actuating rod	8060/1-0-H	131266	0.045	
	 05668E00	Spring-rod actuator Only for use with snap-action contact!	8060/1-0-F	131269	0.034	
Cable gland	 05864E00	8161/5-M20-13	1 piece	138518	0.012	
Contact	 10809E00	1 NC + 1 NO	Slow-action contact	8080/1-1	132529	0.025
		2 NC	Slow-action contact	8080/1-3	132532	0.025
		2 NO	Slow-action contact	8080/1-4	132533	0.025
		1 NC + 1 NO	Slow-action contact, make before break	8080/1-5	132534	0.025
		1 NC + 1 NO	Snap-action contact	8080/1-2	132531	0.025

E4

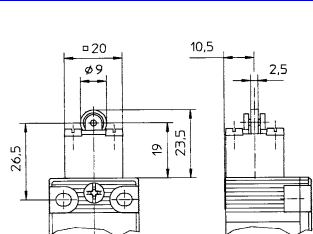
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



Position Switches

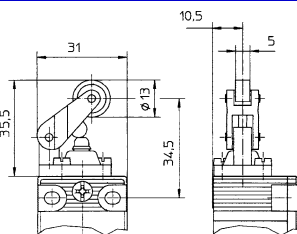
Series 8060

Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



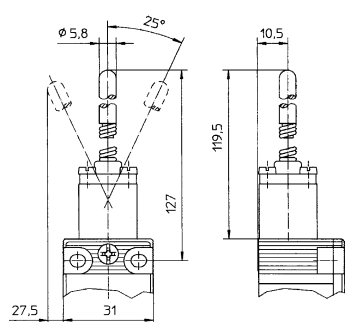
8060/1- .RS
Roller plunger

04259E00



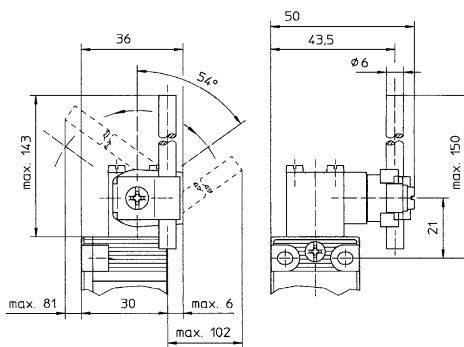
8060/1- .AR
Roller lever, form E

04260E00



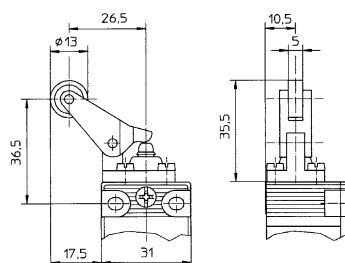
8060/1- 2-F
Spring rod actuator

04264E00



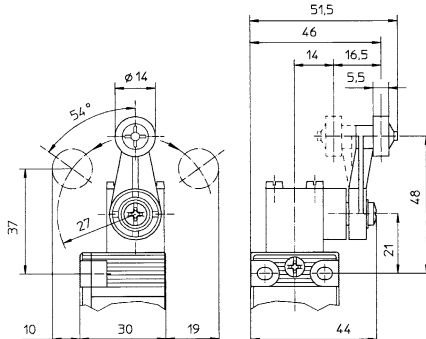
8060/1- .H
Actuating rod

04263E00



8060/1- .WR
Angled roller lever

04265E00



8060/1- .R
Swivelling roller lever, form A

04261E00

We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustrations cannot be considered binding.