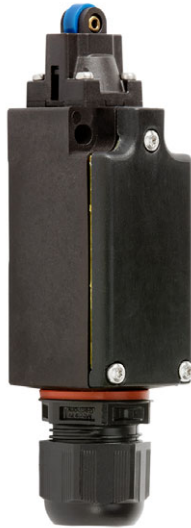


Position Switches Series 8060/2



- > Ex e plastic enclosure
- > Operating temperature range -60 to +60 °C
- > Dimensions and characteristic values according to EN 50047
- > Degree of protection IP66 / IP67
- > Extensive assortment of actuators, which can be offset by 4 x 90°.
- > Safety position switch of Category 1 with different actuators
- > Replaceable contact elements with:
 - Snap-action contact
 - Slow-action contact
 - Overlapping slow-action contact
 - Positive-opening contacts
 - Flameproof enclosure



18566T00

www.stahl.de



E4

Position the position switches, control and monitor the moving parts on machines and systems. Because they meet the requirements of the EN 50 047 and IEC 60947-5-1 product standards, they can also be used as a position switch with a safety function. Position switches of the 8060/2 series are permitted to be used in hazardous areas of zones 1, 2, 21 and 22.

In conjunction with a safety door guard and the corresponding circuitry, the PL position switches reach "e" in accordance with EN ISO 13849-1, or up to SIL 3 in accordance with EN 62061. They are identified with the ⊕ character for positive opening operation.

There are snap- and slow-action versions with different forms of contacts as well as with a variety of different actuating elements.

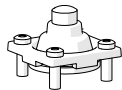
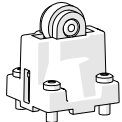
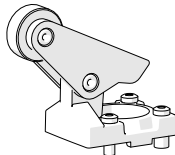
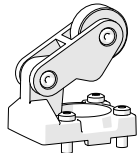
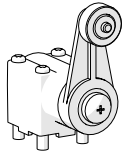
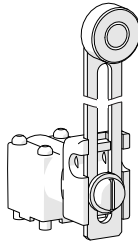
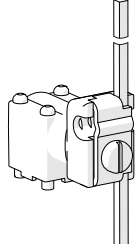
Zone	ATEX / IECEx					
	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 8060B

Position Switches

Series 8060/2

Selection Table

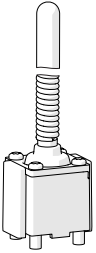

Version	Actuator		Normally open contacts	Order number	Weight kg
 18563E00	Plunger	Plunger with sealing collar	1 NC + 1 NO	8060/2-1-W-60	0.096
			1 NC + 1 NO snap-action contact with spring	8060/2-2-W-60	
			2 NC	8060/2-3-W-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-W-60	
 18614E00	Roller	Roller made of moulded material	1 NC + 1 NO	8060/2-1-R-60	0.100
			1 NC + 1 NO snap-action contact with spring	8060/2-2-R-60	
			2 NC	8060/2-3-R-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-R-60	
 18564E00	Roller lever	Roller made of moulded material	1 NC + 1 NO	8060/2-1-WH-60	0.101
			1 NC + 1 NO snap-action contact with spring	8060/2-2-WH-60	
			2 NC	8060/2-3-WH-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-WH-60	
 18565E00	Parallel roller lever	Roller made of moulded material	1 NC + 1 NO	8060/2-1-WPH-60	0.102
			1 NC + 1 NO snap-action contact with spring	8060/2-2-WPH-60	
			2 NC	8060/2-3-WPH-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-WPH-60	
 18562E00	Rocking lever	Roller made of moulded material	1 NC + 1 NO	8060/2-1-D-60	0.115
			1 NC + 1 NO snap-action contact with spring	8060/2-2-D-60	
			2 NC	8060/2-3-D-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-D-60	
 18561E00	Adjustable rocking lever	Roller made of moulded material Roller rod made of stainless steel	1 NC + 1 NO	8060/2-1-DS-60	0.130
			1 NC + 1 NO snap-action contact with spring	8060/2-2-DS-60	
			2 NC	8060/2-3-DS-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-DS-60	
 18560E00	Rod lever	Rod made of moulded material No positive opening operation, not suitable for safety circuits!	1 NC + 1 NO	8060/2-1-DD-60	0.133
			1 NC + 1 NO snap-action contact with spring	8060/2-2-DD-60	
			2 NC	8060/2-3-DD-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-DD-60	

Position Switches

Series 8060/2



Selection Table

Version	Actuator	Normally open contacts	Order number	Weight kg
 18661E00	Spring rod Spring made of stainless steel Only for use with snap-action contact! No positive opening operation, not suitable for safety circuits!	1 NC + 1 NO snap-action contact with spring	8060/2-2-TK-60	0.122
 18691E00	Safety switch, separate actuator	1 NC + 1 NO	8060/2-1-AZ-60	0.127
		2 NC	8060/2-3-AZ-60	0.127

Note The actuators are included, but not installed

Explosion Protection

Global (IECEX)

Gas and dust	IECEX BVS 16.0066 Ex db eb IIC T6 Gb Ex tb IIIC T80°C Db
--------------	--

Europe (ATEX)

Gas and dust	BVS 16 ATEX E 100 ⊕ II 2 G Ex db eb IIC T6 Gb ⊕ II 2 D Ex tb IIIC T80°C Db
--------------	--

Certifications and certificates

Certificates	IECEX, ATEX
--------------	-------------

Technical Data

Electrical data

Rated operational voltage U_e			8060/2-1 8060/2-2 8060/2-5	8060/2-3 8060/2-4
	Alternating voltage for equal potential: Alternating voltage for unequal potential: Direct voltage:		max. 500 V max. 250 V 250 V	max. 400 V max. 250 V 250 V
Rated operational current I_e	max. 4A: $-60\text{ °C} \leq T_a \leq +55\text{ °C}$, max. 2A: $-60\text{ °C} \leq T_a \leq +60\text{ °C}$			
Switching capacity	AC-12		AC-15	
	8060/2-1 8060/2-2 8060/2-5	8060/2-3 8060/2-4	8060/2-1 8060/2-2 8060/2-5	8060/2-3 8060/2-4
	max. 250 V max. 500 V ^{**)} max. 4 A max. 5000 VA	max. 250 V max. 400 V ^{**)} max. 4 A max. 4000 VA	max. 250 V max. 500 V ^{**)} max. 4 A max. 1000 VA	max. 250 V max. 400 V ^{**)} max. 4 A max. 1000 VA
	^{**)} only with the same potential			
Rated insulation voltage	550 V			
Rated impulse withstand voltage	6 kV			
Short circuit protection	10 A gL / gG			

E4

Position Switches

Series 8060/2

Technical Data

Ambient conditions

Operating temperature range	-60 to +55 °C (4 A) -60 to +60 °C (2 A)
-----------------------------	--

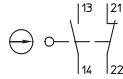
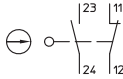
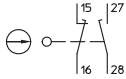
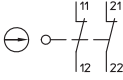
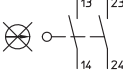
Mechanical data

Maximum switching frequency	max. 6000 operating cycles/h
Degree of protection	IP66 -60 °C, IP67 -20 °C (DIN EN 60529)
Mechanical shock resistance	Snap-action contact: 2 g
	Slow-action contact: 20 g

Mounting / Installation

Cable entries	8161/7-M20..LT on the enclosure bottom: 1 x M20 x 1.5
Connection	with cable entry 8161: For sheathed cable 4 x 2.5 mm ² (Ø 4 to 13 mm); 4 x 1.5 mm ² recommended
Terminals	0.75 to 2.5 mm ² solid, finely stranded with or without a core end sleeve
Tightening torque	Screw terminals: 0.4 Nm max. Cover screws: 0.4 to 0.45 Nm Cable entries: See installation note (enclosed unattached)

Contact

Version	Slow-action contact	Snap-action contact	Slow-action contact, overlapping
	 8060/2-1 08667E00	 8060/2-2 08668E00	 8060/2-5 08675E00
	 8060/2-3 08669E00	Caution: The positive opening operation ⊖ function depends on the actuator	
	 8060/2-4 08670E00		
Contact arrangement	2-pole, galvanically separated with double break		
Contact opening	≥ 1.5 mm (isolating distance ≥ 3 mm)		
Material	Silver-nickel		
Contacts	Polyamide, glass fibre reinforced		
Enclosure contact			
Service life			
Mechanical	max. 10 ⁶ operating cycles		
electrical	max. 10 ⁶ operating cycles		

Position Switches

Series 8060/2



Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Plunger 8060/2.-W-60	For lateral actuation: V = 0.5 m/s Operation in stroke direction: V = 1.0 m/s		In stroke direction 8060/2-1: 	14 N
			8060/2-2: 	
			8060/2-3: 	
			8060/2-4: 	
			8060/2-5: 	

E4

Position Switches

Series 8060/2

Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Roller 8060/2--R-60	<p>For lateral actuation: V = 1.0 m/s</p> <p>Operation in stroke direction: V = 1.0 m/s</p>		<p>In stroke direction</p> <p>8060/2-1:</p> <p>18611E00</p> <p>8060/2-2:</p> <p>18612E00</p> <p>8060/2-3:</p> <p>18613E00</p> <p>8060/2-4:</p> <p>07707E01</p> <p>8060/2-5:</p> <p>18615E00</p>	14 N

18577E00

Position Switches

Series 8060/2



Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊕ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Roller lever 8060/2-.-WH-60	V = 1.0 m/s		Displacement of the roller in the stroke direction of the plunger at the start of the plunger movement 8060/2-1: 18621E00 8060/2-2: 18622E00 8060/2-3: 18623E00 8060/2-4: 18624E00 8060/2-5: 18625E00	12 N

E4

Position Switches

Series 8060/2

Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Parallel roller lever 8060/2-.-WPH-60	V = 1.0 m/s		<p>Displacement of the roller vertically in the stroke direction of the plunger at the start of the plunger movement</p> <p>8060/2-1: </p> <p>8060/2-2: </p> <p>8060/2-3: </p> <p>8060/2-4: </p> <p>8060/2-5: </p>	12 N

18576E00

Position Switches

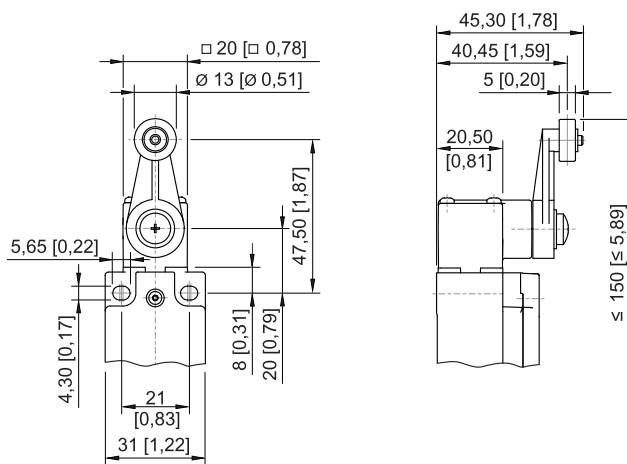
Series 8060/2



Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊕ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Rocking lever 8060/2.-D-60	V = 1.5 m/s		<p>8060/2-1:</p> <p>18641E00</p> <p>8060/2-2:</p> <p>18642E00</p> <p>8060/2-3:</p> <p>18643E00</p> <p>8060/2-4:</p> <p>18644E00</p> <p>8060/2-5:</p> <p>18645E00</p>	0.3 Nm



18572E00

E4

Position Switches

Series 8060/2

Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Adjustable rocking lever 8060/2--DS-60	V = 1.5 m/s		8060/2-1: 	18641E00
			8060/2-2: 	18642E00
			8060/2-3: 	18643E00
			8060/2-4: 	18644E00
			8060/2-5: 	18645E00

18579E00

Position Switches

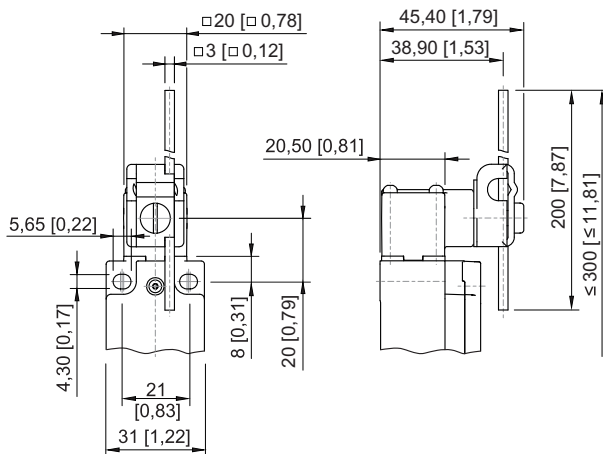
Series 8060/2



Technical data

Operation, operating speed, switching path or switching angle

Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Rod lever 8060/2.-DD-60	V = 1.5 m/s Positive opening operation, not suitable for safety circuits		<p>8060/2-1:</p> <p>18641E00</p> <p>8060/2-2:</p> <p>18642E00</p> <p>8060/2-3:</p> <p>18643E00</p> <p>8060/2-4:</p> <p>18644E00</p> <p>8060/2-5:</p> <p>18645E00</p>	0.3 Nm



18513E00

E4

Position Switches

Series 8060/2

Technical data

Operation, operating speed, switching path or switching angle

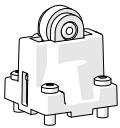
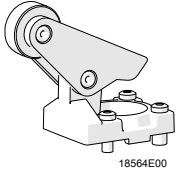
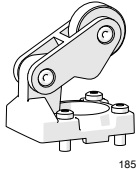
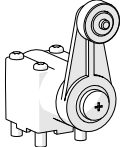
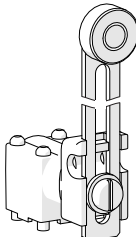
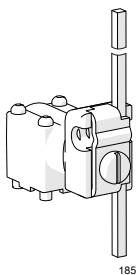
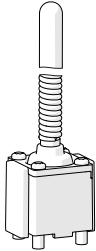
Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊖ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Spring rod 8060/2--TK-60	Positive opening operation, not suitable for safety circuits		<p>Only for use with snap-action contact!</p> <p>8060/2-2:</p>	—
Safety switches 8060/2--AZ-60			<p>8060/2-1:</p> <p>8060/2-3:</p>	—
			<p>Note: Illustration of the shifting travel for an engaged actuator. Actuators must be ordered separately.</p>	

Position Switches

Series 8060/2



Accessories and Spare Parts


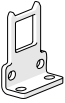
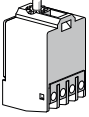
Designation	Figure	Description	Art. no.	Weight kg	
Actuator	 18614E00	Roller	8060/2-0-R	257054	0.020
	 18564E00	Roller lever	8060/2-0-WH	257055	0.020
	 18565E00	Parallel roller lever	8060/2-0-WPH	257056	0.022
	 18562E00	Rocking lever	8060/2-0-D	257057	0.035
	 18561E00	Adjustable rocking lever	8060/2-0-DS	257058	0.020
	 18560E00	Rod lever	8060/2-0-DD	257059	0.050
	 18661E00	Spring rod Only for use with snap-action contact!	8060/2-0-TK	257060	0.055

E4

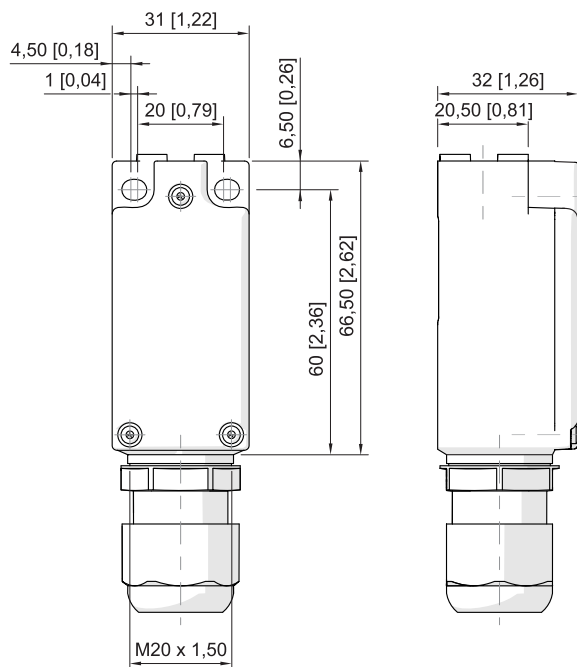
Position Switches

Series 8060/2

Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg
Actuator	 18689E00	Straight actuator 8060/2-0-AZ	257052	0.040
	 18690E00	Bent actuator 8060/2-0-AZ	257053	0.040
Contact	 10809E00	1 NC + 1 NO Slow-action contact 8080/1-1	132529	0.025
		1 NC + 1 NO Slow-action contact, with spring 8080/1-2	132531	0.025
		1 NC + 1 NO Slow-action contact, make before break 8080/1-5	132534	0.025
		2 NC Slow-action contact 8080/1-3	132532	0.025
		2 NO Slow-action contact 8080/1-4	132533	0.025

Dimensional drawings (all dimensions in mm [inches]) – Subject to modifications



Position switch 8060/2

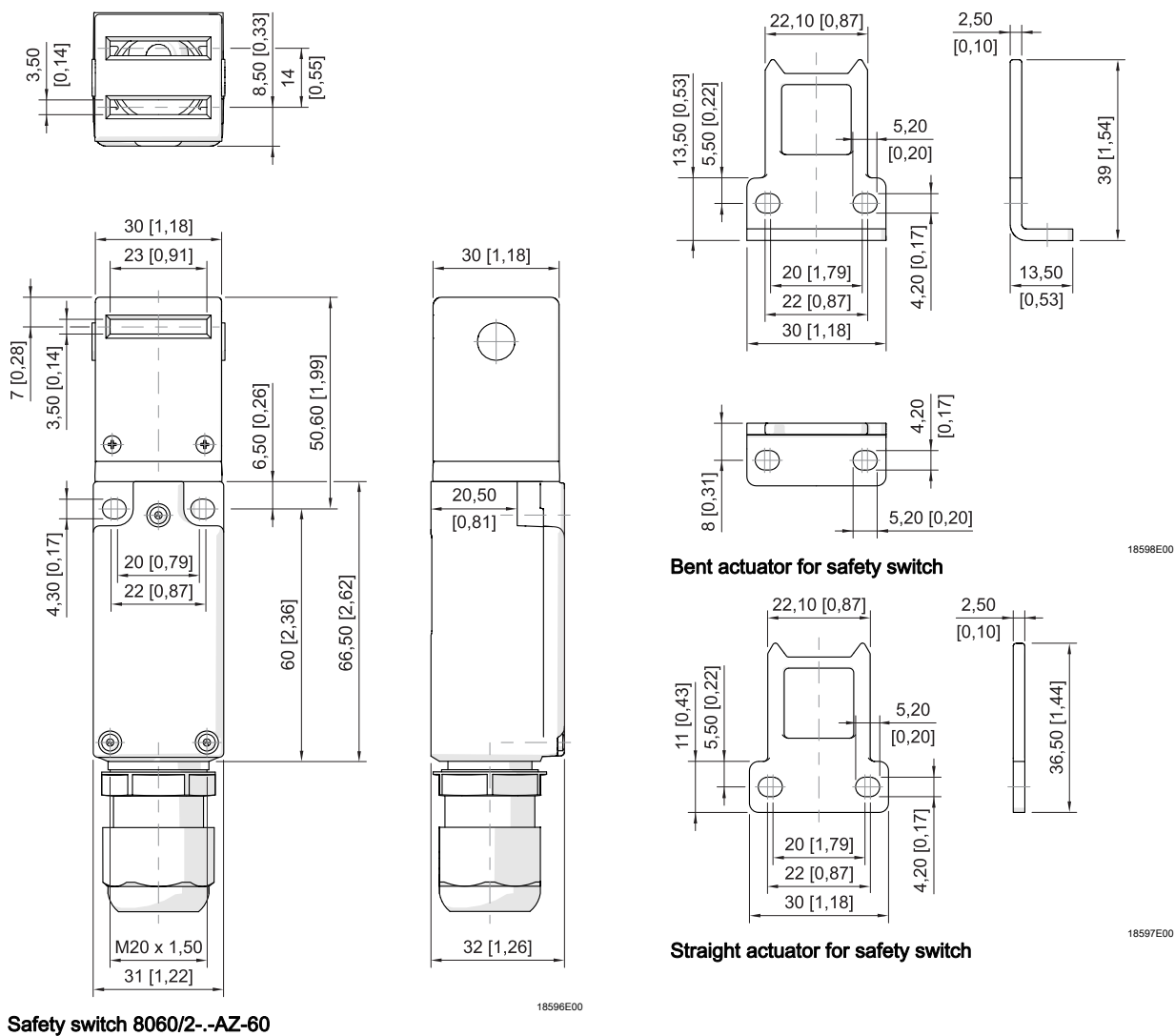
18619E00

Position Switches

Series 8060/2



Dimensional drawings (all dimensions in mm [inches]) – Subject to modifications



E4

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