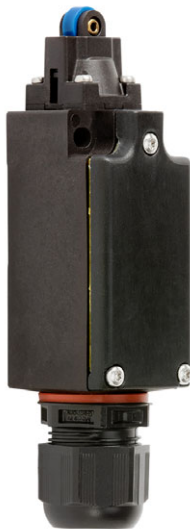


Position Switches

Series 8060/2



www.stahl.de



18566T00

- > 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



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.

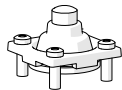
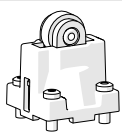
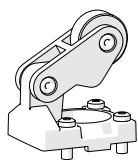
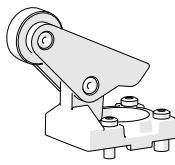
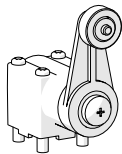
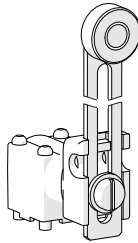
Zone	ATEX / IECEx					
	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 8060B

Position Switches

Series 8060/2

Selection Table

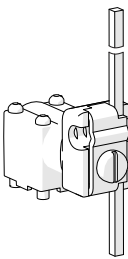
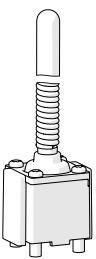

Version	Actuator		Normally open contacts	Order number	Weight kg
 18563E00	Plunger	Plunger with sealing collar	1 NC + 1 NO	8060/2-1-W-60	0.096
			1 NC + 1 NO snap-action contact with spring	8060/2-2-W-60	
			2 NC	8060/2-3-W-60	
			2 NO	8060/2-4-W-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-W-60	
 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	
			2 NO	8060/2-4-R-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-R-60	
 18565E00	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	
			2 NO	8060/2-4-WH-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-WH-60	
 18564E00	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	
			2 NO	8060/2-4-WPH-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-WPH-60	
 18562E00	Rotary 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	
			2 NO	8060/2-4-D-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-D-60	
 18561E00	Adjustable rotary lever	Roller made of moulded material	1 NC + 1 NO	8060/2-1-DS-60	0.130
		Roller rod made of stainless steel	1 NC + 1 NO snap-action contact with spring	8060/2-2-DS-60	
		No positive opening operation!	2 NC	8060/2-3-DS-60	
			2 NO	8060/2-4-DS-60	
			1 NC + 1 NO slow-action contact, overlapping	8060/2-5-DS-60	

Position Switches

Series 8060/2



Selection Table

Version	Actuator	Normally open contacts	Order number	Weight kg
 <small>18560E00</small>	Rod lever Rod made of moulded material No positive opening operation!	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	
		2 NO	8060/2-4-DD-60	
		1 NC + 1 NO slow-action contact, overlapping	8060/2-5-DD-60	
 <small>18661E00</small>	Spring rod Spring made of stainless steel No positive opening operation, not suitable for safety circuits!	1 NC + 1 NO	8060/2-1-TK-60	0.122
		1 NC + 1 NO snap-action contact with spring	8060/2-2-TK-60	
		2 NC	8060/2-3-TK-60	
 <small>18691E00</small>	Safety switch, separate actuator Separate actuator made of metal (please order separately)	1 NC + 1 NO	8060/2-1-AZ-60	0.127
		2 NC	8060/2-3-AZ-60	

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, India (PESO), Canada (CSA), Russia (TR), USA (CSA)

Technical Data

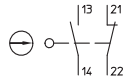
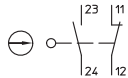
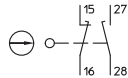
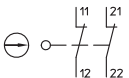
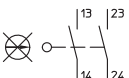
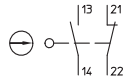
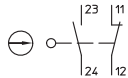
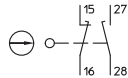
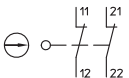
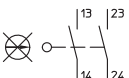
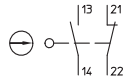
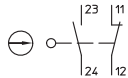
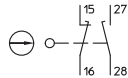
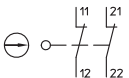
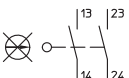
Electrical data

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. 4 A: $-60\text{ °C} \leq T_a \leq +55\text{ °C}$, max. 2 A: $-60\text{ °C} \leq T_a \leq +60\text{ °C}$			
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				

E4

Position Switches

Series 8060/2

Technical Data																						
Rated insulation voltage	500 V																					
Rated impulse withstand voltage	6 kV																					
Short circuit protection	6 A gG																					
Ambient conditions																						
Operating temperature range	-60 to +55 °C (4 A) -60 to +60 °C (2 A)																					
Mechanical data																						
Maximum switching frequency	max. 1800 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																					
Material																						
Enclosure	Glass-fibre-reinforced, impact-proof thermoplast, self-extinguishing UL 94-V0																					
Cover	Glass-fibre-reinforced, impact-proof thermoset, self-extinguishing UL 94-V0																					
Seal	Silicone																					
Mounting / Installation																						
Cable entries	8161/7-M20..LT: with seals containing silicone on the enclosure bottom: 1 x M20 x 1.5																					
Connection	with cable entry 8161: 4 x 1.5 mm ²																					
Terminals	0.75 to 1.5 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	<table border="0"> <tr> <td>Slow-action contact</td> <td>Snap-action contact</td> <td>Slow-action contact, overlapping</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>8060/2-1 08667E00</td> <td>8060/2-2 08668E00</td> <td>8060/2-5 08675E00</td> </tr> <tr> <td></td> <td colspan="2">Caution: The positive opening operation ⊖ function depends on the actuator</td> </tr> <tr> <td>8060/2-3 08669E00</td> <td colspan="2"></td> </tr> <tr> <td></td> <td colspan="2"></td> </tr> <tr> <td>8060/2-4 08670E00</td> <td colspan="2"></td> </tr> </table>	Slow-action contact	Snap-action contact	Slow-action contact, overlapping				8060/2-1 08667E00	8060/2-2 08668E00	8060/2-5 08675E00		Caution: The positive opening operation ⊖ function depends on the actuator		8060/2-3 08669E00						8060/2-4 08670E00		
Slow-action contact	Snap-action contact	Slow-action contact, overlapping																				
																						
8060/2-1 08667E00	8060/2-2 08668E00	8060/2-5 08675E00																				
	Caution: The positive opening operation ⊖ function depends on the actuator																					
8060/2-3 08669E00																						
																						
8060/2-4 08670E00																						
Contact arrangement	2-pole, galvanically separated with double break																					
Contact opening	≥ 1.5 mm (isolating distance ≥ 3 mm)																					
Material																						
Contacts	Silver-nickel																					
Enclosure contact	Polyamide, glass fibre reinforced																					
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: 8060/2-2: 8060/2-3: 8060/2-4: 8060/2-5: 	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

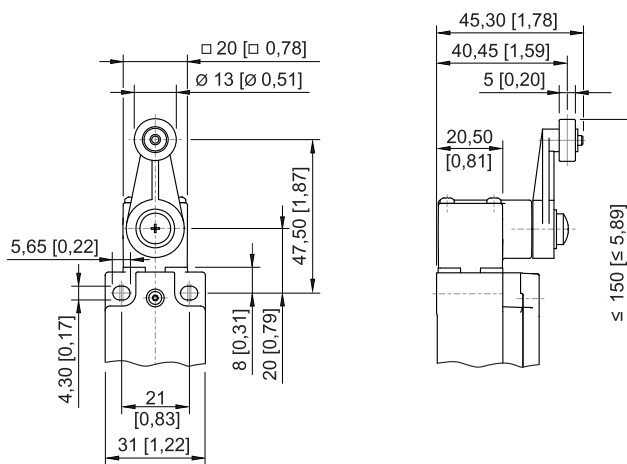
Series 8060/2



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	
Rotary 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 N



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	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Adjustable rotary lever 8060/2-.-DS-60	V = 1.5 m/s No positive opening operation	<p>07700E00</p>	8060/2-1: <p>20378E00</p>	0.3 N
		<p>07701E00</p>	8060/2-2: <p>20379E00</p>	
		<p>07702E00</p>	8060/2-3: <p>20380E00</p>	
		<p>07698E00</p>	8060/2-4: <p>18644E00</p>	
		<p>07703E00</p>	8060/2-5: <p>20381E00</p>	

18579E00

Position Switches

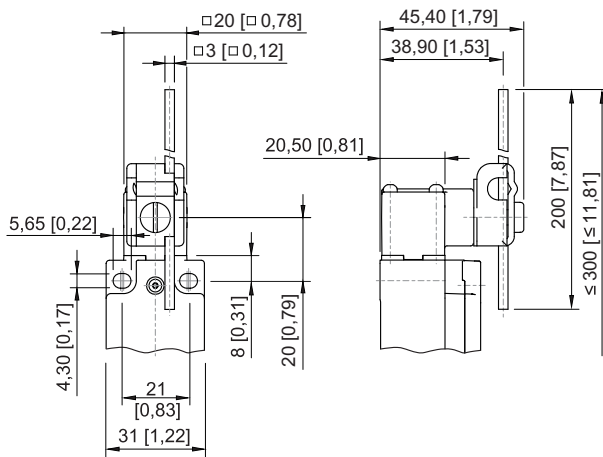
Series 8060/2



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 No positive opening operation		<p>8060/2-1:</p> <p>20319E00</p> <p>8060/2-2:</p> <p>20320E00</p> <p>8060/2-3:</p> <p>20321E00</p> <p>8060/2-4:</p> <p>18644E00</p> <p>8060/2-5:</p> <p>20323E00</p>	0.3 N



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	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Spring rod 8060/2--TK-60	No positive opening operation, not suitable for safety circuits		<p>8060/2-1:</p> <p>20278E00</p> <p>8060/2-2:</p> <p>18640E00</p> <p>8060/2-3:</p> <p>20279E00</p>	—

18578E00

Position Switches

Series 8060/2



Technical data

Operation, operating speed, switching path or switching angle

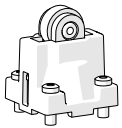
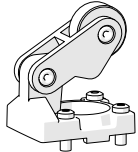
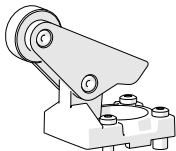
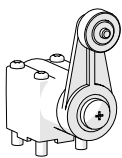
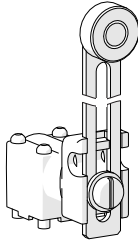
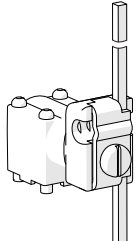
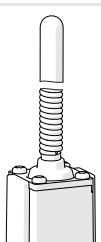
Actuator type	Actuation	Schematic	Nominal switching path or switching angle	Minimum force/torque
Type 8060/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Safety switches 8060/2-.AZ-60			<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>	

E4

Position Switches

Series 8060/2

Accessories and Spare Parts


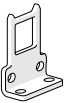
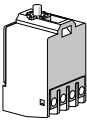
Designation	Figure	Description	Art. no.	Weight kg	
Actuator	 18614E00	Roller	8060/2-0-R	257054	0.020
	 18566E00	Roller lever	8060/2-0-WH	257055	0.020
	 18564E00	Parallel roller lever	8060/2-0-WPH	257056	0.022
	 18562E00	Rotary lever	8060/2-0-D	257057	0.035
	 18561E00	Adjustable rotary lever	8060/2-0-DS	257058	0.020
	 18560E00	Rod lever	8060/2-0-DD	257059	0.050
	 18661E00	Spring rod	8060/2-0-TK	257060	0.055

Position Switches

Series 8060/2

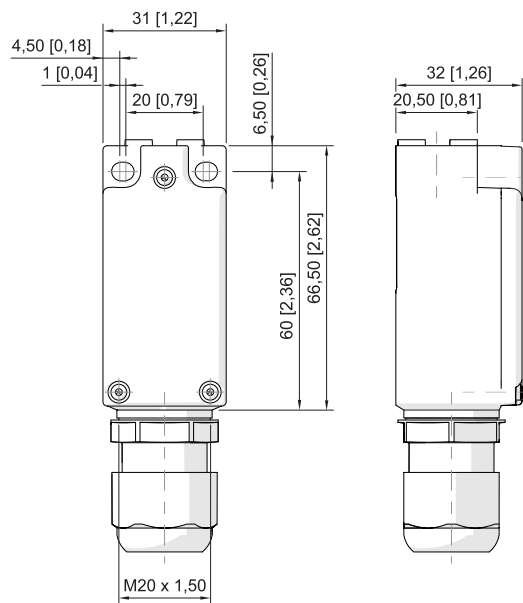


Accessories and Spare Parts

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 Snap-action contact with spring 8080/1-2	132531	
		1 NC + 1 NO Slow-action contact, overlapping 8080/1-5	132534	
		2 NC Slow-action contact 8080/1-3	132532	
		2 NO Slow-action contact 8080/1-4	132533	

E4

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



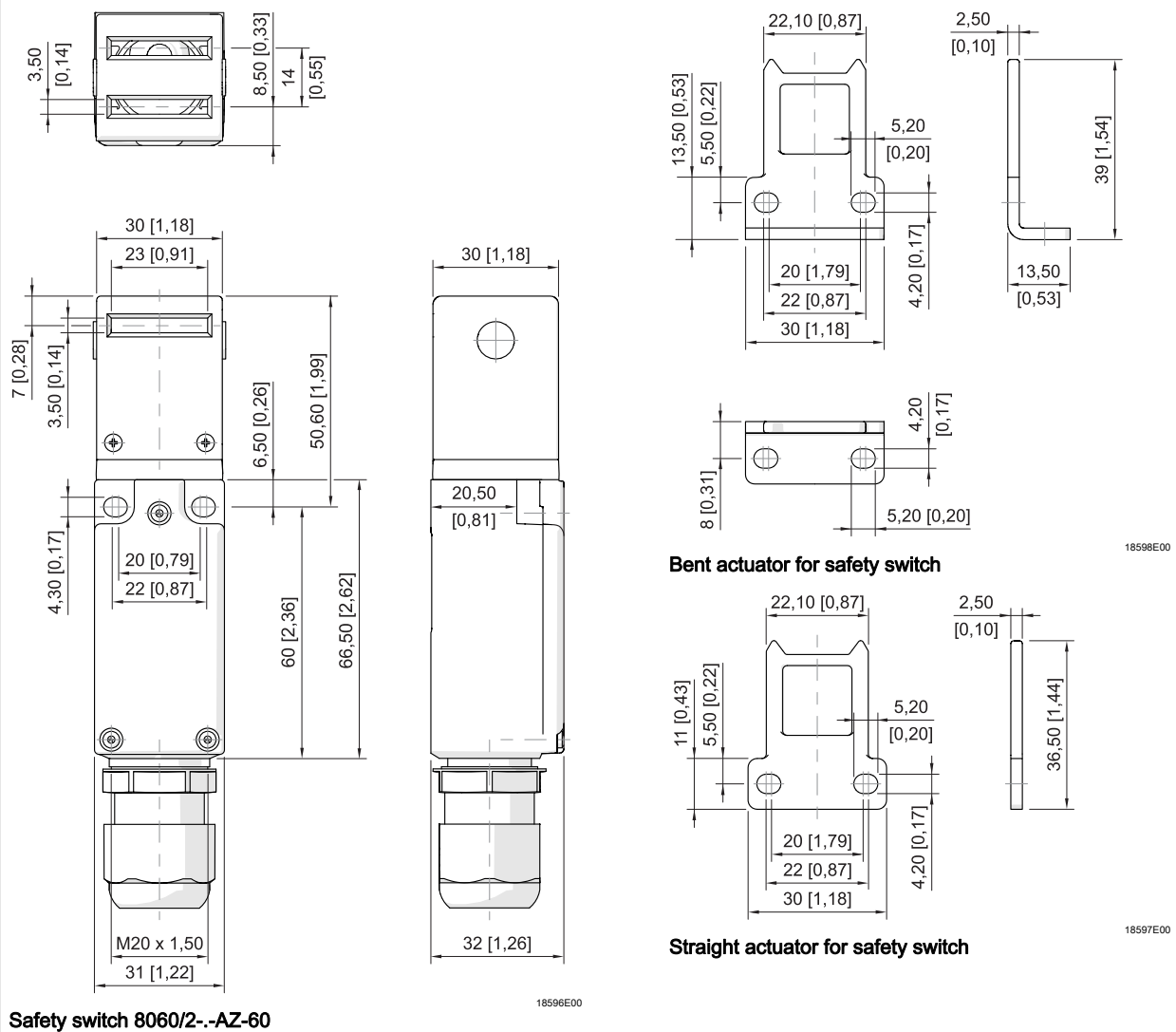
Position switch 8060/2

18619E00

Position Switches

Series 8060/2

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



Safety switch 8060/2-AZ-60

18596E00

18598E00

18597E00

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.