

Position Switches

Series 8074/2



www.stahl.de



18905E00

- > Ex e metal enclosure
- > Operating temperature range -40 °C ... +70 °C
- > Dimensions and characteristic values according to EN 50041
- > Degree of protection IP66
- > 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 switches are used to position, control and monitor the moving parts on machines and systems. Because they meet the requirements of the EN 50 041 and IEC 60947-5-1 product standards, they can also be used as a position switch with a safety function. Position switches of the 8074/2 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 types of contacts as well as with a variety of different actuating elements.


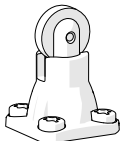
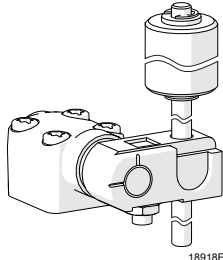
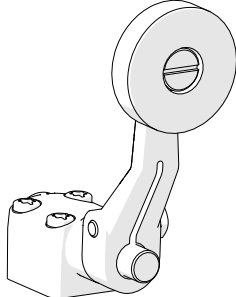
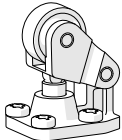
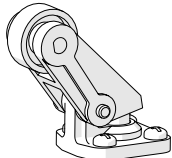
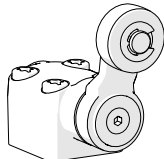
Zone	ATEX / IECEx					
	0	1	2	20	21	22
For use in		x	x		x	x

WebCode 8074D

Position Switches

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Selection Table

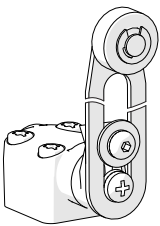
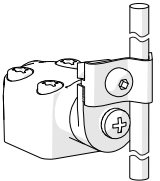
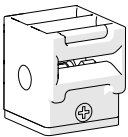
Version	Actuator	Normally open contacts	Order number	Art. no.	Weight kg
 18920E00	Plunger Plunger with sealing collar	1 NO + 1 NC	8074/2-1-W-40	257197	0.298
		1 NO + 1 NC snap-action contact with spring	8074/2-2-W-40	258054	
		2 NC	8074/2-3-W-40	257203	
		1 NO + 1 NC overlapping	8074/2-5-W-40	257212	
 18917E00	Roller Roller made of moulded material	1 NO + 1 NC	8074/2-1-R-40	257184	0.299
		1 NO + 1 NC snap-action contact with spring	8074/2-2-R-40	258055	
		2 NC	8074/2-3-R-40	257204	
		1 NO + 1 NC overlapping	8074/2-5-R-40	257213	
 18918E00	Misalignment switch Roller made of moulded material	1 NO + 1 NC	8074/2-1-SR-40	257201	0.486
		1 NO + 1 NC snap-action contact with spring	8074/2-2-SR-40	258062	
 18915E00	Long rotary lever Roller made of moulded material	1 NO + 1 NC	8074/2-1-DL-40	257188	0.422
		1 NO + 1 NC snap-action contact with spring	8074/2-2-DL-40	258059	
		2 NC	8074/2-3-DL-40	257208	
		1 NO + 1 NC overlapping	8074/2-5-DL-40	257217	
 18921E00	Roller lever Roller made of moulded material	1 NO + 1 NC	8074/2-1-WH-40	257185	0.300
		1 NO + 1 NC snap-action contact with spring	8074/2-2-WH-40	258056	
		2 NC	8074/2-3-WH-40	257205	
		1 NO + 1 NC overlapping	8074/2-5-WH-40	257214	
 18922E00	Parallel roller lever Roller made of moulded material	1 NO + 1 NC	8074/2-1-WPH-40	257186	0.307
		1 NO + 1 NC snap-action contact with spring	8074/2-2-WPH-40	258057	
		2 NC	8074/2-3-WPH-40	257206	
		1 NO + 1 NC overlapping	8074/2-5-WPH-40	257215	
 18913E00	Rocking lever Roller made of moulded material	1 NO + 1 NC	8074/2-1-D-40	257187	0.360
		1 NO + 1 NC snap-action contact with spring	8074/2-2-D-40	258058	
		2 NC	8074/2-3-D-40	257207	
		1 NO + 1 NC overlapping	8074/2-5-D-40	257216	

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Selection Table

Version	Actuator	Normally open contacts	Order number	Art. no.	Weight kg
 18916E00	Adjustable rocking lever Roller made of moulded material Roller rod made of stainless steel No positive opening operation, not suitable for safety circuits!	1 NO + 1 NC	8074/2-1-DS-40	257189	0.386
		1 NO + 1 NC snap-action contact with spring	8074/2-2-DS-40	258060	
		2 NC	8074/2-3-DS-40	257209	
		1 NO + 1 NC overlapping	8074/2-5-DS-40	257218	
 18914E00	Rod lever Rod made of moulded material No positive opening operation, not suitable for safety circuits!	1 NO + 1 NC	8074/2-1-DD-40	257190	0.340
		1 NO + 1 NC snap-action contact with spring	8074/2-2-DD-40	258061	
		2 NC	8074/2-3-DD-40	257210	
		1 NO + 1 NC overlapping	8074/2-5-DD-40	257219	
 18912E00	Safety switch, separate actuator Separate actuator made of metal (please order separately)	1 NO + 1 NC	8074/2-1-AZ-20	257202	0.340
		2 NC	8074/2-3-AZ-20	257211	
Note	The actuators are included, but not installed				

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Position Switches

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Explosion Protection

Global (IECEX)

Gas and dust	IECEX BVS 16.0085 Ex d e IIC T6 ... T5 Gb Ex tb IIIC T80°C Db
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Europe (ATEX)

Gas and dust	BVS 05 ATEX E 007 ⊕ II 2 G Ex d e IIC T6 ... T5 Gb ⊕ II 2 D Ex tb IIIC T80°C Db
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Certifications and certificates

Certificates	IECEX, ATEX, Russia (TR)
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Technical Data

Version	8074/2--W, -R, -SR, -DL, -WH, -WPH, -D, -DS, -DD
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Electrical data

Rated operational voltage U_e			8074/2-1 8074/2-2 8074/2-5	8074/2-3
	Alternating voltage for equal potential: Alternating voltage for unequal potential: Direct voltage:		max. 500 V max. 250 V 125 V	max. 400 V max. 250 V 125 V
Rated operational current I_e	4.4 A: +70 °C (T6); 6.6 A: +70 °C (T5)			
Switching capacity	AC-12	AC-15	DC-12	
	8074/2-1 8074/2-2 8074/2-5	8074/2-3	8074/2-1 8074/2-2 8074/2-5	8074/2-3 8074/2-
	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	4 kV			
Short circuit protection	6 A (time lag)			

Ambient conditions

Operating temperature range	-40 to +70 °C, T6 (max. 4.4 A) -40 to +70 °C, T5 (max. 6.6 A)
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Technical Data

Version	8074/2--AZ-20
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Electrical data

Rated operational voltage U_e			8074/2--AZ-20
	Alternating voltage: Direct voltage:		250 V AC 230 V DC
Rated operational current I_e	max. 6 A: -20 °C < Ta < +60 °C, 250 V AC; max. 0.25 A: -20 °C < Ta < +60 °C, 230 V DC		
Switching capacity	AC-15	DC-13	
	max. 250 V max. 6 A	max. 230 V max. 0.25 A	
Rated insulation voltage	250 V		
Rated impulse withstand voltage	4 kV		
Short circuit protection	6 A gN / gG		

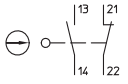
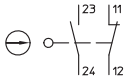
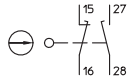
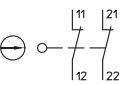
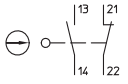
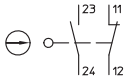
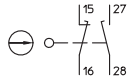
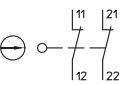
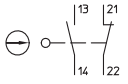
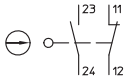
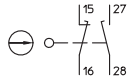
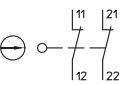
Ambient conditions

Operating temperature range	-20 to +40 °C (T6) -20 to +60 °C (T5)
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Position Switches

Series 8074/2



Technical Data																
Version	8074/2--W, -R, -SR, -DL, -WH, -WPH, -D, -DS, -DD, -AZ-20															
Mechanical data																
Maximum switching frequency	max. 1800 operating cycles/h															
Degree of protection	IP66 -40 °C (DIN EN 60529)															
Mechanical shock resistance	Snap-action contact: 2 g Slow-action contact: 20 g															
Material																
Enclosure	Corrosion-resistant aluminium, powder-coated Similar to RAL 7016															
Cover	1.4401 stainless steel, blasted															
Mounting / Installation																
Cable entries	8161/7-M20.. 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 , 0.75 to 1.5 mm ² (8074/2--AZ-20) solid, finely stranded with or without core end sleeve; additional outer protective conductor connection up to max. 4 mm ²															
Tightening torque	Screw terminals: 0.4 Nm max. Cover screws: 1.5 to 2 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>8074/2-1</td> <td>8074/2-2</td> <td>8074/2-5</td> </tr> <tr> <td></td> <td colspan="2"> Caution: The positive opening operation ⊖ function depends on the actuator </td> </tr> <tr> <td>8074/2-3</td> <td colspan="2"></td> </tr> </table>	Slow-action contact	Snap-action contact	Slow-action contact, overlapping				8074/2-1	8074/2-2	8074/2-5		Caution: The positive opening operation ⊖ function depends on the actuator		8074/2-3		
Slow-action contact	Snap-action contact	Slow-action contact, overlapping														
																
8074/2-1	8074/2-2	8074/2-5														
	Caution: The positive opening operation ⊖ function depends on the actuator															
8074/2-3																
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															

E4

Position Switches

Series 8074/2

Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊖ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Plunger 8074/2--W-40	<p>For lateral actuation: V = 0.5 m/s</p> <p>Actuation in stroke direction: V = 1.0 m/s</p>		<p>In stroke direction</p> <p>8074/2-1:</p> <p>18998E00</p> <p>8074/2-3:</p> <p>18999E00</p> <p>8074/2-5:</p> <p>19000E00</p>	22 N

18822E00

Position Switches

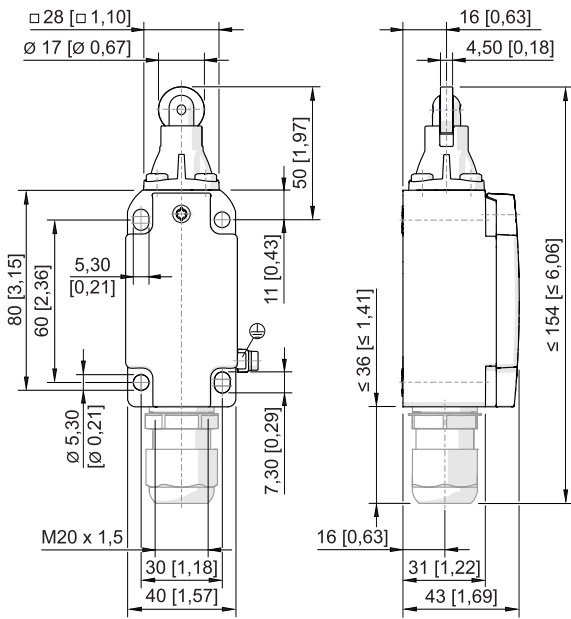
Series 8074/2



Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Roller plunger 8074/2-.-R-40	<p>For lateral actuation: V = 1.0 m/s</p> <p>Actuation in stroke direction: V = 1.0 m/s</p>		<p>In stroke direction</p> <p>8074/2-1:</p> <p>18998E00</p> <p>8074/2-3:</p> <p>18999E00</p> <p>8074/2-5:</p> <p>19000E00</p>	22 N



18820E00

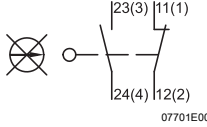
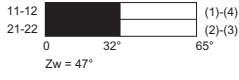
E4

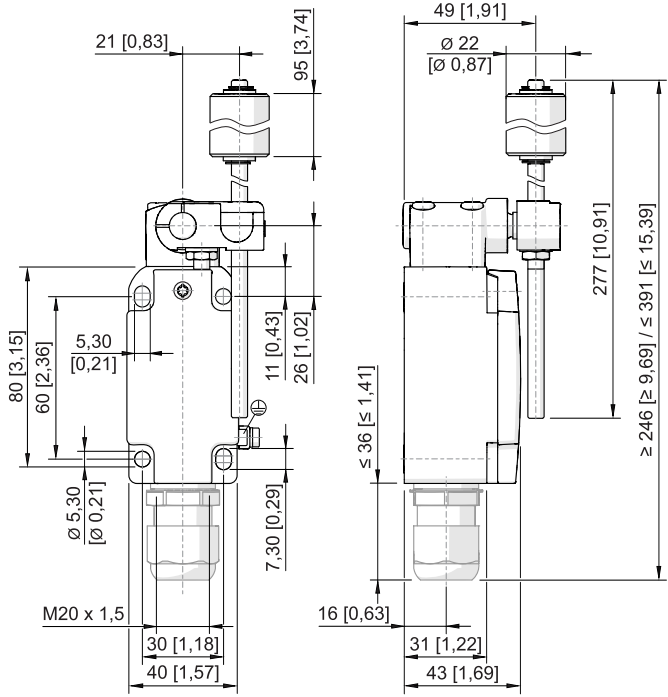
Position Switches

Series 8074/2

Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊖ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Misalignment switch 8074/2--SR-40		 <p>07701E00</p>	<p>Only for use with snap-action contact!</p> <p>8074/2-1:</p>  <p>11-12 (1)-(4) 21-22 (2)-(3) 0 32° 65° Zw = 47°</p> <p>19009E00</p>	2.5 N



18821E00

Position Switches

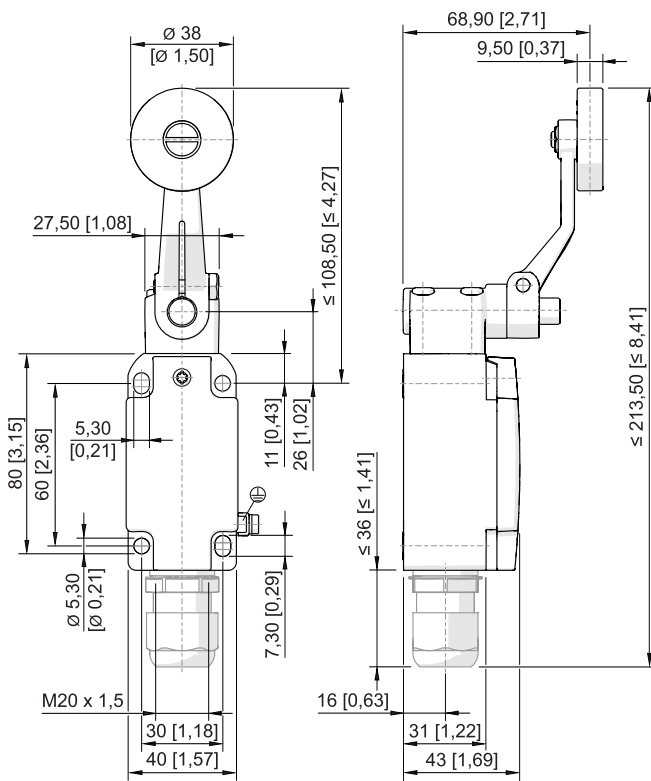
Series 8074/2



Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Long rotary lever 8074/2-.-DL-40		<p style="text-align: center;">07701E00</p>	<p>8074/2-1:</p> <p style="text-align: right;">19066E00</p>	3 N



18818E00

E4

Position Switches

Series 8074/2

Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Roller lever 8074/2-.-WH-40	V = 1.0 m/s		<p>Displacement of the roller in the stroke direction of the plunger at the start of the plunger movement</p> <p>8074/2-1:</p> <p>8074/2-3:</p> <p>8074/2-5:</p>	18 N

18823E00

Position Switches

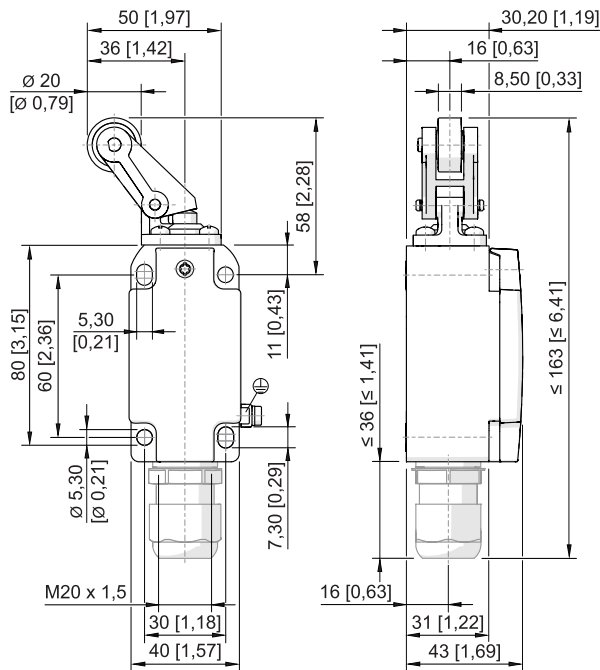
Series 8074/2



Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Parallel roller lever 8074/2-.-WPH-40	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>8074/2-1:</p> <p style="text-align: right;">19004E00</p> <p>8074/2-3:</p> <p style="text-align: right;">19005E00</p>	18 N



18824E00

E4

Position Switches

Series 8074/2

Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	■ = Closed contact □ = Open contact Zw = Positive opening distance	
Rotary lever 8074/2--D-40	V = 1.5 m/s	<p>8074/2-1: 13(3) 21(1) 14(4) 22(2) 07695E00</p> <p>8074/2-3: 11(1) 21(2) 12(4) 22(3) 07697E00</p> <p>8074/2-5: 15(2) 27(1) 16(3) 28(4) 07699E00</p>	<p>8074/2-1: 13-14 (3)-(4) 21-22 (1)-(2) 0 32° 47° 75° Zw = 45° 19006E00</p> <p>8074/2-3: 11-12 (1)-(4) 21-22 (2)-(3) 0 32° 75° Zw = 47° 19007E00</p> <p>8074/2-5: 27-28 (1)-(4) 15-16 (2)-(3) 0 32° 45° 65° Zw = 62° 19008E00</p>	7 N

18816E00

Position Switches

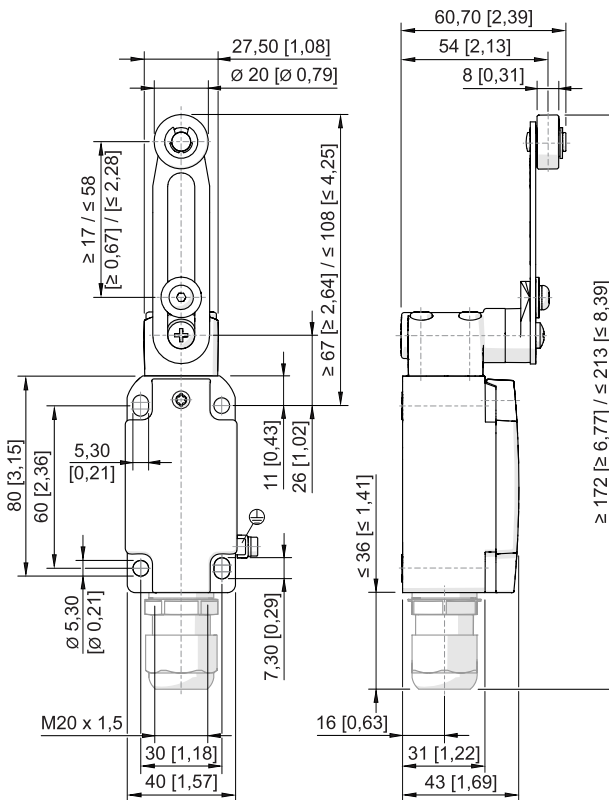
Series 8074/2



Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Adjustable rotary lever 8074/2.-DS-40	V = 1.5 m/s No positive opening operation, not suitable for safety circuits		<p>8074/2-1:</p> <p>Zw = 45°</p> <p>19006E00</p> <p>8074/2-3:</p> <p>Zw = 47°</p> <p>19007E00</p> <p>8074/2-5:</p> <p>Zw = 62°</p> <p>19008E00</p>	4.5 N



18819E00

E4

Position Switches

Series 8074/2

Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊖ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Rod lever 8074/2-.-DD-40	V = 1.5 m/s No positive opening operation, not suitable for safety circuits		<p>8074/2-1:</p> <p>8074/2-3:</p> <p>8074/2-5:</p>	2.5 N

18817E00

Position Switches

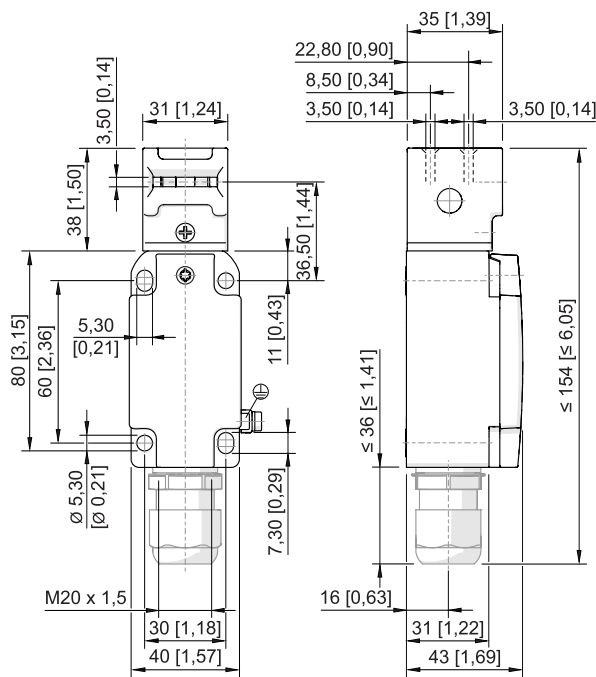
Series 8074/2



Technical data

Operation, operating speed, switching travel or switching angle

Actuator type	Actuation	Schematic	Nominal switching travel or switching angle	Minimum force/torque
Type 8074/2	V = Max. operating speed	⊕ = Positive opening operation	<ul style="list-style-type: none"> ■ = Closed contact □ = Open contact Zw = Positive opening distance 	
Safety switch 8074/2-.-AZ-20			<p>8074/2-1:</p> <p>19010E00</p> <p>8074/2-3:</p> <p>19011E00</p>	17 N



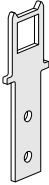
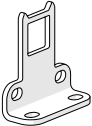
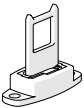
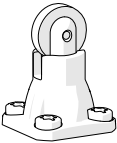
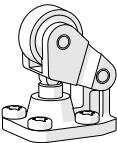
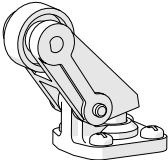
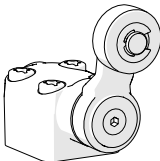
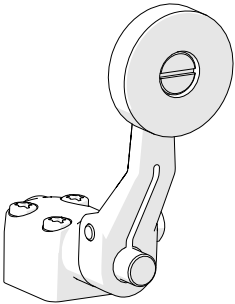
Note:
 Depiction of the switching travel when the actuator is engaged.
 The actuators must be ordered separately.

18815E00

Position Switches

Series 8074/2

Accessories and Spare Parts

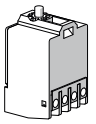
Designation	Figure	Description	Art. no.	Weight kg	
Actuator	 <small>18928E00</small>	Straight actuator	8074/.-.-ZB	132311	0.028
	 <small>18929E00</small>	Bent actuator	8074/.-.-ZB	132312	0.037
	 <small>18930E00</small>	Movable actuator	8074/.-.-ZB	132313	0.035
	 <small>18917E00</small>	Roller plunger	8074/2-0-R	257520	0.102
	 <small>18921E00</small>	Roller lever	8074/2-0-WH	257531	0.102
	 <small>18922E00</small>	Parallel roller lever	8074/2-0-WPH	257532	0.102
	 <small>18913E00</small>	Rotary lever	8074/2-0-D	257533	0.102
	 <small>18915E00</small>	Long rotary lever	8074/2-0-DL	257534	0.102

Position Switches

Series 8074/2

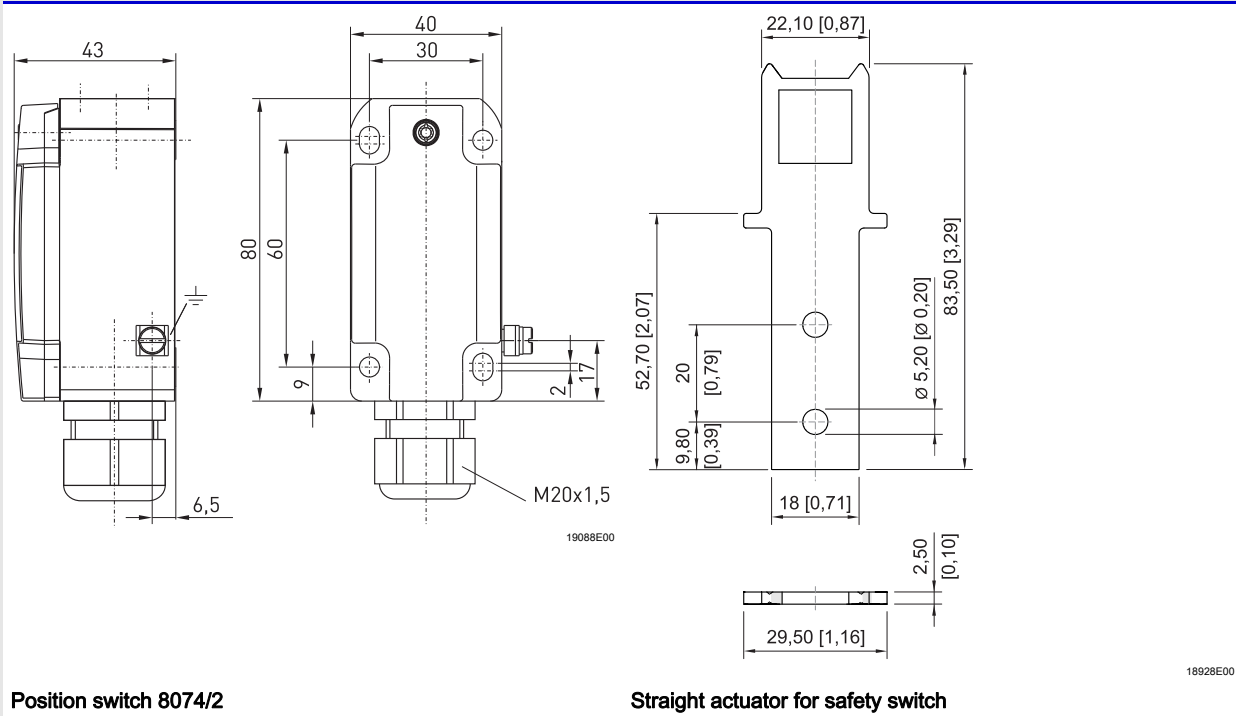


Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg	
Replacement contact elements		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	0.025
		1 NC + 1 NO Slow-action contact, overlapping	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

Note Replacement contact elements for type -W, -R, -SR, -DL, -WH, -WPH, -D, -DS, -DD only

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

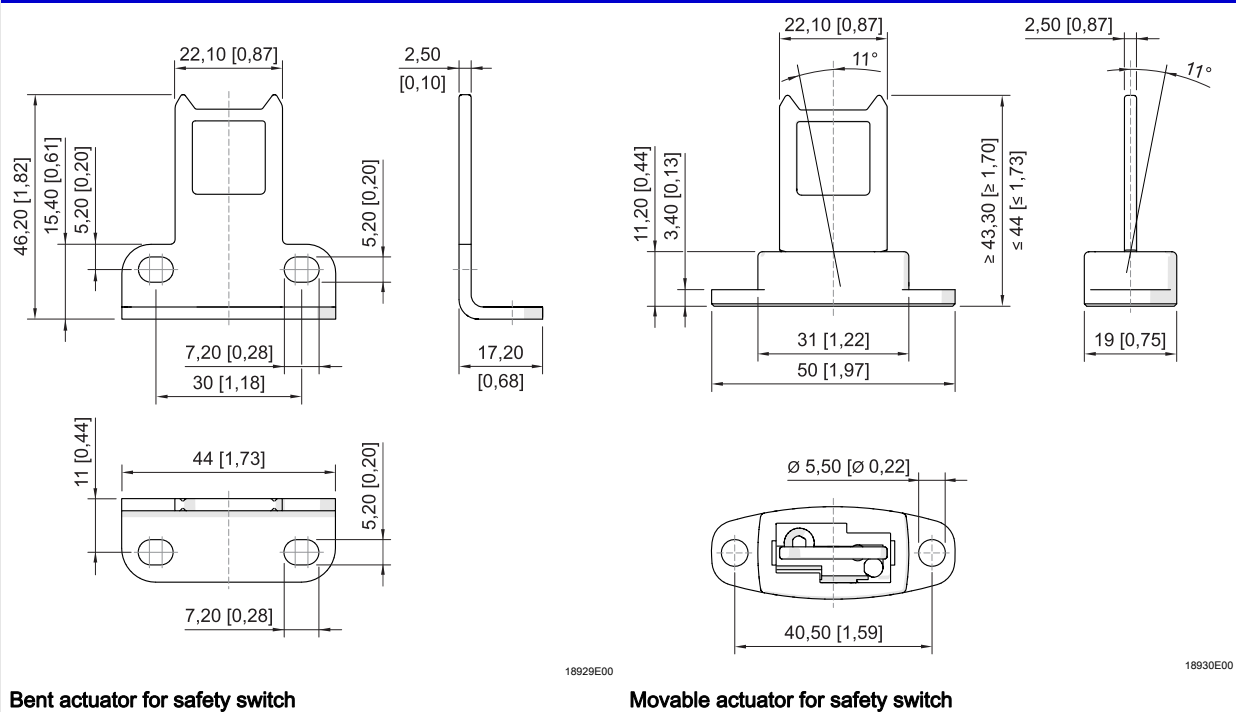


E4

Position Switches

Series 8074/2

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



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