



01616E00

STAHL

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.









Position Switches Series 8060

- Explosion protection according to
 - CENELEC
 - IEC
- For use in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- Enclosures of type of protection "Increased safety"
- Dimensions and characteristic values according to EN 50041
- Replaceable contact in flameproof enclosure
- Positive opening contacts
- Category 1 safety position switch with:
 - Extended plunger
 - Roller lever plunger
 - Angled roller lever
 - Swivelling roller lever
 - Adjustable roller lever
 - Actuating rod
- 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

Zones 1 & 2, 21 & 22



Selection Table

Version	Actuator	Order number	Weight kg
 09386E00	Extended plunger Plunger of moulded material	8060/1-.-S	0.069
 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

Technical Data

Explosion protection

Gas explosion protection	⊕ II 2 G Ex de IIC T6
Dust explosion protection	⊕ II 2 D Ex tD A21 IP65 T80 °C

Certificates

Gas explosion protection	PTB 01 ATEX 1052
Dust explosion protection	PTB 01 ATEX 1052

Other certificates

IECEX

Rated operational voltage U_e

8060/1-1	8060/1-3
8060/1-2	8060/1-4
8060/1-5	
Alternating current for equal potential:	max. 500 V
Alternating current for unequal potential:	max. 250 V
Direct current:	250 V

Rated operational current I_e

max. 10 A

Switching capacity

AC 12		AC 15		DC 12
8060/1-1	8060/1-3	8060/1-1	8060/1-3	8060/1-
8060/1-2	8060/1-4	8060/1-2	8060/1-4	
8060/1-5		8060/1-5		
max. 250 V	max. 250 V	max. 250 V	max. 250 V	max. 125 V
max. 500 V **)	max. 400 V **)	max. 500 V **)	max. 400 V **)	max. 10 A
max. 10 A	max. 10 A	max. 10 A	max. 10 A	max. 400 W
max. 5000 VA	max. 4000 VA	max. 1000 VA	max. 1000 VA	

**) Only for equal potential

Rated insulation voltage

550 V

Rated impulse withstand voltage

6 kV

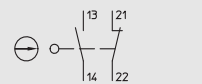
Short circuit protection

10 A gL / gG

Contact

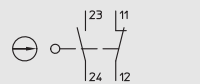
Version

Slow-action contact Snap-action contact Slow-action contact, make before break



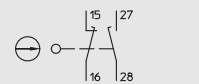
8060/1-1

08667E00



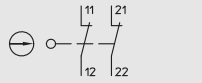
8060/1-2

08668E00



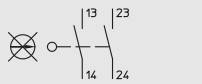
8060/1-5

08675E00



8060/1-3

08669E00



8060/1-4

08670E00

Attention:
The positive opening function ⊕ depends on the actuator used

Contact arrangement

2-pole, galvanically isolated, with double break action

Contact opening

≥ 1.5 mm (isolating distance ≥ 3 mm)

Contacts

Silver-nickel

Service Life

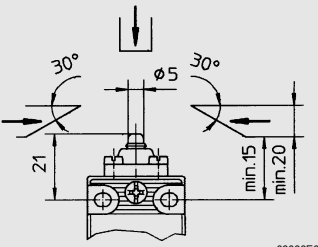
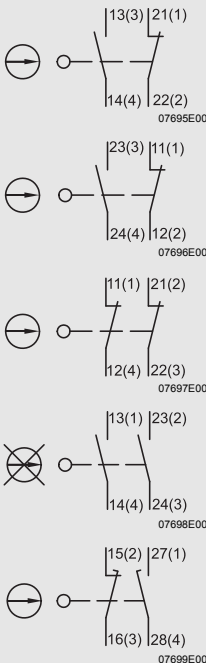
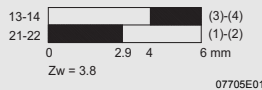
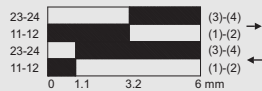
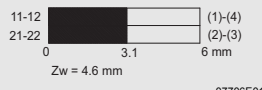
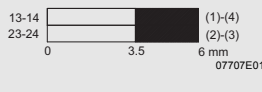
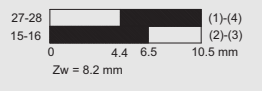
mechanical	max. 10 ⁶ operations
electrical	max. 10 ⁶ operations

Enclosure contact

Polyamide, glass fibre reinforced

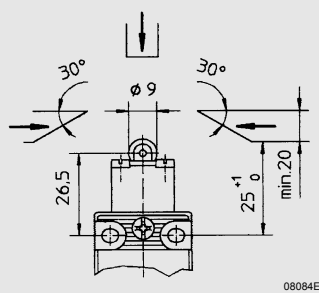
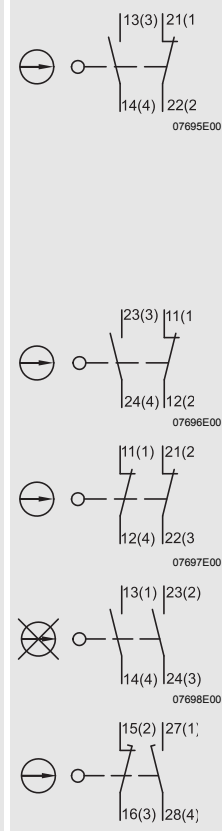
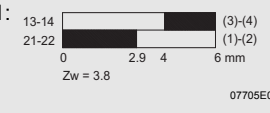
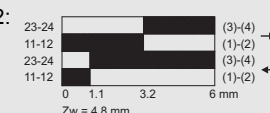
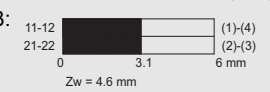
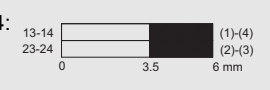
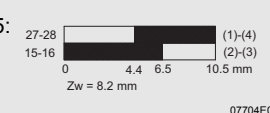
Technical Data	
Operating temperature range	- 20 °C ... + 50 °C (10 A) - 20 °C ... + 70 °C (6 A)
Maximum switching frequency	max. 6000 operations/h
Ingress protection	IP65
Enclosure material	Polyamide, glass fibre reinforced, black
Cable glands	8161/5-M 20-13 at the bottom of the enclosure: 1 x M 20 x 1.5
Connection	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 With mounted connecting cable: Plastic sheathed cable HK-SO-X05VV-F-OZ 4 x 1.5 mm, cable length 6 m
Terminals	1 x 2.5 mm ² or 2 x 1 mm ² , single-wire / finely-stranded
Mechanical shock resistance	Snap-action contact: 2 g Slow-action contact: 20 g
Tightening torque	Screw terminals: max. 0.4 Nm Cover screws: max. 0.7 Nm Connection thread: 2.3 Nm (M 20 x 1.5) Pressure screw: 1.5 Nm (M 20 x 1.5)

Operation, Operating Speed, Contact Travel or Angle

Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end	⊕ = Positive opening	■ = Contact closed □ = Contact open Zw = Travel for positive opening	
Extended plunger 8060/1- . . S	 <p>Lateral operation: V = 0.5 m/s</p> <p>Operation in stroke direction: V = 1.0 m/s</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> <p>8060/1-5:  07704E01</p>	14 N



Operation, Operating Speed, Contact Travel or Angle

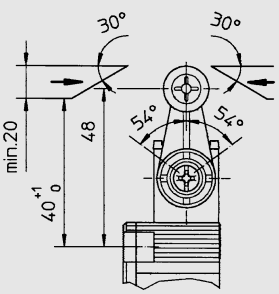
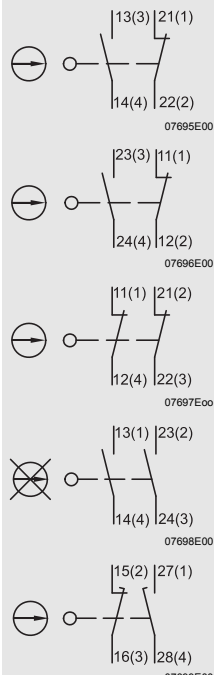
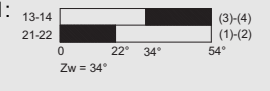
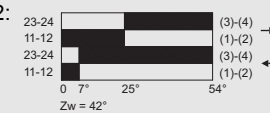
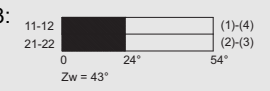
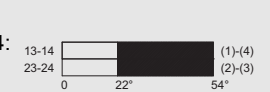

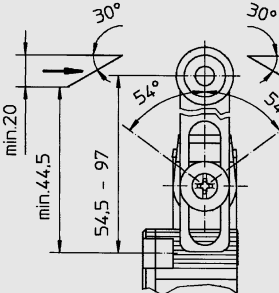
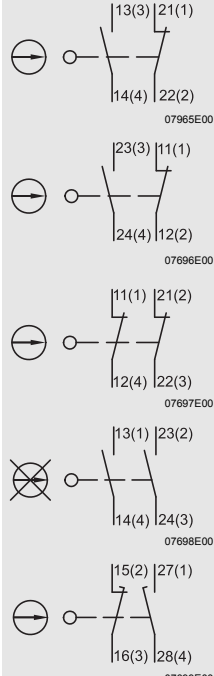
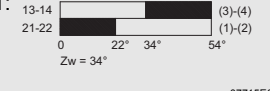
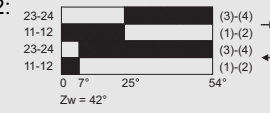
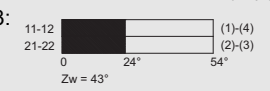


Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	<p>V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end</p>	⊕ = Positive opening	<p>■ = Contact closed □ = Contact open Zw = Travel for positive opening</p>	
Roller plunger 8060/1-..-RS	 <p>08084E00</p> <p>Lateral operation: V = 1.0 m/s</p> <p>Operation in stroke direction: V = 1.0 m/s</p>		<p>In stroke direction</p> <p>8060/1-1:</p>  <p>07705E01</p> <p>8060/1-2:</p>  <p>07722E01</p> <p>8060/1-3:</p>  <p>07706E01</p> <p>8060/1-4:</p>  <p>07707E01</p> <p>8060/1-5:</p>  <p>07704E01</p>	14 N





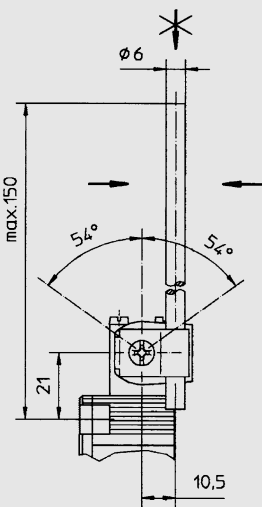
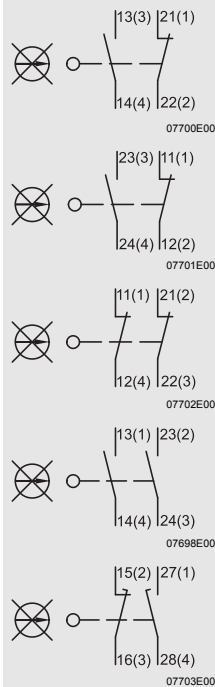
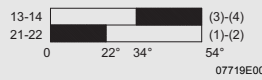
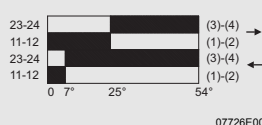
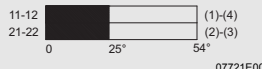
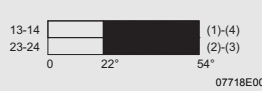

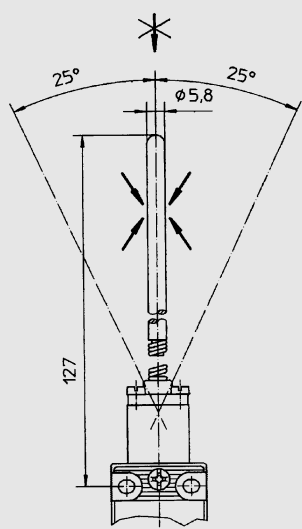
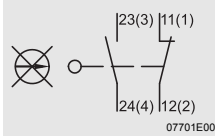
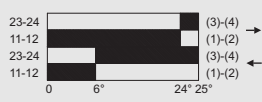
Operation, Operating Speed, Contact Travel or Angle				
Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end	⊕ = Positive opening	■ = Contact closed □ = Contact open Zw = Travel for positive opening	
Roller lever plunger, form E 8060/1-.-AR	<p>V = 1.0 m/s</p>		<p>8060/1-1:</p> <p>07711E01</p> <p>8060/1-2:</p> <p>07727E01</p> <p>8060/1-3:</p> <p>07709E01</p> <p>8060/1-4:</p> <p>07708E01</p> <p>8060/1-5:</p> <p>07710E01</p>	12 N
Angled roller lever 8060/1-.-WR	<p>V = 1.0 m/s</p>		<p>8060/1-1:</p> <p>07712E01</p> <p>8060/1-2:</p> <p>07723E01</p> <p>8060/1-3:</p> <p>07713E01</p> <p>8060/1-4:</p> <p>07714E01</p> <p>8060/1-5:</p> <p>12140E01</p>	12 N

Operation, Operating Speed, Contact Travel or Angle

Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end	⊕ = Positive opening	■ = Contact closed □ = Contact open Zw = Travel for positive opening	
Swivelling roller lever, form A 8060/1-..-R 08743E00	 <p>V = 1.5 m/s</p>		8060/1-1:  <p>07715E00</p>	0.3 Nm
			8060/1-2:  <p>07725E00</p>	
			8060/1-3:  <p>07717E00</p>	
			8060/1-4:  <p>07718E00</p>	
			8060/1-5:  <p>07718E00</p>	
Adjustable roller lever 8060/1-..-V 08091E00	 <p>V = 1.5 m/s</p>		8060/1-1:  <p>07715E00</p>	0.3 Nm
			8060/1-2:  <p>07725E00</p>	
			8060/1-3:  <p>07717E00</p>	
			8060/1-4:  <p>07718E00</p>	
			8060/1-5:  <p>07716E00</p>	












Operation, Operating Speed, Contact Travel or Angle

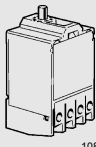
Actuator	Operation	Diagram	Nominal contact travels or angles	Minimum force/torque
Type 8060/1	V = Max. operating speed → = Direction of operation () = Connection for device with unconnected cable end	⊕ = Positive opening	■ = Contact closed □ = Contact open Zw = Travel for positive opening	
Actuating rod 8060/1- . -H	 <p>V = 1.5 m/s No positive opening, not suitable for safety circuits</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
Spring-rod actuator 8060/1-2-F	 <p>No positive opening, not suitable for safety circuits</p>		<p>Only for use with snap-action contact!</p> <p>8060/1-2: </p>	--



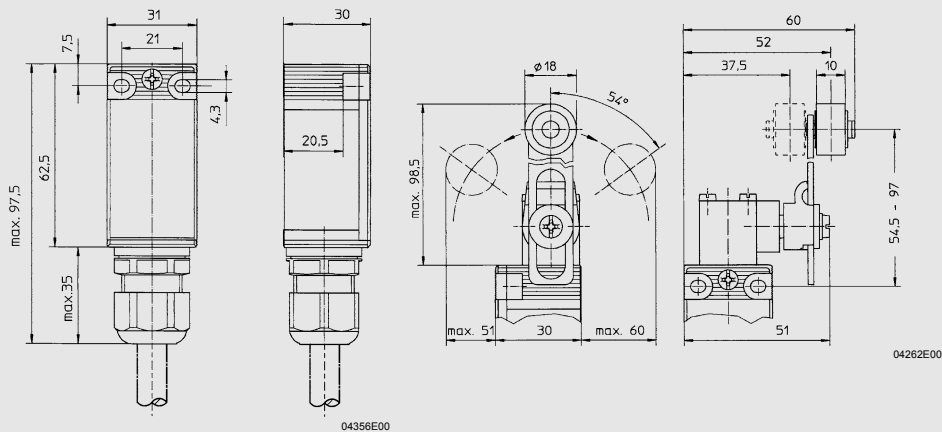
Accessories and Spare Parts

Designation	Illustration	Order number	Weight kg
Actuator	 05662E00	Extended plunger 8060/1-0-S	131251 0.016
	 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
	 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	 05664E00	8161/5-M 20-13 1 piece	138518 0.012

Accessories and Spare Parts

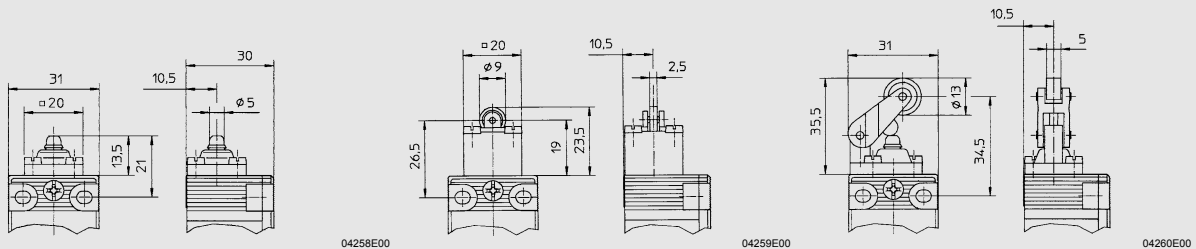
Designation	Illustration	Order number	Weight kg	
Contact		1 NC + 1 NO Slow-action contact 8080/1-1	132529	0.025
		2 NC Slow-action contact 8080/1-3	132532	0.025
		2 NO Slow-action contact 8080/1-4	132533	0.025
		1 NC + 1 NO Slow-action contact, make before break 8080/1-5	132534	0.025
		1 NC + 1 NO Snap-action contact 8080/1-2	132531	0.025

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



8060/1.-OV
Position switch without insert

8060/1.-V
Adjustable roller lever



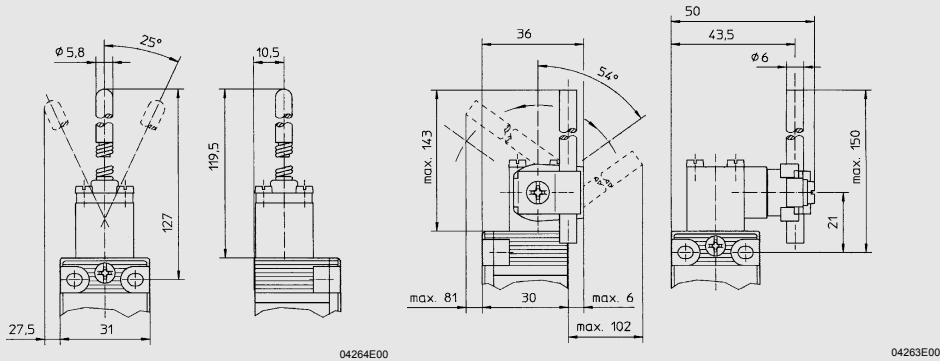
8060/1.-S
Extended plunger

8060/1.-RS
Roller plunger

8060/1.-AR
Roller lever, form E

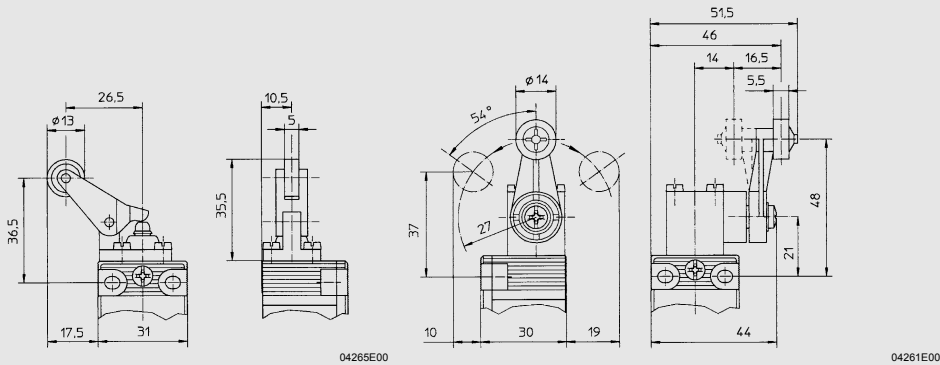


Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



8060/1-2-F
Spring rod actuator

8060/1--H
Actuating rod



8060/1--WR
Angled roller lever

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