



STNK SERIES



The **STNK series** thermoplastic safety switches with separate actuator comply with EN 50047 and is designed to provide different switch variants (slow action or snap action basic switches) and three different separate actuators that complete the product body.

The thermoplastic bodies have two fixing holes with 20 or 22 mm spacing and a cable entry hole at the bottom of the switch. Various types of threaded cable entry are available to cover the main requirements of the international market.

In this type of switch, the switching element and the actuator are actually separate. However, **the product is sold as complete with body and key**. The stainless steel key is fixed to the moving part of the guard in such a way that it is separated from the switch whenever the guard is opened.

The positive opening NC contact is always open when the actuator is removed. A special mechanism ensures that the removal of the actuator forces a positive opening of the electrical contacts.

The STNK series is designed to control gates, sliding doors and other guards that protect dangerous parts of machinery without inertia.

They are suitable for use in the harshest environmental conditions with an **operating temperature range of -25°C to +80°C**.

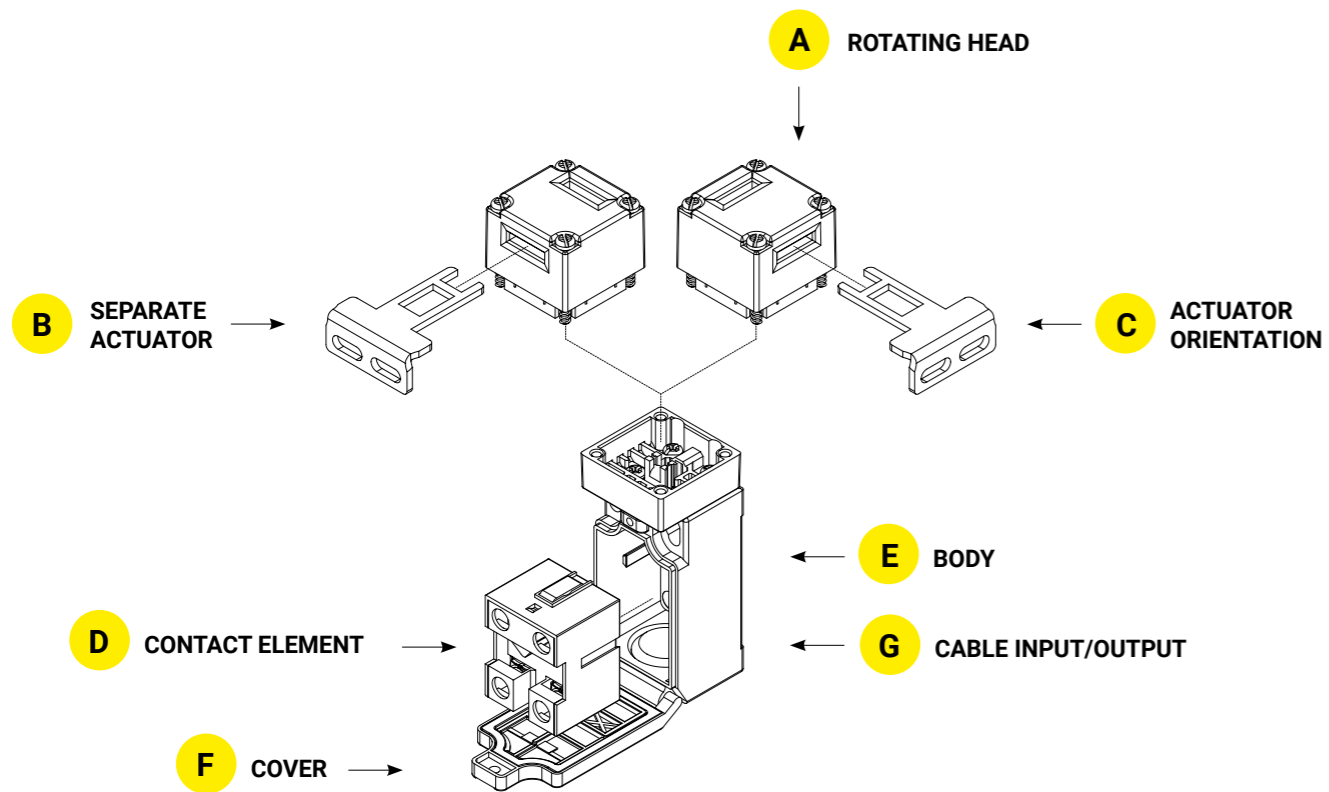
All models in the series are **IP65-rated**.



SPECIFICATIONS

Standards		EN 60947-5-1, UL 508, EN 50047, EN 1088, EN 60204-1
Approvals		cULus, EAC, CCC, CE and UKCA marked for all applicable directives
Positive opening operation		NC contacts conforming to IEC /EN 60947-5-1 ☺
Minimum current		5 mA - 5 V DC
Thermal current	I _{th}	10 A
Rated insulation voltage	U _i	500 V AC
Rated impulse withstand voltage	U _{imp}	6 kV
Insulation resistance	min	100 MΩ (DC 500 V)
Contact resistance	max	25 mΩ (initial)
Actuator frequency	max	2 cycles/min
Enclosure material		UL approved glass-filled polybutylene terephthalate
Enclosure protection		IP65
Operating temperature		-25 ... +80°C (-13 ... +176°F)
Pollution degree		3
Protection against electric shock		Class II (double Insulation) ☐ Double insulation makes ground terminal unnecessary
Electrical life expectancy	min	150.000 cycles
Mechanical life expectancy	min	1 x 10 ⁶ cycles
Vibration	IEC 68-2-6 excursion	10-55 Hz ± 1Hz 0.35 mm, 1 octave/min
Conduit entry		Various international conduit sizes (see product selection table pag. 91)
Fixing		2 x M4 screws

STRUCTURE DESCRIPTION



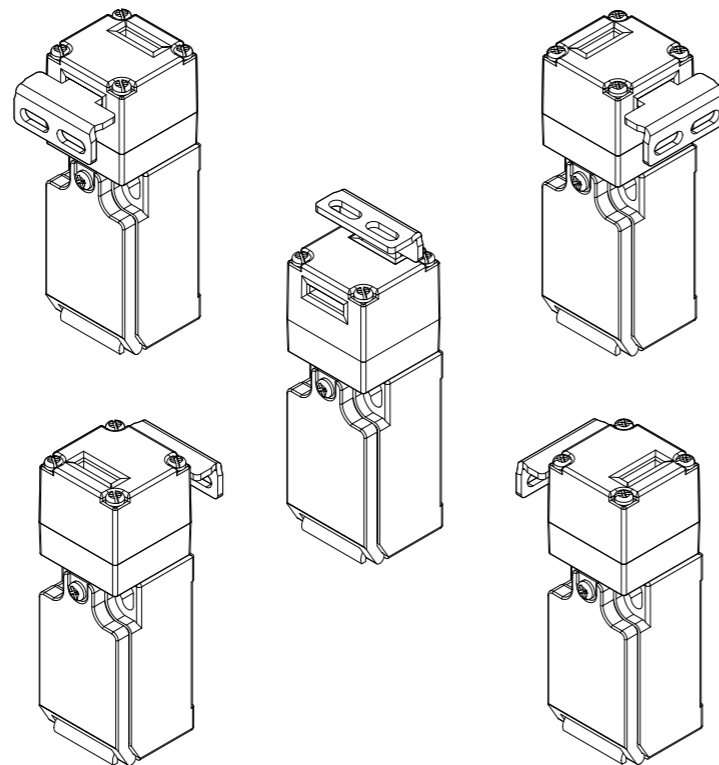
A - ROTATING HEAD

The heads are made of UL approved glass-filled polybutylene terephthalate.

All heads can be adjusted in steps of 90° over 360°, compared to the body.

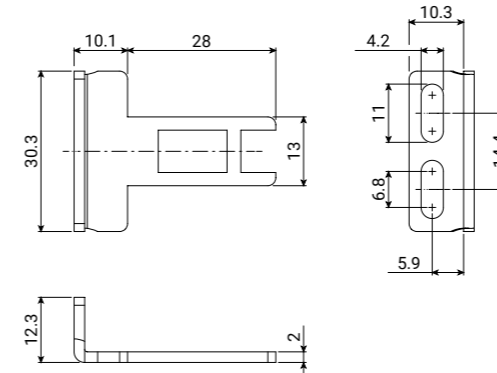
The direction of the switch head can be varied in one of four directions by loosening the screws at the four corners of the head.

The working planes of the device vary depending on the orientation of the head and actuator.

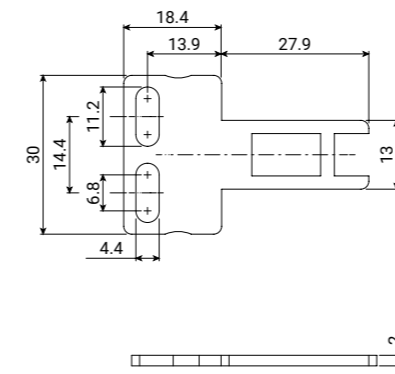


B - SEPARATE ACTUATOR

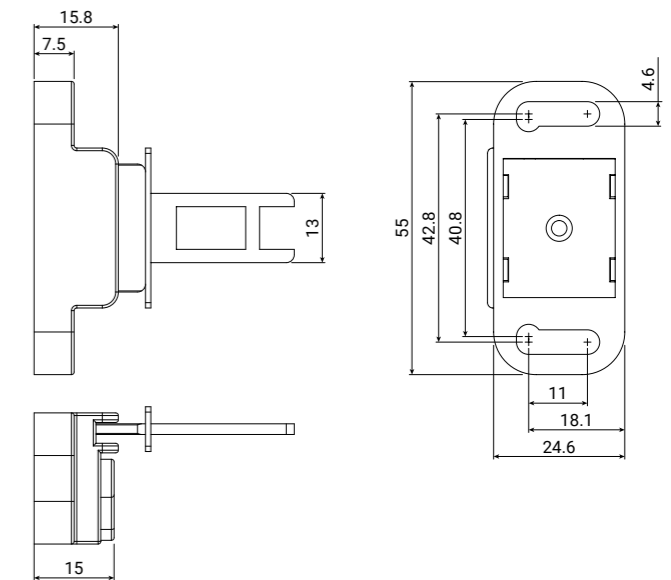
01 Angled actuator



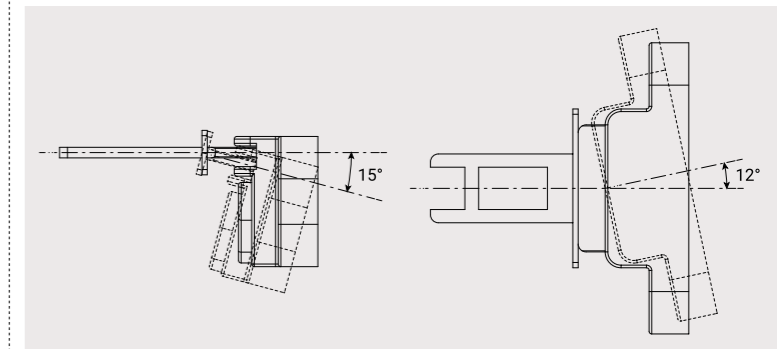
02 Straight actuator



03 Jointed actuator



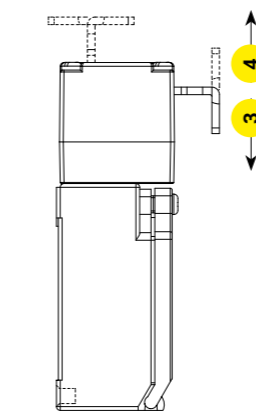
The actuator can flex in four directions for applications where the protection alignment is not precise.



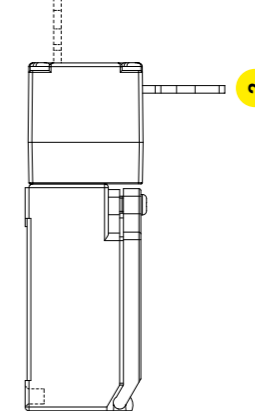
C - ACTUATOR ORIENTATION

The key actuator can be inserted into the side or upper hole.

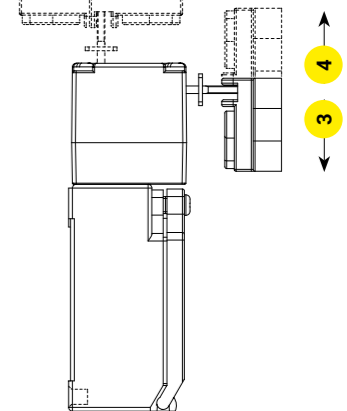
The keys can be inserted in both housings by choosing the orientation that suits the application.



Angled actuator



Straight actuator

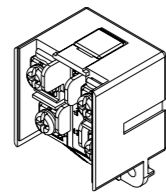


Jointed actuator

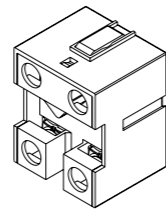
D - CONTACT ELEMENT

The integrated switch has a direct opening mechanism that forcibly separates the NC contact even in the event of accidental welding (overload, short circuit, ...).

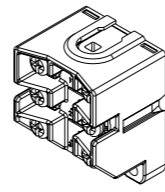
Different contact elements are available, both fast-acting and slow-acting, depending on the different application requirements.



X11: 1NO+1NC
Slow action (Zb)



Z11: 1NO+1NC
Snap action (Zb)



W12: 1NO+2NC
Slow action (Zb)

W02: 2NC
Slow action (Zb)

Z02: 2NC
Snap action (Zb)

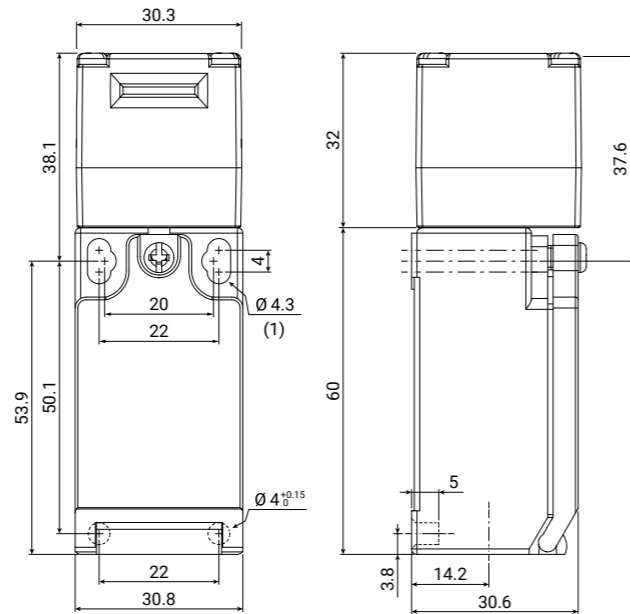
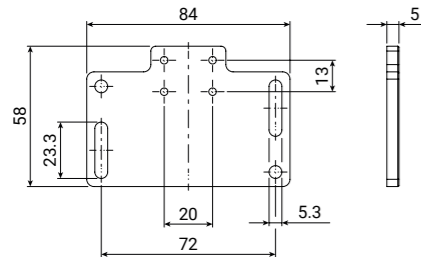
W03: 3NC
Slow action (Zb)

E - BODY

The body complies with EN 50047, with a distance of 20/22 mm between the fixing holes.

It is available a fixing plate with slots to adjust the operating point, developed for backward compatibility with old products. The plate is sold in kits (code: **KIT-FTN**) comprising:

- 1 plate;
- 2 self-tapping screws 4 × 28 mm;
- 2 washers Ø4 mm.



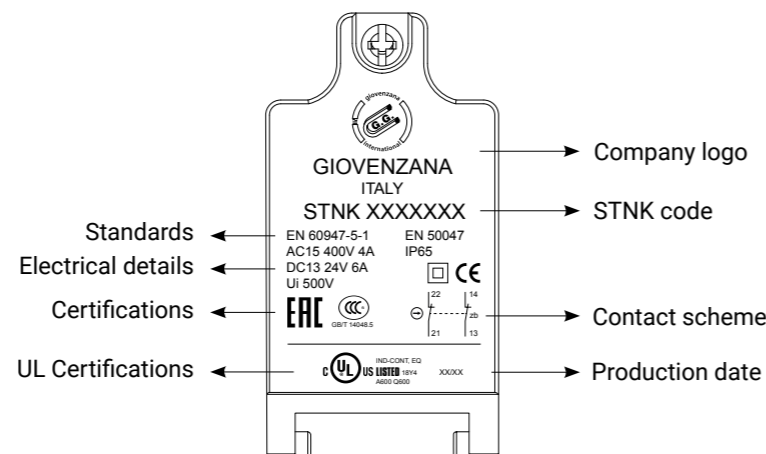
F - COVER

Material conforming to the RoHS Directive.

The lid is laser marked to ensure branding, coding and information on product specifications such as technical data, production date, stock or lot number, revision or control date. Lasering ensures the complete traceability of our products and components and is essential for compliance with ISO quality standards.

- Some of the advantages:
- clear and precise text legibility;
 - guaranteed lifetime unlike ink which deteriorates over time.

The cover, with a hinge at the bottom, can be opened by removing the screw, which ensures easy maintenance and wiring.



G - CABLE INPUT/OUTPUT

A threaded cable input/output is provided at the bottom of the switch. 6 standard and customised cable input/output models are available in order to cover the major international markets.

Standard: Blank: M16 × 1.5

On request: M: M20 × 1.5

N: 1/2" NPT

G1: Pg 11

G3: Pg 13.5

C: M12 connector

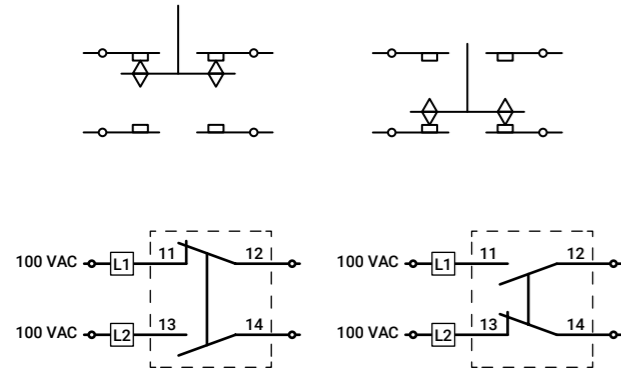
CONTACT ELEMENT - SPECIFICATIONS

CONTACT CODE	CONTACT TYPE	ELECTRICAL SCHEME	CONNECTOR PIN ARRANGEMENT
X11	1NO+1NC Slow action Zb		
W02	2NC Slow action Zb		
Z11	1NO+1NC Snap action Zb		
Z02	2NC Snap action Zb		
W12	1NO+2NC Slow action Zb		No connector
W03	3NC Slow action Zb		No connector

CONTACT ELEMENT - CLASSIFICATION (ACCORDING EN 60947-5-1)

Za contact type

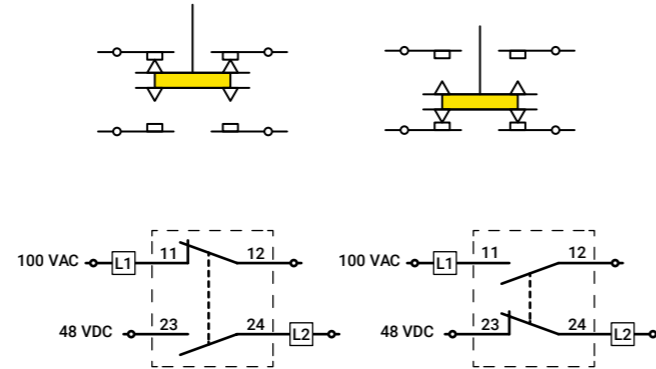
A single blade opens and closes the contacts. With this type of contact it is NOT possible to supply the circuit with different voltages and polarities.



L1: load 1
L2: load 2

Zb contact type

In this case there are two blades that open and close the contact. The two blades are electrically isolated from each other. Therefore, with this type of contact it is possible to supply the circuit with different voltages and polarities.



L1: load 1
L2: load 2

STNK series of thermoplastic safety switches with separate actuator is equipped with Zb contacts.

SAFETY INTEGRITY LEVEL ACCORDING TO IEC 61508

Safety Integrity Level (SIL) is the quantification of the reliability (or degree of reliability) achieved by any object that performs a safety-related function. The greater its reliability, the greater its ability to perform safety-critical functions or machine or plant availability. The determination of a SIL is based on quantitative and qualitative factors such as the development process and safety lifecycle management.

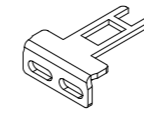
The STNK series thermoplastic limit switches are SIL 3.



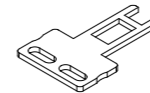
STNK - PRODUCT SELECTION OVERVIEW

1 SEPARATE ACTUATORS

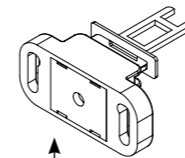
01



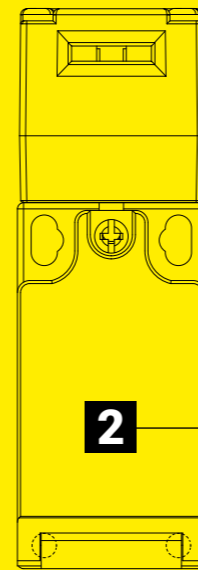
02



03



1



3

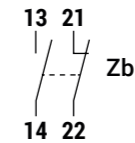
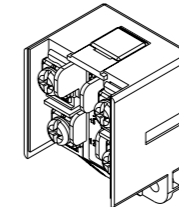
3 CONDUIT ENTRY

Threaded conduit entry

Standard:
M16 x 1.5

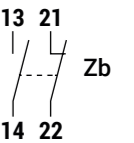
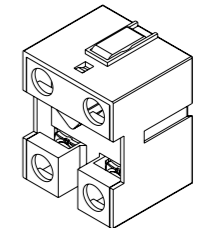
On request:
M20 x 1.5
1/2" NPT
PG11
PG13.5
With connector

2 CONTACT BLOCKS



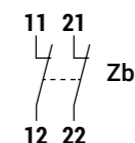
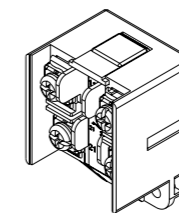
X11

1NO+1NC - slow action (Zb)



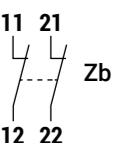
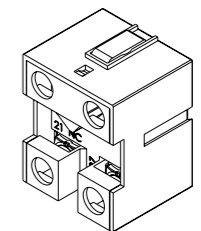
Z11

1NO+1NC - snap action (Zb)



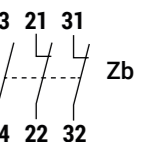
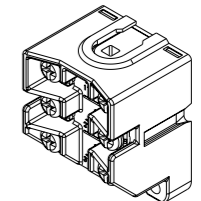
W02

2NC - slow action (Zb)



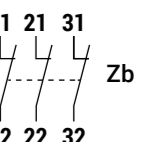
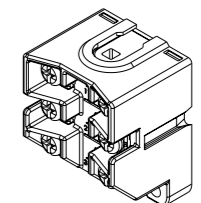
Z02

2NC - snap action (Zb)



W12

1NO+2NC - slow action (Zb)



W03

3NC - slow action (Zb)

CONTACT TYPES		CATEGORIES RATINGS	
X11	1NO+1NC	slow action (Zb)	A600
W02	2NC		Q600
Z11	1NO+1NC	snap action (Zb)	B600
Z02	2NC		Q600
W12	1NO+2NC	slow action (Zb)	A300
W03	3NC		Q300

AC15:
400 V - 4 A
DC13:
24V - 6 A

STNK - CODE SELECTION OVERVIEW

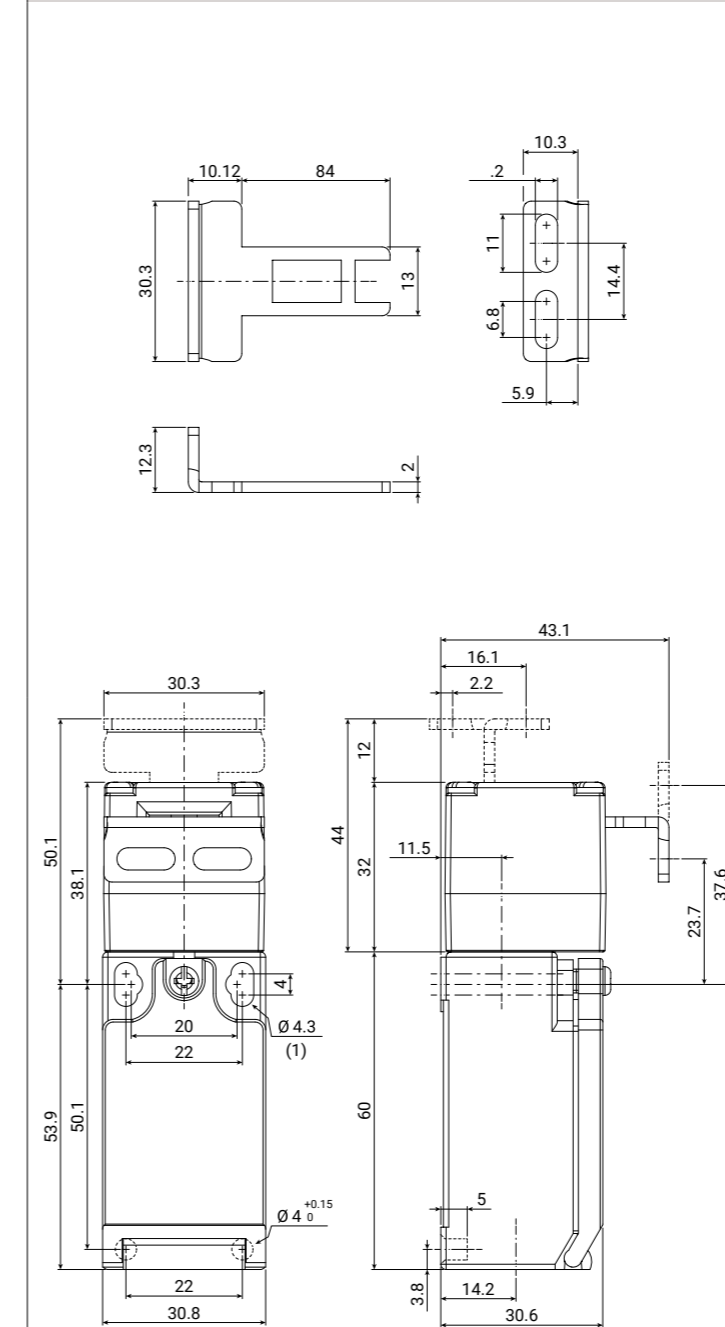
S T N K	0 1	X 1 1	
SERIES	SEPARATE ACTUATOR	CONTACT TYPE	CONDUIT ENTRY
STNK thermoplastic safety switches with separate actuator	01 angled actuator 02 straight actuator 03 jointed actuator	X11 1NO+1NC slow action Zb W02 2NC slow action Zb Z11 1NO+1NC snap action Zb Z02 2NC snap action Zb W12 1NO+2NC slow action Zb W03 3NC slow action Zb	<i>standard</i> blank M16 x 1.5 <i>on request</i> M M20 x 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male code "A" M12 x 1 connector

STNK01

Thermoplastic safety switch with angled actuator
IP65



technical drawing - sizes in mm



(1) mounting holes

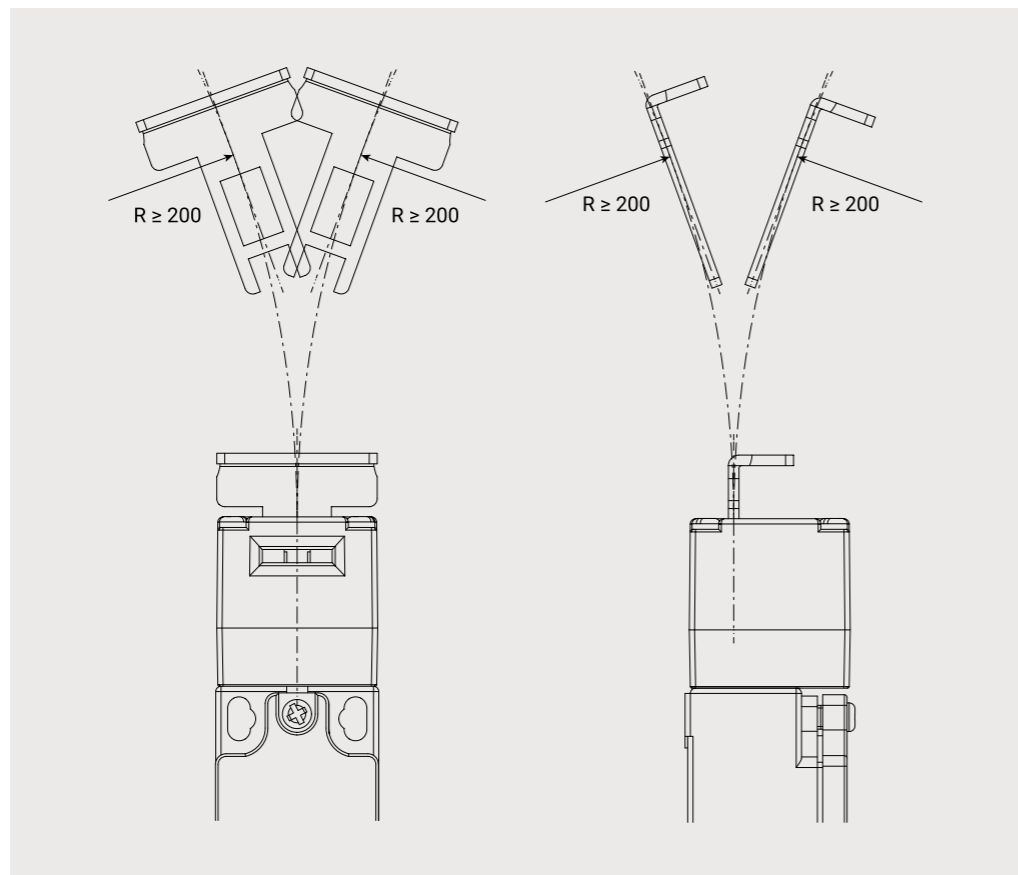
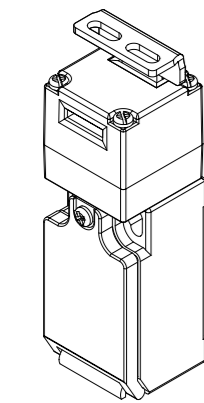
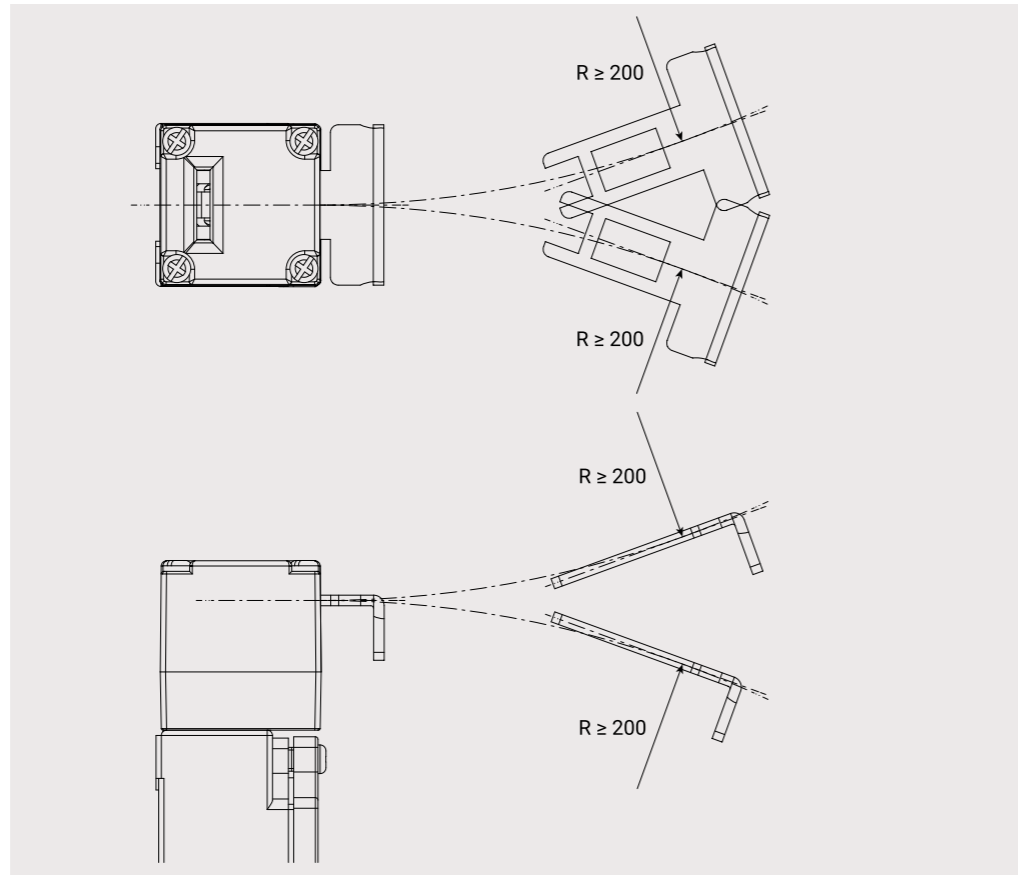
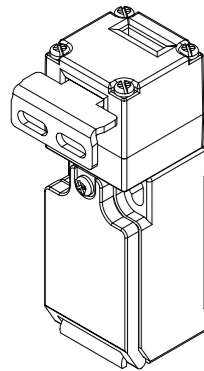
STNK series	01 actuator	XXX contact type	XX conduit entry
STNK thermoplastic safety switch	with angled actuator	X11: 1NO+1NC slow action (Zb) W02: 2NC Z11: 1NO+1NC snap action (Zb) Z02: 2NC W12: 1NO+2NC slow action (Zb) W03: 3NC	blank M16 x 1.5 (standard) M20 x 1.5 1/2" NPT PG11 PG13.5 male connector "A" M12 x 1

contact type	operation diagrams
X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
Z11 1NO+1NC snap action (Zb)	
Z02 2NC snap action (Zb)	
W12 1NO+2NC slow action (Zb)	
W03 3NC slow action (Zb)	

contact type	categories	ratings	operational travel		operating force	positive opening		total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)	
X11: 1NO+1NC W02: 2NC	A600-Q600	AC15: 400V - 4A	7.4 mm	8.4 mm	25 N	8.1 mm	60 N	∞
			7.4 mm	-	25 N	8.1 mm	60 N	
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	6.5 mm	4.8 mm	14 N	8.0 mm	26 N	
			6.5 mm	4.5 mm	14 N	8.0 mm	26 N	
W12: 1NO+2NC W03: 3NC	A300-Q300		7.2 mm	8.0 mm	25 N	8.2 mm	60 N	
			7.2 mm	-	25 N	8.2 mm	60 N	

STNK01

Thermoplastic safety switch with angled actuator
IP65

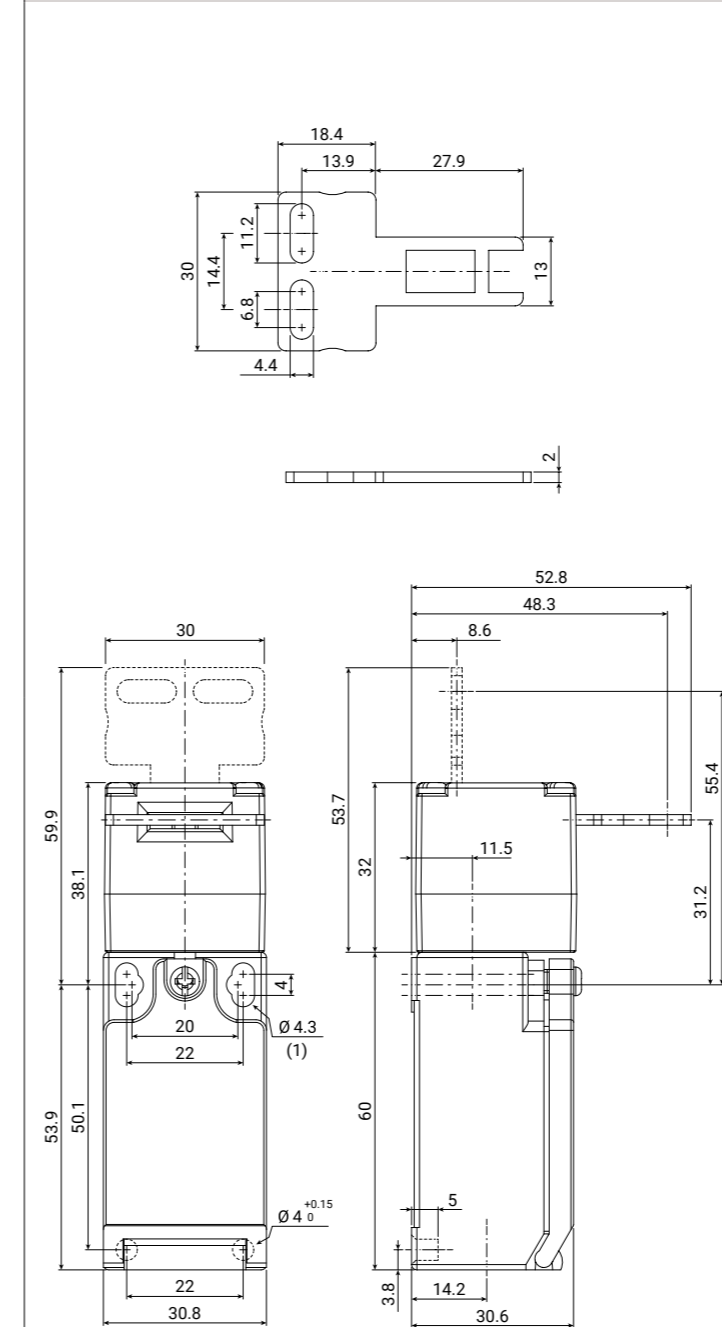


STNK02

Thermoplastic safety switch with straight actuator
IP65



technical drawing - sizes in mm



(1) mounting holes

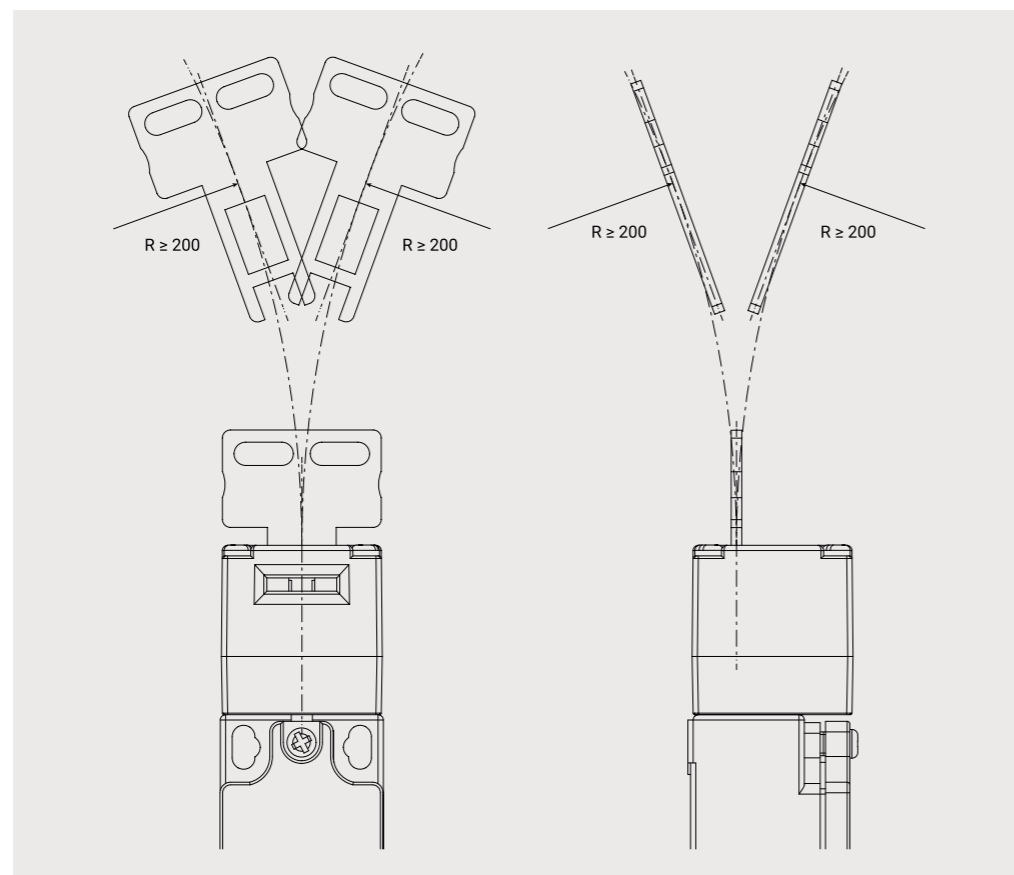
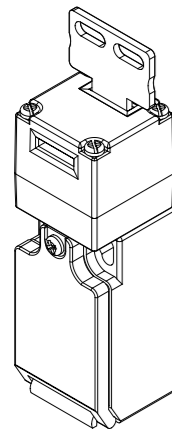
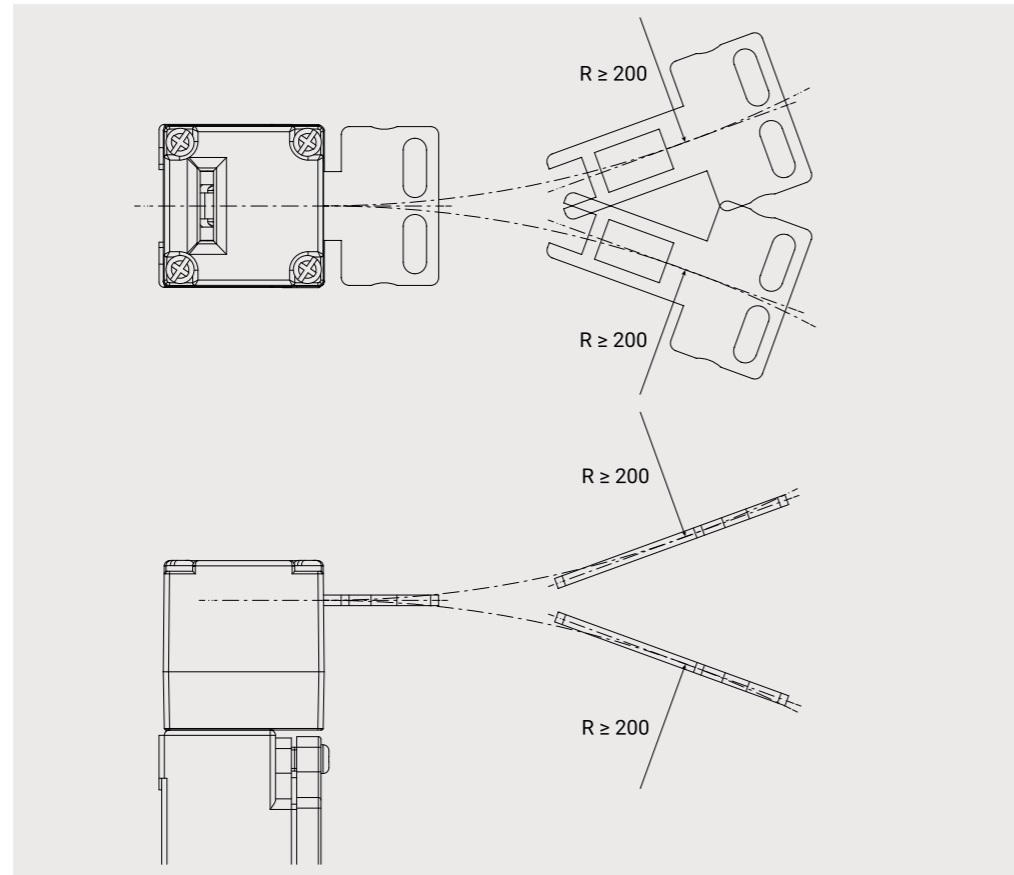
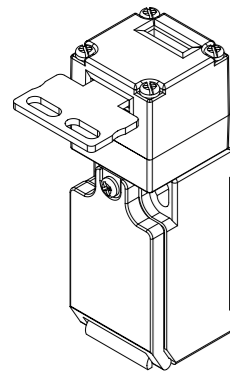
STNK series	02 actuator	XXX contact type	XX conduit entry
STNK thermoplastic safety switch	with straight actuator	X11: 1NO+1NC W02: 2NC Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	blank M N G1 G3 C M16 × 1.5 (standard) M20 × 1.5 1/2" NPT PG11 PG13.5 male connector "A" M12 × 1

contact type	operation diagrams
X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
Z11 1NO+1NC snap action (Zb)	
Z02 2NC snap action (Zb)	
W12 1NO+2NC slow action (Zb)	
W03 3NC slow action (Zb)	

contact type	categories	ratings	operational travel		operating force OF	positive opening		total travel TT
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)	
X11: 1NO+1NC W02: 2NC	A600-Q600	AC15: 400V - 4A	7.4 mm	8.4 mm	25 N	8.1 mm	60 N	∞
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	7.4 mm	-	25 N	8.1 mm	60 N	
W12: 1NO+2NC W03: 3NC	A300-Q300		6.5 mm	4.8 mm	14 N	8.0 mm	26 N	
			6.5 mm	4.5 mm	14 N	8.0 mm	26 N	
			7.2 mm	8.0 mm	25 N	8.2 mm	60 N	
			7.2 mm	-	25 N	8.2 mm	60 N	

STNK02

Thermoplastic safety switch with straight actuator
IP65

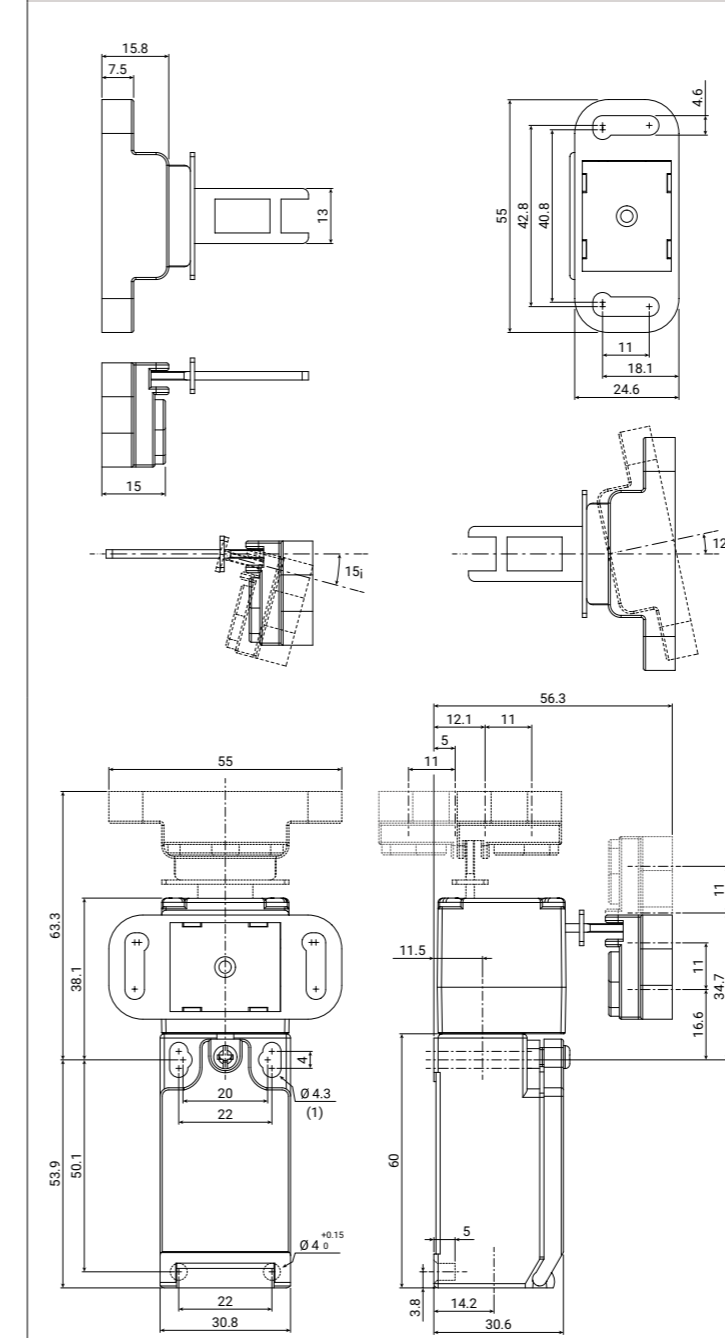


STNK03

Thermoplastic safety switch with jointed actuator
IP65



technical drawing - sizes in mm



(1) mounting holes

STNK series	03 actuator	XXX contact type	XX conduit entry
STNK thermoplastic safety switch	with jointed actuator	X11: 1NO+1NC slow action (Zb) W02: 2NC Z11: 1NO+1NC snap action (Zb) Z02: 2NC W12: 1NO+2NC slow action (Zb) W03: 3NC	blank M16 × 1.5 (standard) M20 × 1.5 1/2" NPT PG11 PG13.5 male connector "A" M12 × 1

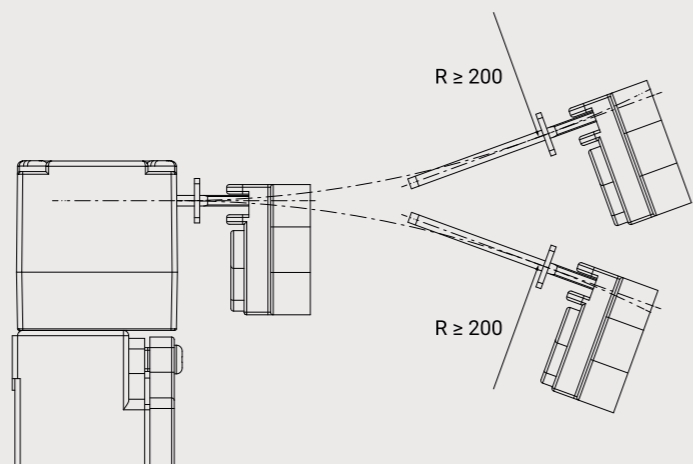
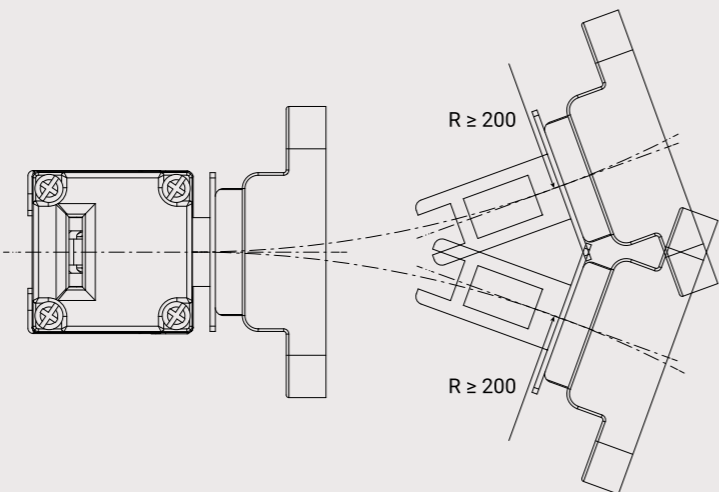
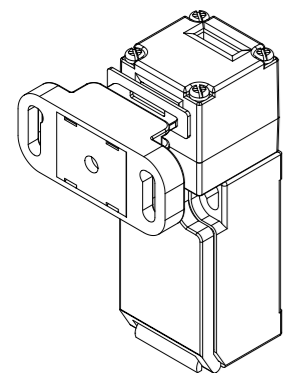
contact type	operation diagrams
X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
Z11 1NO+1NC snap action (Zb)	
Z02 2NC snap action (Zb)	
W12 1NO+2NC slow action (Zb)	
W03 3NC slow action (Zb)	

contact type	categories	ratings	operational travel		operating force OF	positive opening		total travel TT
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)	
X11: 1NO+1NC slow action (Zb)	A600-Q600	AC15: 400V - 4A	7.4 mm	8.4 mm	25 N	8.1 mm	60 N	∞
W02: 2NC			7.4 mm	-	25 N	8.1 mm	60 N	
Z11: 1NO+1NC snap action (Zb)	B600-Q600	DC13: 24V - 6A	6.5 mm	4.8 mm	14 N	8.0 mm	26 N	
Z02: 2NC			6.5 mm	4.5 mm	14 N	8.0 mm	26 N	
W12: 1NO+2NC slow action (Zb)	A300-Q300		7.2 mm	8.0 mm	25 N	8.2 mm	60 N	
W03: 3NC			7.2 mm	-	25 N	8.2 mm	60 N	



STNK03

Thermoplastic safety switch with jointed actuator
IP65



STNK03

Thermoplastic safety switch with jointed actuator
IP65

