

ELEVATOR TECHNOLOGY **NORTH AMERICAN MARKET**



SIL³
READY

SAFETY SOLUTIONS
build the future



ABOUT US

GIOVENZANA INTERNATIONAL B.V. is one of the world's leading suppliers of **industrial safety technology**.

We study **tailor-made technical solutions** thanks to our design capability and production flexibility.

Our high quality products are designed, produced and assembled in our production warehouses in **Italy, Brazil and Hungary**.

We can guarantee to every customer the complete control of our **products' quality** able to satisfy the requirements of the current market.

Our main characteristics are a **strong international attitude** and the will to innovate and realize the demands of customers.

The wide variety of products offered, together with the knowledge of our research and development department, allow us to meet even the most specific and unusual situations.

Giovenzana International B.V. technical and commercial employees aim to provide complete support to our customers during the sales and aftersales processes.

Quality, competence and safety solutions guided us in ur daily work to develop the best products for all market needs.

REV. 00_21

GIOVENZANA INTERNATIONAL B.V.

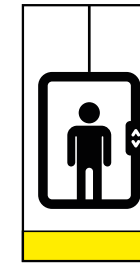
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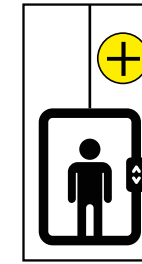
The most up-to-date version of this catalogue can be downloaded from the download section of the website:

PRODUCT CATEGORIES

To easily consult this catalog, it is divided by the positioning of the product lifts. Here are the product categories and the symbols that will guide you in the catalogue.



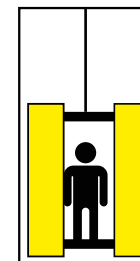
PIT BOTTOM
controls



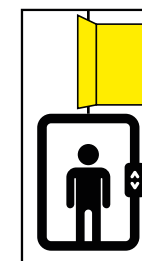
ACCESSORIES
complementary products



CAR TOP
inspection boxes



DOOR
components



PANEL BOARD
components

ASME A17.1/CSA B44: Safety Code for Elevators and Escalators



The safety code for elevators and escalators, **ASME A17.1-2019**, or, if you're in Canada, **CSA B44-2019**, has been revised.

ASME A17.1/CSA B44-2019: Safety Code For Elevators And Escalators serves as a basis for the design, construction, installation, operation, testing, inspection, maintenance, alteration, and repair of elevators, dumbwaiters, escalators, moving walks, and material lifts.

The Safety Code for Elevators

Enhancing skywards construction by permitting taller buildings, elevators fortify the modern life in which we thrive. In all, U.S. elevators make 18 billion passenger trips each year. **ASME A17.1-2019**, as a code, is intended to provide safety of life and limb and promote public welfare. It covers not only elevators, escalators, moving walks, dumbwaiters, material lifts, and related equipment, but also their associated parts, rooms, spaces, and hoistways. The **ASME A17.1-2019** document is broken up into specific parts to ease compliance. Each part, other than those detailing general requirements, cover a specific equipment-electric elevators, hydraulic elevators, elevators with other types of driving machines, special application elevators, escalators and moving walks, and dumbwaiters and material lifts.

Changes to ASME A17.1-2019/CSA B44-2019

The safety code for elevators dates back just about one century, so, over the years, numerous revisions have kept it current. With these changes, the scope of the document has expanded, accommodating not just elevators but also escalators, dumbwaiters, and other equipment types. Decades of changes have developed **ASME A17.1-2019** into an expansive and hefty document, comprehensively approaching various topics pertinent to elevators and other machinery in its over 500 pages of content.

A17.1 has been harmonized with CSA B44 to provide one comprehensive solution for jurisdictions throughout North America.

Important changes to this standard include:

- Updates to door requirements in private residence elevators and occupant evacuation elevators.
- Seismic requirements for elevators and escalators were clarified.
- Updates were made to emergency communication requirements for an elevator to ensure communication with any trapped passengers, including those who are hearing impaired.
- Requirements were modified for increased door protection on passenger elevators.

GIOVENZANA®, an innovator in elevator products for over 65 years, has been successful in providing solutions to every major elevator manufacturer in the world.

In fact, when it comes to products like car top inspection boxes, temporary run stations, pit bottom control stations, emergency stop control stations, recall drive control units and custom products the leading elevator companies in the world rely on Giovenzana International.

Over the years we have lead the way with product designs, product quality and reliability and international safety standards.

The Giovenzana Elevator Products are used to facilitate inspection and maintenance whether on the car roof, in the pit, in the car or on a platform.

We have worked closely with approvals and standards organizations to develop standards and guidelines for increased safety including UL, CSA, IMQ, CCC, RINA, EAC and others.

PIT STOP SWITCHES

IP65

When you need a convenient, safe and reliable way to provide emergency stop to your service technicians you can count on Giovenzana elevator products.

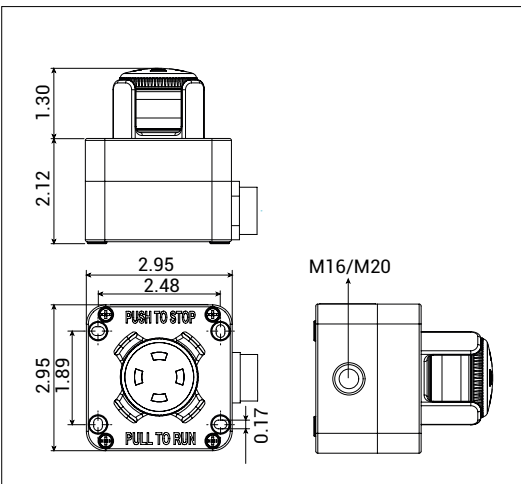
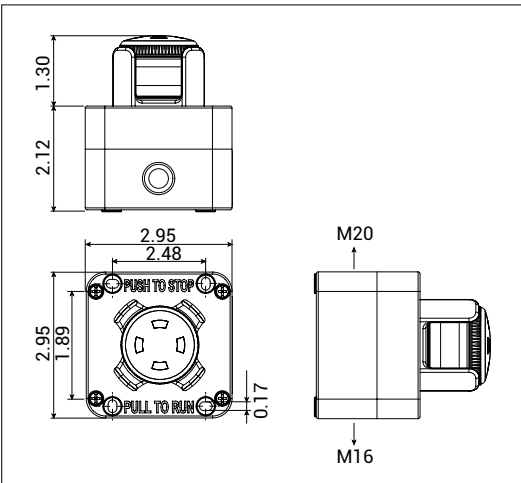
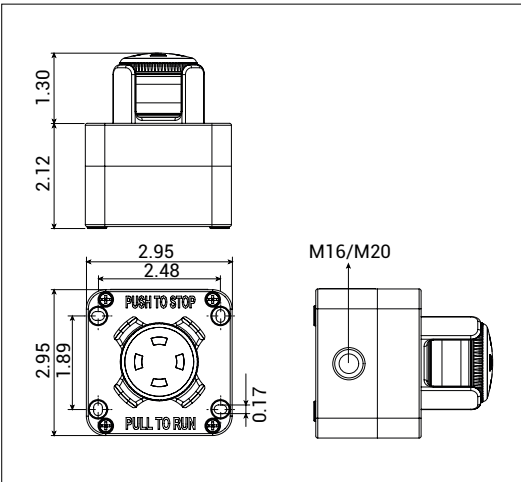


DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 PPFN1P4S ø40 push-pull with visual indicator		1NO + 1NC (PL004001 + PL004002)	SLA11NPNC001
		1NO-1NC-1NO (PCW010SS)	SLA11NPNC001-SS

DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 PPFN1PASH ø40 push-pull with visual indicator		1NC (PL004001)	SLA11NPNC002
		1NO-1NC-1NO (PCW010SS)	SLA11NPNC002-SS

DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 PPFN1PASH ø40 push-pull with visual indicator		1NC (PL004001)	SLA11NPNCGMS360

DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 PPFN1PASH ø40 push-pull with visual indicator		1NC (PCW01)	SLA11NPNCGMS122



PIT STOP AND ALARM SWITCHES

IP65

DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 ø40 push-pull		1NC	TLP1.EPP



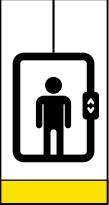
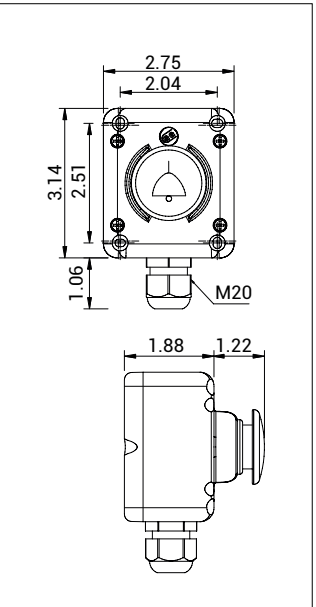
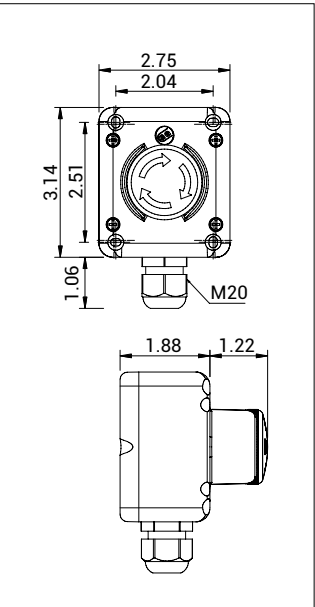
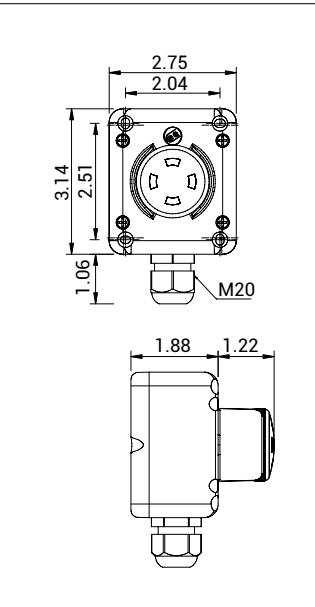
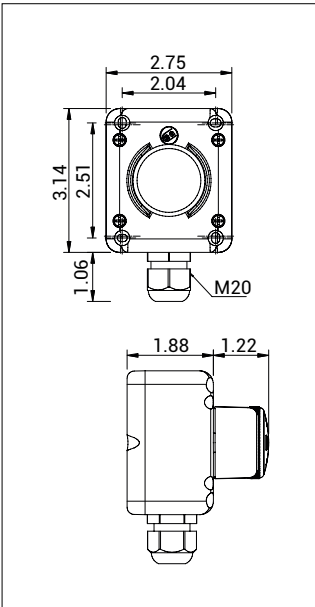
DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 ø40 push-pull with vision		1NC	TLP1.VPP

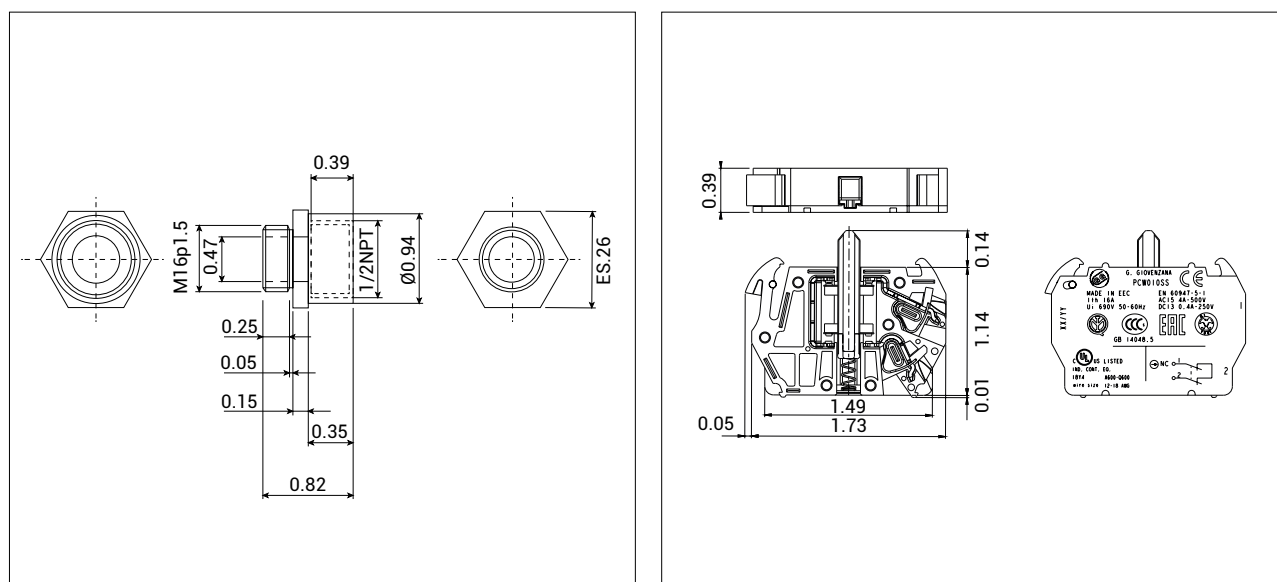


DESCRIPTION	SCHEME	CONTACTS	CODE
Emergency stop EN ISO 13850 ø40 twist to release		1NC	TLP1.ESR



DESCRIPTION	SCHEME	CONTACTS	CODE
ALARM Mushroom Button ø40, flush, momentary, yellow colour		1NO	TLP1B.AL





The PCW010SS self-monitoring contact block offers additional safety in emergency stop applications.

This device contains an additional normally open contact that uses a unique actuator to monitor whether the contact block is still attached to the operator.

In the event of the contact block becoming detached from the emergency stop button, the self-monitoring contact block opens the circuit and stops the system, **providing an extra safety measure.**

GENERAL CHARACTERISTICS									
Material - Colour		PA66 H2 G/25-V0 - YELLOW/BLACK AgNi 10 Ø 0.03 inch							
Protection class	EN 60529	IP20							
Standards		IEC / EN60947-5-1 - UL508 - UL486E - UL1059							
Temperature	operating storage	-25°C ... +70°C -30°C ... +70°C							
Rated insulation voltage	Ui	690 V							
Rated impulse withstand voltage	Uimp	4 kV (UL508: A600 - Q600)							
Frequency		50/60 Hz							
Rated thermal current	Ith	16 A							
AC-15 alternate current	Ue [V]	24	60	110	250	400	440	500	690
	Ie [A]	10	6	6	6	4	4	4	1
DC-13 direct current	Ue [V]	12	24	48	110	250			
	Ie [A]	2	2	2	0.4	0.4			
DC-14 direct current	Ue [V]	12							
	Ie [A]	10							
Positive operation		NC contact block ⊕							
Terminals type		spring contacts(wire peeling length: 0.31 inch)							
Terminals caliber		A2							
Terminals capacity		1 or 2 flexible and solid conductor1... 0.003 inch² / 12-20 AWG							
Mechanical life	min	1.000.000 of cycles							

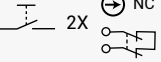


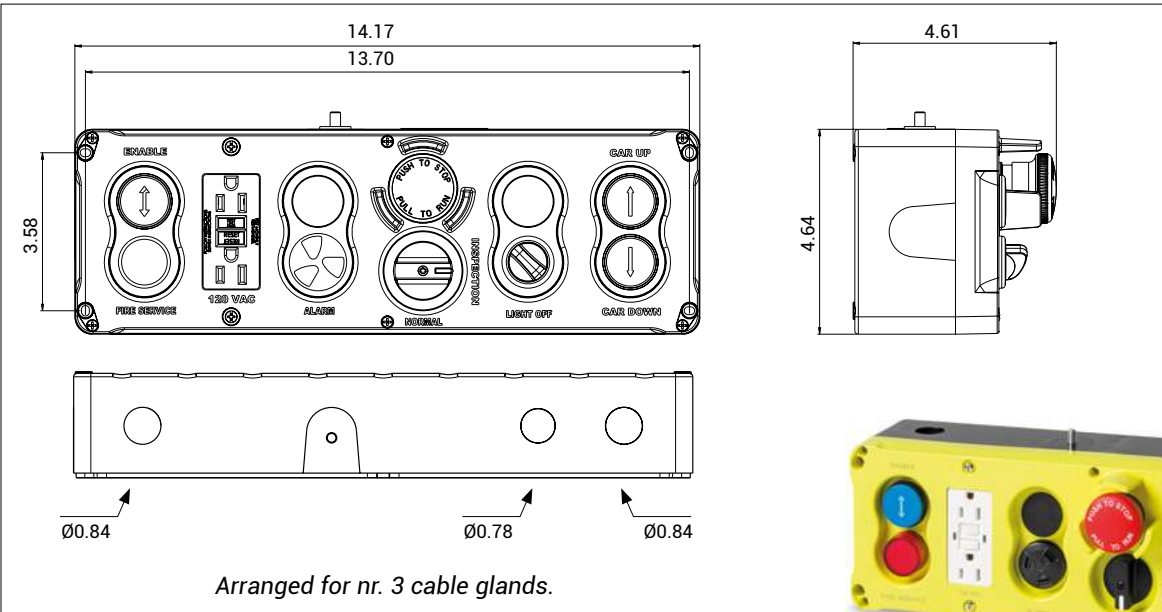
IP20

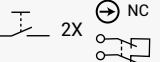
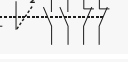
CAR TOP INSPECTION BOXES

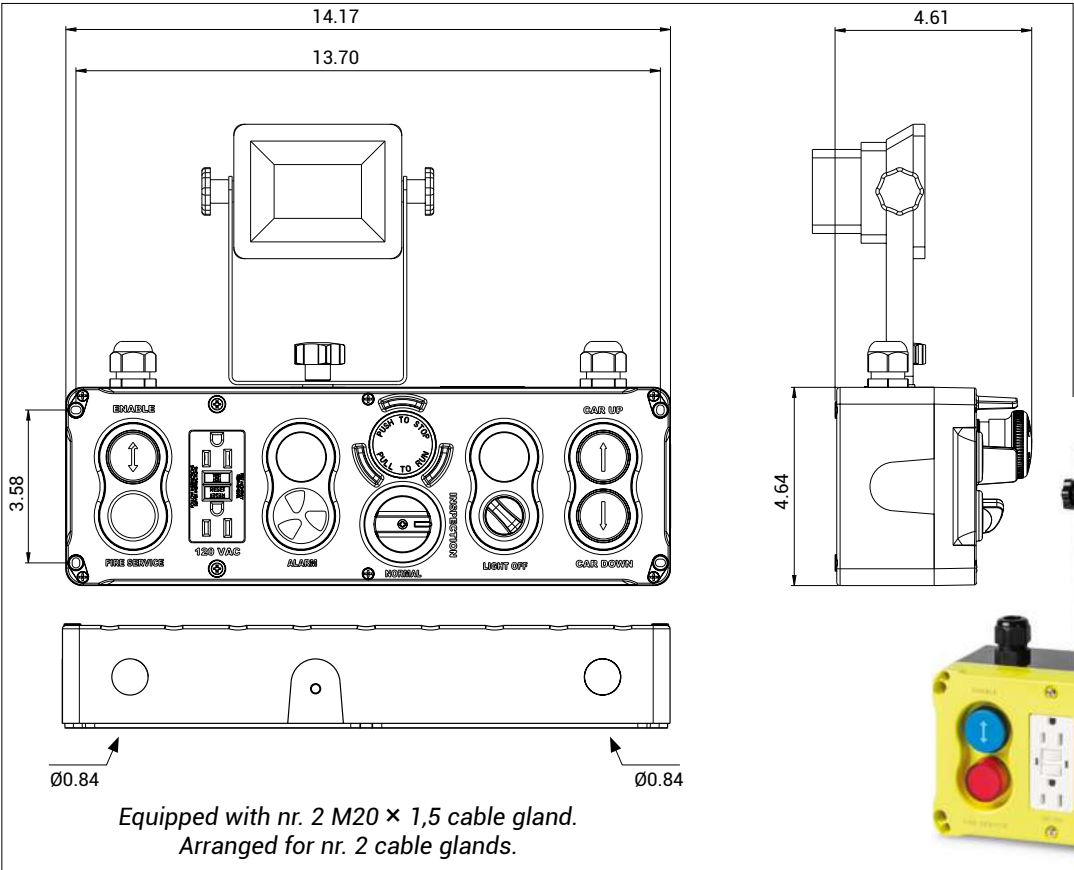
IP54

We offer a wide range of standard car top inspection boxes and based on your requirements are available for custom configurations. Give us a call to see the wide range of inspection boxes now available!

	DESCRIPTION	SCHEME	CONTACTS	CODE 1	CODE 2
	COMMON Push Button flush, momentary, blue colour		1NO		
	Fire Service Red LED PILOT LIGHT red colour	 AC/DC 24V			
	GFCI socket 15 A - 125 V				
	Stopping closing holes black colour				
	BUZZER			with BUZZER 30 - 120 V	with BUZZER 6 - 28 V
	Emergency stop EN ISO 13850 ø40 "push to stop/pull to run"		2 × PCW010SS + 1NO	Min 80dB @ 60 CM / 12 V DC	Min 80dB @ 60 CM / 120 V DC / V AC
	Cam Switch 0-1 Normal-Inspection 90° switching		2NO+2NC		
	Stopping closing holes black colour				
	Knob Selector 0-1 2 positions, white indicator	 OFF 0 ON	1NO		
	UP Push Button flush, momentary, white colour		1NO		
	DOWN Push Button flush, momentary, black colour		1NO		



	DESCRIPTION	SCHEME	CONTACTS	CODE 1	CODE 2
	LED LAMP 12W 1000 LUMEN 120V				
	COMMON Push Button flush, momentary, blue colour		1NO		
	Fire Service Red LED PILOT LIGHT red colour	 AC/DC 24V			
	GFCI socket 15 A - 125 V				
	Stopping closing holes black colour			GMS312	GMS355
	BUZZER			with BUZZER 30 - 120 V	with BUZZER 6 - 28 V
	Emergency stop EN ISO 13850 ø40 "push to stop/pull to run"		2 × PCW010SS + 1NO	Min 80dB @ 60 CM / 12 V DC	Min 80dB @ 60CM / 120 V DC / V AC
	Cam Switch 0-1 Normal-Inspection 90° switching		2NO+2NC		
	Stopping closing holes black colour				
	Knob Selector 0-1 2 positions, white indicator	 OFF 0 ON	1NO		
	UP Push Button flush, momentary, white colour		1NO		
	DOWN Push Button flush, momentary, black colour		1NO		

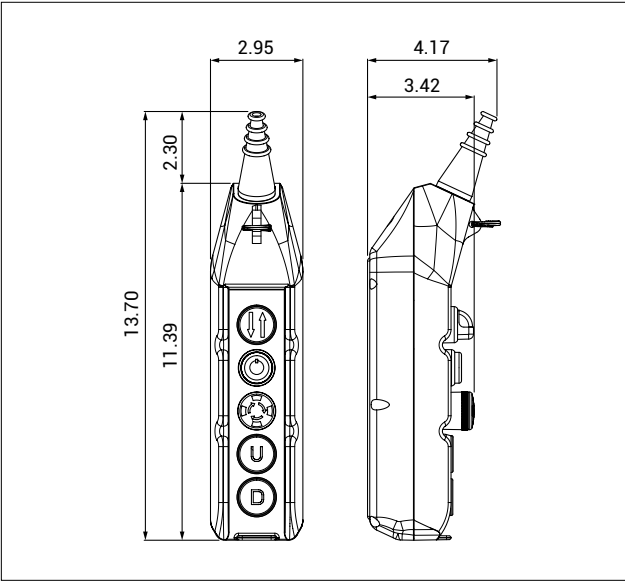


TEMPORARY RUN STATION

IP54

Temporary Run Station with Tubular Key Lock, 5 Position includes E-stop and Up / Down Push Buttons.

	DESCRIPTION	SCHEME	CONTACTS	CODE
↑	COMMON Push Button flush, momentary, green colour		1NO+1NC	PL05.MT
ⓘ	Key Selector 0-1 90° Key removal 0-1		1NO	
•	Emergency stop EN ISO 13850 ø30 twist to release with vision		2NC	
↑	UP Push Button flush, momentary, white colour		1NO+1NC	
↓	DOWN Push Button flush, momentary, black colour		1NO+1NC	



- Robust temporary run station, ideal for elevator testing
- Tubular key lock with two keys, used to engage operation
- Easy to operate push buttons with engraved arrow symbol and letters



ESCAPE HATCH SAFETY SWITCHES

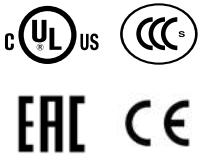
IP65



The **STNK series of safety interlock and safety door switches** is a line of specially designed safety switches for machine door and guard applications. This tongue or key operated safety interlock switch is cUL508 Listed, available with positive opening NC contacts and carries an IP65, NEMA 4, 4X, 6 and 6P protection rating.

Customer wiring to this safety interlock switch is simplified due to the removable contact blocks. The head of this safety door switch can be mounted in 4 directions and the key or tongue can be inserted into the safety switch in 5 directions including downwards.

Applications for the STNK series include safety gate switch, door interlock switch, guard safety switch and as a panel door safety switch. The housing of these mechanical safety interlock switches are double insulated avoiding the need for additional ground connections.

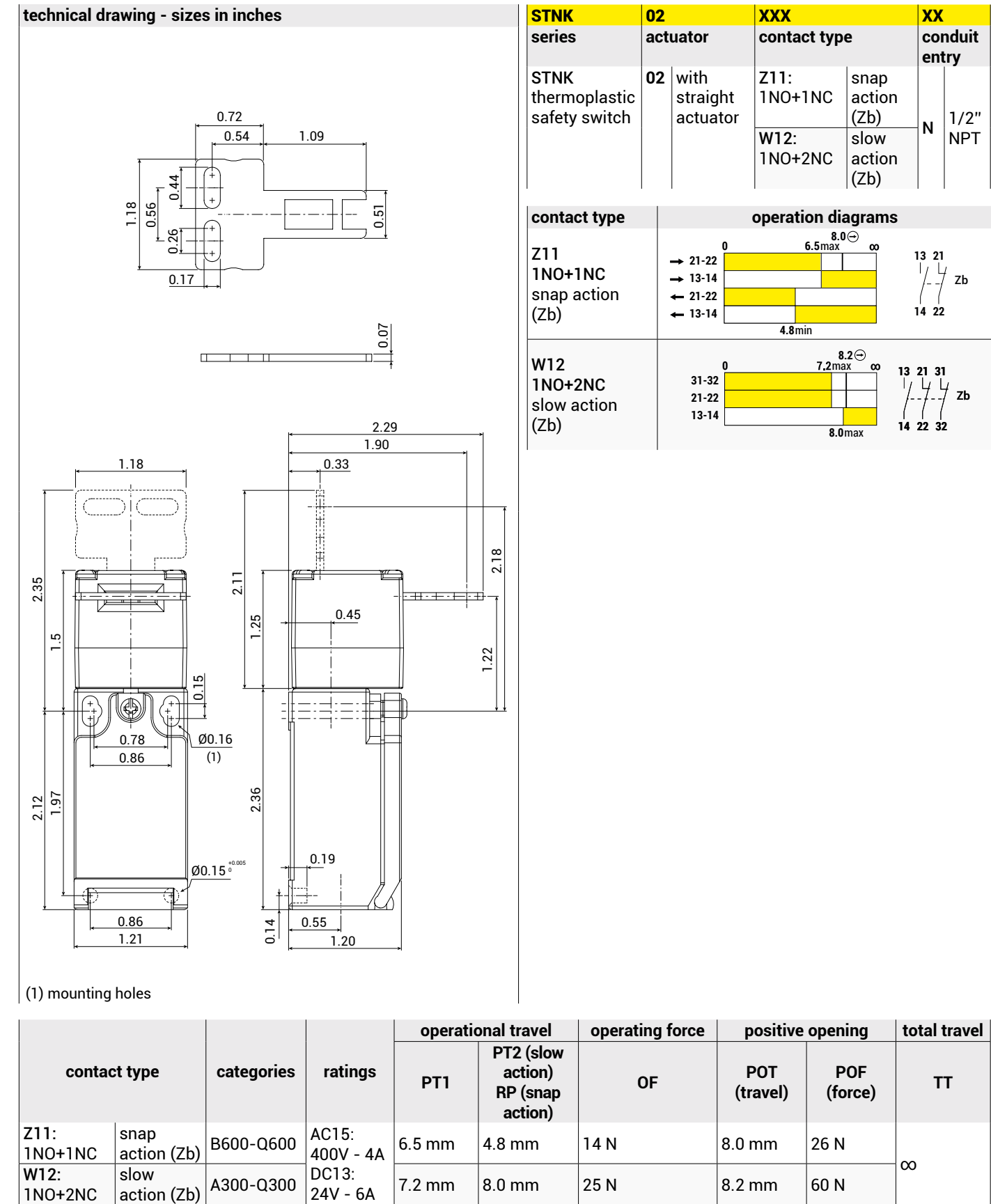


The **STNK02 Series** of safety interlock switch and safety door switch models **with a flat key** are safety switches for machine and equipment applications that require a robust safety limit switch.

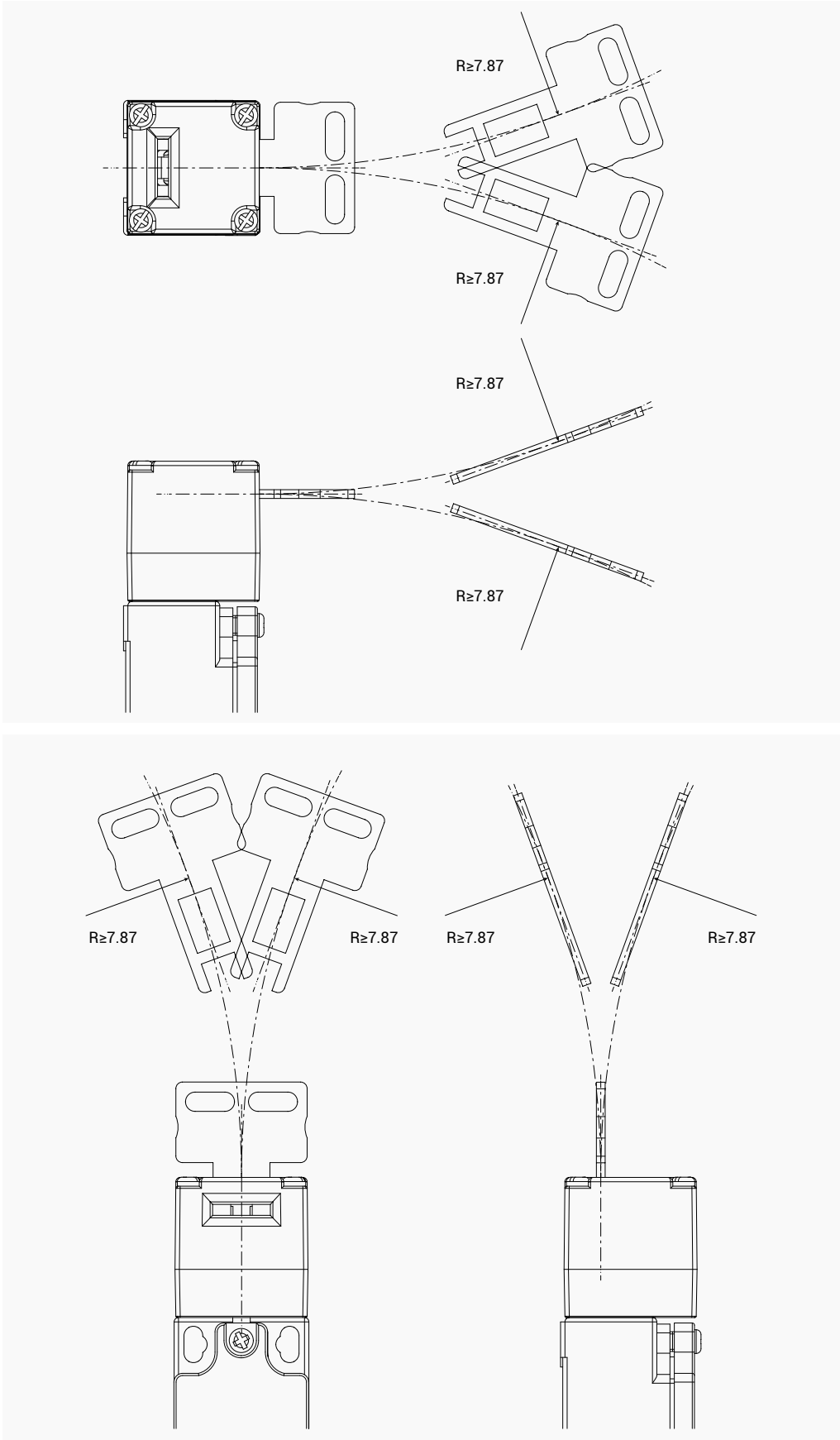
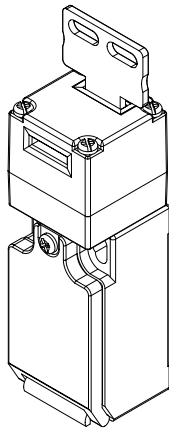
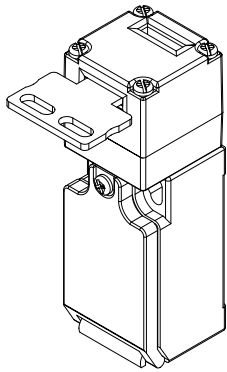
The STNK02 safety interlock switch can be ordered with different contact types including 2NC/1NO slow action and 1NC/1NO snap action.

TECHNICAL DATA		
Standards		EN 60947-5-1, UL 508, EN 50047, EN 1088, EN 60204-1
Approvals		cULus, EAC, CCC and CE 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	Ith	10 A
Rated insulation voltage	Ui	500 V AC
Rated impulse withstand voltage	Uimp	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		1/2" NPT
Fixing		2 × M4 screws

STNK02
 Thermoplastic safety switch with straight actuator
 IP65



STNK02
 Thermoplastic safety switch with straight actuator
 IP65



THERMOPLASTIC LIMIT SWITCHES

IP67

The thermoplastic limit switches of the **FTN series** comply with EN 50047 and are designed to provide a wide range of switch variants (slow action or snap action basic switches) and a variety of actuating heads and levers suitable also for safety applications.

The thermoplastic bodies have two fixing holes with distance of 20 or 22 mm and one hole for cable entry on the bottom of the switch.

Various types of threaded cable entry are available to cover the main requirements of the international market.

The maximum product versatility is guaranteed by the adjustable actuators in 90° steps, allowing easy mounting and lever adjustment every 18° for 360°.

They can be used in applications other than protective doors, e.g. on moving machinery benches, crane arms, hoists, elevators, etc...

They are also 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 **IP67 rated**.

The actuators are made of metal or thermoplastic material, while the housing is made of thermoplastic glass-filled polybutylene terephthalate.

Giovenzana limit switches offer solutions for every need and are suitable for the most varied sectors of use.



TECHNICAL DATA

Standards		EN 60947-5-1, UL 508, EN 50047, EN 1088, EN 60204-1
Approvals		cULus, CCC, EAC and CE marked for all applicable directives
Positive opening operation		NC contact 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
Rated impulse withstand voltage	U _{imp}	6 kV
Insulation resistance	min	100 MΩ (DC 500 V)
Contact resistance	max	25 mΩ (initial)
Switching speed	max	250 mm/s
Switching frequency	max	6000 operations per hour
Enclosure material		UL approved glass-filled polybutylene terephthalate
Enclosure protection		IP67 (all models except for code FTN146 which is IP65 rated)
Operating temperature		-25 ... +80°C (-13 ... +176°F)
Pollution degree		3
Protection against electric shock		Class II (double Insulation)
Electrical life expectancy	min	150.000 cycles
Mechanical life expectancy	min	1 × 10 ⁷ cycles
Vibration	IEC 68-2-6 excursion	10 - 55 Hz ± 1Hz 0.35 mm, 1 octave/min
Conduit entry		Various international conduit sizes
Fixing		2 × M4 screws

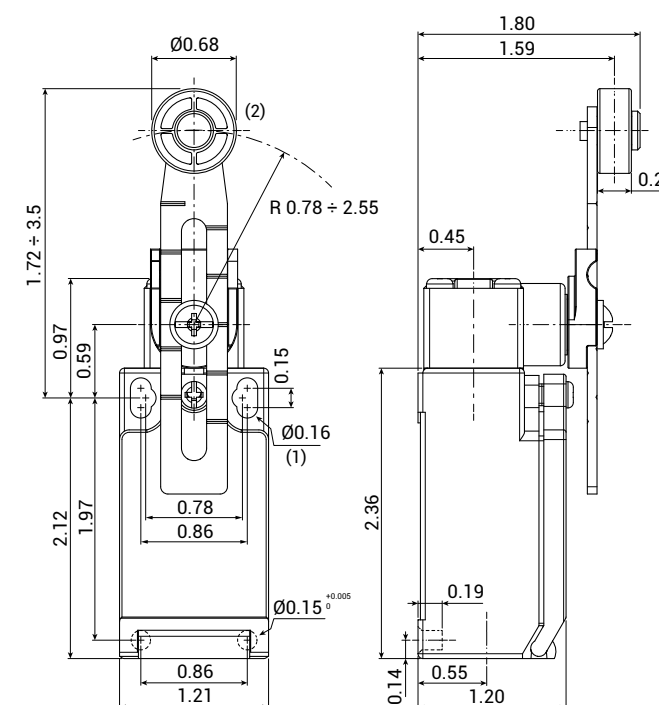
FTN144

Limit switch with Ø18 PA roller lever with variable length
IP67



FTN series	1 function	44 actuator	XXX contact type	XX conduit entry
FTN thermoplastic limit switch	1 without reset function	44 Ø18 PA roller lever with variable length	X11: 1NO+1NC W02: 2NC Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	slow action (Zb) snap action (Zb) slow action (Zb) blank M N G1 G3 C M16 × 1.5 (standard) M20 × 1.5 1/2" NPT PG11 PG13.5 male code "A" M12 × 1 connector

technical drawing - sizes in inches



(1) mounting holes
(2) PA roller

contact type	operation diagrams
X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
W20 2NO 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)	OF	POT (travel)	POF (force)	TT
X11: 1NO+1NC	slow action (Zb)	A600-Q600	AC15: 400V - 4A	30°	45°	6.5 N	40°	6 N	80°
W02: 2NC				30°	-	6.5 N	40°	6 N	
W20: 2NO				32°	-	6.5 N	-	-	
Z11: 1NO+1NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	30°	10°	2.1 N	62°	5.5 N	
Z02: 2NC				30°	5°	2.1 N	62°	5.5 N	
W12: 1NO+2NC				32°	40°	6.5 N	45°	5.4 N	
W03: 3NC	slow action (Zb)	A300-Q300		32°	-	6.5 N	45°	5.4 N	



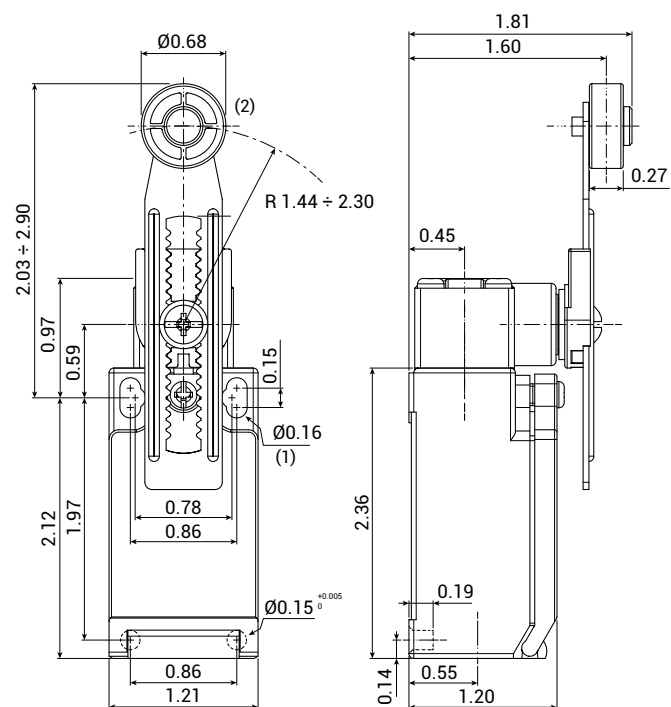
FTN144S

Limit switch with Ø18 PA roller lever with variable sawtooth length (step: 2.2 mm)
IP67



FTN		1	44S	XXX	XX
series		function		contact type	conduit entry
FTN	thermoplastic limit switch	1	without reset function	44S	Ø18 PA roller lever with variable sawtooth length (step: 2.2 mm)
				X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	slow action (Zb) snap action (Zb) slow action (Zb)

technical drawing - sizes in inches



(1) mounting holes
(2) PA roller

contact type	operation diagrams
X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
W20 2NO 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)	OF	POT (travel)	POF (force)	TT
X11: 1NO+1NC	slow action (Zb)	A600-Q600	AC15: 400V - 4A	30°	45°	6.5 N	40°	6 N	80°
W02: 2NC				30°	-	6.5 N	40°	6 N	
W20: 2NO				32°	-	6.5 N	-	-	
Z11: 1NO+1NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	30°	10°	2.1 N	62°	5.5 N	
Z02: 2NC				30°	5°	2.1 N	62°	5.5 N	
W12: 1NO+2NC	slow action (Zb)	A300-Q300		32°	40°	6.5 N	45°	5.4 N	
W03: 3NC				32°	-	6.5 N	45°	5.4 N	

40MM THERMOPLASTIC LIMIT SWITCHES FOR HEAVY APPLICATIONS IP67

The **40 mm FTNG series of thermoplastic limit switches** complies with EN 50041 and is designed to provide a wide range of switch variants (slow action or snap action basic switches) and a variety of actuating heads and levers suitable also for safety applications.

The thermoplastic bodies have four fixing holes at a distance of 30 × 60 mm and a hole for the cable input/output at the bottom of the switch.

The maximum product versatility is guaranteed by the adjustable actuators in 90° steps, allowing easy mounting and lever adjustment every 18° for 360°.

They are particularly suitable **for heavy applications**, thanks to their solidity of steel parts, head and lid fixed by threaded inserts and metric screws. The fixing is prepared for 4 M5 screws.

They are also 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 **IP67** rated.

The actuators are made of metal or thermoplastic material, while the case is made of thermoplastic glass-filled polybutylene terephthalate.

Giovenzana limit switches offer solutions for every need and are suitable for the most varied sectors of use.



TECHNICAL DATA		
Standards		EN 60947-5-1, UL 508, EN 50041, EN 1088, EN 60204-1
Approvals		cULus, EAC, CCC and CE 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	Ith	10 A
Rated insulation voltage	Ui	500 V
Rated impulse withstand voltage	Uimp	6 kV
Insulation resistance	min	100 MΩ (DC 500 V)
Contact resistance	max	25 mΩ (initial)
Switching speed	max	250 mm/s
Switching frequency	max	6000 operations per hour
Enclosure material		UL approved glass-filled polybutylene terephthalate
Enclosure protection		IP67
Operating temperature		-25 ... +80°C (-13 ... +176°F)
Pollution degree		3
Protection against electric shock		Class II (double Insulation)
Electrical life expectancy	min	150.000 cycles
Mechanical life expectancy	min	1 × 10 ⁷ cycles
	IEC 68-2-6 excursion	10-55 Hz ± 1Hz
		0.35 mm, 1 octave/min
Conduit entry		Various international conduit sizes
Fixing		4 × M5 screws



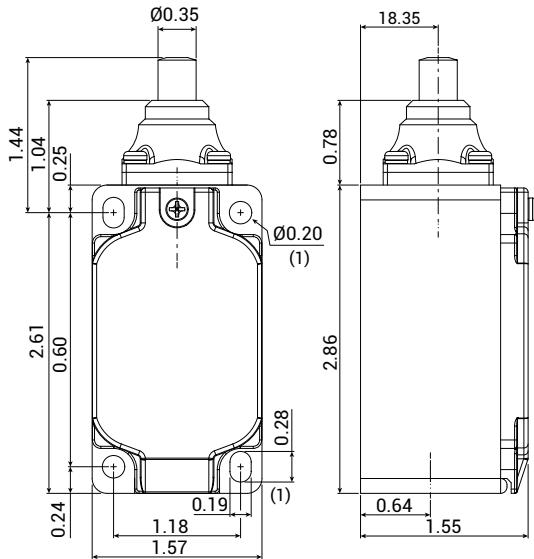
FTNG131

Limit switch with short metal end plunger
IP67



FTNG		1		31		XXX		XX	
series		function		actuator		contact type		conduit entry	
FTNG	40 mm thermoplastic limit switches for heavy applications	1	without reset function	31	short metal end plunger	X11: 1NO+1NC	slow action (Zb)	blank	M20 × 1.5 (standard)
						W02: 2NC		N	1/2" NPT
						Z11: 1NO+1NC	snap action (Zb)	G3	PG13.5
						Z02: 2NC		C	male code "A"
						W12: 1NO+2NC	slow action (Zb)	M12 × 1 connector	
						W03: 3NC			

technical drawing - sizes in inches



(1) mounting holes

contact type

operation diagrams

X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
W20 2NO 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)	

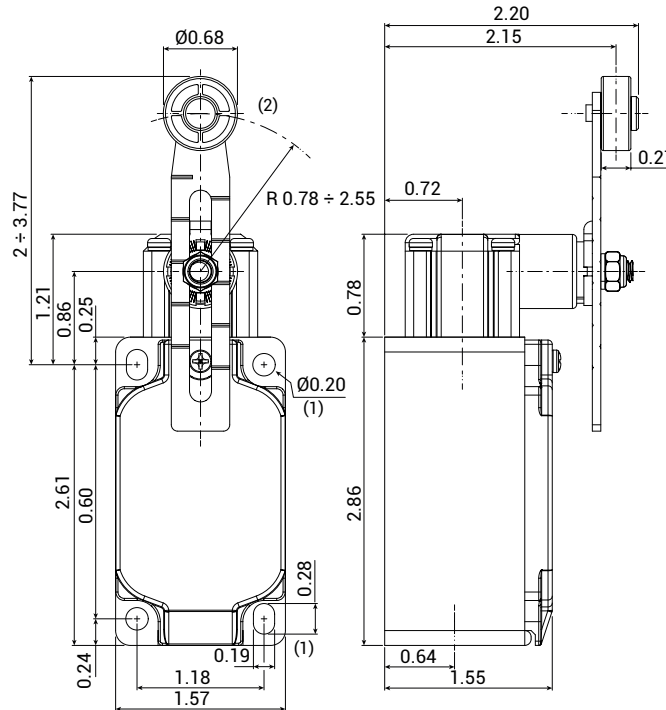
FTNG139

Limit switch with Ø18 PA roller lever with variable length
IP67



FTNG		1		39		XXX		XX	
series		function		actuator		contact type		conduit entry	
FTNG	40 mm thermoplastic limit switches for heavy applications	1	without reset function	39	Ø18 PA roller lever with variable length	X11: 1NO+1NC	slow action (Zb)	blank	M20 × 1.5 (standard)
						W02: 2NC		N	1/2" NPT
						Z11: 1NO+1NC	snap action (Zb)	G3	PG13.5
						Z02: 2NC		C	male code "A"
						W12: 1NO+2NC	slow action (Zb)	M12 × 1 connector	
						W03: 3NC			

technical drawing - sizes in inches



(1) mounting holes

(2) PA roller

contact type

operation diagrams

X11 1NO+1NC slow action (Zb)	
W02 2NC slow action (Zb)	
W20 2NO 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)	OF	POT (travel)	POF (force)	TT	
X11: 1NO+1NC	slow action (Zb)	A600-Q600	AC15: 400V - 4A	2.6 mm	3.8 mm	11.6 N	6.0 mm	28 N	7.0 mm	
W02: 2NC				2.6 mm	-	11.6 N	6.0 mm	28 N		
W20: 2NO				2.6 mm	-	11.4 N	-	-		
Z11: 1NO+1NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	2.5 mm	1.2 mm	10.4 N	4.9 mm	22 N		
Z02: 2NC				2.5 mm	1.2 mm	8.6 N	4.9 mm	22 N		
W12: 1NO+2NC	slow action (Zb)	A300-Q300		2.8 mm	3.5 mm	9.4 N	5.0 mm	10 N		
W03: 3NC				2.8 mm	-	9.4 N	5.0 mm	10 N		

contact type		categories	ratings	operational travel		operating force	positive opening		total travel
				PT1	PT2 (slow action) RP (snap action)	OF	POT (travel)	POF (force)	TT
X11: 1NO+1NC	slow action (Zb)	A600-Q600	AC15: 400V - 4A	33°	45°	6.5 N	45°	8.5 N	80°
W02: 2NC				33°	-	6.5 N	45°	8.5 N	
W20: 2NO				33°	-	6.5 N	-	-	
Z11: 1NO+1NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	35°	15°	5.5 N	65°	13.2 N	
Z02: 2NC				35°	15°	5.5 N	65°	13.2 N	
W12: 1NO+2NC	slow action (Zb)	A300-Q300		35°	42°	6.5 N	50°	8 N	
W03: 3NC				35°	-	6.5 N	50°	8 N	



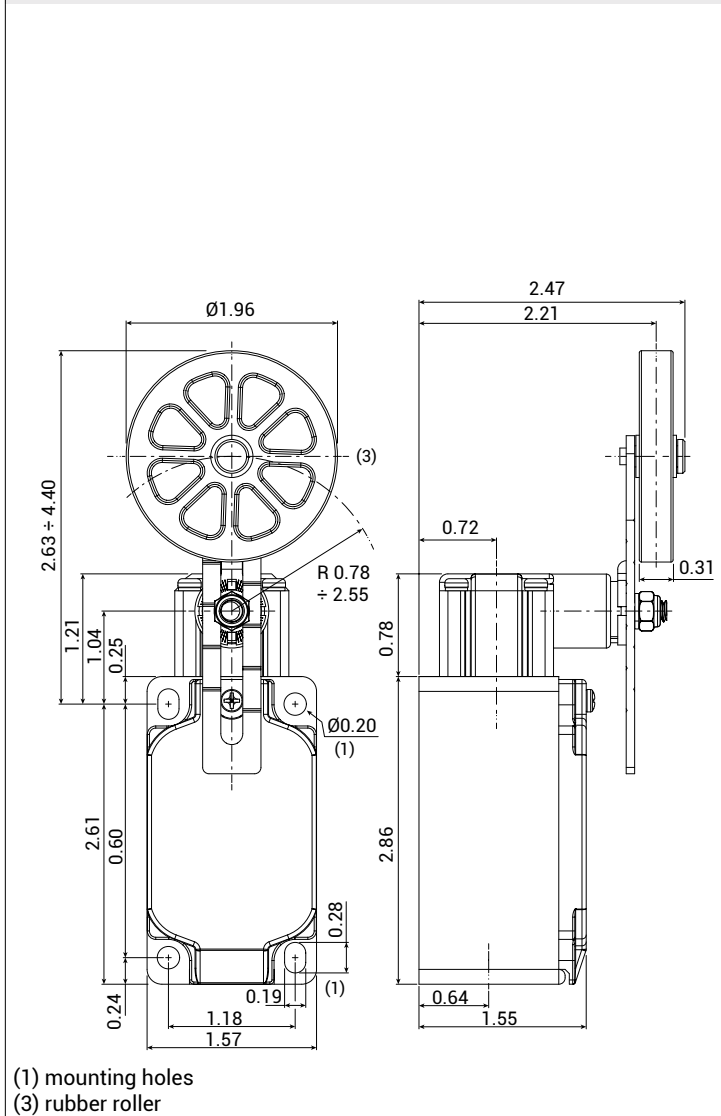
FTNG140

Limit switch with Ø50 rubber roller lever with variable length
IP67

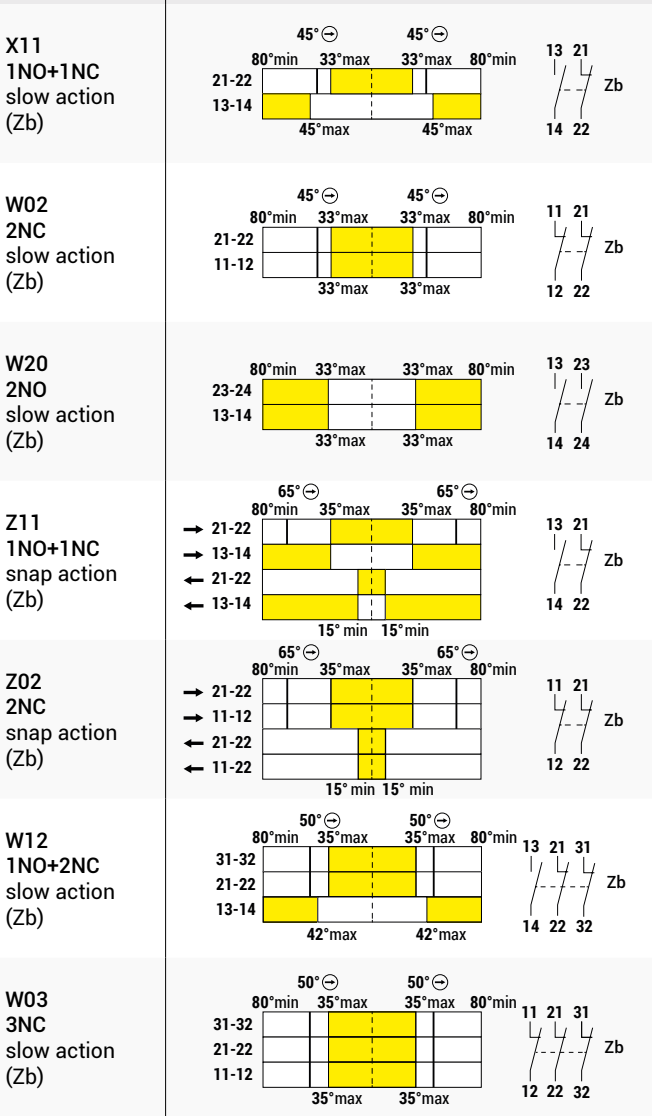


FTNG		1		40		XXX		XX	
series		function		actuator		contact type		conduit entry	
FTNG	40 mm thermoplastic limit switches for heavy applications	1	without reset function	40	Ø50 rubber roller lever with variable length	X11: 1NO+1NC	slow action (Zb)	blank	M20 × 1.5 (standard)
						W02: 2NC			
						W20: 2NO	snap action (Zb)	N	1/2" NPT
						Z11: 1NO+1NC			
						Z02: 2NC	slow action (Zb)	G3	PG13.5
						W12: 1NO+2NC			
						W03: 3NC			

technical drawing - sizes in inches



contact type



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 W20: 2NO	slow action (Zb)	A600-Q600	AC15: 400V - 4A	33°	45°	6.5 N	45°	8.5 N	80°
				33°	-	6.5 N	45°	8.5 N	
				33°	-	6.5 N	-	-	
Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	35°	15°	5.5 N	65°	13.2 N	
				35°	15°	5.5 N	65°	13.2 N	
W12: 1NO+2NC W03: 3NC	slow action (Zb)	A300-Q300		35°	42°	6.5 N	50°	8 N	
				35°	-	6.5 N	50°	8 N	

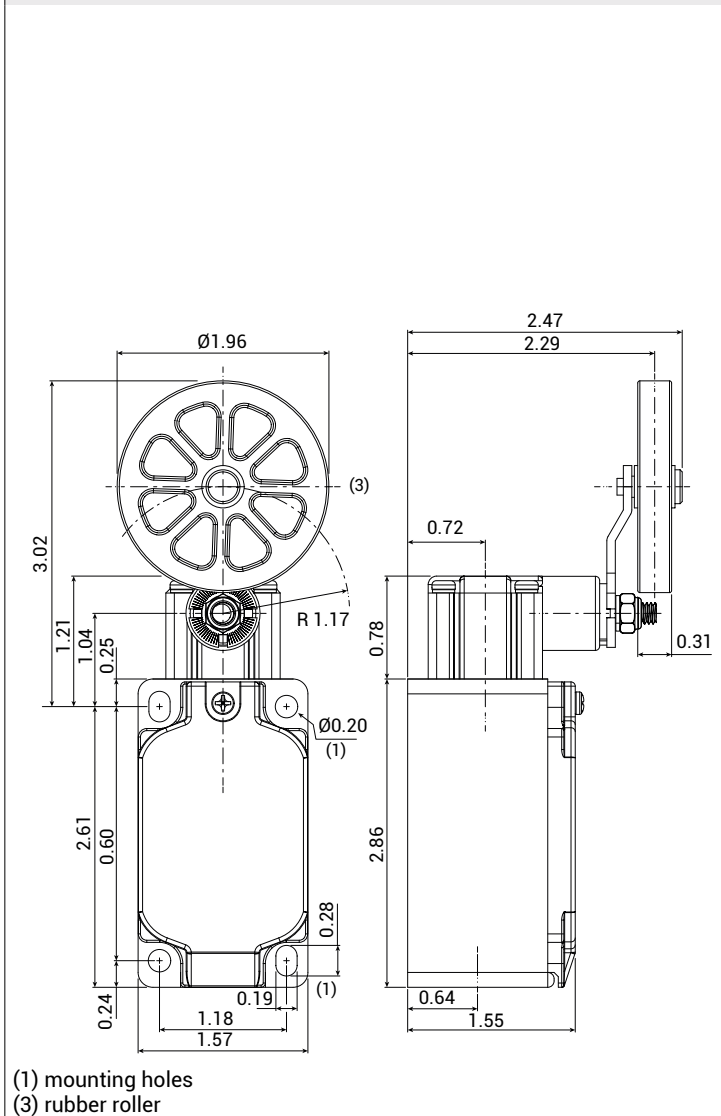
FTNG141

Limit switch with Ø50 rubber roller lever
IP67

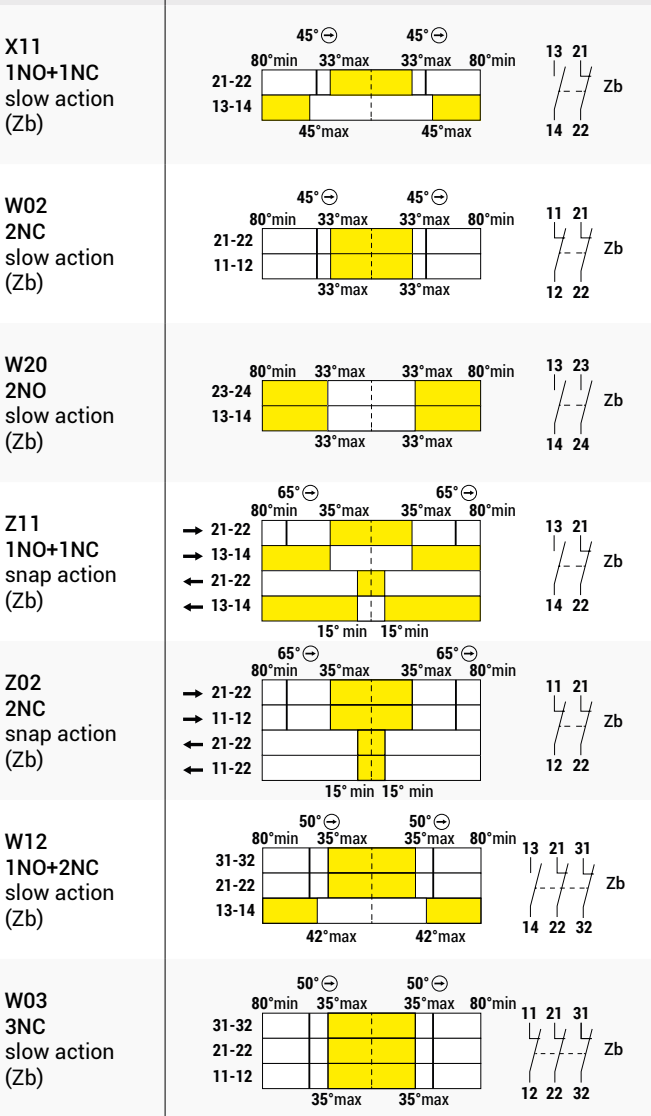


FTNG		1		41		XXX		XX	
series		function		actuator		contact type		conduit entry	
FTNG	40 mm thermoplastic limit switches for heavy applications	1	without reset function	41	Ø50 rubber roller lever	X11: 1NO+1NC	slow action (Zb)	blank	M20 × 1.5 (standard)
						W02: 2NC		N	1/2" NPT
						W20: 2NO	snap action (Zb)	G3	PG13.5
						Z11: 1NO+1NC		slow action (Zb)	C
Z02: 2NC									
W12: 1NO+2NC									
						W03: 3NC			

technical drawing - sizes in inches



contact type



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 W20: 2NO	slow action (Zb)	A600-Q600	AC15: 400V - 4A	33°	45°	6.5 N	45°	8.5 N	80°
				33°	-	6.5 N	45°	8.5 N	
				33°	-	6.5 N	-	-	
Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	35°	15°	5.5 N	65°	13.2 N	
				35°	15°	5.5 N	65°	13.2 N	
W12: 1NO+2NC W03: 3NC	slow action (Zb)	A300-Q300		35°	42°	6.5 N	50°	8 N	
				35°	-	6.5 N	50°	8 N	

SIL³
READY

Safety Integrity Level SIL³ IEC 61508

The **Safety Integrity Level (SIL)** is based on the risk reduction value associated with an instrumented safety function that protects against a specific hazardous event, or how the risk must be reduced to an acceptable level.

It is therefore a relative level of risk reduction provided by a safety function and, in other words, provides a measure of the performance of an instrumented safety function.

In **IEC 61508**, safety is defined as “freedom from unacceptable risks of damage”, while risk is the combination of the probability of damage occurring and the severity of such damage. SIL is a measure of reliability and risk reduction used in various international standards.

The reference one for our area of intervention is:

IEC 61508 (Functional safety of electrical/electronic/programmable electronic/electronic safety systems)

The determination of a SIL is based on quantitative and qualitative factors such as the development process and safety lifecycle management.

SIL³ FOR STNK SERIES: thermoplastic safety switch with straight actuator

SIL³ FOR FTN SERIES: thermoplastic limit switches

SIL³ FOR FTNG SERIES: 40 mm thermoplastic limit switches for heavy applications

Configuration 1oo2 (redundant) 2NC or 2NO or NC + NO positive opening / closing with diagnostics on the two contacts (consistency and crossing check).

λ_{SD}	$1.79 \cdot 10^{-8}$	h^{-1}	λ_s	$2.18 \cdot 10^{-7}$	h^{-1}
λ_{SU}	$2.00 \cdot 10^{-7}$	h^{-1}	λ_D	$1.20 \cdot 10^{-7}$	h^{-1}
λ_{DD}	0.00	h^{-1}			
λ_{DU}	$1.20 \cdot 10^{-7}$	h^{-1}	λ_{TOT}	$3.39 \cdot 10^{-7}$	h^{-1}

SFF 64.48%

MTTR 4h

TID0 .0016667 h

TI	12	5	years
PFDv	$5.27 \cdot 10^{-4}$	$1.05 \cdot 10^{-3}$	$2.64 \cdot 10^{-3}$

SIL3 22

STNK SERIES:
thermoplastic safety switch
with straight actuator IP65



STNK02

FTN SERIES:
thermoplastic limit switches IP67



FTN144



FTN144S

FTNG SERIES:
40 mm thermoplastic limit switches IP67



FTNG131



FTNG139



FTNG140



FTNG141



MFI - CODE SELECTION OVERVIEW

M	F	I	.																						
SERIES				ACTUATOR		TERMINAL TYPE																			
MFI micro switches				blank pin plunger 1 long roller lever 2 simulated roller lever 3 roller lever 4 long lever 5 medium lever 6 short lever 7 16 mm roller lever		blank 6.3 × 0.8 mm faston S solder ST screw STP screw + plate protection T tower actuator with threaded flange																			
						<table><tr><td>OF</td><td>[N]</td><td>Operating Force</td></tr><tr><td>RF</td><td>[N]</td><td>Release force</td></tr><tr><td>PT</td><td>[mm]</td><td>Pretravel</td></tr><tr><td>OT</td><td>[mm]</td><td>Overtravel</td></tr><tr><td>MD</td><td>[mm]</td><td>Differential movement</td></tr><tr><td>OP</td><td>[mm]</td><td>Operating position</td></tr></table>		OF	[N]	Operating Force	RF	[N]	Release force	PT	[mm]	Pretravel	OT	[mm]	Overtravel	MD	[mm]	Differential movement	OP	[mm]	Operating position
OF	[N]	Operating Force																							
RF	[N]	Release force																							
PT	[mm]	Pretravel																							
OT	[mm]	Overtravel																							
MD	[mm]	Differential movement																							
OP	[mm]	Operating position																							

Pin plunger

					<table><tr><td>OF</td><td>max</td><td>5.1 N</td></tr><tr><td>RF</td><td>min</td><td>1.9 N</td></tr><tr><td>PT</td><td>max</td><td>1.4 mm</td></tr><tr><td>OT</td><td>min</td><td>0.8 mm</td></tr><tr><td>MD</td><td>max</td><td>0.3 mm</td></tr><tr><td>OP</td><td></td><td>14.4 ± 0.5 mm</td></tr></table>	OF	max	5.1 N	RF	min	1.9 N	PT	max	1.4 mm	OT	min	0.8 mm	MD	max	0.3 mm	OP		14.4 ± 0.5 mm
OF	max	5.1 N																					
RF	min	1.9 N																					
PT	max	1.4 mm																					
OT	min	0.8 mm																					
MD	max	0.3 mm																					
OP		14.4 ± 0.5 mm																					
MFI	MFI.S	MFI.ST	MFI.STP																				

Long roller lever

					<table><tr><td>OF</td><td>max</td><td>3.2 N</td></tr><tr><td>RF</td><td>min</td><td>1.0 N</td></tr><tr><td>PT</td><td>max</td><td>3.3 mm</td></tr><tr><td>OT</td><td>min</td><td>0.8 mm</td></tr><tr><td>MD</td><td>max</td><td>0.8 mm</td></tr><tr><td>OP</td><td></td><td>17.4 ± 0.8 mm</td></tr></table>	OF	max	3.2 N	RF	min	1.0 N	PT	max	3.3 mm	OT	min	0.8 mm	MD	max	0.8 mm	OP		17.4 ± 0.8 mm
OF	max	3.2 N																					
RF	min	1.0 N																					
PT	max	3.3 mm																					
OT	min	0.8 mm																					
MD	max	0.8 mm																					
OP		17.4 ± 0.8 mm																					
MFI.1	MFI.1S	MFI.1ST	MFI.1STP																				

Simulated roller lever

					<table><tr><td>OF</td><td>max</td><td>3.2 N</td></tr><tr><td>RF</td><td>min</td><td>1.0 N</td></tr><tr><td>PT</td><td>max</td><td>3.3 mm</td></tr><tr><td>OT</td><td>min</td><td>0.8 mm</td></tr><tr><td>MD</td><td>max</td><td>0.8 mm</td></tr><tr><td>OP</td><td></td><td>17.4 ± 0.8 mm</td></tr></table>	OF	max	3.2 N	RF	min	1.0 N	PT	max	3.3 mm	OT	min	0.8 mm	MD	max	0.8 mm	OP		17.4 ± 0.8 mm
OF	max	3.2 N																					
RF	min	1.0 N																					
PT	max	3.3 mm																					
OT	min	0.8 mm																					
MD	max	0.8 mm																					
OP		17.4 ± 0.8 mm																					
MFI.2	MFI.2S	MFI.2ST	MFI.2STP																				

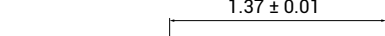
Roller lever

					<table><tr><td>OF</td><td>max</td><td>5.1 N</td></tr><tr><td>RF</td><td>min</td><td>1.9 N</td></tr><tr><td>PT</td><td>max</td><td>1.4 mm</td></tr><tr><td>OT</td><td>min</td><td>0.6 mm</td></tr><tr><td>MD</td><td>max</td><td>0.6 mm</td></tr><tr><td>OP</td><td></td><td>20.3 ± 0.8 mm</td></tr></table>	OF	max	5.1 N	RF	min	1.9 N	PT	max	1.4 mm	OT	min	0.6 mm	MD	max	0.6 mm	OP		20.3 ± 0.8 mm
OF	max	5.1 N																					
RF	min	1.9 N																					
PT	max	1.4 mm																					
OT	min	0.6 mm																					
MD	max	0.6 mm																					
OP		20.3 ± 0.8 mm																					
MFI.3	MFI.3S	MFI.3ST	MFI.3STP																				

Long lever

					<table><tr><td>OF</td><td>max</td><td>1.3 N</td></tr><tr><td>RF</td><td>min</td><td>0.15 N</td></tr><tr><td>PT</td><td>max</td><td>7.6 mm</td></tr><tr><td>OT</td><td>min</td><td>2.2 mm</td></tr><tr><td>MD</td><td>max</td><td>2.2 mm</td></tr><tr><td>OP</td><td></td><td>15.1 ± 2.6 mm</td></tr></table>	OF	max	1.3 N	RF	min	0.15 N	PT	max	7.6 mm	OT	min	2.2 mm	MD	max	2.2 mm	OP		15.1 ± 2.6 mm
OF	max	1.3 N																					
RF	min	0.15 N																					
PT	max	7.6 mm																					
OT	min	2.2 mm																					
MD	max	2.2 mm																					
OP		15.1 ± 2.6 mm																					
MFI.4	MFI.4S	MFI.4ST	MFI.4STP																				

Medium lever

					<table><tr><td>OF</td><td>max</td><td>3.2 N</td></tr><tr><td>RF</td><td>min</td><td>1.2 N</td></tr><tr><td>PT</td><td>max</td><td>3.3 mm</td></tr><tr><td>OT</td><td>min</td><td>0.8 mm</td></tr><tr><td>MD</td><td>max</td><td>0.8 mm</td></tr><tr><td>OP</td><td></td><td>15.1 ± 1.2 mm</td></tr></table>	OF	max	3.2 N	RF	min	1.2 N	PT	max	3.3 mm	OT	min	0.8 mm	MD	max	0.8 mm	OP		15.1 ± 1.2 mm
OF	max	3.2 N																					
RF	min	1.2 N																					
PT	max	3.3 mm																					
OT	min	0.8 mm																					
MD	max	0.8 mm																					
OP		15.1 ± 1.2 mm																					
MFI.5	MFI.5S	MFI.5ST	MFI.5STP																				

Short lever

					<table><tr><td>OF</td><td>max</td><td>5.1 N</td></tr><tr><td>RF</td><td>min</td><td>1.9 N</td></tr><tr><td>PT</td><td>max</td><td>1.6 mm</td></tr><tr><td>OT</td><td>min</td><td>0.6 mm</td></tr><tr><td>MD</td><td>max</td><td>0.6 mm</td></tr><tr><td>OP</td><td></td><td>15.1 ± 0.6 mm</td></tr></table>	OF	max	5.1 N	RF	min	1.9 N	PT	max	1.6 mm	OT	min	0.6 mm	MD	max	0.6 mm	OP		15.1 ± 0.6 mm
OF	max	5.1 N																					
RF	min	1.9 N																					
PT	max	1.6 mm																					
OT	min	0.6 mm																					
MD	max	0.6 mm																					
OP		15.1 ± 0.6 mm																					
MFI.6	MFI.6S	MFI.6ST	MFI.6STP																				

16 mm roller lever

					<table><tr><td>OF</td><td>max</td><td>4.5 N</td></tr><tr><td>RF</td><td>min</td><td>1.9 N</td></tr><tr><td>PT</td><td>max</td><td>1.8 mm</td></tr><tr><td>OT</td><td>min</td><td>0.8 mm</td></tr><tr><td>MD</td><td>max</td><td>0.6 mm</td></tr><tr><td>OP</td><td></td><td>21.1 ± 0.6 mm</td></tr></table>	OF	max	4.5 N	RF	min	1.9 N	PT	max	1.8 mm	OT	min	0.8 mm	MD	max	0.6 mm	OP		21.1 ± 0.6 mm
OF	max	4.5 N																					
RF	min	1.9 N																					
PT	max	1.8 mm																					
OT	min	0.8 mm																					
MD	max	0.6 mm																					
OP		21.1 ± 0.6 mm																					
MFI.7	MFI.7S	MFI.7ST	MFI.7STP																				

Tower actuator with threaded flange

		<table><tr><td>OF</td><td>max</td><td>6.0 N</td></tr><tr><td>RF</td><td>min</td><td>2.0 N</td></tr><tr><td>PT</td><td>max</td><td>2.2 mm</td></tr><tr><td>OT</td><td>min</td><td>3.3 mm</td></tr><tr><td>MD</td><td>max</td><td>0.5 mm</td></tr><tr><td>OP</td><td></td><td>21.2 ± 0.8 mm</td></tr></table>	OF	max	6.0 N	RF	min	2.0 N	PT	max	2.2 mm	OT	min	3.3 mm	MD	max	0.5 mm	OP		21.2 ± 0.8 mm
OF	max	6.0 N																		
RF	min	2.0 N																		
PT	max	2.2 mm																		
OT	min	3.3 mm																		
MD	max	0.5 mm																		
OP		21.2 ± 0.8 mm																		
MFI.T																				

(1) Stainless steel lever (2) Plastic material roller (3) Stainless steel roller

FASTON TERMINALS	

SOLDER TERMINALS	

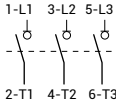
SCREW TERMINALS	

SCREW TERMINALS + PLATE PROTECTION	

MAIN SWITCHES

IP65

DESCRIPTION	SERIES	AC-21A 690V	AC-23A 400V	3 POLES CODE
COMPLETE DEVICE in thermoplastic enclosure • Opening in "0" position. • Arranged for nr. 8 Pg16 cable glands of which nr. 2 on the bottom. • With locking facility in "0 - OFF" (Max 3 locks). • Dimensions: 120x100x85 mm.	SQ025	32 A	25 A	SQ025003BC10
	SQ032	40 A	32 A	SQ032003BC10

For Grey cover and black knob version, replace "10" with "09" in the code.

DESCRIPTION	SERIES	AC-21A 690V	AC-23A 400V	3 POLES CODE
COMPLETE DEVICE in thermoplastic enclosure	SQ040	63 A	50 A	SQ040003BE10
	SQ032	80 A	75 A	SQ063003BE10

- Opening in "0" position.
- Arranged with nr. 4 cable glands M25/M32 + nr. 2 closed holes ø22,5 mm on the bottom.
- With locking facility in "0 - OFF" (Max 3 locks).
- Dimensions: 130x180x106 mm.

For Grey cover and black knob version, replace "10" with "09" in the code.



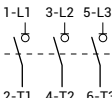
DESCRIPTION	SERIES	AC-21A 690V	AC-23A 400V	2 POLES CODE	3 POLES CODE
BASE MOUNTING with direct command	SQ025	32 A	25 A	SQ025002DL1N	SQ025003DL1N
	SQ032	40 A	32 A	SQ032002DL1N	SQ032003DL1N

- Fixing box DIN RAIL DIN-EN 50022-35.
- Black knob locking in "0-OFF" position.

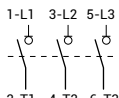
DESCRIPTION	SERIES	AC-21A 690V	AC-23A 400V	2 POLES CODE	3 POLES CODE
BASE MOUNTING with direct command	SQ040	63 A	50 A	SQ040002DL5N	SQ040003DL5N
	SQ063	80 A	75 A	SQ063002DL5N	SQ063003DL5N

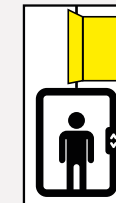
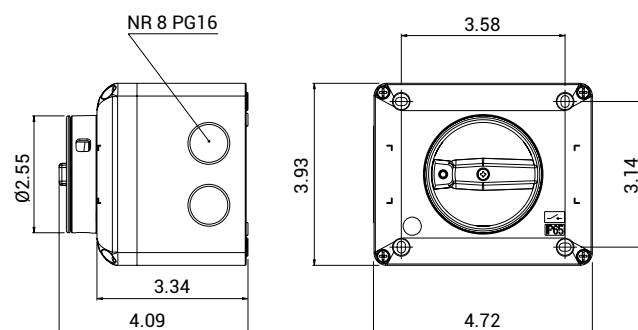
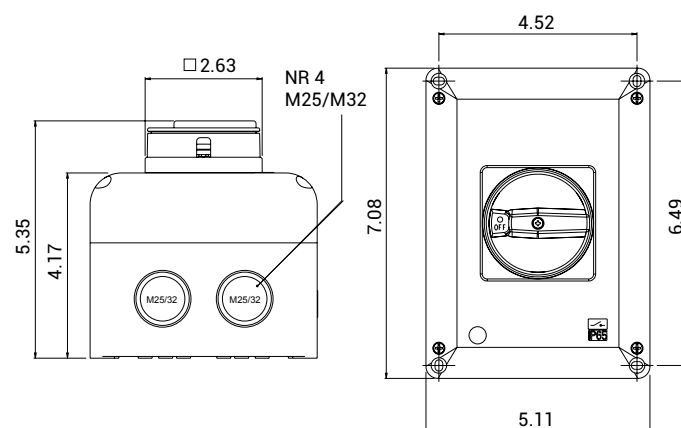
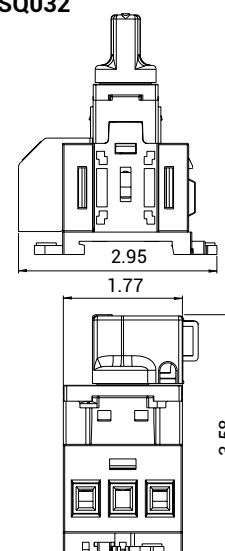
- Fixing box DIN RAIL DIN-EN 50022-35.
- Black knob locking in "0-OFF" position.



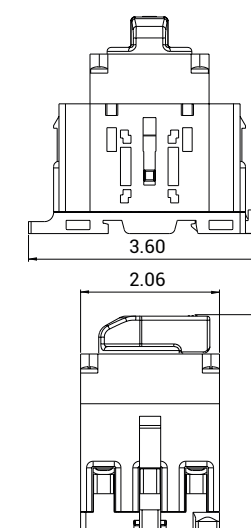
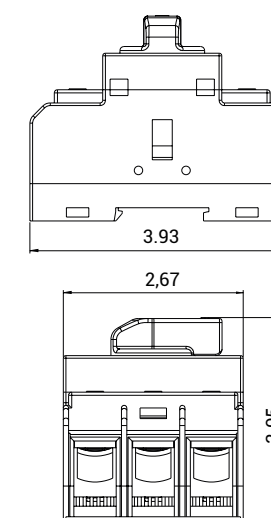


DESCRIPTION	SERIES	AC-21A 690V	AC-23A 400V	3 POLES CODE
BASE MOUNTING TYPE B • Direct command and Door Locking. • Fixing box DIN RAIL DIN-EN 50022-35. • Black knob locking in "0-OFF" position.	SQN125	125 A	125 A	SQN125003B
	SQN160	160 A	160 A	SQN160003B

**SQ025 / SQ032****SQ040 / SQ063****SQ025 / SQ032**

SQ040 / SQ063

**SQN125 / SQN160**

PUSH BUTTONS Ø0.86 inches

IP65

DESCRIPTION	CODE
 ALARM push button <i>flush, yellow colour</i>	PPRN3BL-AL



DESCRIPTION	CODE
 Lighted ALARM push button <i>flush, yellow colour</i>	PPRL3BL-AL



DESCRIPTION	CODE
 Lighted LIGHT push button <i>flush, yellow colour</i>	PPRN3LBL



DESCRIPTION	CODE
 Lighted LIGHT push button <i>flush, black colour</i>	PPRN8LBL



DESCRIPTION	CODE
 Extended dual push button <i>UP/DOWN</i>	PPDNR.9ABL



DESCRIPTION	CODE
 UP push button <i>flush, white colour</i>	PPRN5BL/F



DESCRIPTION	CODE
 COMMON push button <i>flush, blue colour</i>	PPRN4BL/COM



DESCRIPTION	CODE
 DOWN push button <i>flush, black colour</i>	PPRN8BL/F



DESCRIPTION	CODE
 Extended dual push button <i>UP/DOWN</i>	PPDNR.7BL



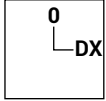
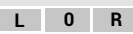
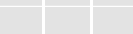
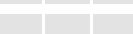
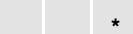
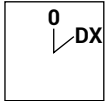
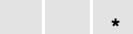
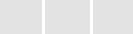
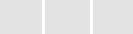
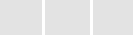
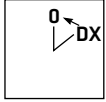
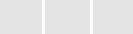
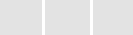
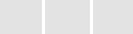
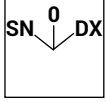
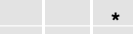
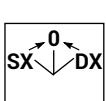
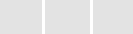
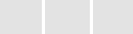
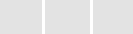
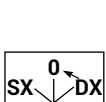
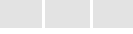
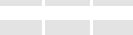
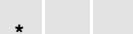
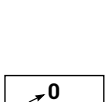
DESCRIPTION	CODE
 Multifunction push button <i>UP/STOP/DOWN</i>	PPMNSBL.B



ROTARY SWITCHES Ø0.86 inches

IP65



WITH OPERATOR			WITH LIGHT OPERATOR			WITH KEY		
POSITION	COLOUR INDEX	CODE	COLOUR INDEX	CODE	KEY REMOVAL			CODE
 90°		PSMB1D0BL		PSML1D0BL				PSCR8D0CBL
		PSMB2D0BL		PSML2D0BL				PSCR8D0EBL
		PSMB3D0BL		PSML3D0BL				PSCR8D0NBL
		PSMB4D0BL		PSML4D0BL				PSCR8D1CBL
		PSMB5D0BL		PSML5D0BL				PSCR8D1EBL
		PSMB8D0BL						PSCR8D1NBL
 45°		PSMB1D1BL		PSML1D1BL				PSCR8D2CBL
		PSMB2D1BL		PSML2D1BL				
		PSMB3D1BL		PSML3D1BL				
		PSMB4D1BL		PSML4D1BL				
		PSMB5D1BL		PSML5D1BL				
		PSMB8D1BL						
 45°		PSMB1D2BL		PSML1D2BL				
		PSMB2D2BL		PSML2D2BL				
		PSMB3D2BL		PSML3D2BL				
		PSMB4D2BL		PSML4D2BL				
		PSMB5D2BL		PSML5D2BL				
		PSMB8D2BL						
 45°		PSMB1T0BL		PSML1T0BL				PSCR8T0CBL
		PSMB2T0BL		PSML2T0BL				PSCR8T0ABL
		PSMB3T0BL		PSML3T0BL				PSCR8T0EBL
		PSMB4T0BL		PSML4T0BL				PSCR8T0GBL
		PSMB5T0BL		PSML5T0BL				PSCR8T0HBL
		PSMB8T0BL						PSCR8T0KBL
 45°		PSMB1T3BL		PSML1T3BL				PSCR8T3CBL
		PSMB2T3BL		PSML2T3BL				
		PSMB3T3BL		PSML3T3BL				
		PSMB4T3BL		PSML4T3BL				
		PSMB5T3BL		PSML5T3BL				
		PSMB8T3BL						
 45°		PSMB1T2BL		PSML1T2BL				PSCR8T2CBL
		PSMB2T2BL		PSML2T2BL				
		PSMB3T2BL		PSML3T2BL				PSCR8T2ABL
		PSMB4T2BL		PSML4T2BL				
		PSMB5T2BL		PSML5T2BL				PSCR8T2HBL
		PSMB8T2BL						
 45°		PSMB1T1BL		PSML1T1BL				PSCR8T1CBL
		PSMB2T1BL		PSML2T1BL				
		PSMB3T1BL		PSML3T1BL				PSCR8T1EBL
		PSMB4T1BL		PSML4T1BL				
		PSMB5T1BL		PSML5T1BL				PSCR8T1NBL
		PSMB8T1BL						

■ For standard rotary switches suitable to operate a central contact, replace the letter "B" with the letter "C": PSMC

■ For rotary switches with Left - Right operating angles replace the letters "DO" with "SD": PSMB1DO or PSCR8SDE

NOTE: Dimensions of technical drawings are in inches

* Key removable position

