



FTN1R SERIES



The **FTN1R series** of thermoplastic limit switches with reset device for manual reset 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.

Each model has a **positive opening mechanism** (NC contacts only) and is equipped with a drive retention mechanism.

The thermoplastic bodies have two fixing holes with 20 or 22 mm spacing and a cable entry hole in the bottom of the switch.

The maximum product versatility is guaranteed by the easy orientation of the actuator and reset heads in 90° steps and the possibility of adjusting the levers every 18° for 360°.

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.

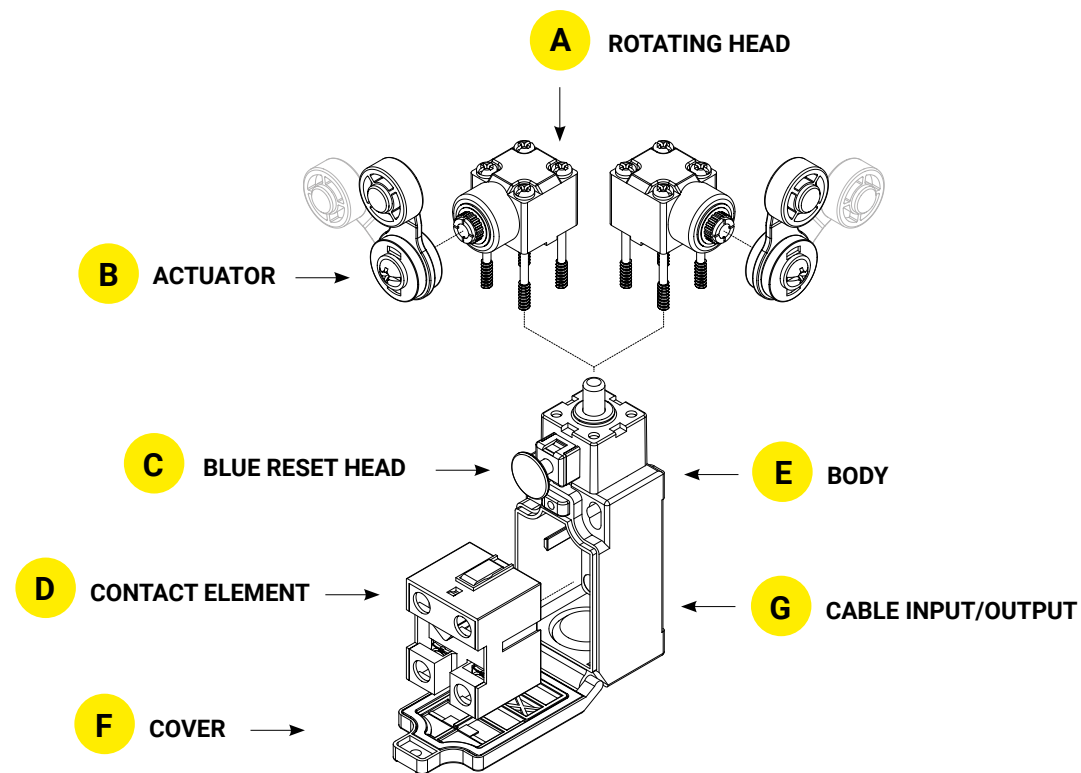
Giovenzana limit switches are suitable for every requirement and can be used in a wide range of sectors.



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
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
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 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. 51)
Fixing		2 × M4 screws

STRUCTURE DESCRIPTION

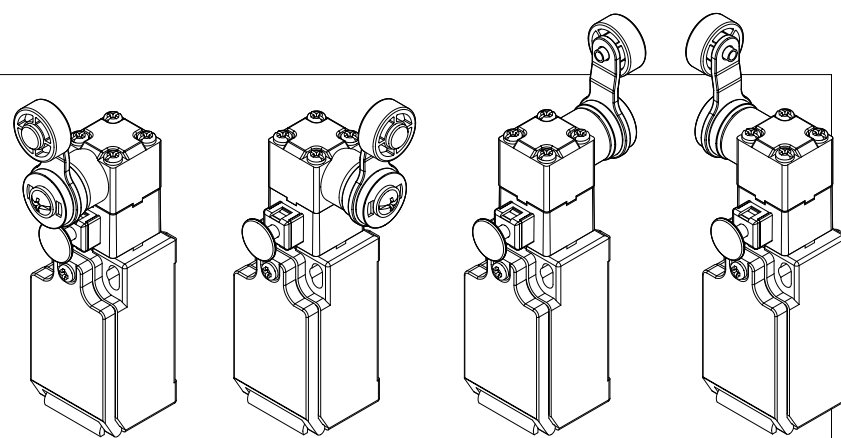


A - ROTATING HEAD

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.



B - ACTUATOR

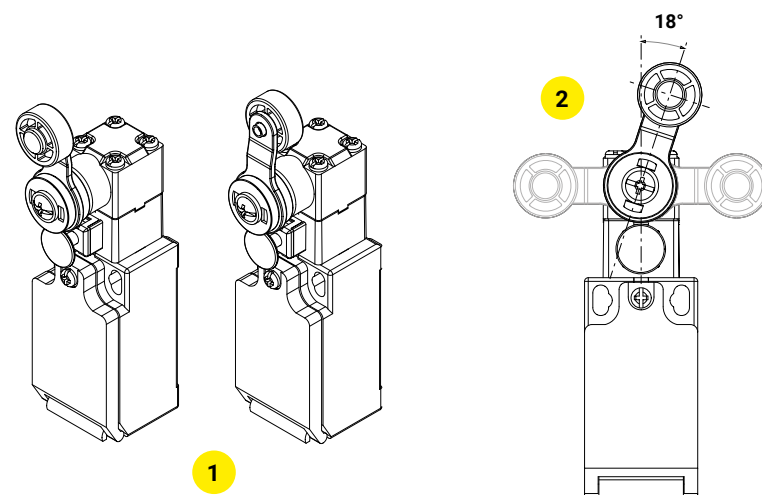
Available different types of actuators: plungers, levers, rollers and rods.

1. Tilting levers

Possibility to fix the lever on the observe or on the reverse, keeping the positive opening of the NC contact. In this way is possible to obtain two different lever work plans.

2. Adjustable levers

All levers are adjustable in steps of 18° over 360°, compared to the horizontal axis of the head. The positive movement transmission is always guaranteed thanks to the particular geometric coupling between the lever and the rotation shaft.

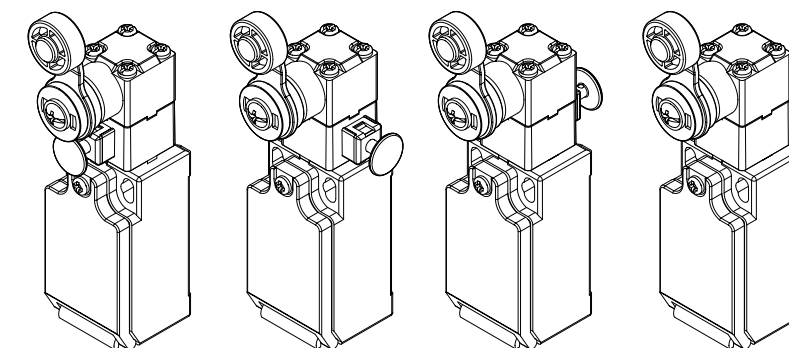


C - RESET HEAD

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

The manual reset mechanism is blue.

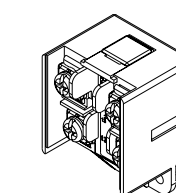
The direction of the reset head can be adjusted to any of the four directions.



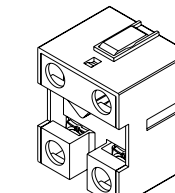
D - CONTACT ELEMENT

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

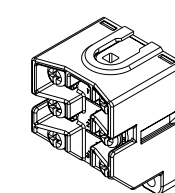
Different contact elements, both fast-acting and slow-acting, are available to suit different application requirements.



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)

W20: 2NO
Slow action (Zb)

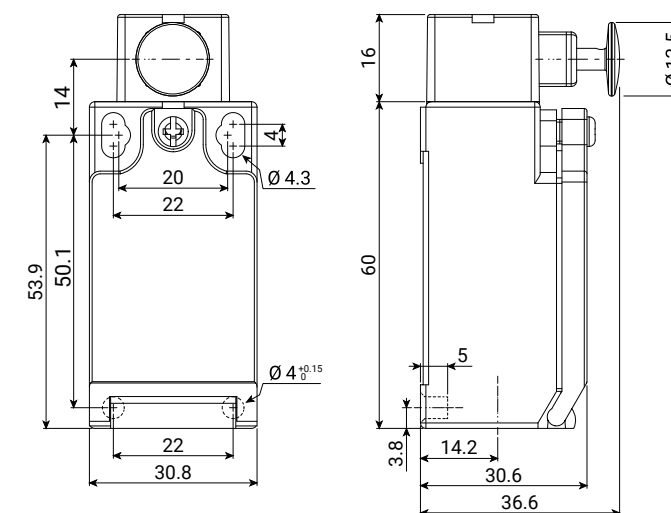
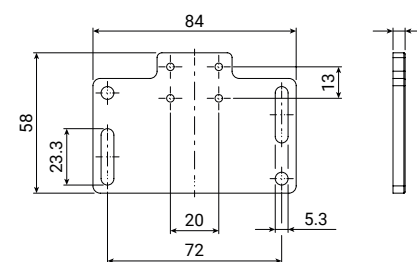
→ Not suitable for safety applications!

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.



In order to provide more fixing stability, it is possible to use the basic holes of the device with dowel insertion.

F - COVER

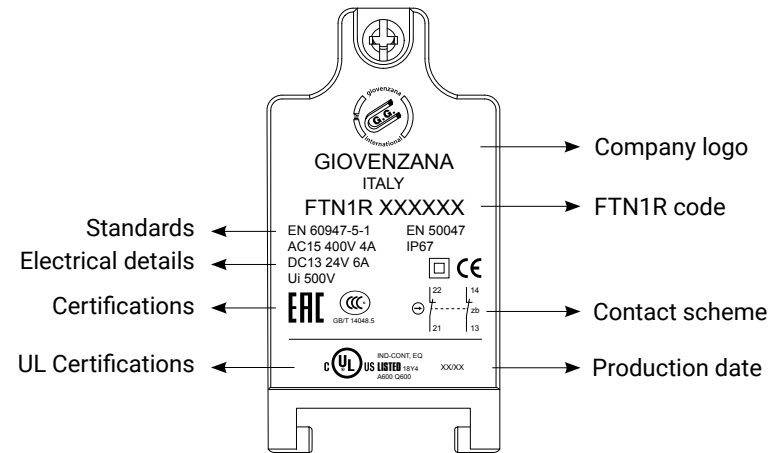
Material conforming to the RoHS Directive.

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 switch cover can be opened by loosening the screw. The hinge at the bottom ensures a useful opening for easy maintenance and easy wiring, without having to completely remove the lid.



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		
W20	2NO Slow action Zb Not suitable for safety applications!		
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 - OPERATING PRINCIPLE

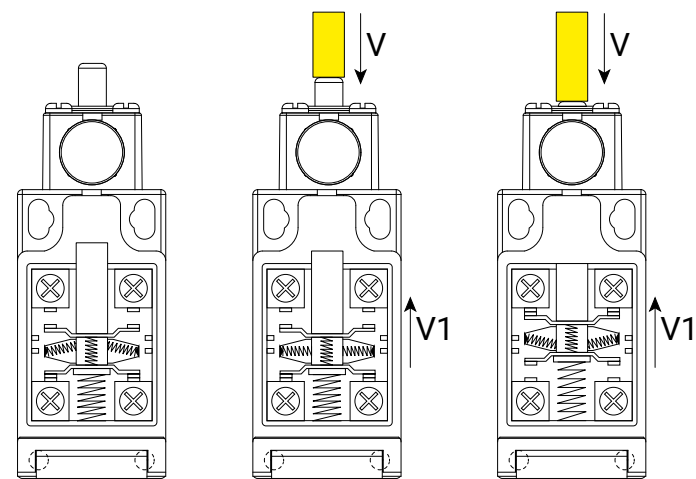
SLOW ACTION - Contact elements direct acting

Slow-acting contact blocks are characterised by identical switching and resetting points (no differential travel).

The contact movement speed (V1) is equal or proportional to the actuator speed (V).

This type of contact is suitable for fast movements.

The opening distance depends on the distance travelled by the operator.



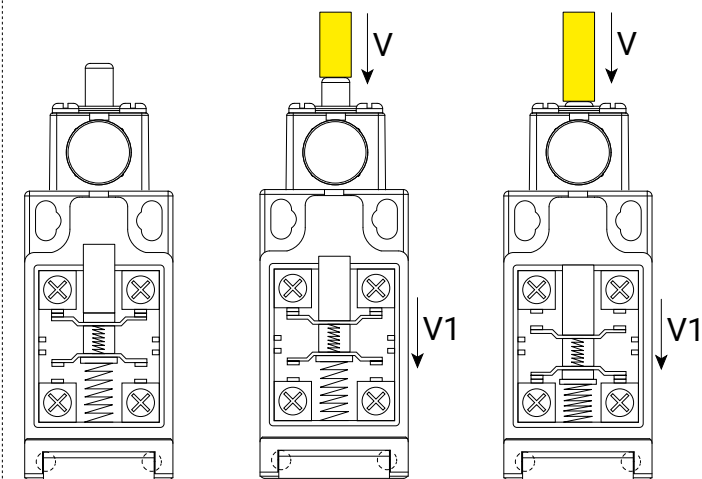
SNAP ACTION - Contact elements acting independently

Snap-action contact blocks are characterised by non-coincident switching and resetting points (differential travel).

The speed of the contact movement (V1) is not linked to the speed of the actuator (V).

This type of contact is also suitable for slow movements.

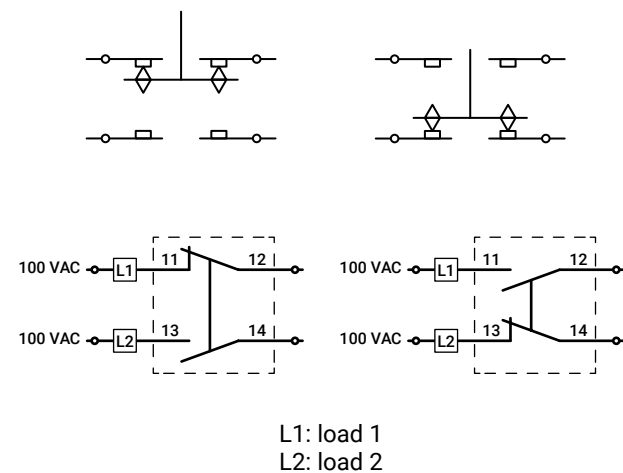
This feature ensures satisfactory electrical performance in applications involving low-speed actuators.



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

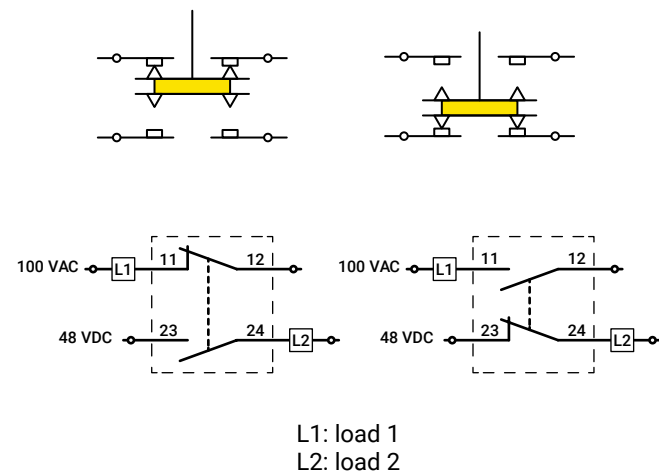
Za contact type

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.



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.

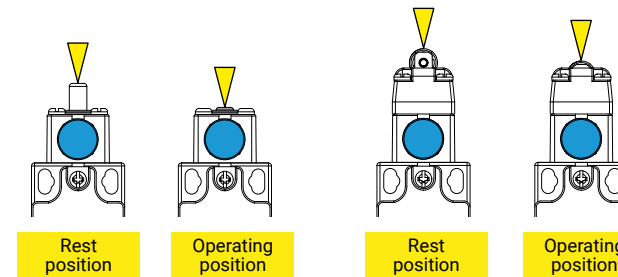


FTN1R series of thermoplastic limit switches with manual reset is equipped with Zb contacts.

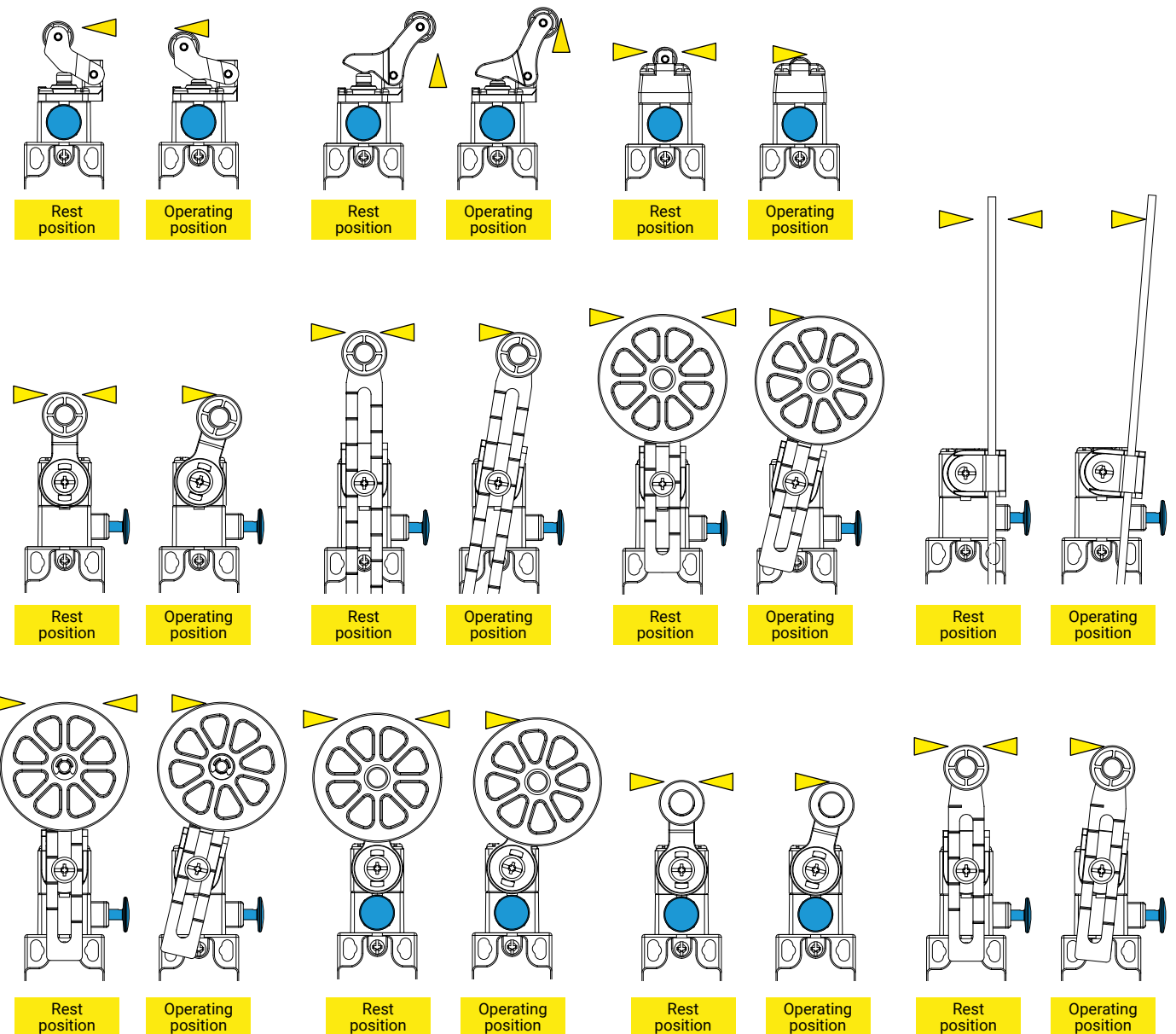
DETECTION MOVEMENTS

Limit switches are used in all automated installations and also in a wide variety of other applications. They transmit data to the logic processing system regarding: presence/absence, passage, positioning and end of travel. They have different detection movements: linear and rotary.

1. Linear detection movement - Plunger

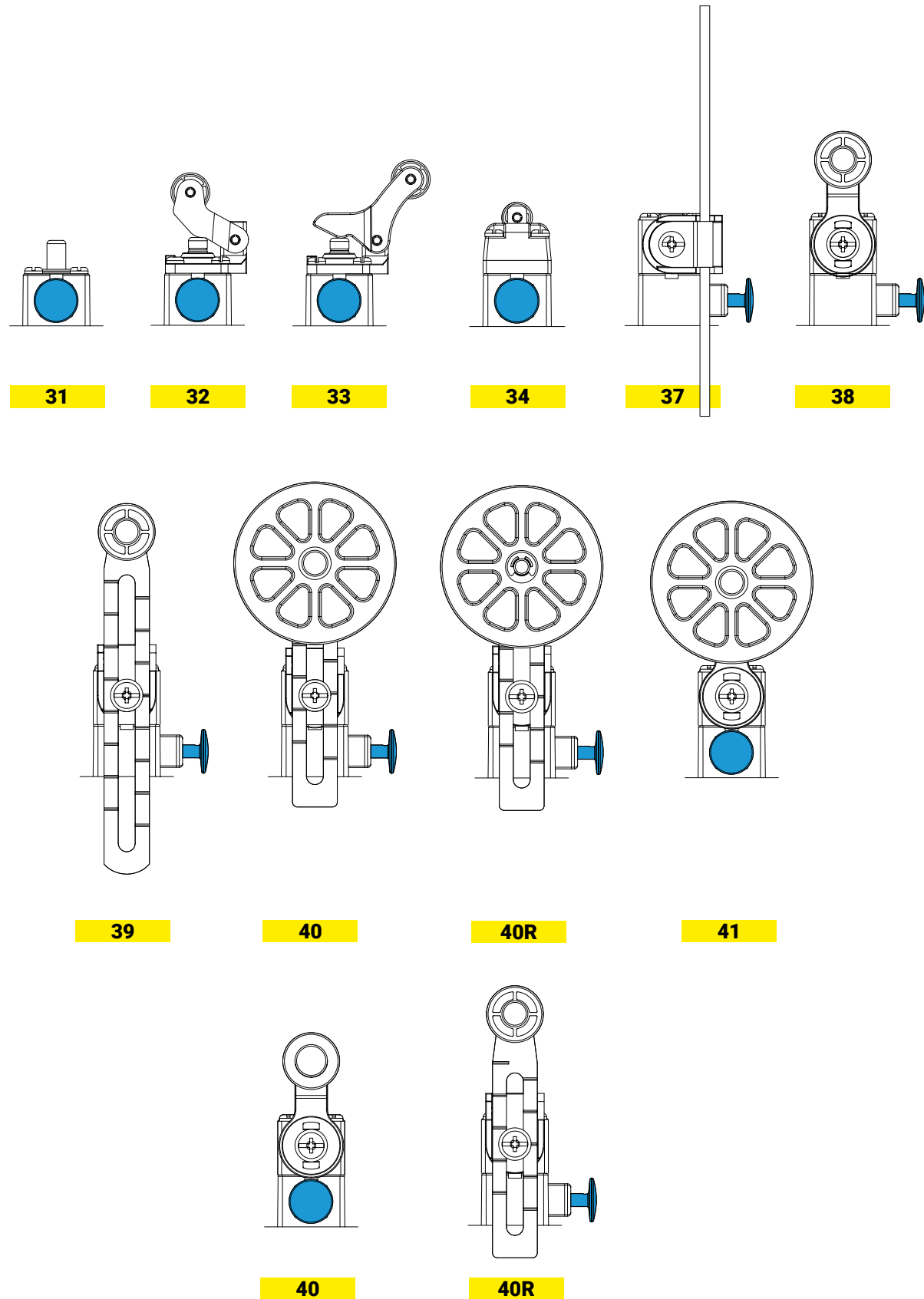


2. Rotary detection movement - Lever

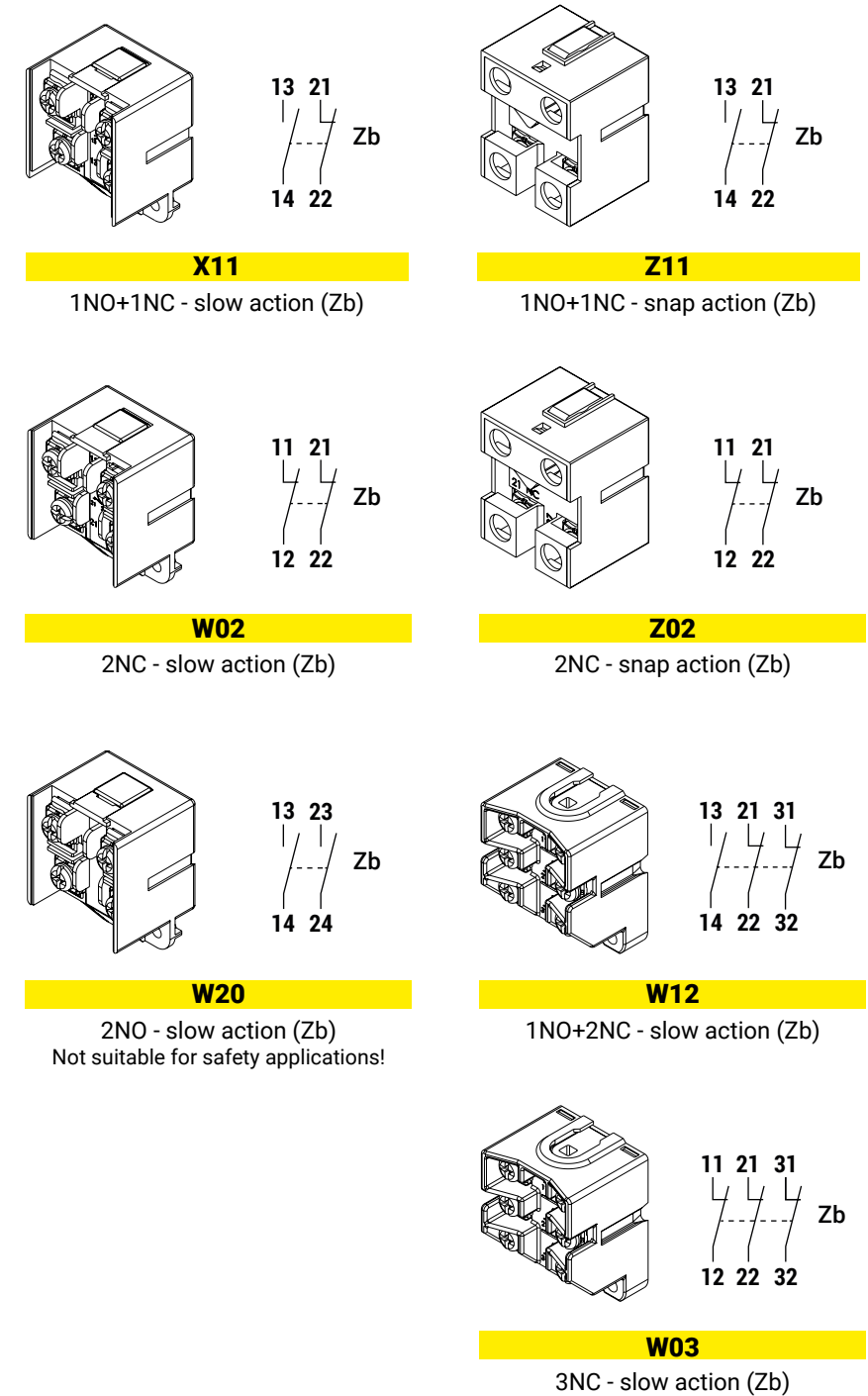


FTN1R - PRODUCT SELECTION OVERVIEW

1 HEADS + ACTUATORS



2 CONTACT BLOCKS



3 CONDUIT ENTRY

Threaded conduit entry

Standard:
M16 × 1.5

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

CONTACT TYPES		CATEGORIES RATINGS		
X11	1NO+1NC	slow action (Zb)	A600	AC15: 400 V - 4 A
W02	2NC		Q600	
Z11	1NO+1NC	snap action (Zb)	B600	DC13: 24V - 6 A
Z02	2NC		Q600	
W12	1NO+2NC	slow action (Zb)	A300	
W03	3NC		Q300	

FTN1R - CODE SELECTION OVERVIEW

F T N	1 R	3 1	X 1 1	
SERIES	FUNCTION	ACTUATOR	CONTACT TYPE	CONDUIT ENTRY
FTN thermoplastic limit switches	1R with manual reset	31 plastic end plunger 32 PA roller lever plunger, horizontal action 33 PA roller lever plunger, vertical action 34 PA roller plunger 37 adjustable metal rod lever 38 Ø18 PA roller lever 39 Ø18 PA roller lever with variable length 40 Ø50 rubber roller lever with variable length 40R Ø50 rubber roller lever with variable length and overhang 41 Ø50 rubber roller lever 43 Ø18 metal roller lever 44 Ø18 PA roller lever with variable length	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	<i>standard</i> blank M16 × 1.5 <i>on request</i> M M20 × 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 × 1

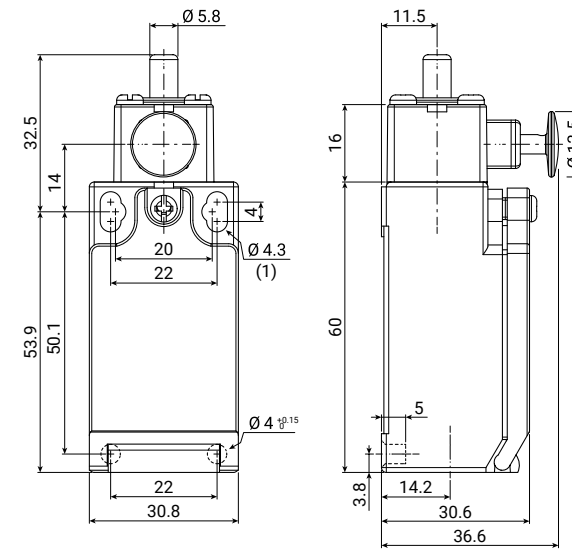
FTN1R31

Limit switch with plastic end plunger and manual reset
IP67



FTN series	1R function	31 actuator	XXX contact type	XX conduit entry
FTN	thermoplastic limit switch	1R with manual reset function	31 plastic end plunger	
			X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)
			Z11: 1NO+1NC Z02: 2NC	snap action (Zb)
			W12: 1NO+2NC W03: 3NC	slow action (Zb)
				blank M16 × 1.5 (standard) M M20 × 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 × 1

technical drawing - sizes in mm



(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)	

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	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	2.4 mm	3.4 mm	7.5 N	3.1 mm	22 N	4.0 mm	6.0 mm
				2.4 mm	-	7.5 N	3.1 mm	22 N		
				2.4 mm	-	9.5 N	-	-		
Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	B600-Q600	DC13: 24V - 6A	2.0 mm	1.0 mm	8.5 N	4.4 mm	16.5 N	4.0 mm	6.0 mm
				2.0 mm	0.8 mm	8.5 N	4.4 mm	16.5 N		
W12: 1NO+2NC W03: 3NC	slow action (Zb)	A300-Q300		2.3 mm	3.0 mm	7.5 N	3.0 mm	23 N		
				2.3 mm	-	7.5 N	3.0 mm	23 N		

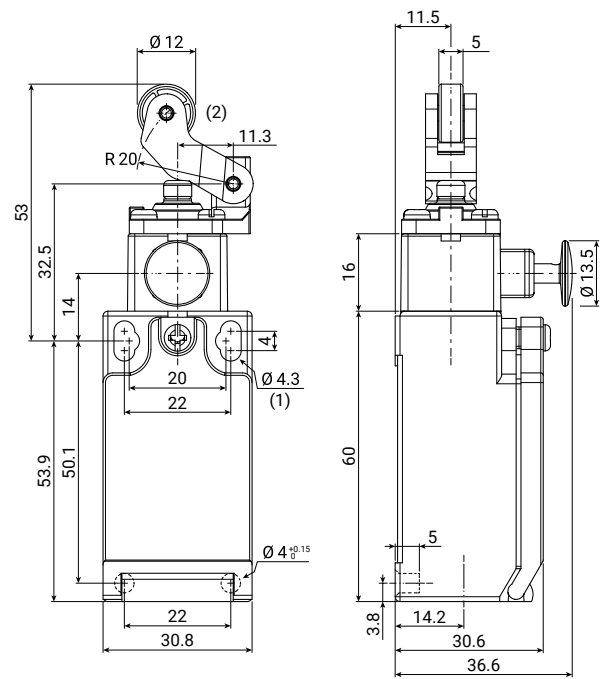
FTN1R32

Limit switch with PA roller lever plunger, horizontal action and manual reset
IP67



FTN series		1R function		32 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	32	PA roller lever plunger, horizontal action	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	PG11 PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes
(2) PA roller

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	3.5 mm	5.0 mm	5.3 N	7.5 mm	13.5 N	5.7 mm	9.0 mm
			3.5 mm	-	5.3 N	7.5 mm	13.5 N		
			3.5 mm	-	7.2 N	-	-		
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	2.7 mm	1.3 mm	5.9 N	6.6 mm	10.8 N	5.7 mm	9.0 mm
			2.7 mm	1.1 mm	5.9 N	6.6 mm	10.8 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	3.5 mm	4.5 mm	5.3 N	8.8 mm	15 N	5.7 mm	9.0 mm
			3.5 mm	-	5.3 N	8.8 mm	15 N		

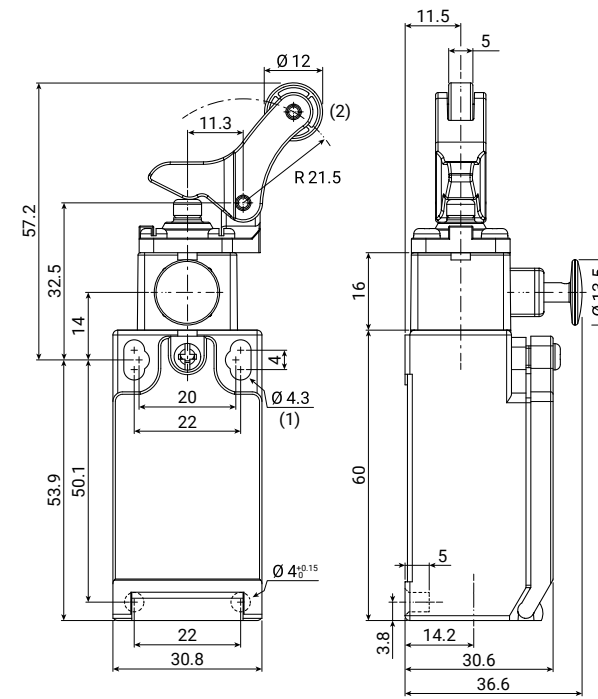
FTN1R33

Limit switch with PA roller lever plunger, vertical action and manual reset
IP67



FTN series		1R function		33 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	33	PA roller lever plunger, vertical action	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	PG11 PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes
(2) PA roller

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	4.0 mm	6.0 mm	6.4 N	5.0 mm	15 N	6.8 mm	9.5 mm
			4.0 mm	-	7.0 N	5.0 mm	15 N		
			3.0 mm	-	5.8 N	-	-		
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	3.3 mm	1.6 mm	5.0 N	7.7 mm	10 N	6.8 mm	9.5 mm
			3.3 mm	1.4 mm	5.0 N	7.7 mm	10 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	4.0 mm	6.0 mm	6.4 N	5.3 mm	17 N	6.8 mm	9.5 mm
			4.0 mm	-	6.5 N	5.3 mm	17 N		

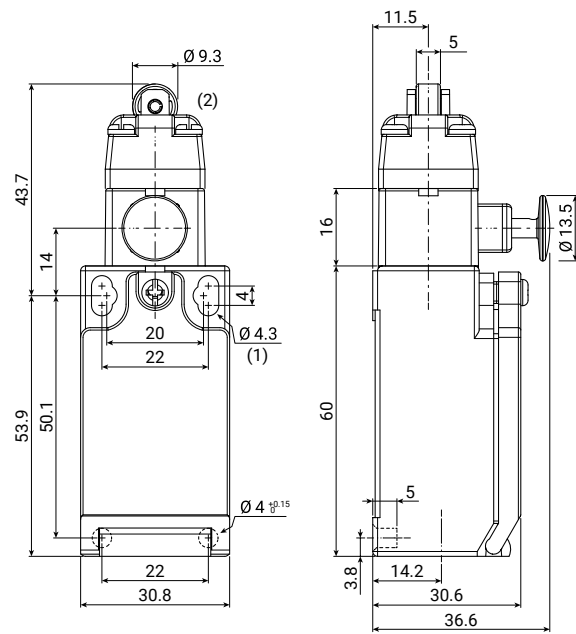
FTN1R34

Limit switch with PA roller plunger and manual reset
IP67



FTN series		1R function		34 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	34	PA roller plunger	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	1/2" NPT PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes
(2) PA roller

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	2.4 mm	3.4 mm	7.5 N	3.1 mm	22 N	4.0 mm	6.0 mm
			2.4 mm	-	7.5 N	3.1 mm	22 N		
			2.4 mm	-	9.5 N	-	-		
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	2.0 mm	1.0 mm	8.5 N	4.4 mm	16.5 N	4.0 mm	6.0 mm
			2.0 mm	0.8 mm	8.5 N	4.4 mm	16.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	2.3 mm	3.0 mm	7.5 N	3.0 mm	23 N	4.0 mm	6.0 mm
			2.3 mm	-	7.5 N	3.0 mm	23 N		

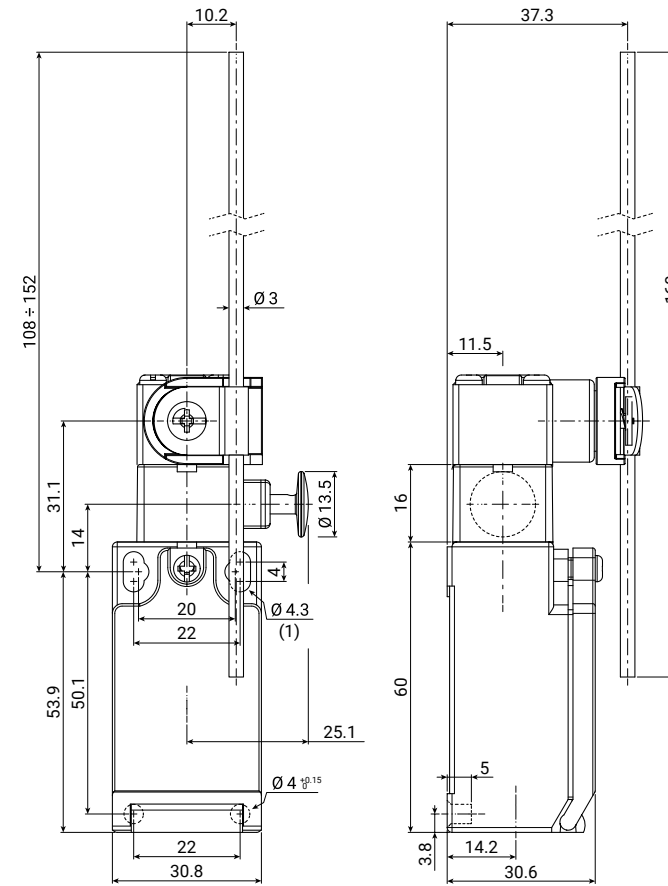
FTN1R37

Limit switch with adjustable metal rod lever and manual reset
IP67



FTN series		1R function		37 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	37	adjustable metal rod lever	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	1/2" NPT PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	1.8 N	45°	6 N	55°	80°
			35°	-	1.8 N	45°	6 N		
			35°	-	1.8 N	-	-		
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N	55°	80°
			35°	4°	5.9 N	64°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	32°	40°	1.8 N	45°	5.4 N	55°	80°
			32°	-	1.8 N	45°	5.4 N		

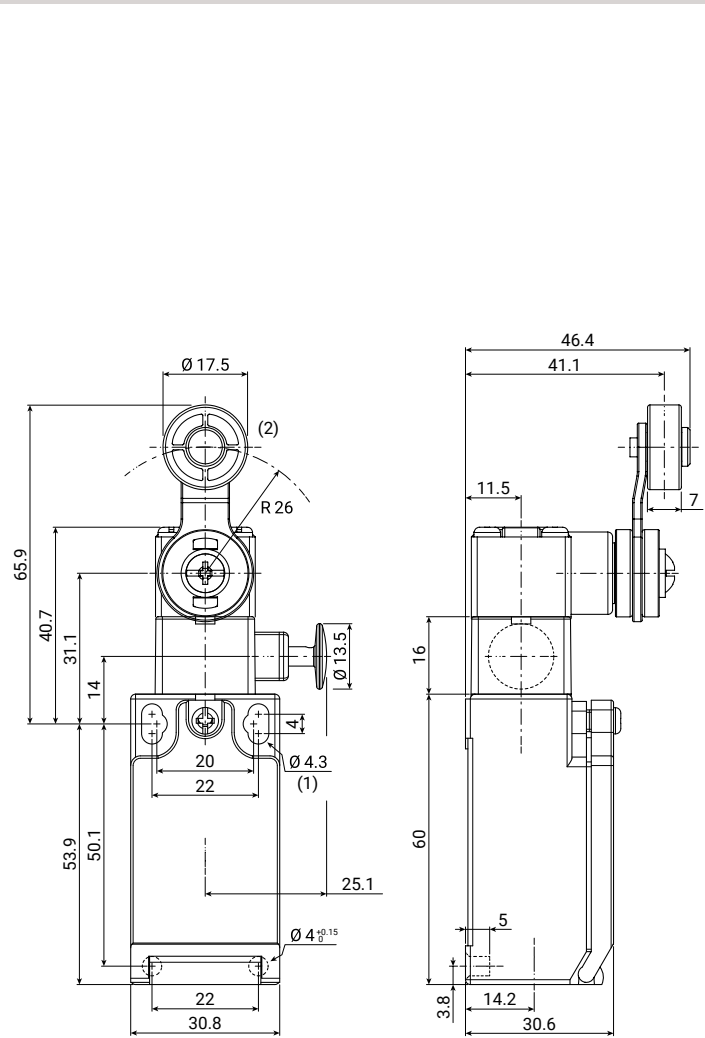
FTN1R38

Limit switch with Ø18 PA roller lever and manual reset
IP67



FTN series		1R function		38 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	38	Ø18 PA roller lever	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	PG11 PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(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)		

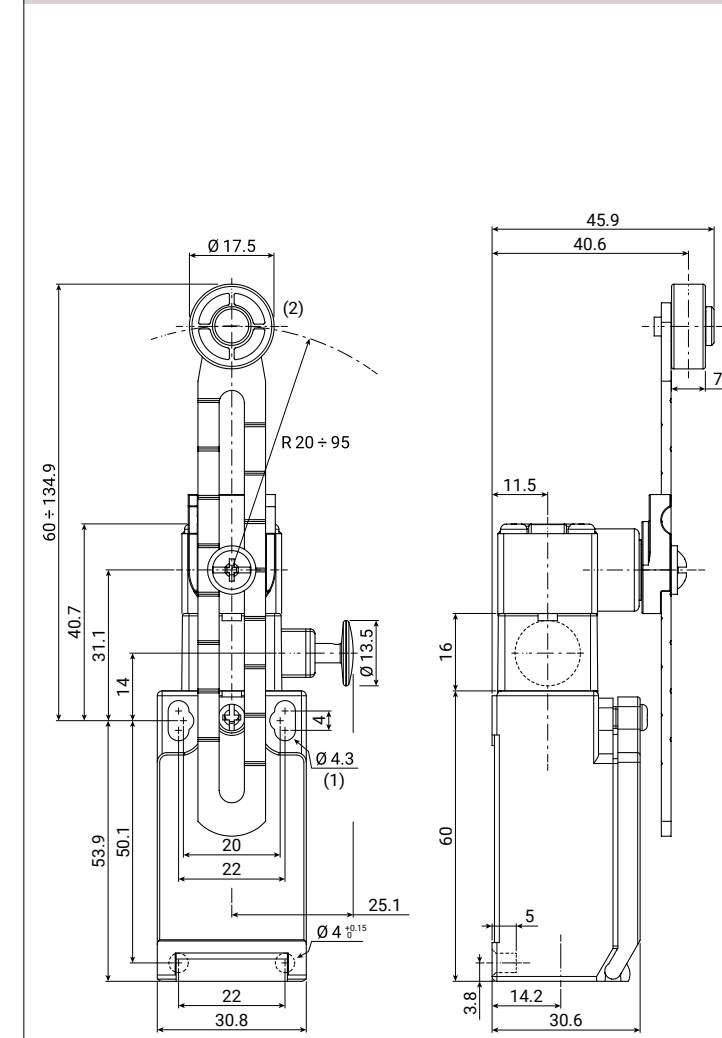
FTN1R39

Limit switch with Ø18 PA roller lever with variable length and manual reset
IP67



FTN series		1R function		39 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	39	Ø18 PA roller lever with variable length	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M	M16 × 1.5 (standard) M20 × 1.5
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	PG11 PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male connector "A" M12 × 1

technical drawing - sizes in mm



(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		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	6.5 N	45°	6 N	55°	80°
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300		35°	4°	5.9 N	64°	5.5 N		
			32°	40°	6.5 N	45°	5.4 N		
			32°	-	6.5 N	45°	5.4 N		

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	6.5 N	45°	6 N	55°	80°
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300		35°	4°	5.9 N	64°	5.5 N		
			32°	40°	6.5 N	45°	5.4 N		
			32°	-	6.5 N	45°	5.4 N		

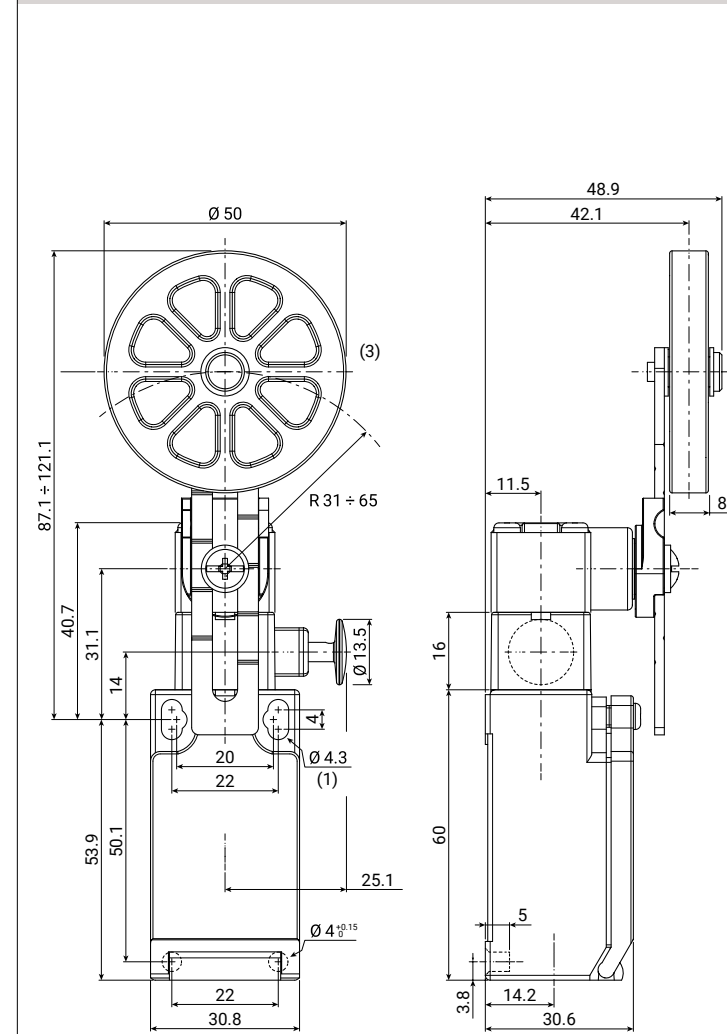
FTN1R40

Limit switch with Ø50 rubber roller lever with variable length and manual reset
IP67



FTN series		1R function	40 actuator	XXX contact type	XX conduit entry
FTN	thermoplastic limit switch	1R with manual reset function	40 Ø50 rubber roller lever with variable length	X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	blank M16 x 1.5 (standard) M M20 x 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 x 1

technical drawing - sizes in mm



(1) mounting holes
(3) rubber roller

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	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:	35°	50°	6.5 N	45°	6 N	55°	80°
			400V - 4A	35°	-	6.5 N	45°	6 N		
				35°	-	6.5 N	-	-		
Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	B600-Q600	DC13:	35°	9°	5.9 N	60°	5.5 N	55°	80°
			24V - 6A	35°	4°	5.9 N	64°	5.5 N		
W12: 1NO+2NC W03: 3NC	slow action (Zb)	A300-Q300		32°	40°	6.5 N	45°	5.4 N	55°	80°
				32°	-	6.5 N	45°	5.4 N		

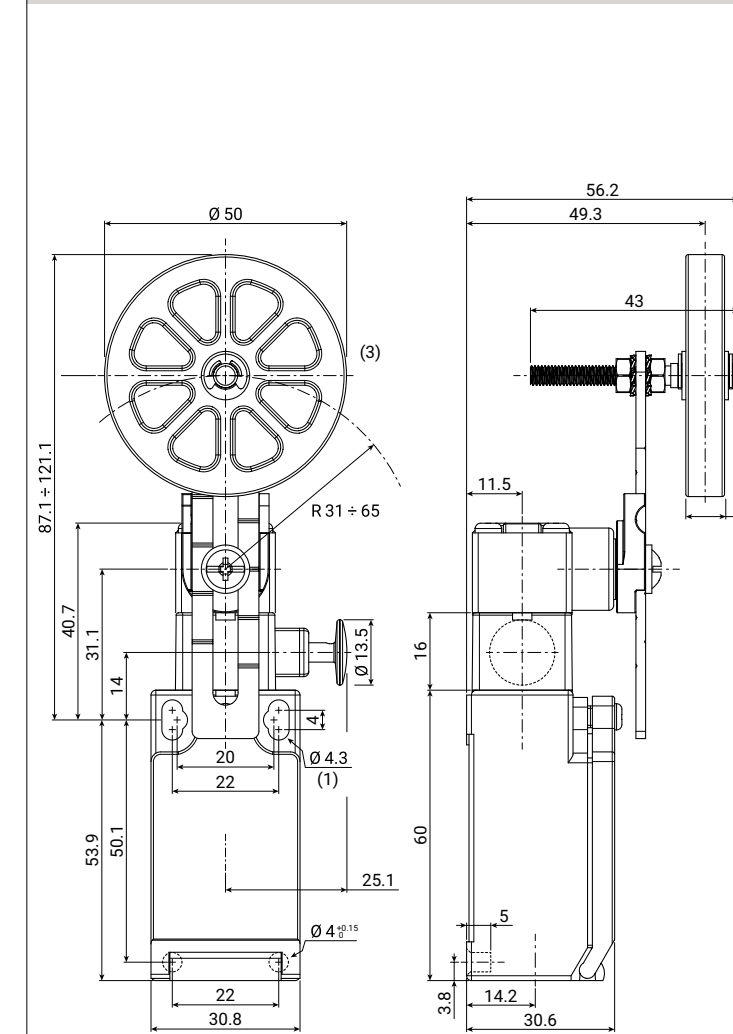
FTN1R40R

Limit switch with Ø50 rubber roller lever with variable length, overhang and manual reset
IP67



FTN series		1R function	40R actuator	XXX contact type	XX conduit entry
FTN	thermoplastic limit switch	1R with manual reset function	40R Ø50 rubber roller lever with variable length and overhang	X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	blank M16 x 1.5 (standard) M M20 x 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 x 1

technical drawing - sizes in mm



(1) mounting holes
(3) rubber roller

contact type	categories	ratings	operational travel		operating force	positive opening		lock travel	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:	35°	50°	6.5 N	45°	6 N	55°	80°
			400V - 4A	35°	-	6.5 N	45°	6 N		
				35°	-	6.5 N	-	-		
Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	B600-Q600	DC13:	35°	9°	5.9 N	60°	5.5 N	55°	80°
			24V - 6A	35°	4°	5.9 N	64°	5.5 N		
W12: 1NO+2NC W03: 3NC	slow action (Zb)	A300-Q300		32°	40°	6.5 N	45°	5.4 N	55°	80°
				32°	-	6.5 N	45°	5.4 N		

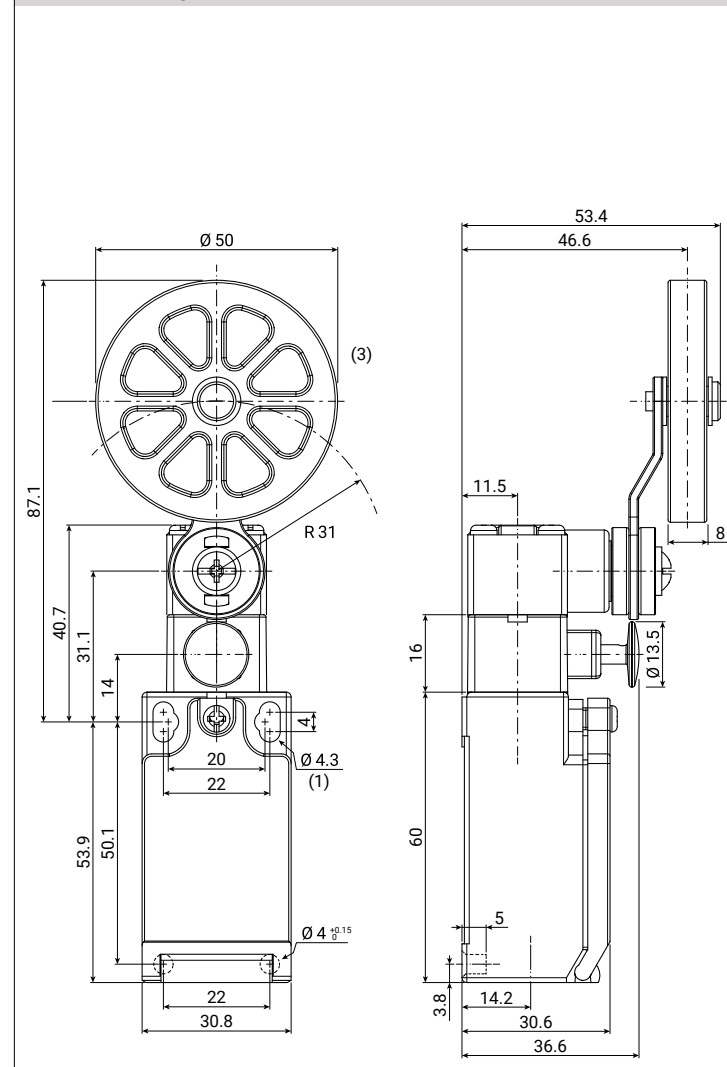
FTN1R41

Limit switch with Ø50 rubber roller lever and manual reset
IP67



FTN series		1R function	41 actuator	XXX contact type	XX conduit entry
FTN	thermoplastic limit switch	1R with manual reset function	41 Ø50 rubber roller lever	X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	blank M16 × 1.5 (standard) M M20 × 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes
(3) rubber roller

contact type	categories	ratings	operational travel		operating force OF	positive opening		lock travel LT	total travel TT
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	6.5 N	45°	6 N	55°	80°
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	32°	40°	6.5 N	45°	5.4 N		
			32°	-	6.5 N	45°	5.4 N		

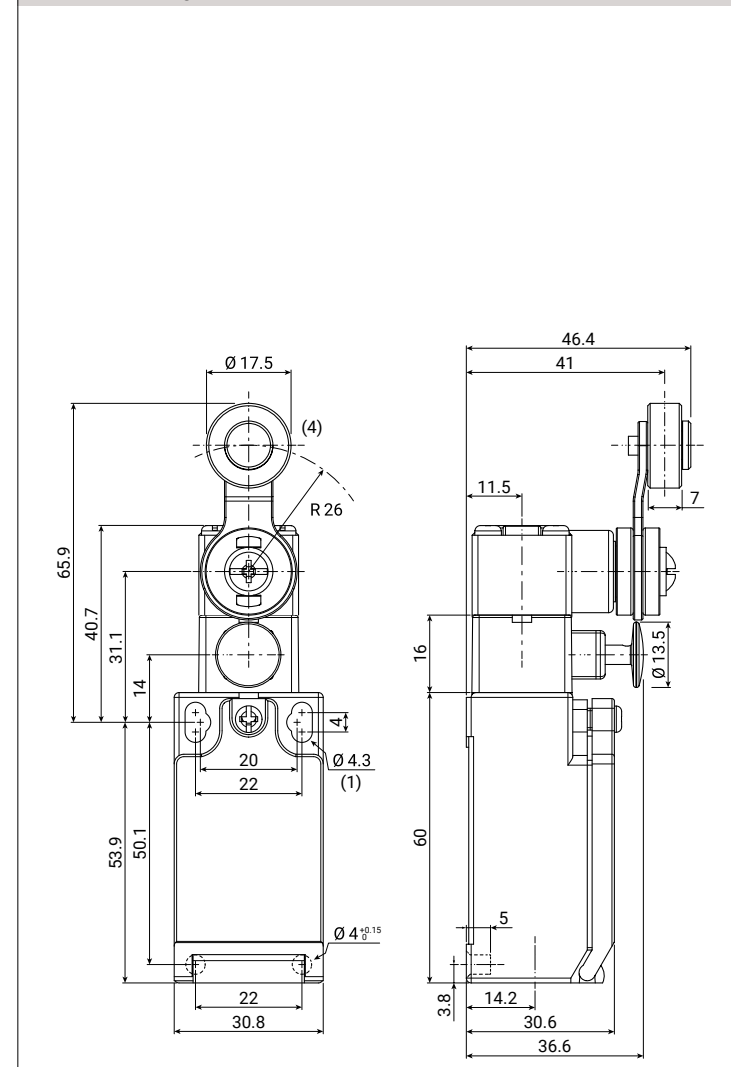
FTN1R43

Limit switch with Ø18 metal roller lever and manual reset
IP67



FTN series		1R function	43 actuator	XXX contact type	XX conduit entry
FTN	thermoplastic limit switch	1R with manual reset function	43 Ø18 metal roller lever	X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC	blank M16 × 1.5 (standard) M M20 × 1.5 N 1/2" NPT G1 PG11 G3 PG13.5 C male connector "A" M12 × 1

technical drawing - sizes in mm



(1) mounting holes
(4) metal roller

contact type	categories	ratings	operational travel		operating force OF	positive opening		lock travel LT	total travel TT
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	6.5 N	45°	6 N	55°	80°
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300	24V - 6A	32°	40°	6.5 N	45°	5.4 N		
			32°	-	6.5 N	45°	5.4 N		

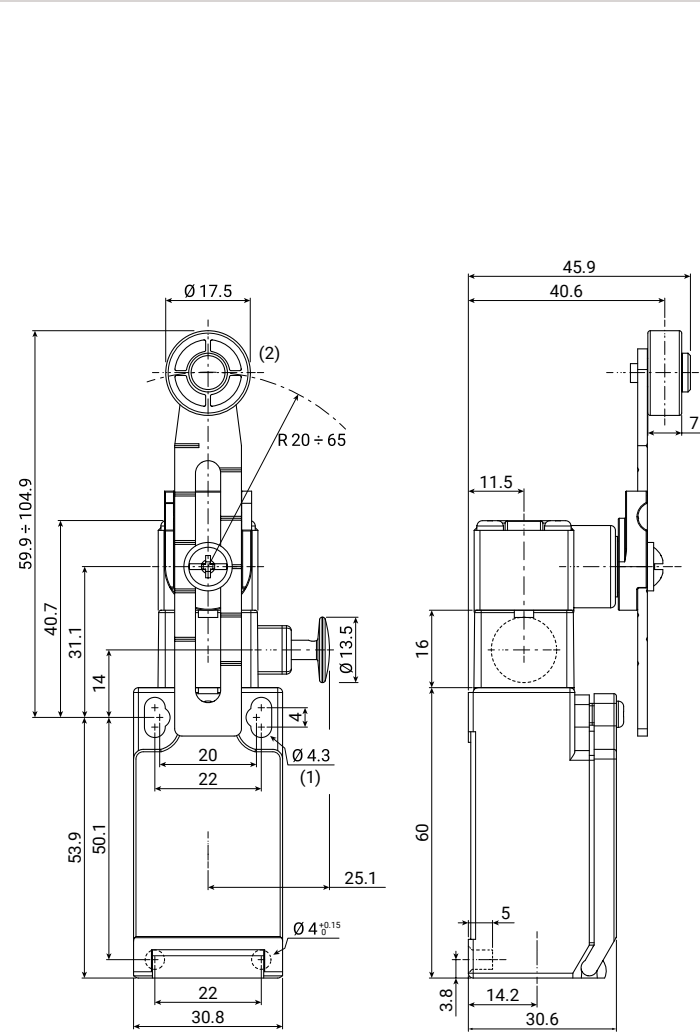
FTN1R44

Limit switch with Ø18 PA roller lever with variable length and manual reset
IP67



FTN series		1R function		44 actuator		XXX contact type		XX conduit entry	
FTN	thermoplastic limit switch	1R	with manual reset function	44	Ø18 PA roller lever with variable length	X11: 1NO+1NC W02: 2NC W20: 2NO	slow action (Zb)	blank M N	M16 × 1.5 (standard) M20 × 1.5 1/2" NPT
						Z11: 1NO+1NC Z02: 2NC	snap action (Zb)	G1 G3	PG11 PG13.5
						W12: 1NO+2NC W03: 3NC	slow action (Zb)	C	male code "A" M12 × 1 connector

technical drawing - sizes in mm



(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		lock travel	total travel
			PT1	PT2 (slow action) RP (snap action)		POT (travel)	POF (force)		
X11: 1NO+1NC W02: 2NC W20: 2NO	A600-Q600	AC15: 400V - 4A	35°	50°	6.5 N	45°	6 N	55°	80°
Z11: 1NO+1NC Z02: 2NC	B600-Q600	DC13: 24V - 6A	35°	9°	5.9 N	60°	5.5 N		
W12: 1NO+2NC W03: 3NC	A300-Q300		35°	4°	5.9 N	64°	5.5 N		
			32°	40°	6.5 N	45°	5.4 N		
			32°	-	6.5 N	45°	5.4 N		