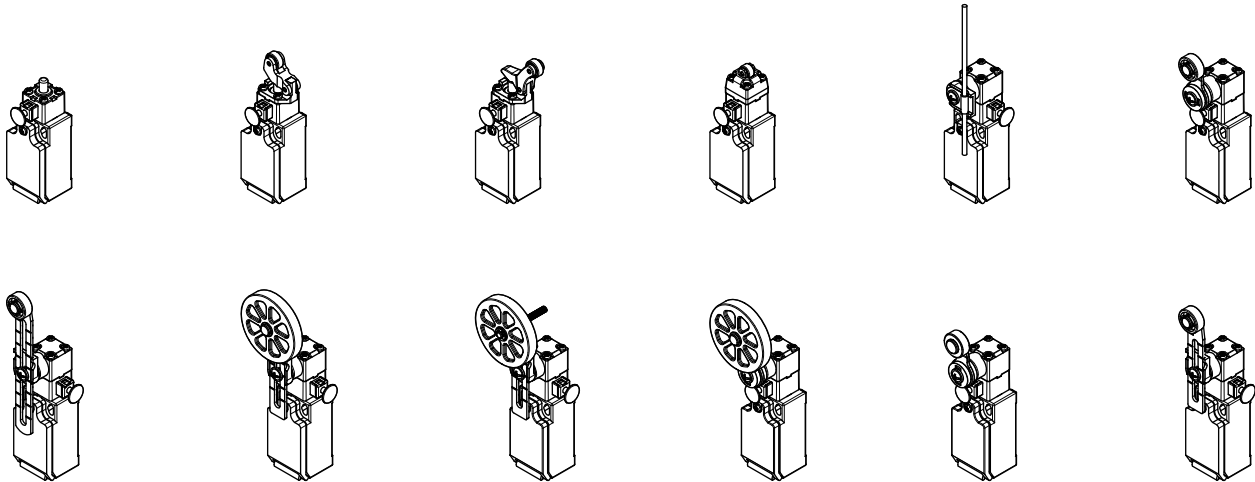




FTN1R

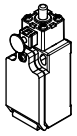
THERMOPLASTIC LIMIT SWITCHES WITH MANUAL RESET



Specifications



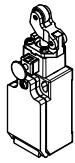
Positive opening operation		NC contact
Minimum current		5 mA - 5 V DC
Thermal current	I _{th}	10 A
Rated insulation voltage		500 V AC
Rated impulse withstand voltage		2500 V AC
Insulation resistance	min	100 MΩ (DC 500 V)
Contact resistance	max	25 mΩ (initial)
Switching speed	max	250 mm/s
Switching frequency	max	6000 operations per hour
Enclosure material		UL approved glass-filled polybutylene terephthalate
Enclosure protection		IP67
Operating temperature		-25 ... +80°C (-18 ... +176°F)
Pollution degree		3
Protection against electric shock		class II (double insulation)
Mechanical life expectancy	min	1×10 ⁶ cycles
Electrical life expectancy	min	150000 cycles
Vibration	IEC 68-2-6 excursion	10-55 ±1 Hz 0.35 mm, 1 octave/min
Fixing		2 × M4 screws



p.3

FTN1R31

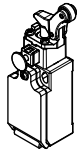
Short plastic end plunger with protective boot with manual reset



p.5

FTN1R32

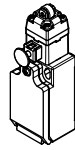
PA roller lever plunger with protective boot horizontal action with manual reset



p.7

FTN1R33

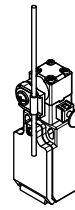
PA roller lever plunger with protective boot vertical action with manual reset



p.9

FTN1R34

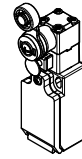
PA roller plunger with manual reset



p.11

FTN1R37

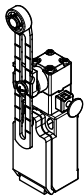
Rod lever type with manual reset



p.15

FTN1R38

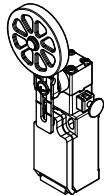
Ø18 PA roller lever with manual reset



p.16

FTN1R39

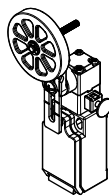
Variable length roller lever Ø18 with manual reset



p.19

FTN1R40

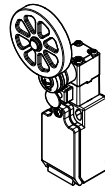
Variable length rubber roller lever Ø50 with manual reset



p.21

FTN1R40R

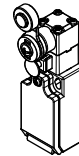
Variable length and rubber roller lever Ø50 with manual reset



p.23

FTN1R41

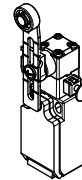
Ø50 rubber roller lever with manual reset



p.25

FTN1R43

Metal roller short lever Ø18 with manual reset



p.27

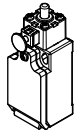
FTN1R44

Variable length roller lever Ø18 with manual reset

FTN1R31

Limit switch with short plastic end plunger with protective boot with manual reset

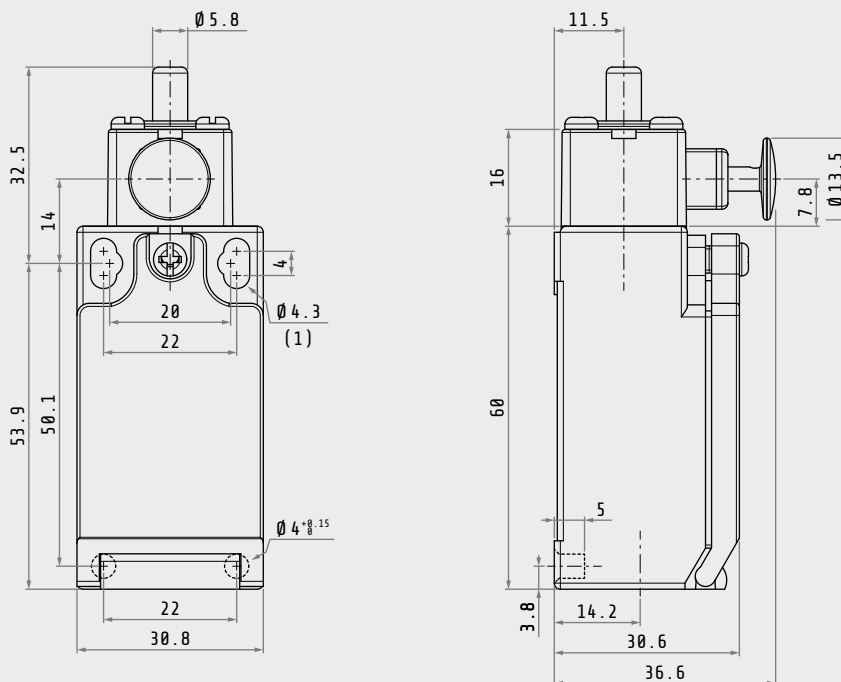
- Thermoplastic limit switch
- Vertical action
- Ø 5.8 mm plunger
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	31 short plastic end plunger with protective boot	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12×1 connector

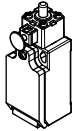
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes



FTN1R31

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600		2.4 mm	3.4 mm	7.5 N	3.1 mm	22 N		
W02 2NC			2.4 mm	-	7.5 N	3.1 mm	22 N		
W20 2NO	snap action (Zb) B600 - Q600	AC15: 400 V - 4 A DC13: 24 V - 6 A	2.4 mm	-	9.5 N	-	-	4.0* mm	
Z11 1NO 1NC			2.0 mm	1.0 mm	8.5 N	4.4 mm	16.5 N		
Z02 2NC	slow action (Zb) A300 - Q300		2.0 mm	0.8 mm	8.5 N	4.4 mm	16.5 N	6.0** mm	
W12 1NO 2NC			2.3 mm	3.0 mm	7.5 N	3.0 mm	23 N		
W03 3NC			2.3 mm	-	7.5 N	3.0 mm	23 N		

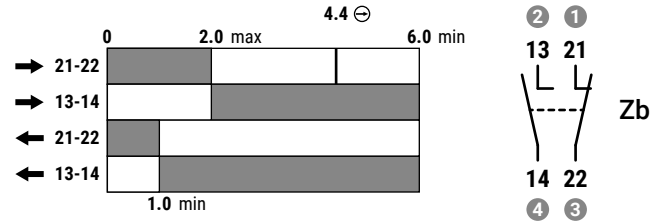


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

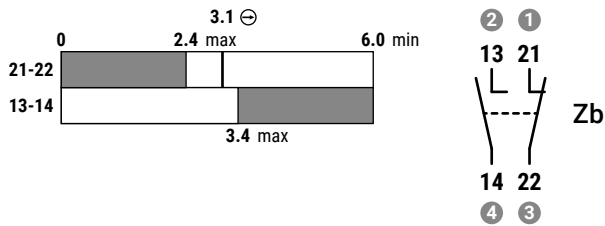


M12 Connector pin arrangement - on request

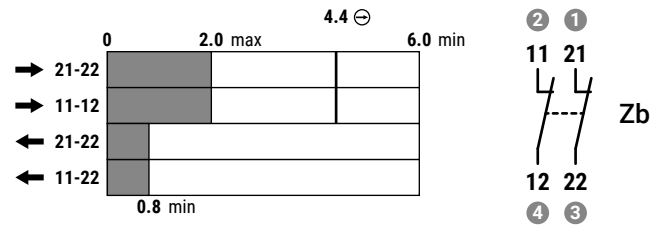
Z11 1NO 1NC snap action (Zb)



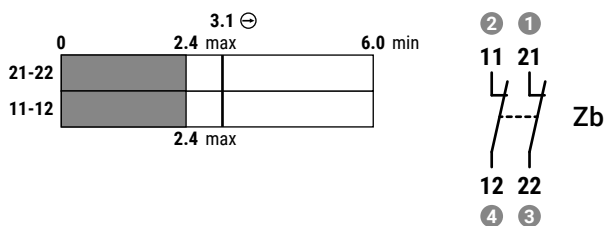
X11 1NO 1NC slow action (Zb)



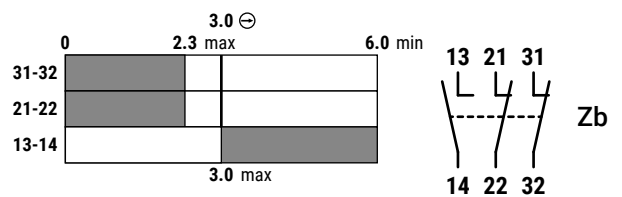
Z02 2NC snap action (Zb)



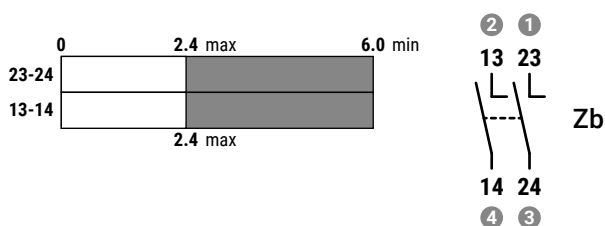
W02 2NC slow action (Zb)



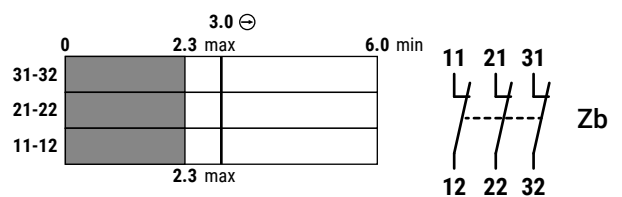
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



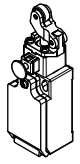
W03 3NC slow action (Zb)



FTN1R32

Limit switch PA roller lever plunger with protective boot horizontal action with manual reset

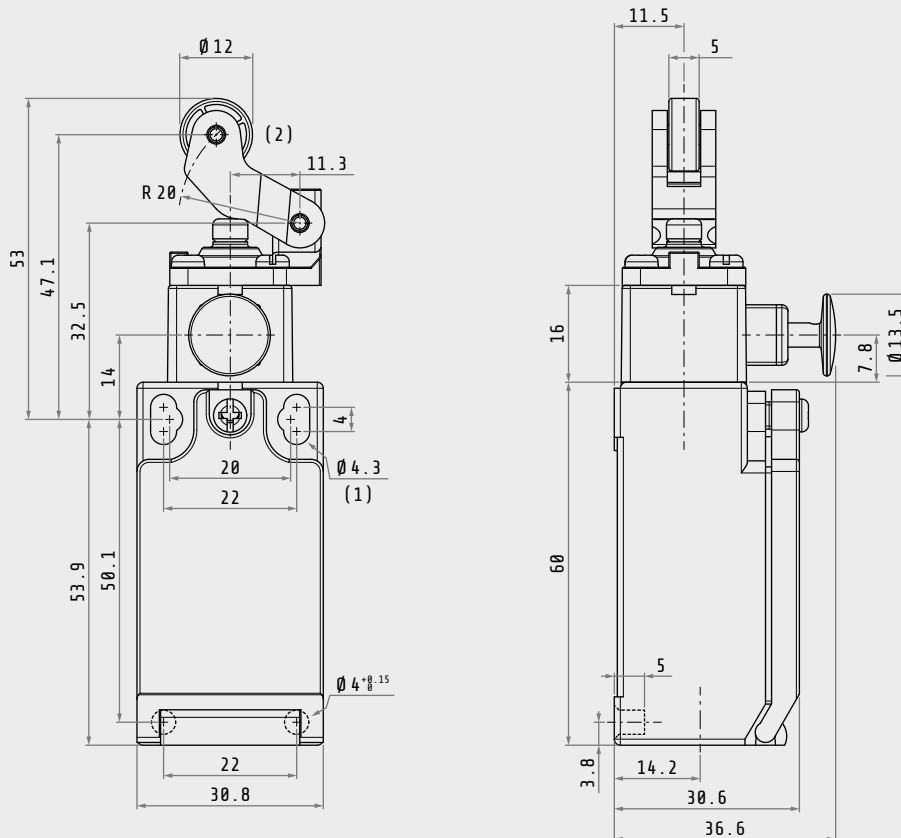
- Thermoplastic limit switch
- Horizontal action
- Plastic material \varnothing 12 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	32 PA roller lever plunger with protective boot Horizontal action	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

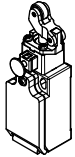
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(2) Plastic roller



FTN1R32

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600		3.5 mm	5.0 mm	5.3 N	7.5 mm	13.5 N		
W02 2NC			3.5 mm	-	5.3 N	7.5 mm	13.5 N		
W20 2NO	snap action (Zb) B600 - Q600	AC15: 400 V - 4 A	3.5 mm	-	7.2 N	-	-	5.7* mm	
Z11 1NO 1NC			2.7 mm	1.3 mm	5.9 N	6.6 mm	10.8 N		
Z02 2NC	slow action (Zb) A300 - Q300	DC13: 24 V - 6 A	2.7 mm	1.1 mm	5.9 N	6.6 mm	10.8 N	9.0** mm	
W12 1NO 2NC			3.5 mm	4.5 mm	5.3 N	8.8 mm	15 N		
W03 3NC			3.5 mm	-	5.3 N	8.8 mm	15 N		

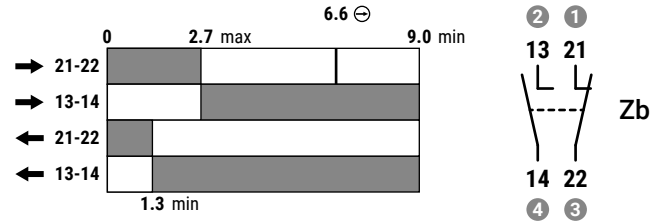


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

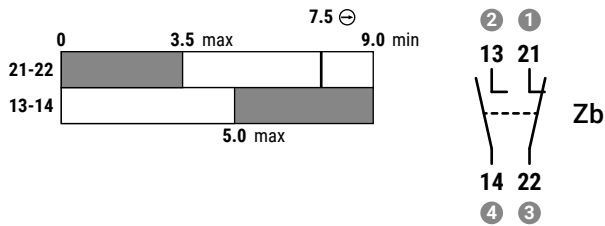


M12 Connector pin arrangement - on request

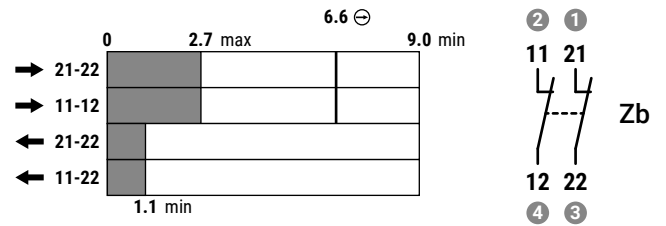
Z11 1NO 1NC snap action (Zb)



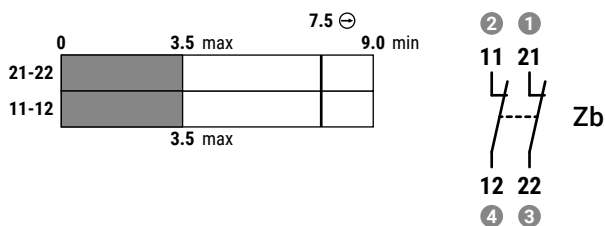
X11 1NO 1NC slow action (Zb)



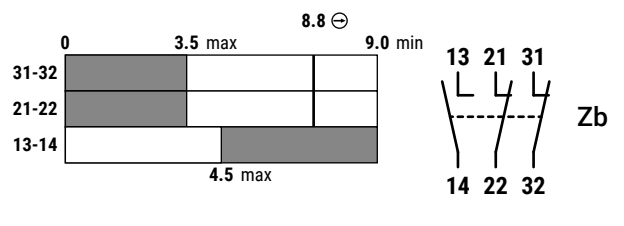
Z02 2NC snap action (Zb)



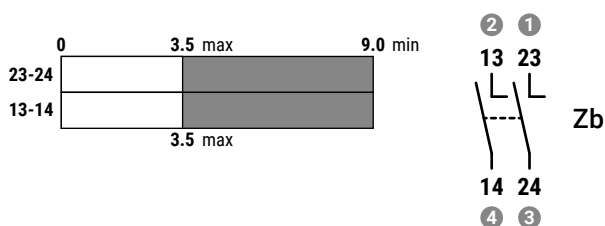
W02 2NC slow action (Zb)



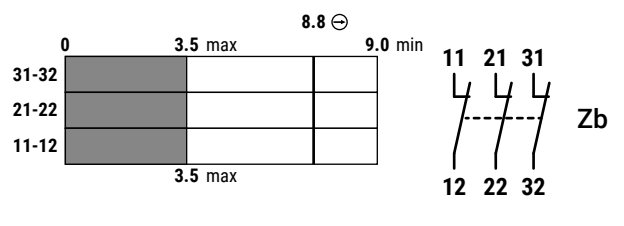
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



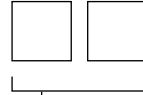
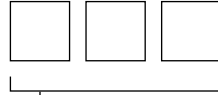
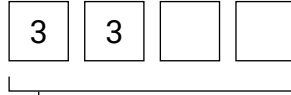
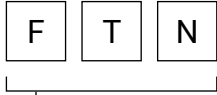
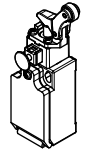
W03 3NC slow action (Zb)



FTN1R33

Limit switch with PA roller lever plunger with protective boot vertical action with manual reset

- Thermoplastic limit switch
- Vertical action
- Plastic material \varnothing 12 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series

FTN thermoplastic limit switches

Function

1R with reset function

Head and actuator

33 PA roller lever plunger with protective boot Vertical action

Contact type

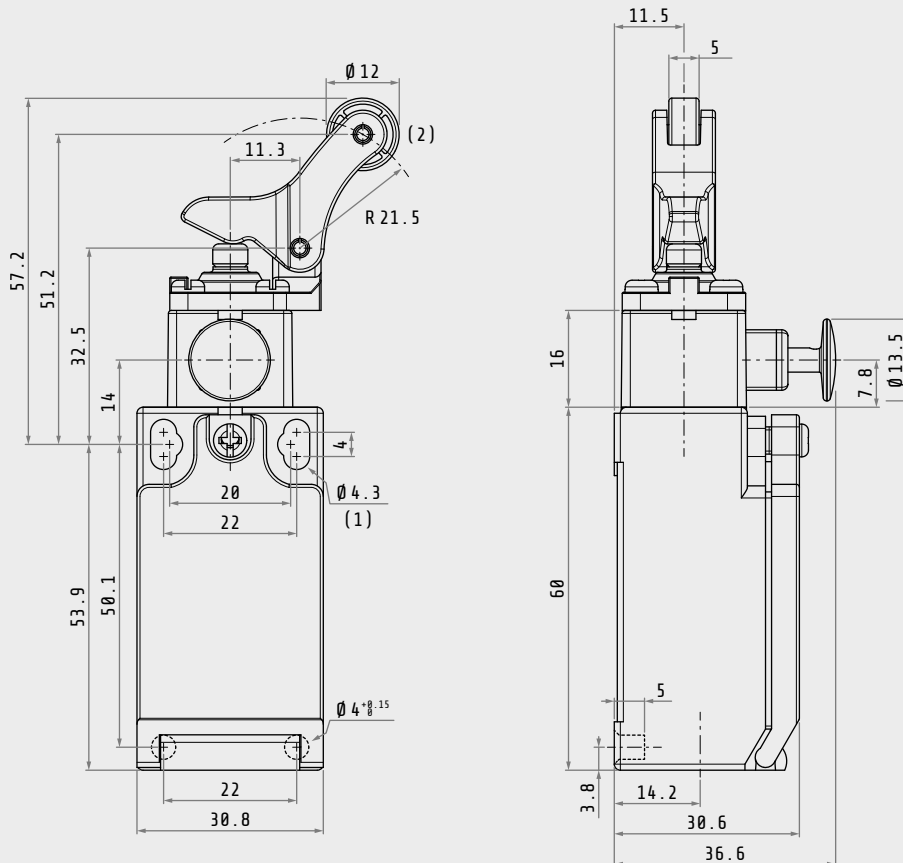
X11 1NO/1NC slow action Zb
W02 2NC slow action Zb
W20 2NO slow action Zb
Z11 1NO/1NC snap action Zb
Z02 2NC snap action Zb
W12 1NO/2NC slow action Zb
W03 3NC slow action Zb

Lead exit dimension or type

blank M16 (standard)
M M20
N 1/2NPT
G1 PG11
G3 PG13.5
C male code "A" M12x1 connector

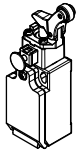
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
 (2) Plastic roller



FTN1R33

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600		4.0 mm	6.0 mm	6.4 N	5.0 mm	15 N		
W02 2NC			4.0 mm	-	7.0 N	5.0 mm	15 N		
W20 2NO	snap action (Zb) B600 - Q600	AC15: 400 V - 4 A DC13: 24 V - 6 A	3.0 mm	-	5.8 N	-	-	6.8* mm	
Z11 1NO 1NC			3.3 mm	1.6 mm	5.0 N	7.7 mm	10 N		
Z02 2NC	slow action (Zb) A300 - Q300		3.3 mm	1.4 mm	5.0 N	7.7 mm	10 N	9.5** mm	
W12 1NO 2NC			4.0 mm	6.0 mm	6.4 N	5.3 mm	17 N		
W03 3NC			4.0 mm	-	6.5 N	5.3 mm	17 N		

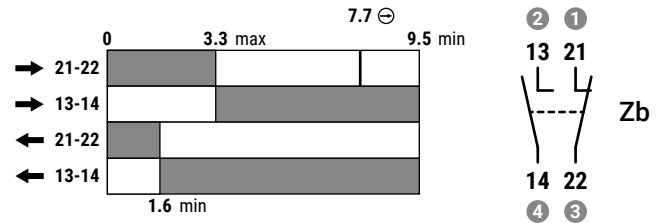


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

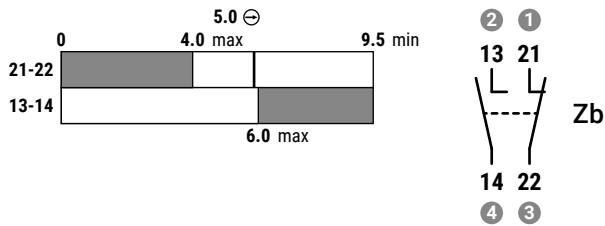


M12 Connector pin arrangement - on request

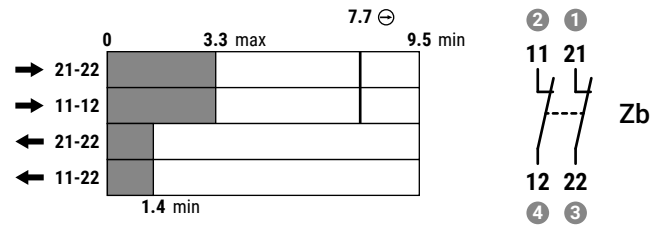
Z11 1NO 1NC snap action (Zb)



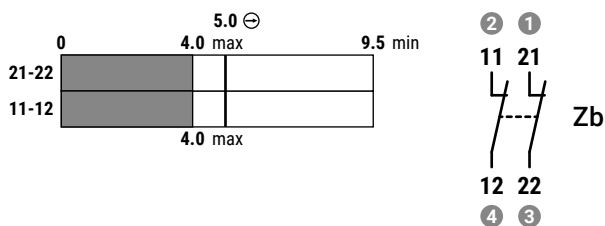
X11 1NO 1NC slow action (Zb)



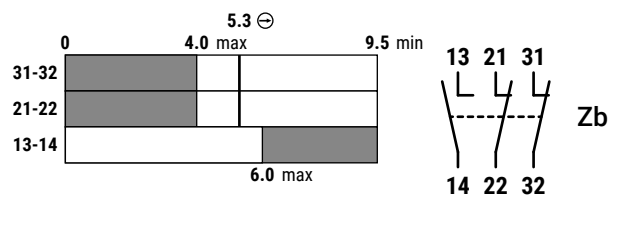
Z02 2NC snap action (Zb)



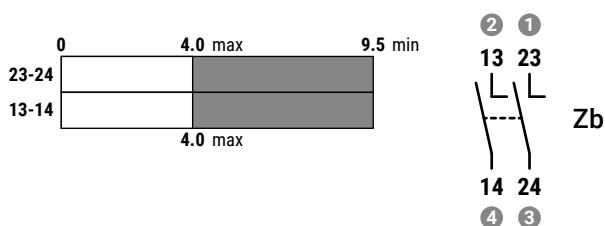
W02 2NC slow action (Zb)



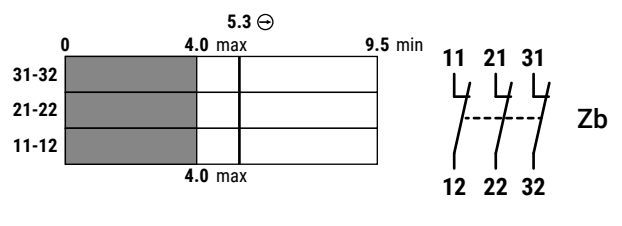
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



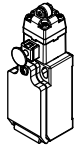
W03 3NC slow action (Zb)



FTN1R34

Limit switch with PA roller plunger with manual reset

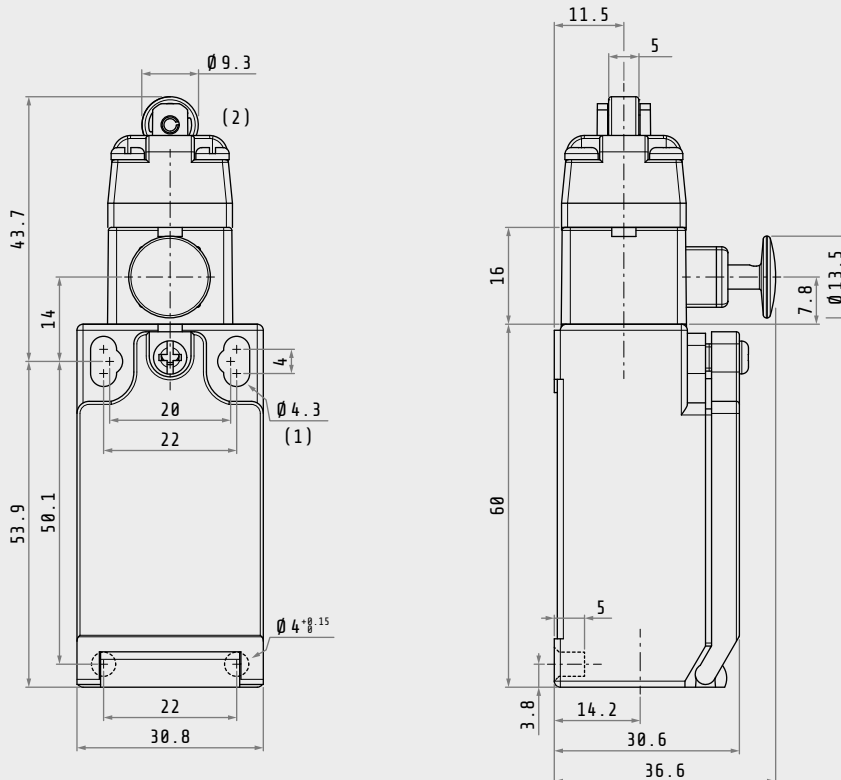
- Thermoplastic limit switch
- Horizontal action
- Plastic material \varnothing 9.3 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	34 PA roller plunger	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

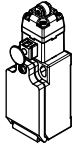
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(2) Plastic roller



FTN1R34

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	2.4 mm	3.4 mm	7.5 N	3.1 mm	22 N		
W02 2NC			2.4 mm	-	7.5 N	3.1 mm	22 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	2.4 mm	-	9.5 N	-	-	4.0* mm	
Z11 1NO 1NC			2.0 mm	1.0 mm	8.5 N	4.4 mm	16.5 N		
Z02 2NC	slow action (Zb) A300 - Q300		2.0 mm	0.8 mm	8.5 N	4.4 mm	16.5 N	6.0** mm	
W12 1NO 2NC			2.3 mm	3.0 mm	7.5 N	3.0 mm	23 N		
W03 3NC			2.3 mm	-	7.5 N	3.0 mm	23 N		

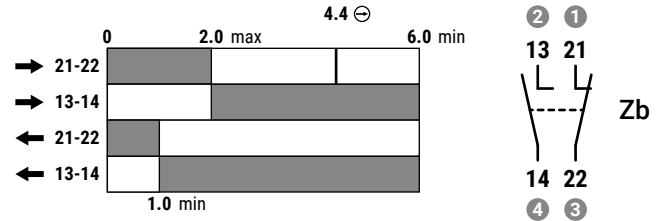


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

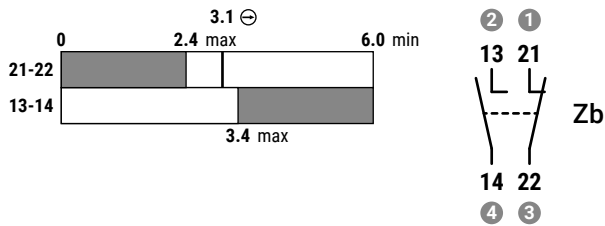


M12 Connector pin arrangement - on request

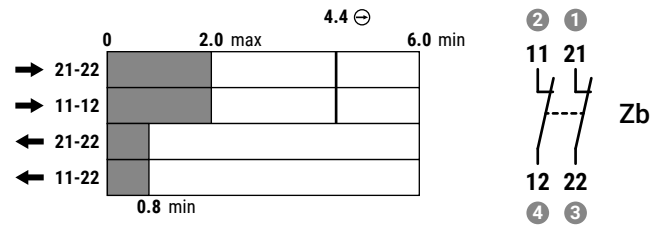
Z11 1NO 1NC snap action (Zb)



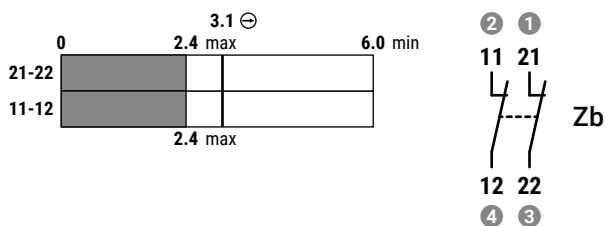
X11 1NO 1NC slow action (Zb)



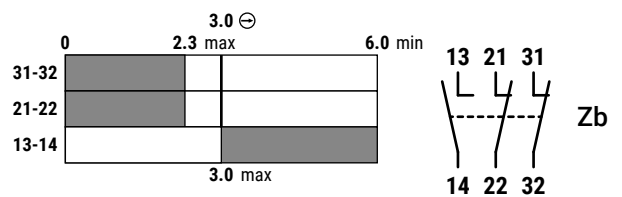
Z02 2NC snap action (Zb)



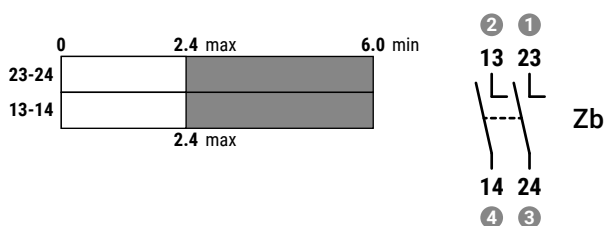
W02 2NC slow action (Zb)



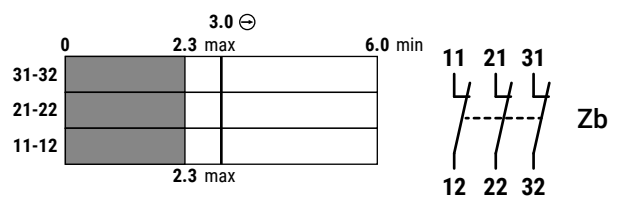
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



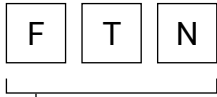
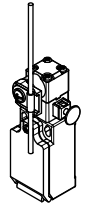
W03 3NC slow action (Zb)



FTN1R37

Limit switch with rod lever type with manual reset

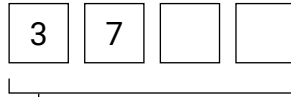
- Thermoplastic limit switch
- Horizontal action
- Adjustable rod
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



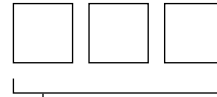
Series
FTN thermoplastic limit switches



Function
1R with reset function



Head and actuator
37 rod lever type



Contact type

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

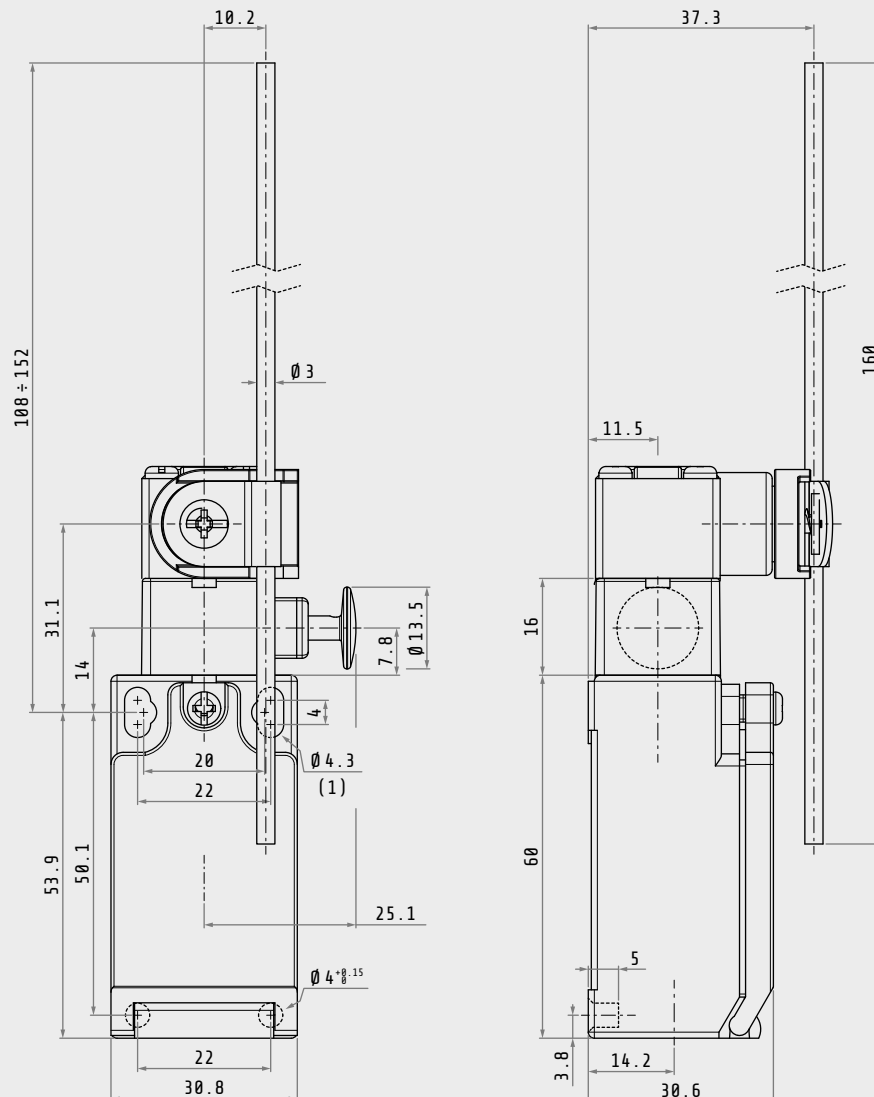


Lead exit dimension or type

blank	M16 (standard)
M	M20
N	1/2NPT
G1	PG11
G3	PG13.5
C	male code "A" M12x1 connector

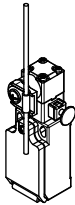
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes



FTN1R37

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	1.8 N	45°	6 N		
W02 2NC			35°	-	1.8 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	1.8 N	45°	5.4 N		
W12 1NO 2NC			32°	-	1.8 N	45°	5.4 N		
W03 3NC									

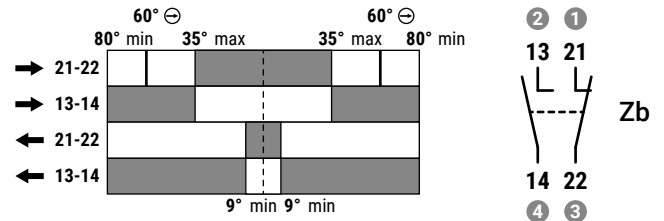


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

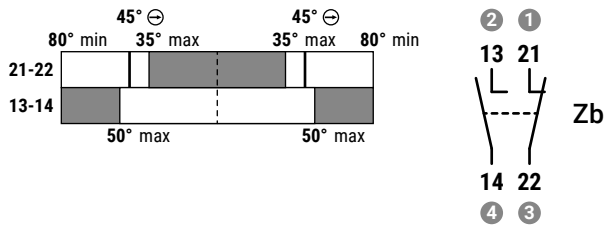


M12 Connector pin arrangement - on request

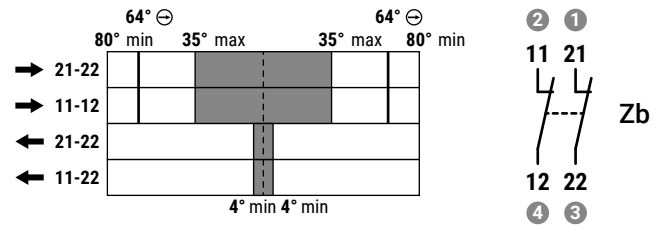
Z11 1NO 1NC snap action (Zb)



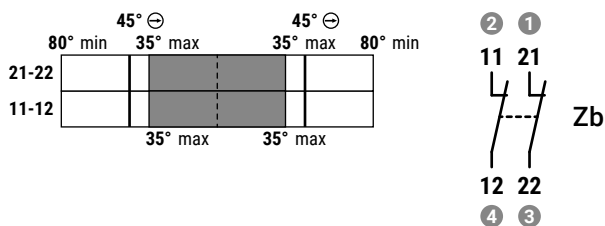
X11 1NO 1NC slow action (Zb)



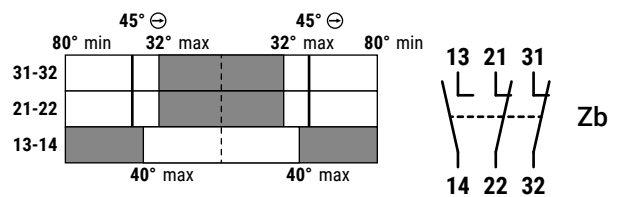
Z02 2NC snap action (Zb)



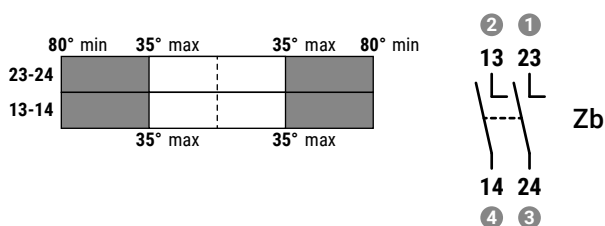
W02 2NC slow action (Zb)



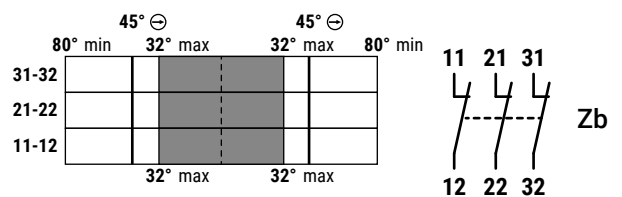
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



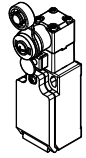
W03 3NC slow action (Zb)



FTN1R38

Limit switch with Ø18 PA roller lever with manual reset

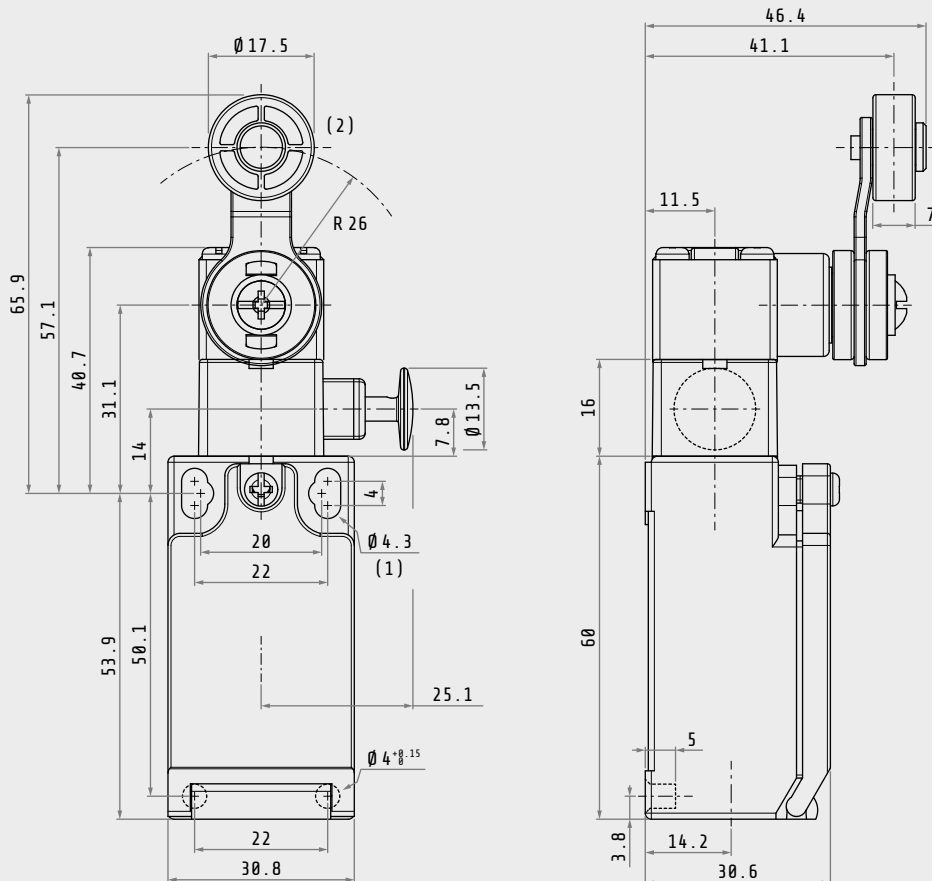
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever with 18° steps
- Plastic material Ø 17.5 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	38 Ø18 PA roller lever	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12×1 connector

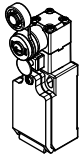
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(2) Plastic roller



FTN1R38

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	6.5 N	45°	5.4 N		
W12 1NO 2NC			32°	-	6.5 N	45°	5.4 N		
W03 3NC									

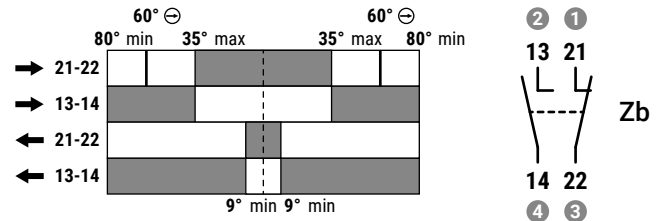


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

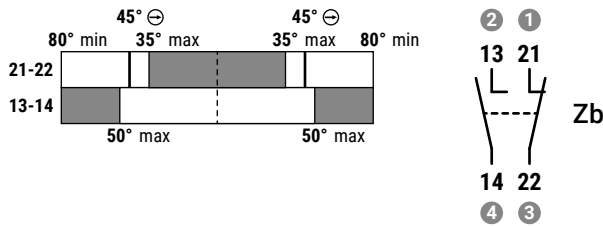


M12 Connector pin arrangement - on request

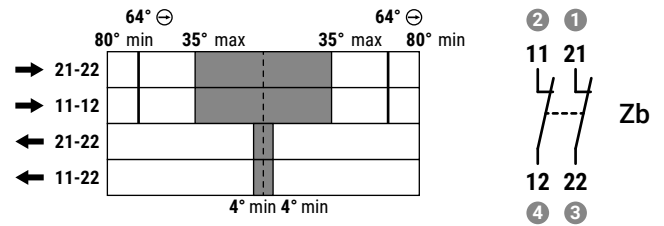
Z11 1NO 1NC snap action (Zb)



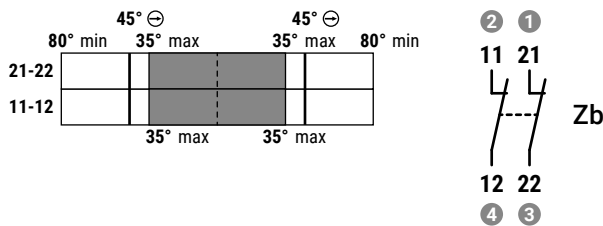
X11 1NO 1NC slow action (Zb)



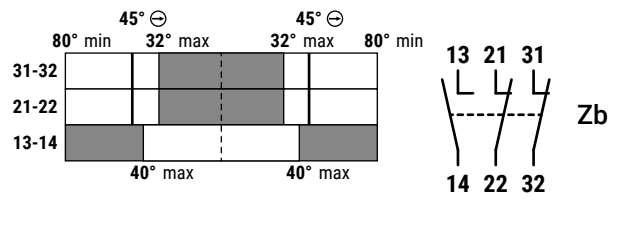
Z02 2NC snap action (Zb)



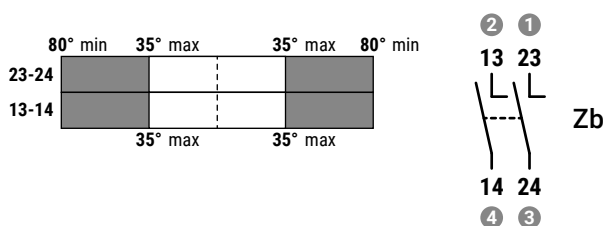
W02 2NC slow action (Zb)



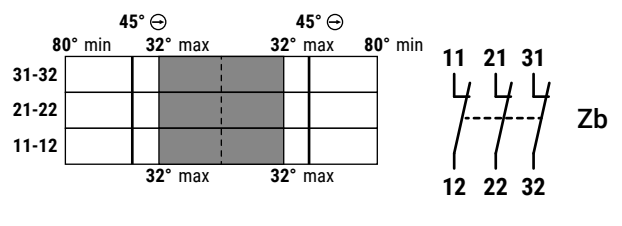
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



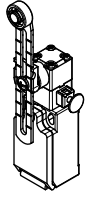
W03 3NC slow action (Zb)



FTN1R39

Limit switch with variable length roller lever Ø18 with manual reset

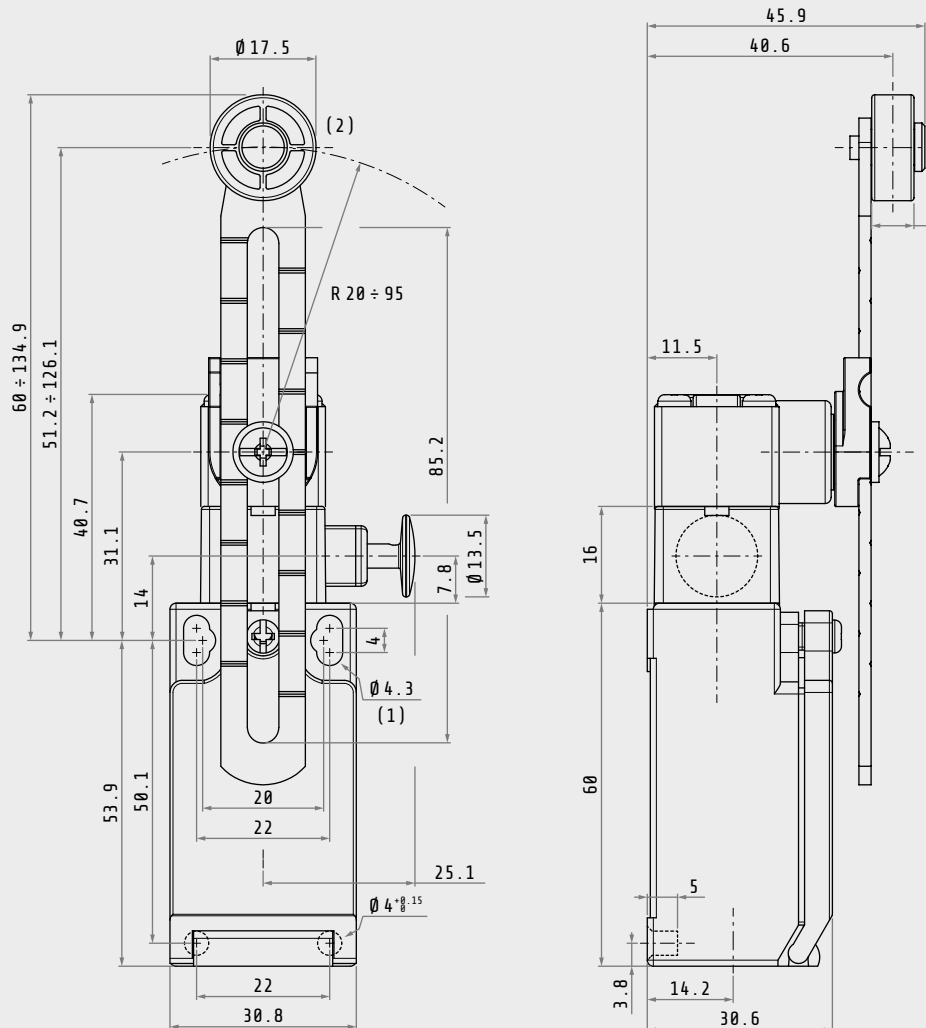
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever
- Plastic material Ø 17.5 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	39 variable length roller lever Ø18	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

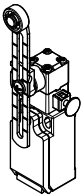
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(2) Plastic roller



FTN1R39

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600		35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	AC15: 400 V - 4 A DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	6.5 N	45°	5.4 N		
W12 1NO 2NC			32°	-	6.5 N	45°	5.4 N		
W03 3NC									

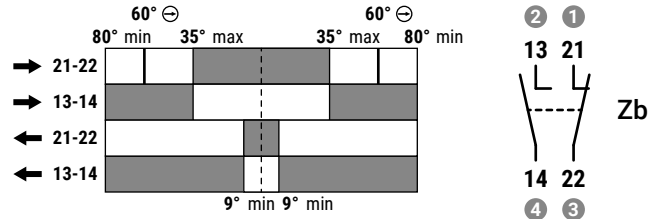


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

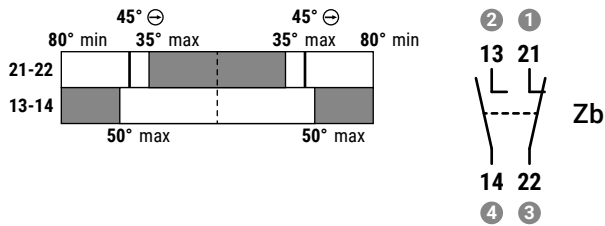


M12 Connector pin arrangement - on request

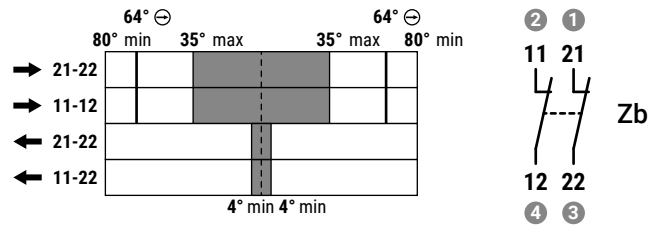
Z11 1NO 1NC snap action (Zb)



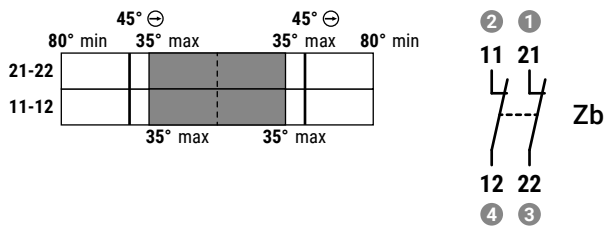
X11 1NO 1NC slow action (Zb)



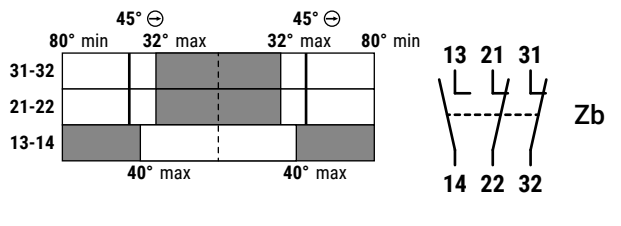
Z02 2NC snap action (Zb)



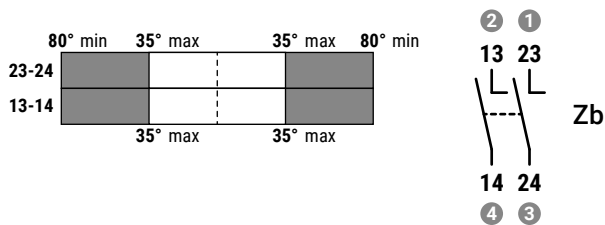
W02 2NC slow action (Zb)



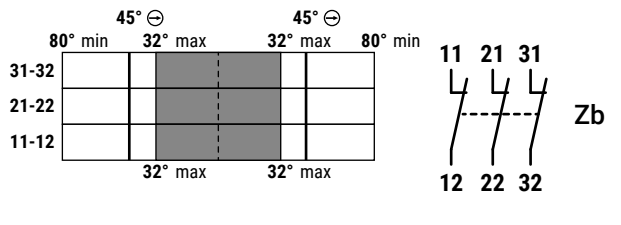
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



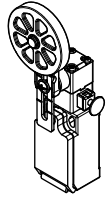
W03 3NC slow action (Zb)



FTN1R40

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

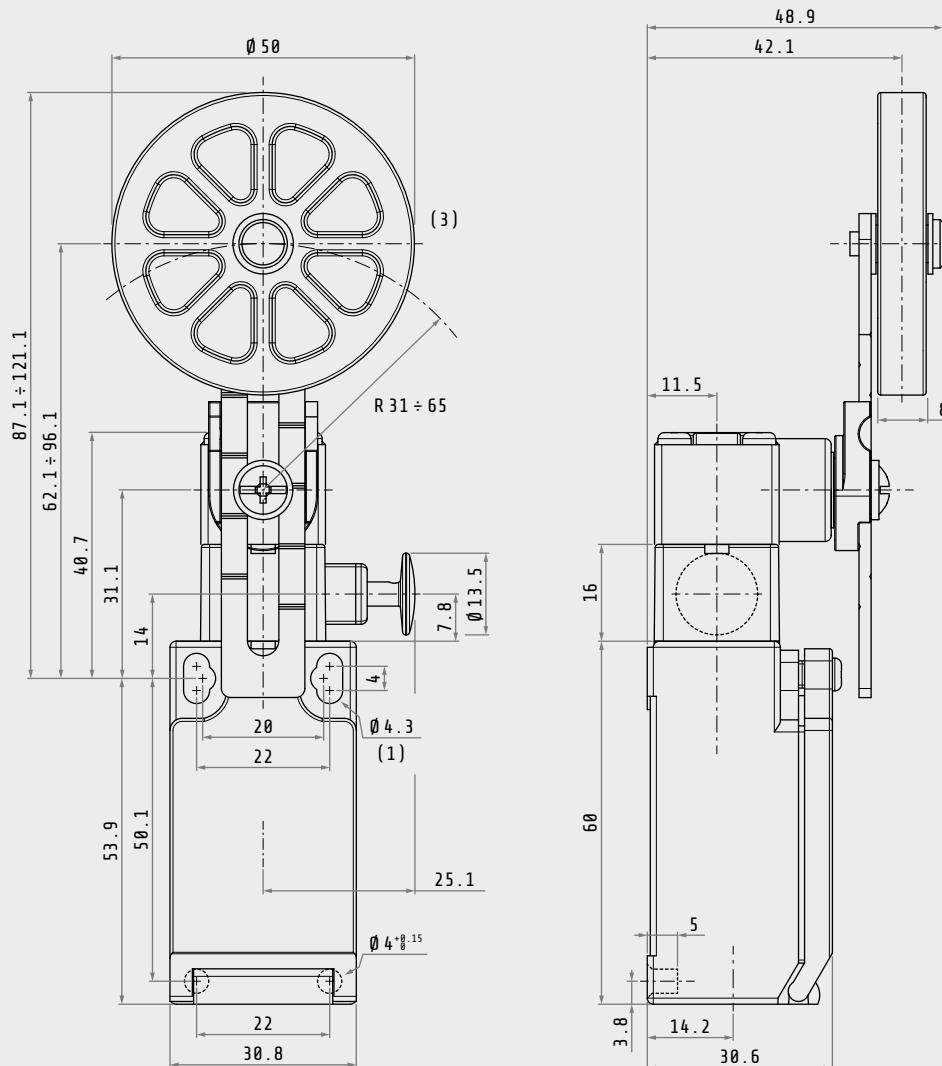
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever
- Plastic material Ø 50 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	40 variable length rubber roller lever Ø50	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

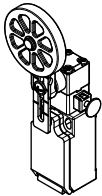
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(3) Rubber roller



FTN1R40

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	6.5 N	45°	5.4 N		
W12 1NO 2NC			32°	-	6.5 N	45°	5.4 N		
W03 3NC									

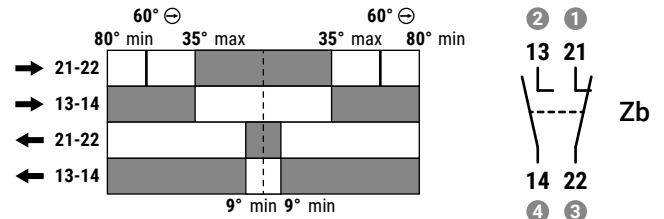


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

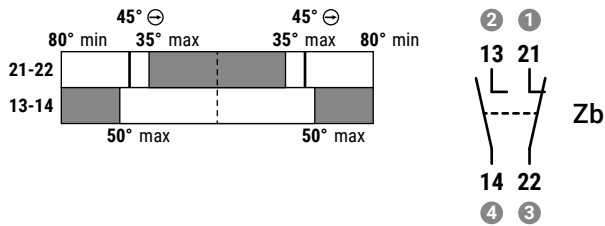


M12 Connector pin arrangement - on request

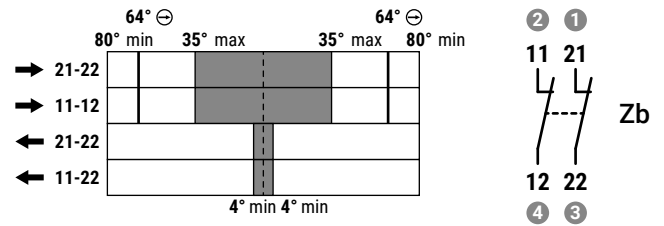
Z11 1NO 1NC snap action (Zb)



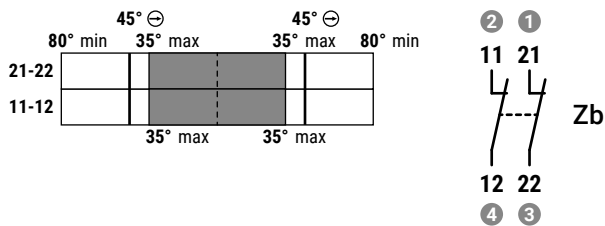
X11 1NO 1NC slow action (Zb)



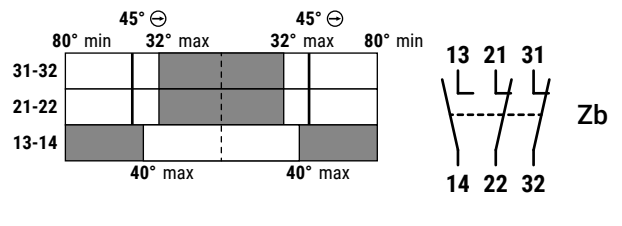
Z02 2NC snap action (Zb)



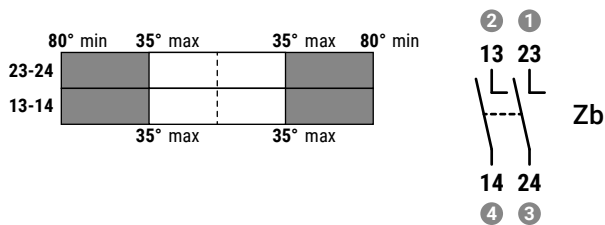
W02 2NC slow action (Zb)



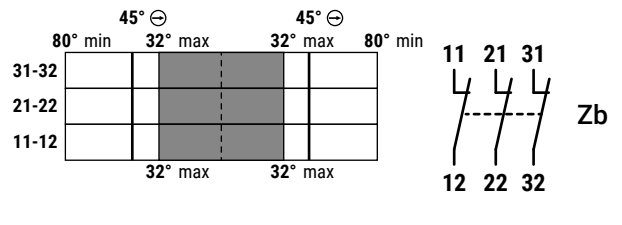
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



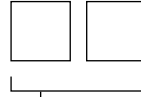
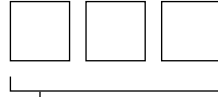
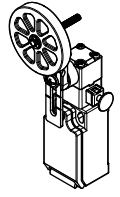
W03 3NC slow action (Zb)



FTN1R40R

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

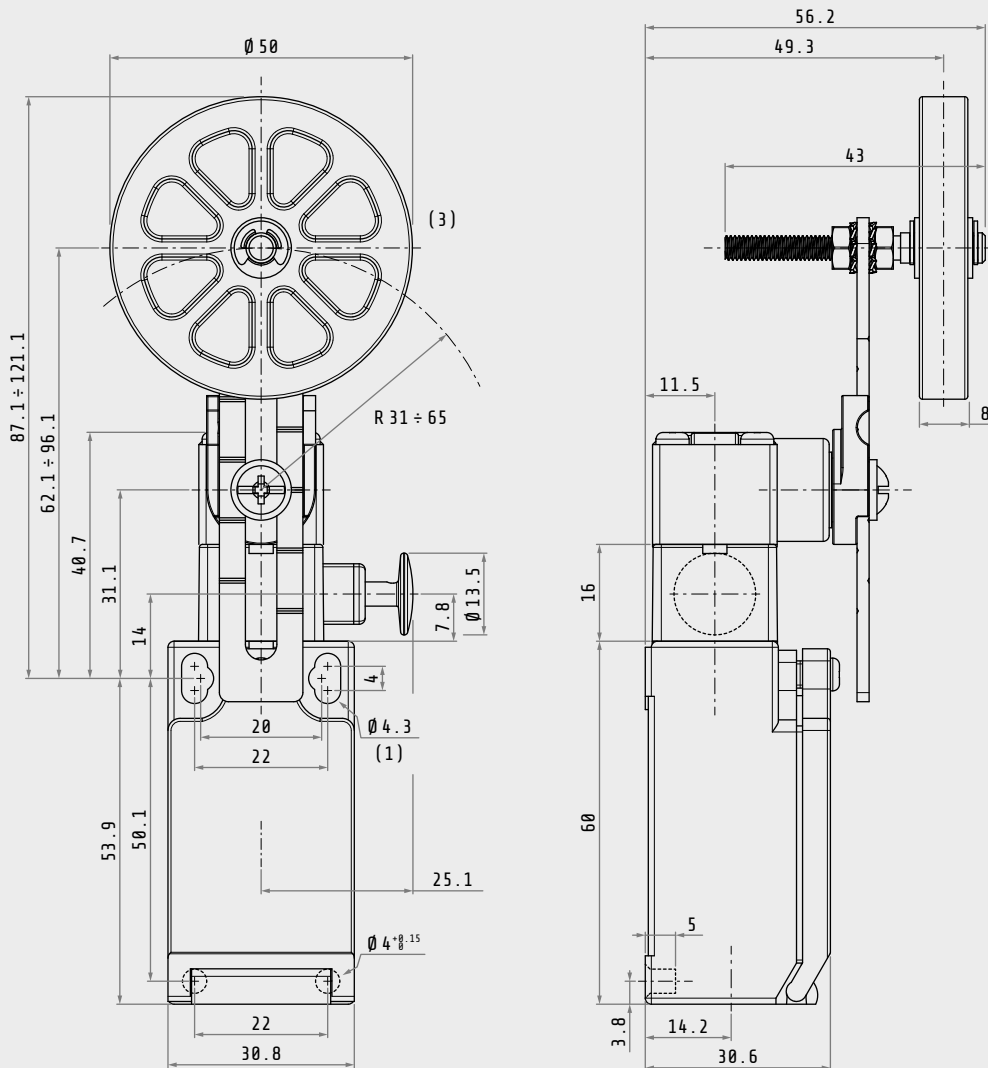
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever (long version)
- Plastic material Ø 50 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	40R variable length rubber roller lever Ø50 (long arm)	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12×1 connector

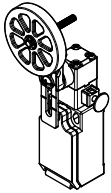
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(3) Rubber roller



FTN1R40R

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	6.5 N	45°	5.4 N		
W12 1NO 2NC			32°	-	6.5 N	45°	5.4 N		
W03 3NC									

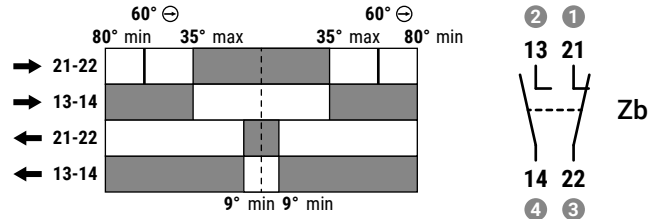


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

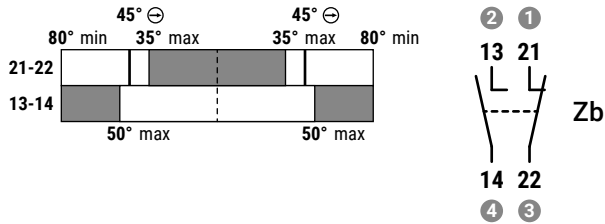


M12 Connector pin arrangement - on request

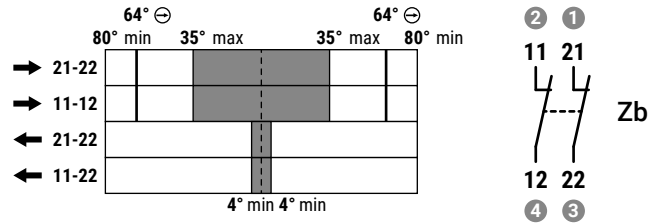
Z11 1NO 1NC snap action (Zb)



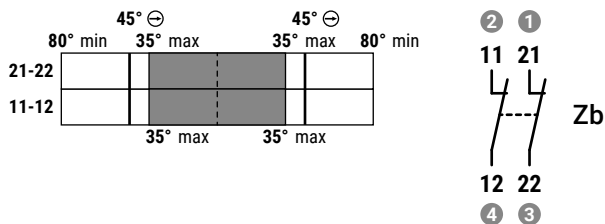
X11 1NO 1NC slow action (Zb)



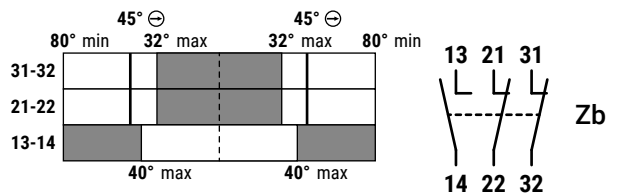
Z02 2NC snap action (Zb)



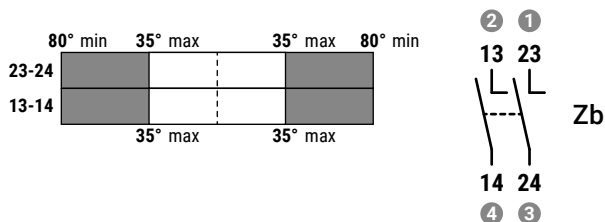
W02 2NC slow action (Zb)



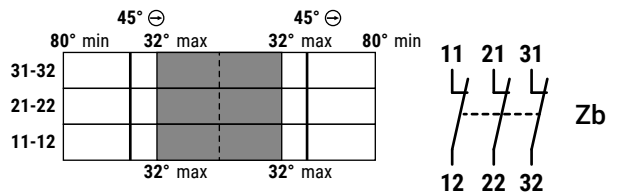
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



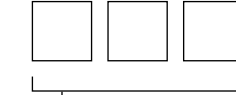
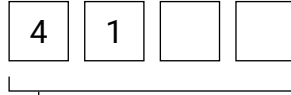
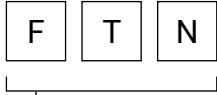
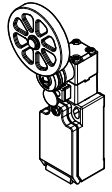
W03 3NC slow action (Zb)



FTN1R41

Limit switch with Ø50 rubber roller lever with manual reset

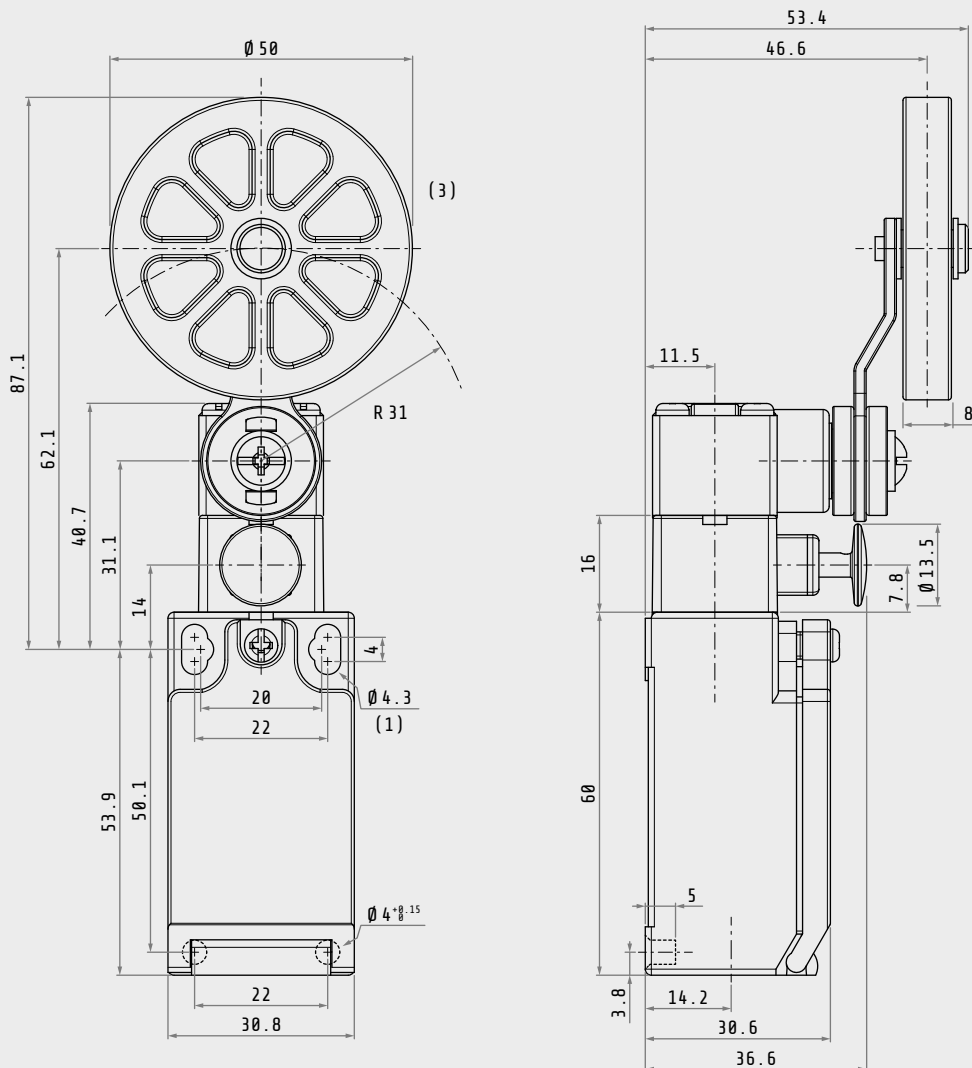
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever with 18° steps
- Plastic material Ø 50 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	41 Ø50 rubber roller lever	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

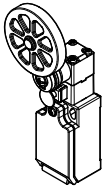
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(3) Rubber roller



FTN1R41

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
Z02 2NC	slow action (Zb) A300 - Q300		32°	40°	6.5 N	45°	5.4 N		
W12 1NO 2NC			32°	-	6.5 N	45°	5.4 N		
W03 3NC									

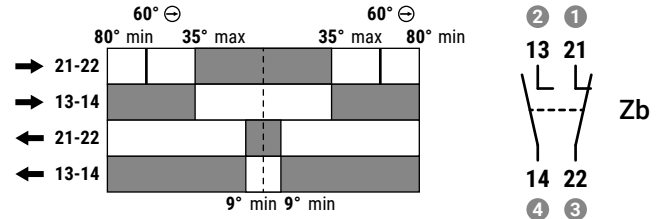


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

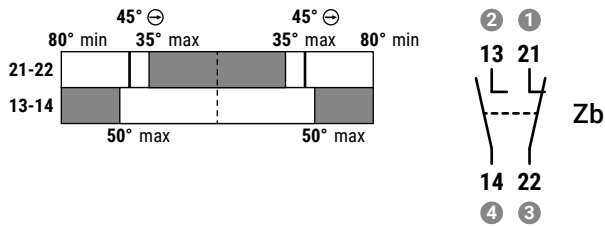


M12 Connector pin arrangement - on request

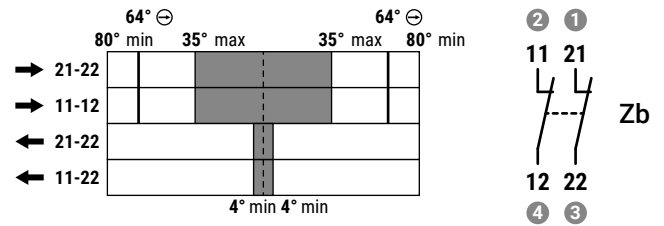
Z11 1NO 1NC snap action (Zb)



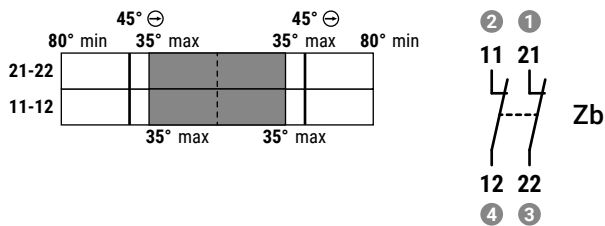
X11 1NO 1NC slow action (Zb)



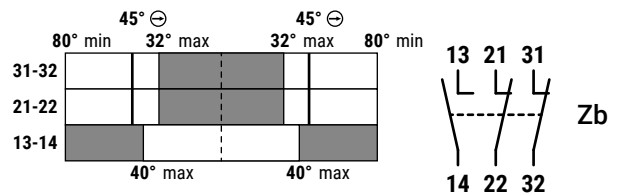
Z02 2NC snap action (Zb)



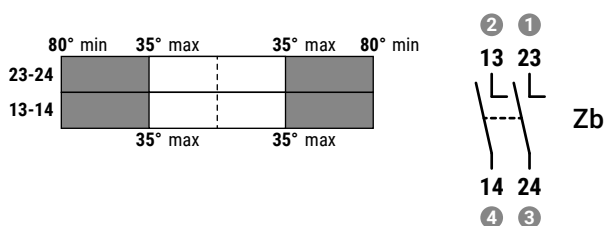
W02 2NC slow action (Zb)



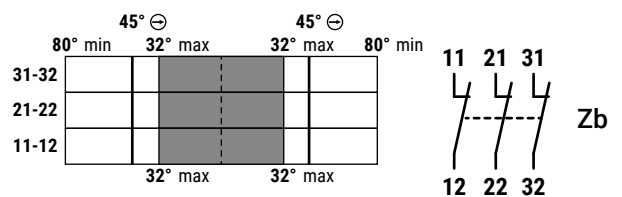
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



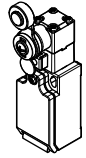
W03 3NC slow action (Zb)



FTN1R43

Limit switch with metal roller short lever Ø18 with manual reset

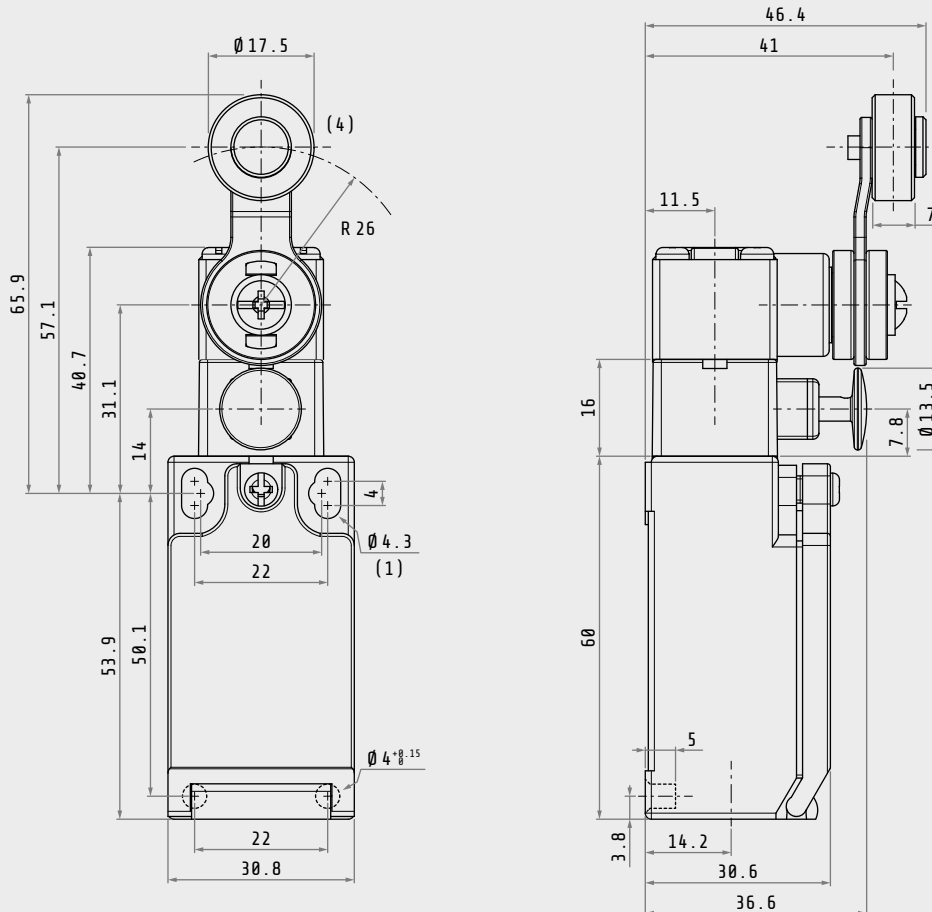
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever with 18° steps
- Metallic Ø 17.5 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	43 metal roller short lever Ø18	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12x1 connector

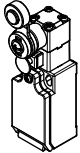
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(4) Metal roller



FTN1R43

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
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		

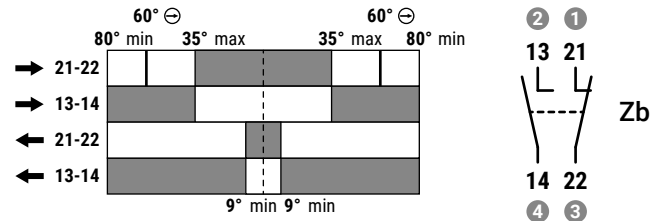


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

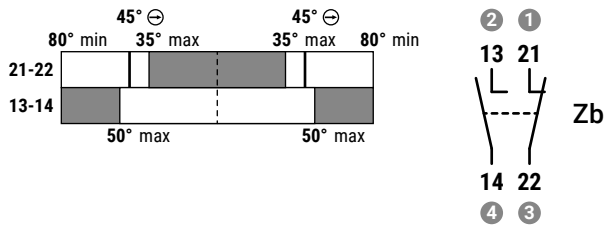


M12 Connector pin arrangement - on request

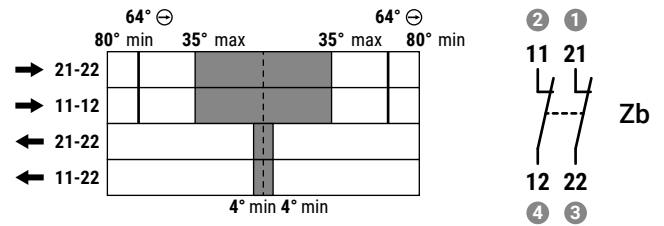
Z11 1NO 1NC snap action (Zb)



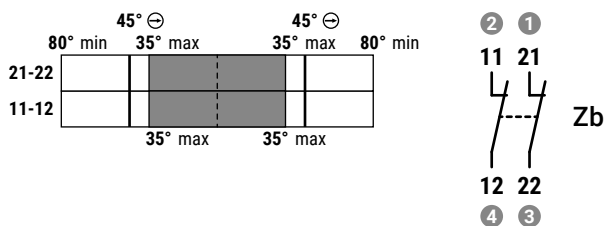
X11 1NO 1NC slow action (Zb)



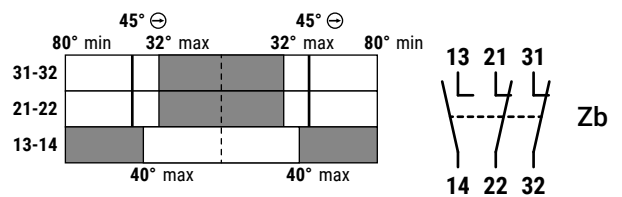
Z02 2NC snap action (Zb)



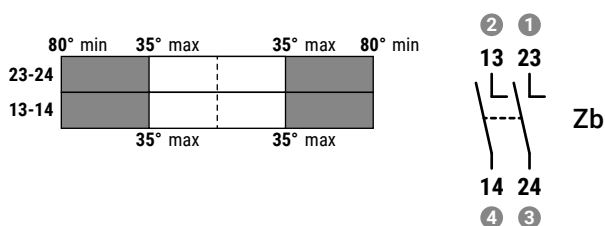
W02 2NC slow action (Zb)



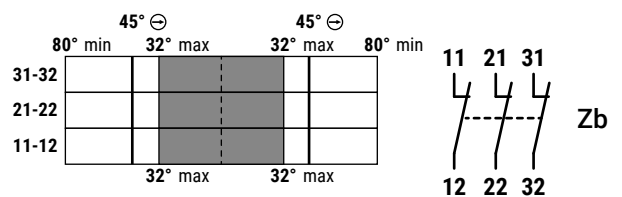
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



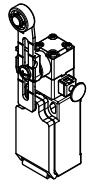
W03 3NC slow action (Zb)



FTN1R44

Limit switch with variable length roller lever Ø18 with manual reset

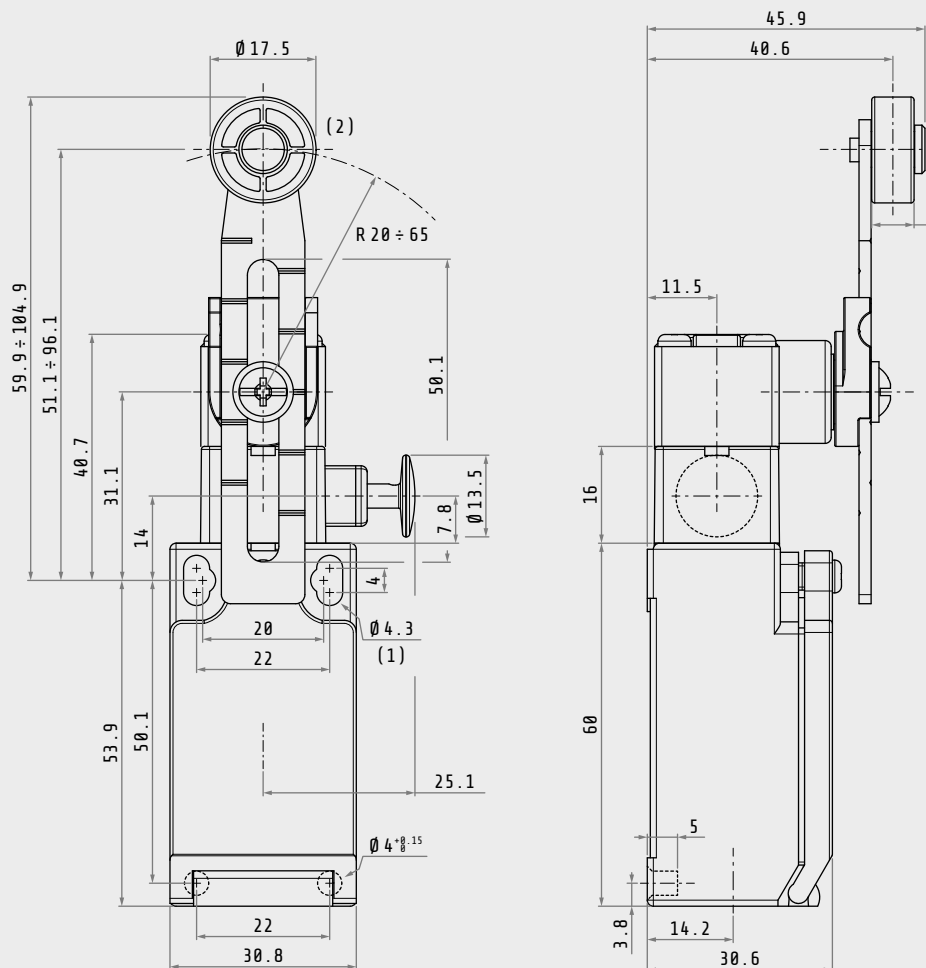
- Thermoplastic limit switch
- Horizontal action
- Adjustable lever
- Plastic material Ø 17.5 mm roller
- Adjustable head (90° step)
- Electrically independent contacts (Zb)
- Compliance: EN50047, EN60947-5-1, UL508



Series	Function	Head and actuator	Contact type	Lead exit dimension or type
FTN thermoplastic limit switches	1R with reset function	44 variable length roller lever Ø18	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	blank M16 (standard) M M20 N 1/2NPT G1 PG11 G3 PG13.5 C male code "A" M12×1 connector

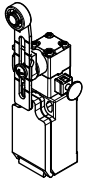
Dimensions in mm / illustrations NOT in scale

(1) Mounting holes
(2) Plastic roller



FTN1R44

Contact types	Categories	Ratings	PT1	PT2 / RP	OF	POT	POF	LT*	TT**
X11 1NO 1NC	slow action (Zb) A600 - Q600	AC15: 400 V - 4 A	35°	50°	6.5 N	45°	6 N		
W02 2NC			35°	-	6.5 N	45°	6 N		
W20 2NO	snap action (Zb) B600 - Q600	DC13: 24 V - 6 A	35°	9°	5.9 N	60°	5.5 N		55° *
Z11 1NO 1NC			35°	4°	5.9 N	64°	5.5 N		80° **
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		

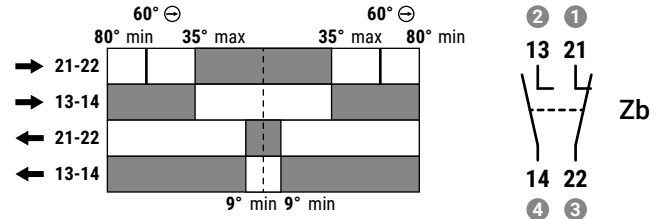


- PT1 Operating travel
- PT2 Second operating travel (slow action)
- RP Release position (snap action)
- OF Operating force
- POT Positive opening travel
- POF Positive opening force
- LT Lock travel
- TT Total travel

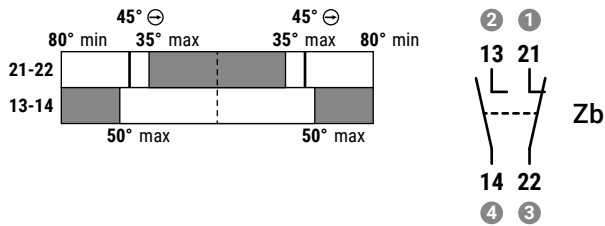


M12 Connector pin arrangement - on request

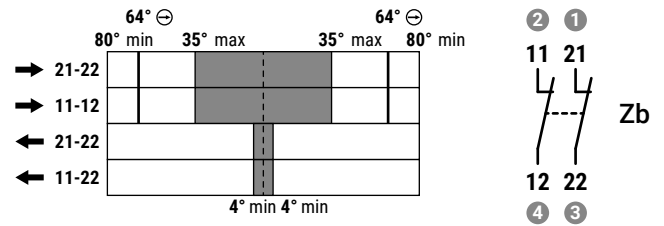
Z11 1NO 1NC snap action (Zb)



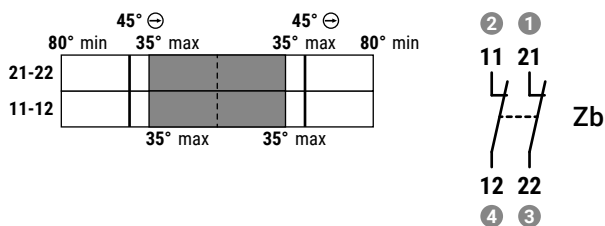
X11 1NO 1NC slow action (Zb)



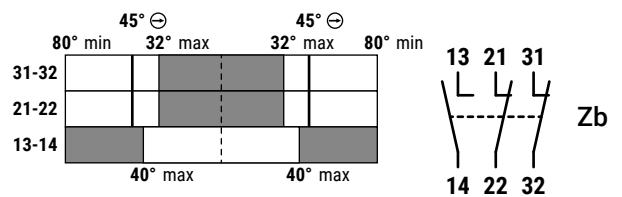
Z02 2NC snap action (Zb)



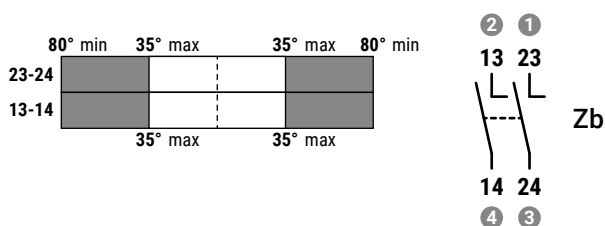
W02 2NC slow action (Zb)



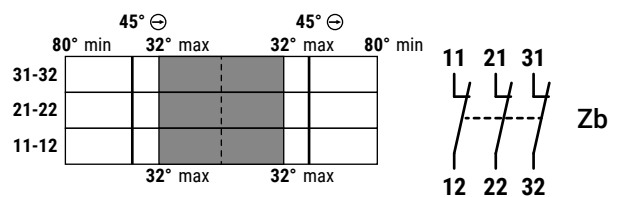
W12 1NO 2NC slow action (Zb)



W20 2NO slow action (Zb)



W03 3NC slow action (Zb)





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