GIOVENZANA
INTERNATIONAL B.V.
Strawinskylaan 1105
1077 XX Amsterdam, The Netherlands

IT
manuale di istruzioni

FTN...

INTERRUTTORI DI POSIZIONE IN TERMOPLASTICO

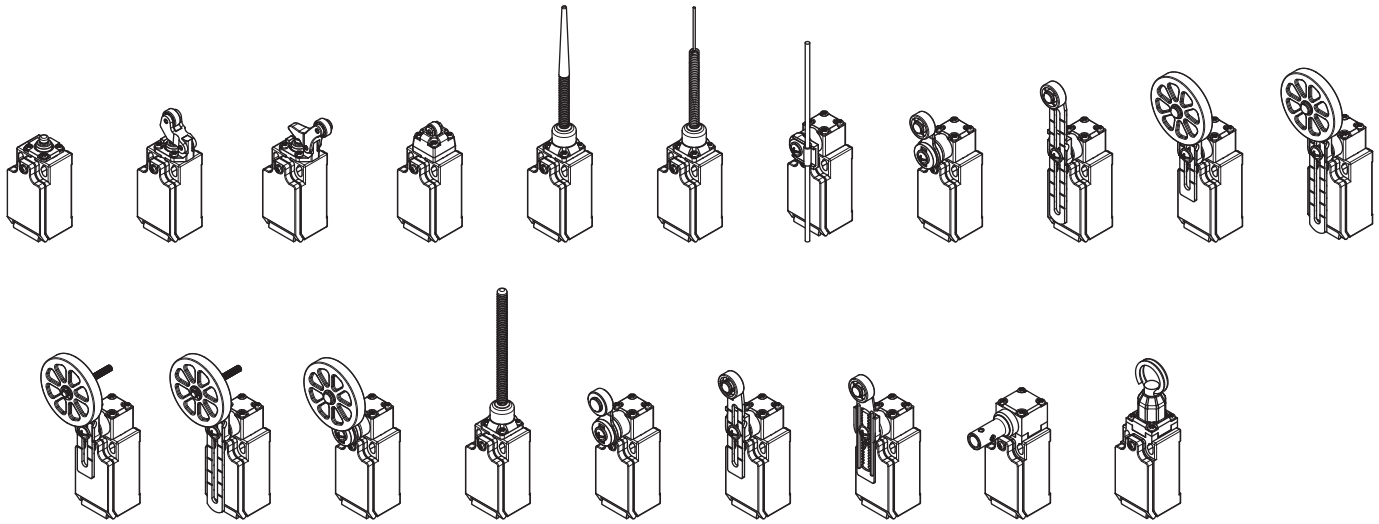
ATTENZIONE
Prima di qualsiasi intervento di installazione o di manutenzione, togliere l'alimentazione elettrica all'impianto. Prima di ripristinare l'alimentazione, accertarsi che tutti i collegamenti al dispositivo siano stati effettuati correttamente. Giovenzana International B.V. declina ogni responsabilità per eventuali danni a cose e persone causati dall'inosservanza delle norme qui descritte.

Prima dell'uso leggere attentamente il contenuto di questo fascicolo per familiarizzare con le caratteristiche del prodotto. Il presente fascicolo è parte integrante del prodotto e pertanto deve essere conservato fino alla dismissione del prodotto.

Giovenzana International B.V. si riserva di variare le caratteristiche e i dati riportati nel presente fascicolo in qualunque momento e senza preavviso. Questo fascicolo pertanto non può essere considerato contratto nei confronti di terzi.

Un'istallazione impropria o la manomissione possono causare gravi danni a persone e cose, pertanto l'istallazione e la manutenzione devono essere effettuate da personale specializzato ed autorizzato.

Non è previsto l'impiego del dispositivo in ambienti con atmosfera potenzialmente esplosiva o in presenza di sostanze corrosive e in nebbia salina.



F	T	N	1											

Serie **Funzione** **Testa e attuatore** **Tipo di contatto** **Dimensione o tipo uscita cavo**

Serie

FTN interruttori di posizione in termoplastico

Funzione

1 senza funzione di reset

Testa e attuatore

31 pistoncino in plastica
32 leva angolare con rotella Ø12 in PA (azione orizzontale)
33 leva angolare con rotella Ø12 in PA (azione verticale)
34 pistoncino con rotella Ø9.3 in PA
35 leva con asta a molla e puntale in PA
36 leva con asta a molla e puntale in filo
37 leva ad asta regolabile Ø3 in metallo
38 leva con rotella Ø18 in PA
39 leva lunga regolabile con rotella Ø18 in PA
40 leva regolabile con rotella Ø50 in gomma
40L leva lunga regolabile con rotella Ø50 in gomma
40R sbalzo e leva regolabili con rotella Ø50 in gomma
40RL sbalzo e leva lunga regolabili con rotella Ø50 in gomma
41 leva con rotella Ø50 in gomma
42 leva con asta a molla
43 leva con rotella Ø18 in metallo
44 leva regolabile con rotella Ø18 in PA
44S leva dentata regolabile con rotella Ø18 in PA (passo: 2.2 mm)
46 interruttore per cerniera
98 anello con azionamento a trazione

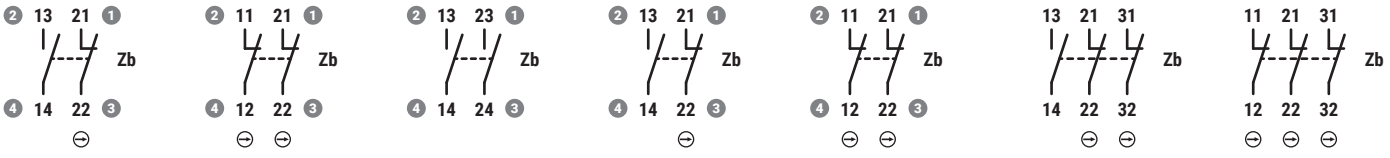
Tipo di contatto

X11	1NO/1NC	azione lenta	Zb
W02	2NC	azione lenta	Zb
W20	2NO	azione lenta	Zb
Z11	1NO/1NC	scatto rapido	Zb
Z02	2NC	scatto rapido	Zb
W12	1NO/2NC	azione lenta	Zb
W03	3NC	azione lenta	Zb

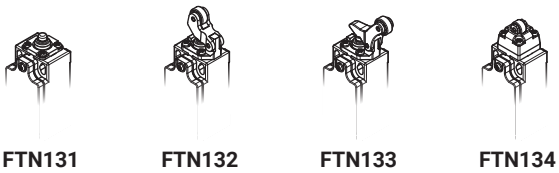
Dimensione o tipo uscita cavo

vuoto M16 (standard)
M M20
N 1/2NPT
G1 PG11
G3 PG13.5
C connettore maschio 4 poli codice “A” M12×1

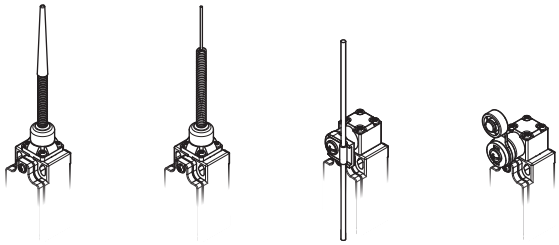
Disposizione pin connettore M12 - su richiesta dove pertinente



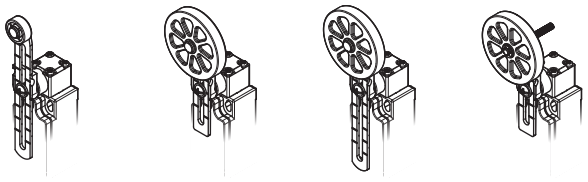
X11 **W02** **W20** **Z11** **Z02** **W12** **W03**



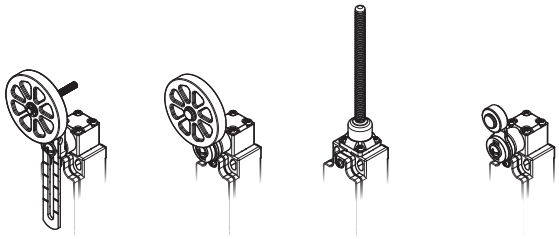
FTN131 **FTN132** **FTN133** **FTN134**



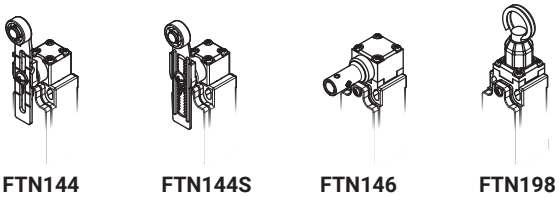
FTN135 **FTN136** **FTN137** **FTN138**



FTN139 **FTN140** **FTN140L** **FTN140R**



FTN140RL **FTN141** **FTN142** **FTN143**



FTN144 **FTN144S** **FTN146** **FTN198**

Caratteristiche generali

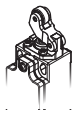
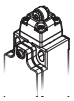
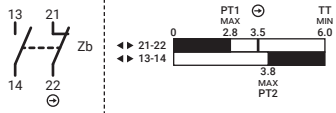
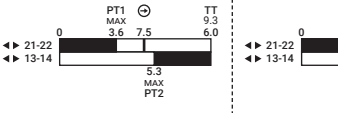
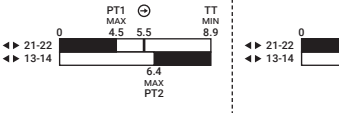
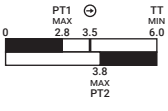
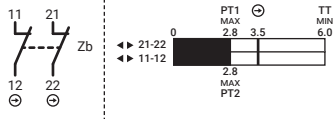
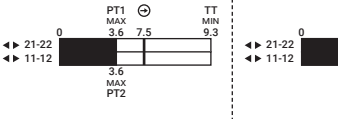
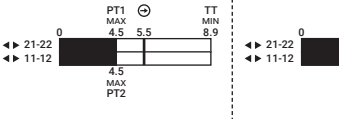
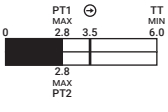
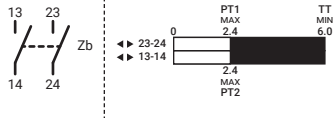
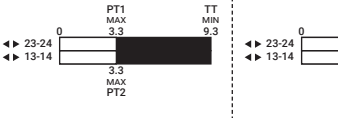
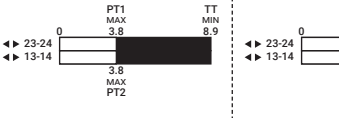
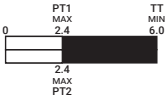
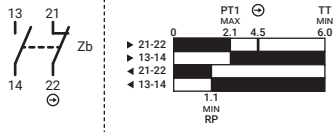
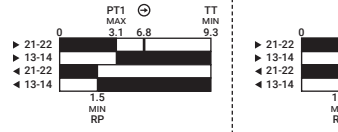
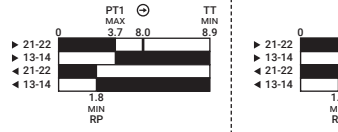
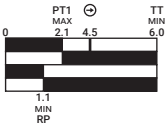
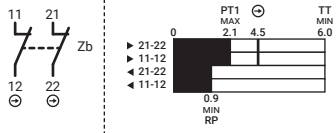
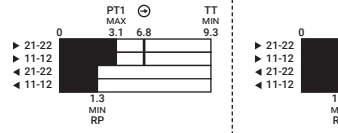
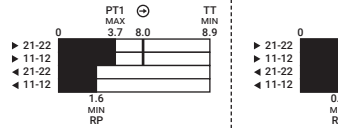
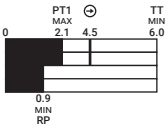
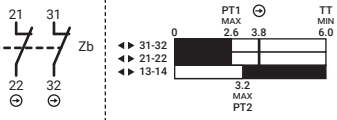
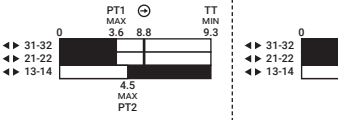
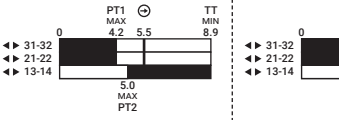
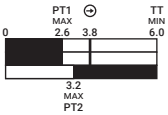
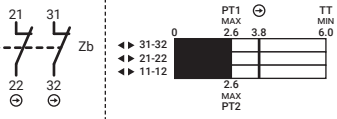
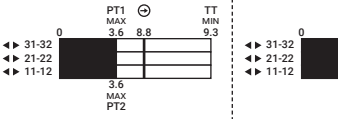
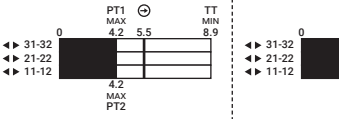
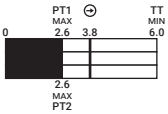
Commutazione ad apertura positiva	⊝	contatto NC
Corrente minima		5 mA - 5 V DC
Corrente termica	Ith	10 A
Tensione nominale di isolamento	Ui	500 V
Tensione nominale di tenuta ad impulso	Uimp	6 kV
Resistenza di isolamento	min	100 MΩ (DC 500 V)
Resistenza di contatto	max	25 mΩ (iniziale)
Materiale della custodia		Polibutilene tereftalato con fibra di vetro approvato UL
Grado di protezione della custodia		IP67 (FTN146: IP65)
Temperatura di funzionamento		-25 ... +80°C (-13 ... +176°F)
Classe di inquinamento		3
Protezione contro le scosse elettriche	⧈	classe II (doppio isolamento)
Aspettativa di vita meccanica	min	1×10^7 cicli
Aspettativa di vita elettrica	min	150000 cicli
Vibrazioni	IEC 68-2-6 escursione	10-55 ±1 Hz 0.35 mm, 1 ottave/min
Fissaggio		2 × viti M4
Marcature		CE, UL, CCC, EAC, UKCA

Caratteristiche dei contatti

Tipi di contatto				Categorie (UL 508 / CSA C22-2 n° 14)	Classificazioni
X11	1NO	1NC	azione lenta (Zb)	A600 - Q600	AC15: 400 V - 4 A DC13: 24 V - 6 A
W02		2NC			
W20	2NO				
Z11	1NO	1NC	scatto rapido (Zb)	B600 - Q600	
Z02		2NC			
W12	1NO	2NC	azione lenta (Zb)	A300 - Q300	
W03		3NC			

PT1 Corsa di azionamento
PT2 Seconda corsa di azionamento (azione lenta)
RP Posizione di rilascio (scatto rapido)
⊖ Corsa di apertura positiva
TT Corsa totale
OF Forza di azionamento
POF Forza di apertura positiva

L'apertura positiva potrebbe non essere disponibile. Verificare sui diagrammi di azionamento.

	FTN131	FTN132	FTN133	FTN134
				
	Pistoncino in plastica	Leva angolare con rotella Ø12 in PA (azione orizzontale)	Leva angolare con rotella Ø12 in PA (azione verticale)	Pistoncino con rotella Ø9.3 in PA
X11 azione lenta 1 NO + 1 NC				
W02 azione lenta 2 NC				
W20 azione lenta 2 NO (*)				
Z11 scatto rapido 1 NO + 1 NC				
Z02 scatto rapido 2 NC				
W12 azione lenta 1 NO + 2 NC				
W03 azione lenta 3 NC				

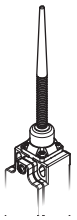
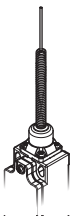
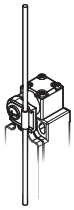
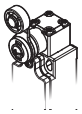
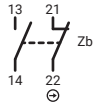
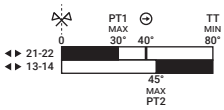
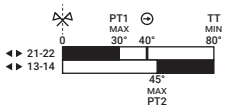
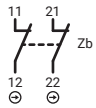
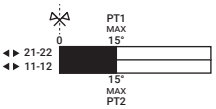
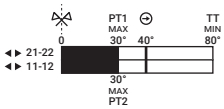
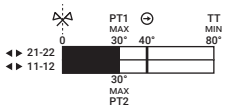
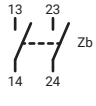
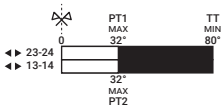
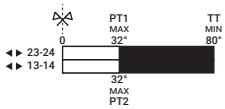
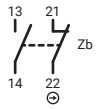
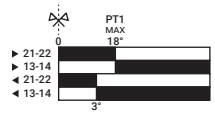
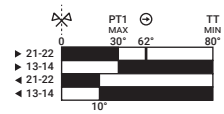
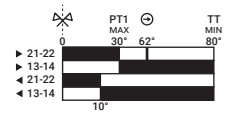
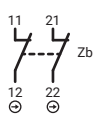
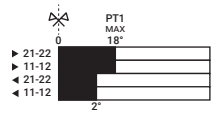
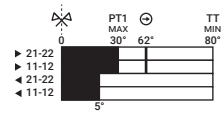
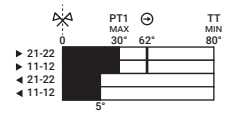
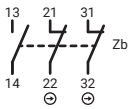
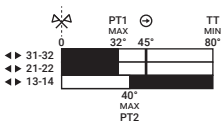
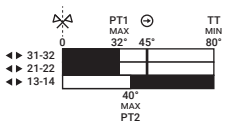
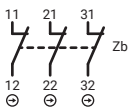
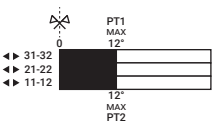
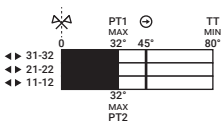
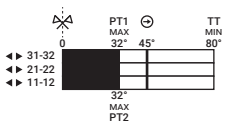
(*) Non adatto ad applicazioni di sicurezza

Forze di azionamento

	OF	POF	OF	POF	OF	POF	OF	POF
X11	7.3 N	22 N	5.3 N	13.5 N	7.0 N	15 N	7.3 N	22 N
W02	7.3 N	22 N	5.3 N	13.5 N	7.0 N	15 N	7.3 N	22 N
W20	8.2 N	-	5.7 N	-	7.0 N	-	8.2 N	-
Z11	7.2 N	16.3 N	5.0 N	10.4 N	4.2 N	8.3 N	7.2 N	16.3 N
Z02	7.2 N	16.3 N	5.0 N	10.4 N	4.2 N	8.3 N	7.2 N	16.3 N
W12	7.3 N	23 N	5.3 N	15 N	7.0 N	17 N	7.3 N	23 N
W03	7.3 N	23 N	5.3 N	15 N	7.0 N	17 N	7.3 N	23 N

PT1 Corsa di azionamento
PT2 Seconda corsa di azionamento (azione lenta)
RP Posizione di rilascio (scatto rapido)
⊖ Corsa di apertura positiva
TT Corsa totale
OF Forza di azionamento
POF Forza di apertura positiva

L'apertura positiva potrebbe non essere disponibile. Verificare sui diagrammi di azionamento.

	FTN135	FTN136	FTN137	FTN138
				
	Leva con asta a molla e puntale in PA	Leva con asta a molla e puntale in filo	Leva ad asta regolabile Ø3 in metallo	Leva con rotella Ø18 in PA
X11 azione lenta 1 NO + 1 NC				
W02 azione lenta 2 NC				
W20 azione lenta 2 NO (*)				
Z11 scatto rapido 1 NO + 1 NC				
Z02 scatto rapido 2 NC				
W12 azione lenta 1 NO + 2 NC				
W03 azione lenta 3 NC				

(*) Non adatto ad applicazioni di sicurezza

Forze di azionamento

	OF	POF	OF	POF	OF	POF	OF	POF
X11	-	-	-	-	1.8 N	6 N	6.5 N	6 N
W02	6.5 N	-	6.5 N	-	1.8 N	6 N	6.5 N	6 N
W20	-	-	-	-	1.8 N	-	6.5 N	-
Z11	5.8 N	-	5.8 N	-	2.1 N	5.5 N	2.1 N	5.5 N
Z02	5.8 N	-	5.8 N	-	2.1 N	5.5 N	2.1 N	5.5 N
W12	-	-	-	-	1.8 N	5.4 N	6.5 N	5.4 N
W03	6.5 N	-	6.5 N	-	1.8 N	5.4 N	6.5 N	5.4 N

PT1 Corsa di azionamento

PT2 Seconda corsa di azionamento (azione lenta)

RP Posizione di rilascio (scatto rapido)

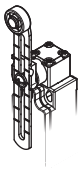
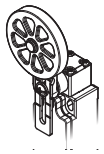
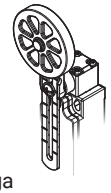
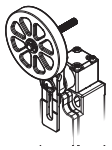
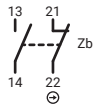
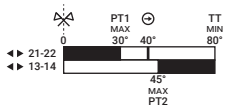
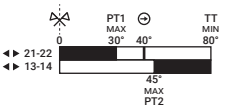
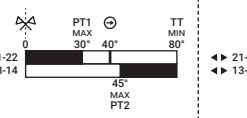
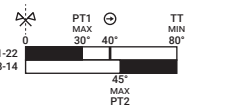
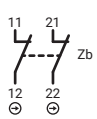
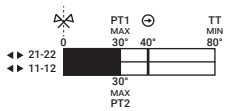
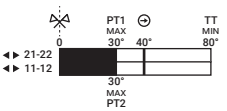
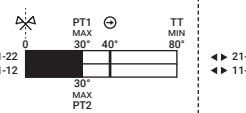
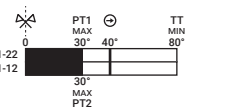
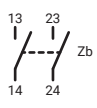
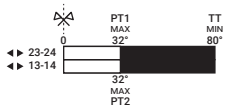
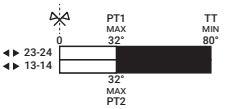
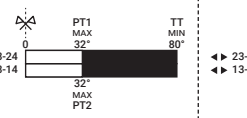
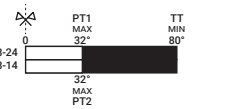
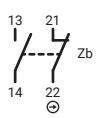
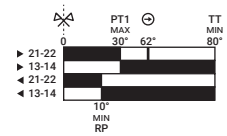
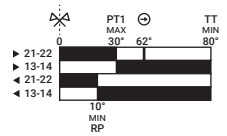
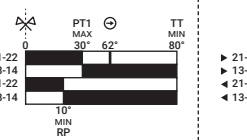
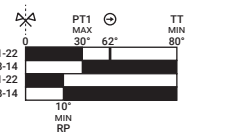
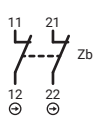
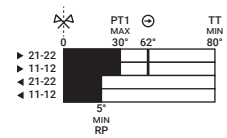
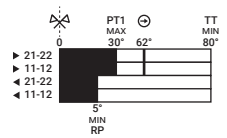
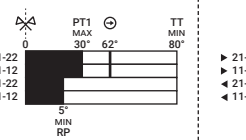
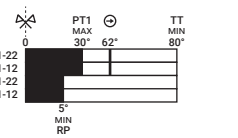
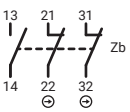
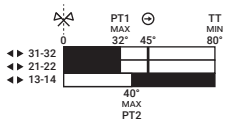
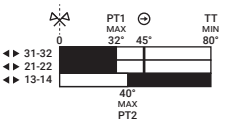
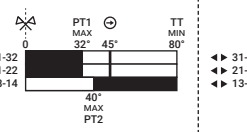
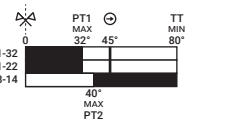
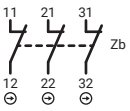
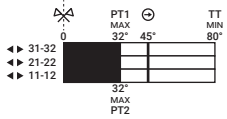
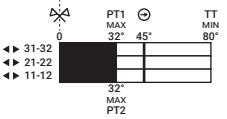
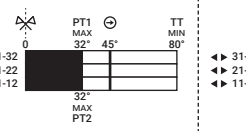
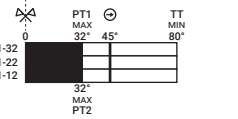
⊖ Corsa di apertura positiva

TT Corsa totale

OF Forza di azionamento

POF Forza di apertura positiva

L'apertura positiva potrebbe non essere disponibile. Verificare sui diagrammi di azionamento.

	FTN139	FTN140	FTN140L	FTN140R
				
	Leva lunga regolabile con rotella Ø18 in PA	Leva regolabile con rotella Ø50 in gomma	Leva lunga regolabile con rotella Ø50 in gomma	Sbalzo e leva regolabili con rotella Ø50 in gomma
X11 azione lenta 1 NO + 1 NC	 			
W02 azione lenta 2 NC	 			
W20 azione lenta 2 NO (*)	 			
Z11 scatto rapido 1 NO + 1 NC	 			
Z02 scatto rapido 2 NC	 			
W12 azione lenta 1 NO + 2 NC	 			
W03 azione lenta 3 NC	 			

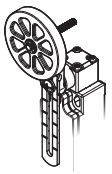
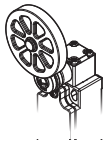
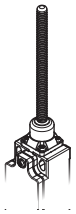
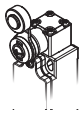
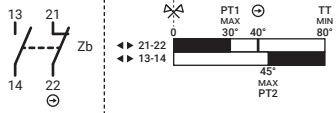
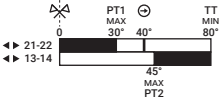
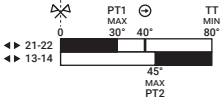
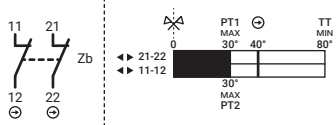
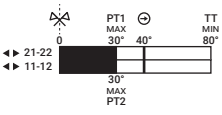
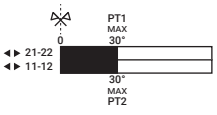
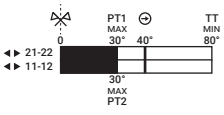
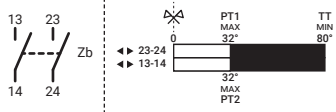
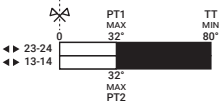
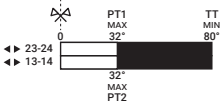
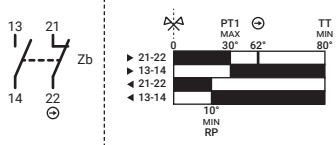
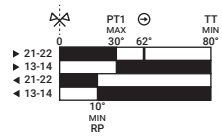
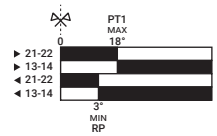
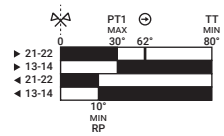
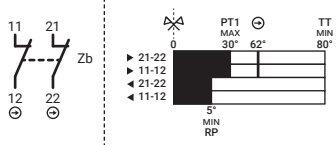
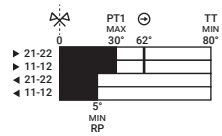
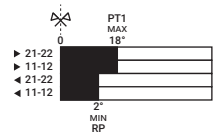
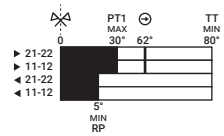
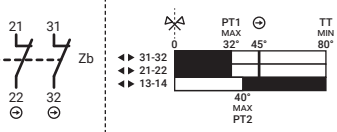
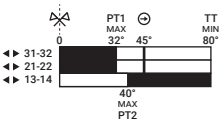
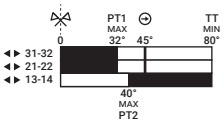
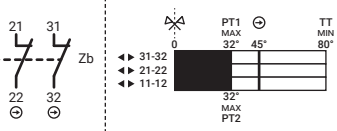
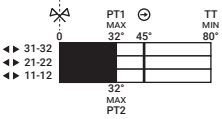
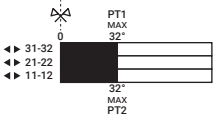
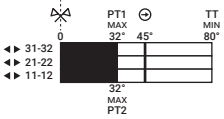
(*) Non adatto ad applicazioni di sicurezza

Forze di azionamento

	OF	POF	OF	POF	OF	POF	OF	POF
X11	6.5 N	6 N	6.5 N	6 N	6.5 N	6 N	6.5 N	6 N
W02	6.5 N	6 N	6.5 N	6 N	6.5 N	6 N	6.5 N	6 N
W20	6.5 N	-	6.5 N	-	6.5 N	-	6.5 N	-
Z11	2.1 N	5.5 N	2.1 N	5.5 N	2.1 N	5.5 N	2.1 N	5.5 N
Z02	2.1 N	5.5 N	2.1 N	5.5 N	2.1 N	5.5 N	2.1 N	5.5 N
W12	6.5 N	5.4 N	6.5 N	5.4 N	6.5 N	5.4 N	6.5 N	5.4 N
W03	6.5 N	5.4 N	6.5 N	5.4 N	6.5 N	5.4 N	6.5 N	5.4 N

PT1 Corsa di azionamento
PT2 Seconda corsa di azionamento (azione lenta)
RP Posizione di rilascio (scatto rapido)
⊖ Corsa di apertura positiva
TT Corsa totale
OF Forza di azionamento
POF Forza di apertura positiva

L'apertura positiva potrebbe non essere disponibile. Verificare sui diagrammi di azionamento.

	FTN140RL	FTN141	FTN142	FTN143
				
	Sbalzo e leva lunga regolabili con rotella Ø50 in gomma	Leva con rotella Ø50 in gomma	Leva con asta a molla	Leva con rotella Ø18 in metallo
X11 azione lenta 1 NO + 1 NC				
W02 azione lenta 2 NC				
W20 azione lenta 2 NO (*)				
Z11 scatto rapido 1 NO + 1 NC				
Z02 scatto rapido 2 NC				
W12 azione lenta 1 NO + 2 NC				
W03 azione lenta 3 NC				

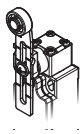
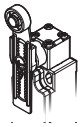
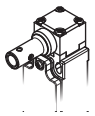
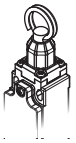
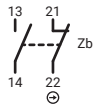
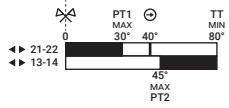
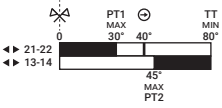
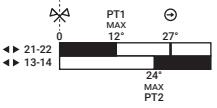
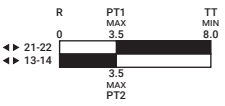
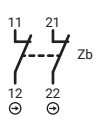
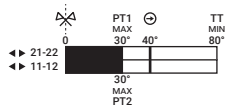
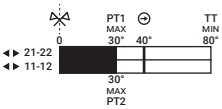
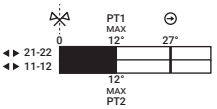
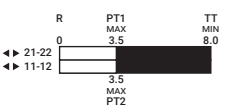
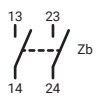
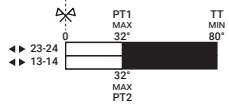
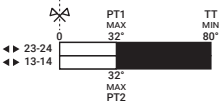
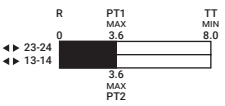
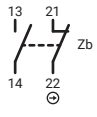
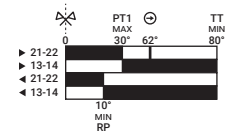
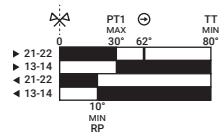
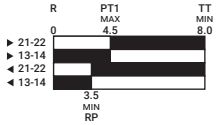
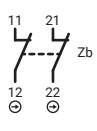
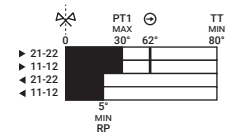
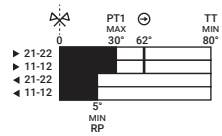
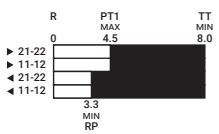
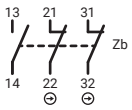
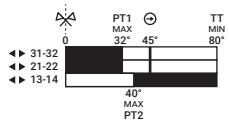
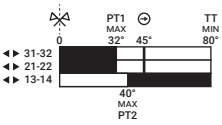
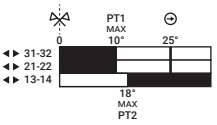
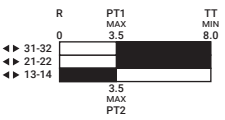
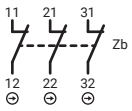
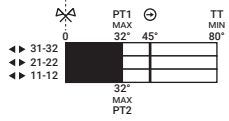
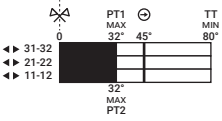
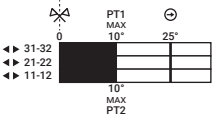
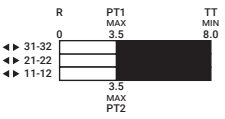
(*) Non adatto ad applicazioni di sicurezza

Forze di azionamento

	OF	POF	OF	POF	OF	POF	OF	POF
X11	6.5 N	6 N	6.5 N	6 N	-	-	6.5 N	6 N
W02	6.5 N	6 N	6.5 N	6 N	6.5 N	-	6.5 N	6 N
W20	6.5 N	-	6.5 N	-	-	-	6.5 N	-
Z11	2.1 N	5.5 N	2.1 N	5.5 N	5.8 N	-	2.1 N	5.5 N
Z02	2.1 N	5.5 N	2.1 N	5.5 N	5.8 N	-	2.1 N	5.5 N
W12	6.5 N	5.4 N	6.5 N	5.4 N	-	-	6.5 N	5.4 N
W03	6.5 N	5.4 N	6.5 N	5.4 N	6.5 N	-	6.5 N	5.4 N

PT1 Corsa di azionamento
PT2 Seconda corsa di azionamento (azione lenta)
RP Posizione di rilascio (scatto rapido)
⊖ Corsa di apertura positiva
TT Corsa totale
OF Forza di azionamento
POF Forza di apertura positiva
R Posizione di riposo

L'apertura positiva potrebbe non essere disponibile. Verificare sui diagrammi di azionamento.

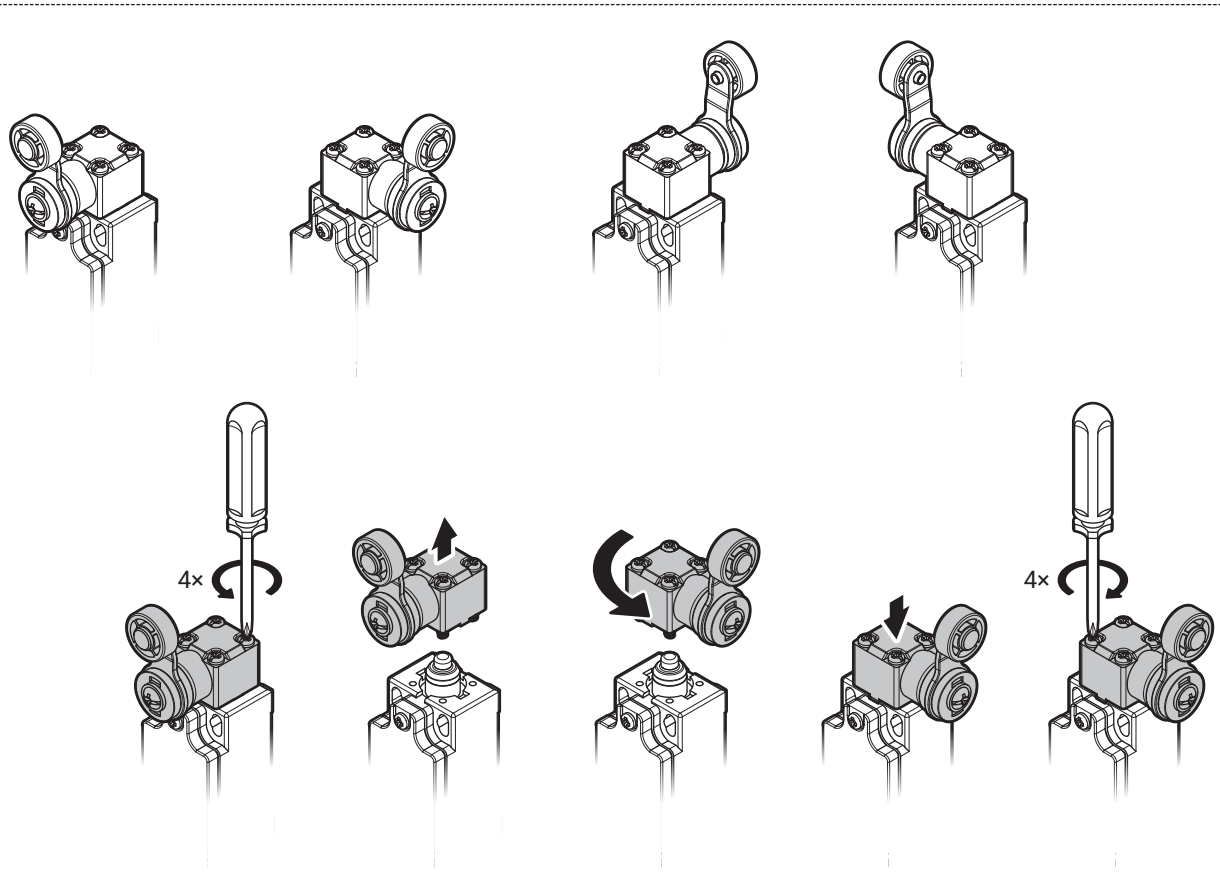
	FTN144	FTN144S	FTN146	FTN198
				
	Leva regolabile con rotella Ø18 in PA	Leva dentata regolabile con rotella Ø18 in PA (passo: 2.2 mm)	Interruttore per cerniera	Anello con azionamento a trazione
X11 azione lenta 1 NO + 1 NC	 			
W02 azione lenta 2 NC	 			
W20 azione lenta 2 NO (*)	 			
Z11 scatto rapido 1 NO + 1 NC	 			
Z02 scatto rapido 2 NC	 			
W12 azione lenta 1 NO + 2 NC	 			
W03 azione lenta 3 NC	 			

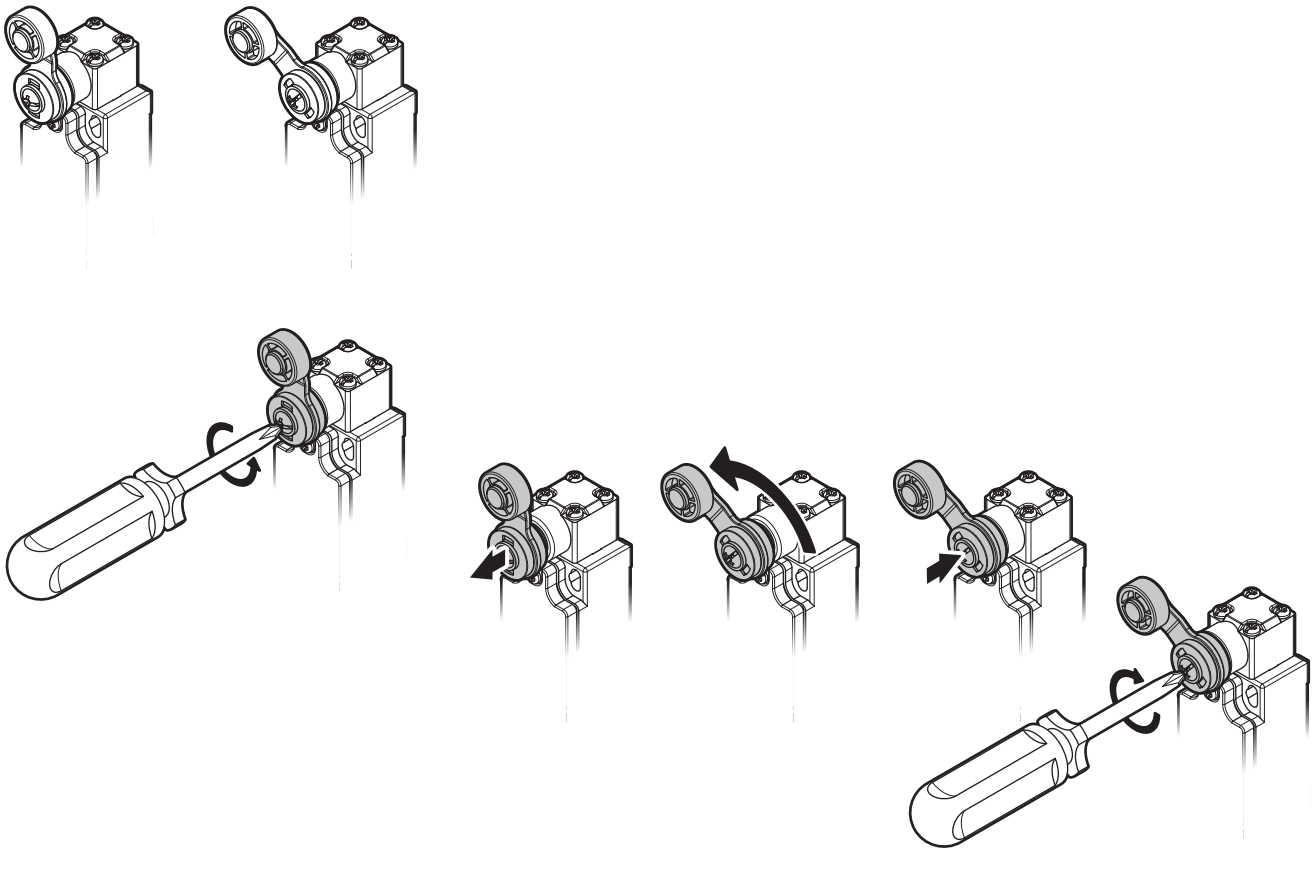
(*) Non adatto ad applicazioni di sicurezza

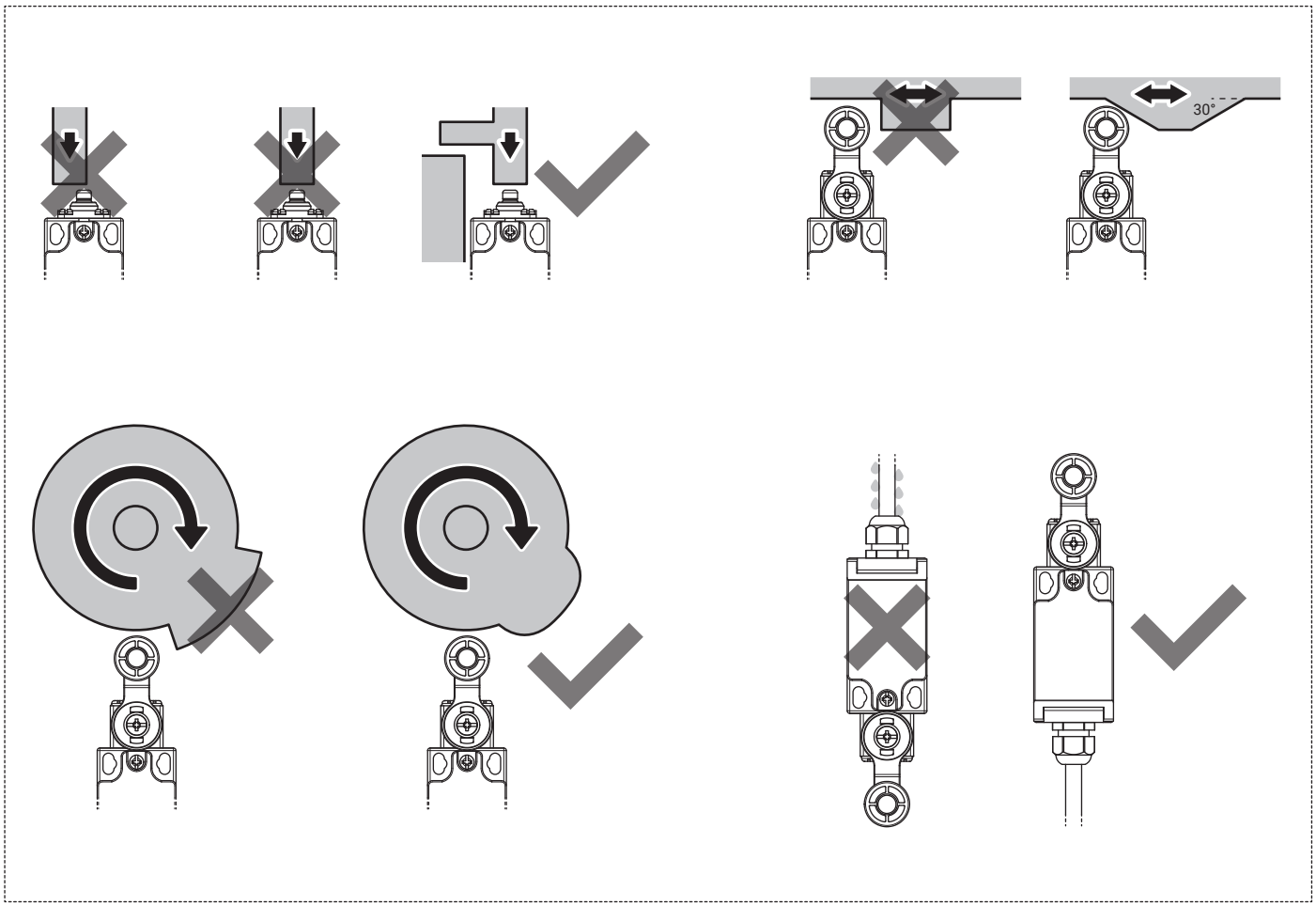
FTN198: gli schemi elettrici rappresentano la posizione di massima trazione.

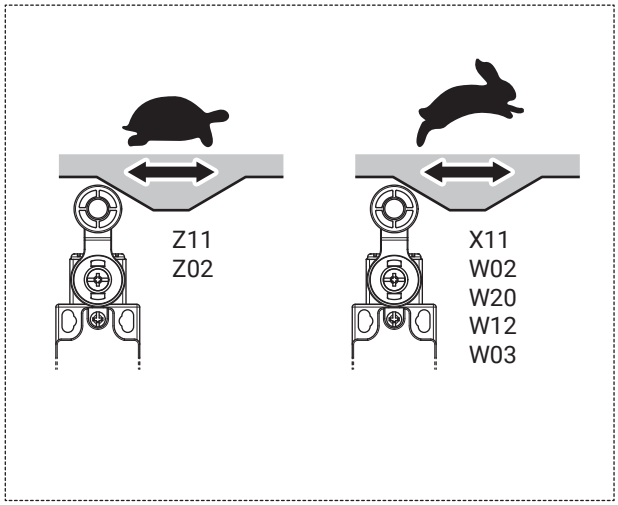
Forze di azionamento

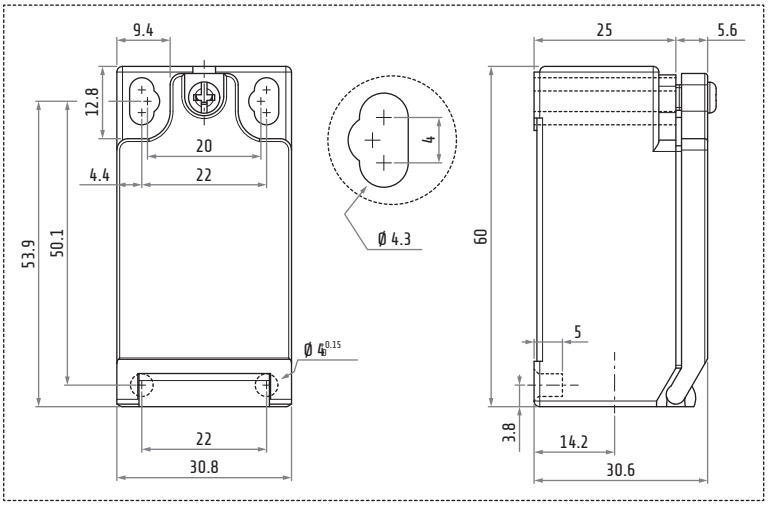
	OF	POF	OF	POF	OF	POF	OF	POF
X11	6.5 N	6 N	6.5 N	6 N	0.06 Nm	0.12 Nm	20 N	-
W02	6.5 N	6 N	6.5 N	6 N	0.06 Nm	0.12 Nm	20 N	-
W20	6.5 N	-	6.5 N	-	-	-	20 N	-
Z11	2.1 N	5.5 N	2.1 N	5.5 N	-	-	20 N	-
Z02	2.1 N	5.5 N	2.1 N	5.5 N	-	-	20 N	-
W12	6.5 N	5.4 N	6.5 N	5.4 N	0.05 Nm	0.11 Nm	20 N	-
W03	6.5 N	5.4 N	6.5 N	5.4 N	0.05 Nm	0.11 Nm	20 N	-


4×
4×

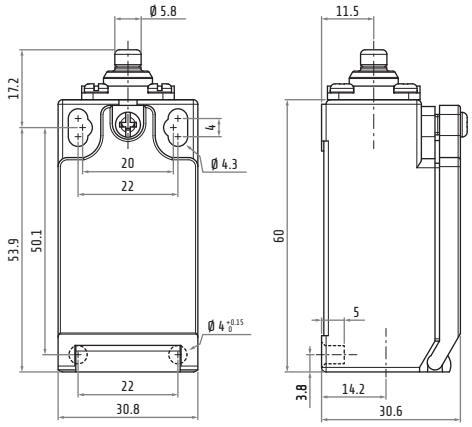



30°

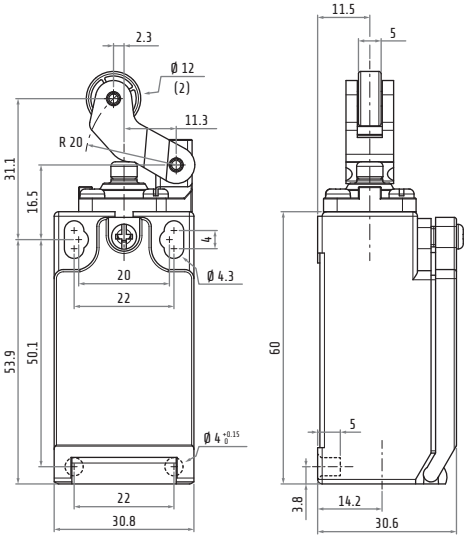

Z11
Z02
X11
W02
W20
W12
W03


9.4
12.8
20
4.4
22
53.9
50.1
Ø 4.3
4
Ø 4 0.15
22
30.8
25
5.6
60
5
3.8
14.2
30.6

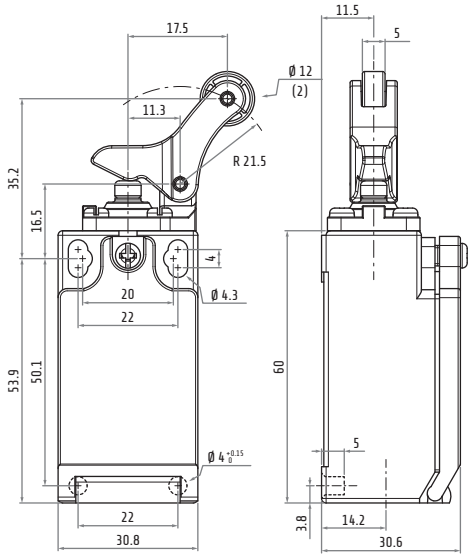
FTN131



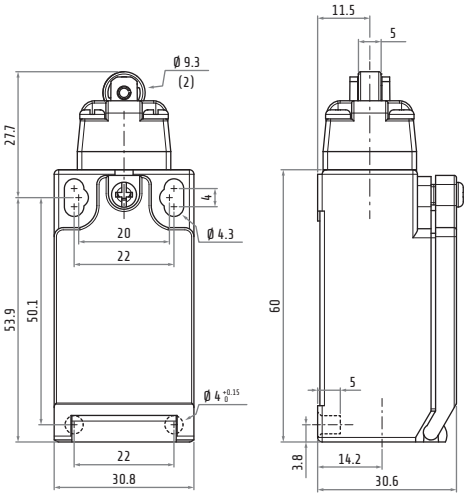
FTN132



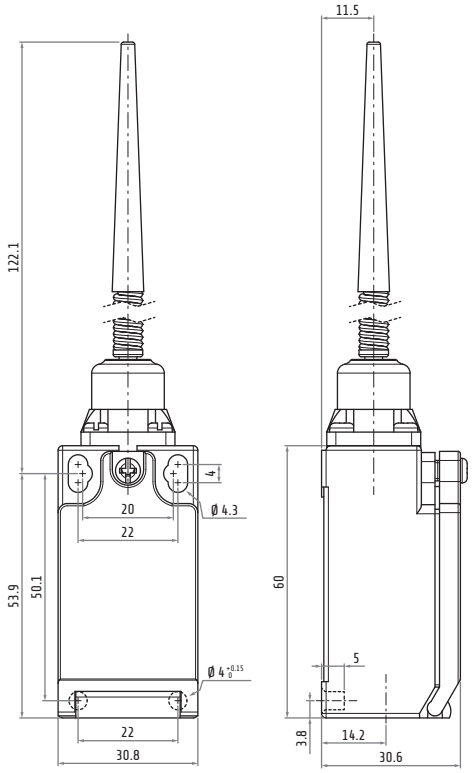
FTN133



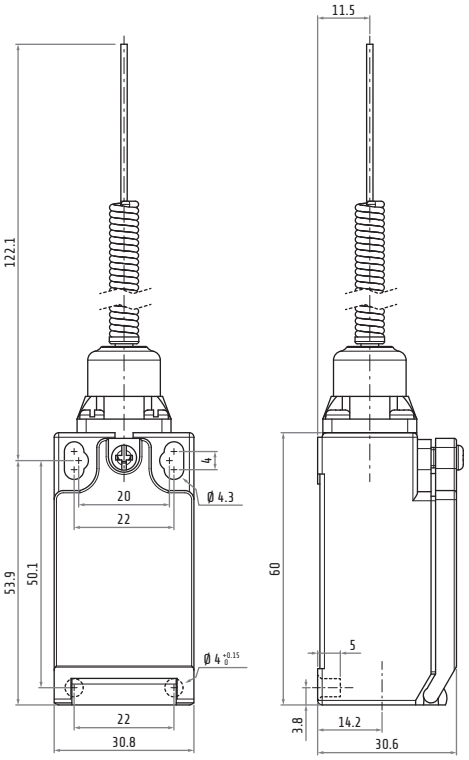
FTN134



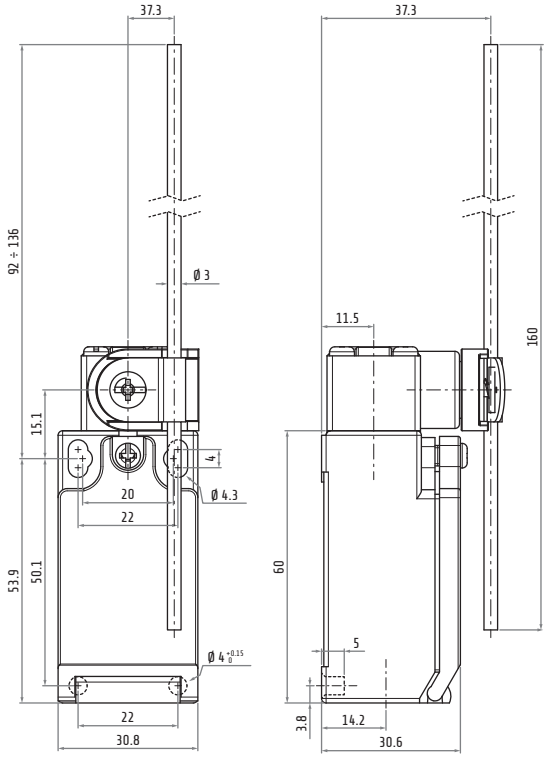
FTN135



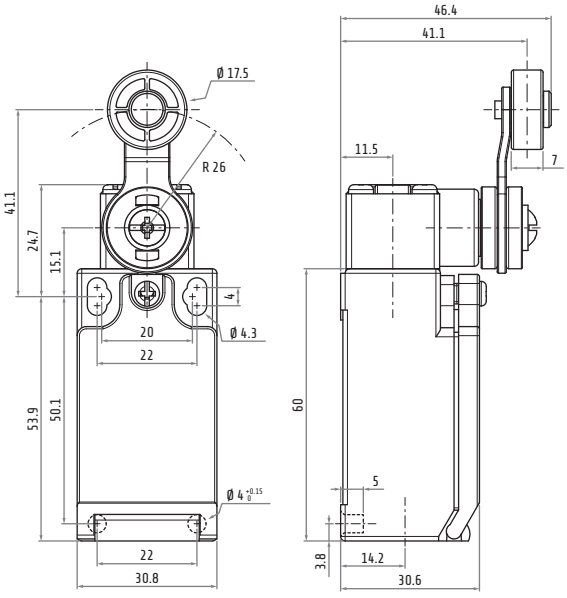
FTN136



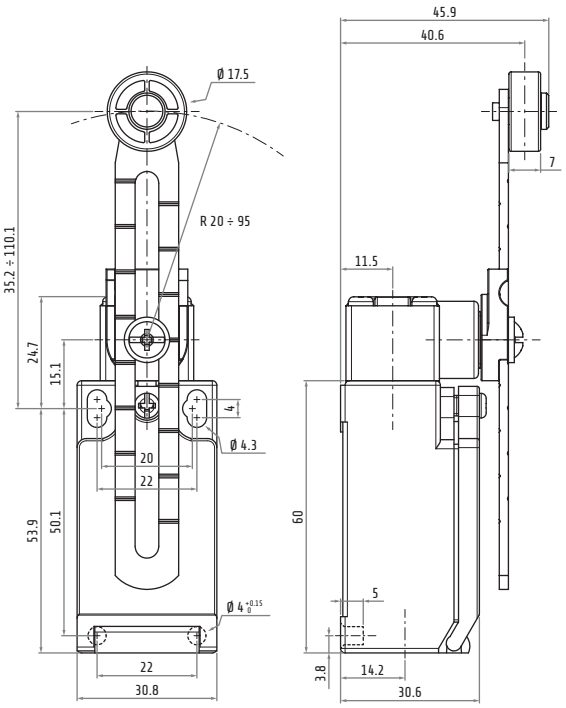
FTN137



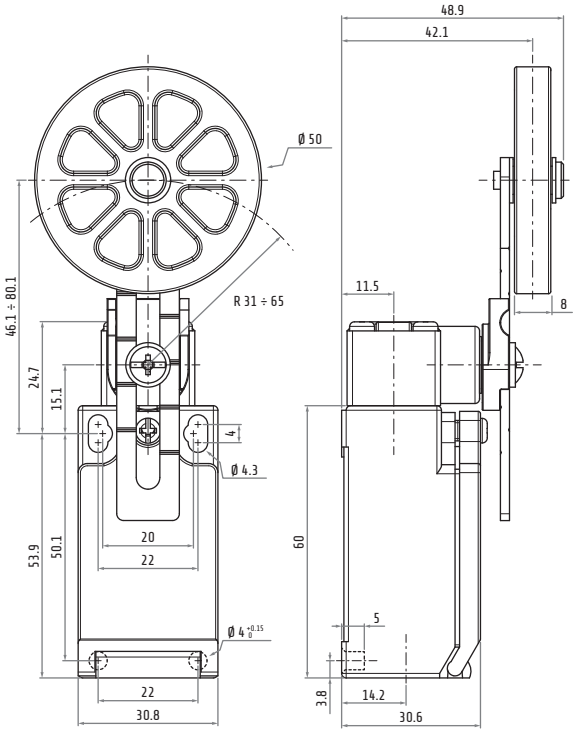
FTN138



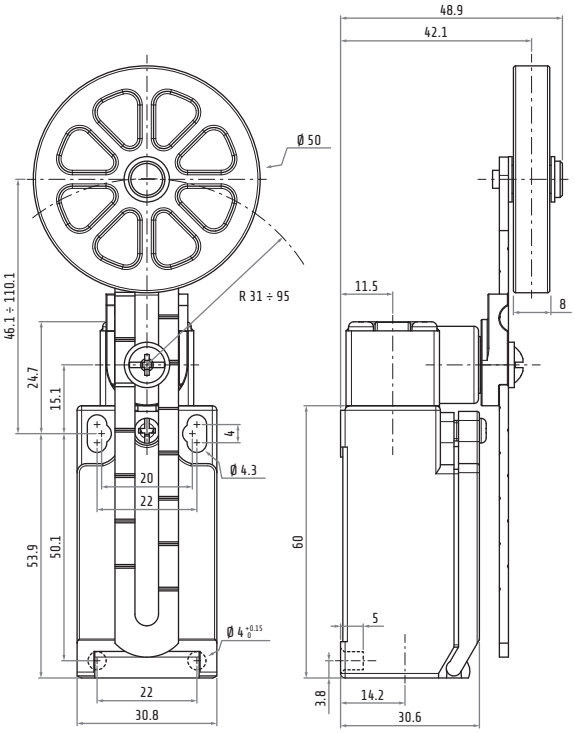
FTN139



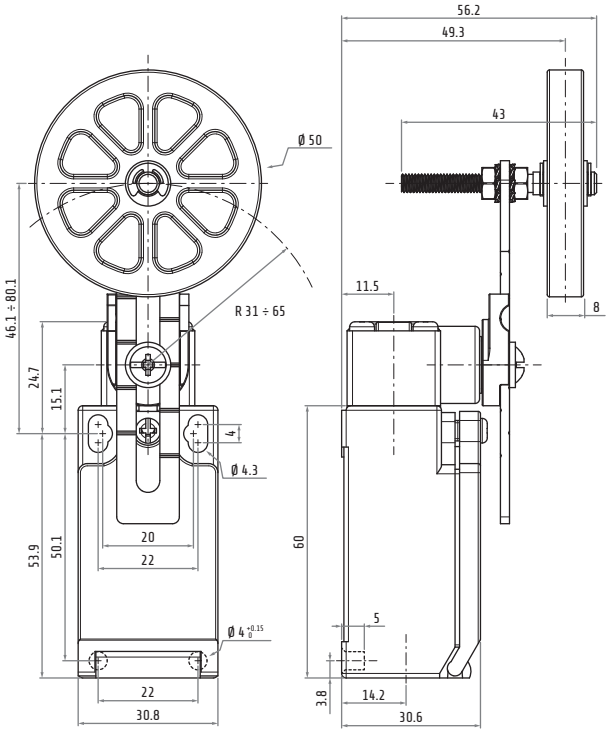
FTN140



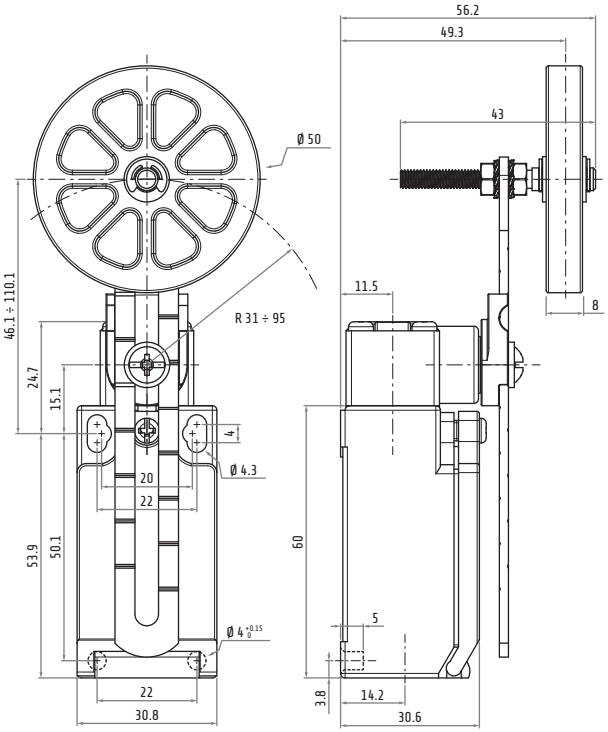
FTN140L



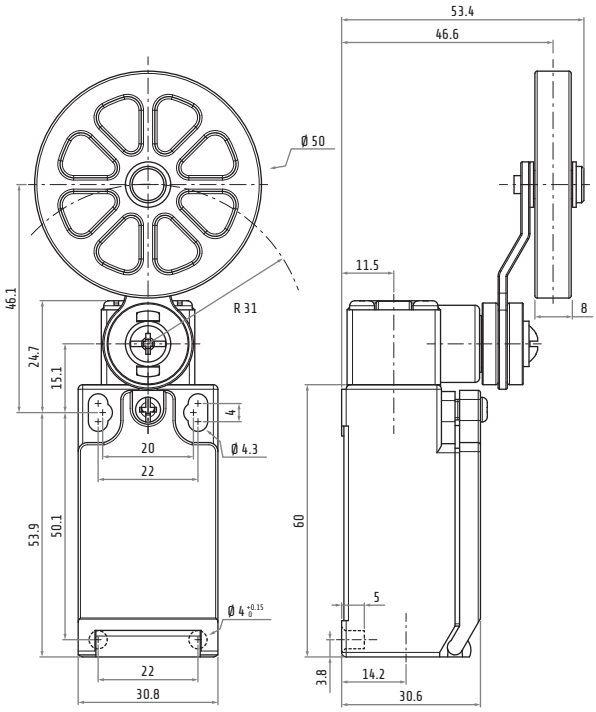
FTN140R



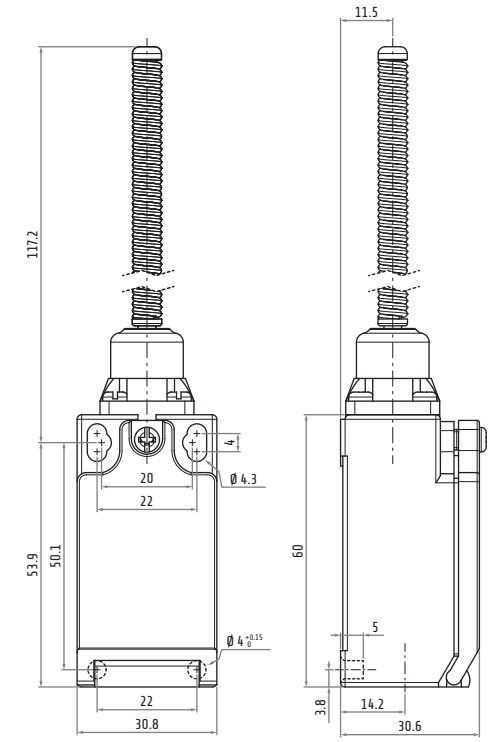
FTN140RL



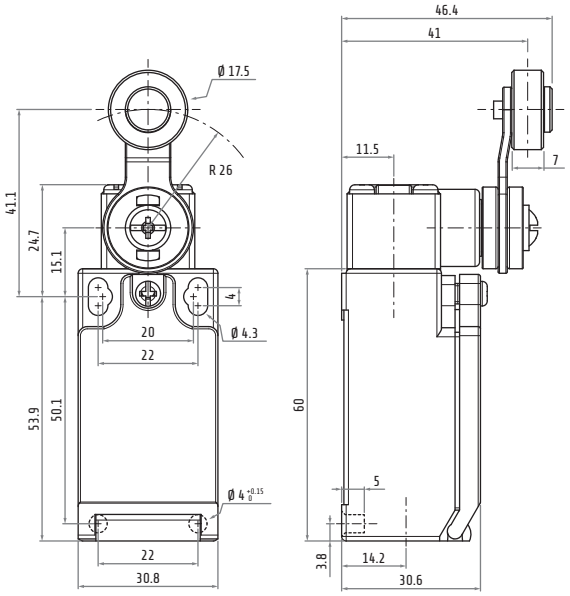
FTN141



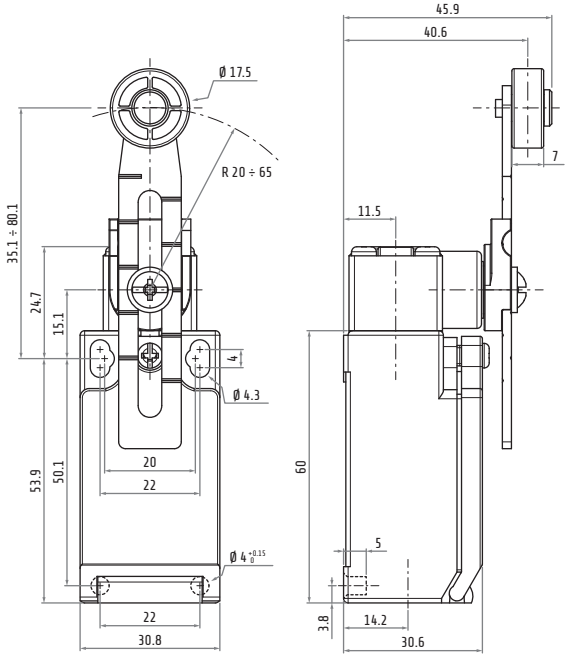
FTN142



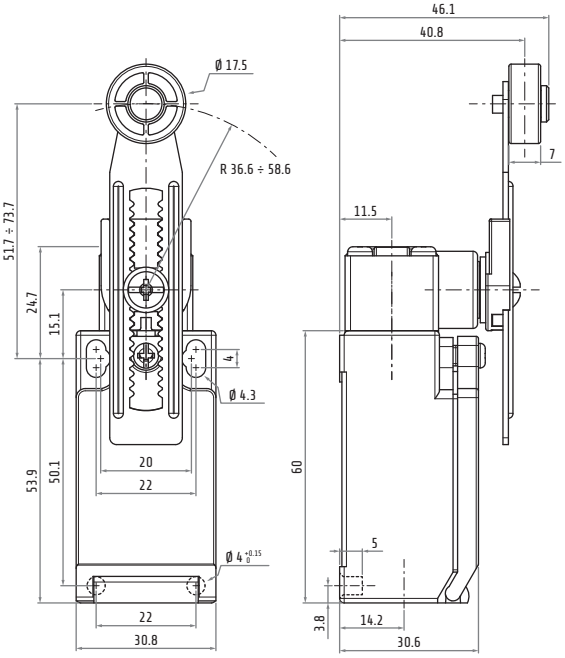
FTN143



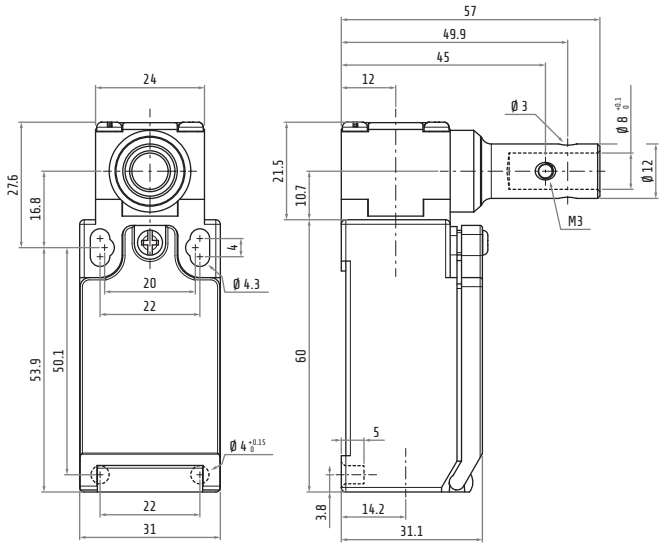
FTN144



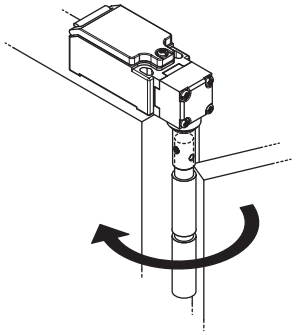
FTN144S

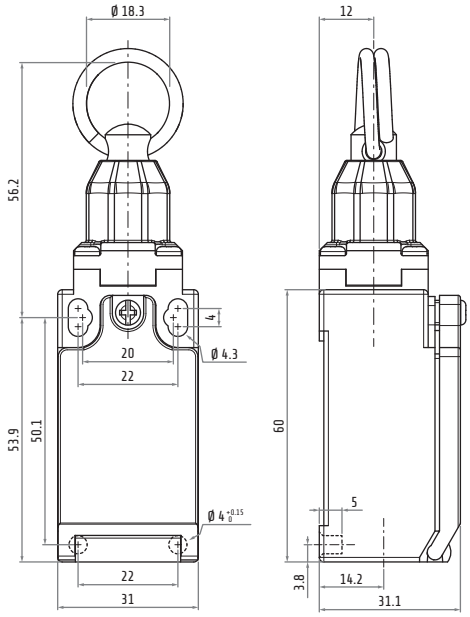


FTN146

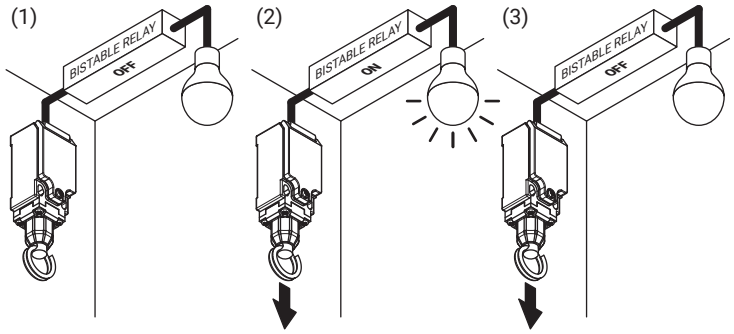


Principio di funzionamento





Principio di funzionamento



FTN198 non ha una modalità di funzionamento mantenuto. Ciò significa che è necessario inserire nell'impianto un relè bistabile per mantenere la posizione. Esempio:
(1) Stato iniziale (lampadina spenta)
(2) Tirare e rilasciare per accendere la lampadina
(3) Tirare e rilasciare per spegnere la lampadina