

## Wide Selection of Two-circuit Double-break Limit Switches



### FEATURES

- Rigid diecast switch housing
- Set position indicator plate for easy maintenance
- High mechanical strength
- Oiltight, waterproof and dust-proof construction

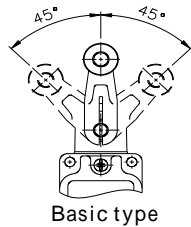
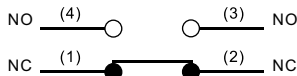
### SPECIFICATIONS

#### RATINGS

Rated Voltage (V)	Non-inductive load(A)				Inductive load(A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	10	10	3	1.5	10	5	3	2
250VAC	5	5	2	1	5	3	1.0	1.0
480VAC	3	3	1.5	0.8	3	1.5	0.8	0.8
600VAC	1	1	1	0.5	1.5	1	0.5	0.5
8 VDC	10	6	3		10	6		
14 VDC	10	6	3		10	6		
30 VDC	6	4	3		6	4		
125 VDC	0.8	0.2	0.2		0.8	0.2		
250 VDC	0.4	0.1	0.1		0.4	0.1		

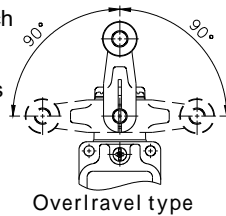
Notes: 1. Inductive load: power factor=0.4; time constant=7msec.  
 2. Lamp load has an inrush current of 10 times the steady-state current while motor load has an inrush current of 6 times the steady-state current.

### CONTACT CONFIGURATION



### OVERTRAVEL TYPE

The Overtravel Type is a limit switch which is provided with a greater OT to facilitate dog setting. Since this type is identical to the Basic Type in dimensions, both types are interchangeable. The Overtravel Type is classified into two versions -2 series and -2N series.

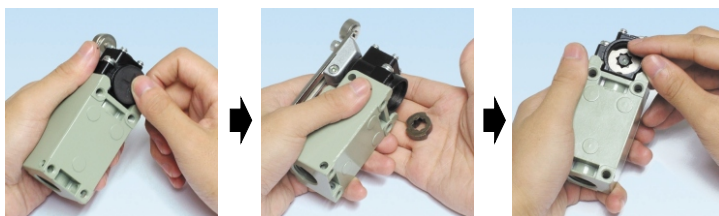


#### -2 SERIES

The head of -2 series switch can be installed in any of the four directions.  
 90° operation on only one side - impossible  
 90° operation on either side - possible

#### -2N SERIES

The head of -2N series switch can be installed only in two directions, forward and backward.  
 90° operation on only one side - possible  
 90° operation on either side - possible



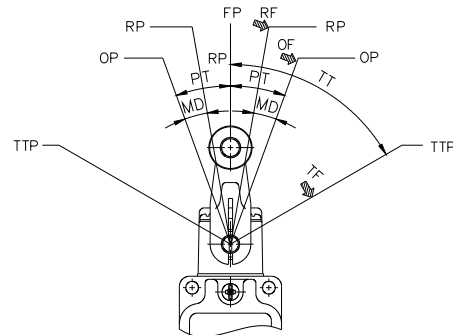
Loosen the cam holder with a coin or screw driver

Reverse the cam

Reverse the position of the cam and reinstall

### CHARACTERISTICS

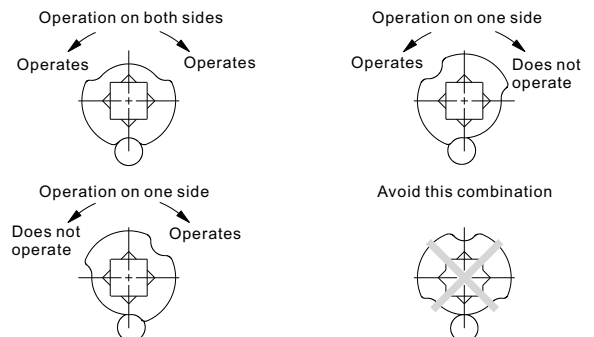
Operating speed	1mm to 2m/sec (TZ5104)
Operating frequency	Mechanically: 120 operations/min Electrically: 30 operations/min
Contact resistance	15m max. (initial)
Insulation resistance	100M max. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60Hz, for 1 minute between non-continuous terminals; 2,200 VAC, 50/60Hz, for 1 minute between each terminal and non-current-carrying metal part and between each terminal and ground
Vibration	Malfunction durability: 10 to 55HZ, 1.5mm double amplitude
Shock	Mechanical durability: approx. 1,000m/sec <sup>2</sup> (approx. 100G's) Malfunction durability: approx 300m/sec <sup>2</sup> (approx. 30G's)
Ambient temperature	Operating: -10~+80°C
Humidity	95%RH max.
Service life	Mechanically: 15,000,000 operations min. Electrically: 500,000 operations min.
Weight	Approx. 275g (with Type TZ-5104)
Degree of protection	IEC: IP67
Temperature rise	50 degrees max.



- OF: Operating Force
- RF: Releasing Force
- TF: Total Force
- FP: Free Position
- OP: Operating Position
- RP: Releasing Position
- TTP: Total Travel Position
- PT: Pretravel
- OT: Overtravel
- MD: Movement Differential
- TT: Total travel

90° operation on one side is possible by simply changing the direction of the cam.

Relationship of cam to operation as observed from the rear of switch

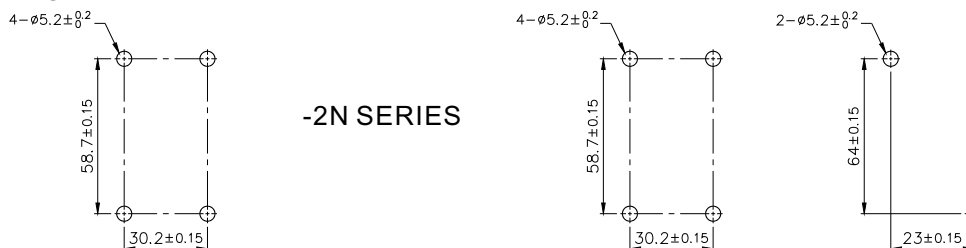


## OPERATING CHARACTERISTICS

Type	TZ-5101	TZ-5102	TZ-5109	TZ-5104	TZ-5108	TZ-5107	TZ-5105
OF max.	2,720g	2,720g	2,720g	1,360g	1,360g	142g	1,200g
RF min.	910g	910g	910g	227g	227g	28g	-
PT max.	1.7mm	1.7mm	1.7mm	20°	20°	20°	55°
OT min.	6.4mm	5.6mm	4mm	30°	30°	30°	35°
MD max.	1mm	1mm	1mm	12°	12°	12°	-
OP	34±0.8mm	44.8±0.8mm	44.5±0.8mm	-	-	-	90±10°
TTP max.	29.5mm	39.5mm	41mm	-	-	-	-

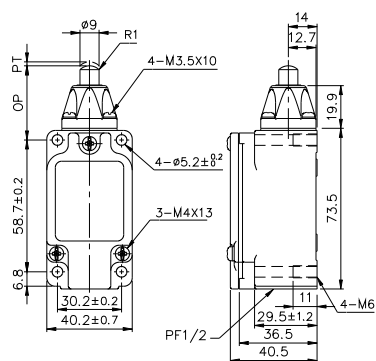
Type	TZ-5106.5166.5168.5169	TZ-5104-2.5108-2	TZ-5107-2	TZ-5104-2N.5108-2N	TZ-5107-2N
OF max.	150g	1000g	290g	980g	290g
RF min.	-	100g	25g	120g	25g
PT max.	28mm	20°	20°	20°	20°
OT min.	-	55°	55°	70°	70°
MD max.	-	12°	12°	10°	10°

## Mounting holes Basic type and -2 SERIES

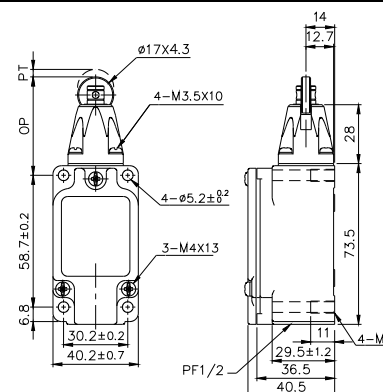


## DIMENSIONS

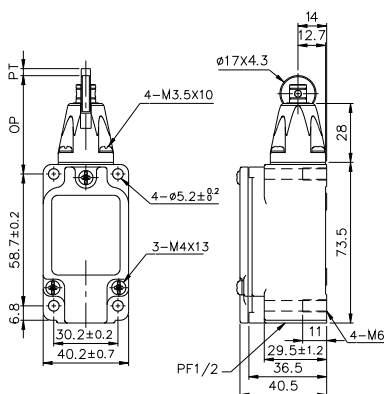
TZ-5101



TZ-5102

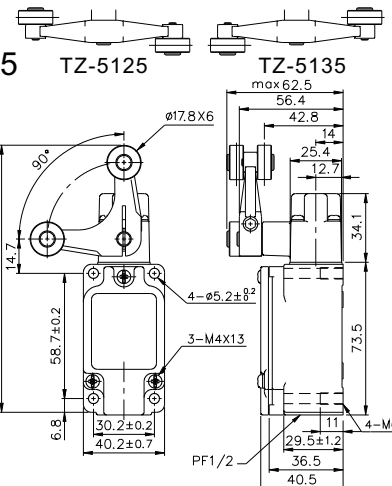


TZ-5103

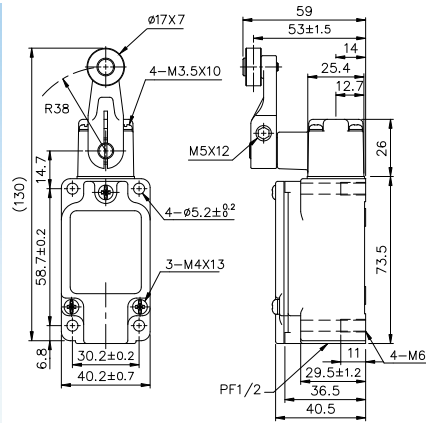


TZ-5105

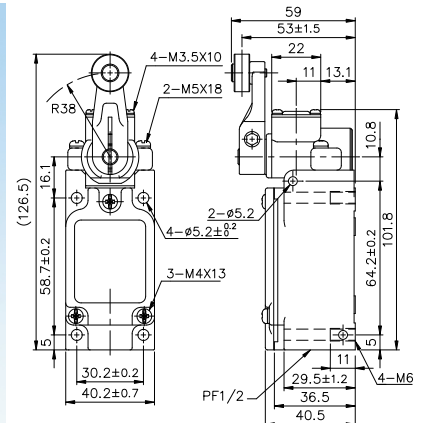
TZ-5125 TZ-5135



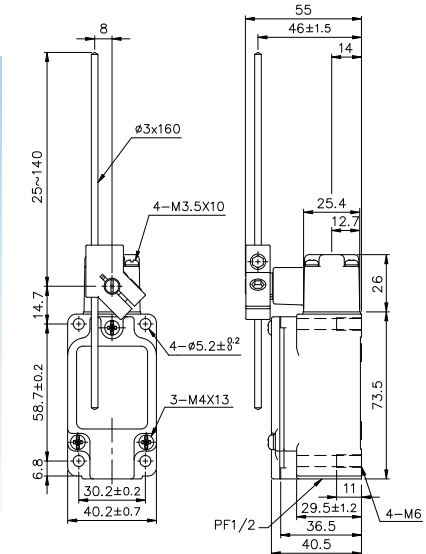
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TZ-5104-2



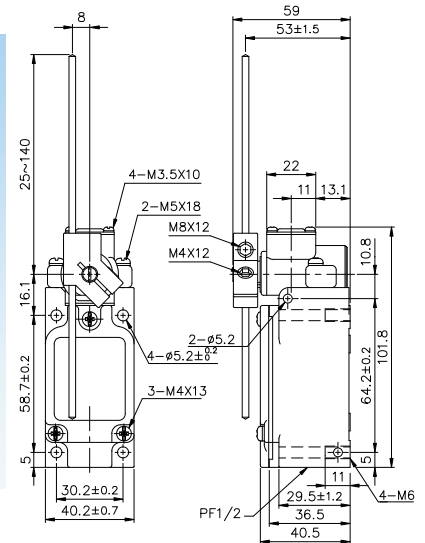
TZ-5104-2N



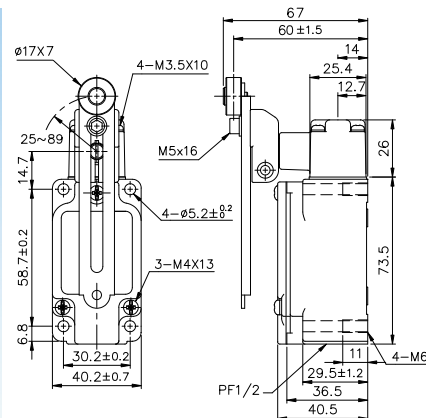
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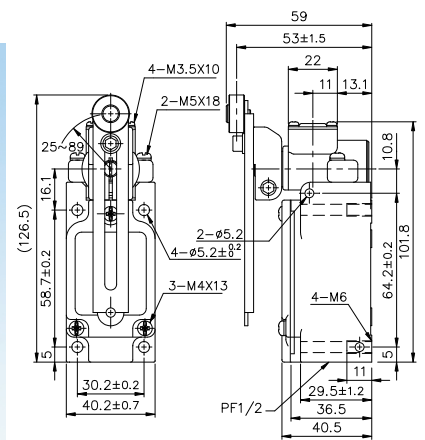
TZ-5107-2N



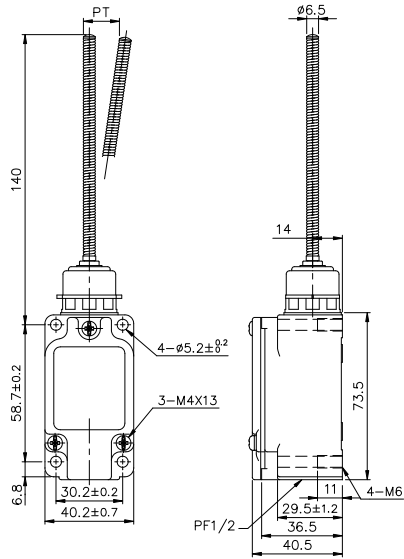
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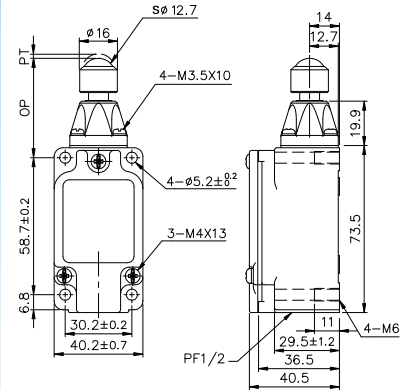
TZ-5108-2N



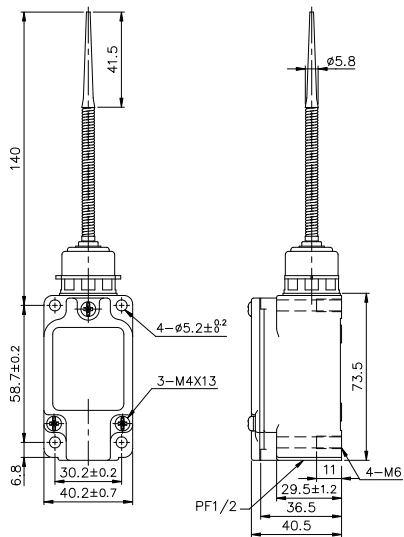
TZ-5106



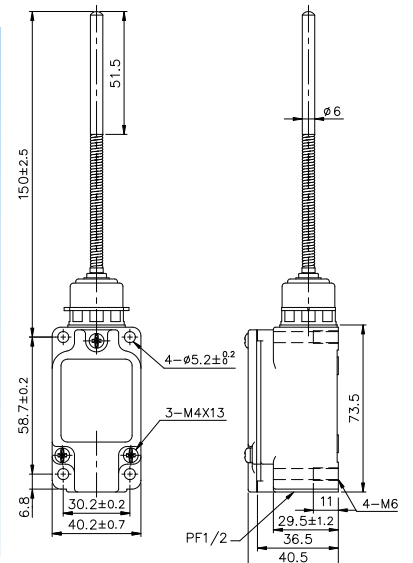
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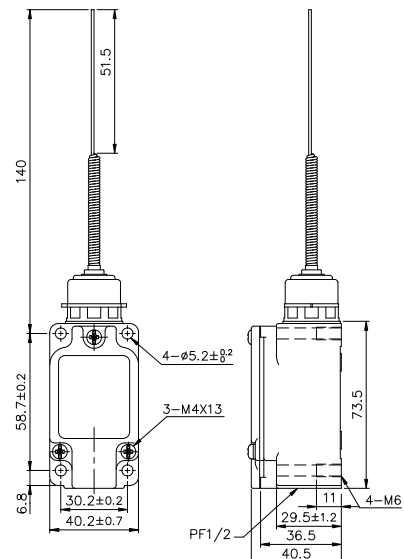
TZ-5166



TZ-5168



TZ-5169



TZ-501

