

# tend LIMIT SWITCH

## ลิมิตสวิตช์ IP67



Wide Selection of Two-circuit Double-break Limit Switches

### ■ FEATURES

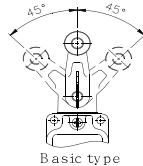
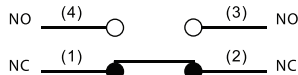
- Rigid diecast switch housing
- Set position indicator plate for easy maintenance
- High mechanical strength
- Oiltight, waterproof and dust proof construction

### ■ SPECIFICATIONS RATING

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
125 V AC	10	10	3	1.5	10	5	2.0	
250 V AC	5	5	2	1	5	3	1.0	
480 V AC	3	3	1.5	0.8	3	1.5	0.8	
600 V AC	1	1	1	0.5	1.5	1	0.5	
8 V AC		10	6	3	10		6	
14 V DC		10	6	3	10		6	
30 V DC		6	4	3	6		4	
125 V DC		0.8	0.2	0.2	0.8		0.2	
250 V DC		0.4	0.1	0.1	0.4		0.1	

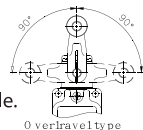
NOTES : 1. Inductive load has a power factor = 0.4; time constant = 7 msec.  
2. Lamp load has an inrush current of 10 times the steady-state current while motor load has an inrush current of 6 times the steady-state current.

### ■ 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.



#### J2 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

#### J2N 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



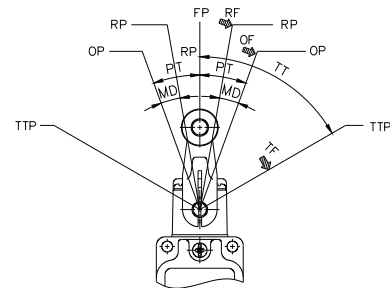
Loosen the cam holder with a coin or screw driver

Reverse the cam

Reverse the position of the cam and reinstall

### ■ CHARACTERISTICS

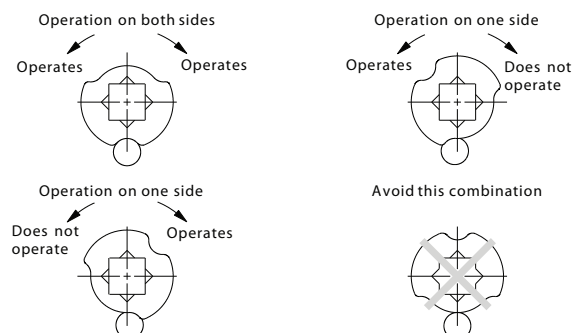
Operating speed	1 mm to 2 m/sec (TZ-5104)
Operating frequency	Mechanically: 120 operations/min Electrically: 30 operations/min
Contact resistance	15 mΩ max. (initial)
Insulation resistance	100 MΩ max. (at 500 V DC)
Dielectric strength	1,000 V AC, 50/60 Hz for 1 minute between noncontinuous terminals. 2,200 V AC, 50/60 Hz for 1 minute between each terminal and non-current carrying metal part and between each terminal and ground
Temperature rise	50 degrees max.
Vibration	Malfunction durability : 10 to 55 Hz. 1.5 mm double amplitude
Shock	Mechanical durability : approx 1,000 m/sec <sup>2</sup> (approx: 100 G's) Malfunction durability : approx 300 m/sec <sup>2</sup> (approx: 30G's)
Ambient temperature	Operating : -10° ~ +80°C
Humidity	95% RH max
Service life	Mechanical : 15,000,000 operations min. Electrically : 500,000 operations min.
Weight	Approx. 275 g (with Type TZ-5104)
Degree of protection	IEC : IP 67



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

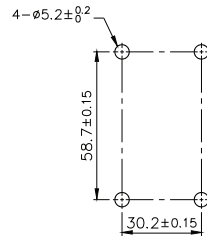
Operating characteristics	Type	TZ-5101	TZ-5102	TZ-5104	TZ-5105	TZ-5107	TZ-5108
OF max.		2,720 g	2,720 g	1,360 g	1,200 g	142 g	1,360 g
RF min.		910 g	910 g	227 g	-	28°	227 g
PT max.		1.7 mm	1.7 mm	20°	55°	20°	20°
OT min.		6.4 mm	5.6 mm	30°	35°	30°	30°
MD max.		1 mm	1 mm	12°	-	12°	12°
TTP max.		29.5 mm	39.5 mm	-	-	-	-
OP		OP : 34 ± 0.8 mm	44 ± 0.8 mm	-	OP: 90 ± 10°	-	-

### OPERATING CHARACTERISTICS

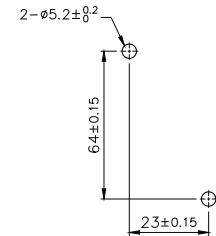
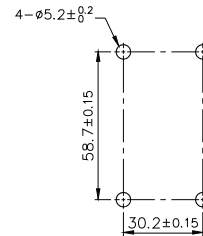
Type	TZ-5104-2 / TZ-5108-2	TZ-5104-2N / TZ-5108-2N	TZ-5106 / TZ-5169	TZ-5107-2	TZ-5107-2N
OF max.	1000 g	980 g	150 g	290 g	290 g
RF min.	100g	120 g	-	25g	25g
PT max.	20°	20°	28 mm	20°	20°
OT min.	55°	70°	-	55°	70°
MD max.	12°	10°	-	12°	10°

### MOUNTING HOLES

Basic type and -2 SERIES

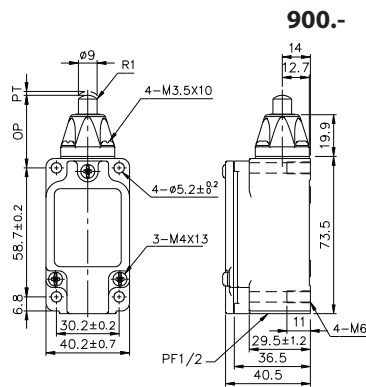


-2N SERIES



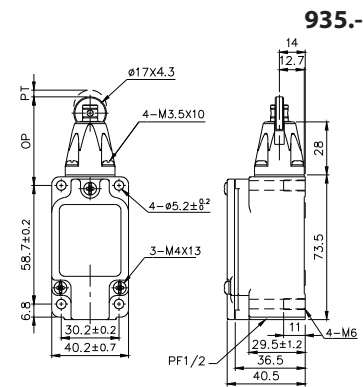
### DIMENSIONS

#### TZ-5101



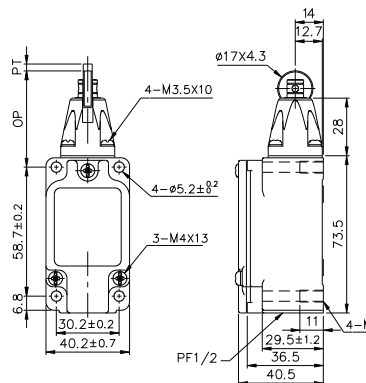
#### 900.-

#### TZ-5102



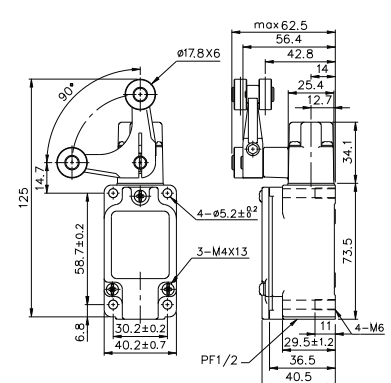
#### 935.-

#### TZ-5103(HL-5000)



#### 935.-

#### TZ-5105(WLCA32-41)



#### 1,475.-

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## LIMIT SWITCH

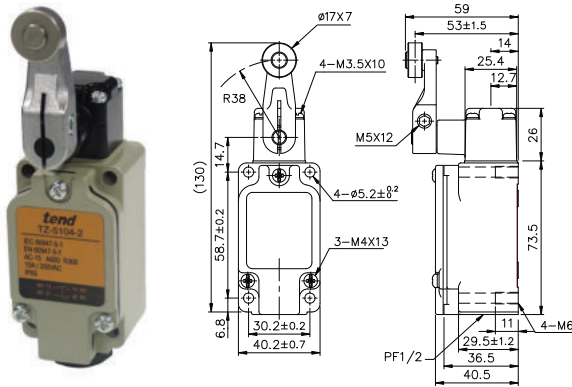
### ลิมิตสวิตช์ IP67



#### DIMENSIONS

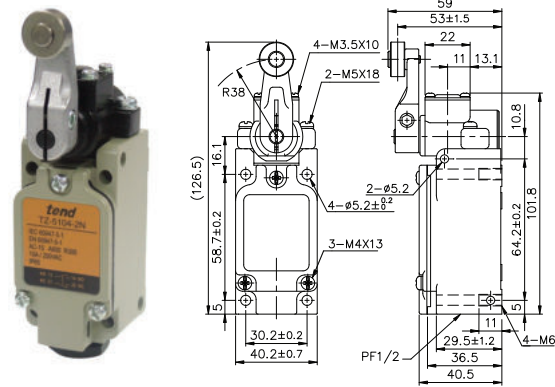
**TZ-5104 (WLCA2)**  
**TZ-5104-2 (WLCA2-2)**

**945.-**  
**1,065.-**



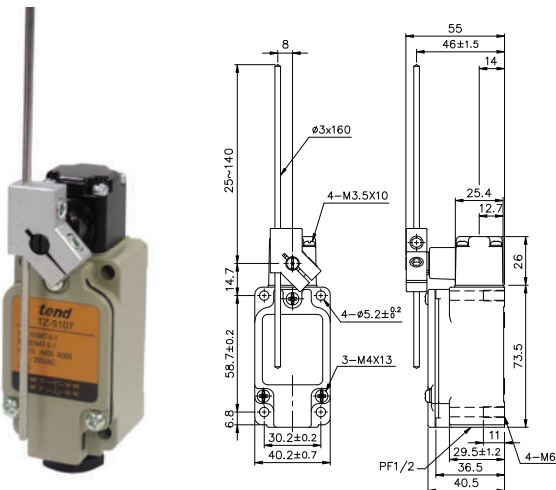
**TZ-5104-2N (WLCA2-2N)**

**1,095.-**



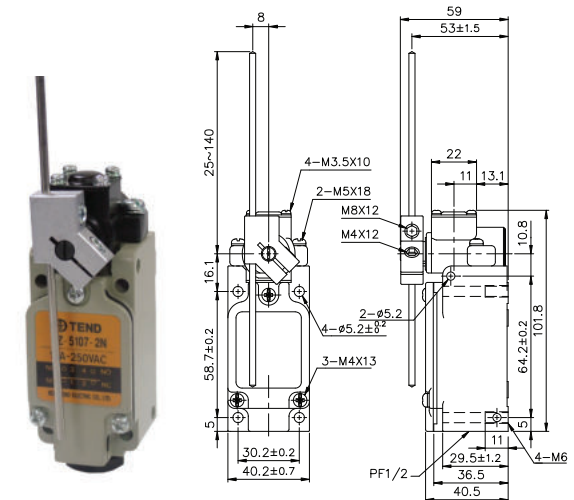
**TZ-5107 (WLCL)**  
**TZ-5107-2 (WLCL-2)**

**1,020.-**  
**1,100.-**



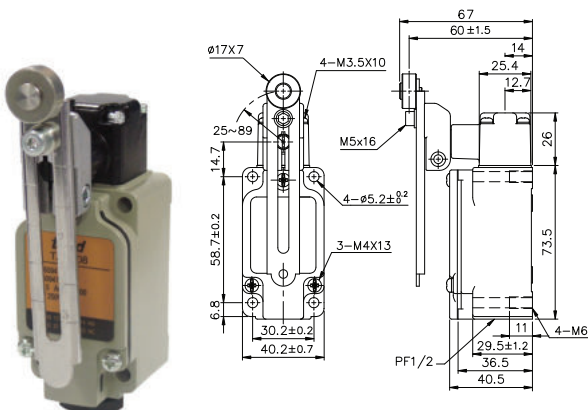
**TZ-5107-2N (WLCL-2N)**

**1,180.-**



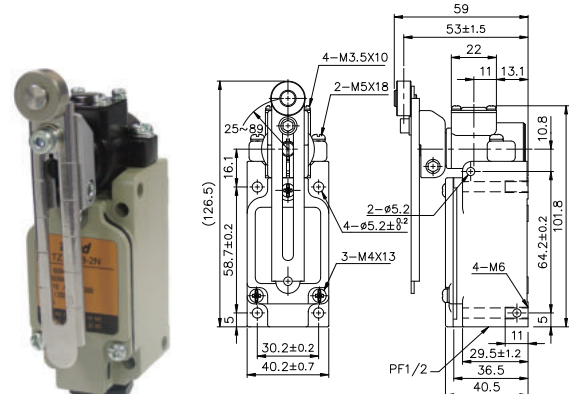
**TZ-5108 (WLCA12)**  
**TZ-5108-2 (WLCA12-2)**

**1,090.-**  
**1,175.-**



**TZ-5108-2N (WLCA-2N)**

**1,235.-**



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## ลิมิตสวิตช์ IP67



TEND

BANDEX

TAKAMURA

TEEFLEX

KENION

NISSEI

ROSI

APEKS

LKEW

TAC

MARLOW

HARU

WIND  
SPEED

COMMAX

ADVANTE

UNIVERSAL  
ADAPTER

ALION

EXOWELD

CONTROL  
MAX

JKN

SYLVIA

WANG

MACCON

NIZING

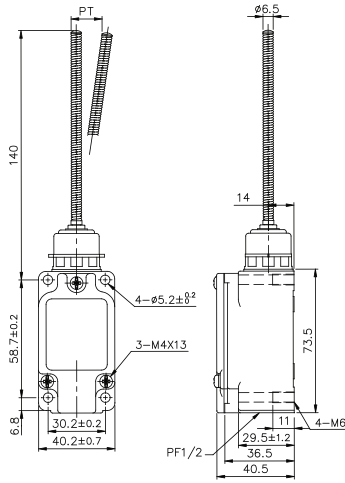
RISESUN

UNITUBE

■ DIMENSIONS (Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions)

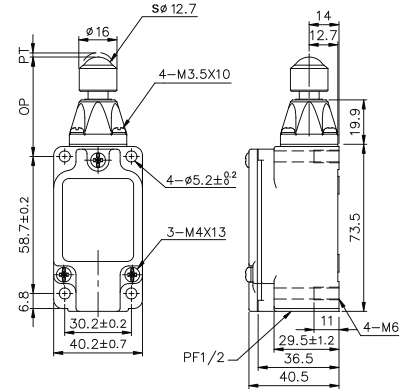
TZ-5106(WLNJ)

955.-



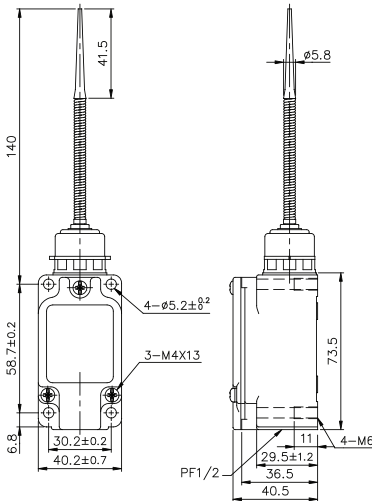
TZ-5109(WLD3)

1,100.-



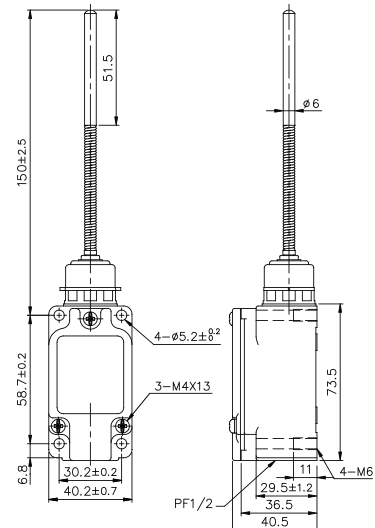
TZ-5166

955.-



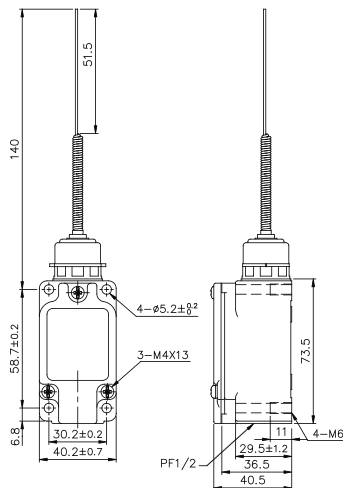
TZ-5168

1,010.-



TZ-5169

955.-



TZ-501

335.-

