

tend MICRO SWITCH

ไมโครสวิตช์

 ISO 9002    

**Best-selling basic switch boasting
High precision and wide variety**

■ FEATURES

- Wide variety of actuators
- High precision
- High breaking capacity (15A)
- Wide operating speed range

■ RATINGS

Rated voltage (V)	Non-inductive load (A)			Inductive load (A)			Inrush current (A)	
	Resistive load		Lamp load	Inductive load		Motor load		
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	15	3	1.5	15	5	2.5	30 max.	15 max.
250 VAC	15	2.5	1.25	15	3	1.5		
500 VAC	3	1.5	0.75	2.5	1.5	0.75		
8 VAC	15	3	1.5	15	5	2.5		
14 VAC	15	3	1.5	10	5	2.5		
30 VAC	6 (2)	3	1.5	5	5	2.5		
125 VAC	0.4	0.4	0.4	0.05	0.05	0.05		
250 VAC	0.2	0.2	0.2	0.03	0.03	0.03		

NOTES :

1. Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 msec (DC)
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.

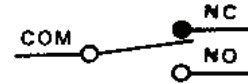
■ CHARACTERISTICS

Operating speed	0.01 mm to 1 m/sec
Operating frequency	Mechanically : 240 Operations/min. Electrically : 20 operations/min.
Contact resistance	15 mΩ max. (initial)
Insulation resistance	100 MΩ min. (at 500 V DC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between current carrying part and ground
Vibration	Mechanically durability : 10 to 55 Hz 1.5 mm double amplitude
Shock	Mechanically durability : Approx. 1,000 m/sec ² (approx: 100 G's) Malfunction durability : Approx. 300 m/sec ² (approx. 30G's)
Ambient operating temperature	General purpose type : -25° to +80°C Sealed type : -15° to 80°C
Humidity	General purpose type : 85% RH max Sealed type : 95% RH
Service life	Mechanically : 20,000,000 Operations min Electrically : 500,000 operations min.
Weight	Approx. 22 to 58g

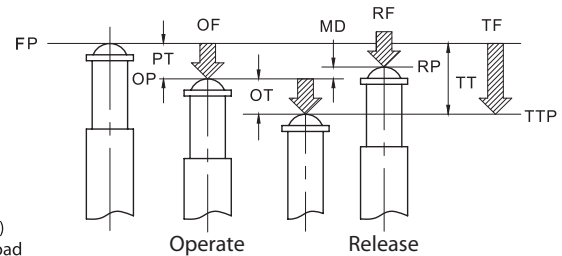
Z-15 SERIES :

- 15A 125, 250 or 480 VAC
- 1/2A 125 V DC, 1/4 250 V DC
- 1/8 HP 125 VAC, 1/4 HP 250 VAC

■ CONTACT CONFIGURATION



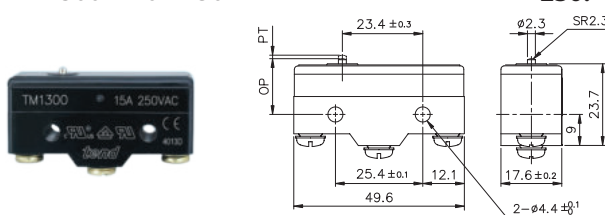
■ DEFINITIONS OF OPERATING CHARACTERISTICS



- 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

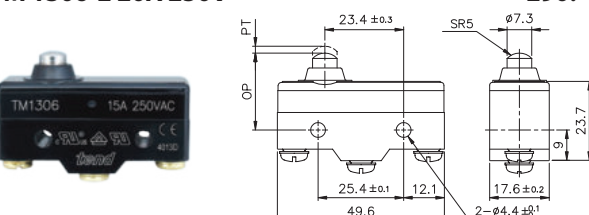
DIMENSIONS

TM 1300(Z-15G-B) 15A 250V AC **155.-**
TM 1300-2 20A 250V **230.-**



Technical drawing showing front and side views of the TM 1300 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2.3.7, 2-φ4.4 ± 0.1, φ2.3, SR2.3.

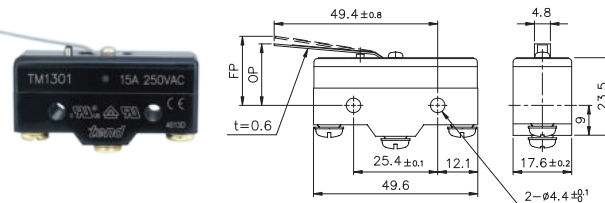
TM 1306(Z-15GD-B) 15A 250V AC **165.-**
TM 1306-2 20A 250V **290.-**



Technical drawing showing front and side views of the TM 1306 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2.3.7, 2-φ4.4 ± 0.1, φ7.3, SR5.

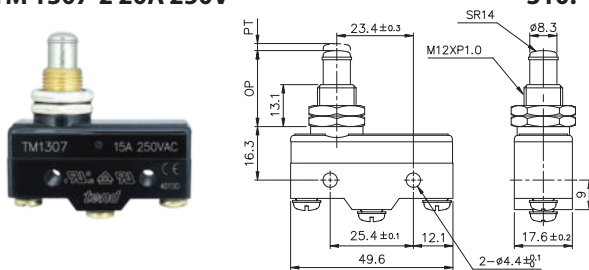
TM 1301(Z-15GL-B) 15A 250V AC **160.-**
TM 1301-2 20A 250V **245.-**

Resistive Load Lamp Load Inductive Load Motor Load



Technical drawing showing front and side views of the TM 1301 micro switch. Dimensions include: FP, OP, 49.4 ± 0.8, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2.3.5, 4.8, 9, t = 0.6, 2-φ4.4 ± 0.1.

TM 1307(Z-15GQ-B) 15A 250V AC **205.-**
TM 1307-2 20A 250V **310.-**



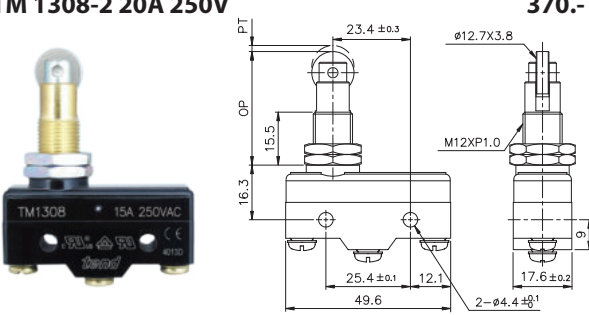
Technical drawing showing front and side views of the TM 1307 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, 13.1, 16.3, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2-φ4.4 ± 0.1, SR14, φ8.3, M12XP1.0.

TM 1303(Z-15GL2-B) 15A 250V AC **175.-**
TM 1303-2 20A 250V **260.-**



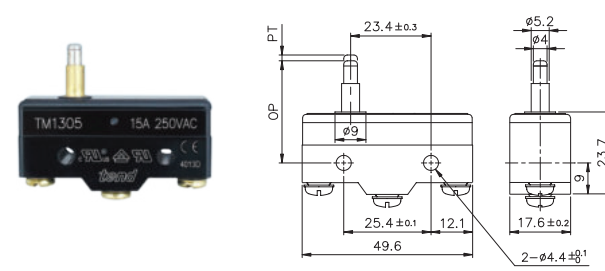
Technical drawing showing front and side views of the TM 1303 micro switch. Dimensions include: FP, OP, 45.3 ± 0.8, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2.3.5, 9, t = 0.6, φ9.5X4, 2-φ4.4 ± 0.1.

TM 1308(Z-15GQ22-B) 15A 250V AC **255.-**
TM 1308-2 20A 250V **370.-**



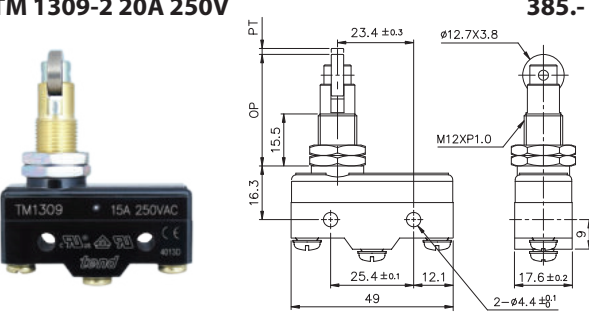
Technical drawing showing front and side views of the TM 1308 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, 15.5, 16.3, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2-φ4.4 ± 0.1, φ12.7X3.8, M12XP1.0.

TM 1305(Z-15GS-B) 15A 250V AC **165.-**
TM 1305-2 20A 250V **290.-**



Technical drawing showing front and side views of the TM 1305 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, φ9, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2.3.7, 9, φ5.2, φ4, 2-φ4.4 ± 0.1.

TM 1309(Z-15GQ21-B) 15A 250V AC **275.-**
TM 1309-2 20A 250V **385.-**



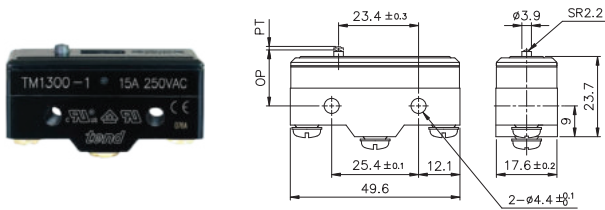
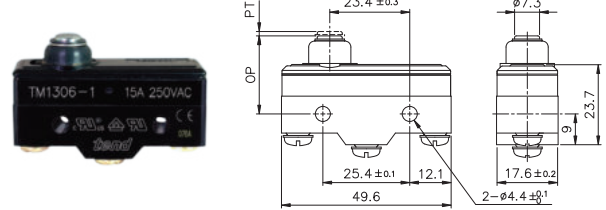
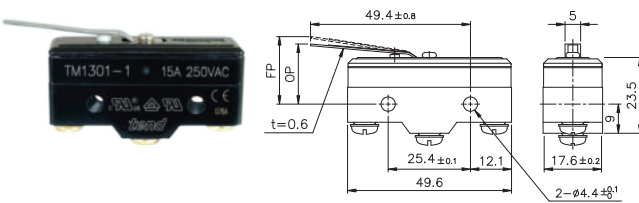
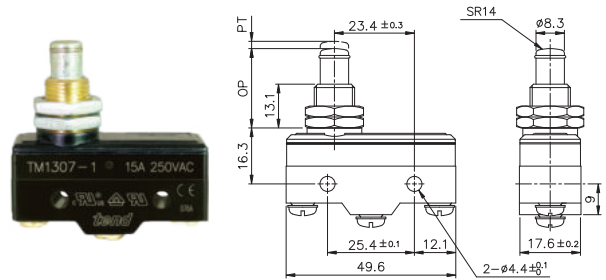
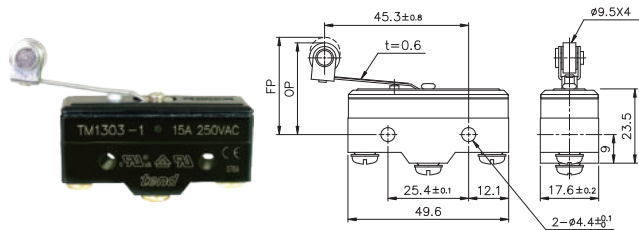
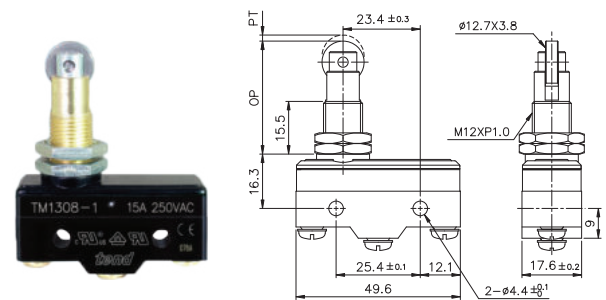
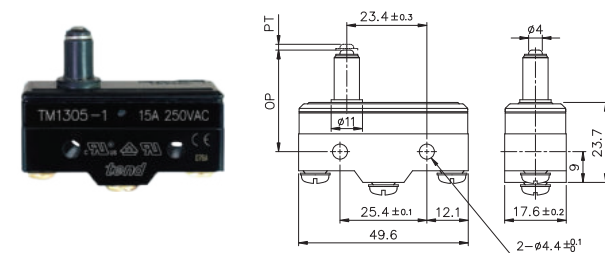
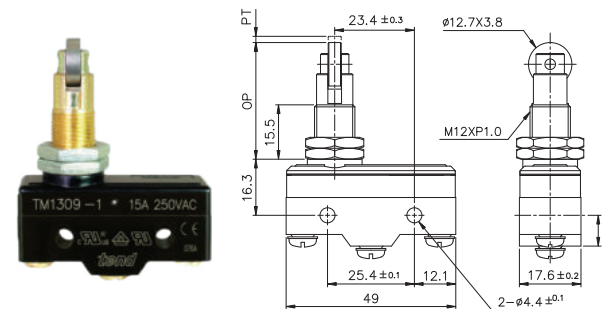
Technical drawing showing front and side views of the TM 1309 micro switch. Dimensions include: PT, OP, 23.4 ± 0.3, 15.5, 16.3, 25.4 ± 0.1, 12.1, 49.6, 17.6 ± 0.2, 2-φ4.4 ± 0.1, φ12.7X3.8, M12XP1.0.

OPERATION CHARACTERISTICS

Type	TM 1300	TM 1301	TM 1303	TM 1305	TM 1306	TM 1307	TM 1308	TM 1309
OF max	350 g	300 g	300 g	350 g	350 g	350 g	350 g	350 g
RF min	114 g	50 g	50 g	114 g	114 g	114 g	114 g	114 g
PT max	0.4 mm	4 mm	4 mm	0.4 mm	0.4 mm	0.4 mm	0.4 mm	0.4 mm
OT min	0.13 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm	5.5 mm	3.58 mm	3.58 mm
MD max	0.05 mm	1.3 mm	1.3 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
FP max		20.6 mm	31.8 mm					
OP	15.9 ± 0.4 mm	17.4 ± 0.8 mm	28.6 ± 0.8 mm	28.2 ± 0.5 mm	21.5 ± 0.5 mm	21.8 ± 0.8 mm	33.4 ± 1.2 mm	33.4 ± 1.2 mm

tend**MICRO SWITCH**

ไมโครสวิตช์ ชนิดกันน้ำ, กันน้ำมัน, กันฝุ่น ISO 9002

**DIMENSIONS****TM 1300-1(15A 250V AC)****225.-****TM 1306-1(15A 250V AC)****255.-****TM 1301-1(15A 250V AC)****240.-****TM 1307-1(15A 250V AC)****295.-****TM 1303-1(15A 250V AC)****255.-****TM 1308-1(15A 250V AC)****360.-****TM 1305-1(15A 250V AC)****255.-****TM 1309-1(15A 250V AC)****360.-****OPERATION CHARACTERISTIC**

Type	TM1300-1	TM1301-1	TM1303-1	TM1305-1	TM1306-1	TM1307-1	TM1308-1	TM1309-1
OF max	500 g	400 g	400 g	500 g	500 g	500 g	500 g	500 g
RF min	114 g	50 g	50 g	114 g	114 g	114 g	114 g	114 g
PT max	0.4 mm	4 mm	4 mm	0.4 mm	0.4 mm	0.4 mm	0.4 mm	0.4 mm
OT min	0.13 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm	5.5 mm	3.58 mm	3.58 mm
MD max	0.05 mm	1.3 mm	1.3 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
FP max		20.6 mm	31.8 mm					
OP	15.9 ± 0.4 mm	17.4 ± 0.8 mm	28.6 ± 0.8 mm	28.2 ± 0.5 mm	21.5 ± 0.5 mm	21.8 ± 0.8 mm	33.4 ± 1.2 mm	33.4 ± 1.2 mm

*ขอสจวนลลทรลในการเปลยยนเปลงราคา

tend MICRO SWITCH

ไมโครสวิตช์ ชนิดกันน้ำ, กันน้ำมัน, กันฝุ่น

ISO 9002



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

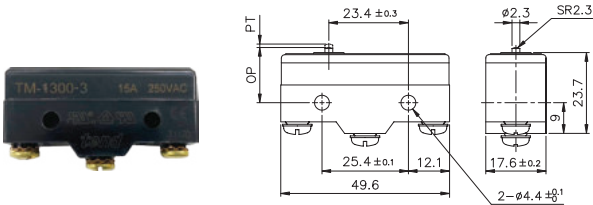
RISESUN

UNITUBE

DIMENSIONS

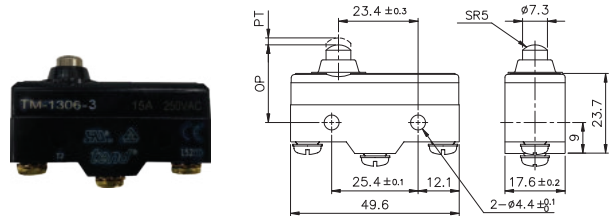
TM 1300-3(20A 250V AC)
TM 1303-12

275.-
275.-



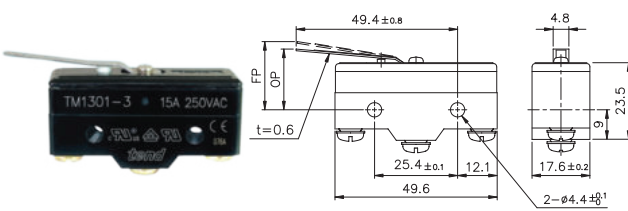
TM 1306-3(20A 250V AC)

305.-



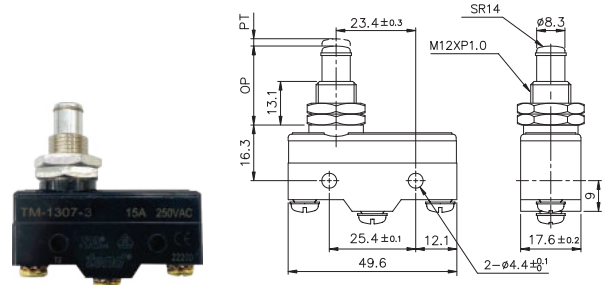
TM 1301-3(20A 250V AC)

335.-



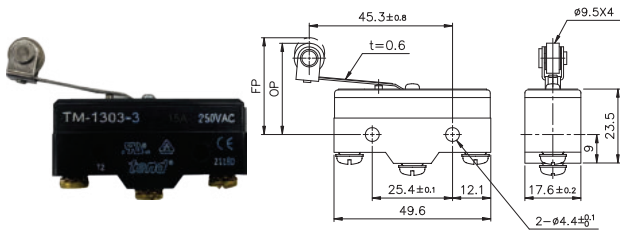
TM 1307-3(20A 250V AC)

335.-



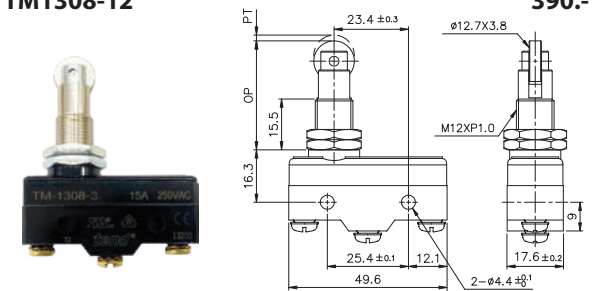
TM 1303-3(20A 250V AC)
TM 1303-12

295.-



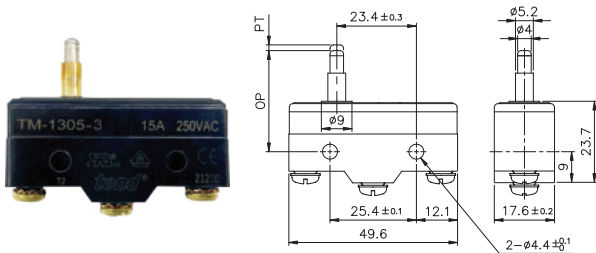
TM 1308-3(20A 250V AC)
TM1308-12

390.-
390.-



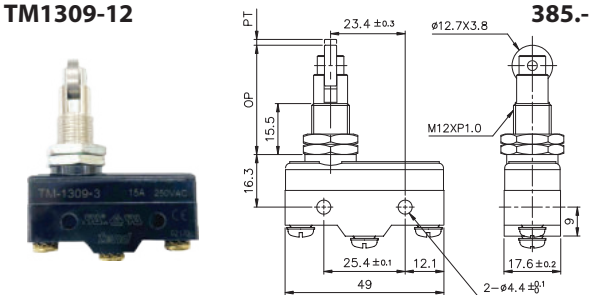
TM 1305-3(20A 250V AC)

305.-



TM 1309-3(20A 250V AC)
TM1309-12

385.-
385.-

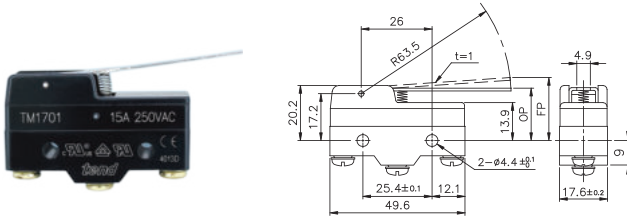
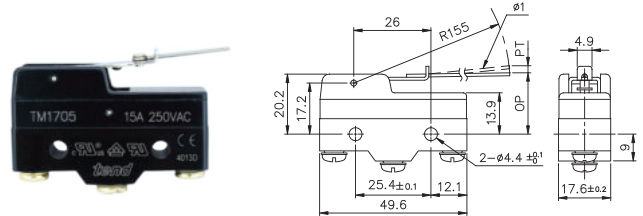
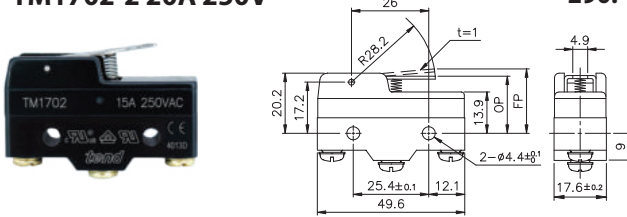
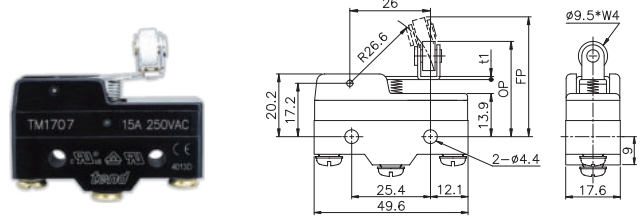
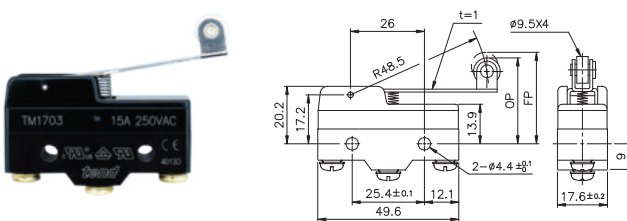
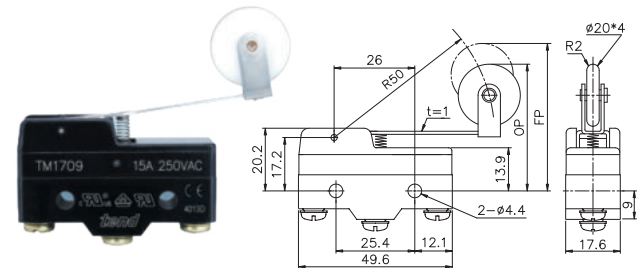
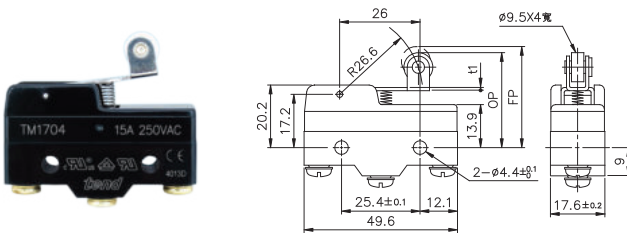
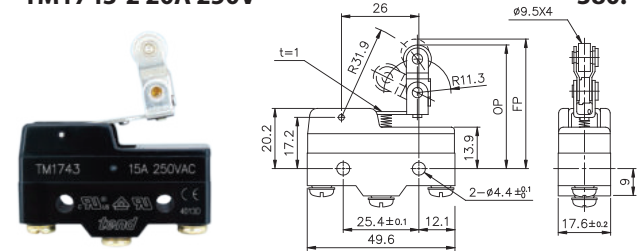


OPERATION CHARACTERISTIC

Type	TM1300-3	TM1301-3	TM1303-3	TM1305-3	TM1306-3	TM1307-3	TM1308-3	TM1309-3
OF max	850 g	450 g	450 g	800 g	800 g	800 g	800 g	800 g
RF min	200 g	50 g	50 g	200 g	200 g	200 g	200 g	200 g
PT max	0.7 mm	4 mm	4 mm	0.7 mm	0.7 mm	0.7 mm	0.7 mm	0.7 mm
OT min	0.13 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm	5.5 mm	3.58 mm	3.58 mm
MD max	0.2 mm	1.3 mm	1.3 mm	0.2 mm	0.2 mm	0.2 mm	0.2 mm	0.2 mm
FP max		20.6 mm	31.8 mm					
OP	15.9 ± 0.4 mm	17.4 ± 0.8 mm	28.6 ± 0.8 mm	28.2 ± 0.5 mm	21.5 ± 0.5 mm	21.8 ± 0.8 mm	33.4 ± 1.2 mm	33.4 ± 1.2 mm

tend MICRO SWITCH

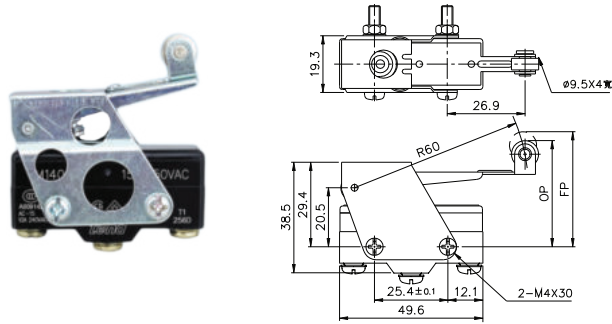
ไมโครสวิตช์

 ISO 9002    
TM1701(15A 250V AC)
TM1701-2 20A 250V
180.-
290.-

TM1705(15A 250V AC)
TM1705-2 20A 250V
250.-
360.-

TM1702(15A 250V AC)
TM1702-2 20A 250V
180.-
290.-

TM1707(15A 250V AC)
300.-

TM1703(15A 250V AC)
TM1703-2 20A 250V
190.-
295.-

TM1709(15A 250V AC)
350.-

TM1704(15A 250V AC)
TM1704-2 20A 250V
190.-
295.-

TM1743(15A 250V AC)
TM1743-2 20A 250V
240.-
380.-


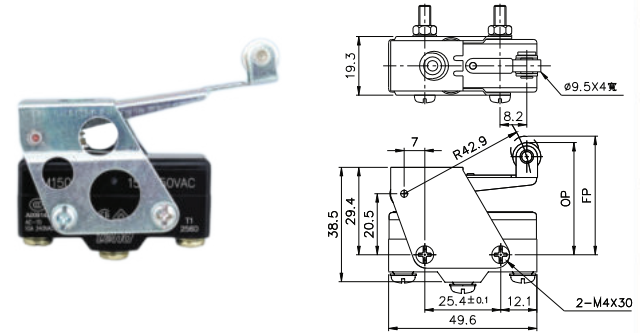
■ OPERATION CHARACTERISTICS

Type	TM1701	TM1702	TM1703	TM1704	TM1705	TM1707	TM1709	TM1743
OF max	70 g	100 g	160 g	160 g	10 g	170 g	100 g	160 g
RF min	14 g	28 g	22 g	42 g	3 g	42 g	21 g	42 g
PT max	10 mm	5 mm	7.1 mm	2.7 mm	20 mm	2.7 mm	7.3 mm	2.7 mm
OT min	5.6 mm	2 mm	4 mm	2.4 mm	5.6 mm	2.4 mm	4 mm	2.4 mm
MD max	1.27 mm	1 mm	1.02 mm	0.5 mm	3 mm	0.5 mm	1.6 mm	0.5 mm
FP max	28.2 mm	24.8 mm	36.5 mm	32.5 mm		33.3mm	47.5 mm	43.6 mm
OP	19 ± 0.8 mm	19 ± 0.8 mm	30.2 ± 0.8 mm	30.2 ± 0.4 mm	19 ± 0.8 mm	31 ± 0.4 mm	41.2 ± 0.8 mm	43.1 ± 0.8 mm

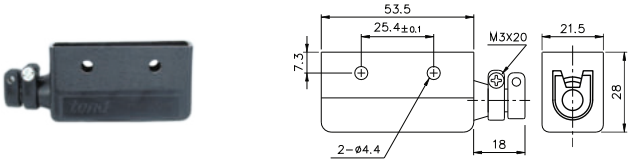
TM1401(15A 250 VAC) 240.-
 TM1401-2 20A 250V 355.-
 TM1401-1(15A 250VAC) ก้านน้ำ 340.-
 TM1401-3(20A 250VAC) ก้านน้ำ 410.-



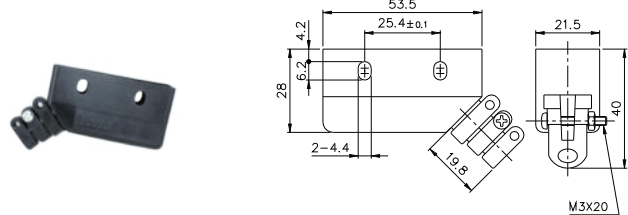
TM1501(15A 250 VAC) 240.-
 TM1501-2 20A 250V 355.-
 TM1501-1(15A 250VAC) ก้านน้ำ 340.-
 TM1501-3(20A 250VAC) ก้านน้ำ 410.-



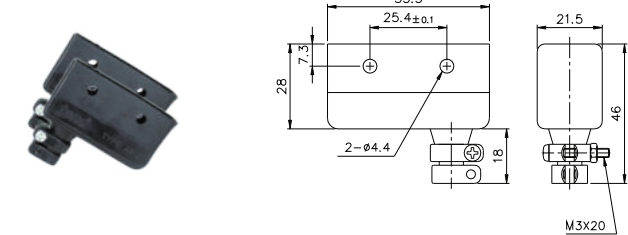
TAP-X 36.-



TAP-Y 36.-



TAP-Z 36.-



■ OPERATION CHARACTERISTICS

Type	TM1401	TM1501
OF max	500 g	600 g
RF min	170 g	300 g
PT max	5 mm	3 mm
OT min	12.7 mm	6 mm
MD max	2.2 mm	2 mm
FP max	44.5 ± 1.6 mm	41 ± 1.6 mm
OP	40.4 ± 1.6 mm	40.4 ± 1.6 mm

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