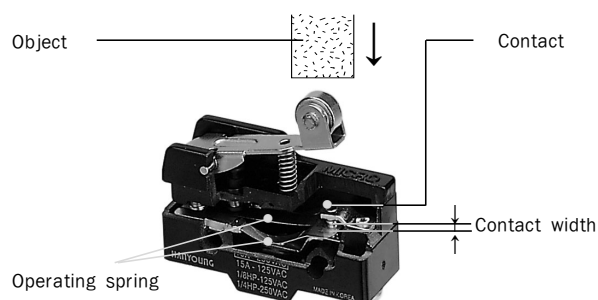


■ Micro Limit / Switch

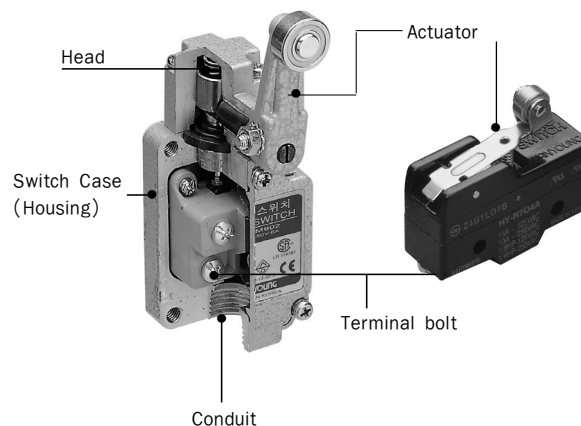
■ General terminology

MICRO SWITCH: Having microscopic contact width and snap action part, switching contact part is in the case and actuator is in the outside.

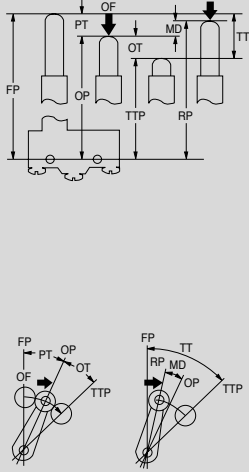
LIMIT SWITCH: To avoid water, oil, dust and external power, micro switch is inserted into metal or plastic case.



■ Structure



■ Operation terminology

Movement definition	Type	Terminology	Abbriviation	Unit	Definition
	Force	Operating Force	OF	$g \cdot kg$ $g \cdot mm$	Necessary force to move actuator from FP to OP
		Return Force	RF	$g \cdot kg$ $g \cdot mm$	Necessary force to move actuator from TTP to RP
		Totaltravel Force	TF	$g \cdot kg$ $g \cdot mm$	Necessary force to move actuator from OP to TTP
	Movement	Pretravel	PT	$mm, ^\circ$	Moving distance or angle of actuator from FP to OP
		Overtravel	OT	$mm, ^\circ$	Moving distance or angle of actuator from OP to TTP
		Movement Differential	MD	$mm, ^\circ$	Moving distance or angle of actuator from OP to RP
		Totaltravel	TT	$mm, ^\circ$	Moving distance or angle of actuator from FP to TTP
	Position	Free Position	FP	$mm, ^\circ$	Initial position of actuator
		Operating Position	OP	$mm, ^\circ$	Actuator position for operation
		Return Position	RP	$mm, ^\circ$	Actuator position for FP
		Totaltravel Position	TTP	$mm, ^\circ$	Maximum actuator position



■ Terminal and contact

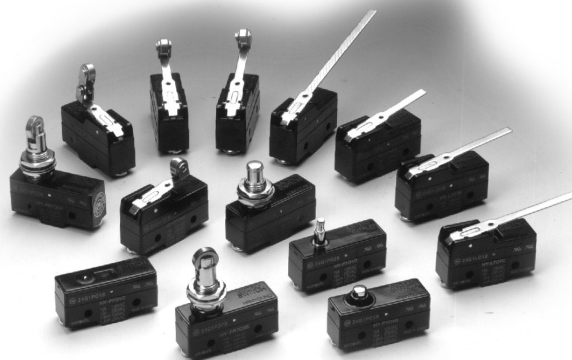
	Contact
COM	Common
N C	Normal close
N O	Normal open

	Contact
Double terminal	
Dual single terminal	

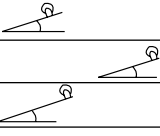
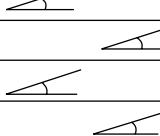
■ Actuator (Limit Switch)

Shape	Type	Standard	Small	N type	ZCN type	Specification
	Roller Lever type	HY-M908 HY-LM908	HY-L808	HY-LS808N	.	Stroke : 45°~90°, Lever : 360°
	Adjustable Roller Lever type	HY-M904 HY-LM904	HY-L804	HY-LS804N	.	Adjustable length of Lever
	Adjustable Rod Lever type	HY-M907 HY-LM907	HY-L807	HY-LS807N	.	Sensitive action, adjustable length of Rod
	Plunger type	.	.	HY-LS803N	ZCN-P501A	Accuracy for hydraulic and air cylinder operation
	Roller Plunger type	HY-M902 HY-LM902	.	HY-LS802N	ZCN-PR508V ZCN-PR508H	Wide operation with Cam, Dog, Cylinder and sub actuator
	Ball Plunger type	HY-M903 HY-LM903	.	.	.	Plunger is consist of power steel with free direction
	Coil Spring type	HY-M909 HY-LM909	HY-L809	.	.	Free direction but low activity
	Hinge Lever type	.	.	.	ZCN-L507A ZCN-L507C	Lever is consist of stainless steel
	Hinge Roller Lever type	.	.	.	ZCN-R504A ZCN-R504C	Suitable for high speed Cam
	Roller Arm type	.	.	HY-LS803RN	.	Variable position of Roller

MICRO SWITCH



■ Suffix Code

Type	Shape	Model	Specification
Long button		HY-P701A (Z4G1P05B)	Manual operation with low speed CAM
Short button		HY-P701B (Z4G1P09B)	Wide diameter of PLUNGER
Pin button		HY-P701C (Z4G1P01B)	Suitable for short straight stroke and stopper required
Push button		HY-P701D (Z4G1P03B)	Power press on center
Short roller lever		HY-R704A (Z4G1L07B)	Suitable for CAM operation
Middle roller lever		HY-R704B	
Long roller lever		HY-R704C (Z4G1L03B)	
Two roller lever		HY-R704-2W	Operation for one side direction
Short lever		HY-L707A	Suitable for low speed CAM
Middle lever		HY-L707B	
Long lever		HY-L707C (Z4G1L01B)	
Special long lever		HY-L707D	
Roller button(Vertical)		HY-PR708A	Selectable roller face
Roller button(Horizontal)		HY-PR708B (Z4G1P07B)	

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MICRO /LIMIT SWITCH



MICRO SWITCH

■ Ratings

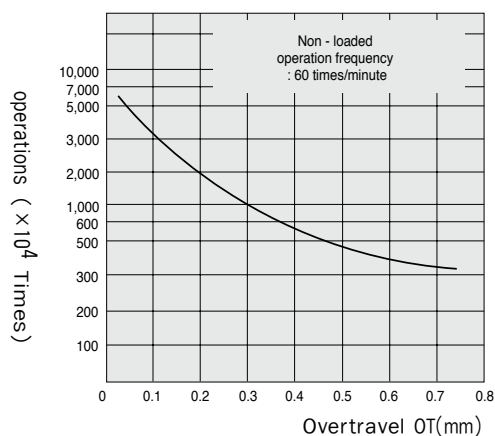
Voltage (V)	Non-Inductive load(A)		Inductive load(A)			
	Resistive load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO
AC 125	15		10		3	1.5
AC 250	10		6		2	1
AC 600	3		2		1.5	0.75
DC 8	15		10		-	
DC 14	15		10		-	
DC 30	6		5		-	
DC 125	0.4		0.05		-	
DC 250	0.2		0.03		-	

■ Specification

Operation speed		0.01~1m/s
Switching frequency	Mechanical	240 times / minute
	Electrical	20 times / minute
Insulation resistance		100MΩ Min. (at DC 500V)
Contact resistance		20MΩ Max. (Initial value), 100MΩ Max. (Test value)
Vibration		10~55Hz, Double amplitude 1.5 mm
Shock	Durability	1,000% Min. (100G Min.)
	Malfunction	300% Min. (30G Min.)
Dielectric strength	Current-carrying	AC 1,000V 1 minute (50~60Hz)
	noncurrent-carrying	AC 2,000V 1 minute (50~60Hz)
Life	Mechanical	1 million operations Min.
	Electrical	500,000 operations Min.
Weight		31.5~59.5g

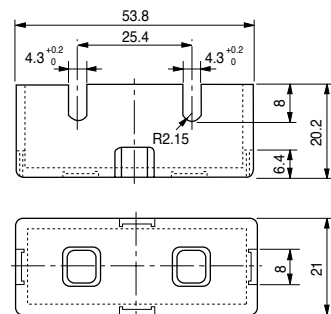
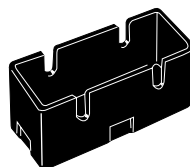
■ Life Curve

● Mechanical life curve

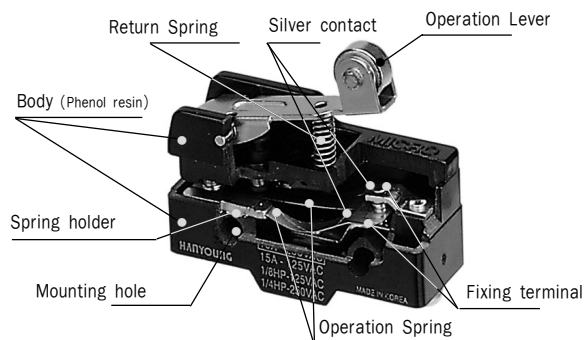


■ Terminal cover

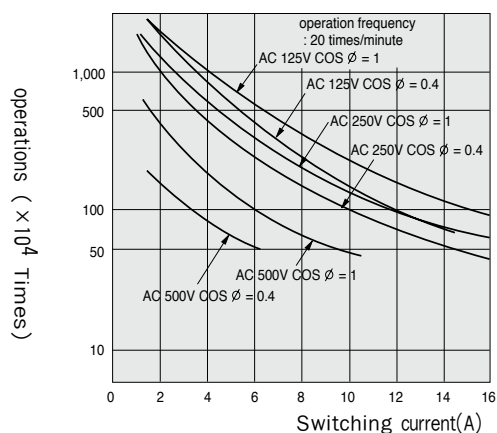
MS-10



■ Construction



● Electrical life curve

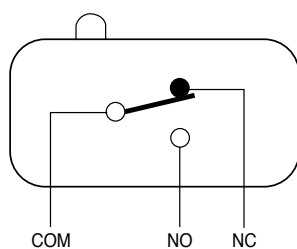


MICRO SWITCH

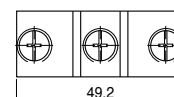
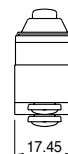
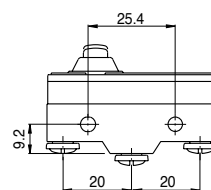


HALPYOUNG

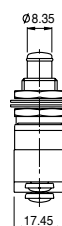
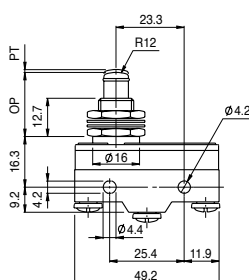
■ Diagram



■ Dimension

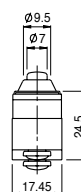
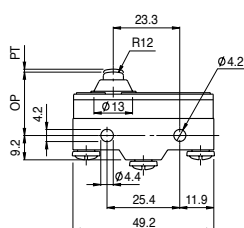


Long button  
HY-P701A (Z4G1P05B)



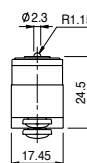
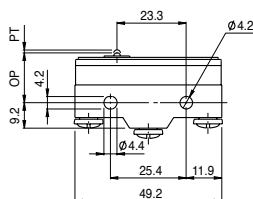
OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	5.2mm
MD	Max.	0.1mm
OP		21.8±0.8mm

Short button  
HY-P701B (Z4G1P09B)



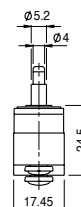
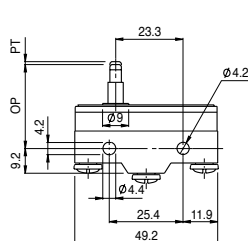
OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	1.3mm
MD	Max.	0.1mm
OP		21.2 ± 0.8 mm

Pin button  
HY-P701C (Z4G1P01B)



OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	0.13mm
MD	Max.	0.1mm
OP		15.9±0.4mm

Push button   
HY-P701D (Z4G1P03B)



OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	1.3mm
MD	Max.	0.1mm
OP		$28.2 \pm 0.6\text{mm}$

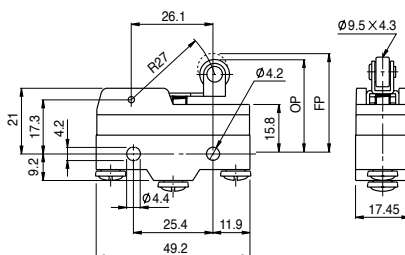
MICRO /LIMIT SWITCH



HANYOUNG

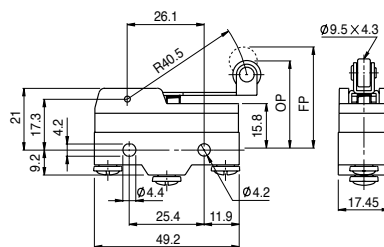
MICRO SWITCH

Short roller lever   
HY-R704A (Z4G1L07B)



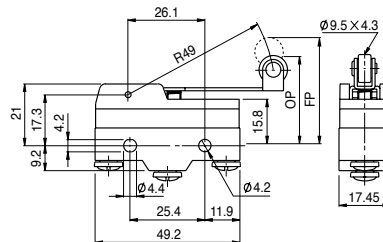
OF	Max.	160g
RF	Min.	40g
PT	Max.	2.7mm
OT	Min.	2.4mm
MD	Max.	0.5mm
FP	Max.	32mm
OP		30.2±0.4mm

Middle roller lever   
HY-R704B



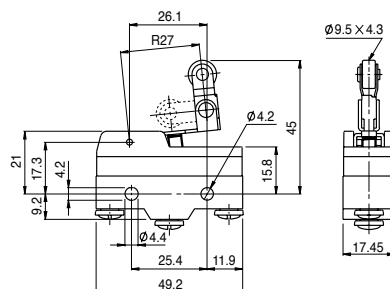
OF	Max.	120g
RF	Min.	56g
PT	Max.	5.5mm
OT	Min.	4mm
MD	Max.	0.7mm
FP	Max.	35mm
OP		30.5±0.4mm

Long roller lever   
HY-R704C (Z4G1L03B)



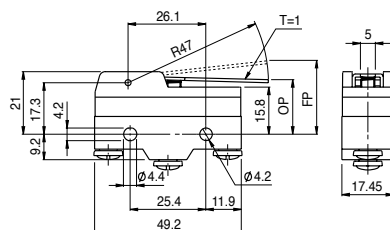
OF	Max.	86g
RF	Min.	22g
PT	Max.	7.1mm
OT	Min.	4mm
MD	Max.	0.9mm
FP	Max.	36mm
OP		30.2±0.8mm

Double roller lever
HY-R704-2W



OF	Max.	160g
RF	Min.	40g
PT	Max.	2.7mm
OT	Min.	2.4mm
MD	Max.	0.5mm
FP	Max.	45mm
OP		43.2±0.4mm

Short lever   
HY-L707A



OF	Max.	95g
RF	Min.	25g
PT	Max.	6mm
OT	Min.	4mm
MD	Max.	2mm
FP	Max.	24.8mm
OP		18.4±0.8mm

MICRO /LIMIT SWITCH

18

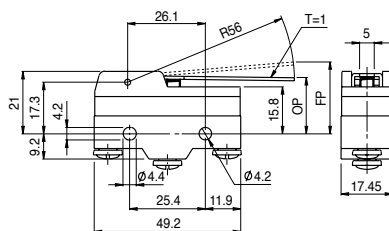
MICRO /LIMIT SWITCH



MICRO SWITCH

Middle lever

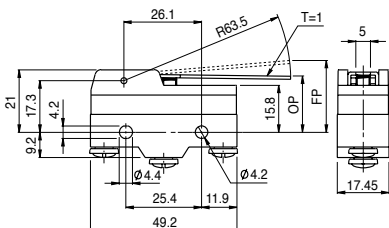
HY-L707B



OF	Max.	90g
RF	Min.	40g
PT	Max.	8mm
OT	Min.	5.6mm
MD	Max.	0.9mm
FP	Max.	24mm
OP		18.8±0.8mm

Long lever

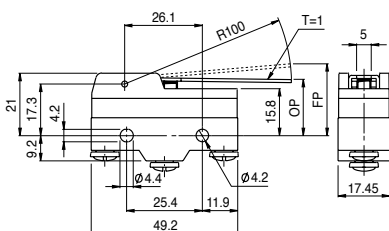
HY-L707C (Z4G1L01B)



OF	Max.	85g
RF	Min.	25g
PT	Max.	10mm
OT	Min.	5.6mm
MD	Max.	0.7mm
FP	Max.	28mm
OP		19.1±0.8mm

Special long lever

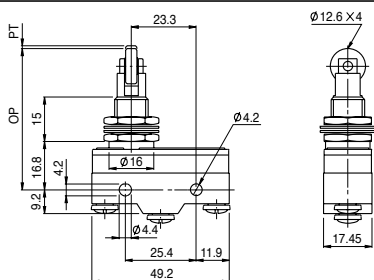
HY-L707D



OF	Max.	80g
RF	Min.	14g
PT	Max.	14mm
OT	Min.	5.6mm
MD	Max.	3.5mm
FP	Max.	33mm
OP		20.9±0.8mm

Roller button(Horizontal)

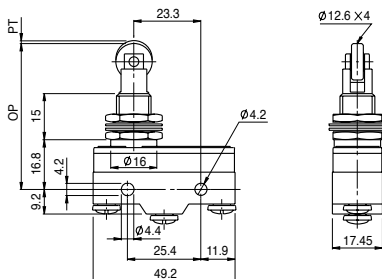
HY-PR708A



OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	3.5mm
MD	Max.	0.1mm
OP		50.6±0.8mm

Roller button(Vertical)

HY-PR708B (Z4G1P07B)

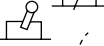
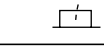


OF	Max.	380g
RF	Min.	114g
PT	Max.	0.4mm
OT	Min.	3.5mm
MD	Max.	0.1mm
OP		50.6±0.8mm

LIMIT SWITCH



Model

Type	Shape	Model	
		Standard	Lamp
Roller plunger		HY-M902	HY-LM902
Top ball plunger		HY-M903	HY-LM903
Variable roller lever		HY-M904	HY-LM904
Variable rod		HY-M907	HY-LM907
Roller lever		HY-M908	HY-LM908
Spring wire		HY-M909	HY-LM909

Ratings

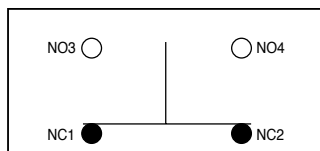
Voltage (V)	Non-Inductive load(A)				Inductive load(A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
AC 125	10	10	3	1.5	10		5	2.5
AC 250	6	6	2	1	10		3	1.5
AC 480	4	4	1.5	0.8	3		1.5	0.8
DC 8	10		6	3	10		6	
DC 14	10		6	3	10		6	
DC 30	6		4	3	6		4	
DC 125	0.8		0.2	0.2	0.8		0.2	
DC 250	0.4		0.1	0.1	0.1		0.1	

Built-in Switch

LS-10



Diagram



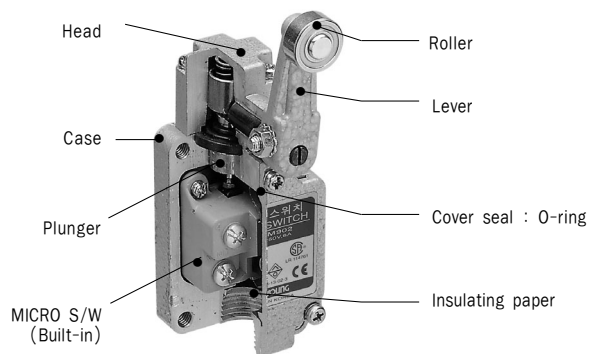
Specification

Operation speed		1mm~1m/s
Switching frequency	Mechanical	120 times/minute
	Electrical	30 times/minute
Insulation resistance		100mΩ Min. (at DC 500V)
Contact resistance		25mΩ Max.
Dielectric strength	Current-carrying	AC 1,000V 1 minute (50~60Hz)
	Non-current carrying	AC 2,000V 1 minute (50~60Hz)
Vibration	Malfunction	10~55Hz, double amplitude except roller lever type
Shock	Durability	1,000m/s² Min.
	Malfunction	300m/s² Min.
Life	Mechanical	5Million times Min.
	Electrical	0.75Million times Min.

Application

- Engineering machine, Assembly line, Conveyor system

Construction

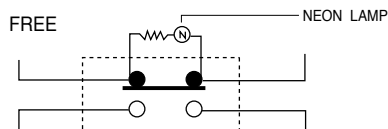
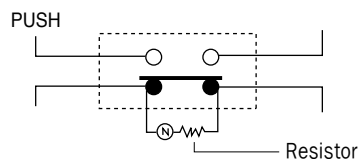


MICRO /LIMIT SWITCH

LIMIT SWITCH



Lamp Type Diagram

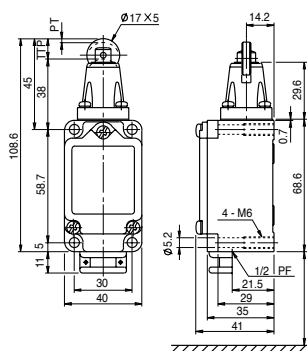


Dimension

Roller plunger

HY-M902

HY-LM902

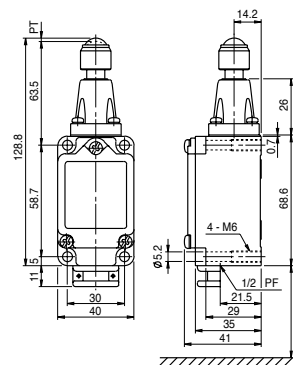


Model	M 902
Operation	LM 902
OF Max.	2,800g
RF Min.	900g
PT Max.	2mm
OT Min.	5.5mm

Top ball plunger

HY-M903

HY-LM903

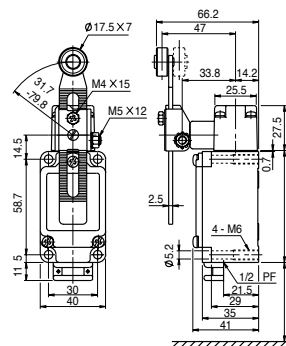


Model	M 903
Operation	LM 903
OF Max.	2,800g
RF Min.	900g
PT Max.	2mm
OT Min.	5.5mm

Variable roller lever

HY-M904

HY-LM904



Model	M 904
Operation	LM 904
OF Max.	1,000g
RF Min.	277g
PT Max.	15°~20°
OT Min.	25°
TF Max.	1,820g

MICRO /LIMIT SWITCH



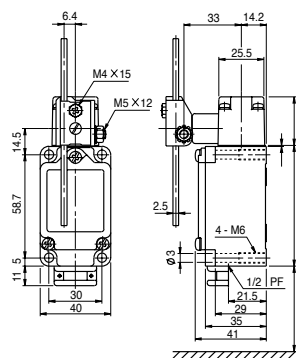
HANYOUNG

LIMIT SWITCH

Variable rod

HY-M907

HY-LM907

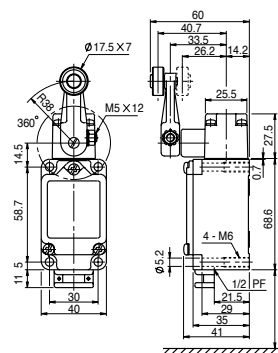


Model	M 907
Operation	LM 907
OF Max.	1,000g
RF Min.	50g
PT Max.	15~20°
OT Min.	25°
TF Max.	200g

Roller lever

HY-M908

HY-LM908

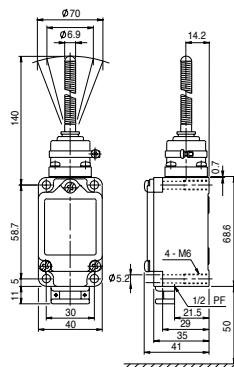


Model	M 908
Operation	LM 908
OF Max.	1,000g
RF Min.	227g
PT Max.	15~20°
OT Min.	25°
TF Max.	1,820g

Spring wire

HY-M909

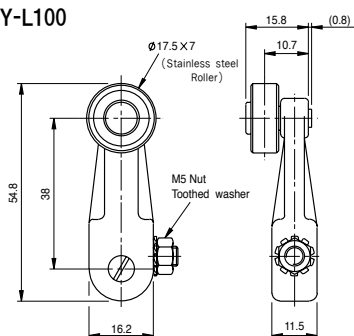
HY-LM909



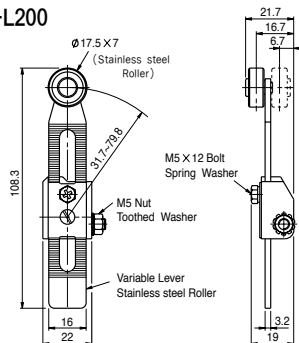
Model	M 909
Operation	LM 909
OF Max.	150g
PT Max..	30mm

Lever Dimension

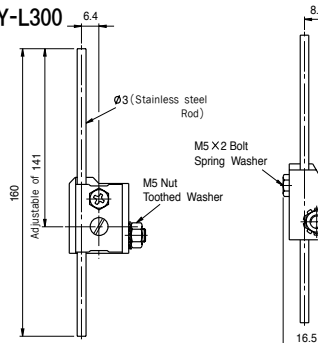
HY-L100



HY-L200



HY-L300



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www.talentkj.com email: talentkj@talentkj.com

N TYPE LIMIT SWITCH

■ Application

- Engineering machine, Assembly line, Conveyor system



■ Specification

Contact	Connection	Double circuit type
Electrical capability	Insulation resistance	100MΩ (at DC 500V)
	Dielectric strength	Between non-continuous terminal : AC 1000V for 1 minute Between terminal and non-current carrying metal parts : AC2000V for 1 minute
	Contact resistance	25MΩ Max.(Initial)
Mechanical capability	Shock	Free position : 10G Min. Operation limit : 30G Max.
	Vibration	10~55Hz double amplitude 1.5mm
Life	Mechanical	1 milion operations min.
	Electrical	100,000 operations min.
Ambient condition	temperature / humidity	-10~+70℃ / 95%RH Max (at 20℃)
	Maximum switching frequency	120 times / minute (Mechanical), 30 times / minute (Electrical)
Weight		Approx. 60g (HY-LS803N)

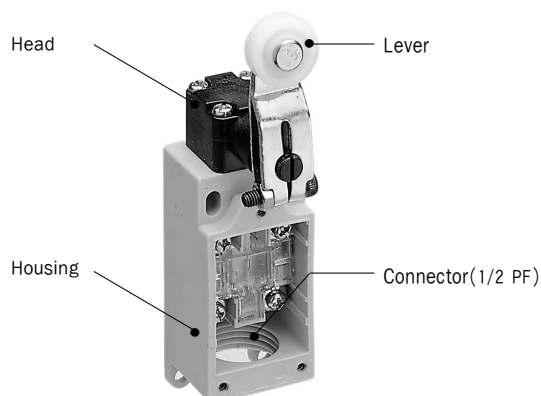
■ Ratings

Voltage (V)	Non-Inductive load(A)				Inductive load(A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
AC 125	6		2		6		3	
AC 250	6		1.5		6		1.5	
DC 8	6		4		6		4	
DC 14	6		4		6		4	
DC 30	4		2.5		4		2.5	
DC 125	0.4		0.1		0.4		0.1	
DC 250	0.2		0.05		0.2		0.05	

Model

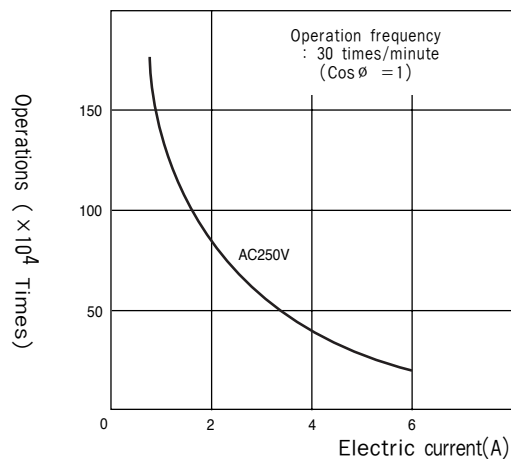
Type	Shape	Model
Roller plunger		HY LS802N
Push plunger		HY LS803N
Roller arm		HY LS803RN
Variable roller lever		HY LS804N
Variable rod		HY LS807N
Roller lever		HY LS808N

Construction



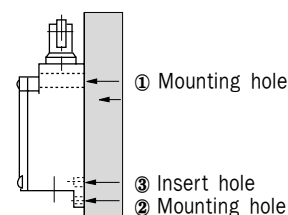
Electrical life cycle

(Cos ϕ = 1)

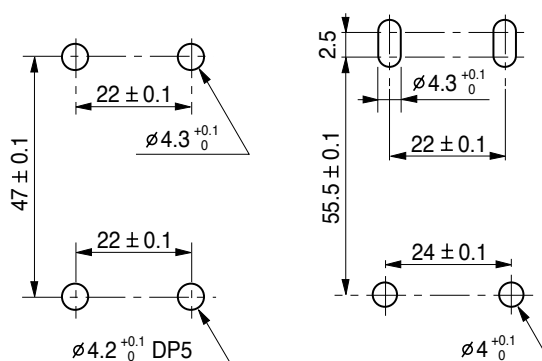


Mounting & cutout hole

- Apply switch with washer in 5~7kg-cm torque
- Insert hole ϕ : $4_{-0}^{+0.1}$, 4.8 Max.
(①, ② or ①, ③)



- Mounting and insert hole cutout



MICRO /LIMIT SWITCH

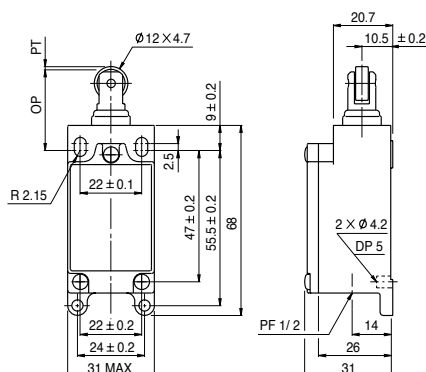
N TYPE LIMIT SWITCH



Dimension

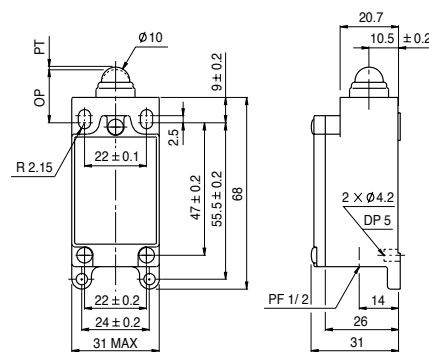
Roller plunger

HY-LS802N



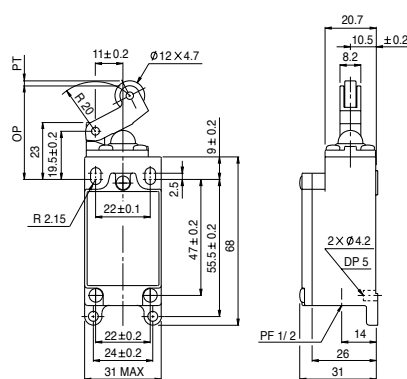
Push plunger

HY-LS803N



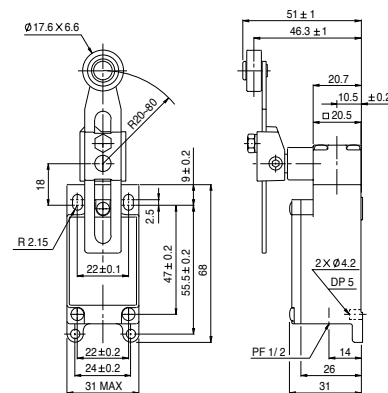
Roller arm

HY-LS803RN



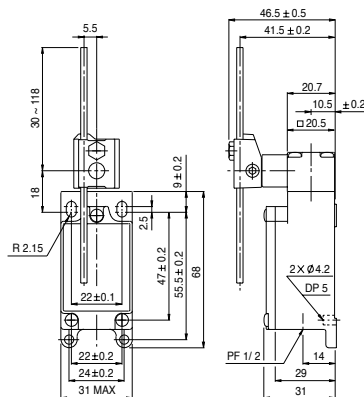
Variable roller lever

HY-LS804N



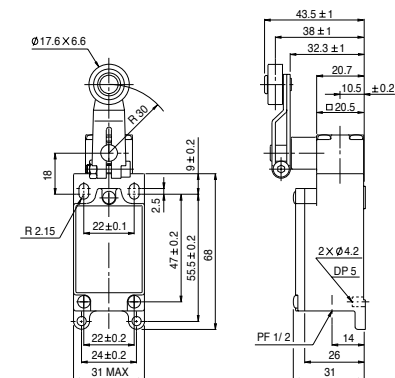
Variable rod

HY-LS807N



Roller lever

HY-LS808N

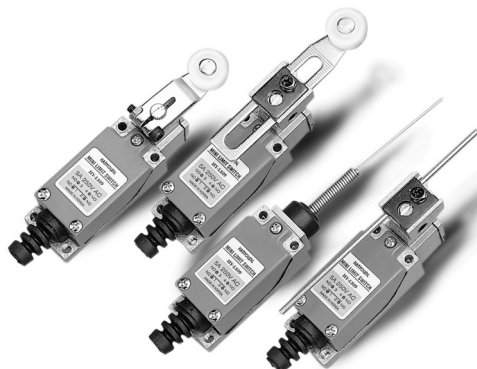


Model	HY-LS802N	HY-LS803N	HY-LS803RN	HY-LS804N	HY-LS807N	HY-LS808N
Operation						
OF Max.	650g	650g	400g	430g	430g	500g
RF Min.	150g	150g	80g	43g	43g	50g
PT Max.	2mm	2mm	4mm	18° ~ 27°	18° ~ 27°	18° ~ 27°
OT Min.	4mm	4mm	5mm	30°	30°	30°
MD Max.	0.8mm	0.8mm	1.5mm	14°	14°	14°
OP	28.2 $\pm$ 0.8mm	18 $\pm$ 0.5mm	37 $\pm$ 0.8mm	-	-	-

MINI LIMIT SWITCH

■ Application

- Engineering machine, Assembly line, Conveyor system



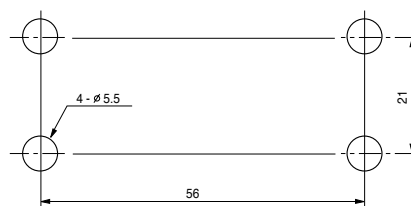
■ Specification

Contact	Connection	Double circuit type
Electrical capability	Insulation resistance	100MΩ (at DC 500V)
	Dielectric strength	Between non-continuous terminal : AC 1,500V for 1 minute Between terminal and non-current carrying metal parts : AC2000V for 1 minute
Mechanical capability	Shock	Free position : 100% (10G)Min. Operation limit : 300% (30G)Min.
	Vibration	10~55Hz double amplitude 1.5mm
Life	Mechanical	1 milion operations Min.
	Electrical	0.1 milion operations Min.
Ambient condition	Temperature / humidity	-10~+70℃ / 95%RH Max (at 20℃)
	Maximum switching frequency	120 times / minute (Mechanical), 30 times / minute(Electrical)

■ Ratings

Voltage \ Load	Resistive load ($\cos \theta \div 1$)	Inductive load(A) ($\cos \theta \div 0.4$)
AC 125V	5A	3A
AC 250V	5A	2A
DC 125V	0.4A	0.1A

■ Panel cutout



■ Model

Type	Shape	Model
Variable roller lever		HY-L804
Variable rod		HY-L807
Roller lever		HY-L808
Spring		HY-L809

■ Built in Switch

HY-800



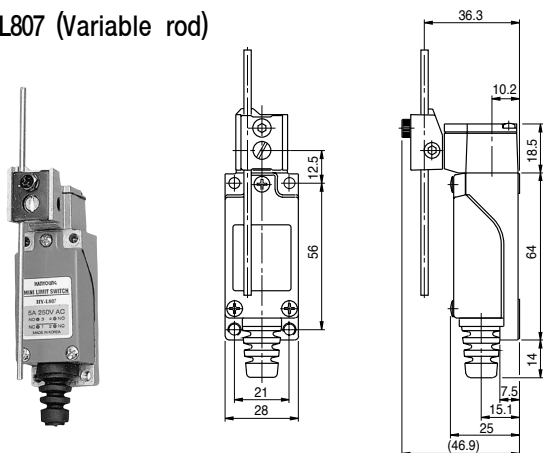
DIAGRAM



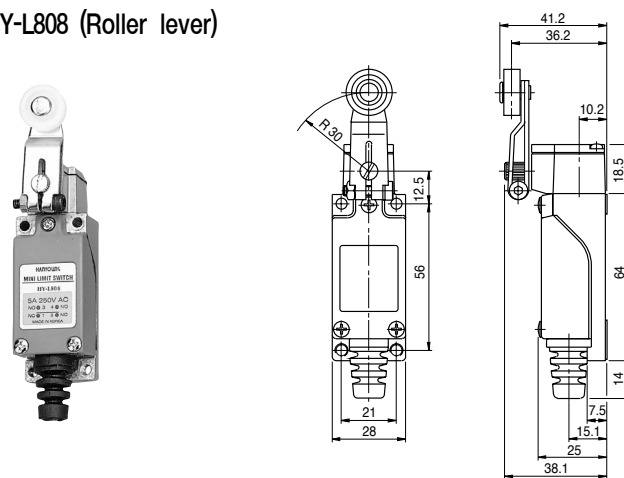
中山市泰伦特电子科技有限公司
 电话 (TEL) : 0760-6116619 6116629 6116639 8732779 传真 (FAX) : 0760- 8306579
 www.talentkj.com email: talentkj@talentkj.com

Dimension

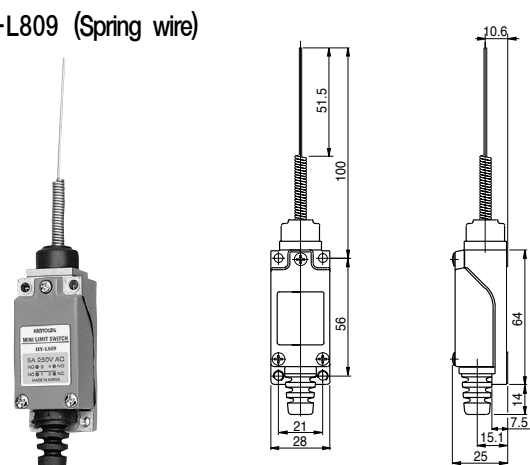
HY-L807 (Variable rod)



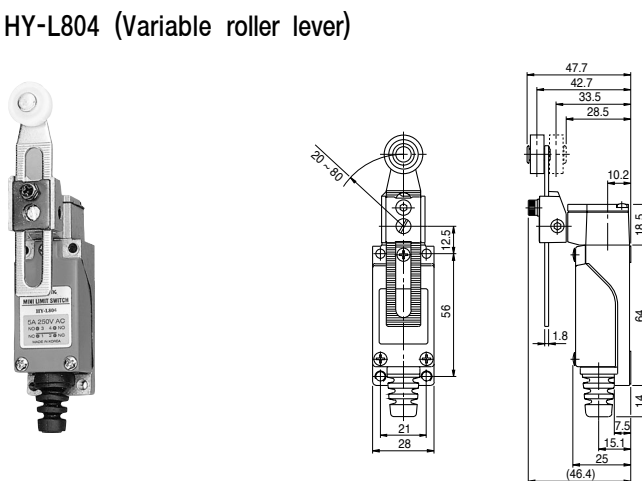
HY-L808 (Roller lever)



HY-L809 (Spring wire)



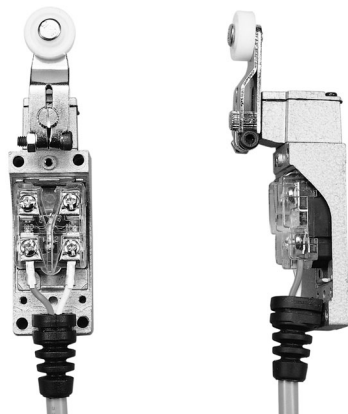
HY-L804 (Variable roller lever)



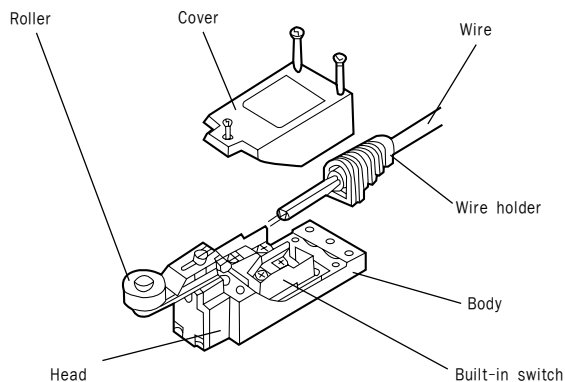
Model	HY-L804	HY-L807	HY-L808	HY-L809
Operation				
OF Max.	800g	800g	600g	90g
RF Min.	21g	12g	50g	-
PT Max.	20mm	20mm	20°	30mm
MD Max.	10mm	10mm	10°	-
OT Min.	70mm	70mm	70°	20mm
TT Min.			90°	50mm

Construction

● Wiring

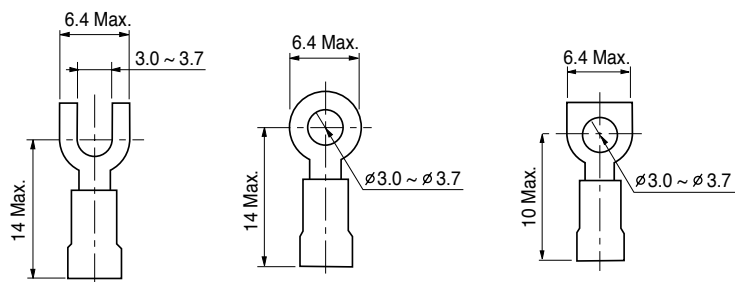


● Assembly

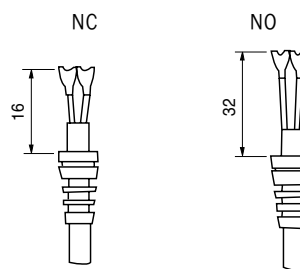


Crimp type terminal

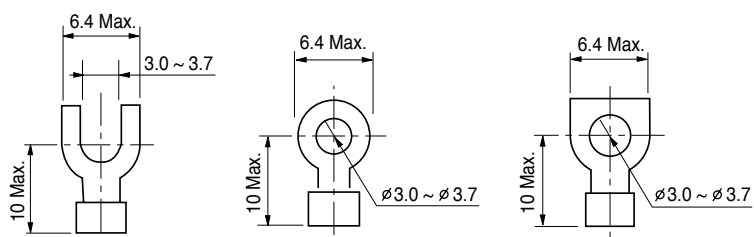
● Insulating terminal



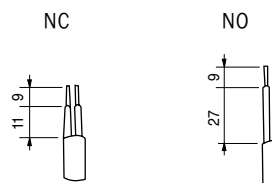
● Wire length with crimp terminal



● Non-Insulating terminal



● Wire length without crimp terminal



ZCN TYPE LIMIT SWITCH



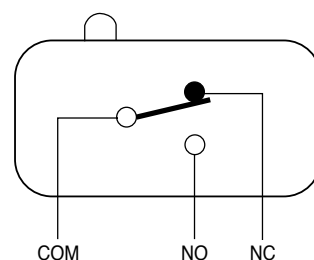
Specification

Electrical capability	Insulation resistance	100M Ω (at DC 500V)
	Dielectric strength	Between non-continuous terminal/AC 1,000V for 1 minute
		Between terminal and non-current carrying metal parts : AC 2,000V for 1 minute
	Contact resistance	20M Ω Max. (Initial), 100M Ω Max. (Test)
Operation speed		0.05mm $\sim$ 0.5mm/s
Mechanical capability	Shock	Free position : 1,000m/s ² Min. Operation limit : 300m/s ² Min.
	Vibration	10 $\sim$ 55Hz double amplitude 1.5mm
Life	Mechanical	1 million operations Min. (Switching frequency 60 times/minute)
	Electrical	0.5 million operations Min. (Switching frequency 20 times/minute)
Ambient condition	Temperature/humidity	-10 $\sim$ +80 $^{\circ}$ C /25 $\sim$ 95% RH
	Maximum switching frequency	Mechanical : 120 times/minute, Electrical : 20 times/minute
Weight		90g (ZCN - PR508)

Ratingsw

Voltage (V)	Non-Inductive load(A)		Inductive load(A)			
	Resistive load		Inductive load		Motor load	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
AC 125	15		10		3	1.5
AC 250	10		6		2	1
AC 600	3		2		1.5	0.75
DC 8	15		10		-	-
DC 14	15		10		-	-
DC 30	6		5		-	-
DC 125	0.4		0.05		-	-
DC 250	0.2		0.03		-	-

Diagram

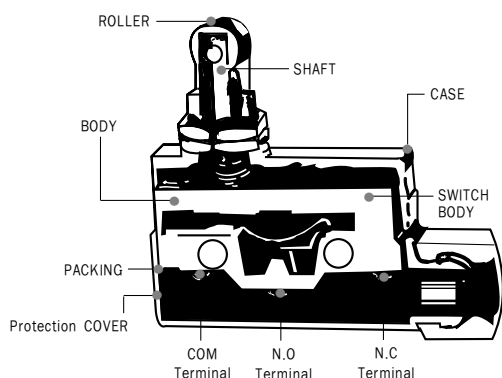


MICRO /LIMIT SWITCH

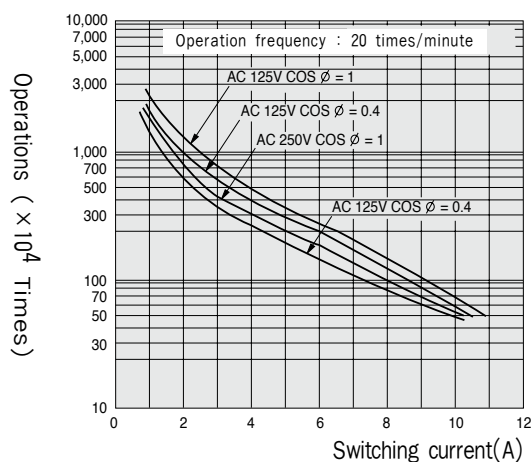
ZCN TYPE LIMIT SWITCH



Construction

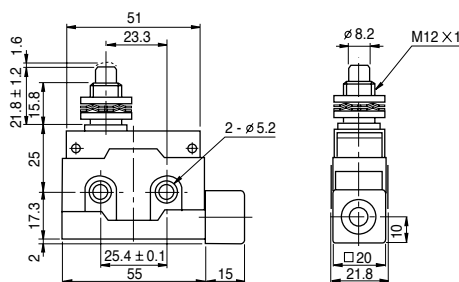


Electrical life cycle



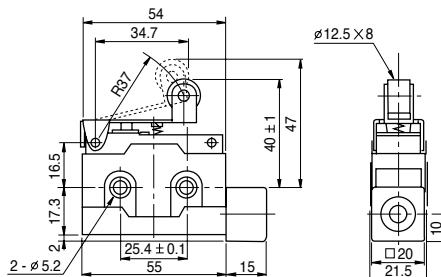
Dimension

Long button
ZCN-P5010



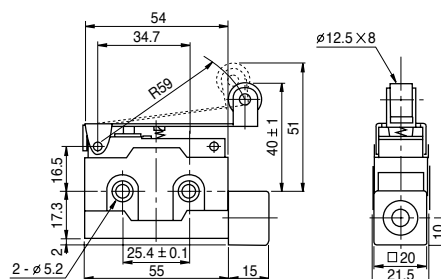
OF Max.	600g
RF Min.	100g
PT Max.	1.6mm
OT Min.	5mm
MD Max.	0.2mm
OP	21.8mm

Short roller lever
ZCN-R504A



OF Max.	600g
RF Min.	80g
OT Min.	2mm
MD Max.	1.5mm
OP	40mm
FP Max.	47mm

Long roller lever
ZCN-R504C



OF Max.	280g
RF Min.	60g
OT Min.	5mm
MD Max.	3mm
OP	40mm
FP Max.	51mm

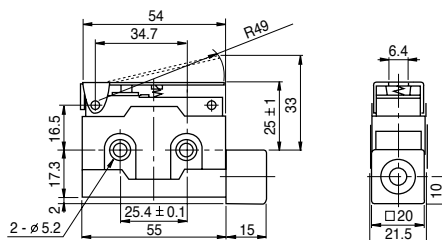
中山市泰伦特电子科技有限公司
电话 (TEL) : 0760-6116619 6116629 6116639 8732779 传真 (FAX) : 0760- 8306579
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MICRO /LIMIT SWITCH



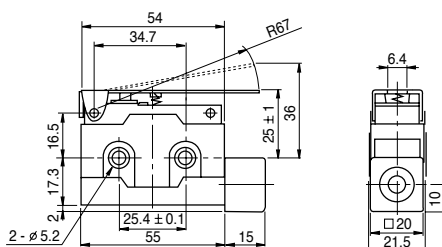
ZCN TYPE LIMIT SWITCH

Short lever
ZCN-L507A



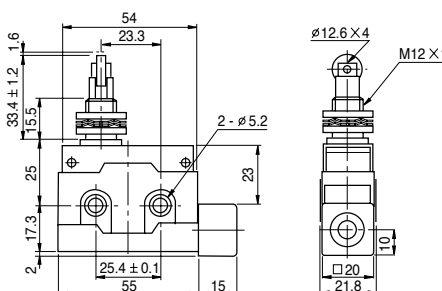
OF Max.	400g
RF Min.	80g
OT Min.	2.5mm
MD Max.	1mm
OP	25mm
FP Max.	33mm

Long lever
ZCN-L507C



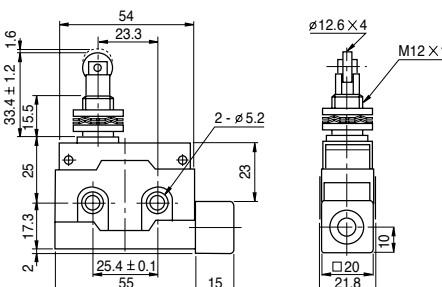
OF Max.	280g
RF Min.	60g
OT Min.	4mm
MD Max.	1.4mm
OP	25mm
FP Max.	36mm

Roller push button(Horizontal)
ZCN-PR508V



OF Max.	600g
RF Min.	100g
PT Max.	1.6mm
OT Min.	5mm
MD Max.	0.2mm
OP	33.4mm

Roller push button(Vertical)
ZCN-PR508H



OF Max.	600g
RF Min.	100g
PT Max.	1.6mm
OT Min.	5mm
MD Max.	0.2mm
OP	33.4mm