

Structure

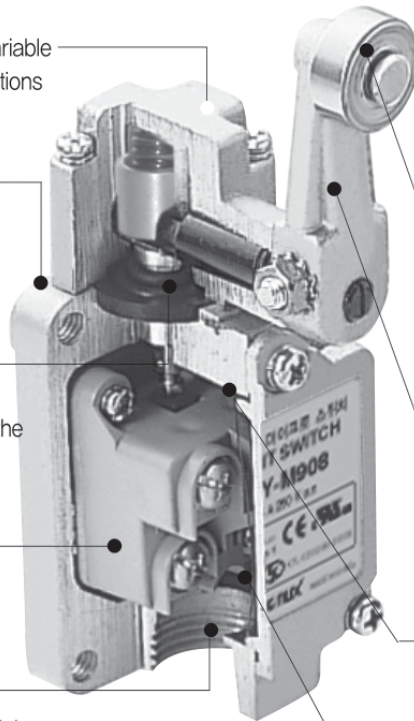
- **Head** : Al die casting roller lever type, variable roller lever type : Attach in any of 4 directions by unloosening 4 screws.

- **Case** : Al die casting, high mechanical durability and has a heat resistance, oil-proof and dust protective structure.

- **Plunger** : Accurate manufacturing which provides excellent reciprocating motion. It makes the operation of built-in switch very smooth.

- **MICRO S/W** : long mechanical life expectancy

- **Wire opening** : Connector screw is PF 1/2 common parallel screw. When using it with our company connector (M1 and M2) then it will be sealed more tightly.



- **Roller** : Excellent hardness and abrasion resistance

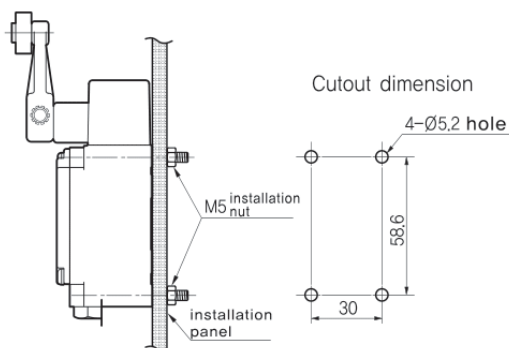
- **Lever** : Al die-casting (M908) variable roller lever type, variable rod type and roller lever type can set the lever position within any position (360 degree)

- **Cover Seal** : O ring. It tightens the cover properly which helps it to seal the area

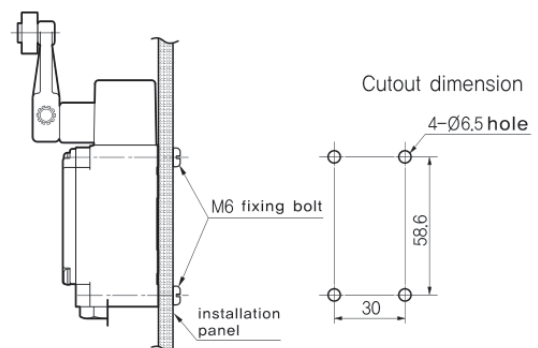
- **Insulating paper** : Excellent insulation

Installation method

Front installation



Back installation



Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder

Control box
Cable connector

Discontinued Products

HY-M900 / HY-LM900 series

Limit switch

- Solid die casting case and built in the 2 circuits double micro switch
- High mechanical intensity with the heat resistance, oil proof and dust protection structure
- Various actuators (8 types) provide wide application
- IP67 protective structure
(when using the company product HYC-M1 in wire opening)
- Check the operation state on the outside by attaching the operation indicator.



●● Suffix code

Model	Code	Description
HY-M90	<input type="checkbox"/>	Limit switch (No operation indicator)
HY-LM90	<input type="checkbox"/>	Limit switch (Operation indicator attachment type)
Actuator (operation part)	2	Roller Plunger Type
	3	Ball Plunger Type
	4	Roller Adjustable Lever Type
	7	Adjustable Rod Wire Type
	8	Roller Lever Type
	8L	Fork Roller Lever
	8R	Ø50 Roller Lever Type
	9	Coil Spring Type
Operation indicator classification (HY-LM90□□)		No operation indicator
	A	a.c indicator attachment type
	D	d.c indicator attachment type

●● Operation indicator attachment type classification

- M900 series limit switch is generally composed of the product with operation indicator and without operation indicator. Also divided into the a.c type and d.c type operation indicator.
- It can be used as an operation indicator just by changing the cover of limit switch.
It does not need the separate connection and it selects ON/OFF by rotating the holder 180 degree.

Voltage	a.c operation indicator (250 V a.c)	d.c operation indicator (24 V d.c)
Model	HY-LM90□A (a.c)	HY-LM90□D (d.c)
Indicator type	Neon lamp	L.E.D
Leakage current	approx 1.2 mA (250 V a.c)	approx 1.0 mA (24 V d.c)

Control
switch
Combination
display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder

Control box
Cable connector

Discontinued
Products

●● Ratings

Rated voltage		Rated electro current (A)			
		Resistive load	Inductive load	electric motor load	
				N.C	N.O
a.c	125 V	15	10	3	1.5
	250 V	10	6	2	1
	480 V	3	2	1.5	0.75
d.c	8 V	15	10	–	–
	14 V	15	10	–	–
	30 V	6	5	–	–
	125 V	0.4	0.05	–	–
	250 V	0.2	0.03	–	–

※ In case of electric magnetic coil and incandescent lamp load then it is same as the electric motor load.

●● Specification

Contact structure	M4 screw tightening terminal, 2 circuits double type (1a1b)	
Contact material	AgNi	
Protective structure	IP67 (Only when using our company product HYC-M2 in the wire opening)	
Operation indicator	a.c : Neon lamp, d.c : LED (only with the HY-LM series)	
Rated current(Ie)	6 A 250 V a.c (AC-15, DC-13)	
Dielectric strength	2,000 V a.c 50/60 Hz for 1 min (between the terminal and non-recharging metal part)	
Insulation resistance	Min 100 M Ω (500 V d.c insulated ohmmeter)	
Contact resistance	Max 50 M Ω (default value)	
Rated voltage(Ue)	250 V a.c, 30 V d.c	
Actuator intensity	5 times larger than O.F (force required to operate) 1min to the, operating direction	
Vibration	Double amplitude 1.5mm, frequency 10 ~ 55 Hz, continuously 2 hour	
Shock	1,000 $\%$ (durability), 300 $\%$ (malfunction)	
Allowable operation speed	0.1 ~ 1 $\%$ (without damaging the actuator)	
Life expectancy	Mechanical	Min 1million times (open/close frequency 120 times/min)
	Electrical	Min 300 thousand times (open/close frequency 20 times/min)
Ambient temperature	-10 ~ 70 $^{\circ}$ C	
Ambient humidity	45 ~ 95 % R.H.	
Weight	Approx 350 g (included the box with HY-M904)	



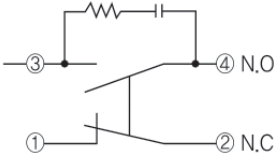
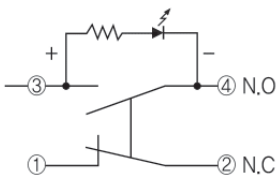
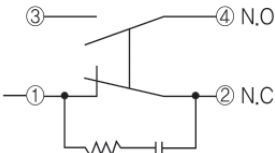
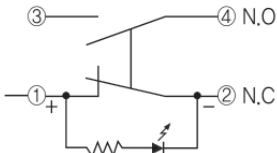
● Built in type micro switch

Appearance (LS-10)	Connection diagram
	

Control switch
Combination display light

Power switch
Main switch
Cam switch

● Cover for operation indicator and internal connection diagram

a.c	d.c
	
<p>L.ON when Normal close (default)</p> 	<p>L.ON when Normal close (default)</p> 
<p>L.ON when Push</p> 	<p>L.ON when Push</p> 

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light


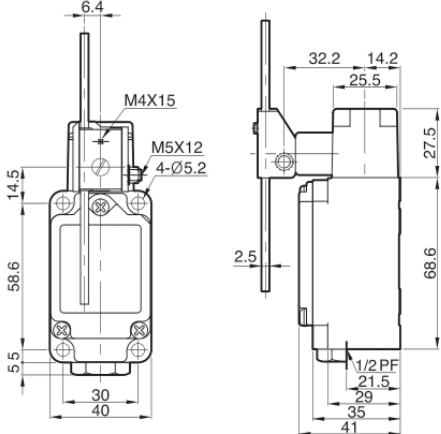
Buzzer
Terminal block
Fuse holder

Control box
Cable connector

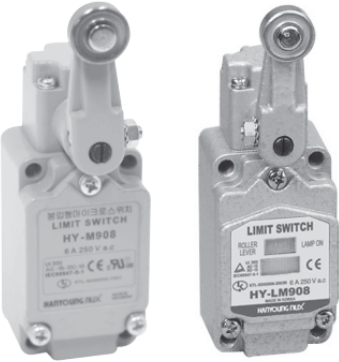
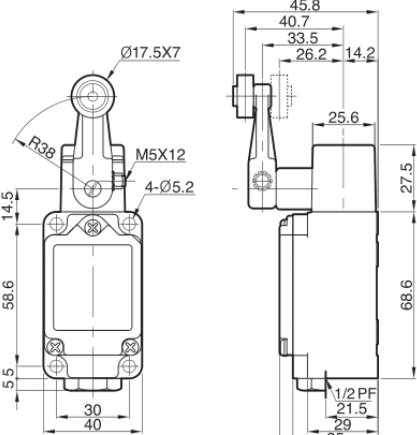
Discontinued
Products

HY-M900/HY-LM900 series


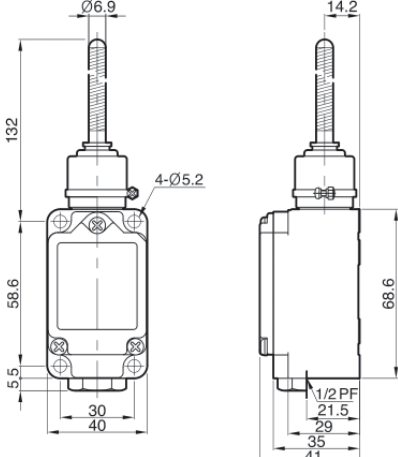
■ Rod Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="300 781 400 810">HY-M907</p> <p data-bbox="488 781 604 810">HY-LM907</p>		<p>O.F max : 1.5 N (153 gf)</p> <p>R.F min: 0.25 N (25 gf)</p> <p>P.T : 15° ±5°</p> <p>M.D max : 12°</p> <p>T.T : 40°</p>

■ Roller Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="300 1384 400 1413">HY-M908</p> <p data-bbox="488 1384 604 1413">HY-LM908</p>		<p>O.F max : 14 N (1428 gf)</p> <p>R.F min: 2.1 N (214 gf)</p> <p>P.T : 15° ±5°</p> <p>M.D max : 12°</p> <p>T.T : 40°</p>

■ Coil Spring

Appearance	Dimension	Operation characteristic
 <p data-bbox="300 1987 400 2015">HY-M909</p> <p data-bbox="488 1987 604 2015">HY-LM909</p>		<p>O.F max : 1.5 N (153 gf)</p> <p>P.T : 20.0 ±10.0 mm</p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder

Control box
Cable connector

Discontinued Products

HY-L800 series

Mini limit switch

- Less installation space due to the compact size
- Zinc die-casting body and plastic cover structure provide electrical safeties
- 4 types of actuators provide wide usages
- Able to install at the front side and back side
- Simple connecting because when open the cover, the terminal part is exposed to the front side.
- Applied to the machine tools, transportation machine, assembling line and various industrial machines



●● Suffix code


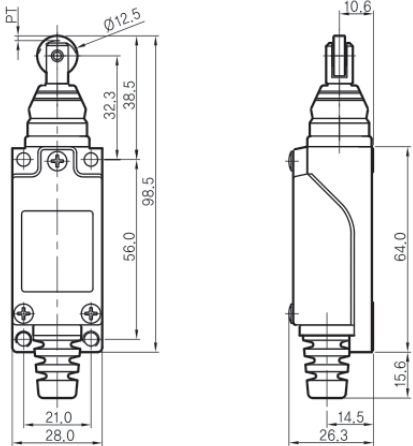
Model	Code	Description
HY-L80	<input type="checkbox"/>	Compact limit switch (HY-L800 series)
Actuator (operation part)	2	Roller Plunger type
	2C	Cross Roller Plunger type
	3	Top Plunger type
	4	Roller Adjustable Lever type
	7	Adjustable Rod Lever type
	8	Roller Lever type
	9	Coil Spring type

●● Specification

Contact structure	M3 screw tightening terminal, 2 circuits double type (1a1b)	
Contact material	AgNi	
Protective structure	IP 54	
Rated current(Ie)	6 A 250 V a.c (AC-12, AC-13)	
Dielectric strength	2,000 V a.c 50/60 Hz for 1 min (between the terminal and non-recharging metal part)	
Insulation resistance	Min 100 M Ω (500 V d.c insulated ohmmeter)	
Contact resistance	Max 20 M Ω (default value)	
Rated voltage(Ue)	250 V a.c	
Case material	Zinc die-casting and plastic body and plastic cover	
Vibration	Double amplitude 1.5 mm, frequency 10 ~ 55 Hz, continuously 2 hour	
Shock	300 % (durability), 100 % (malfunction)	
Max opening/closing frequency	Max 120 times / min	
Life expectancy	Mechanical	Min 1 million times (less than open / close frequency 120 times/min)
	Electrical	Min 100 thousand times (less than open / close frequency 30 times/min)
Ambient temperature	-10 ~ 70 °C	
Ambient humidity	45 ~ 95 % R.H.	
Weight	Approx 157g (HY-LS804 standard)	

Dimension (unit : mm)

Roller Plunger type


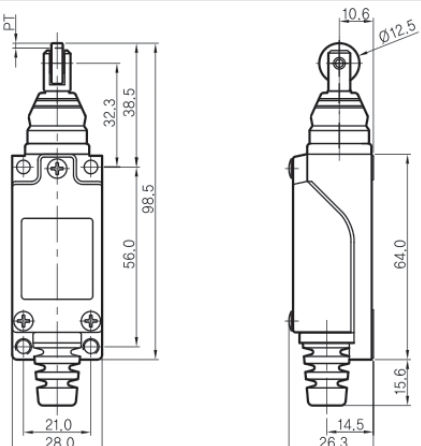
Appearance	Dimension	Operation characteristic
 <p>HY-L802</p>		<p>O.F max : 8.83 N (900 gf) R.F min : 1.47 N (150 gf) P.T max : 1.5 mm O.T min : 2.5 mm M.D max : 0.8 mm TTP : 3.5 mm</p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Cross Roller Plunger type


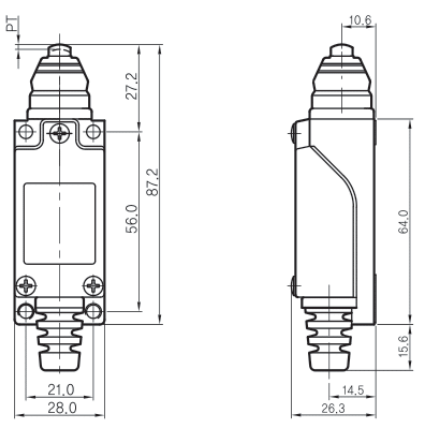
Appearance	Dimension	Operation characteristic
 <p>HY-L802C</p>		<p>O.F max : 8.83 N (900 gf) R.F min : 1.47 N (150 gf) P.T max : 1.5 mm O.T min : 2.5 mm M.D max : 0.8 mm TTP : 3.5 mm</p>

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder


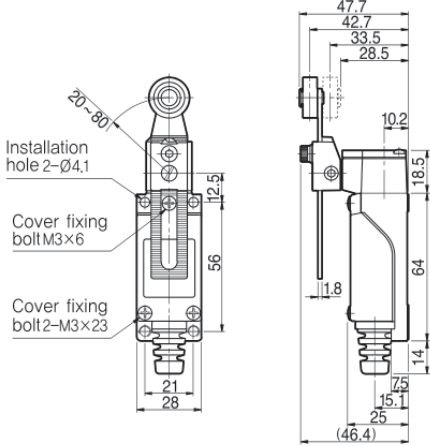
Top Plunger type

Appearance	Dimension	Operation characteristic
 <p>HY-L803</p>		<p>O.F max : 8.83 N (900 gf) R.F min : 1.47 N (150 gf) P.T max : 1.5 mm O.T min : 2.1 mm M.D max : 0.8 mm TTP : 3.0 mm</p>


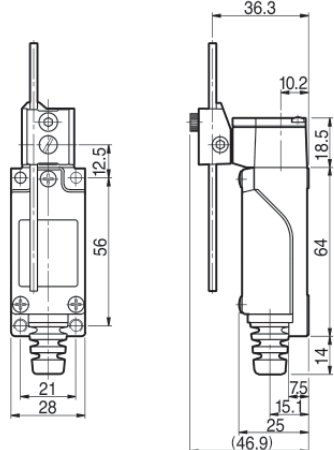
Control box
Cable connector

Discontinued Products


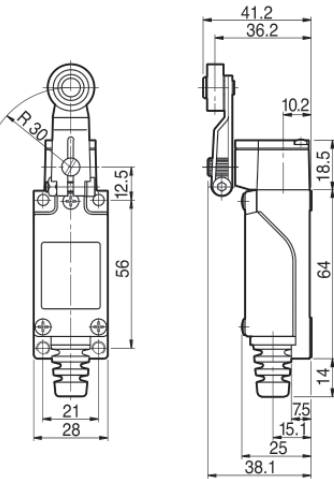
■ Roller Adjustable Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="287 797 391 825">HY-L804</p>		<p data-bbox="1125 491 1364 698"> O.F max : 7.84 N (800 gf) R.F min : 0.2 N (21 gf) P.T max : 20 mm O.T min : 70° M.D max : 10 mm </p>

■ Adjustable Rod Lever


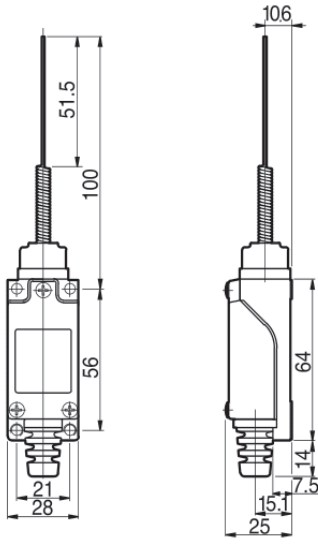
Appearance	Dimension	Operation characteristic
 <p data-bbox="287 1386 391 1413">HY-L807</p>		<p data-bbox="1125 1081 1364 1288"> O.F max : 7.84 N (800 gf) R.F min : 0.1 N (21 gf) P.T max : 20 mm O.T min : 70° M.D max : 10 mm </p>

■ Roller Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="287 2009 391 2042">HY-L808</p>		<p data-bbox="1125 1670 1364 1911"> O.F max : 5.88 N (400 gf) R.F min : 0.5 N (50 gf) P.T max : 20° O.T min : 70° M.D max : 10° T.T min : 90° </p>

HY-L800 series

■ Coil spring type


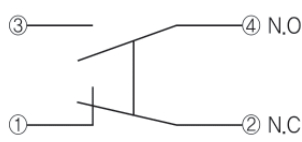
Appearance	Dimension	Operation characteristic
 <p data-bbox="327 934 438 967">HY-L809</p>		<p data-bbox="1165 578 1404 819"> O.F max : 0.88 N (90 gf) R.F min : - P.T max : 30 mm O.T min : 20 ° M.D max : - T.T min : 30 mm </p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

●● Built in switch and connection diagram

Appearance (HY-800)	Connection diagram
	

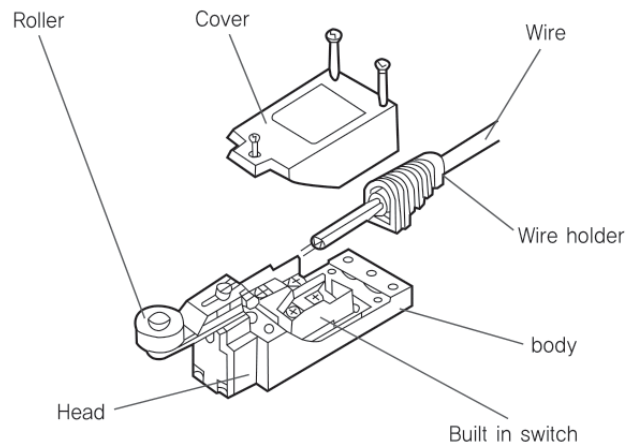
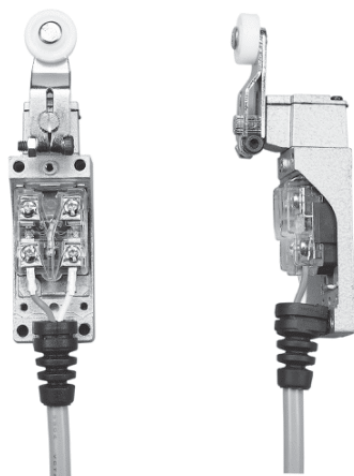
Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

●● Structure and name of each part

■ Image (After completed the connection)

■ Name of each part (structure)



Buzzer
Terminal block
Fuse holder

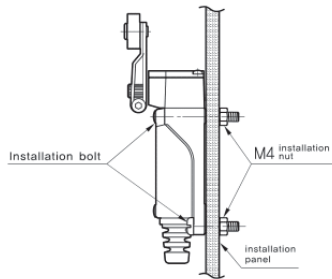
Control box
Cable connector

Discontinued Products

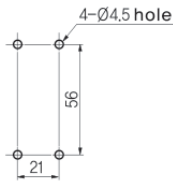
●● Installation method

※Front installation : Use M4 bolt, Back installation : Use M5 bolt.

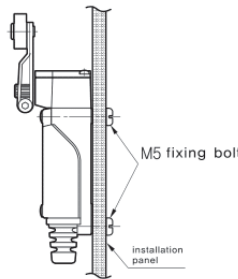
■ Front installation



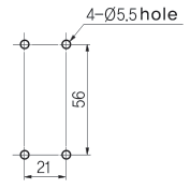
Cutout dimension



■ Back installation

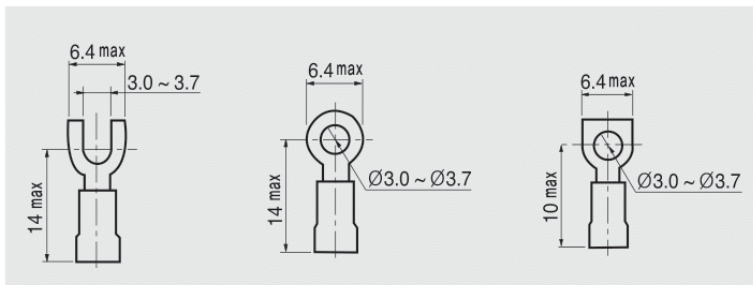


Cutout dimension

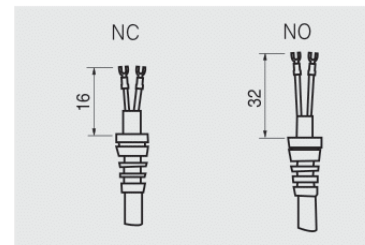


●● Applying pressure terminal

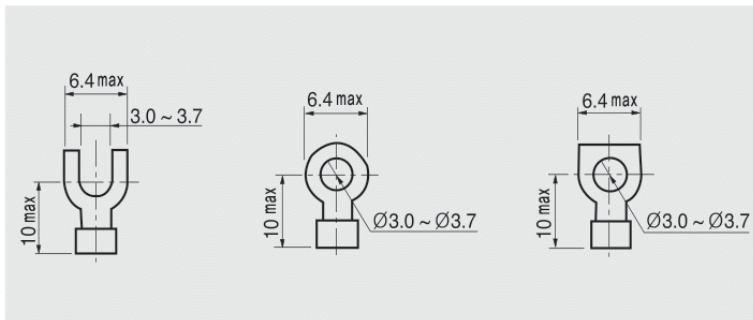
■ Insulation terminal



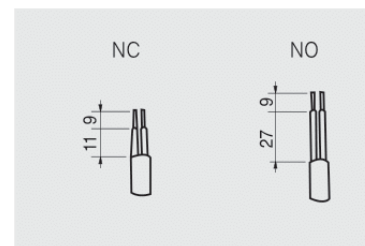
■ Wire handling when using the pressure terminal



■ Non-insulation terminal



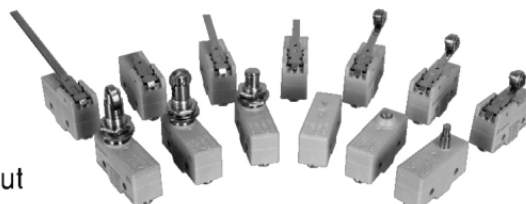
■ Wire handling when not using the pressure terminal



HY-700 series

Micro switch

- Certain operation and long life expectancy due to the snap action tool and strong chemical resistance case (phenolic resin)
- Excellent repetitive accuracy and 10A opening / closing capacity
- Standard type, hole gap of installation cutout dimension : 25.4mm, fix with M4 bolt
- 9 types of actuators provide wide usages
- Terminal protective cover (optional)



Specification

Contact structure	M4-5.5 screw tightening, 1c contact	
Contact material	AgCdO	
Protective structure	Standard type	
Rated current(Ie)	10 A 250 V a.c	
Dielectric strength	2,000 V a.c 50/60 Hz for 1min (between the terminal and non-recharging metal part)	
Insulation resistance	Min 100 M Ω (500 V d.c insulated ohmmeter)	
Contact resistance	Max 50 M Ω (default value)	
Rated voltage(Ue)	250 V a.c	
Vibration	Double amplitude 1.5mm, frequency 10 ~ 55 Hz, continuously 2 hour	
Shock	100 % (durability), 50 % (malfunction)	
Allowable operation speed	0.1 % ~ 1 %	
Life expectancy	Mechanical	Min 1 million times (less than open/close frequency 120 times/min)
	Electrical	Min 300 thousand times (less than open/close frequency 20 times/min)
Ambient temperature	-10 ~ 80 °C	
Ambient humidity	25 ~ 95 % R.H.	
Weight	Approx 800g (10 HY-R704B 1 box)	

Terminal arrangement

Appearance	Connection diagram

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light


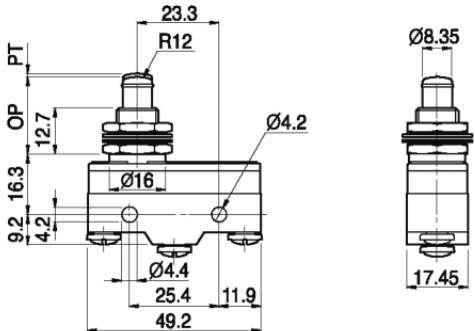
Buzzer
Terminal block
Fuse holder

Control box
Cable connector


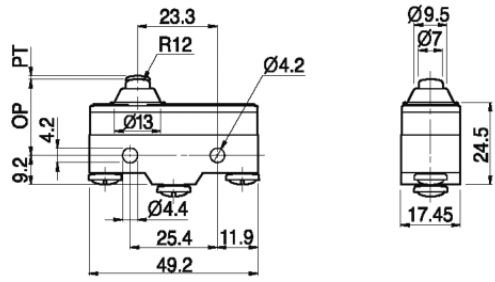
Discontinued Products

Dimension (unit : mm)


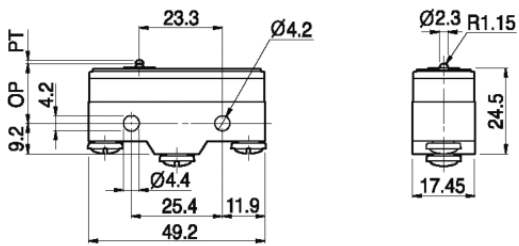
■ Panel mounting type

Appearance	Dimension	Operation characteristic
 <p>HY-P701A (Z4G1P05B)</p>		<p>O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 5.2 mm M.D max : 0.13 mm O.P : 21.8 ±0.8 mm</p>


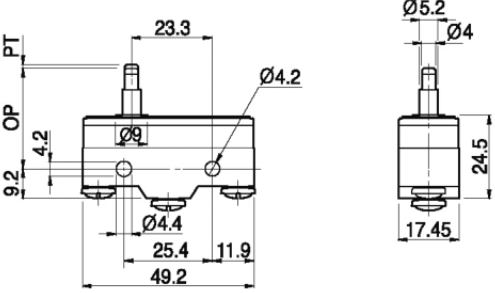
■ Spring single push button type

Appearance	Dimension	Operation characteristic
 <p>HY-P701B (Z4G1P09B)</p>		<p>O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 1.3 mm M.D max : 0.13 mm O.P : 21.8 ±0.8 mm</p>

■ Pin push button type

Appearance	Dimension	Operation characteristic
 <p>HY-P701C (Z4G1P01B)</p>		<p>O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 0.13 mm M.D max : 0.13 mm O.P : 16.0 ±0.5 mm</p>

■ Spring stander push button type


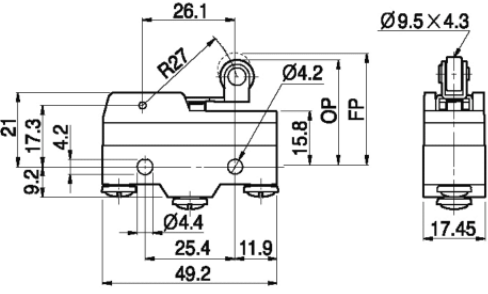
Appearance	Dimension	Operation characteristic
 <p data-bbox="318 674 435 728">HY-P701D (Z4G1P03B)</p>		<p data-bbox="1146 433 1389 670">O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 1.3 mm M.D max : 0.13 mm O.P : 28.2 ±0.6 mm</p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch


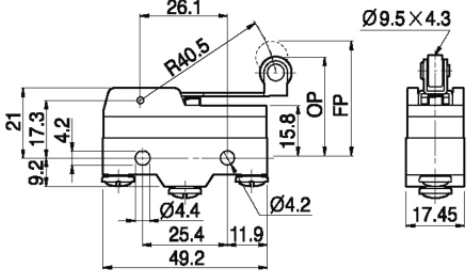
■ Hinge roller single lever type

Appearance	Dimension	Operation characteristic
 <p data-bbox="318 1203 435 1256">HY-R704A (Z4G1L07B)</p>		<p data-bbox="1146 959 1389 1196">O.F max : 1.57 N (160 gf) R.F min : 0.27 N (28 gf) P.T max : 5.0 mm O.T min : 2.0 mm M.D max : 1.2 mm O.P : 30.2 ±1.0 mm</p>

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

■ Hinge roller middle lever type


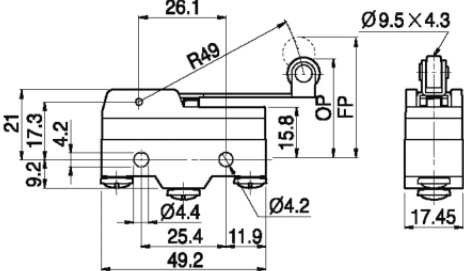
Appearance	Dimension	Operation characteristic
 <p data-bbox="318 1752 435 1785">HY-R704B</p>		<p data-bbox="1146 1502 1389 1739">O.F max : 1.18 N (120 gf) R.F min : 0.2 N (28 gf) P.T max : 5.0 mm O.T min : 2.0 mm M.D max : 1.2 mm O.P : 30.2 ±1.0 mm</p>

Buzzer
Terminal block
Fuse holder


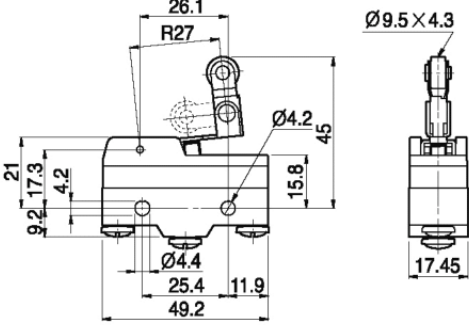
Control box
Cable connector

Discontinued Products


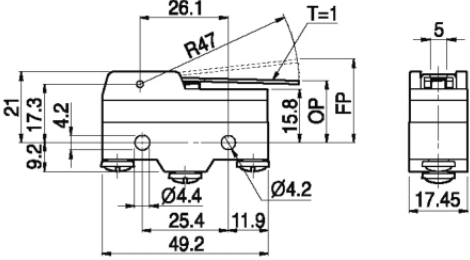
■ Hinge roller lever type

Appearance	Dimension	Operation characteristic
 <p data-bbox="272 674 393 728">HY-R704C (Z4G1L03B)</p>		<p data-bbox="1103 433 1342 670">O.F max : 0.98 N (100 gf) R.F min : 0.14 N (14 gf) P.T max : 8.0 mm O.T min : 3.6 mm M.D max : 2.4 mm O.P : 30.2 ±1.0 mm</p>

■ 2 positions roller lever type


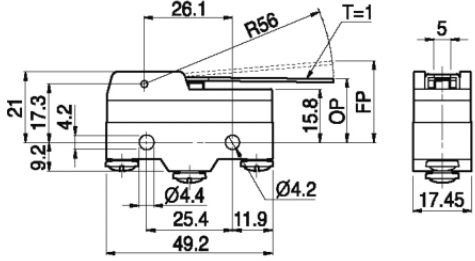
Appearance	Dimension	Operation characteristic
 <p data-bbox="263 1203 401 1231">HY-R704-2W</p>		<p data-bbox="1103 959 1342 1196">O.F max : 0.98 N (100 gf) R.F min : 0.14 N (14 gf) P.T max : 8.0 mm O.T min : 3.6 mm M.D max : 0.5 mm O.P : 43.2 ±1.4 mm</p>

■ Single position lever type

Appearance	Dimension	Operation characteristic
 <p data-bbox="279 1748 385 1776">HY-L707A</p>		<p data-bbox="1103 1504 1342 1742">O.F max : 1.57 N (160 gf) R.F min : 0.27 N (28 gf) P.T max : 5.0 mm O.T min : 2.0 mm M.D max : 1.2 mm O.P : 19.1 ±1.0 mm</p>

HY-700 series


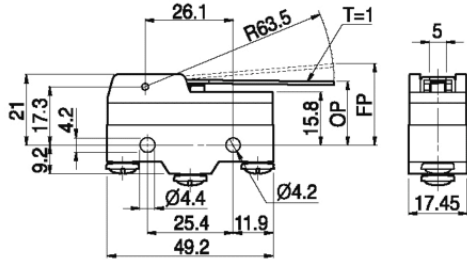
■ Middle lever type

Appearance	Dimension	Operation characteristic
 <p>HY-L707B</p>		<p>O.F max : 1.18 N (120 gf) R.F min : 0.20 N (20 gf) P.T max : 6.5 mm O.T min : 2.8 mm M.D max : 1.8 mm O.P : 19.1 ±1.0 mm</p>

Control
switch
Combination
display light

Power switch
Main switch
Cam switch

■ Hinge lever type


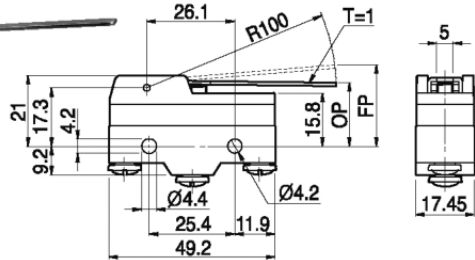
Appearance	Dimension	Operation characteristic
 <p>HY-L707C (Z4G1L01B)</p>		<p>O.F max : 0.98 N (100 gf) R.F min : 0.14 N (14 gf) P.T max : 1.0 mm O.T min : 4.0 mm M.D max : 2.4 mm O.P : 19.1 ±1.0 mm</p>

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

■ Special lever type

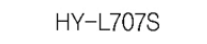
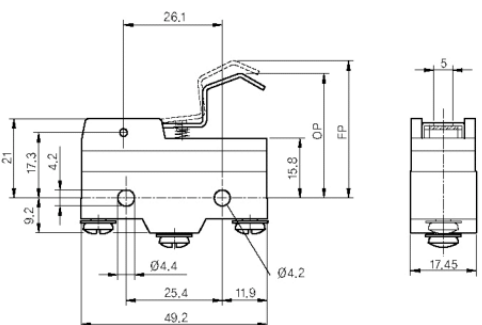
Appearance	Dimension	Operation characteristic
 <p>HY-L707D</p>		<p>O.F max : 0.78 N (80 gf) R.F min : 0.1 N (10 gf) P.T max : 1.4 mm O.T min : 5.6 mm M.D max : 3.5 mm O.P : 19.1 ±1.0 mm</p>

Buzzer
Terminal block
Fuse holder


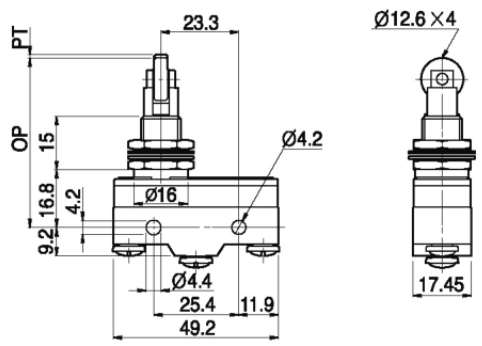
Control box
Cable connector

Discontinued
Products


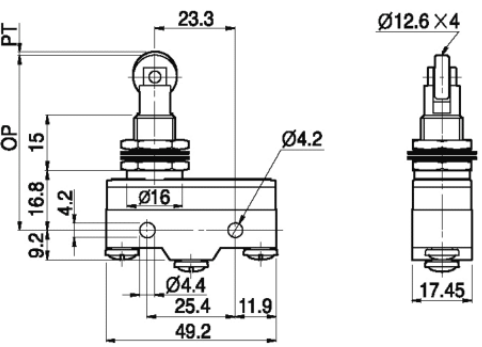
■ Hunge Special lever type

Appearance	Dimension	Operation characteristic
 <p>HY-L707S</p>		<p>O.F max : 1.37 N (140 gf) R.F min : 0.27 N (28 gf) P.T max : 5.0 mm O.T min : 4.5 mm M.D max : 1.2 mm O.P : 33.0 ±1 mm</p>

■ Roller panel mounting type (Vertical)

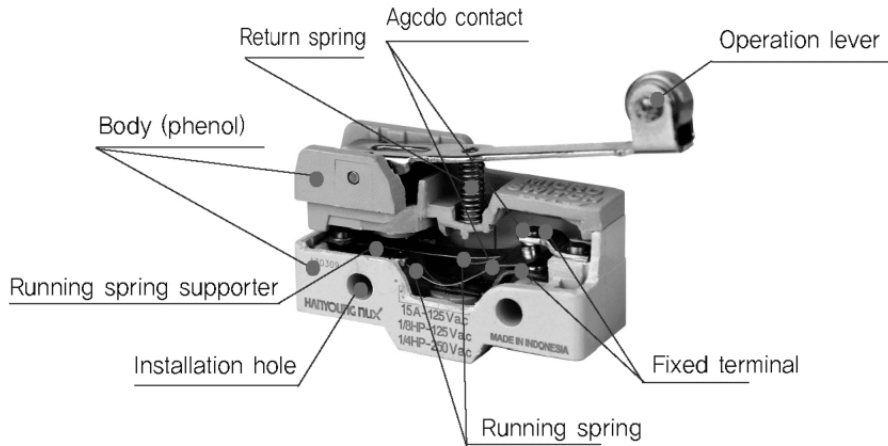
Appearance	Dimension	Operation characteristic
 <p>HY-PR708A</p>		<p>O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 3.2 mm M.D max : 0.13 mm O.P : 33.3 ±1.4 mm</p>

■ Roller panel mounting type

Appearance	Dimension	Operation characteristic
 <p>HY-PR708B (Z4G1P07B)</p>		<p>O.F max : 3.73 N (380 gf) R.F min : 1.12 N (114 gf) P.T max : 1.0 mm O.T min : 3.2 mm M.D max : 0.13 mm O.P : 33.3 ±1.4 mm</p>

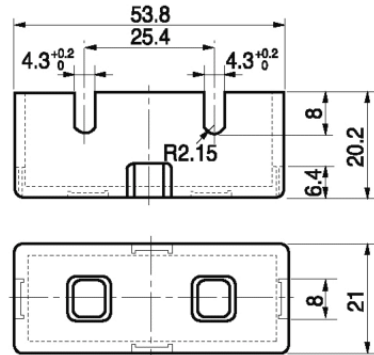
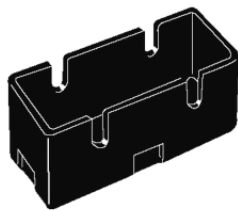
● Structure

■ Internal structure

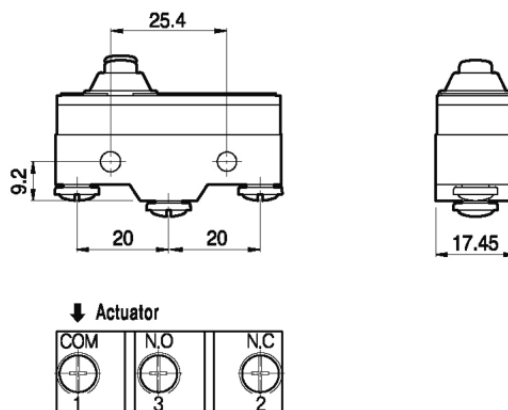


■ Terminal protective cover

MS-10



■ Dimension and terminal arrangement



Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

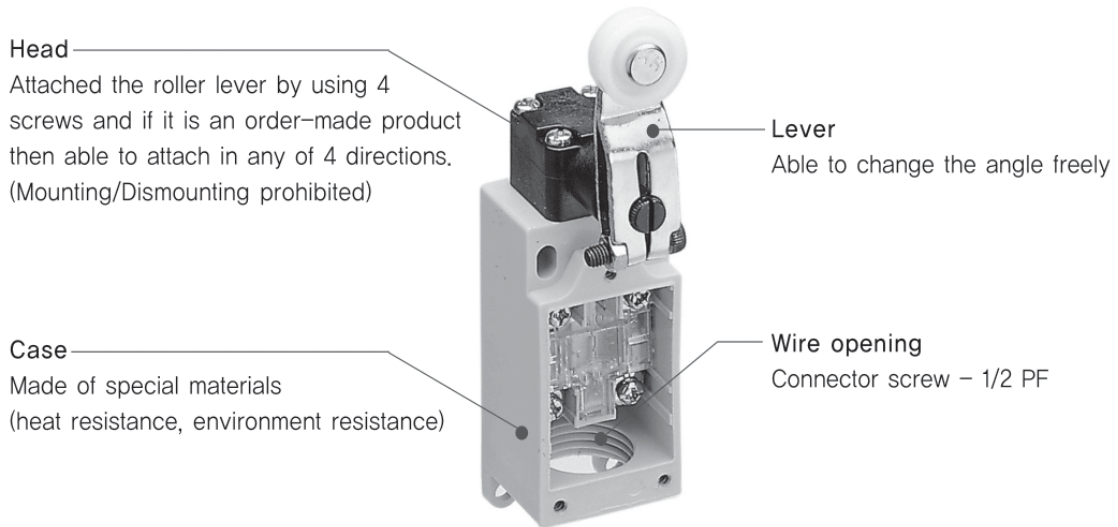
Sign tower
Signal light

Buzzer
Terminal block
Fuse holder

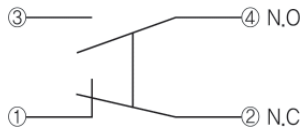
Control box
Cable connector

Discontinued Products

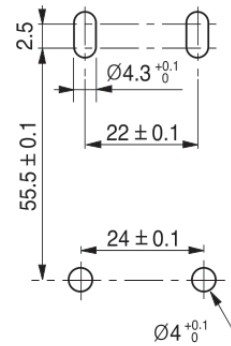
Structure



Switch connection diagram (external case one body type)

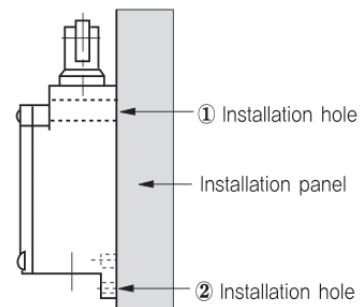


Panel cutout (unit : mm)



Proper using instruction

- In order to prevent the looseness when it is mounted, it is ok to use washer and mount it with 5 ~ 7 N · m torque.
- There are 2 installing holes (Ø4 ~ 4,8) in order to mount the switch solidly and when mounting it, please fix it with the installing holes ① and ②.
- Please connect the lead wire to the terminal directly or connect the pressing terminal with the 5~6 N · m torque.
- Avoid the places where temperature is high, various kinds of dust exist and possible leakage of organic gas.
- Please ask us if you are going to use it in the place where it needs the corrosiveness cold/hot cycle and long period hot resistance.
- Please ask us if you are going to change the direction of head (LS803RN, LS804N, LS807N, LS808N)



Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder

Control box
Cable connector

Discontinued Products

HY-LS800 series

Limit switch

- Compact size and light weight by applying the plastic case
- Plastic case which provides safety regarding the electric leakage
- Various actuators (6 types) provide wide application
- IP54 protective structure
(Applied only when using our company connector model HYC-M1 in the wire opening)
- Connector rating of wire opening : 1/2 PF


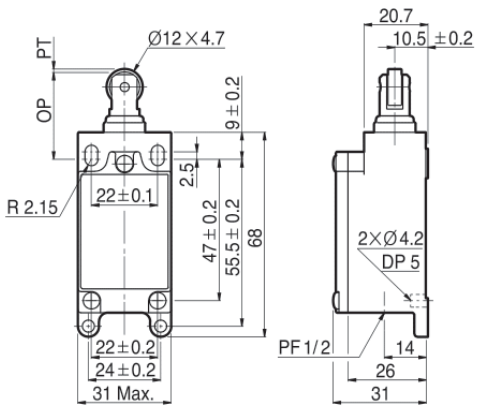


●● Specification


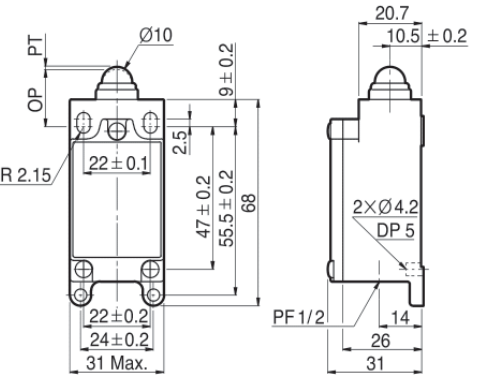
Contact structure	M3 screw tightening terminal, 2 circuits double type (1a1b)	
Contact material	AgNi	
Protective structure	IP54 (Only when using our company product HYC-M1, M2 in the wire opening)	
Rated current(Ie)	6 A 250 V a.c, 4 A 30 V d.c (AC-12, AC-13, AC-15, DC-13)	
Dielectric strength	2,000 V a.c 50/60 Hz for 1 min (between the terminal and non-recharging metal part)	
Insulation resistance	Min 100 M Ω (500 V d.c insulated ohmmeter)	
Contact resistance	Max 25 M Ω (default value)	
Rated voltage(Ue)	250 V a.c, 30 V d.c	
Actuator intensity	5 times larger than O.F (required force for the operation), operating direction 1 min	
Vibration	Double amplitude 1.5mm, frequency 10 ~ 55 Hz, continuously 2 hour	
Shock	100 % (durability), 50 % (malfunction)	
Allowable operation speed	0.1 ~ 0.5 % (without damaging the actuator)	
Life expectancy	Mechanical	Min 1 million times (less than open/close frequency 120 times/min)
	Electrical	Min 100 thousand times (less than open/close frequency 30 times/min)
Ambient temperature	-10 ~ 70 °C	
Ambient humidity	45 ~ 95 % R.H.	
Weight	Approx 60g (HY-LS803N)	

Dimension (unit : mm)


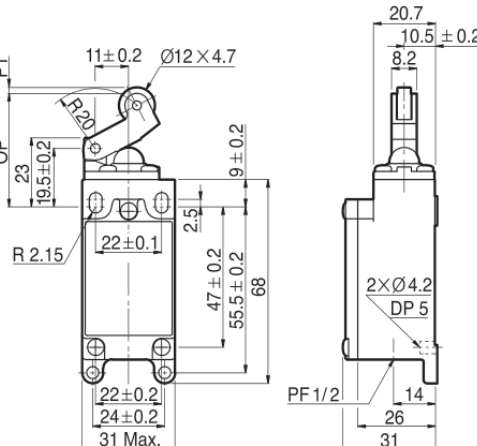
Roller Plunger

Appearance	Dimension	Operation characteristic
 <p>HY-LS802N</p>		<p>O.F max : 6.37 N (650 gf) R.F min : 1.47 N (150 gf) P.T max : 2.0 mm O.T min : 4.0 mm M.D max : 0.8 mm O.P : 28.2 ±0.8</p>

Push Plunger

Appearance	Dimension	Operation characteristic
 <p>HY-LS803N</p>		<p>O.F max : 6.37 N (650 gf) R.F min : 1.47 N (150 gf) P.T max : 2.0 mm O.T min : 4.0 mm M.D max : 0.8 mm O.P : 18.0 ±0.5</p>

Roller Arm

Appearance	Dimension	Operation characteristic
 <p>HY-LS803RN</p>		<p>O.F max : 3.92 N (400 gf) R.F min : 0.78 N (80 gf) P.T max : 4.0 mm O.T min : 5.0 mm M.D max : 1.5 mm O.P : 37.0 ±0.8</p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch


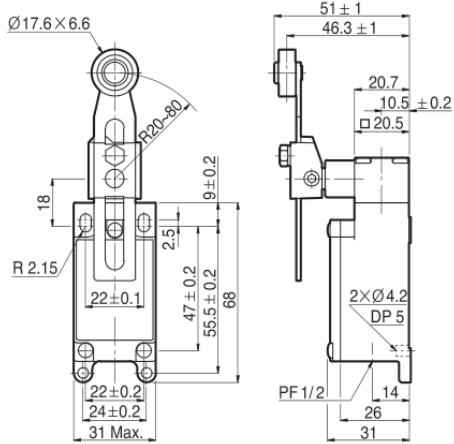
Sign tower
Signal light

Buzzer
Terminal block
Fuse holder


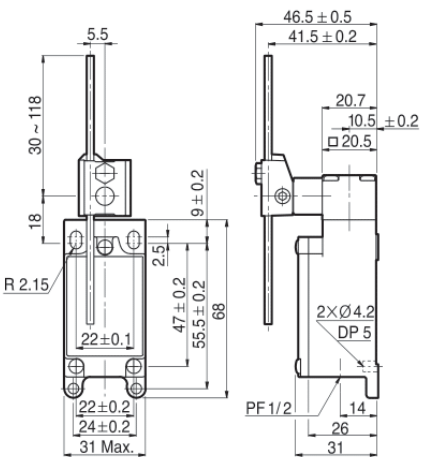
Control box
Cable connector

Discontinued Products


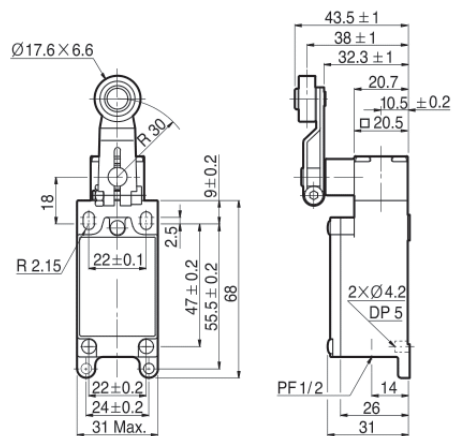
■ Roller Adjustable Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="272 788 400 816">HY-LS804N</p>	 <p>Technical drawing showing dimensions for the roller adjustable lever. Front view dimensions include: roller diameter $\varnothing 17.6 \times 6.6$, roller radius $R20-80$, mounting hole offset 18, roller offset $R 2.15$, roller height 22 ± 0.1, roller width 2.5, roller depth 47 ± 0.2, roller length 9 ± 0.2, roller base width 55.5 ± 0.2, roller base length 68, roller base hole offset 22 ± 0.2, roller base hole offset 24 ± 0.2, roller base hole offset 31 Max. Side view dimensions include: roller offset 51 ± 1, roller offset 46.3 ± 1, roller offset 20.7, roller offset 10.5 ± 0.2, roller offset $\square 20.5$, roller offset $2 \times \varnothing 4.2$, roller offset $DP 5$, roller offset $PF 1/2$, roller offset 14, roller offset 26, roller offset 31.</p>	<p>O.F max : 4.21 N (430 gf) R.F min : 0.42 N (43 gf) P.T max : $18^\circ \sim 27^\circ$ O.T min : 30° M.D max : 14°</p>

■ Adjustable Rod Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="272 1399 400 1428">HY-LS807N</p>	 <p>Technical drawing showing dimensions for the adjustable rod lever. Front view dimensions include: rod diameter 5.5, rod length $30 \sim 118$, mounting hole offset 18, roller offset $R 2.15$, roller height 22 ± 0.1, roller width 2.5, roller depth 47 ± 0.2, roller length 9 ± 0.2, roller base width 55.5 ± 0.2, roller base length 68, roller base hole offset 22 ± 0.2, roller base hole offset 24 ± 0.2, roller base hole offset 31 Max. Side view dimensions include: roller offset 46.5 ± 0.5, roller offset 41.5 ± 0.2, roller offset 20.7, roller offset 10.5 ± 0.2, roller offset $\square 20.5$, roller offset $2 \times \varnothing 4.2$, roller offset $DP 5$, roller offset $PF 1/2$, roller offset 14, roller offset 26, roller offset 31.</p>	<p>O.F max : 4.21 N (430 gf) R.F min : 0.42 N (43 gf) P.T max : $18^\circ \sim 27^\circ$ O.T min : 30° M.D max : 14°</p>

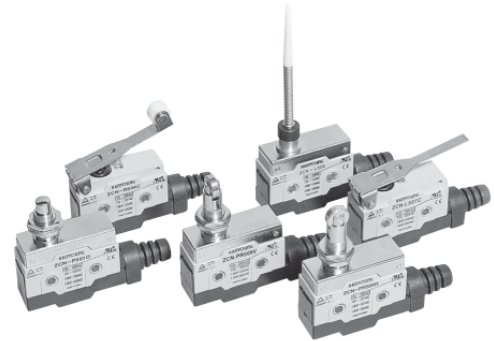
■ Roller Lever

Appearance	Dimension	Operation characteristic
 <p data-bbox="272 1983 400 2011">HY-LS808N</p>	 <p>Technical drawing showing dimensions for the roller lever. Front view dimensions include: roller diameter $\varnothing 17.6 \times 6.6$, roller radius $R 30$, mounting hole offset 18, roller offset $R 2.15$, roller height 22 ± 0.1, roller width 2.5, roller depth 47 ± 0.2, roller length 9 ± 0.2, roller base width 55.5 ± 0.2, roller base length 68, roller base hole offset 22 ± 0.2, roller base hole offset 24 ± 0.2, roller base hole offset 31 Max. Side view dimensions include: roller offset 43.5 ± 1, roller offset 38 ± 1, roller offset 32.3 ± 1, roller offset 20.7, roller offset 10.5 ± 0.2, roller offset $\square 20.5$, roller offset $2 \times \varnothing 4.2$, roller offset $DP 5$, roller offset $PF 1/2$, roller offset 14, roller offset 26, roller offset 31.</p>	<p>O.F max : 4.9 N (500 gf) R.F min : 0.49 N (50 gf) P.T max : $18^\circ \sim 27^\circ$ O.T min : 30° M.D max : 14°</p>

ZCN-500 series

Limit switch

- Gap of installation cutout dimension is same as micro switch (HY-P700)
- Certain operation and long life expectancy by applying Beryllium copper and running spring to the strong chemical resistance case.
- Compact size and light weight. (Strong mechanical durability)
- 9 types of actuators which provide wide usages
- Less force required to run the operation comparing to the normal limit switch.
- Excellent sealing



Specification

Contact structure	M4 screw tightening, 1c contact	
Contact material	AgCdO	
Protective structure	IP 54	
Rated current(Ie)	10 A 250 V a.c	
Dielectric strength	2,000 V a.c 50/60 Hz for 1 min (between the terminal and non-recharging metal part)	
Insulation resistance	Min 100 M Ω (500 V d.c insulated ohmmeter)	
Contact resistance	Max 50 M Ω (default value)	
Rated voltage(Ue)	250 V a.c	
Actuator intensity	5 times larger than O.F (force required to operate), operating direction 1 min	
Vibration	Double amplitude 1.5 mm, frequency 10 ~ 55 Hz, continuously 2 hour	
Shock	1,000 % (durability), 300 % (malfunction)	
Allowable operation speed	0.1 ~ 1 % (without damaging the actuator)	
Life expectancy	Mechanical	Min 1 million times (less than open/close frequency 120 times/min)
	Electrical	Min 300 thousand times (less than open/close frequency 20 times/min)
Ambient temperature	-10 ~ 80 °C	
Ambient humidity	25 ~ 95 % R.H.	
Weight	Approx 1010 g (10 ZCN-PR508H 1 box)	

Terminal arrangement

Appearance	Connection diagram
<p>↓ Actuator</p>	

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

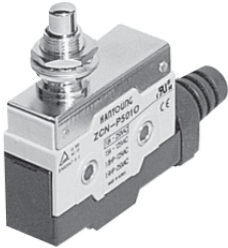
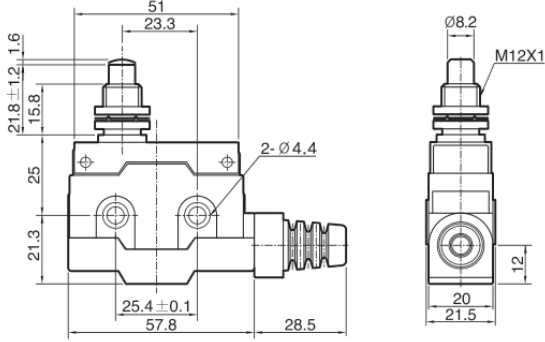
Buzzer
Terminal block
Fuse holder

Control box
Cable connector

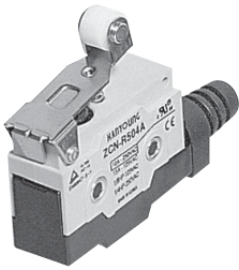
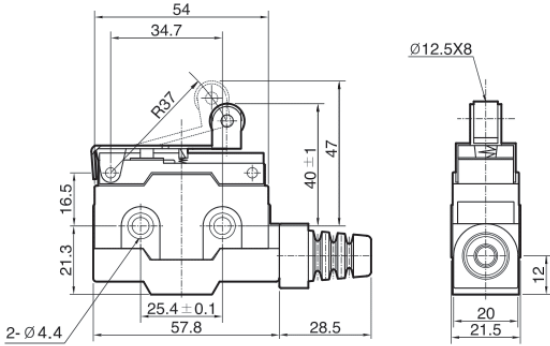
Discontinued Products

Dimension (unit : mm)

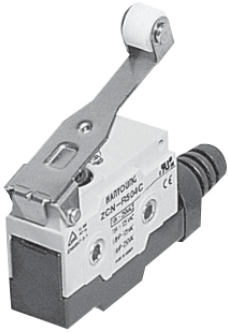
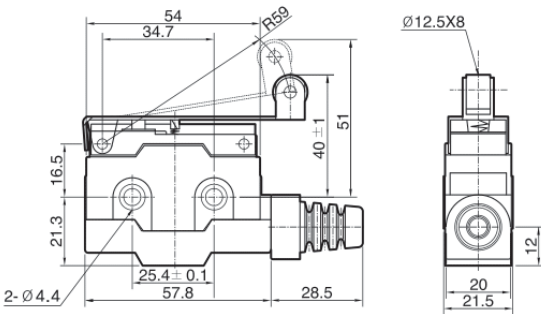
■ Plunger type

Appearance	Dimension	Operation characteristic
 <p>ZCN-P5010</p>		<p>O.F max : 5.88 N (600 gf) R.F min : 0.98 N (100 gf) P.T max : 1.6 mm O.T min : 5 mm M.D max : 0.2 mm O.P : 21.8 mm</p>

■ Hinge roller short lever type

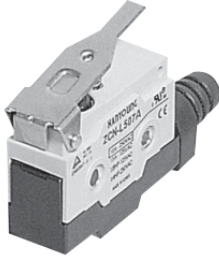
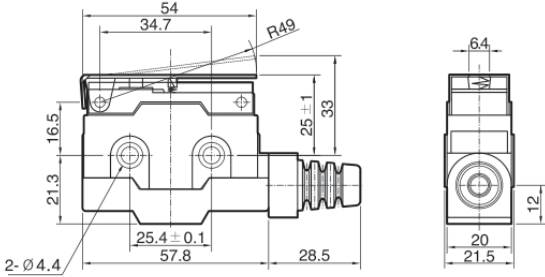
Appearance	Dimension	Operation characteristic
 <p>ZCN-R504A</p>		<p>O.F max : 5.88 N (600 gf) R.F min : 0.78 N (80 gf) O.T min : 2 mm M.D max : 1.5 mm F.P max : 47 mm O.P : 40 mm</p>

■ Hinge roller long lever type

Appearance	Dimension	Operation characteristic
 <p>ZCN-R504C</p>		<p>O.F max : 2.74 N (280 gf) R.F min : 0.95 N (60 gf) O.T min : 5 mm M.D max : 3 mm F.P max : 51 mm O.P : 40 mm</p>

ZCN-500 series

■ Hinge short lever type

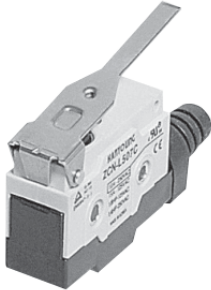
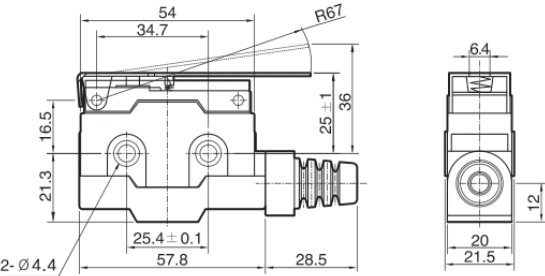
Appearance	Dimension	Operation characteristic
 <p>ZCN-L507A</p>		<p>O,F max : 3,92 N (400 gf) R,F min : 0,78 N (80 gf) O,T min : 2,5 mm M,D max : 1 mm F,P max : 33 mm O,P : 25 mm</p>

Control switch
Combination display light

Power switch
Main switch
Cam switch

Limit switch
Micro switch

■ Hinge long lever type


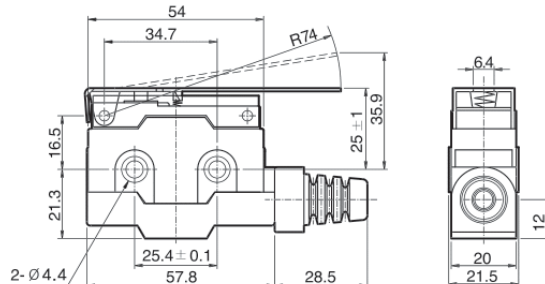
Appearance	Dimension	Operation characteristic
 <p>ZCN-L507C</p>		<p>O,F max : 2,74 N (280 gf) R,F min : 0,59 N (60 gf) O,T min : 4 mm M,D max : 1,4 mm F,P max : 36 mm O,P : 25 mm</p>

Hoist switch
Foot switch
Mono lever switch

Sign tower
Signal light

Buzzer
Terminal block
Fuse holder


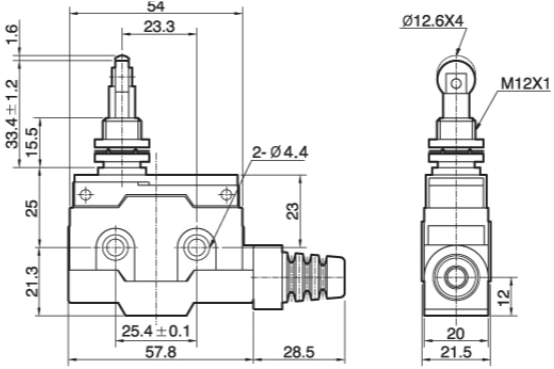
■ Hinge long lever type

Appearance	Dimension	Operation characteristic
 <p>ZCN-L507D</p>		<p>O,F max : 2,74 N (280 gf) R,F min : 0,59 N (60 gf) O,T min : 4 mm M,D max : 1,4 mm F,P max : 36 mm O,P : 25 mm</p>


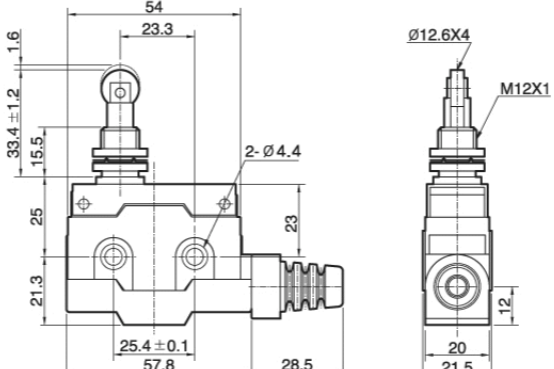
Control box
Cable connector

Discontinued Products


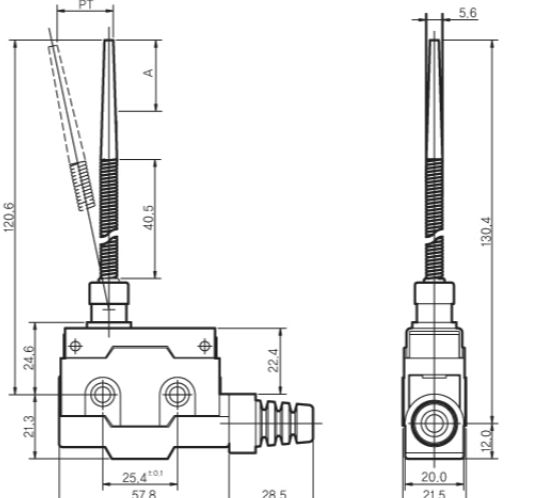
■ (Vertical) roller plunger type

Appearance	Dimension	Operation characteristic
 <p>ZCN-PR508V</p>		<p>O.F max : 5.88 N (600 gf) R.F min : 0.98 N (100 gf) P.T max : 1.6 mm O.T min : 5 mm M.D max : 0.2 mm O.P : 33.4 mm</p>

■ (Horizontal) roller plunger type

Appearance	Dimension	Operation characteristic
 <p>ZCN-PR508H</p>		<p>O.F max : 5.88 N (600 gf) R.F min : 0.98 N (100 gf) P.T max : 1.6 mm O.T min : 5 mm M.D max : 0.2 mm O.P : 33.4 mm</p>

■ Resin rod coil spring type

Appearance	Dimension	Operation characteristic
 <p>ZCN-L509</p>		<p>O.F max : 5.88 N (600gf) P.T max : 19 mm T.T max : 40 mm</p>

A : Optimum operating range of the resin rod is within 1/3 of the entire length from the top end