

Snap Action Switch

Z

General Purpose Snap Action Switch










- High precision basic switch in a variety of styles
- Wide margins of operating conditions increasing the operating speed range
- Available in general purpose and drip-proof types
- Available in micro-load models

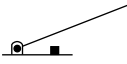





Ordering Information














List of Models

Basic Models (General Purpose)

Actuator			Standard		High-sensitivity	Micro load
			G (0.5 mm)		H (0.25 mm)	H (0.25 mm)
Pin plunger		Solder terminal	Z-15G	Z-15H	Z-01H	
		Screw terminal	Z-15G-B	Z-15H-B	Z-01H-B	
Slim spring plunger		Solder terminal	Z-15GS	Z-15HS	Z-01HS	
		Screw terminal	Z-15GS-B	Z-15HS-B	Z-01HS-B	
Short spring plunger		Solder terminal	Z-15GD	Z-15HD	Z-01HD	
		Screw terminal	Z-15GD-B	Z-15HD-B	Z-01HD-B	
Panel mount plunger		Low OP	Solder terminal	Z-15GQ3	—	—
			Screw terminal	Z-15GQ3-B	—	—
		Medium OP	Solder terminal	Z-15GQ	Z-15HQ	Z-01HQ
			Screw terminal	Z-15GQ-B	Z-15HQ-B	Z-01HQ-B
		High OP	Solder terminal	Z-15GQ8	—	—
			Screw terminal	Z-15GQ8-B	—	—
Panel mount roller plunger		Solder terminal	Z-15GQ22	Z-15HQ22	—	
		Screw terminal	Z-15GQ22-B	Z-15HQ22-B	—	
Panel mount cross roller plunger		Solder terminal	Z-15GQ21	Z-15HQ21	—	
		Screw terminal	Z-15GQ21-B	Z-15HQ21-B	—	
Short hinge lever		Solder terminal	Z-15GW21	—	—	
		Screw terminal	Z-15GW21-B	—	—	
Hinge lever		Low OF	Solder terminal	Z-15GW	Z-15HW	—
			Screw terminal	Z-15GW-B	Z-15HW-B	—
		Medium OF	Solder terminal	Z-15GW3	—	—
			Screw terminal	Z-15GW3-B	—	—
		High OF	Solder terminal	Z-15GW32	—	—
			Screw terminal	Z-15GW32-B	—	—
Low-force hinge lever		Solder terminal	Z-15GW4	Z-15HW24	—	
		Screw terminal	Z-15GW4-B	Z-15HW24-B	—	


Actuator			Standard	High-sensitivity	Micro load
			G (0.5 mm)	H (0.25 mm)	H (0.25 mm)
Low-force wire hinge lever 	Low OF	Solder terminal	—	Z-15HW78	—
		Screw terminal		Z-15HW78-B	
	High OF	Solder terminal		Z-15HW52	
		Screw terminal		Z-15HW52-B	
Short hinge roller lever 	Solder terminal	Z-15GW22	Z-15HW22	Z-01HW22	
	Screw terminal	Z-15GW22-B	Z-15HW22-B	Z-01HW22-B	
Hinge roller lever 	Solder terminal	Z-15GW2	Z-15HW2	—	
	Screw terminal	Z-15GW2-B	Z-15HW2-B		
Unidirectional short hinge roller lever 	Solder terminal	Z-15GW2277	—	—	
	Screw terminal	Z-15GW2277-B			

Basic Models (Drip-proof Models)

Actuator			Basic model (drip-proof)	
			Standard G (0.5 mm)	Micro load H (0.25 mm)
				Without drip-proof terminal protective cover
Pin plunger 	Solder terminal	Z-15G55	Z-01H55	
	Screw terminal	Z-15G55-B	Z-01H55-B	
Short spring plunger 	Solder terminal	Z-15GD55	Z-01HD55	
	Screw terminal	Z-15GD55-B	Z-01HD55-B	
Spring plunger 	Medium OP	Solder terminal	Z-15GK55	—
		Screw terminal	Z-15GK55-B	
	High OP	Solder terminal	Z-15GK355	
		Screw terminal	Z-15GK355-B	
Panel mount plunger 	Medium OP	Solder terminal	Z-15GQ55	—
		Screw terminal	Z-15GQ55-B	
Panel mount roller plunger 		Solder terminal	Z-15GQ2255	—
		Screw terminal	Z-15GQ2255-B	
Panel mount cross roller plunger 		Solder terminal	—	—
		Screw terminal	Z-15GQ2155-B	
Short hinge lever 		Solder terminal	Z-15GW2155	—
		Screw terminal	Z-15GW2155-B	
Long hinge lever 		Solder terminal	Z-15GW4455	—
		Screw terminal	Z-15GW4455-B	
Hinge lever 		Solder terminal	Z-15GW55	—
		Screw terminal	Z-15GW55-B	
Short hinge roller lever 		Solder terminal	Z-15GW2255	Z-01HW2255
		Screw terminal	Z-15GW2255-B	Z-01HW2255-B
Hinge roller lever 		Solder terminal	Z-15GW255	—
		Screw terminal	Z-15GW255-B	
Unidirectional short hinge roller lever 		Solder terminal	Z-15GW227755	—
		Screw terminal	Z-15GW227755-B	
Flexible rod (coil spring) (see note 1) 		Solder terminal	Z-15GNJ55	—
		Screw terminal	Z-15GNJ55-B	

Note: The tip is made of resin.

Basic Models (Drip-proof High-sensitivity Models)

Actuator			High-sensitivity	
			H (0.25 mm)	
Flexible rod (steel wire) 	Solder terminal	Z-15HNJS55		
	Screw terminal	Z-15HNJS55-B		

Specifications

■ Characteristics

Item		Basic (except micro load and flexible rod)/ maintained contact Z-15	Basic (micro load) Z-01H	Basic (flexible rod) Z-15
Operating speed (see note)		0.01 mm to 1 m/s (see note 1)		1 mm to 1 m/s
Operating frequency	Mechanical	240 operations/min		120 operations/min
	Electrical	20 operations/min		20 operations/min
Insulation resistance		100 MΩ min. (at 500 VDC)		
Contact resistance		15 mΩ max. (initial value)	15 mΩ max. (initial value)	15 mΩ max. (initial value)
Dielectric strength		Between contacts of same polarity Contact gap G: 1,000 VAC, 50/60 Hz for 1 min Contact gap H: 600 VAC, 50/60 Hz for 1 min Between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal parts 2,000 VAC, 50/60 Hz for 1 min		Between contacts of same polarity Contact gap G: 1,000 VAC, 50/60 Hz for 1 min Contact gap H: 600 VAC, 50/60 Hz for 1 min Between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal parts 2,000 VAC, 50/60 Hz for 1 min
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (see note 4)		10 to 20 Hz, 1.5-mm double amplitude (see note 4)
Shock resistance	Destruction	1,000 m/s ² {approx. 100G} max.		1,000 m/s ² {approx. 100G} max.
	Malfunction	300 m/s ² {approx. 30G} max. (see note 2, 4)		50 m/s ² {approx. 5G} max. (see note 4)
Life expectancy	Mechanical	20,000,000 operations min. (see note 3)		1,000,000 operations min.
	Electrical	500,000 operations min.		100,000 operations min.
Degree of protection		General-purpose: IP00 Drip-proof: IP62		
Degree of protection against electric shock		Class I		
Proof tracking index (PTI)		175		
Switch category		D (IEC335-1)		
Ambient temperature		Operating: General-purpose: -25°C to 80°C (with no icing) Drip-proof: -15°C to 80°C (with no icing)		
Ambient humidity		Operating: General-purpose: 35% to 85% Drip-proof: 35% to 95%		
Weight		Approx. 22 to 58 g		Approx. 42 to 48 g

Note: 1. The values are for the plunger models. (For the lever models, the values are at the plunger section.)
(Contact your OMRON representative for other models.)

2. The values are for the Z-15G pin plunger.
3. The values are for the pin plunger. The life expectancy for models other than the pin plunger is 10,000,000 min.
4. Malfunction: 1 ms max.

■ Operating Characteristics — Z Series Accessories (Levers/Plungers)

Characteristics	Model				
	ZAA-1 w/Z-15G-B	ZAA-2 w/Z-15G-B	ZAQ-3 w/Z-15G-B	ZAQ-2 w/Z-15G-B	ZAQ-1 w/Z-15G-B
OF max.	500 g		550 g		
RF min.	170 g		144 g		
PT max.	—		1 mm (0.04 in)		
OT min.	12.7 mm (0.50 in)		4.5 mm (0.18 in)		20.4 mm (0.80 in)
MD max.	2.2 mm (0.09 in)		0.2 mm (0.01 in)		
FP max.	34.5 mm (1.36 in)	46.1 mm (1.81 in)	—		
OP	28.9 ± 1.6 mm (1.14 ± 0.06 in)	40.4 ± 1.6 mm (1.60 ± 0.06 in)	27.8 ± 1.5 mm (1.09 ± 0.06 in)	53.2 ± 1.5 mm (2.09 ± 0.06 in)	69.1 ± 1.5 mm (2.72 ± 0.06 in)

■ Terminal Enclosures — Standard Models

Material	Mounting method	For solder terminal	For screw terminal	Remarks
Phenolic resin	Side mounting	AP-A	AP-B	—
Metal		AP1-A	AP1-B	Use in conjunction with AP-A and AP-B
Polyvinyl chloride		AP-Z	AP-Z	Excels in safety and dust-proofing property

■ Contact Information

Type	Contact gap	Features
General purpose	H: 0.25 mm (high sensitivity)	Pin plunger and lever types available. Drip-proof and flexible rod types are also available.
	G: 0.5 mm (standard)	
Drip-proof	H: 0.25 mm (high sensitivity)	The pin plunger is sealed from the other switch mechanisms by a resilient rubber, and the case and cover are sealed by adhesive so that the switch is resistant to humidity, oil and dust. The degree of protection conforms to IEC IP63.
	G: 0.5 mm (standard)	

■ Ratings

Z-15 (Except Flexible Rod Models)

Item Model	Rated voltage	Non-inductive load				Inductive load			
		Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
G, H	125 VAC	15 (10) A (see note)		3 A	1.5 A	15 (10) A (see note)		5 A	2.5 A
	250 VAC	15 (10) A (see note)		2.5 A	1.25 A	15 (10) A (see note)		3 A	1.5 A
	500 VAC	10 A		1.5 A	0.75 A	6 A		1.5 A	0.75 A
G	8 VDC	15 A		3 A	1.5 A	15 A		5 A	2.5 A
	14 VDC	15 A		3 A	1.5 A	10 A		5 A	2.5 A
	30 VDC	6 A		3 A	1.5 A	5 A		5 A	2.5 A
	125 VDC	0.5 A		0.5 A	0.5 A	0.05 A		0.05 A	0.05 A
	250 VDC	0.25 A		0.25 A	0.25 A	0.03 A		0.03 A	0.03 A
H	8 VDC	15 A		3 A	1.5 A	15 A		5 A	2.5 A
	14 VDC	15 A		3 A	1.5 A	10 A		5 A	2.5 A
	30 VDC	2 A		2 A	1.4 A	1 A		1 A	1 A
	125 VDC	0.4 A		0.4 A	0.4 A	0.03 A		0.03 A	0.03 A
	250 VDC	0.2 A		0.2 A	0.2 A	0.02 A		0.02 A	0.02 A

Note: Figures in parenthesis are for Z-15HW52 and Z-15HW78(-B) models, the AC ratings of these models are 125 and 250 V only.

Z-15 (Flexible Rod Models)

Rated voltage	Non-inductive load				Inductive load			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	15 A		2 A	1 A	7 A		2.5 A	2 A
250 VAC	15 A		1 A	0.5 A	5 A		1.5 A	1 A
8 VDC	15 A		2 A	1 A	7 A		3 A	1.5 A
14 VDC	15 A		2 A	1 A	7 A		3 A	1.5 A
30 VDC	2 A		2 A	1 A	1 A		1 A	0.5 A
125 VDC	0.4 A		0.4 A	0.4 A	0.03 A		0.03 A	0.03 A
250 VDC	0.2 A		0.2 A	0.2 A	0.02 A		0.02 A	0.02 A

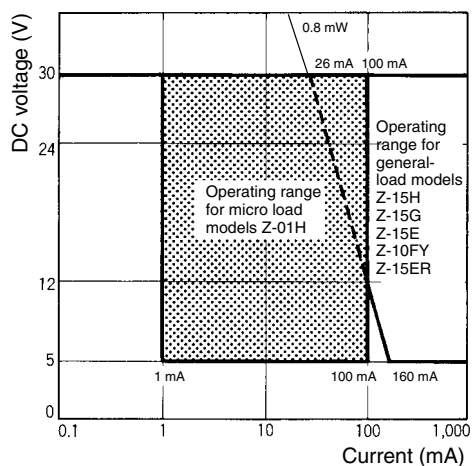
Z-01H

Rated Voltage	Resistive load	
	NC	NO
125 VAC	0.1 A	
8 VDC	0.1 A	
14 VDC	0.1 A	
30 VDC	0.1 A	

Using Micro Loads

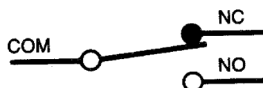
Using a model for ordinary loads to open or close the contact of a micro load circuit may result in faulty contact. Use models that operate in the following range. However, even when using micro load models within the operating range shown here, if inrush current occurs when the contact is opened or closed, it may increase contact wear and so decrease life expectancy. Therefore, insert a contact protection circuit where necessary.

The minimum applicable load is the N-level reference value. This value indicates the malfunction reference level for the reliability level of 60% ($\lambda 60$). The equation, $\lambda 60 = 0.5 \times 10^{-6}/\text{operations}$ indicates that the estimated malfunction rate is less than 1/2,000,000 operations with a reliability level of 60%.



Item	Z-01H	Z-15□, Z-10FY
Minimum applicable load	1 mA at 5 VDC	160 mA at 5 VDC

Contact Form



Approval Standards

UL508 (File No. E41515)

CSA C22.2 No.55 (File No. LR21642)

Rated voltage	Z-15	Z-01H
125 VAC	15 A 1/8 HP	0.1 A
250 VAC	15 A 1/4 HP	—
480 VAC	15 A	—
30 VDC	—	0.1 A
125 VDC	0.5 A	—
250 VDC	0.25 A	—

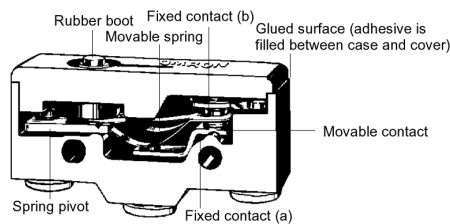
EN (EN61058-1)

Rated voltage	Z-15H□-B	Z-15G□-B	Z-01H□-B
250 VAC	15 A	15 A	—
125 VAC	—	—	0.1 A
30 VDC	—	—	0.1 A

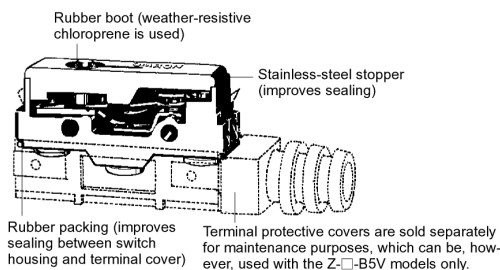
Note: Consult with Omron about approved part numbers by standards.

Drip-proof Construction

Without Terminal Protective Cover



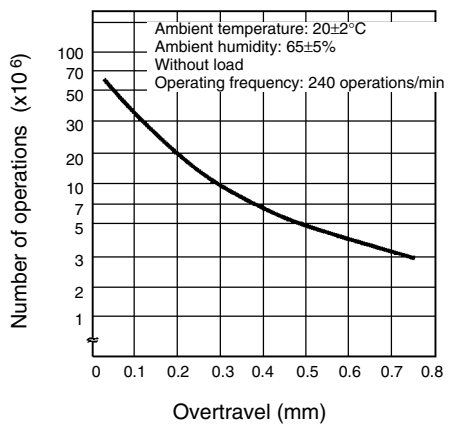
With Terminal Protective Cover



Engineering Data

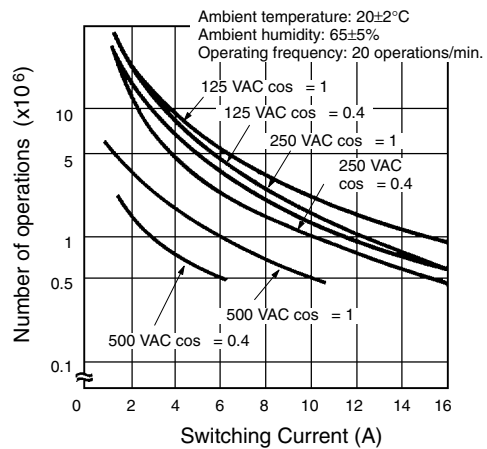
Mechanical Life Expectancy

Z-15G



Electrical Life Expectancy

Z-15G

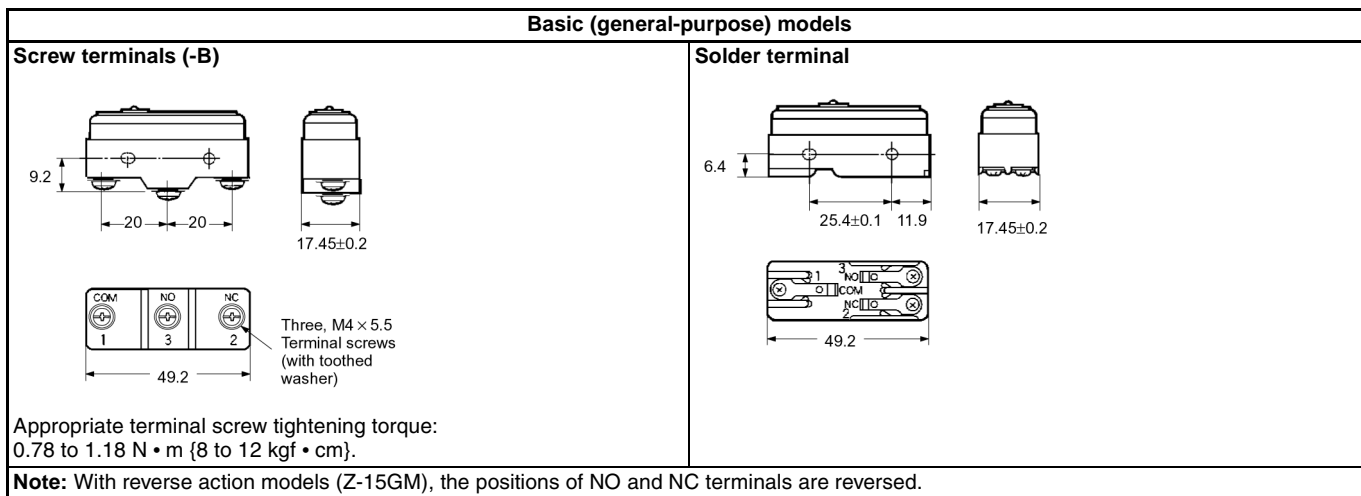


Dimensions

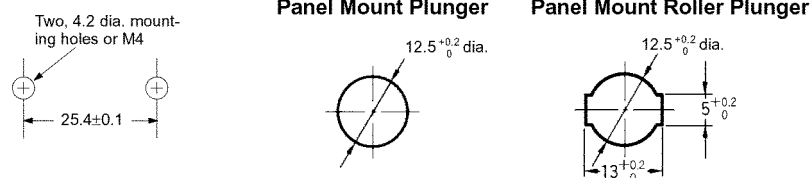
- Note:** 1. All units are in millimeters unless otherwise indicated.
 2. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

Basic Models (General-purpose)

Terminals



Mounting Holes

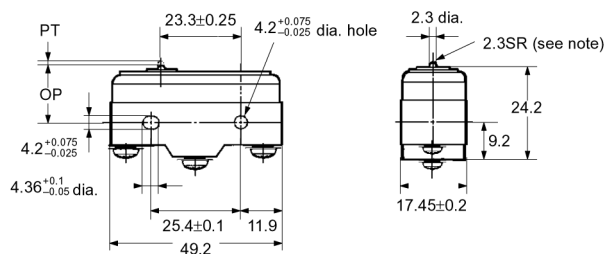


Dimensions and Operating Characteristics

The models, illustrations, and graphics are for screw-terminal models (-B). The “-A” at the end of the model number for solder terminal models has been omitted. For details of the terminals, refer to *Terminals* above.

Pin Plunger

Z-15G-B, Z-15E-B
 Z-15H-B, Z-01H-B

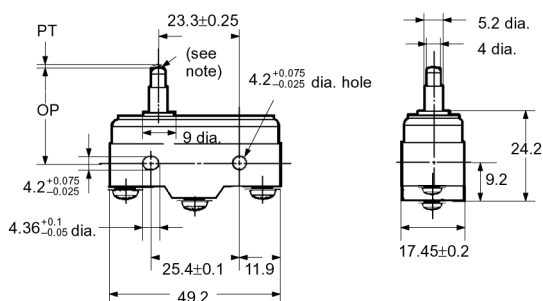
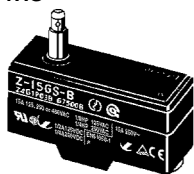


Note: Stainless-steel plunger

	Z-15G-B	Z-15H-B	Z-15E-B	Z-01H-B
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.75 N {200 to 280 gf}	6.12 to 7.85 N {625 to 800 gf}	2.45 N {250 gf} max.
RF min	1.12 N {114 gf}	1.12 N {114 gf}	1.12 N {114 gf}	0.78 N {80 gf}
PT max.	0.4 mm	0.3 mm	0.8 mm	0.5 mm
OT min.	0.13 mm	0.13 mm	0.13 mm	0.13 mm
MD max.	0.05 mm	0.025 mm	0.13 mm	0.04 mm
OP	15.9 ± 0.4 mm			

Slim Spring Plunger

Z-15GS-B, Z-15HS-B, Z-01HS

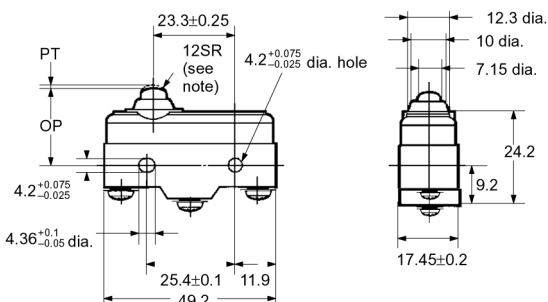
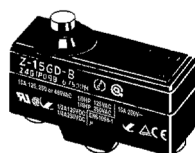


Note: Stainless-steel plunger (flat, 1R chamfered)

	Z-15GS-B	Z-15HS-B	Z-01HS
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.79 N {200 to 285 gf}	2.45 N {250 gf} max.
RF min	1.12 N {114 gf}	1.12 N {114 gf}	0.78 N {80 gf}
PT max.	0.4 mm	0.3 mm	0.5 mm
OT min.	1.6 mm	1.6 mm	1.6 mm
MD max.	0.05 mm	0.025 mm	0.05 mm
OP	28.2 ± 0.5 mm		

Short Spring Plunger

Z-15GD-B, Z-15HD-B, Z-01HD-B, Z-15ED-B

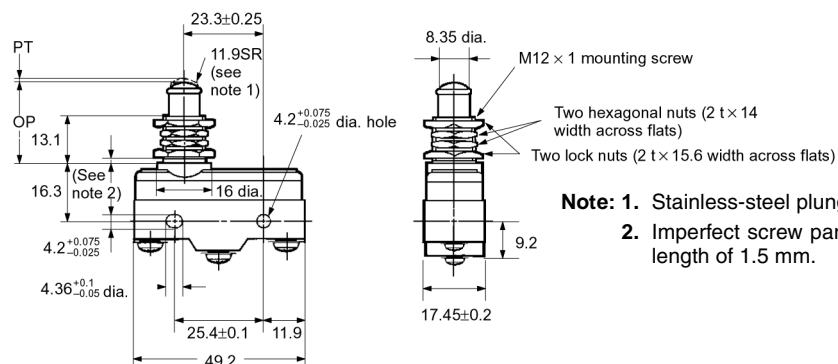
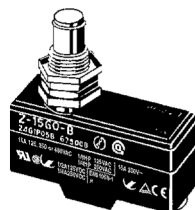


Note: Plated iron plunger

	Z-15GD-B	Z-15HD-B	Z-15ED-B	Z-01HD-B
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.79 N {200 to 285 gf}	6.13 to 7.85 N {625 to 800 gf}	2.45 N {250 gf} max.
RF min	1.12 N {114 gf}	1.12 N {114 gf}	1.12 N {114 gf}	0.78 N {80 gf}
PT max.	0.4 mm	0.3 mm	0.8 mm	0.5 mm
OT min.	1.6 mm	1.6 mm	1.6 mm	1.6 mm
MD max.	0.05 mm	0.025 mm	0.13 mm	0.05 mm
OP	21.5 ± 0.5 mm			

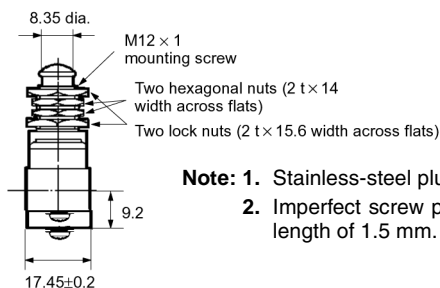
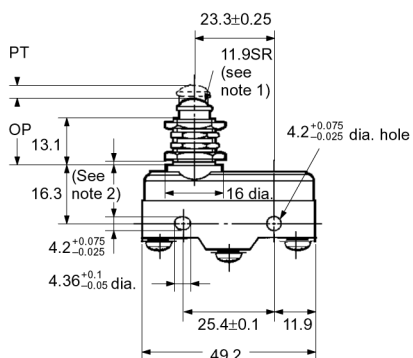
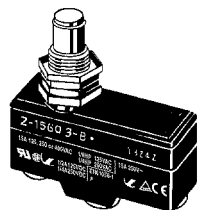
Panel Mount Plunger

Z-15GQ-B, Z-01HQ-B, Z-15HQ-B, Z-15EQ-B



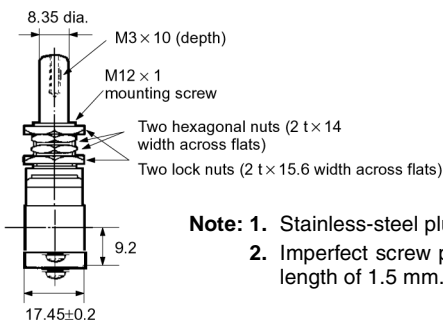
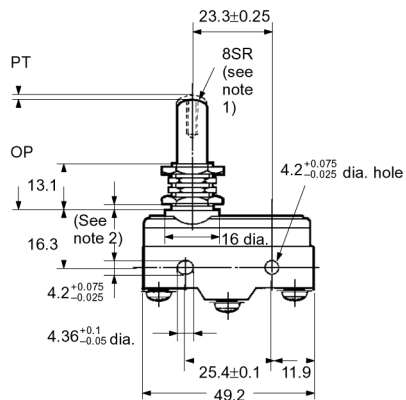
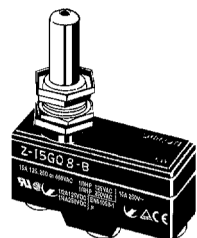
Note: 1. Stainless-steel plunger
2. Imperfect screw part with a maximum length of 1.5 mm.

Z-15GQ3-B



- Note: 1.** Stainless-steel plunger
Note: 2. Imperfect screw part with a maximum length of 1.5 mm.

Z-15GQ8-B



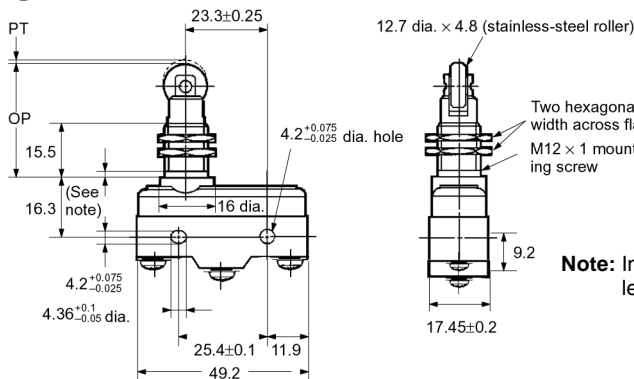
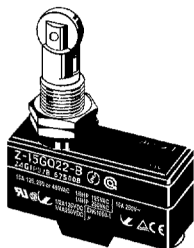
- Note: 1.** Stainless-steel plunger
Note: 2. Imperfect screw part with a maximum length of 1.5 mm.

	Z-15GQ-B	Z-15HQ-B	Z-15EQ-B	Z-01HQ-B	Z-15GQ3-B	Z-15GQ8-B
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.79 N {200 to 285 gf}	6.13 to 7.85 N {625 to 800 gf}	2.45 N {250 gf} max.	2.45 to 3.43 N {250 to 350 gf}	2.45 to 3.43 N {250 to 350 gf}
RF min	1.12 N {114 gf}	1.12 N {114 gf}	1.12 N {114 gf}	0.78 N {80 gf}	1.12 N {114 gf}	1.12 N {114 gf}
PT max.	0.4 mm	0.3 mm	0.8 mm	0.5 mm	4.2 mm	0.5 mm
OT min.	5.5 mm	5.5 mm	5.5 mm	5.5 mm	2.5 mm	5.5 mm
MD max.	0.05 mm	0.025 mm	0.13 mm	0.05 mm	2.2 mm	0.05 mm
OP	21.8 ± 0.8 mm				18.8 ± 0.8 mm	32.5 ± 1 mm

- Note: 1.** Do not use the M12 mounting screw and the case mounting hole at the same time, or excessive pulling force will be imposed on the Switch and the case and cover may be damaged.
Note: 2. On the model Z-15GQ3-B, PT can be set to a value larger than that for the Z-15GQ.
Note: 3. On the model Z-15GQ8-B, operating position can be adjusted by providing a screw in the plunger section. The M3 hole with a depth of 10 mm is a through hole. Take precautions so that no water or screw lock agent penetrates into the hole.

Panel Mount Roller Plunger

Z-15GQ22-B, Z-15EQ22-B,
Z-15HQ22-B



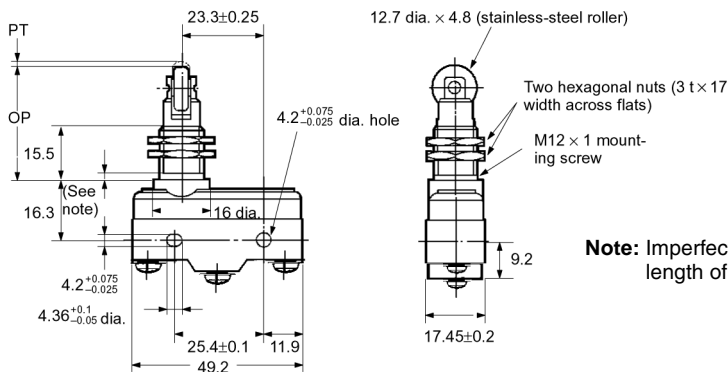
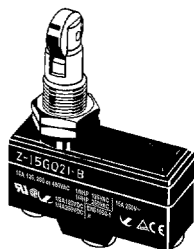
Note: Imperfect screw part with a maximum length of 1.5 mm.

	Z-15GQ22-B	Z-15HQ22-B	Z-15EQ22-B
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.79 N {200 to 285 gf}	6.13 to 7.85 N {625 to 800 gf}
RF min	1.12 N {114 gf}	1.12 N {114 gf}	1.12 N {114 gf}
PT max.	0.4 mm	0.3 mm	0.8 mm
OT min.	3.58 mm	3.58 mm	3.58 mm
MD max.	0.05 mm	0.025 mm	0.13 mm
OP	33.4 ± 1.2 mm		

Note: Do not use the M12 mounting screw and the case mounting hole at the same time, or the case may be damaged.

Panel Mount Cross Roller Plunger

Z-15GQ21-B, Z-15HQ21-B,
Z-15EQ21-B



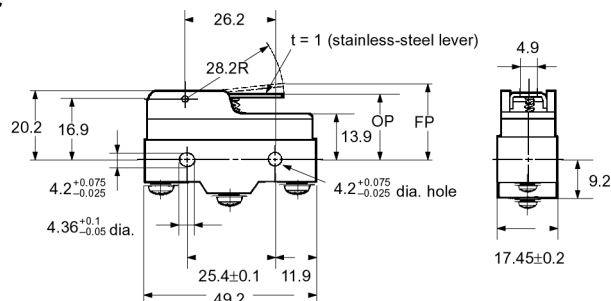
Note: Imperfect screw part with a maximum length of 1.5 mm.

	Z-15GQ21-B	Z-15HQ21-B	Z-15EQ21-B
OF	2.45 to 3.43 N {250 to 350 gf}	1.96 to 2.79 N {200 to 285 gf}	6.13 to 7.85 N {625 to 800 gf}
RF min	1.12 N {114 gf}	1.12 N {114 gf}	1.12 N {114 gf}
PT max.	0.4 mm	0.3 mm	0.8 mm
OT min.	3.58 mm	3.58 mm	3.58 mm
MD max.	0.05 mm	0.025 mm	0.13 mm
OP	33.4 ± 1.2 mm		

Note: Do not use the M12 mounting screw and the case mounting hole at the same time, or the case may be damaged.

Short Hinge Lever

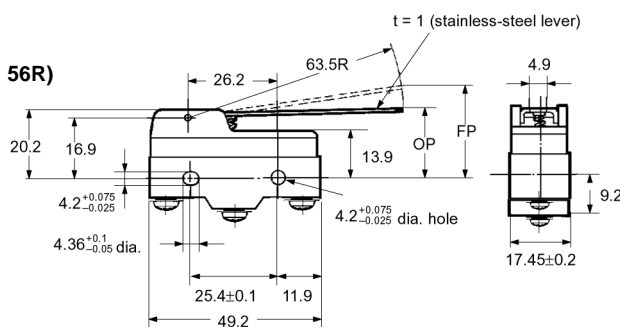
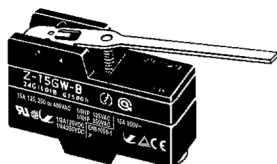
Z-15GW21-B



OF max.	1.57 N {160 gf}
RF min.	0.27 N {28 gf}
OT min.	2 mm
MD max.	1 mm
FP max.	24.8 mm
OP	19 ± 0.8 mm

Hinge Lever

Z-15GW-B, Z-15GW32-B,
Z-15HW-B, Z-15GW3-B (Lever length: 56R)
(see note)

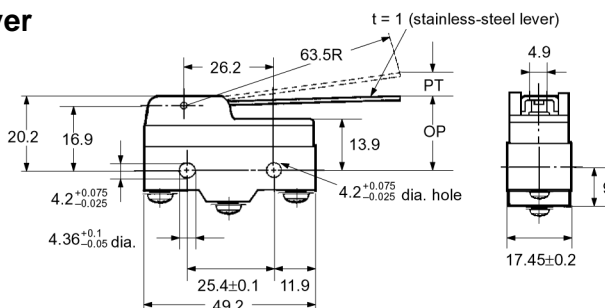
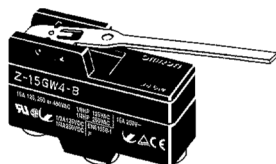


Note: The external dimensions of the actuator vary.

	Z-15GW-B	Z-15HW-B	Z-15GW32-B	Z-15GW3-B
OF max.	0.69 N {70 gf}	0.66 N {67 gf}	1.47 to 1.69 N {150 to 200 gf}	0.78 N {80 gf}
RF min.	0.14 N {14 gf}	0.14 N {14 gf}	0.92 N {94 gf}	0.15 N {15.5 gf}
OT min.	5.6 mm	5.6 mm	5.6 mm	4.8 mm
MD max.	1.27 mm	0.63 mm	1.27 mm	1.12 mm
FP max.	28.2 mm	27.4 mm	28.2 mm	27.2 mm
OP	19 ± 0.8 mm			

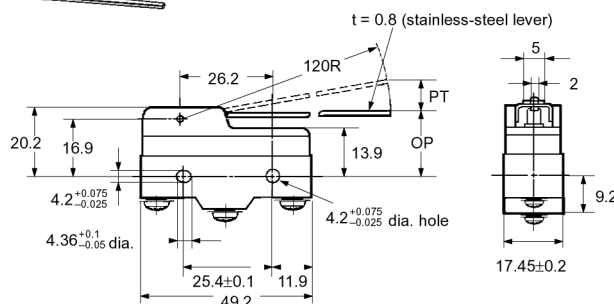
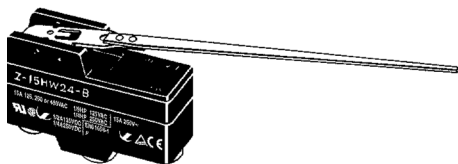
Low-force Hinge Lever

Z-15GW4-B



OF max.	274 mN {28 gf}
RF min.	34.3 mN {3.5 gf}
PT max.	10 mm
OT min.	5.6 mm
MD max.	1.27 mm
OP	19 ± 0.8 mm

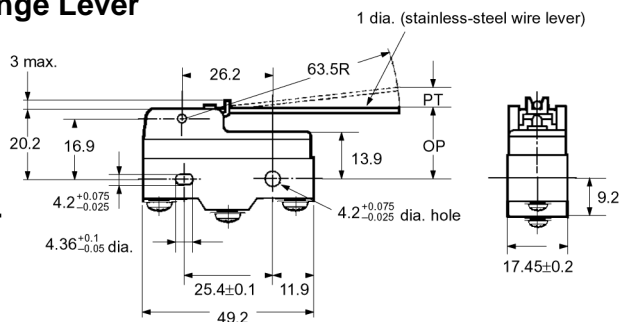
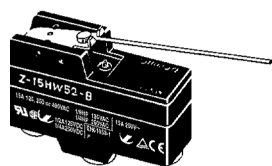
Z-15HW24-B



OF max.	58.8 mN {6 gf}
RF min.	4.90 mN {0.5 gf}
PT max.	19.8 mm
OT min.	10 mm
MD max.	2 mm
OP	19.8 ± 1.6 mm

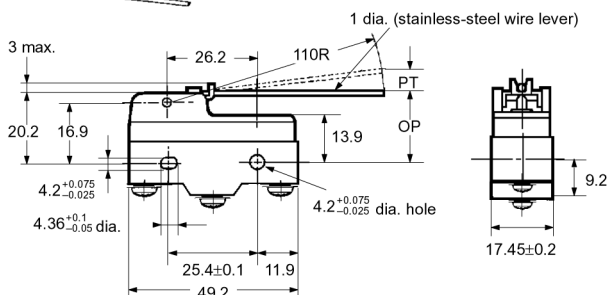
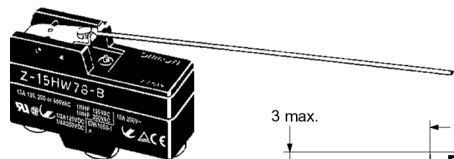
Low-force Wire Hinge Lever

Z-15HW52-B



OF max.	58.8 mN {6 gf}
RF min.	4.90 mN {0.5 gf}
PT max.	8.3 mm
OT min.	5.6 mm
MD max.	0.65 mm
OP	19 ± 1 mm

Z-15HW78-B

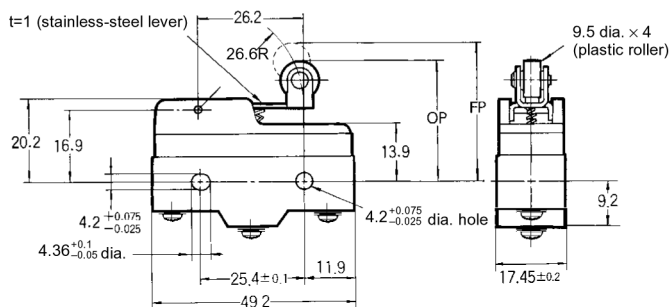


OF max.	39.2 mN {4 gf}
RF min.	2.94 mN {0.3 gf}
PT max.	10 mm
OT min.	6 mm
MD max.	3 mm
OP	20 ± 1 mm

Note: The AC rating is 10 A at 125 or 250 V.

Short Hinge Roller Lever

Z-15GW22-B, Z-01HW22-B
Z-15HW22-B, Z-15EW22-B, Z-15GW2-B
Z-15HW2-B (see note),
(Lever Length: 48.5R) (see note)

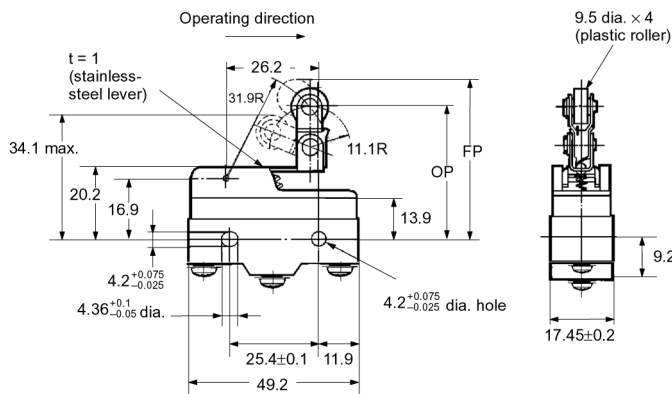
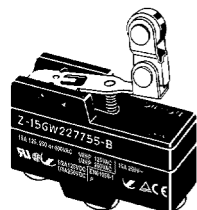


Note: The external dimensions of the actuator vary.

	Z-15GW22-B	Z-15HW22-B	Z-15EW22-B	Z-01HW22-B	Z-15GW2-B	Z-15HW2-B
OF max.	1.57 N {160 gf}	1.47 N {150 gf}	1.94 N {198 gf}	1.57 N {160 gf}	0.98 N {100 gf}	0.84 N {86 gf}
RF min.	0.41 N {42 gf}	0.41 N {42 gf}	0.41 N {42 gf}	0.27 N {28 gf}	0.22 N {22 gf}	0.22 N {22 gf}
OT min.	2.4 mm	2.4 mm	2.4 mm	2.4 mm	4 mm	4 mm
MD max.	0.5 mm	0.45 mm	1.3 mm	0.5 mm	1.02 mm	0.6 mm
FP max.	32.5 mm		35.1 mm	32.5 mm	36.5 mm	
OP	30.2 ± 0.4 mm		30.2 ± 0.4 mm	30.2 ± 0.4 mm	30.2 ± 0.8 mm	

Unidirectional Short Hinge Roller Lever

Z-15GW2277-B

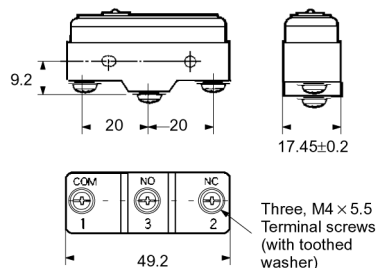


OF max.	1.67 N {170 gf}
RF min.	0.41 N {42 gf}
OT min.	2.4 mm
MD max.	0.51 mm
FP max.	43.6 mm
OP	41.3 ± 0.8 mm

Basic Models (Drip-proof) without Terminal Protective Cover

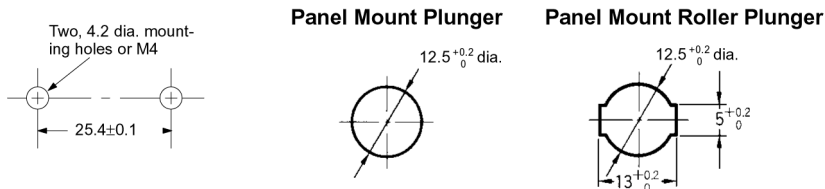
Terminals

Without Terminal Protective Cover



Note: With reverse action models (Z-15GM), the positions of NO and NC terminals are reversed.

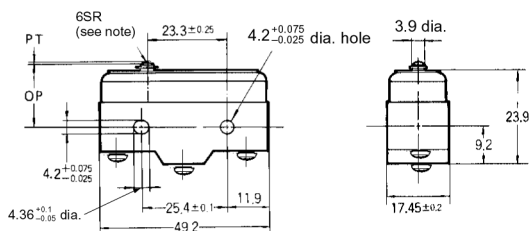
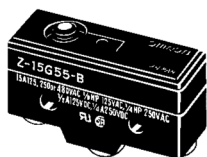
Mounting Holes



Dimensions and Operating Characteristics

Pin Plunger

Z-15G55-B
Z-01H55-B

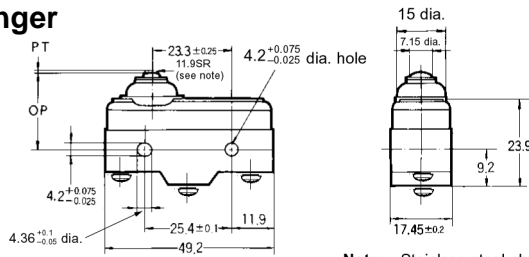
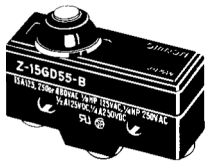


Note: Stainless-steel plunger

Model	Z-15G55-B	Z-01H55-B
OF	2.45 to 4.22 N {250 to 431 gf}	3.43 N {350 gf} max.
RF min.	1.12 N {114 gf}	0.78 N {80 gf}
PT max.	2.2 mm	2.2 mm
OT min.	0.13 mm	0.13 mm
MD max.	0.06 mm	0.06 mm
OP	15.9 ± 0.4 mm	

Short Spring Plunger

Z-15GD55-B
Z-01HD55-B

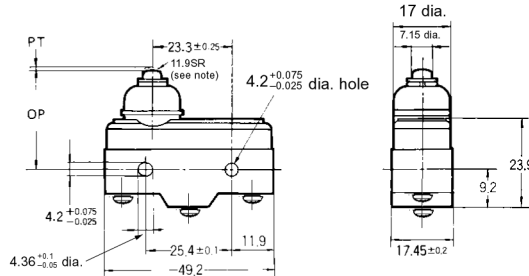
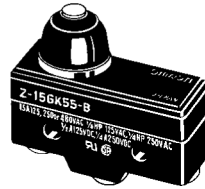


Note: Stainless-steel plunger

Model	Z-15GD55-B	Z-01HD55-B
OF	5.30 N {541 gf}	3.63 N {370 gf}
RF min.	1.12 N {114 gf}	0.78 N {80 gf}
PT max.	1.8 mm	1.9 mm
OT min.	1.6 mm	1.6 mm
MD max.	0.06 mm	0.06 mm
OP	21.5 ± 0.5 mm	

Spring Plunger

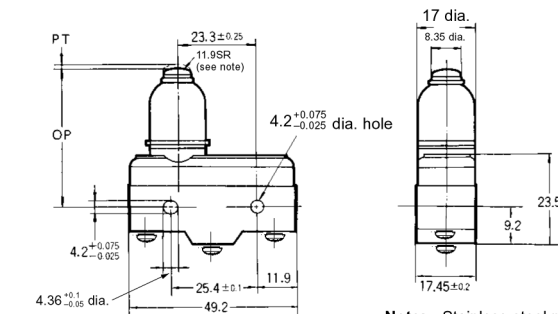
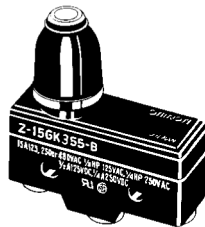
Z-15GK55-B



Note: Stainless-steel plunger

OF max.	5.30 N {541 gf}
RF min.	1.12 N {114 gf}
PT max.	2.3 mm
OT min.	1.6 mm
MD max.	0.06 mm
OP	28.2 ± 0.5 mm

Z-15GK355-B

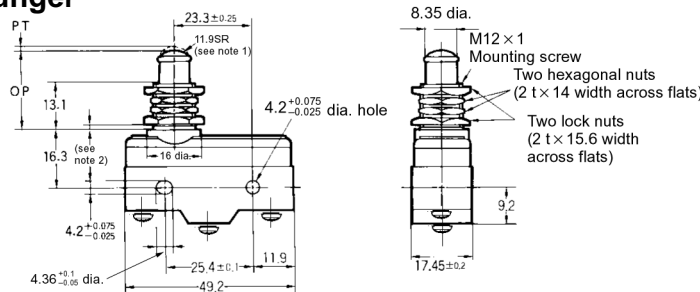
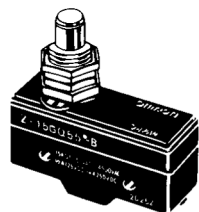


Note: Stainless-steel plunger

OF max.	5.30 N {541 gf}
RF min.	1.12 N {114 gf}
PT max.	2.4 mm
OT min.	3.5 mm
MD max.	0.06 mm
OP	37.8 ± 1.2 mm

Panel Mount Plunger

Z-15GQ55-B



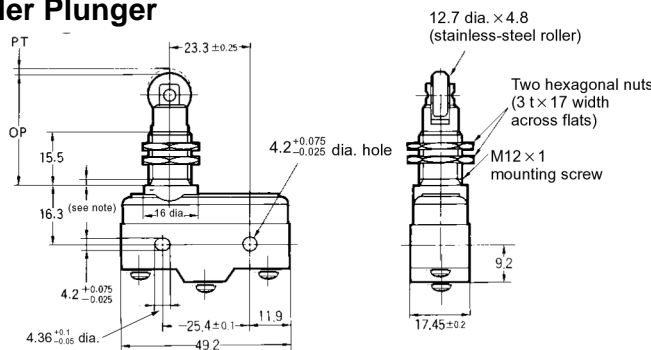
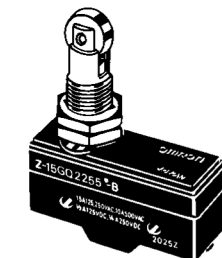
Note: 1. Stainless-steel plunger
2. Imperfect screw part with a maximum length of 1.5 mm.

OF max.	5.30 N {541 gf}
RF min.	1.12 N {114 gf}
PT max.	1.8 mm
OT min.	5.5 mm
MD max.	0.06 mm
OP	21.8 ± 0.8 mm

Note: Do not use the M12 mounting screw and the case mounting hole at the same time, or the case may be damaged.

Panel Mount Roller Plunger

Z-15GQ2255-B



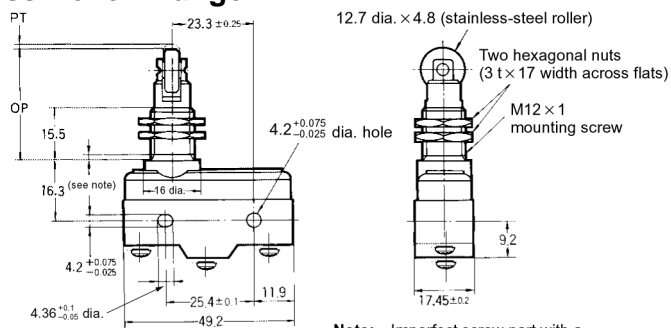
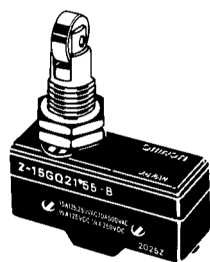
Note: Imperfect screw part with a maximum length of 1.5 mm.

OF max.	5.30 N {541 gf}
RF min.	1.12 N {114 gf}
PT max.	1.8 mm
OT min.	3.58 mm
MD max.	0.06 mm
OP	33.4 ± 1.2 mm

Note: Do not use the M12 mounting screw and the case mounting hole at the same time, or the case may be damaged.

Panel Mount Cross Roller Plunger

Z-15GQ2155-B



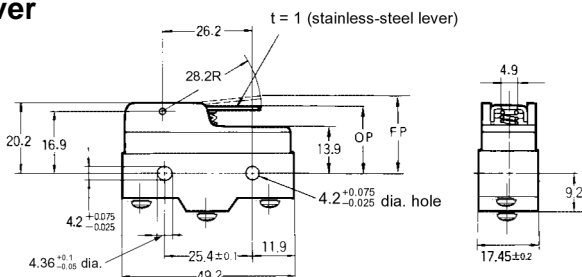
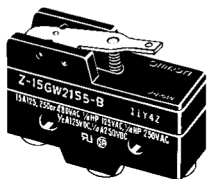
Note: Imperfect screw part with a maximum length of 1.5 mm.

OF max.	5.30 N {541 gf}
RF min.	1.12 N {114 gf}
PT max.	1.8 mm
OT min.	3.58 mm
MD max.	0.06 mm
OP	33.4 ± 1.2 mm

Note: Do not use the M12 mounting screw and the case mounting hole at the same time, or the case may be damaged.

Short Hinge Lever

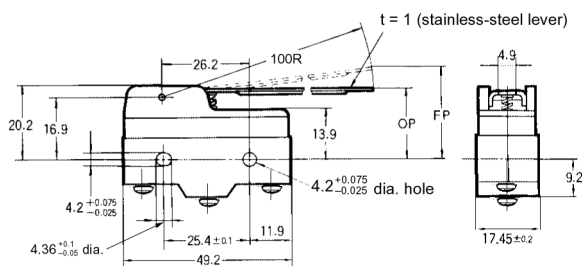
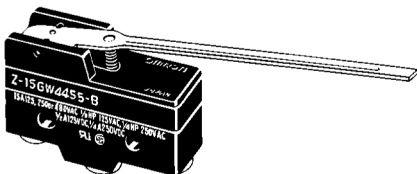
Z-15GW2155-B



OF max.	1.86 N {190 gf}
RF min.	0.27 N {28 gf}
OT min.	2 mm
MD max.	1 mm
FP max.	25 mm
OP	19 ± 0.8 mm

Long Hinge Lever

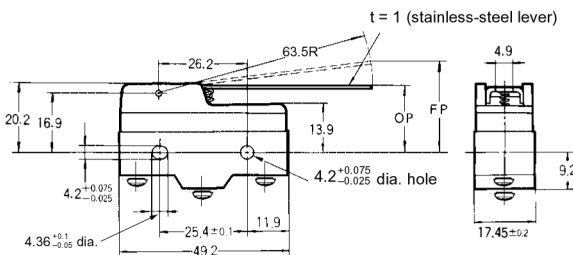
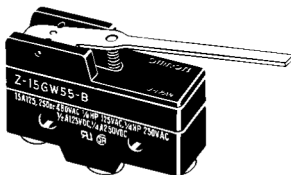
Z-15GW4455-B



OF max.	0.88 N {90 gf}
RF min.	0.14 N {14 gf}
OT min.	5.6 mm
MD max.	3.5 mm
FP max.	33 mm
OP	19 ± 1.2 mm

Hinge Lever

Z-15GW55-B

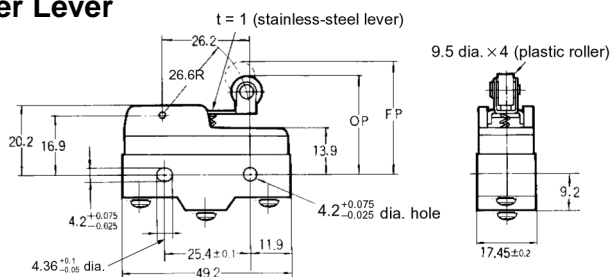
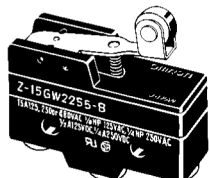


OF max.	0.98 N {100 gf}
RF min.	0.14 N {14 gf}
OT min.	5.6 mm
MD max.	2 mm
FP max.	28.2 mm
OP	19 ± 0.8 mm

Short Hinge Roller Lever

Z-15GW2255-B

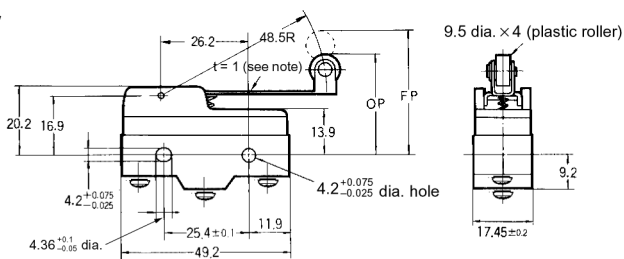
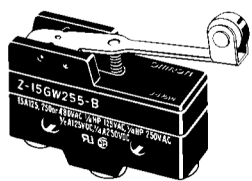
Z-01HW2255-B



Model	Z-15GW2255-B	Z-01HW2255-B
OF max.	1.96 N {200 gf}	1.96 N {200 gf}
RF min.	0.41 N {42 gf}	0.27 N {28 gf}
OT min.	2.4 mm	2.4 mm
MD max.	0.8 mm	0.8 mm
FP max.	32.9	
OP	30.2 ± 0.4 mm	

Hinge Roller Lever

Z-15GW255-B

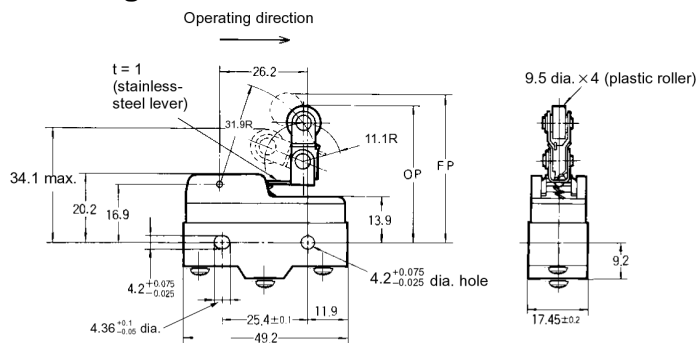
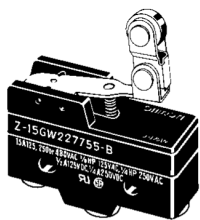


Note: Stainless-steel lever

OF max.	1.27 N {130 gf}
RF min.	0.21 N {21 gf}
OT min.	4 mm
MD max.	1.6 mm
FP max.	36.5 mm
OP	30.2 ± 0.8 mm

Unidirectional Short Hinge Roller Lever

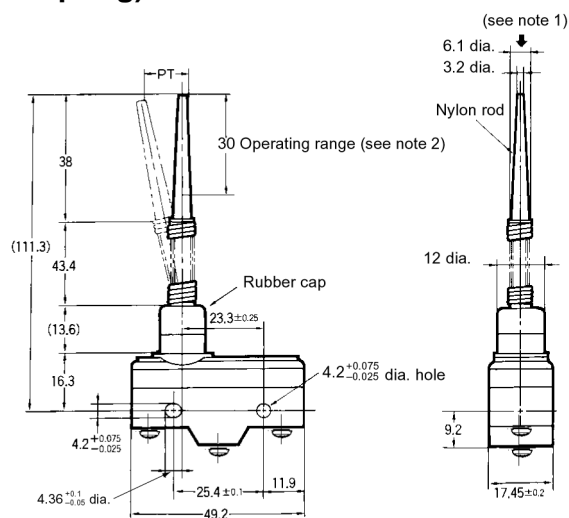
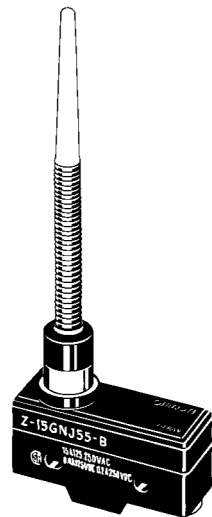
Z-15GW227755-B



OF max.	1.77 N {181 gf}
RF min.	0.49 N {50 gf}
OT min.	2.4 mm
MD max.	1.8 mm
FP max.	43.6 mm
OP	41.3 ± 0.8 mm

Flexible Rod (Coil Spring)

Z-15GNJ55-B



OF max.	0.49 N {50 gf}
PT max.	(20 mm)
OT	42 to 60 mm

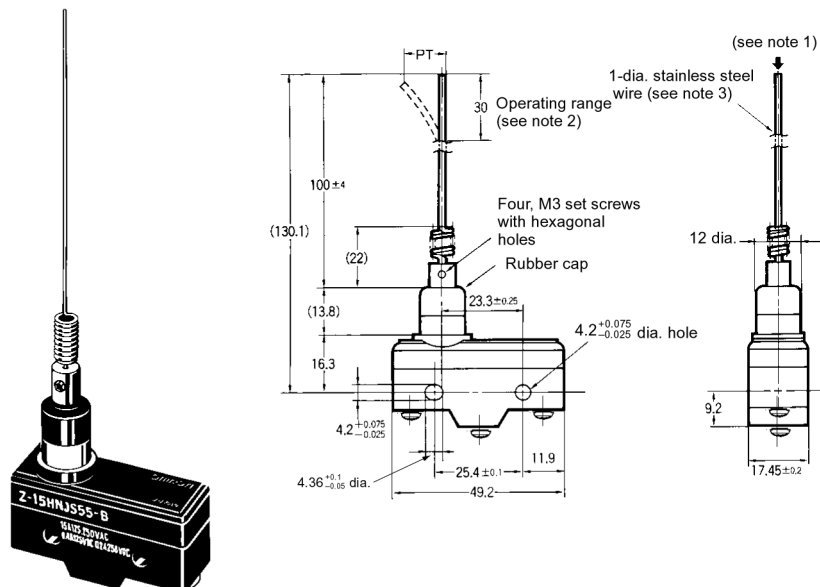
Note: 1. Operation is possible in any direction other than the axial direction (indicated by the arrow ↓).

2. Use only the area within the top 30 mm of the rod as the operating part. (Do not use the area that falls within 80 mm from the mounting hole as the operating part. Using this area may cause damage to the nylon rod.)

Flexible Rod (Steel Wire)

Z-15HNJS55-B

OF max.	0.15 N {15 gf}
PT max.	(25 mm)

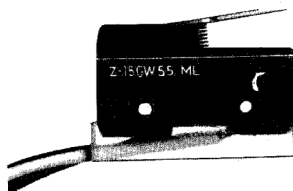


- Note:**
1. Operation is possible in any direction other than the axial direction (indicated by the arrow ↓).
 2. Use only the area within the top 30 mm of the rod as the operating part. (Do not use the area that falls within 100 mm from the mounting hole as the operating part. Using this area may cause damage to the steel wire.)
 3. The steel wire can be replaced if damaged. (Model: Lever for HNJS55)

■ Molded Terminal Type Ordering Information

The solder terminal type can be supplied with molded terminals with a choice of five different lead outlet directions. When placing your order for the molded terminal type, add the following code to the model number.

- M□□
- Lead outlet directions (L, R, D, F, H)
 - Mold thickness (No symbol)...a = 12 mm with VSF
19...a = 19 mm with VCT

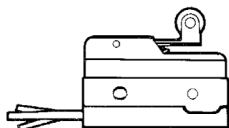


- Note:**
1. Standard leads are single-core vinyl cords (VSF) with a nominal cross sectional area of 1.25 mm².
 2. Standard vinyl cord lengths are 1 m, 3 m, and 5 m.
 3. Mold thickness will be 19 mm when using VCT cords.
 4. Standard unit has three lead outlets in the same direction.
 5. Connect the black lead to the COM terminal, white lead to the NO terminal, and red lead to the NC terminal, respectively.

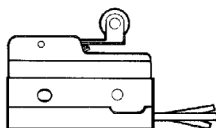
Directions of Lead Outlets

The following diagrams show the molded terminal version of sealed type Z-15GW2255, with a mold thickness of 12 mm.

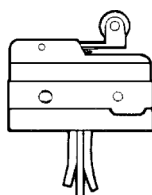
Z-15GW2255-ML
(left-hand)



Z-15GW2255-MR
(right-hand)



Z-15GW2255-MD
(underside)



Note: Respective directions of lead outlets are determined with the plunger viewed on your left.

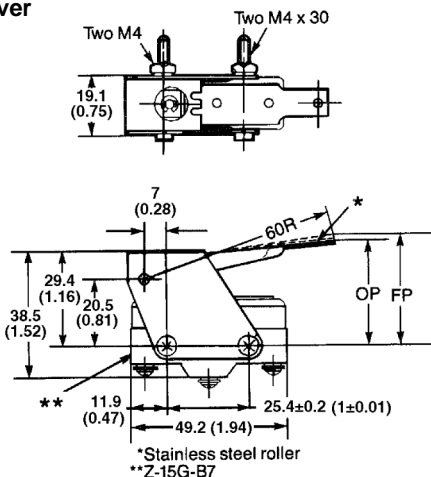
Lead Wire Specifications

Type	Nominal cross-sectional area (mm ²)	Finished outer diameter (mm)	Connection to terminal	Length (m)
VSF (single-core, vinyl cord)	1.25	Approx. 3.1	Black-COM	0.5, 1, 2, 3, 5
VCT (vinyl-insulated cable)		Approx. 9.6 (2-core) Approx. 10.5 (3-core)	White-NO Red-NC	(standard)

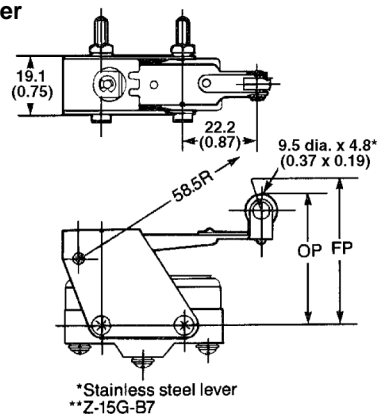
Accessories (order separately)

Unit: mm (inch)

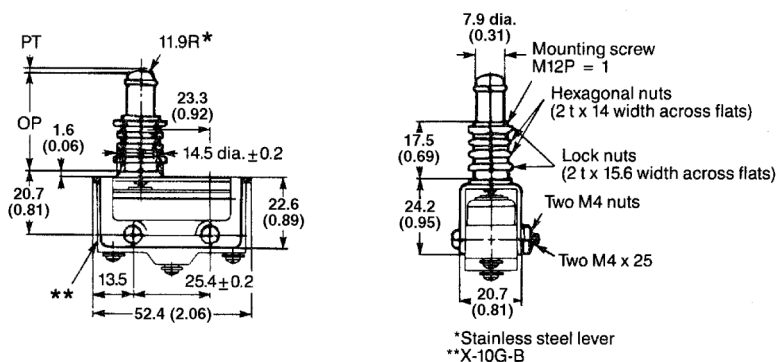
Hinge lever
ZAA-1



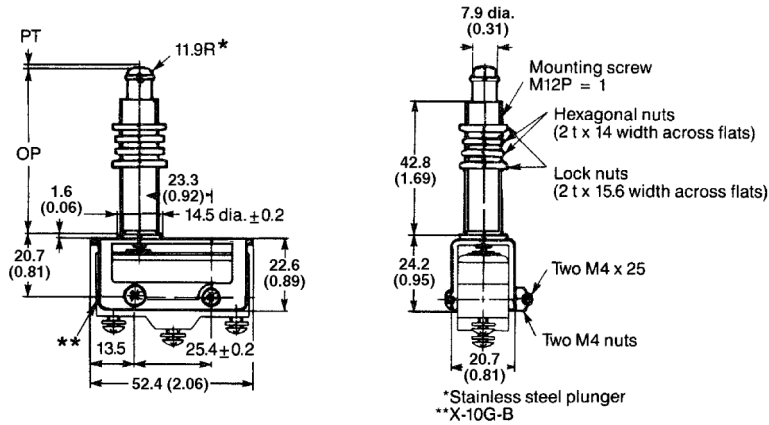
Hinge roller lever
ZAA-2



Panel mount plunger
ZAQ-3

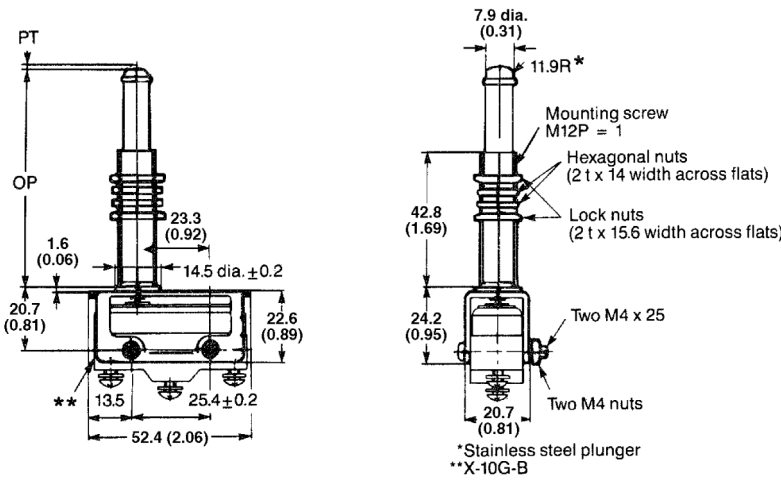


**Panel mount plunger
ZAQ-2**



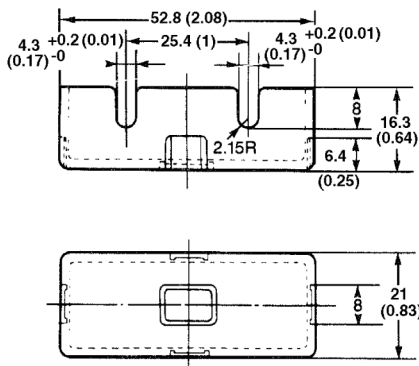
Note: Unless otherwise specified, a tolerance of ± 0.8 mm applies to all dimensions.

**Panel mount plunger
ZAQ-1**

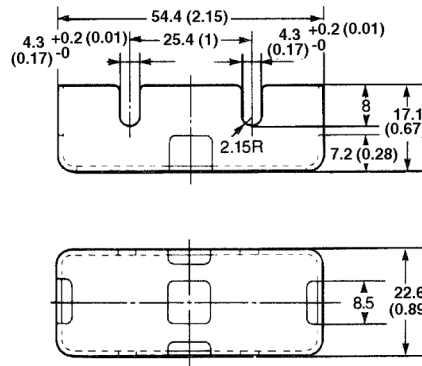


Note: Unless otherwise specified, a tolerance of ± 0.8 mm applies to all dimensions.

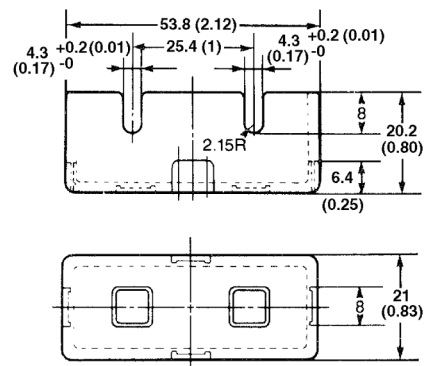
AP-A (for solder terminal)



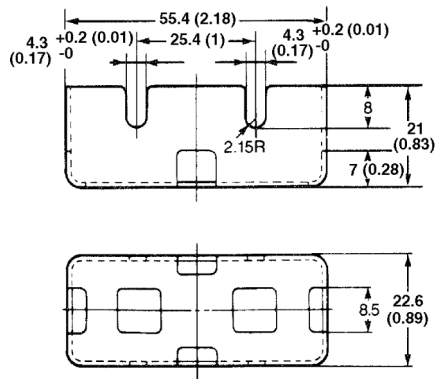
AP1-A (for solder terminal)



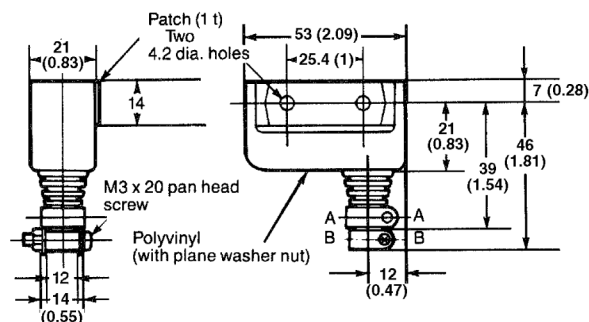
AP-B (for screw terminal)



AP1-B



AP-Z



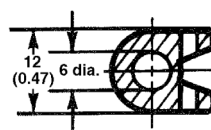
Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

■ Cable Outlet Dimensions

A-A section



B-B section



Note: The cable outlet is provided with two stepped openings (6 dia. and 8 dia.) to permit the use of either opening according to the finished OD of the cable to be connected.

Precautions

■ Correct Use

Mounting

Use M4 screws with plane washers and spring washers to mount the Switch. Tighten each mounting screw securely to a torque of 1.18 to 1.47 N • m {12 to 15 kgf • cm}.

Panel Mount Switch (Z-15□Q, Z-01□Q□)

When mounting the panel mount plunger model with screws on a side surface, be careful of the dog angle and operation speed. Excessive dog angle or operation speed may damage the Switch.

The Switch can be panel mounted, provided that the hexagonal nut of the actuator is tightened to a torque of 2.94 to 4.9 N • m {30 to 50 kgf • cm}.

When using the panel mount plunger model mounted with screws on a side surface, be careful not to apply a large shock. Applying a shock exceeding 100G may damage the Switch.

When using the panel mount plunger model mounted with screws on a side surface, remove the hexagonal nuts from the actuator.

High-sensitivity Switch (Z-15H)

When using the Switch in a DC circuit, be sure to provide an arc suppressor as well because the small contact gap of the Switch may result in contact troubles.

In an application where a high repeat accuracy is required, limit the current that flows through the Switch to within 0.1 A. Also, use a relay to control a high-capacity load if the Switch is connected to such a load. (In this case, the exciting current of the relay coil is the load of the Switch.)

Do not apply a force of 19.6 N {2 kgf} or higher to the pin plunger.

Exercise care that the environment conditions such as temperature and humidity do not change abruptly.

Drip-proof Switch (Z-□55)

The Switch is not perfectly oil-tight; so do not dip it in oil or water.

The rubber boots are made from weather-resistant chloroprene rubber.

Do not use Basic Switches in places with radical changes in temperature.

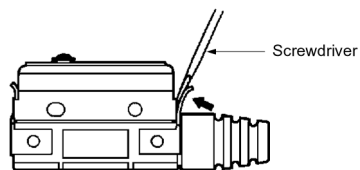
Flexible Rod Switch (Z-15□NJ□55, Drip-proof)

When the rod is fully swung, the Switch may operate when the lever returns, causing chattering. Use a circuit that compensates for chattering wherever possible.

Do not switch the rod to the fullest extent when the Switch is to break a power circuit because such a practice may cause metal deposition to occur between the mating contacts of the Switch.

Others

Do not apply an excessive force to the mounting bracket with a screwdriver or a similar object when attaching or detaching the protective cover; otherwise, the cover will be deformed.



This terminal protective cover cannot be used with models whose model number does not have the prefix “-B5V.”

Terminal protective covers can be ordered separately for maintenance use.

MEMO

A large grid of dashed lines for taking notes, consisting of 20 columns and 30 rows.

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