

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

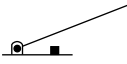




Ordering Information














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.)

- The values are for the Z-15G pin plunger.
- The values are for the pin plunger. The life expectancy for models other than the pin plunger is 10,000,000 min.
- 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.