

## Best-selling Basic Switch Boasting High Precision and Wide Variety



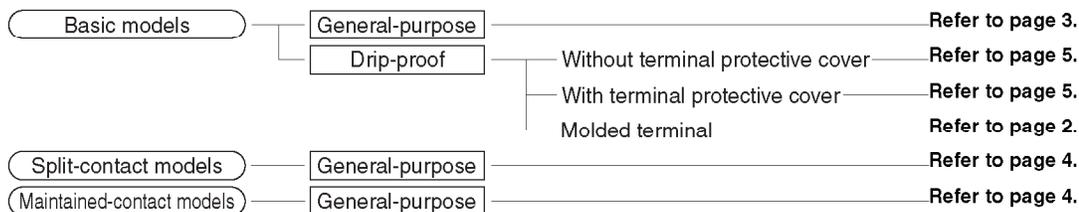
- A large switching capacity of 15 A with high repeat accuracy.
- A wide range of variations in contact form for your selection: basic, split-contact, maintained-contact, and adjustable contact gap types.
- A series of standard models for micro loads is available.
- A series of molded terminal-type models incorporating safety terminal protective cover is available.



**!** Be sure to read *Safety Precautions* on page 22 and *Safety Precautions for All Basic Switches*.

## Model Number Structure

### Configuration



### Basic Models

#### General-purpose

- A variety of actuators is available for a wide range of application.
- The contact mechanism of models for micro loads is a crossbar type with gold-alloy contacts, which ensures highly reliable operations for micro loads.
- Contact Gap:
  - H2: 0.20 mm (extra-high-sensitivity)
  - H: 0.25 mm (high-sensitivity, micro voltage current load)
  - G: 0.5 mm (standard)
  - E: 1.8 mm (high-capacity)
  - F: 1.0 mm (split-contact models)

#### Drip-proof

- These Switches use a rubber boot on the actuator and adhesive fill between the case and cover to increase resistance to drips.
- Models with drip-proof terminal protective covers and molded terminals with resin filling are also available.

### Split-contact Models

- This type is identical in construction to the general-purpose basic switch except that it has two pairs of simultaneous acting contacts by splitting moving contacts.
- Since the moving contacts are connected to a common terminal, either parallel or series connection is possible.
- Highly reliable micro load switching is ensured if the model is used as a twin-contact switch.

### Maintained-contact Models

- The maintained-contact type has a reset button at the bottom of the switch case, in addition to the pushbutton (plunger) located on the opposite side of the reset button. Use these buttons alternately.
- Since the Switch has greater pretravel than overtravel, it is suitable for use in reversible control circuits, manual reset circuits, safety limit circuits, and other circuits which are not preferable for automatic resetting. (For further details, refer to individual datasheets.)

## Model Number Legend

### Basic Models

Z-□□□□-□

(1)(2)(3)(4) (5)

#### (1) Ratings

01 : 0.1 A (micro load)  
15 : 15 A

#### (2) Contact Gap

H2 : 0.20 (extra-high-sensitivity)  
H : 0.25 mm (high-sensitivity,  
micro load)  
G : 0.5 mm (standard)  
E : 1.8 mm (high-capacity)

#### (3) Actuator

None : Pin plunger  
S : Slim spring plunger  
D : Short spring plunger  
K : Spring plunger (medium OP)  
K3 : Spring plunger (high OP)  
Q3 : Panel mount plunger (medium OP)  
Q : Panel mount plunger (medium OP)  
Q8 : Panel mount plunger (high OP)  
Q22 : Panel mount roller plunger  
Q21 : Panel mount cross roller plunger  
L : Leaf spring (high OF)  
L2 : Roller leaf spring  
W21 : Short hinge lever  
W : Hinge lever (low OF)  
W3 : Hinge lever (medium OF)  
W32 : Hinge lever (high OF)  
W4 : Low-force hinge lever  
W44 : Long hinge lever  
W78 : Low-force wire hinge lever (low OF)  
W52 : Low-force wire hinge lever (high OF)  
W22 : Short hinge roller lever  
W2 : Hinge roller lever  
W25 : Hinge roller lever (large roller)  
W49 : Short hinge cross roller lever  
W54 : Hinge cross roller lever  
W2277 : Unidirectional short hinge roller lever (low OF)  
M : Reverse hinge lever  
M22 : Reverse short hinge roller lever  
M2 : Reverse hinge roller lever  
NJ : Flexible rod (high OF)  
NJS : Flexible rod (low OF)

#### (4) Degree of Protection

None : General-purpose  
55 : Drip-proof  
(not include the terminals)  
A55 : Drip-proof  
(including the terminals)

#### (5) Terminals

None : Solder terminal  
B : Screw terminal  
(with toothed washer)  
B5V : Screw terminal with terminal cover (for Z-15G□A55 only)

### Standard Models (Drip-proof Type/Molded Terminals)

Z-□55-M□□ □M

(1) (2)(3) (4)

#### (1) Drip-proof Type

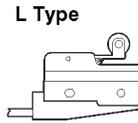
#### (2) Lead Outlets

None : VSF  
19 : VCT

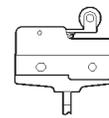
#### (3) Directions of Lead

#### Outlets (See following diagrams.)

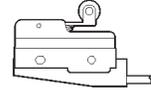
L : Left  
R : Right  
D : Descending



#### D Type



#### R Type



#### (4) Length of Lead

#### Outlets

1 : 1 m  
3 : 3 m

### Split-contact Models

Z-10F□Y-B

(1)(2)(3)(4) (5)

#### (1) Ratings

10 : 10 A (split-contact models)

#### (2) Contact Gap

F : 1 mm (high-capacity)

#### (3) Actuator

None : Pin plunger  
S : Slim spring plunger  
D : Short spring plunger  
Q : Panel mount plunger  
Q22 : Panel mount roller plunger  
W : Hinge lever  
W22 : Short hinge roller lever  
W2 : Hinge roller lever  
M22 : Reverse short hinge roller lever

#### (4) Construction

Y : Split-contact models

#### (5) Terminals

B : Screw terminal  
(with toothed washer)

### Maintained-contact Models

Z-15-E□R

(1) (2)(3)(4)

#### (1) Ratings

15 : 15 A

#### (2) Contact Gap

E : 1.8 mm (high capacity)

#### (3) Actuator

None : Pin plunger  
S : Slim spring plunger  
W : Hinge lever

#### (4) Structure

R : Maintained-contact models

Note: For combinations of models, *Ordering Information* on page 3 to 6.

## Ordering Information

### Main Unit

#### Basic Models (General-purpose)

Actuator	Classification	Contact gap Terminal *1	Standard	High-sensitivity	Extra-high sensitivity	High-capacity	Micro load
			G (0.5 mm)	H (0.25 mm)	H2 (0.20 mm)	E (1.8 mm)	H (0.25 mm)
			Model	Model	Model	Model	Model
Pin plunger		 	Z-15G	Z-15H	Z-15H2	Z-15E	Z-01H
			Z-15G-B	Z-15H-B	Z-15H2-B	Z-15E-B	Z-01H-B
Slim spring plunger		 	Z-15GS	Z-15HS	---	---	Z-01HS
			Z-15GS-B	Z-15HS-B	---	---	Z-01HS-B
Short spring plunger		 	Z-15GD	Z-15HD	---	Z-15ED	Z-01HD
			Z-15GD-B	Z-15HD-B	---	Z-15ED-B	Z-01HD-B
Panel mount plunger		 	Low OP Z-15GQ3	---	---	---	---
			Medium OP Z-15GQ3-B	---	---	---	---
		 	High OP Z-15GQ	Z-15HQ	---	Z-15EQ	Z-01HQ
			Z-15GQ8	Z-15HQ-B	---	Z-15EQ-B	Z-01HQ-B
Panel mount roller plunger		 	Z-15GQ22	Z-15HQ22	---	Z-15EQ22	---
			Z-15GQ22-B	Z-15HQ22-B	---	Z-15EQ22-B	---
Panel mount cross roller plunger		 	Z-15GQ21	Z-15HQ21	---	Z-15EQ21	---
			Z-15GQ21-B	Z-15HQ21-B	---	Z-15EQ21-B	---
Leaf spring		 	Z-15GL	---	---	---	---
			Z-15GL-B	---	---	---	---
Roller leaf spring		 	Z-15GL2	---	---	---	---
			Z-15GL2-B	---	---	---	---
Short hinge lever		 	Z-15GW21	---	---	---	---
			Z-15GW21-B	---	---	---	---
Hinge lever		 	Low OP Z-15GW	Z-15HW	---	---	---
			Medium OP Z-15GW3	Z-15HW-B	---	---	---
		 	High OP Z-15GW32	---	---	---	---
			Z-15GW32-B	---	---	---	---
Low-force hinge lever		 	Z-15GW4	Z-15HW24	---	---	---
			Z-15GW4-B	Z-15HW24-B	---	---	---
Low-force wire hinge lever		 	---	Z-15HW78	---	---	---
			---	Z-15HW78-B	---	---	---
		 	High OP	---	Z-15HW52	---	---
			Z-15HW52-B	---	Z-15HW52-B	---	---
Short hinge roller lever		 	Z-15GW22	Z-15HW22	---	Z-15EW22	Z-01HW22
			Z-15GW22-B	Z-15HW22-B	---	Z-15EW22-B	Z-01HW22-B
Short hinge cross roller lever		 	Z-15GW49	---	---	---	---
			Z-15GW49-B	---	---	---	---
Hinge roller lever		 	Standard Z-15GW2	Z-15HW2	---	---	---
			Large roller Z-15GW25	Z-15HW2-B	---	---	---
		 	---	---	---	---	---
			Z-15GW25-B	---	---	---	---
Hinge cross roller lever		 	Z-15GW54	---	---	---	---
			Z-15GW54-B	---	---	---	---
Unidirectional short hinge roller lever		 	Parallel Z-15GW2277	---	---	---	---
			Z-15GW2277-B	---	---	---	---
Reverse hinge lever *2		 	Z-15GM	---	---	---	---
			Z-15GM-B	---	---	---	---
Reverse short hinge roller lever *2		 	Z-15GM22	---	---	---	---
			Z-15GM22-B	---	---	---	---
Reverse hinge roller lever *2		 	Z-15GM2	---	---	---	---
			Z-15GM2-B	---	---	---	---

\*1.  : Solder terminal  : Screw terminal

\*2. The pin plungers of reverse-type models are continuously pressed by the actuator levers with compression coil springs and the pin plungers are freed by operating the levers. Reverse-type models are highly vibration- and shock-resistant because the pin plungers are normally pressed.

Accessories (Terminal Covers, Actuators, and Separators): Refer to Z/A/X/DZ Common Accessories and Z/X/DZ Common Accessories.

### Minimum Order Lot

The following models are available at the minimum order lot specified below.

Orders must be placed per lot.

Classification	Standard	High-sensitivity	Minimum order lot (pcs)
Actuator			
Short spring plunger	Z-15GD-B	—	10
Panel mount plunger	Z-15GQ Z-15GQ-B Z-15GQ8-B	—	
Panel mount roller plunger	Z-15GQ22 Z-15GQ22-B	—	
Panel mount cross roller plunger	Z-15GQ21-B	—	
Short hinge lever	Z-15GW21-B	—	
Hinge lever	Z-15GW Z-15GW-B	—	
Low-force hinge lever	Z-15GW4-B	Z-15HW24-B	
Low-force hinge wire lever	—	Z-15HW78-B	
Short hinge roller lever	Z-15GW22 Z-15GW22-B	—	
Hinge roller lever	Z-15GW2 Z-15GW2-B	—	
Reverse short hinge roller lever	Z-15GM22-B	—	
Reverse hinge roller lever	Z-15GM2-B	—	

### Split-contact Models

Actuator	Contact gap Terminal *1	F (1.0 mm)
		Model
Pin plunger		—
		Z-10FY-B
Slim spring plunger		—
		Z-10FSY-B
Short spring plunger		—
		Z-10FDY-B
Panel mount plunger		—
		Z-10FQY-B
Panel mount roller plunger		—
		Z-10FQ22Y-B
Hinge lever		—
		Z-10FWY-B
Short hinge roller lever		—
		Z-10FW22Y-B
Hinge roller lever		—
		Z-10FW2Y-B
Reverse short hinge roller lever *2		—
		Z-10FM22Y-B

\*1. : Solder terminal : Screw terminal

\*2. The pin plungers of reverse-type models are continuously pressed by the actuator levers with compression coil springs and the pin plungers are freed by operating the levers. Reverse-type models are highly vibration- and shock-resistant because the pin plungers are normally pressed.

### Maintained-contact Models

Actuator	Model
Pin plunger	Z-15ER
Slim spring plunger	Z-15ESR
Hinge lever	Z-15EWR

## Basic Models (Drip-proof Models | Standard, Microload |)

Actuator	Classification Contact gap Drip-proof terminal protective cover Terminal *1	Standard G (0.5 mm)		Micro load H (0.25 mm)		
		Not provided	Provided	Not provided		
		Model	Model	Model		
Pin plunger			Z-15G55	---	Z-01H55	
			Z-15G55-B	Z-15GA55-B5V	Z-01H55-B	
Short spring plunger			Z-15GD55	---	Z-01HD55	
			Z-15GD55-B	---	Z-01HD55-B	
Spring plunger				Z-15GK55	---	
				Z-15GK55-B	---	
				Z-15GK355	---	---
				Z-15GK355-B	Z-15GK3A55-B5V	---
Panel mount plunger			Z-15GQ55	---	---	
			Z-15GQ55-B	Z-15GQA55-B5V	---	
Panel mount roller plunger			Z-15GQ2255	---	---	
			Z-15GQ2255-B	Z-15GQ22A55-B5V	---	
Panel mount cross roller plunger			---	---	---	
			Z-15GQ2155-B	Z-15GQ21A55-B5V	---	
Leaf spring			Z-15GL55	---	---	
			Z-15GL55-B	---	---	
Roller leaf spring			Z-15GL255	---	---	
			Z-15GL255-B	---	---	
Short hinge lever			Z-15GW2155	---	---	
			Z-15GW2155-B	---	---	
Long hinge lever			Z-15GW4455	---	---	
			Z-15GW4455-B	Z-15GW44A55-B5V	---	
Hinge lever			Z-15GW55	---	---	
			Z-15GW55-B	Z-15GWA55-B5V	---	
Short hinge roller lever			Z-15GW2255	---	Z-01HW2255	
			Z-15GW2255-B	Z-15GW22A55-B5V	Z-01HW2255-B	
Hinge roller lever			Z-15GW255	---	---	
			Z-15GW255-B	Z-15GW2A55-B5V	---	
Unidirectional short hinge roller lever			Z-15GW227755	---	---	
			Z-15GW227755-B	Z-15GW2277A55-B5V	---	
Reverse hinge lever *2			Z-15GM55	---	---	
			Z-15GM55-B	---	---	
Reverse short hinge roller lever *2			Z-15GM2255	---	---	
			Z-15GM2255-B	---	---	
Reverse hinge roller lever *2			Z-15GM255	---	---	
			Z-15GM255-B	---	---	
Flexible rod (coil spring) *3			Z-15GNJ55	---	---	
			Z-15GNJ55-B	---	---	

\*1.  : Solder terminal  : Screw terminal

\*2. The pin plungers of reverse-type models are continuously pressed by the actuator levers with compression coil springs and the pin plungers are freed by operating the levers.

\*3. The tip is made of resin.

## Minimum Order Lot

The following models are available at the minimum order lot specified below.

Orders must be placed per lot.

Actuator	Classification Contact gap	Standard G (0.5 mm)	Minimum order lot (pcs)
Short spring plunger		Z-15GD55-B	10
Spring plunger		Z-15GK55-B	
Hinge lever		Z-15GW4455-B	
		Z-15GW55	
		Z-15GW55-B	
Short hinge roller lever		Z-15GW2255	
		Z-15GW2255-B	
Hinge roller lever		Z-15GW255-B	
Flexible rod (coil spring)		Z-15GNJ55-B	

Accessories (Terminal Covers, Actuators, and Separators): Refer to Z/A/X/DZ Common Accessories and Z/X/DZ Common Accessories.

**Basic Models (Drip-proof Models High-sensitivity)**

Actuator	Classification Drip-proof terminal protective cover	High-sensitivity	
		Contact gap	
		Terminal *	
		Model	
Flexible rod (steel wire)		Z-15HNJS55	
		Z-15HNJS55-B	

\*  : Solder terminal  : Screw terminal

**Minimum Order Lot**

The following models are available at the minimum order lot specified below.  
Orders must be placed per lot.

Actuator	Classification Contact gap	High-sensitivity	Minimum order lot (pcs)
		H (0.25 mm)	
Flexible rod (steel wire)		Z-15HNJS55-B	10

**Specifications**

**Ratings (Basic, Split-contact and Maintained contact Models)**

**Z-15 (Except Micro Load and Flexible Rod Models)**

Contact gap	Item Rated voltage	Non-inductive load (A)				Inductive load (A)			
		Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
G, H, H2, E	125 VAC	15 (10) *	3	1.5	15 (10) *	5	2.5		
	250 VAC	15 (10) *	2.5	1.25	15 (10) *	3	1.5		
	500 VAC *	10	1.5	0.75	6	1.5	0.75		
G	8 VDC	15	3	1.5	15	5	2.5		
	14 VDC	15	3	1.5	10	5	2.5		
	30 VDC	6	3	1.5	5	5	2.5		
	125 VDC	0.5	0.5	0.5	0.05	0.05	0.05		
	250 VDC	0.25	0.25	0.25	0.03	0.03	0.03		
H, H2	8 VDC	15	3	1.5	15	5	2.5		
	14 VDC	15	3	1.5	10	5	2.5		
	30 VDC	2	2	1.4	1	1	1		
	125 VDC	0.4	0.4	0.4	0.03	0.03	0.03		
	250 VDC	0.2	0.2	0.2	0.02	0.02	0.02		
E	8 VDC	15	3	1.5	15	5	2.5		
	14 VDC	15	3	1.5	15	5	2.5		
	30 VDC	15	3	1.5	10	5	2.5		
	125 VDC	0.75	0.75	0.75	0.4	0.4	0.4		
	250 VDC	0.3	0.3	0.3	0.2	0.2	0.2		

\* Figures in parentheses are for the Z-15HW52, Z-15HW78(-B) and Z-15H2(-B) models, the AC ratings of these models are 125 and 250 V only.

**Z-01H**

Rated voltage	Resistive load (A)	
	NC	NO
125 VAC	0.1	
8 VDC	0.1	
14 VDC	0.1	
30 VDC	0.1	

- Note: 1. The above current ratings are the values of the steady-state current.  
2. Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).  
3. Lamp load has an inrush current of 10 times the steady-state current.  
4. Motor load has an inrush current of 6 times the steady-state current.  
5. The normally closed and normally open ratings of reverse hinge lever models are opposite to each other.  
6. The AC ratings of molded terminals are 125 and 250 V only.  
7. The ratings values apply under the following test conditions:  
(1) Ambient temperature: 20±2°C  
(2) Ambient humidity: 65±5%RH  
(3) Operating frequency: 20 operations/min

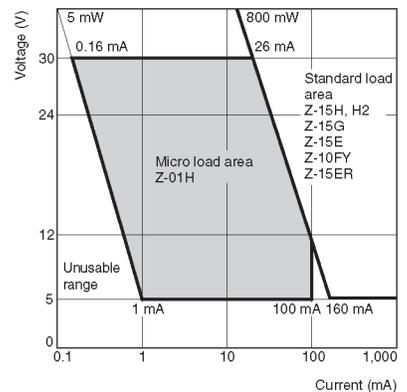
**Z-15 (Flexible Rod Models)**

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

**Z-10F**

Contact gap	Item Rated voltage	Non-inductive load (A)				Inductive load (A)			
		Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
Series connection	125 VAC	10	4	2		6	5	2.5	
	250 VAC	10	2.5	1.5		6	3	1.5	
	30 VDC	10	4	2		6	6	3	
	125 VDC	1	1	1		0.1	0.1	0.1	
Parallel connection	250 VDC	0.6	0.6	0.6		0.05	0.05	0.05	
	125 VAC	6	3	1.5		4	4	2	
	250 VAC	6	2.5	1.25		4	2	1	
	30 VDC	6	4	2		4	6	3	
Parallel connection	125 VDC	0.6	0.6	0.6		0.1	0.1	0.1	
	250 VDC	0.3	0.3	0.3		0.05	0.05	0.05	

**Use the switch within the operating range.**



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

## Certified Standard Ratings

Ask your OMRON representative for information on certified models.

### UL/CSA (General ratings only)

Rated voltage	Model	Z-15	Z-10F	Z-01H
125 VAC		15A 1/8HP	6A 1/10HP	0.1A
250 VAC		15A 1/4HP	6A 1/8HP	---
480 VAC		15A	6A	---
30 VDC		---	---	0.1A
125 VDC		0.5A	0.6A	---
250 VDC		0.25A	0.3A	---

### TÜV (EN61058-1)

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

### CCC (GB14048.5)

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

## Characteristics

Item	Classification	Z-15 (except micro load and flexible rod)	Z-01H	Z-15 (flexible rod)	Z-10F	Z-15H2
Operating speed		0.01 mm to 1 m/s *1		1 mm to 1 m/s	0.1 mm to 1 m/s *1	0.01 mm to 1 m/s
Operating frequency	Mechanical	240 operations/min		120 operations/min	240 operations/min	240 operations/min
	Electrical	20 operations/min				
Insulation resistance		100 MΩ min. (at 500 VDC)				
Contact resistance		15 mΩ max. (initial value)	50 mΩ max. (initial value)	15 mΩ max. (initial value)	25 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 Contact gap E: 1,500 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 contacts of same polarity Contact gap F: 1,500 VAC, 50/60 Hz for 1 min	Between contacts of same polarity 600VAC, 50/60Hz for 1min
		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 *5		10 to 20 Hz, 1.5-mm double amplitude *5	10 to 55 Hz, 1.5-mm double amplitude *5	
Shock resistance	Destruction	1,000 m/s <sup>2</sup> max.				
	Malfunction	300 m/s <sup>2</sup> max. *2 *5		50 m/s <sup>2</sup> max. *5	300 m/s <sup>2</sup> max. *3 *5	100 m/s <sup>2</sup> max.
Durability	Mechanical	Contact gap H2: 10,000,000 operations min. Contact gap G, H: 20,000,000 operations min. Contact gap E: 300,000 operations		1,000,000 operations min.	500,000 operations min. *1	20,000,000 operations min.
	Electrical	Contact gap G, H: 500,000 operations min. Contact gap E: 100,000 operations min.		100,000 operations min.	100,000 operations min.	500,000 operations min.
Degree of protection	General-purpose	IP00				
	Drip-proof	Equivalent to IP62 (except terminals)				
Degree of protection against electric shock		Class I				
Proof tracking index (PTI)		175				
Ambient operating temperature	General-purpose	-25°C to 80°C (with no icing)				
	Drip-proof	-15°C to 80°C (with no icing)				
Ambient operating humidity	General-purpose	35% to 85%RH				
	Drip-proof	35% to 95%RH				
Weight		Approx. 22 to 58 g		Approx. 42 to 48 g	Approx. 34 to 61 g	Approx. 22 g

\*1. The values are for the plunger models. (For the lever models, the values are at the plunger section.) (Consult your OMRON representative for other models.)

\*2. The values are for the Z-15G pin plunger.

\*3. The values are for the Z-10FY-B.

\*4. The values are for the pin plunger. The durability for models other than the pin plunger is 10,000,000 min.

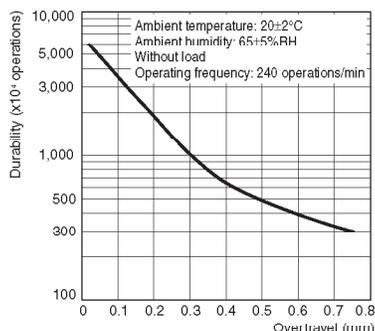
\*5. Malfunction: 1 ms max.

## Contacts Specification

Item	Classification	Z-15	Z-01H	Z-10F
Contacts	Shape	Rivet	Single crossbar	Rivet
	Material	Silver	Gold alloy	Silver
Inrush current	NC	30 A max.	0.1 A max.	40 A max.
	NO	15 A max.	0.1 A max.	20 A max.

## Engineering Data

### Mechanical Durability (Z-15G)



### Electrical Durability (Z-15G)

