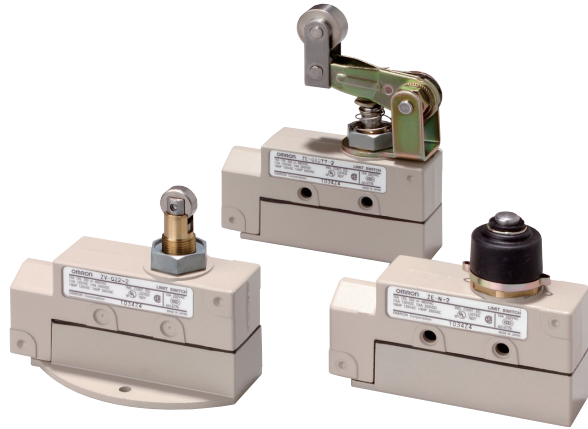


General-purpose Enclosed Switches with High Breaking Capacity and High Durability



- Z General-purpose Basic Switches are built into ZE, ZV, and ZV2 Switches. They provided high durability and high breaking capacity.
- X Basic Switches with magnetic blowout are built into XE, XV, and XV2 Switches. DC models have also been added to the series.
- Three mounting methods (side, base, and diagonal side) and many types of actuator are available.
- Terminals face the front when the cover is removed for easy connection.
- Switches with ground terminals have CE marking.
- Approved by UL, CSA, and CCC (Chinese standard). (Ask your OMRON representative for information on approved models.)



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Be sure to read *Safety Precautions* on page 8 to 9 and *Safety Precautions for All Limit Switches*.

Model Number Structure

Model Number Legend (Not all combinations are possible. Ask your OMRON representative for details.)

□□-□-2□
(1)(2) (3) (4)

(1) Built-in Switch

- Z : SPDT (AC)
- X : SPDT (DC)

(2) Mounting Direction

- E : Side mounting
- V : Base mounting
- V2 : Diagonal side mounting

(3) Actuator











- Q : Plunger
- Q22 : Roller plunger
- Q21 : Crossroller plunger
- QA2 : Roller arm lever
- QA277 : One-way action roller arm lever
- N : Sealed plunger
- N22 : Sealed roller plunger (ZE, ZV, ZV2 only)
- N21 : Sealed crossroller plunger (ZE, ZV, ZV2 only)
- NA2 : Sealed roller arm lever
- NA277 : Sealed one-way action roller arm lever

(4) Conduit/Ground Terminal *

- None : G 1/2/without ground terminal
- G1 : G 1/2/with ground terminal
- G : Pg13.5/with ground terminal
- SG1 : 1/2-14NPSM/with ground terminal
- YG1 : M20/with ground terminal
- S : 1/2-14NPSM/without ground terminal
- Y : M20/without ground terminal

* Consult with your OMRON representative concerning availability, pricing, and delivery of conduit sizes and ground terminal specifications other than those on standard models.

Ordering Information

Mounting			Side mounting				Base mounting				Diagonal side mounting			
			Model		Approved standards		Model		Approved standards		Model		Approved standards	
					UL	CSA			UL	CSA			UL	CSA
General purpose	Plunger		AC	ZE-Q-2	●	●	ZV-Q-2	●	●	ZV2-Q-2	●	●		
			DC	XE-Q-2			XV-Q-2			XV2-Q-2				
	Roller plunger		AC	ZE-Q22-2	●	●	ZV-Q22-2	●	●	ZV2-Q22-2	●	●		
			DC	XE-Q22-2			XV-Q22-2			XV2-Q22-2				
	Crossroller plunger		AC	ZE-Q21-2	●	●	ZV-Q21-2	●	●	ZV2-Q21-2	●	●		
			DC	XE-Q21-2			XV-Q21-2			---				
	Roller arm lever		AC	ZE-QA2-2	●	●	ZV-QA2-2	●	●	ZV2-QA2-2	●	●		
			DC	XE-QA2-2			XV-QA2-2			XV2-QA2-2				
	One-way action roller arm lever		AC	ZE-QA277-2	●	●	---			ZV2-QA277-2	●	●		
			DC	XE-QA277-2			---			---				
	Sealed (Booted)	Sealed plunger		AC	ZE-N-2	●	●	ZV-N-2	●	●	ZV2-N-2	●	●	
				DC	XE-N-2			XV-N-2			XV2-N-2			
Sealed roller plunger			AC	ZE-N22-2	●	●	ZV-N22-2	●	●	ZV2-N22-2	●	●		
Sealed crossroller plunger			AC	ZE-N21-2	●	●	ZV-N21-2	●	●	ZV2-N21-2	●	●		
Sealed roller arm lever			AC	ZE-NA2-2	●	●	ZV-NA2-2	●	●	ZV2-NA2-2	●	●		
			DC	XE-NA2-2			XV-NA2-2			XV2-NA2-2				
One-way action sealed roller arm lever			AC	ZE-NA277-2	●	●	ZV-NA277-2	●	●	ZV2-NA277-2	●	●		
			DC	XE-NA277-2			---			XV2-NA277-2				

Note: 1. The diagonal side mounting model feature improved sealing property, improved mounting strength through use of M5 screws, increased stability in seating with large mounting width (31 x 75 mm) and permit coupling of a number of Switch units.
 2. Ask your OMRON representative for information on models with ground terminals.

Specifications

Approved Standards

Agency	Standard	File No.
UL	UL508	E76675
CSA	CSA C22.2 No.14	LR45746
CCC (CQC)	GB/T14048.5	Contact your OMRON representative for details.

Note: 1. Models XE, XV, and XV2 are not approved by UL, CSA, and CCC.
 2. Ask your OMRON representative for information on approved models.

Ratings

Model	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
ZE-□ ZV-□ ZV2-□	125 VAC	15	3	1.5	15	5	2.5		
	250 VAC	15	2.5	1.25	15	3	1.5		
	480 VAC	10	1.5	0.75	6	1.5	0.75		
	125 VDC	0.5	0.5		0.05	0.05			
	250 VDC	0.25	0.25		0.03	0.03			
	8 VDC	10	3	1.5	10	5	2.5		
XE-□ XV-□ XV2-□	14 VDC	10	3	1.5	10	5	2.5		
	30 VDC	10	3	1.5	10	5	2.5		
	125 VDC	10	3	1.5	7.5	6	2.5		
	250 VDC	3	1.5	0.75	2	1.5	2		

Inrush current	NC	30 A max.
	NO	15 A max.

Note: 1. The above figures are for standard currents.
 2. Inductive loads have 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.

Approved Standard Ratings UL/CSA

Model	Rated voltage	Current	Horsepower
ZE	125 VAC	15 A	1/8HP
	250 VAC	15 A	1/4HP
	480 VAC	15 A	---
	125 VDC	0.5 A	---
	250 VDC	0.25 A	---

CCC (GB/T14048.5)

Applicable category and ratings
AC-12 10 A/250 VAC

Characteristics

Degree of protection		IP65*1
Durability *2	Mechanical	Z□: 10,000,000 operations min. X□: 1,000,000 operations min.
	Electrical	Z□: 500,000 operations min., for 15 A, 250 VAC resistive load X□: 100,000 operations min., for 10 A, 125 VDC resistive load
Operating speed		Plunger type: 0.01 mm/s to 0.5 m/s Lever type: 0.02 mm/s to 0.5 m/s
Operating frequency	Mechanical	120 operations/min
	Electrical	20 operations/min
Rated frequency		50/60 Hz
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance		15 mΩ max. (initial value)
Terminal temperature rise		50°C max.
Dielectric strength	Between terminals of the same polarity	1,000 VAC, 50/60 Hz for 1 min
	Between current-carrying metal part and ground	Z□: 2,000 VAC, 50/60 Hz for 1 min X□: 1,500 VAC, 50/60 Hz for 1 min
	Between each terminal and non-current-carrying metal part	Z□: 2,000 VAC, 50/60 Hz for 1 min X□: 1,500 VAC, 50/60 Hz for 1 min
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude*3
Shock resistance *3	Destruction	1,000m/s ² max.
	Malfunction	100 m/s ² max.*4 50 m/s ² max.*5
Ambient operating temperature		-10°C to +80°C (with no icing)
Ambient operating humidity		General-purpose type: 35% to 85%RH Sealed type: 35% to 95%RH
Weight		Approx. 260 to 280 g

Note: The above figures are initial values.

*1. IP65 for □-N models and IP60 for □-Q models.

*2. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.

*3. At the operation limit positions.

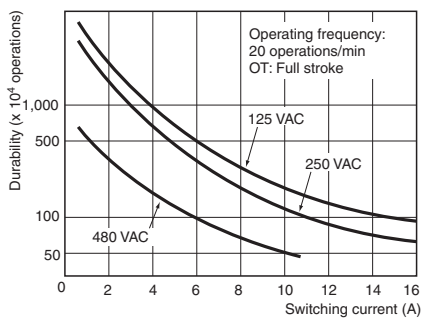
*4. Only for plunger, sealed plunger, roller arm lever, and sealed roller arm lever.

*5. Only for crossroller plunger, sealed crossroller plunger, roller plunger, and sealed roller plunger.

Engineering Data

Electrical Durability

ZE (cosφ = 1)



ZE (cosφ = 0.4)

