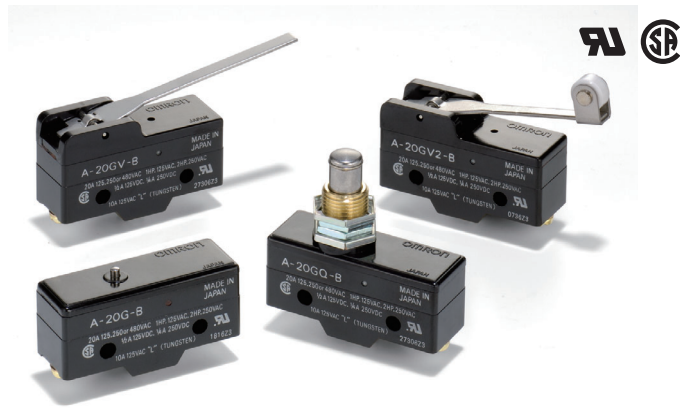


## High-capacity Switch Capable of Handling 20 A Loads with Large Inrush Currents

- Same shape as OMRON Z Basic Switches except in pin plunger position, yet endures inrush currents as large as 75 A.



Be sure to read *Safety Precautions* on page 5 and *Safety Precautions for All Basic Switches*.

## Model Number Structure

### Model Number Legend

**A - 20 G □ - □**  
(1) (2) (3) (4)

#### (1) Ratings

20 : 20 A (250 VAC)

#### (2) Contact Gap

G : 0.5 m

#### (3) Actuator

- None : Pin plunger
- D : Short spring plunger
- Q : Panel mount plunger
- Q21 : Panel mount cross roller plunger
- Q22 : Panel mount roller plunger
- V : Hinge lever
- V2 : Hinge roller lever
- V21 : Short hinge lever
- V22 : Short hinge roller lever

#### (4) Terminals

- None : Solder terminal
- B : Screw terminal (with toothed washer)

## Ordering Information

Actuator	Terminal	Solder terminal	Screw terminal (-B)
		Model	Model
Pin plunger		A-20G	A-20G-B
Short spring plunger		A-20GD	A-20GD-B
Panel mount plunger		A-20GQ	A-20GQ-B
Panel mount roller plunger		A-20GQ22	A-20GQ22-B
Panel mount cross roller plunger		---	A-20GQ21-B
Short hinge lever		A-20GV21	A-20GV21-B
Hinge lever		A-20GV	A-20GV-B
Short hinge roller lever		A-20GV22	A-20GV22-B
Hinge roller lever		A-20GV2	A-20GV2-B

## Specifications

### Ratings

Rated voltage (V)	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	20		7.5		20		12.5	
250 VAC	20		7.5		20		8.3	
500 VAC	15		4		10		2	
8 VDC	20	3	1.5		20		12.5	
14 VDC	20	3	1.5		15		12.5	
30 VDC	6	3	1.5		5		5	
125 VDC	0.5	0.5	0.5		0.05		0.05	
250 VDC	0.25	0.25	0.25		0.03		0.03	

- Note: 1. The above values are for 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 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

### Certified Standard Ratings

Ask your OMRON representative for information on certified models.  
**UL/CSA (General ratings only)**

Rated voltage	Model	A-20G
125 VAC		1 HP 10 A "L"
250 VAC		2 HP
480 VAC		20 A
125 VDC		0.5 A
250 VDC		0.25 A

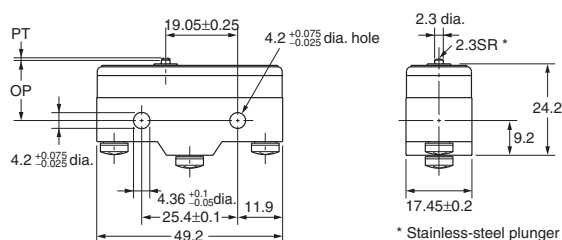
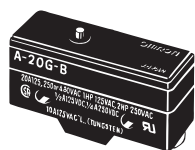
**Accessories (Terminal Covers, and Separators): Refer to Z/A/X/DZ Common Accessories.**



## Dimensions and Operating Characteristics

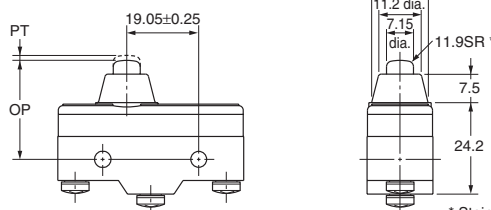
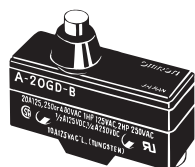
The models, illustrations, and graphics are for screw-terminal models. (The dimensions for models that are omitted here are the same as for pin-plunger models.)

### Pin Plunger A-20G-B



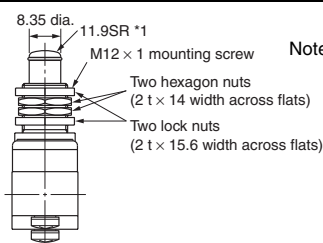
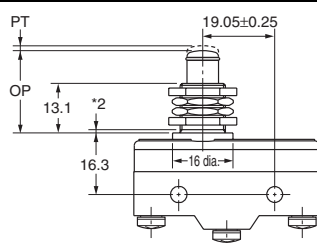
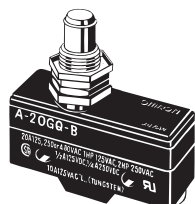
\* Stainless-steel plunger

### Short Spring Plunger A-20GD-B



\* Stainless-steel plunger

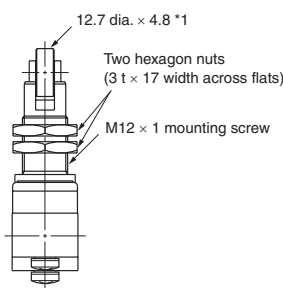
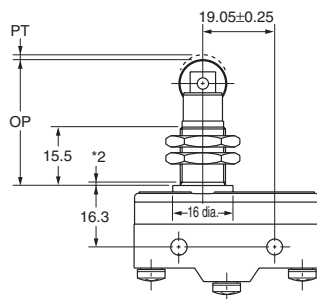
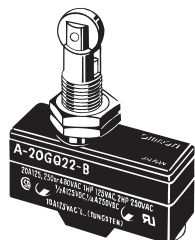
### Panel Mount Plunger A-20GQ-B



Note: Do not use both M12 mounting screw and mounting holes at the same time.

\*1 Stainless-steel plunger  
\*2 Incomplete screw part with a maximum length of 1.5 mm.

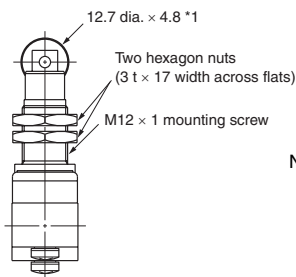
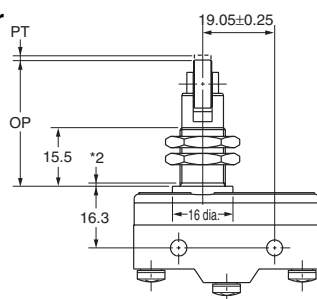
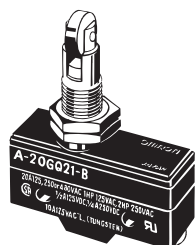
### Panel Mount Roller Plunger A-20GQ22-B



Note: Do not use both M12 mounting screw and mounting holes at the same time.

\*1 Stainless-steel roller  
\*2 Incomplete screw part with a maximum length of 1.5 mm.

### Panel Mount Cross Roller Plunger A-20GQ21-B



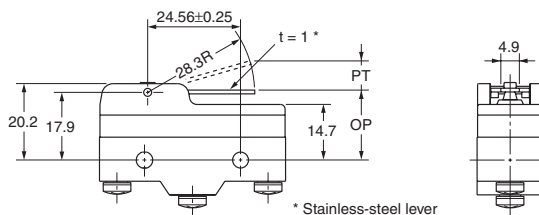
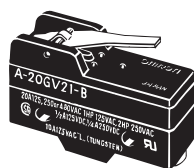
Note: Do not use both M12 mounting screw and mounting holes at the same time.

\*1 Stainless-steel roller  
\*2 Incomplete screw part with a maximum length of 1.5 mm.

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

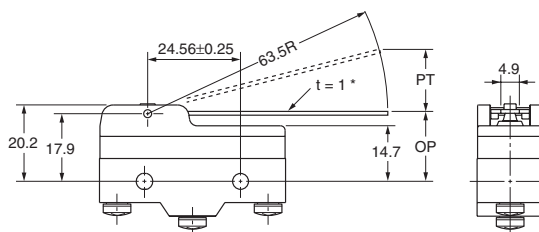
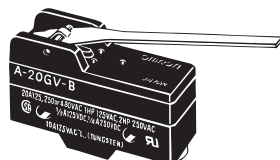
Operating Characteristics	Model	A-20G-B	A-20GD-B	A-20GQ-B	A-20GQ22-B	A-20GQ21-B
Operating force	OF	3.92 to 6.13 N	3.92 to 6.13 N	3.92 to 6.13 N	6.18 N max.	6.18 N max.
Release force	RF min.	2.79 N	2.79 N	2.79 N	2.75 N	2.75 N
Pretravel	PT max.	1.3 mm	1.3 mm	1.3 mm	1.3 mm	1.3 mm
Over Travel	OT min.	0.25 mm	3 mm	5.6 mm	3.58 mm	3.58 mm
Movement differential	MD max.	0.2 mm	0.2 mm	0.2 mm	0.35 mm	0.35 mm
Operating Position	OP	16.3±0.4 mm	26.2±0.5 mm	21.8±0.8 mm	33.4±1.2 mm	33.4±1.2 mm

**Short Hinge Lever  
A-20GV21-B**



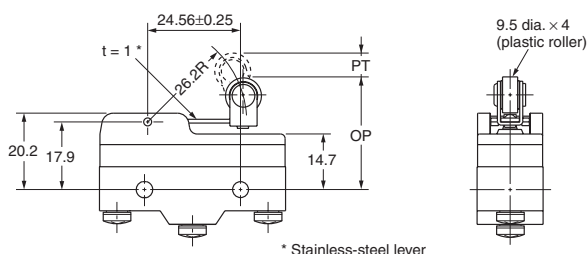
\* Stainless-steel lever

**Hinge Lever  
A-20GV-B**



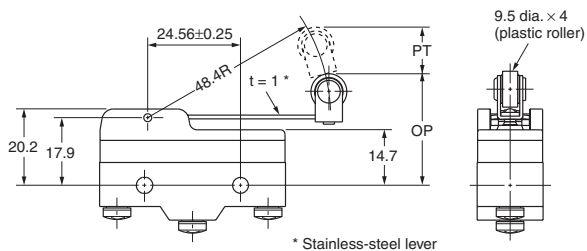
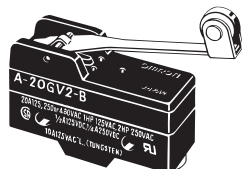
\* Stainless-steel lever

**Short Hinge Roller Lever  
A-20GV22-B**



\* Stainless-steel lever

**Hinge Roller Lever  
A-20GV2-B**



\* Stainless-steel lever

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

Operating Characteristics	Model	A-20GV21-B	A-20GV-B	A-20GV22-B	A-20GV2-B
OF max.		1.57 N	0.69 N	1.57 N	0.88 N
RF min.		0.41 N	0.14 N	0.41 N	0.14 N
PT max.		6.5 mm	15.9 mm	6.3 mm	12 mm
OT min.		1.2 mm	4 mm	1.2 mm	2.4 mm
MD max.		1.2 mm	2.4 mm	1.2 mm	2.2 mm
OP		19±0.8 mm	19±0.8 mm	29.8±0.8 mm	30.2±0.8 mm

## Safety Precautions

Refer to *Safety Precautions for All Basic Switches*.

### Precautions for Safe Use

#### Terminal Connection

When soldering lead wires to the Switch, make sure that the capacity of the soldering iron is 60 W maximum. Do not take more than 5 s to solder any part of the Switch. The characteristics of the Switch will deteriorate if a soldering iron with a capacity of more than 60 W is applied to any part of the Switch for 5 s or more.

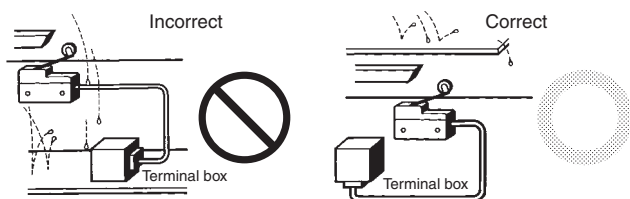
#### Operation

- Make sure that the switching frequency or speed is within the specified range.
  1. If the switching speed is extremely slow, the contact may not be switched smoothly, which may result in a contact failure or contact welding.
  2. If the switching speed is extremely fast, switching shock may damage the Switch soon. If the switching frequency is too high, the contact may not catch up with the speed.
 The rated permissible switching speed and frequency indicate the switching reliability of the Switch. The life of a Switch is determined at the specified switching speed. The life varies with the switching speed and frequency even when they are within the permissible ranges. In order to determine the life of a Switch model to be applied to a particular use, it is best to conduct an appropriate durability test on some samples of the model under actual conditions.
- Make sure that the actuator travel does not exceed the permissible OT position. The operating stroke must be set to 70% to 100% of the rated OT.

### Precautions for Correct Use

#### Mounting Location

- Do not use the switch alone in atmospheres such as flammable or explosive gases. Arcing and heat generation associated with switching may cause fires or explosions.
- Switches are generally not constructed with resistance against water. Use a protective cover to prevent direct spraying if the switch is used in locations subject to splashing or spurring oil or water, dust adhering.

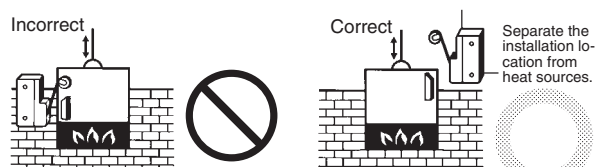


- Install the switch in a location that is not directly subject to debris and dust from cutting. The actuator and the switch body must be protected from accumulated cutting debris and dirt.



- Do not use the switch in locations subject to hot water (greater than 60°C) or in water vapor.
- Do not use the switch outside the specified temperature and atmospheric conditions.

The permissible ambient temperature depends on the model. (Refer to the specifications in this catalog.) Sudden thermal changes may cause thermal shock to distort the switch and result in faults.



- Mount a cover if the switch is to be installed in a location where worker inattention could result in incorrect operation or accidents.



- Subjecting the switch to continuous vibration or shock may result in contact failure or faulty operation due to abrasion powder and in reduced durability. Excessive vibration or shock will cause the contacts to operate malfunction or become damaged. Mount the switch in a location that is not subject to vibration or shock and in a direction that does not subject the switch to resonance.
- If silver contacts are used with relatively low frequency for a long time or are used with microloads, the sulfide coating produced on the contact surface will not be broken down and contact faults will result. Use a microload switch that uses gold contacts.
- Do not use the switch in atmospheres with high humidity or heat or in harmful gases, such as sulfide gas (H<sub>2</sub>S, SO<sub>2</sub>), ammonia gas (NH<sub>3</sub>), nitric acid gas (HNO<sub>3</sub>), or chlorine gas (Cl<sub>2</sub>). Doing so may impair functionality, such as with damage due to contacting faults or corrosion.
- The switch includes contacts. If the switch is used in an atmosphere with silicon gas, arc energy may cause silicon oxide (SiO<sub>2</sub>) to accumulate on the contacts and result in contact failure. If there is silicon oil, silicon filling, silicon wiring, or other silicon products in the vicinity of the switch, use a contact protection circuit to limit arcing and remove the source of the silicon gas.

#### Panel-mounting model (A-20G□)

- If a Switch is side-mounted with screws, remove the hexagonal nut of the actuator.
- If a Switch is side-mounted and secured with screws, make sure that the angle or speed of the actuating object is not excessively large or too high, otherwise the Switch may be damaged.
- If a Switch is panel-mounted, pay utmost attention to make sure that the actuating speed or OT distance is not excessively high or large. Not doing so may damage the Switch.

## Accessories (Order Separately)

Refer to Z/A/X/DZ Common Accessories for details about Terminal Covers, Separators, and Actuators.

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1. **Offer; Acceptance.** These terms and conditions (these "**Terms**") are deemed part of all quotes, agreements, purchase orders, acknowledgments, price lists, catalogs, manuals, brochures and other documents, whether electronic or in writing, relating to the sale of products or services (collectively, the "**Products**") by Omron Electronics LLC and its subsidiary companies ("**Omron**"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
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  - d. Delivery and shipping dates are estimates only; and
  - e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
12. **Claims.** Any claim by Buyer against Omron for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Omron within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.
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Schaumburg, IL USA • 847.843.7900 • 800.556.6766 • [www.omron247.com](http://www.omron247.com)

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**OMRON CANADA, INC. • HEAD OFFICE**

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**OMRON ELETRÔNICA DO BRASIL LTDA • HEAD OFFICE**

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