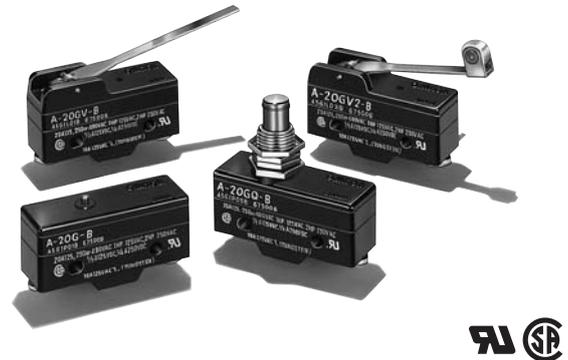


General-purpose Basic Switch

A

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.



Model Number Structure

■ Model Number Legend

A-20G□-□
1 2 3 4

1. Ratings

20: 20 A (250 VAC)

2. Contact Gap

G: 0.5 mm

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

■ List of Models

Actuator	Solder terminal	Screw terminal (-B)
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

Note: Refer to *Terminals* in Model Z for solder and screw terminals.

Specifications

■ Approved Standards

Agency	Standard	File No.
UL	UL508	E41515
CSA	CSA C22.2 No. 55	LR21642

■ Approved Standard Ratings

UL508 (File No. E41515)

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

Rated voltage	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

■ Ratings

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

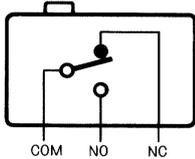
- Note:**
- The above values are for steady-state current.
 - Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
 - Lamp load has an inrush current of 10 times the steady-state current.
 - Motor load has an inrush current of 6 times the steady-state current.
 - The ratings values apply under the following test conditions:
 Ambient temperature: 20±2° C
 Ambient humidity: 65±5%
 Operating frequency: 20 operations/min

■ Characteristics

Operating speed	0.01 mm to 1 m/s (see note 1)
Operating frequency	Mechanical: 240 operations/min Electrical: 20 operations/min (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Contact resistance	15 mΩ max. (initial value)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between terminals of the same polarity 2,000 VAC, 50/60 Hz for 1 min between the current-carrying metal parts and the ground, and between each terminal and non-current-carrying metal parts
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude (see note 2)
Shock resistance	Destruction: 1,000 m/s ² {approx. 100G} max. Malfunction: 300 m/s ² {approx. 30G} max. (see note 1, 2)
Durability	Mechanical: 1,000,000 operations min. Electrical: 500,000 operations min.
Degree of protection	IP00
Degree of protection against electric shock	Class I
Proof tracking index (PTI)	175
Switch category	D (IEC335-1)
Ambient temperature	Operating: -25° C to 80° C (with no icing)
Ambient humidity	Operating: 35% to 85%
Weight	Approx. 23 to 58 g

- Note:**
- The value is for the pin plunger. (Contact your OMRON representative for other models.)
 - Malfunction: 1 ms max.

■ Contact Form (SPDT)



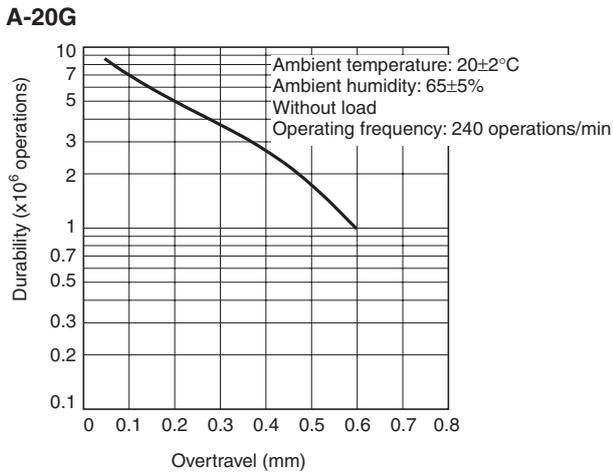
■ Contact Specification

Item		A-20
Contacts	Shape	Rivet
	Material	Silver alloy
	Gap (standard value)	0.5 mm
Inrush current	NC	75 A max.
	NO	75 A max.

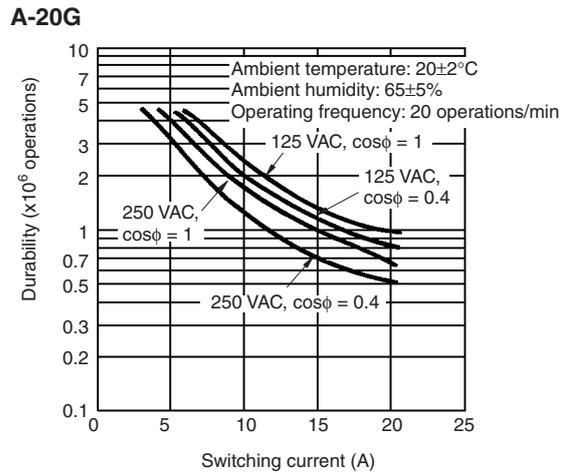
Limit switches

Engineering Data

Mechanical Durability



Electrical Durability



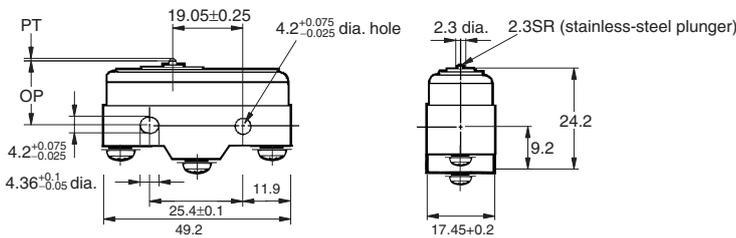
Dimensions

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

Dimensions and Operating Characteristics

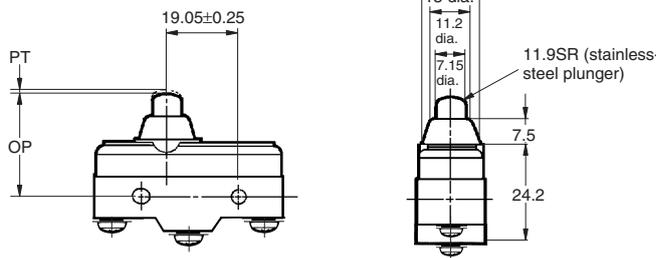
The models, illustrations, and graphics are for screw-terminal models. (The dimensions for models that are omitted here are the same as for pin-plunger models.)

Pin Plunger A-20G-B



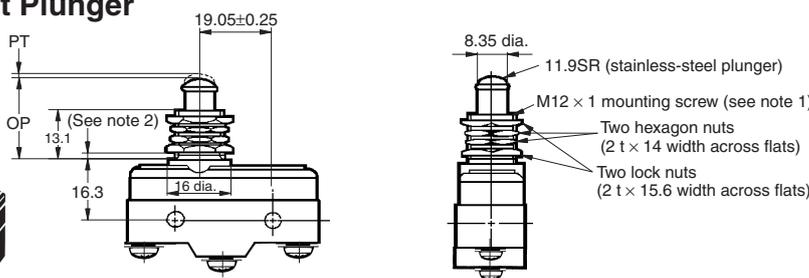
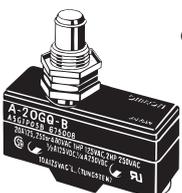
OF	3.92 to 6.13 N {400 to 625 gf}
RF min.	2.79 N {285 gf}
PT max.	1.3 mm
OT min.	0.25 mm
MD max.	0.2 mm
OP	16.3±0.4 mm

Short Spring Plunger A-20GD-B



OF	3.92 to 6.13 N {400 to 625 gf}
RF min.	2.79 N {285 gf}
PT max.	1.3 mm
OT min.	3 mm
MD max.	0.2 mm
OP	26.2±0.5 mm

Panel Mount Plunger A-20GQ-B



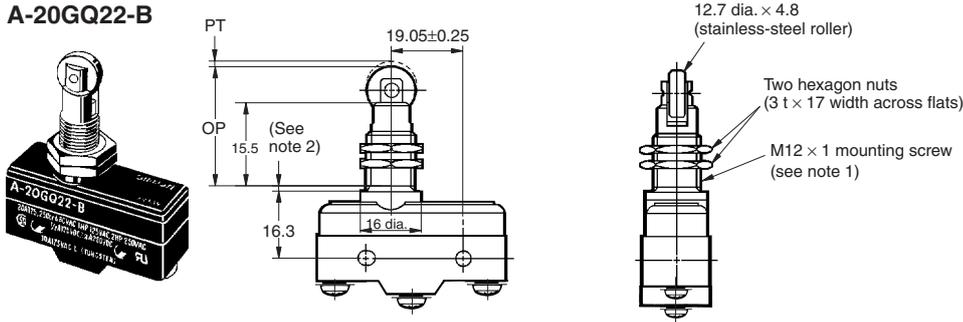
OF	3.92 to 6.13 N {400 to 625 gf}
RF min.	2.79 N (285 gf)
PT max.	1.3 mm
OT min.	5.6 mm
MD max.	0.2 mm
OP	21.8±0.8 mm

Note: 1. Do not use both M12 mounting screw and mounting holes at the same time.

2. Imperfect screw part with a maximum length of 1.5 mm.

Panel Mount Roller Plunger

A-20GQ22-B

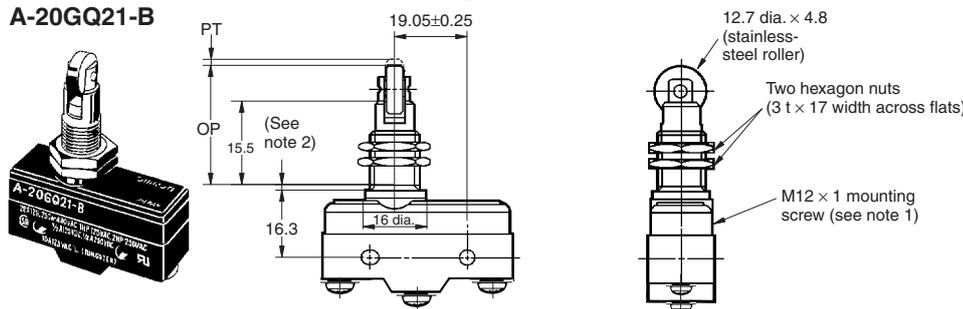


OF	6.18 N {630 gf} max.
RF min.	2.75 N {280 gf}
PT max.	1.3 mm
OT min.	3.58 mm
MD max.	0.35 mm
OP	33.4±1.2 mm

Note: 1. Do not use both M12 mounting screw and mounting holes at the same time.
2. Imperfect screw part with a maximum length of 1.5 mm.

Panel Mount Cross Roller Plunger

A-20GQ21-B

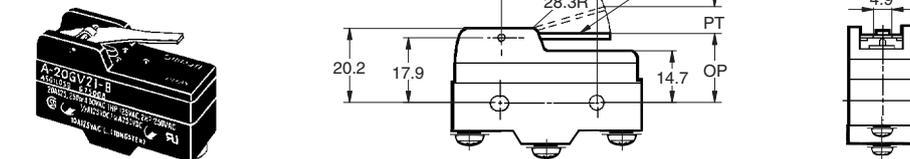


OF	6.18 N {630 gf} max.
RF min.	2.75 N {280 gf}
PT max.	1.3 mm
OT min.	3.58 mm
MD max.	0.35 mm
OP	33.4±1.2 mm

Note: 1. Do not use both M12 mounting screw and mounting holes at the same time.
2. Imperfect screw part with a maximum length of 1.5 mm.

Short Hinge Lever

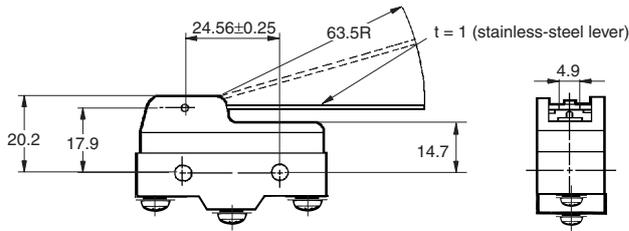
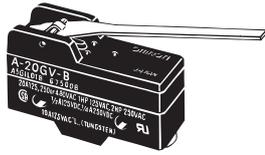
A-20GV21-B



OF	1.57 N {160 gf} max.
RF min.	0.41 N {42 gf}
PT max.	6.5 mm
OT min.	1.2 mm
MD max.	1.2 mm
OP	19±0.8 mm

Hinge Lever

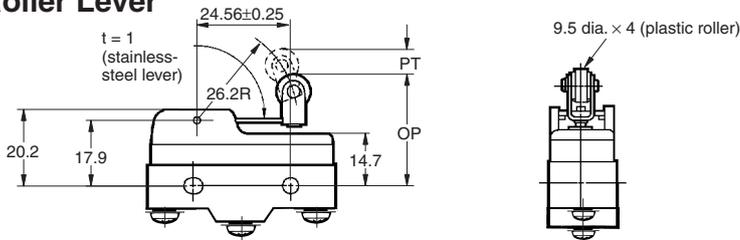
A-20GV-B



OF	0.69 N {70 gf} max.
RF min.	0.14 N {14 gf}
PT max.	15.9 mm
OT min.	4 mm
MD max.	2.4 mm
OP	19±0.8 mm

Short Hinge Roller Lever

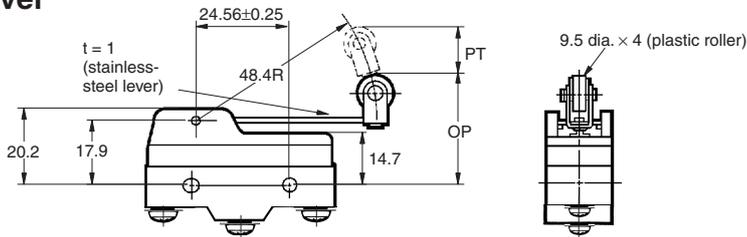
A-20GV22-B



OF	1.57 N {160 gf}
RF min.	0.41 N {42 gf}
PT max.	6.3 mm
OT min.	1.2 mm
MD max.	1.22 mm
OP	29.8±0.8 mm

Hinge Roller Lever

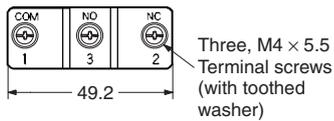
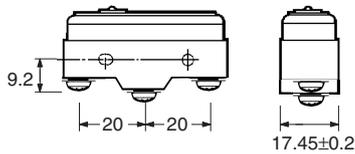
A-20GV2-B



OF	0.88 N {90 gf}
RF min.	0.14 N {14 gf}
PT max.	12 mm
OT min.	2.4 mm
MD max.	2.2 mm
OP	30.2±0.8 mm

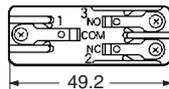
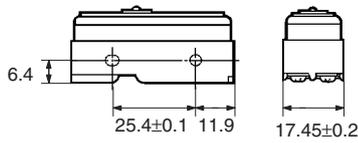
■ Terminals

Screw Terminals (-B)



Appropriate terminal screw tightening torque:
0.78 to 1.18 N·m {8 to 12 kgf·cm}.

Solder Terminal



Precautions

Refer to the *Technical Information for Basic Switches* (Cat. No. C122) for common precautions.

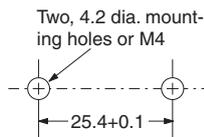
■ Correct Use

Mounting

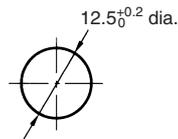
Use M4 mounting screws with plane washers or spring washers to securely mount the Switch. Tighten the screws to a torque of 1.18 to 1.47 N·m {12 to 15 kgf·cm}.

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}.

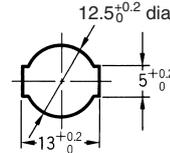
Mounting Holes



Panel Mount Plunger



Panel Mount Roller Plunger



Panel-mounting (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.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.