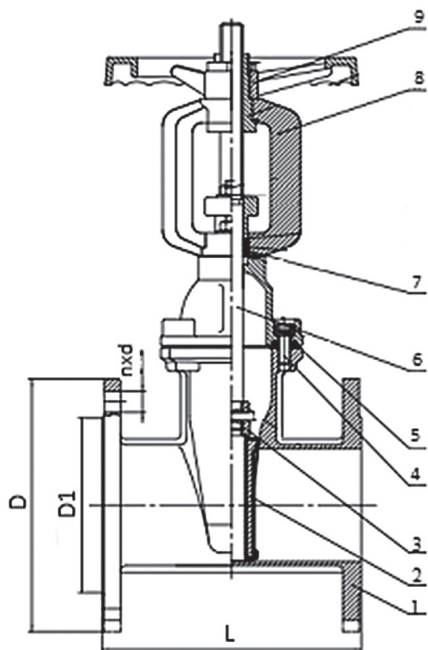




TECHNICAL DATA

- Size : DN50-DN400
- Maximum working pressure : 16 bar
- Maximum working temperature: +80°C
- Testing pressure : Body : 24 bar
Seat : 17.6 bar

MATERIAL

No.	Parts name	Material
1	Body	Ductile iron GGG50
2	Wedge	Ductile iron +NBR
3	Stem nut	Brass
4	Bolt	Carbon steel
5	Bonnet gasket	NBR
6	Stem	Stainless steel 420
7	O-ring	NBR
8	Support frame	Ductile iron GGG50
9	Hand wheel	Ductile iron

APPLICATION

Water supply, fire - fighting, pump station.

SPECIFICATION

- Type: Rising stem type gate valve with flanged
- Conforms to DIN3352
- Flanges drilled according to EN 1092-2
- Painting: epoxy power coating

DIMENSIONS

Size		D	D1	L	nxd
DN	Inch				
50	2	165	102	150	4x19
65	2-1/2	185	122	170	8x19
80	3	200	138	180	8x19
100	4	220	158	190	8x19
125	5	250	188	200	8x19
150	6	285	212	210	8x23
200	8	340	268	230	12x23
250	10	405	320	250	12x28
300	12	460	378	270	12x28
350	14	520	470	290	16x28
400	16	580	525	310	16x31

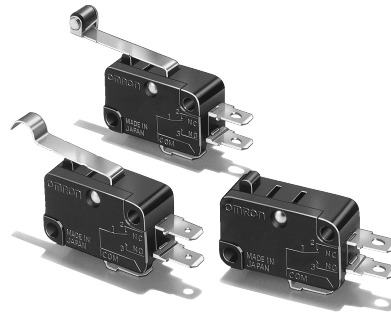
* Bigger size available upon request.



Miniature Basic Switch

Miniature Basic Switch that Offers High Reliability and Security

- Wide variation of best-selling microswitches with switching currents of 10 to 21 A.
- Can be used for interrupting current when doors are opened or closed.
- Available in two types of cases: thermoplastic resin and thermosetting resin.
- Indium contact models available for DC load



V

Model Number Legend

V-12-3456

1. Ratings

21: 21 A at 250 VAC

16: 16 A at 250 VAC

15: 15 A at 250 VAC

10: 10 A at 250 VAC

2. Actuator

None : Pin plunger

1 : Short hinge lever

2 : Hinge lever

3 : Long hinge lever

4 : Simulated roller lever

5 : Short hinge roller lever

6 : Hinge roller lever

3. Contact Form

1: SPDT

2: SPST-NC

3: SPST-NO

4. Terminals

A : Solder terminals

C2: Quick-connect terminals (#187)

C : Quick-connect terminals (#250)

5. Maximum Operating Force

6: 3.92 N {400 gf}

5: 1.96 N {200 gf}

4: 0.98 N {100 gf}

Note: These values are for the pin plunger models.

6. Heat Resistance

None : Standard (80°C)

-T : Heat-resistive (150°C)

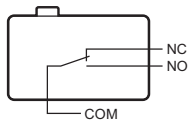
Actuator	Terminals	Contact form	Ratings Maximum operating force (OF)	15A	10A	Heat-resistive	
						15A	10A
Hinge roller lever 	Solder terminals (A)	SPDT	2.45N	V-156-1A6	---	V-156-1A6-T	---
		SPST-NC		V-156-2A6	---	---	---
		SPST-NO		V-156-3A6	---	---	---
		SPDT	1.23N	V-156-1A5	V-106-1A5	V-156-1A5-T	V-106-1A5-T
		SPST-NC		V-156-2A5	V-106-2A5	---	---
		SPST-NO		V-156-3A5	V-106-3A5	---	---
		SPDT	0.59N	---	V-106-1A4	---	V-106-1A4-T
		SPST-NC		---	V-106-2A4	---	---
		SPST-NO		---	V-106-3A4	---	---
	Quick-connect terminals (#187) (C2)	SPDT	2.45N	V-156-1C26	---	V-156-1C26-T	---
		SPST-NC		V-156-2C26	---	---	---
		SPST-NO		V-156-3C26	---	---	---
		SPDT	1.23N	V-156-1C25	V-106-1C25	V-156-1C25-T	V-106-1C25-T
		SPST-NC		V-156-2C25	V-106-2C25	---	---
		SPST-NO		V-156-3C25	V-106-3C25	---	---
		SPDT	0.59N	---	V-106-1C24	---	V-106-1C24-T
		SPST-NC		---	V-106-2C24	---	---
		SPST-NO		---	V-106-3C24	---	---
	Quick-connect terminals (#250) (C)	SPDT	2.45N	V-156-1C6	---	V-156-1C6-T	---
		SPST-NC		V-156-2C6	---	---	---
		SPST-NO		V-156-3C6	---	---	---
		SPDT	1.23N	V-156-1C5	V-106-1C5	V-156-1C5-T	V-106-1C5-T
		SPST-NC		V-156-2C5	V-106-2C5	---	---
		SPST-NO		V-156-3C5	V-106-3C5	---	---
		SPDT	0.59N	---	V-106-1C4	---	V-106-1C4-T
		SPST-NC		---	V-106-2C4	---	---
		SPST-NO		---	V-106-3C4	---	---

For DC load (V-21(IN) models)

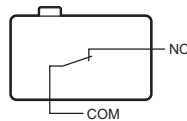
Actuator	Terminals	Contact form	Ratings Maximum operating force (OF)	30VDC 12A
Pin plunger 	Quick-connect terminals (#250) (C)	SPDT	3.92N	V-21-1C6(IN)

Contact form

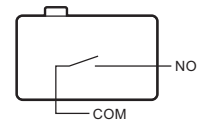
SPDT



SPST-NC



SPST-NO



Refer to **"Micro Switch Common Accessories"** for Separators (sold separately), Actuators (sold separately) and Terminal Connectors (sold separately).

Contact Specifications

Item	Model	V-21	V-16	V-15	V-10	V-21(IN)
Contact	Specification	Rivet				
	Material	Silver alloy			Silver	Indium alloy
	Gap (standard value)	1 mm				
Inrush current	NC	50 A max.	40 A max.	30 A max.	24 A max.	50 A max.
	NO					
Minimum applicable load (reference value)		DC5V 160mA				

Ratings

Model	Rated voltage	Item	Resistive load
V-21	AC250V		21 A
	DC125V		0.6 A
	DC250V		0.3 A
V-16	AC250V		16 A
	DC125V		0.6 A
	DC250V		0.3 A
V-15	AC250V		15 A
	DC125V		0.6 A
	DC250V		0.3 A
V-10	AC250V		10 A
	DC125V		0.6 A
	DC250V		0.3 A
V-21(IN)	DC30V		12 A

Note. The above rating values apply under the following test conditions.

- (1) Ambient temperature: 20±2°C
- (2) Ambient humidity: 65±5% RH
- (3) Operating frequency: 30 operations/min

Characteristics

Item	Model	V-10	V-15	V-16	V-21	V-21(IN)
Permissible operating speed		0.1mm to 1 m/s max. (pin plunger models)				
Permissible operating frequency	Mechanical	600 operations/min max. (pin plunger models)				
	Electrical	60 operations/min				
Insulation resistance		100MΩ min. (at 500 VDC with insulation tester)				
Contact resistance (initial value)		15mΩ max.				
Dielectric strength *1	Between terminals of the same polarity	AC1,000V 50/60Hz 1min				
	Between current-carrying metal parts and ground	AC1,500V 50/60Hz 1min	AC1,500V 50/60Hz 1min	AC2,000V 50/60Hz 1min		
	Between each terminals and non-current-carrying metal parts	AC1,500V 50/60Hz 1min	AC1,500V 50/60Hz 1min	AC2,000V 50/60Hz 1min		
Vibration resistance *2	Malfunction	10 to 55 Hz, 1.5-mm double amplitude				
	Durability	1,000 m/s ² {approx. 100 G} max.				
Shock resistance *2	Malfunction	200 m/s ² {approx. 20G} max.	300 m/s ² {approx. 30 G} max.			
	Mechanical	50,000,000 operations min. (60 operations/min)				
Durability *3	Electrical	300,000 operations min. (30 operations/min) Heat resistive: 50,000 operations min (30 operations/min)	100,000 operations min. (30 operations/min) Heat resistive: 20,000 operations min (30 operations/min)	100,000 operations min. (30 operations/min)		
	Degree of protection	IEC IP40				
Degree of protection against electric shock		Class I				
Proof tracking index (PTI)		175				
Ambient operating temperature		-25 to 105°C (Heat resistive: -25 to 150°C)		-25 to 105°C	-25 to 80°C	
		-25 to 105°C (V-21 series: -25 to 80°C) (Heat resistive: -25 to 150°C) at ambient humidity of 60% max. (with no icing or condensation)				
Ambient operating humidity		85% max. (for 5 to 35°C)				
Weight		Approx. 6.2g (pin plunger models)				

Note. The data given above are initial values.

*1. The dielectric strength shown in the table indicates a value for models with a Separator.

*2. For the pin plunger models, the above values apply for use at the free position and total travel position. For the lever models, they apply at the total travel position. Close or open circuit of the contact is shorter than 1 ms.

*3. For testing conditions, consult your OMRON sales representative.

Approved Standards

UL (UL61058-1)/cUL (CSA C22.2 No.61058-1)

Rated voltage	Model	V-21	V-16	V-15	V-10
125 VAC		21A 1/2HP	16A 1/2HP	15A 1/2HP	10A 1/2HP
250 VAC					
125 VDC		0.6A			
250 VDC		0.3A			

VDE (EN61058-1)

Consult your OMRON sales representative for specific models with VDE approvals.

Rated voltage	Model	V-21	V-16
AC250V		20(4)A	16(4)A

Testing conditions: 5E4 (50,000 operations), for models of V-21:

T80 (0 to 80°C), for models of V-16: T105 (0 to 105°C)

Note. V-21(IN) models are not Safety standard approved.