Direct Operated 2 Port Solenoid Valve

New

Note) For air and water only

Air | Medium vacuum | Water | Oil | Steam

* Can be used with heated water.

Large flow rate

Flow rate

20% More flow*

(Size 1)

Compact

Height

10% Smaller*

(Size 1)

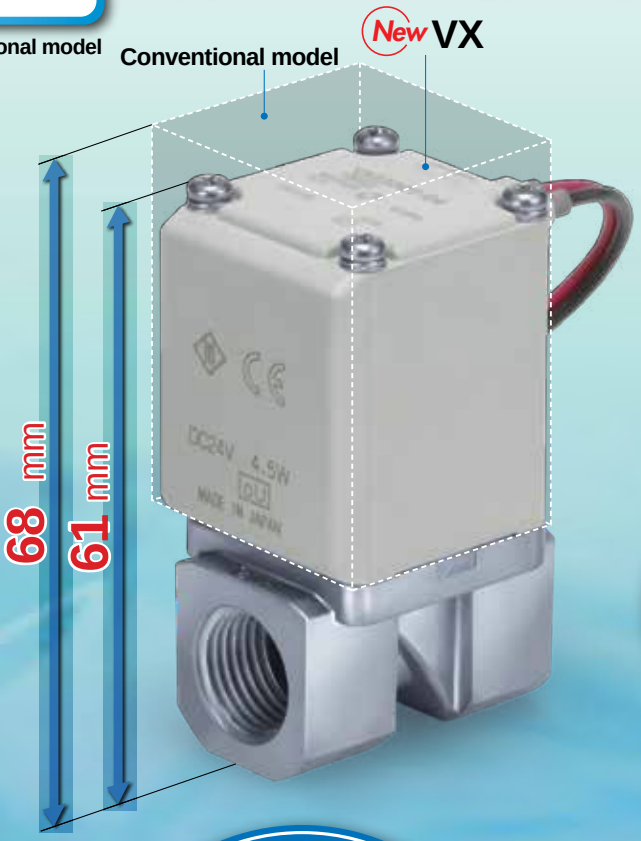
Lightweight

Weight

30% Lighter*

(Size 1, Aluminum body)

* Comparison with SMC conventional model



Body material

Air
Aluminum, Resin
Water/Oil/
Medium vacuum/Steam
C37 (Brass),
Stainless steel

Enclosure

IP65*

* Electrical entry
Flat terminal type
terminal is IP40.

With One-touch fittings
(Resin body)

Power consumption

4.5 W (Size 1)
7 W (Size 2)
10.5 W (Size 3)
(DC/N.C. valve)

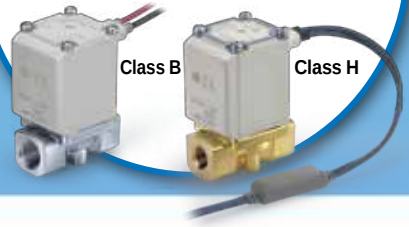
Manifold

Air | Medium vacuum

Material
- Body/PPS
- Base/Aluminum
- Seal/NBR, FKM

Solenoid coil type

- Insulation type Class B/H
- Fluid temperature
  Class B/Max. 140°F (60°C)
  Class H/Max. 361°F (183°C)



Valve type

N.C. N.O.

Series VX21/22/23

SMC

CAT.NAS70-44D

Direct Operated 2 Port Solenoid Valve

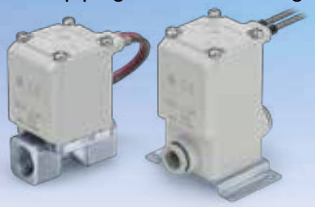
Air | Medium vacuum | Water | Oil | Steam
* Can be used with heated water.

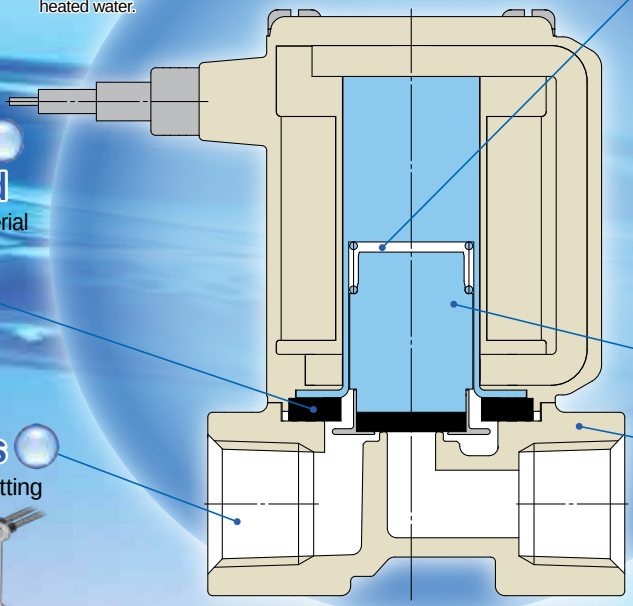
Enclosure
IP65

Flame resistance
UL94V-0 conformed
Flame resistant mold coil material

Low-noise construction
Metal noise reduced by the rubber bumper

Piping variations
Thread piping, One-touch fitting





Clearance
By providing a bumper and clearance, we reduced the collision sound of the core when ON (when the valve is open). Because of the clearance, when using highly viscous fluids such as oil, the armature does not get stuck and the responsiveness when OFF (when the valve is closed) is improved.

Power consumption
* DC/Class B, N.C. valve

4.5 W (Size 1)
7 W (Size 2)
10.5 W (Size 3)

Improved armature durability

Body material
Air Aluminum, Resin
Water/ Oil/ Medium vacuum/ Steam C37 (Brass), Stainless steel

Full-wave rectifier type (AC specification: Insulation type Class B/H)

Improved durability
Service life is extended by the special construction. (compared with current shading coil)

Reduced buzz noise
Rectified to DC by the full-wave rectifier, resulting in a buzz noise reduction.

Reduced apparent power * Class B, N.C. valve
10 VA→**7** VA (Size 1) 20 VA→**9.5** VA (Size 2)
32 VA→**12** VA (Size 3)

Improved OFF response
Specially constructed to improve the OFF response when operated with a higher viscosity fluid such as oil.

Low-noise construction
Specially constructed to reduce the metal noise during operation.

Variations <Fluid>

Model	Applicable fluid *1 (* Can be used with heated water.)				
	Air	Medium vacuum	Water	Oil	Steam
For Air **VX2□0** Page 5	●	—	—	—	—
For Medium vacuum **VX2□4** Page 10	●*2	●	—	—	—
For Water **VX2□2** Page 14	●*2	—	●	—	—
For Oil **VX2□3** Page 16	●*2	—	●*2	●	—
For Steam * Can be used with heated water. **VX2□5** Page 18	●*2	—	●*2	●*2	●

*1 For details, refer to pages 45 and 46. *2 Refer to the individual specifications for each fluid.

<Body Size>

Model	Body size	Orifice diameter							Port size
		2 mmø	3 mmø	4 mmø	5 mmø	7 mmø	8 mmø	10 mmø Note)	
VX2$^{1}_{4}$	**Size 1**	●	●	—	●	—	—	—	1/8, 1/4 One-touch fitting: ø6, ø8
VX2$^{2}_{5}$	**Size 2**	—	—	●	—	●	—	—	1/4, 3/8 One-touch fitting: ø8, ø10
VX2$^{3}_{6}$	**Size 3**	—	—	—	●	—	●	●	1/4, 3/8, 1/2 One-touch fitting: ø10, ø12

Note) N.C. only

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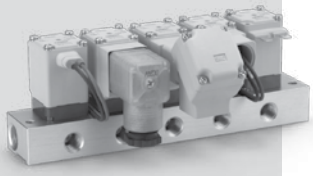
Direct Operated 2 Port Solenoid Valve
Series VX21/22/23



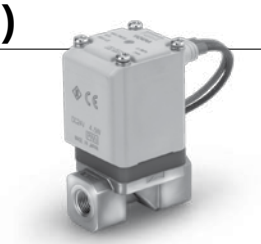
Direct Operated 2 Port Solenoid Valve

Series VX21/22/23

For Air, Medium Vacuum, Water, Oil and Steam

Variations

Single Unit (For Air, Medium Vacuum, Water, Oil and Steam)



■ Valve type

Normally Closed (N.C.)
Normally Open (N.O.)

■ Solenoid coil type

Insulation type: Class B, Class H

■ Rated voltage

100 V/200 V/110 V/230 VAC
(220 V/240 V/48 V/24 VAC)
24 VDC (12 VDC)

Voltage in ( ) indicates special voltage.

■ Material

Body — Aluminum, Resin, C37 (Brass), Stainless steel
Seal — NBR, FKM*

* Refer to individual pages for details of each fluid.

■ Electrical entry

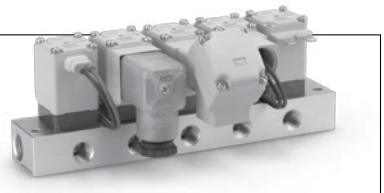
- Grommet
- Conduit
- DIN terminal
- Conduit terminal
- Flat terminal

Normally Closed (N.C.) **Normally Open (N.O.)**

Size		Size 1	Size 2	Size 3
Orifice diameter	2 mmø	●	—	—
	3 mmø	●	—	—
	4 mmø	—	●	—
	5 mmø	●	—	●
	7 mmø	—	●	—
	8 mmø	—	—	●
	10 mmø	—	—	●*
Port size		1/8, 1/4 ø6, ø8	1/4, 3/8 ø8, ø10	1/4, 3/8, 1/2 ø10, ø12

* N.C. only

Manifold (For Air, Medium Vacuum)



■ Valve type

Normally Closed (N.C.)
Normally Open (N.O.)

■ Manifold type

Common SUP type
Individual SUP type

■ Solenoid coil type

Insulation type: Class B

■ Rated voltage

100 V/200 V/110 V/230 VAC
(220 V/240 V/48 V/24 VAC)
24 VDC (12 VDC)

Voltage in ( ) indicates special voltage.

■ Material

Body — Resin
Base — Aluminum
Seal — NBR, FKM

■ Electrical entry

- Grommet
- Conduit
- DIN terminal
- Conduit terminal
- Flat terminal

Manifold

Size			Size 1	Size 2	Size 3
Orifice diameter		2 mmø	●	—	—
		3 mmø	●	—	—
		4 mmø	—	●	—
		5 mmø	●	—	●
		7 mmø	—	●	●
Port size	Common SUP type (Air)	IN	3/8		
		OUT	1/8, 1/4		
	Individual SUP type (Medium vacuum)	IN	1/8, 1/4		
		OUT	3/8		

Series VX21/22/23
Common Specifications

Standard Specifications

Valve specifications	Valve construction		Direct operated poppet
	Withstand pressure		290 psi (2.0 MPa) (Resin body type 218 psi [1.5 MPa])
	Body material		Aluminum, Resin, C37 (Brass), Stainless steel
	Seal material Note 3)		NBR, FKM
	Enclosure		Dust-tight, Water-jet-proof type (IP65) Note 1)
	Environment		Location without corrosive or explosive gases
Coil specifications	Rated voltage	AC	100 VAC, 200 VAC, 110 VAC, 230 VAC, (220 VAC, 240 VAC, 48 VAC, 24 VAC) Note 2)
		DC	24 VDC, (12 VDC) Note 2)
	Allowable voltage fluctuation		±10% of rated voltage
	Allowable leakage voltage	AC	5% or less of rated voltage
		DC	2% or less of rated voltage
	Coil insulation type		Class B, Class H

Note 1) Electrical entry flat terminal type terminal is IP40.
Note 2) Voltage in ( ) indicates special voltage. (Refer to page 21.)
Note 3) For seal material/EPDM, refer to X332. (Refer to page 23.)

⚠ **Be sure to read "Specific Product Precautions" before handling.**

Solenoid Coil Specifications

Normally Closed (N.C.)

DC Specification

Class B

Size	Power consumption (W) Note 1)	Temperature rise °F [°C] Note 2)
Size 1	4.5	122 [50]
Size 2	7	131 [55]
Size 3	10.5	149 [65]

Class H

Size	Power consumption (W) Note 1)	Temperature rise °F [°C] Note 2)
Size 1	9	212 [100]
Size 2	12	212 [100]
Size 3	15	212 [100]

Note 1) Power consumption: The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. (Variation: ±10%)
Note 2) The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

AC Specification (Built-in Full-wave Rectifier Type)

Class B

Size	Apparent power (VA) Note 1) 2)	Temperature rise °F [°C] Note 3)
Size 1	7	140 [60]
Size 2	9.5	158 [70]
Size 3	12	158 [70]

Class H

Size	Apparent power (VA) Note 1) 2)	Temperature rise °F [°C] Note 3)
Size 1	9	212 [100]
Size 2	12	212 [100]
Size 3	15	212 [100]

Note 1) Apparent power: The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. (Variation: ±10%)
Note 2) There is no difference in the frequency and the inrush and energized apparent power, since a rectifying circuit is used in the AC.
Note 3) The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

Normally Open (N.O.)

DC Specification

Class B

Size	Power consumption (W) Note 1)	Temperature rise °F [°C] Note 2)
Size 1	7.5	140 [60]
Size 2	8.5	158 [70]
Size 3	12.5	158 [70]

Class H

Size	Power consumption (W) Note 1)	Temperature rise °F [°C] Note 2)
Size 1	9	212 [100]
Size 2	12	212 [100]
Size 3	15	212 [100]

Note 1) Power consumption: The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. (Variation: ±10%)
Note 2) The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

AC Specification (Built-in Full-wave Rectifier Type)

Class B

Size	Apparent power (VA) Note 1) 2)	Temperature rise °F [°C] Note 3)
Size 1	9	140 [60]
Size 2	10	158 [70]
Size 3	14	158 [70]

Class H

Size	Apparent power (VA) Note 1) 2)	Temperature rise °F [°C] Note 3)
Size 1	9	212 [100]
Size 2	12	212 [100]
Size 3	15	212 [100]

Note 1) Apparent power: The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. (Variation: ±10%)
Note 2) There is no difference in the frequency and the inrush and energized apparent power, since a rectifying circuit is used in the AC.
Note 3) The value at ambient temperature of 68°F (20°C) and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

Selection Steps

Selection Steps

Step 1 **Select the fluid.**

Item	Selection item	Page	Symbol	
Select the fluid.	Air	Page 5, 6	0	❶
	Water	Page 14	2	
	Oil	Page 16	3	
	Medium vacuum	Page 10	4	
	Steam ※ Can be used with heated water.	Page 18	5	

VX2 3 **0** A A
❶

Step 2 **Select “Body material”, “Port size” and “Orifice diameter” from “Flow rate — Pressure” of each fluid.**

Item	Selection item		Symbol	
Select from “Flow rate — Pressure.” ● Body material ● Port size ● Orifice diameter	Size	Size 3	3	❷
	Body material	Aluminum	A	❸
	Port size	1/8		
	Orifice diameter	2		

VX2 **3** 0 **A** A
❷ ❸

Step 3 **Select electrical specification.**

Item	Selection item		Symbol	
Select electrical specification.	Voltage	24 VDC	A	❹
	Electrical entry	Grommet		

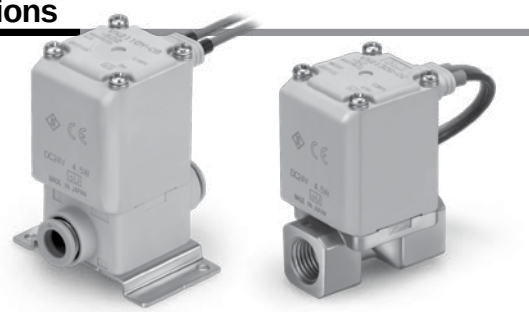
VX2 3 0 A **A**
❹

Step 4 **For special options, refer to pages 21 to 23.**

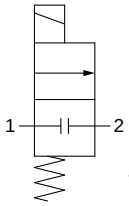
For Air Single Unit

Model/Valve Specifications

N.C.



Symbol



When the valve is closed, flow is blocked from port 1 to port 2. However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

Aluminum Body Type

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv			
1	1/8, 1/4	2	VX210	0.63	0.63	0.23	145 (1.0)	145 (1.0)	220
		3		1.05	0.68	0.41	87 (0.6)		220
		5		2.20	0.39	0.62	29 (0.2)		220
2	1/4, 3/8	4	VX220	1.90	0.52	0.62	145 (1.0)		340
		7		3.99	0.44	1.08	22 (0.15)		340
3	1/4, 3/8	5	VX230	1.96	0.55	0.75	145 (1.0)		450
		8		5.67	0.33	1.58	44 (0.3)		450
		10		5.74	0.64	2.21	15 (0.1)		450
	1/2	10		8.42	0.39	2.21	15 (0.1)		470

Resin Body Type (Built-in One-touch Fittings)

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv			
1	ø6	2	VX210	0.82	0.44	0.23	145 (1.0)	145 (1.0)	220
		3		1.25	0.34	0.35	87 (0.6)		220
		5		1.45	0.43	0.40	29 (0.2)		220
	ø8	2		0.82	0.44	0.23	145 (1.0)		220
		3		1.81	0.40	0.41	87 (0.6)		220
		5		2.11	0.32	0.56	29 (0.2)		220
2	ø8	4	VX220	1.69	0.40	0.47	145 (1.0)		340
		7		3.14	0.34	0.84	22 (0.15)		340
	ø10	4		1.68	0.49	0.50	145 (1.0)		340
		7		3.54	0.36	0.90	22 (0.15)		340
3	ø10	5	VX230	2.50	0.44	0.70	145 (1.0)		460
		8		2.77	0.82	1.22	44 (0.3)		460
		10		5.69	0.46	1.54	15 (0.1)		460
	ø12	5		2.50	0.44	0.70	145 (1.0)		460
		8		2.56	0.88	1.38	44 (0.3)		460
		10		5.69	0.64	1.76	15 (0.1)		460

Note) Weight of grommet type. Add 10 g for conduit type, 30 g for DIN terminal type, 60 g for conduit terminal type respectively.

• Refer to "Glossary of Terms" on page 37 for details on the maximum operating pressure differential.

Fluid and Ambient Temperature

Fluid temperature °F (°C)	Ambient temperature °F (°C)
14 to 140 (–10 Note) to 60)	–4 to 140 (–20 to 60)

Note) Dew point temperature: 14°F (–10°C) or less

Valve Leakage Rate

Internal Leakage

Seal material Note 2)	Leakage rate (Air) Note 1)
NBR (FKM)	1 cm³/min or less (Aluminum body type)
	15 cm³/min or less (Resin body type)

External Leakage

Seal material Note 2)	Leakage rate (Air) Note 1)
NBR (FKM)	1 cm³/min or less (Aluminum body type)
	15 cm³/min or less (Resin body type)

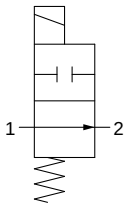
Note 1) Leakage is the value at ambient temperature 68°F (20°C).
Note 2) For seal material/FKM, refer to "Other Options" on page 21 for the selection.

For Air Single Unit

Model/Valve Specifications

N.O.

Symbol



When the valve is closed, flow is blocked from port 1 to port 2. However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

Aluminum Body Type

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv			
1	1/8, 1/4	2	**VX240**	0.63	0.63	0.23	131 (0.9)	145 (1.0)	240
		3		1.05	0.68	0.41	65 (0.45)		240
		5		2.20	0.39	0.62	29 (0.2)		240
2	1/4, 3/8	4	**VX250**	1.90	0.52	0.62	116 (0.8)		370
		7		3.99	0.44	1.08	22 (0.15)		370
3	1/4, 3/8	5	**VX260**	1.96	0.55	0.75	116 (0.8)		490
		8		5.67	0.33	1.58	44 (0.3)		490

Resin Body Type (Built-in One-touch Fittings)

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv			
1	ø6	2	**VX240**	0.82	0.44	0.23	131 (0.9)	145 (1.0)	240
		3		1.25	0.34	0.35	65 (0.45)		240
		5		1.45	0.43	0.40	29 (0.2)		240
	ø8	2		0.82	0.44	0.23	131 (0.9)		240
		3		1.81	0.40	0.41	65 (0.45)		240
		5		2.11	0.32	0.56	29 (0.2)		240
2	ø8	4	**VX250**	1.69	0.40	0.47	116 (0.8)		370
		7		3.14	0.34	0.84	22 (0.15)		370
	ø10	4		1.68	0.49	0.50	116 (0.8)		370
		7		3.54	0.36	0.90	22 (0.15)		370
3	ø10	5	**VX260**	2.50	0.44	0.70	116 (0.8)		500
		8		2.77	0.82	1.22	44 (0.3)		500
	ø12	5		2.50	0.42	0.70	116 (0.8)		500
		8		2.56	0.88	1.38	44 (0.3)		500

Note) Weight of grommet type. Add 10 g for conduit type, 30 g for DIN terminal type, 60 g for conduit terminal type respectively.

- Refer to "Glossary of Terms" on page 37 for details on the maximum operating pressure differential.

Fluid and Ambient Temperature

Fluid temperature °F (°C)	Ambient temperature °F (°C)
14 to 140 (–10 Note) to 60)	–4 to 140 (–20 to 60)

Note) Dew point temperature: 14°F (–10°C) or less

Valve Leakage Rate

Internal Leakage

Seal material Note 2)	Leakage rate (Air) Note 1)
NBR (FKM)	1 cm³/min or less (Aluminum body type)
	15 cm³/min or less (Resin body type)

External Leakage

Seal material Note 2)	Leakage rate (Air) Note 1)
NBR (FKM)	1 cm³/min or less (Aluminum body type)
	15 cm³/min or less (Resin body type)

Note 1) Leakage is the value at ambient temperature 68°F (20°C).
Note 2) For seal material/FKM, refer to "Other Options" on page 21 for the selection.

Note) Refer to the table on page 24 for UL-compliant.

RoHS

How to Order (Single Unit)

VX2 [1] [0] [A] [A]

Fluid

0	Air

Common Specifications

Seal material	NBR
Coil insulation type	Class B
Thread type	Rc*

* One-touch fittings are attached to the resin body type.

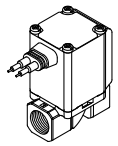
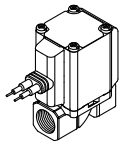
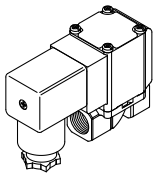
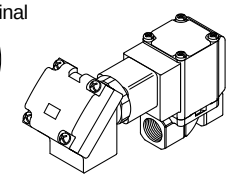
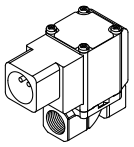
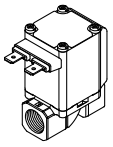
Coil size/Valve type

Size	Symbol	Valve type
Size 1	1	N.C.
	4	N.O.
Size 2	2	N.C.
	5	N.O.
Size 3	3	N.C.
	6	N.O.

Body material/Port size/Orifice diameter

Symbol	Body material	Port size	Orifice diameter
A	Aluminum	1/8	2
B			3
C			5
D		1/4	2
E			3
F			5
H	Resin (With bracket)	ø6	2
J			3
K			5
L		ø8	2
M			3
N			5
A	Aluminum	1/4	4
B			7
D		3/8	4
E			7
H	Resin (With bracket)	ø8	4
J			7
L		ø10	4
M			7
A	Aluminum	1/4	5
B			8
C			10 (N.C. only)
D		3/8	5
E			8
F			10 (N.C. only)
G		1/2	10 (N.C. only)
H	Resin (With bracket)	ø10	5
J			8
K			10 (N.C. only)
L		ø12	5
M			8
N			10 (N.C. only)

Voltage/Electrical entry

Symbol	Voltage	Electrical entry
A	24 VDC	Grommet 
B	100 VAC	Grommet (With surge voltage suppressor) 
C	110 VAC	
D	200 VAC	
E	230 VAC	
F	24 VDC	
G	24 VDC	DIN terminal (With surge voltage suppressor) 
H	100 VAC	
J	110 VAC	
K	200 VAC	
L	230 VAC	
M	24 VDC	Conduit terminal (With surge voltage suppressor) 
N	100 VAC	
P	110 VAC	
Q	200 VAC	
R	230 VAC	
S	24 VDC	Conduit (With surge voltage suppressor) 
T	100 VAC	
U	110 VAC	
V	200 VAC	
W	230 VAC	
Y	24 VDC	Flat terminal 
Z	Other voltages	

For special options, refer to pages 21 to 23.

Special voltage	24 VAC
	48 VAC
	220 VAC
	240 VAC
	12 VDC
DIN terminal with light	
Conduit terminal with light	
Without DIN connector	

Low concentration ozone resistant (Seal material: FKM)
Seal material: EPDM
Oil-free
G thread
NPT thread
With bracket (Aluminum body only)
Mounting holes on the bottom side of the body (Aluminum body only)
Special electrical entry direction

Dimensions → Pages 28 to 31 (Single unit)

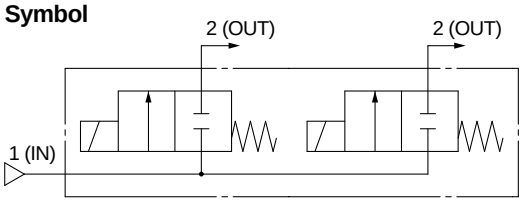
For Air Manifold

∗ For other fluids, please contact SMC.

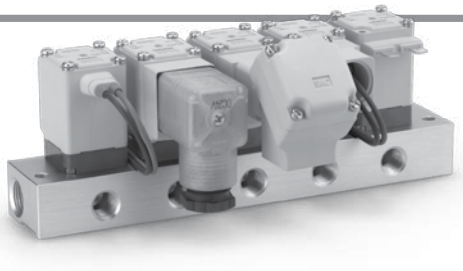
Model/Valve Specifications

N.C.

Symbol

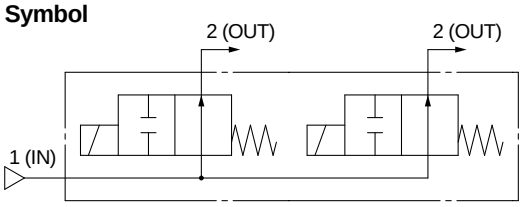


Common SUP type



N.O.

Symbol



Common SUP type

When the valve is closed, flow is blocked from port 1 to port 2. However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

Normally Closed (N.C.)

Size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)
			C [dm³/(s·bar)]	b	Cv		
1	2	VX2A0	0.63	0.63	0.23	145 (1.0)	145 (1.0)
	3		1.05	0.68	0.41	87 (0.6)	
	5		2.20	0.39	0.62	29 (0.2)	
2	4	VX2B0	1.90	0.52	0.62	145 (1.0)	
	7		3.99	0.44	1.08	22 (0.15)	
3	5	VX2C0	1.96	0.55	0.75	145 (1.0)	
	7		3.99	0.44	1.08	44 (0.3)	

Normally Open (N.O.)

Size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Maximum operating pressure differential psi (MPa)	Max. system pressure psi (MPa)
			C [dm³/(s·bar)]	b	Cv		
1	2	VX2D0	0.63	0.63	0.23	131 (0.9)	145 (1.0)
	3		1.05	0.68	0.41	65 (0.45)	
	5		2.20	0.39	0.62	29 (0.2)	
2	4	VX2E0	1.90	0.52	0.62	116 (0.8)	
	7		3.99	0.44	1.08	22 (0.15)	
3	5	VX2F0	1.96	0.55	0.75	116 (0.8)	
	7		3.99	0.44	1.08	44 (0.3)	

Fluid and Ambient Temperature

Fluid temperature °F (°C)	Ambient temperature °F (°C)
14 to 140 (−10 Note) to 60)	–4 to 140 (−20 to 60)

Note) Dew point temperature: 14 (–10°C) or less

Valve Leakage Rate

Internal Leakage

Seal material Note 2)	Leakage rate Note 1)
NBR (FKM)	1 cm³/min or less

External Leakage

Seal material Note 2)	Leakage rate Note 1)
NBR (FKM)	1 cm³/min or less

Note 1) Leakage is the value at ambient temperature 68°F (20°C).
Note 2) For seal material/FKM, refer to “Other Options” on page 21 for the selection.

How to Order (Solenoid Valve for Manifold)

VX2 [A] [0] [A] [A]

Fluid

0	Air

Common Specifications

Seal material	NBR
Coil insulation type	Class B

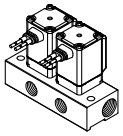
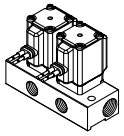
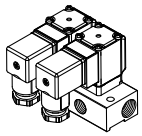
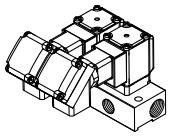
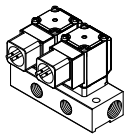
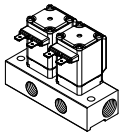
Coil size/Valve type

Size	Symbol	Valve type
Size 1	A	N.C.
	D	N.O.
Size 2	B	N.C.
	E	N.O.
Size 3	C	N.C.
	F	N.O.

Body material/Orifice diameter

Symbol	Body material	Orifice diameter
A	Resin	2
B		3
C		5
A	Resin	4
B		7
A	Resin	5
B		7

Voltage/Electrical entry

Symbol	Voltage	Electrical entry
A	24 VDC	Grommet 
B	100 VAC	Grommet (With surge voltage suppressor) 
C	110 VAC	
D	200 VAC	
E	230 VAC	
F	24 VDC	
G	24 VDC	DIN terminal (With surge voltage suppressor) 
H	100 VAC	
J	110 VAC	
K	200 VAC	
L	230 VAC	
M	24 VDC	Conduit terminal (With surge voltage suppressor) 
N	100 VAC	
P	110 VAC	
Q	200 VAC	
R	230 VAC	
S	24 VDC	Conduit (With surge voltage suppressor) 
T	100 VAC	
U	110 VAC	
V	200 VAC	
W	230 VAC	
Y	24 VDC	Flat terminal 
Z	Other voltages	

For special options, refer to pages 21 to 23.

Special voltage	24 VAC
	48 VAC
	220 VAC
	240 VAC
	12 VDC
DIN terminal with light	
Conduit terminal with light	
Without DIN connector	
Seal material: EPDM	
Low concentration ozone resistant (Seal material: FKM)	
Oil-free	
Special electrical entry direction	

⚠Caution

Mounting orientation exists when mounting valves onto manifold base. Refer to page 48 for details.

Manifold Base/How to Order

VVX2 [1] [0] [A] [02] [ ]

Fluid

0	Air

Coil size

Size	Symbol
Size 1	1
Size 2	2
Size 3	3

Base material /Port size/Base type

Symbol	Base material	Individual port size	Base type
A	Aluminum	1/8	Common
B		1/4	SUP

Common port size: 3/8 (IN port)

Stations

Symbol	Stations
02	2 stations
03	3 stations
04	4 stations
05	5 stations
06	6 stations
07	7 stations
08	8 stations
09	9 stations
10	10 stations

Symbol	Oil-free	Special thread
Nil	—	Rc
A	—	G
B	—	NPT
D	○	G
E	○	NPT
Z	○	Rc

Blanking Plate Assembly Part No.

For size 1 VVX021S-4A-[N]

For size 2 VVX022S-4A-[N]

For size 3 VVX023S-4A-[N]

When mounting a blanking plate assembly, if the solenoid valve for the manifold is ozone resistant, (Seal material: FKM), please select FKM.

Seal material

N	NBR
F	FKM

Dimensions → Page 35

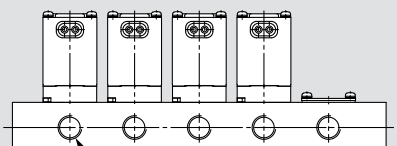
How to Order Manifold Assembly (Example)

Enter the valve and blanking plate to be mounted under the manifold base part number.

<Example>

VVX210B05……..1
∗VX2A0AA ……4
∗VVX021S-4A-N ……1
"∗" is the symbol for mounting.
Add an "∗" in front of the part numbers for solenoid valves etc. to be mounted.

D side (Stations 1 2 3 4 5) U side



Enter the product's part number in order, counting the 1st station from the D side (left in the manifold arrangement, when viewing the individual port in front).

For Medium Vacuum (0.1 Pa·abs or more) Single Unit

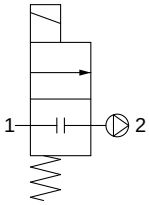
∗ This valve can also be used with air.
(Refer to the valve specifications for air.)

Model/Valve Specifications

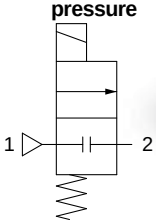
Symbol (Application example)

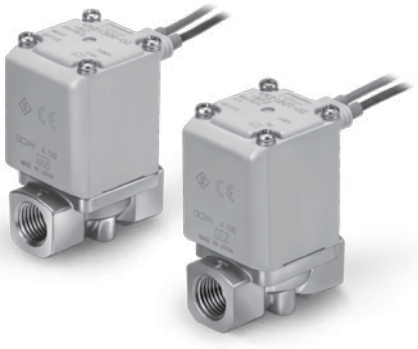
N.C.

① Used with vacuum



② Used with pressure



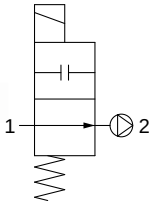


When the valve is closed, flow is blocked from port 1 to port 2.
However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

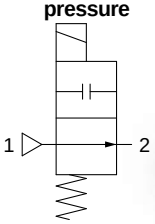
Symbol (Application example)

N.O.

① Used with vacuum



② Used with pressure



When the valve is closed, flow is blocked from port 1 to port 2.
However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

Normally Closed (N.C.)

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Operating pressure range		Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv	① Used with vacuum (Pa·abs)	② Used with pressure psi (MPa·G)		
1	1/8, 1/4	2	VX214	0.63	0.63	0.23	0.1 to atmospheric pressure	0 to 145 (0 to 1.0)	145 (1.0)	300
		3		1.05	0.68	0.41		0 to 87 (0 to 0.6)		300
		5		2.20	0.39	0.62		0 to 29 (0 to 0.2)		300
2	1/4, 3/8	4	VX224	1.90	0.52	0.62		0 to 145 (0 to 1.0)		460
		7		3.99	0.44	1.08		0 to 22 (0 to 0.15)		460
3	1/4, 3/8	5	VX234	1.96	0.55	0.75		0 to 145 (0 to 1.0)		580
		8		5.67	0.33	1.58		0 to 44 (0 to 0.3)		580
		10		5.74	0.64	2.21		0 to 15 (0 to 0.1)		580
	1/2	10		8.42	0.39	2.21		0 to 15 (0 to 0.1)		630

Normally Open (N.O.)

Size	Port size	Orifice diameter (mmø)	Model	Flow-rate characteristics			Operating pressure range		Max. system pressure psi (MPa)	Weight Note) (g)
				C [dm³/(s·bar)]	b	Cv	① Used with vacuum (Pa·abs)	② Used with pressure psi (MPa·G)		
1	1/8, 1/4	2	VX244	0.63	0.63	0.23	0.1 to atmospheric pressure	0 to 131 (0 to 0.9)	145 (1.0)	320
		3		1.05	0.68	0.41		0 to 65 (0 to 0.45)		320
		5		2.20	0.39	0.62		0 to 29 (0 to 0.2)		320
2	1/4, 3/8	4	VX254	1.90	0.52	0.62		0 to 116 (0 to 0.8)		490
		7		3.99	0.44	1.08		0 to 22 (0 to 0.15)		490
3	1/4, 3/8	5	VX264	1.96	0.55	0.75		0 to 116 (0 to 0.8)		620
		8		5.67	0.33	1.58		0 to 44 (0 to 0.3)		620

Note) Weight of grommet type. Add 10 g for conduit type, 30 g for DIN terminal type, 60 g for conduit terminal type respectively.

Fluid and Ambient Temperature

Fluid temperature °F (°C)	Ambient temperature °F (°C)
34 to 140 (1 to 60) Note)	–4 to 140 (−20 to 60)

Note) With no freezing

Valve Leakage Rate

Internal Leakage

Seal material	Leakage rate Note)
FKM	10^{-6} Pa·m³/sec or less

External Leakage

Seal material	Leakage rate Note)
FKM	10^{-6} Pa·m³/sec or less

Note) Leakage (10^{-6} Pa·m³/sec) is the value at differential pressure 15 psi (0.1 MPa) and ambient temperature 68°F (20°C).

How to Order (Single Unit)

VX2 [1] [4] [A] [A]

Fluid

4	Medium vacuum

Common Specifications

Seal material	FKM
Coil insulation type	Class B
Thread type	Rc
Oil-free	
Non-leak	

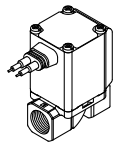
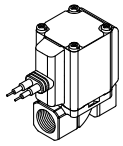
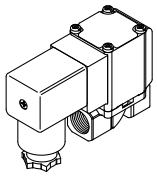
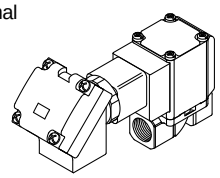
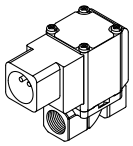
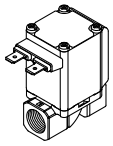
Coil size/Valve type

Size	Symbol	Valve type
Size 1	1	N.C.
	4	N.O.
Size 2	2	N.C.
	5	N.O.
Size 3	3	N.C.
	6	N.O.

Body material/Port size/Orifice diameter

Symbol	Body material	Port size	Orifice diameter
A	C37	1/8	2
B			3
C			5
D		1/4	2
E			3
F			5
H	Stainless steel	1/8	2
J			3
K			5
L		1/4	2
M			3
N			5
A	C37	1/4	4
B			7
D		3/8	4
E			7
H	Stainless steel	1/4	4
J			7
L		3/8	4
M			7
A	C37	1/4	5
B			8
C			10 (N.C. only)
D		3/8	5
E			8
F			10 (N.C. only)
G		1/2	10 (N.C. only)
H	Stainless steel	1/4	5
J			8
K			10 (N.C. only)
L		3/8	5
M			8
N			10 (N.C. only)
P		1/2	10 (N.C. only)

Voltage/Electrical entry

Symbol	Voltage	Electrical entry
A	24 VDC	Grommet 
B	100 VAC	Grommet (With surge voltage suppressor) 
C	110 VAC	
D	200 VAC	
E	230 VAC	
F	24 VDC	
G	24 VDC	DIN terminal (With surge voltage suppressor) 
H	100 VAC	
J	110 VAC	
K	200 VAC	
L	230 VAC	
M	24 VDC	Conduit terminal (With surge voltage suppressor) 
N	100 VAC	
P	110 VAC	
Q	200 VAC	
R	230 VAC	
S	24 VDC	Conduit (With surge voltage suppressor) 
T	100 VAC	
U	110 VAC	
V	200 VAC	
W	230 VAC	
Y	24 VDC	Flat terminal 
Z	Other voltages	

For special options, refer to pages 21 to 23.

Special voltage	24 VAC
	48 VAC
	220 VAC
	240 VAC
	12 VDC
DIN terminal with light	
Conduit terminal with light	

Without DIN connector
Seal material: EPDM
G thread
NPT thread
With bracket
Mounting holes on the bottom side of the body
Special electrical entry direction

Dimensions→ Pages 32, 33 (Single unit)