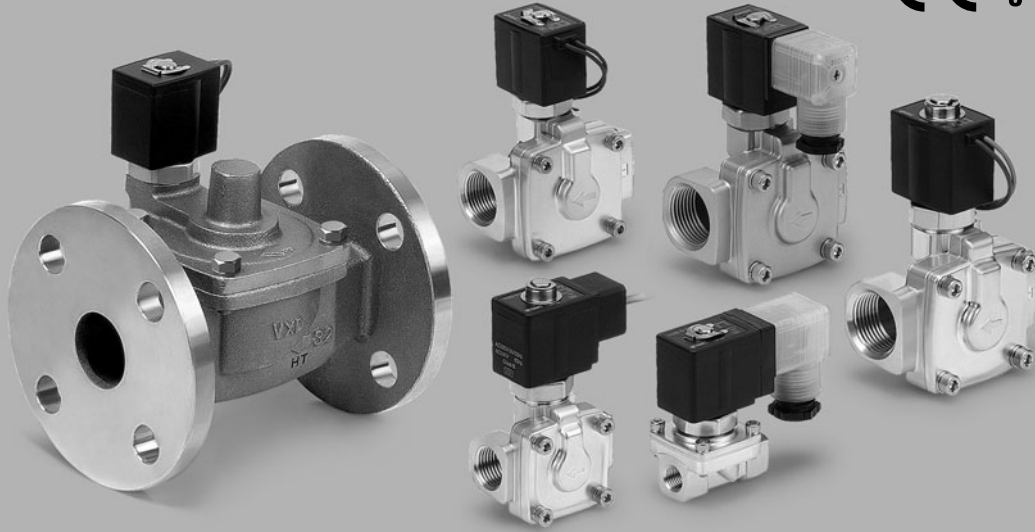


Pilot Operated 2 Port Solenoid Valve

Series VXD21/22/23

For Air, Water, Oil



VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH□

VDW

VQ

LVM

VCA

VCB

VCL

VCS

VCW

Solenoid valves for various fluids used in a wide variety of applications

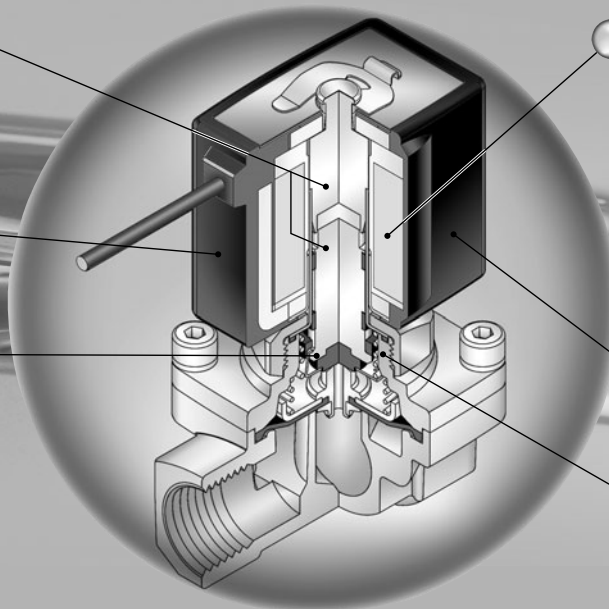
Improved corrosion resistance

Special magnetic material adopted

Enclosure: IP65

Low-noise construction

Special construction enables to reduce the metal noise. (DC spec.)



Reduced power consumption

(DC spec.)

VXD21: 6 W

→ 4.5 W_(VXD2140 to 2150)

→ 5.5 W_(VXD2130)

VXD22: 8 W → 7 W

VXD23: 11.5 W

→ 10.5 W

Flame resistance

UL94V-0 conformed

Flame resistant mold coil material

Improved maintenance performance

Maintenance is performed easily due to the threaded assembly.

Pilot Operated 2 Port Solenoid Valve

Series *VXD21/22/23*

For Air, Water, Oil

■ Valve

Normally closed (N.C.)
Normally open (N.O.) Note)

Note) Except VXD2130

■ Solenoid Coil

Coil: Class B, Class H

■ Rated Voltage

100 VAC, 200 VAC, 110 VAC,
220 VAC, 240 VAC, 230 VAC,
48 VAC, 24 VDC, 12 VDC

■ Material

Body Brass (C37)/CAC407,
Stainless steel
Seal NBR, FKM, EPDM

■ Electrical Entry

- Grommet
- Conduit
- DIN terminal
- Conduit terminal



Model	VXD2130	VXD214 ²	VXD215 ³	VXD226 ³
Orifice dia.				
10 mmø	●	—	—	—
15 mmø	—	●	—	—
20 mmø	—	—	●	—
25 mmø	—	—	—	●
Port size (Thread)	1/4 3/8 1/2	3/8 1/2	3/4	1

Model	VXD227 ²	VXD238 ²	VXD239 ²
Orifice dia.			
35 mmø	●	—	—
40 mmø	—	●	—
50 mmø	—	—	●
Port size (Flange)	32A	40A	50A

Contents

For Air	P.64
For Water	P.66
For Oil	P.68
Construction	P.70
Dimensions	P.72
Replacement Parts	P.75

VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH□

VDW

VQ

LVM

VCA

VCB

VCL

VCS

VCW

Series VXD21/22/23

Common Specifications

Standard Specifications

Valve specifications	Valve construction		Pilot operated 2 port diaphragm type
	Withstand pressure (MPa)		8A to 25A: 5.0, 32A to 50A: 2.0
	Body material		Brass (C37), Stainless steel, CAC407
	Seal material		NBR, FKM, EPDM
	Enclosure		Dusttight, Low jetproof (equivalent to IP65) ^{Note 1)}
	Environment		Location without corrosive or explosive gases
Coil specifications	Rated voltage	AC (Class B coil, Built-in full-wave rectifier type)	100 VAC, 200 VAC, 110 VAC, 220 VAC, 230 VAC, 240 VAC, 48 VAC
		AC (Class B coil/H coil) ^{Note 2)}	
		DC (Class B coil only)	
	Allowable voltage fluctuation		±10% of rated voltage
	Allowable leakage voltage	AC (Class B coil, Built-in full-wave rectifier type)	10% or less of rated voltage
		AC (Class B coil/H coil) ^{Note 2)}	20% or less of rated voltage
		DC (Class B coil only)	2% or less of rated voltage
Coil insulation type		Class B, Class H	

Note 1) Electrical entry: Grommet with surge voltage suppressor (GS) has a rating of IP40.

Note 2) For the AC (Class B coil) of the VXD2130, built-in full-wave rectifier type is only applicable.

⚠ Be sure to read "Specific Product Precautions."

Solenoid Coil Specifications

Normally Closed (N.C.)

DC Specification

Model	Power consumption (W)	Temperature rise (°C) ^{Note)}
VXD2130	5.5	50
VXD2140/2150	4.5	45
VXD2260/2270	7	45
VXD2380/2390	10.5	60

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

AC Specification (Class B coil, Built-in full-wave rectifier type)

Model	Apparent power (VA)*	Temperature rise (°C) ^{Note)}
VXD21	7	55
VXD22	9.5	60
VXD23	12	65

* There is no difference in apparent power due to the inrush, energization, or frequency of the power, since the AC (Class B coil, Built-in full-wave rectifier type) uses a rectifying circuit.

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

AC Specification

Model	Frequency (Hz)	Apparent power (VA)		Temperature rise (°C) ^{Note)}
		Inrush	Energized	
VXD21	50	19	10	50
	60	16	8	45
VXD22	50	43	20	65
	60	35	17	60
VXD23	50	62	32	65
	60	52	27	60

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

Normally Open (N.O.)

DC Specification

Model	Power consumption (W)	Temperature rise (°C) ^{Note)}
VXD2142/2152	4.5	45
VXD2262/2272	7	45
VXD2382/2392	10.5	60

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

AC Specification (Class B coil, Built-in full-wave rectifier type)

Model	Apparent power (VA)*	Temperature rise (°C) ^{Note)}
VXD21	7	55
VXD22	9.5	60
VXD23	12	65

* There is no difference in apparent power due to the inrush, energization, or frequency of the power, since the AC (Class B coil, Built-in full-wave rectifier type) uses a rectifying circuit.

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

AC Specification


Model	Frequency (Hz)	Apparent power (VA)		Temperature rise (°C) ^{Note)}
		Inrush	Energized	
VXD21	50	22	11	55
	60	18	8	50
VXD22	50	46	20	65
	60	38	18	60
VXD23	50	64	32	65
	60	54	27	60

Note) The values at ambient temperature of 20°C and when the rated voltage is applied.

Applicable Fluid Check List

Pilot Operated 2 Port Solenoid Valve Series VXD21/22/23

All Options (8A to 25A)

 Refer to pages 64, 66, and 68 for specifications and models.



VXD2 ³ ¹ ⁴ ⁰ - - ¹ R1 -
₂ ₅ ₂ ₆ ● Option symbol

Fluid and application	Option symbol	Seal material	Body/Shading coil material ^{Note 6)}	Push rod (N.O. only) material ^{Note 5)}	Coil insulation type ^{Note 3)}	Note
Air	NII	NBR	Brass (C37)/-	PPS	B	Select the built-in full-wave rectifier type for the AC spec.
	G		Stainless steel/-			
Water	NII	NBR	Brass (C37)/Cu		B	
	G		Stainless steel/Ag			
Heated water	E	EPDM	Brass (C37)/Cu		H	
	P		Stainless steel/Ag			
Oil ^{Note 2)}	A	FKM	Brass (C37)/Cu		B	
	H		Stainless steel/Ag			
	D		Brass (C37)/Cu		H	
	N		Stainless steel/Ag			
High corrosive spec., Oil-free	L ^{Note 1)}	FKM	Stainless steel/Ag	B		
Copper-free, Fluorine-free ^{Note 4)}	J	EPDM	Stainless steel/Ag	B		
	P		Stainless steel/Ag	H		
Other combinations	B	EPDM	Brass (C37)/Cu	B		

Note 1) "L" option is for oil-free treatment.

Note 2) The dynamic viscosity of the fluid must not exceed 50 mm²/s.

The special construction of the armature adopted in the built-in full-wave rectifier type gives an improvement in OFF response by providing clearance on the absorbed surface when it is switched ON.

Select the DC spec. or AC spec. built-in full-wave rectifier type when the dynamic viscosity is higher than water or when the OFF response is prioritized.

Note 3) Coil insulation type Class H: AC spec. only


Note 4) The nuts (non-wetted parts) are nickel-plated on the Brass (C37) material.

Note 5) N.O. for VXD2130 is not available.

Note 6) There is no shading coil attached to the DC spec. or AC spec built-in full-wave rectifier type.

* Please contact SMC when fluids other than above are used.

All Options (32A to 50A)

 Refer to pages 64, 66, and 68 for specifications and models.

VXD2 ⁷ ² ⁸ ⁰ - - ¹ R1 -
₃ ₉ ₂ ● Option symbol



Fluid and application	Option symbol	Seal material	Body/Shading coil material ^{Note 4)}	Push rod (N.O. only) material	Coil insulation type ^{Note 3)}	Note
Air	NII	NBR	CAC407/-	PPS	B	Select the built-in full-wave rectifier type for the AC spec.
Water	NII	NBR	CAC407/Cu		B	
Heated water ^{Note 1)}	E	EPDM	CAC407/Cu		H	
Oil ^{Note 2)}	A	FKM	CAC407/Cu		B	
	D		CAC407/Cu		H	
Other combination	B	EPDM	CAC407/Cu		B	

Note 1) The highest operating temperature of 32A to 50A is 80°C.

Note 2) The dynamic viscosity of the fluid must not exceed 50 mm²/s.

The special construction of the armature adopted in the built-in full-wave rectifier type gives an improvement in OFF response by providing clearance on the absorbed surface when it is switched ON.

Select the DC spec. or AC spec built-in full-wave rectifier type when the dynamic viscosity is higher than water or when the OFF response is prioritized.

Note 3) Coil insulation type Class H: AC spec. only

Note 4) There is no shading coil attached to the DC spec. or AC spec built-in full-wave rectifier type.

* Please contact SMC when fluids other than above are used.

- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

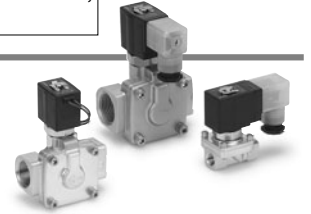
Series VXD21/22/23

For Air

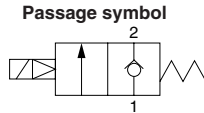
(Inert gas)

Model/Valve Specifications

⚠ When the fluid is air.
 Please select the built-in full wave rectifier type when the fluid is air.
 • The special construction of the armature reduces abrasion, resulting in a longer service life.
 • Reduced buzz noise
 Best suited for medical equipment, low-noise environments, etc.



Normally closed (N.C.)



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics			Max. system pressure (MPa)	Mass (g) ^{Note 2)}			
				AC	DC	C	b	Cv					
Thread (Nominal size)	1/4 (8A)	10	VXD2130-02	0.02	0.9	0.7	8.5	0.35	2.0	1.5	420		
	3/8 (10A)	10	VXD2130-03				9.2		2.4				
		15	VXD2140-03				18.0		5.0				
	1/2 (15A)	10	VXD2130-04				0.9		0.7			9.2	2.4
		15	VXD2140-04				20.0		5.5				
3/4 (20A)	20	VXD2150-06	1.0	1.0	38.0	0.30	9.5	1150					

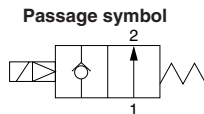
Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics			Max. system pressure (MPa)	Mass (g) ^{Note 2)}
				AC, DC	Effective area (mm ²)	C	b	Cv		
Thread (Nominal size)	1 (25A)	25	VXD2260-10	0.02	1.0		225	1.5		1650
Flange	32A	35	VXD2270-32	0.03			415			5400
	40A	40	VXD2380-40				560			6800
	50A	50	VXD2390-50				880			8400



Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.
 • Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Normally open (N.O.)



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics			Max. system pressure (MPa)	Mass (g) ^{Note 2)}
				AC, DC	C	b	Cv			
Thread (Nominal size)	3/8 (10A)	15	VXD2142-03	0.02	0.7	18.0	0.35	5.0	1.5	690
	1/2 (15A)	VXD2142-04	20.0			5.5				
	3/4 (20A)	VXD2152-06	38.0			0.30		9.5		

Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics			Max. system pressure (MPa)	Mass (g) ^{Note 2)}
				AC, DC	Effective area (mm ²)	C	b	Cv		
Thread (Nominal size)	1 (25A)	25	VXD2262-10	0.02	0.7		225	1.5		1690
Flange	32A	35	VXD2272-32	0.03			415			5400
	40A	40	VXD2382-40				560			6800
	50A	50	VXD2392-50				880			8400



Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.
 • Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Power source	Fluid temperature (°C)		Ambient temperature (°C)
	Solenoid valve option symbol		
	NII, G		
AC		-10 ^{Note)} to 60	-10 to 60
DC		-10 to 60	

Note) Dew point temperature: -10°C or less

Valve Leakage Rate

Internal Leakage

Seal material	Leakage rate (Air)	
	1/4 to 1	32A to 50A
NBR, FKM	2 cm ³ /min or less	10 cm ³ /min or less

External Leakage

Seal material	Leakage rate (Water)	
	1/4 to 1	32A to 50A
NBR, FKM	0.1 cm ³ /min or less	0.1 cm ³ /min or less

Pilot Operated 2 Port Solenoid Valve Series VXD21/22/23

For Air



Note) Refer to "How to Order" for UL-compliant.

How to Order

DC VXD 21 3 0 [] [] - 02 [] - 5 G 1 - []

AC VXD 21 3 0 [] [] - 02 [] - 1 G R1 - []

Model Refer to the table (1) shown below for availability.

Orifice diameter Refer to the table (1) shown below for availability.

Valve/Body configuration

0	N.C. / Single unit
2	N.O. / Single unit

* N.O. for VXD2130 is not available.

Solenoid valve option Refer to the table (2) shown below for availability.

Port size Refer to the table (1) shown below for availability.

Bracket

Nil	None
B	With bracket

* Bracket is not removable.

Built-in full-wave rectifier type

Thread type

Nil	Rc
T	NPTF
F	G
N	NPT

Electrical entry

Symbol	Electrical entry	Configuration	Symbol	Electrical entry	Configuration
G	Grommet		C	Conduit	
GS	With grommet surge voltage suppressor		D	DIN terminal	
T	With conduit terminal		DS	DIN terminal with surge voltage suppressor	
TS	With conduit terminal and surge voltage suppressor		DL	DIN terminal with light	
TL	With conduit terminal and light		DZ	DIN terminal with surge voltage suppressor and light	
TZ	With conduit terminal, surge voltage suppressor and light		DO	For DIN terminal (without connector, gasket is included.)	

Rated voltage

1	100 VAC 50/60 Hz	6	12 VDC
2	200 VAC 50/60 Hz	7	240 VAC 50/60 Hz
3	110 VAC 50/60 Hz	8	48 VAC 50/60 Hz
4	220 VAC 50/60 Hz	J	230 VAC 50/60 Hz
5	24 VDC		

* Refer to the table (3) shown below for availability.

Suffix

Nil	—
Z	Oil-free spec.

Refer to page 75 for ordering coil only.

Table (1) Model/Orifice Diameter/Port Size Normally closed (N.C.)

Solenoid valve (Port size)				Orifice symbol (Diameter)					Material			
Model	VXD21	VXD22	VXD23	3 (10 mmø)	4 (15 mmø)	5 (20 mmø)	6 (25 mmø)	7 (35 mmø)	8 (40 mmø)	9 (50 mmø)	Body	Seal
Port no. (Port size)	Thread	02 (1/4)	—	—	●	—	—	—	—	—	Brass (C37), Stainless steel	NBR
		03 (3/8)	—	—	●	●	—	—	—	—		
		04 (1/2)	—	—	●	●	—	—	—	—		
		06 (3/4)	—	—	—	—	●	—	—	—		
	Flange	—	10 (1)	—	—	—	—	●	—	—	CAC407	
		—	32 (32A)	—	—	—	—	●	—	—		
		—	—	40 (40A)	—	—	—	—	●	—		
		—	—	50 (50A)	—	—	—	—	—	●		

Normally open (N.O.)

Solenoid valve (Port size)				Orifice symbol (Diameter)					Material			
Model	VXD21	VXD22	VXD23	4 (15 mmø)	5 (20 mmø)	6 (25 mmø)	7 (35 mmø)	8 (40 mmø)	9 (50 mmø)	Body	Seal	
Port no. (Port size)	Thread	03 (3/8)	—	—	●	—	—	—	—	Brass (C37), Stainless steel	NBR	
		04 (1/2)	—	—	●	●	—	—	—			
		06 (3/4)	—	—	—	●	—	—	—			—
		—	10 (1)	—	—	—	●	—	—			—
	Flange	—	32 (32A)	—	—	—	—	●	—	—		CAC407
		—	—	40 (40A)	—	—	—	●	—	—		
		—	—	50 (50A)	—	—	—	—	●	—		
		—	—	—	—	—	—	—	—	●		

Table (2) Solenoid Valve Option

Option symbol	Seal material	Body/ Shading coil material	Coil insulation type	Note
Nil	NBR	Brass (C37)/Cu ^{Note}	B	—
G		Stainless steel/Ag		

Note) CAC407 for 32A to 50A.

Table (3) Rated Voltage – Electrical Option

Rated voltage			Class B			Class H		
AC/DC	Voltage symbol	Voltage	With surge voltage suppressor	With light	With light and surge voltage suppressor	With surge voltage suppressor	With light	With light and surge voltage suppressor
AC	1	100 V	— (Note)	●	— (Note)	●	●	●
	2	200 V		●		●	●	
	3	110 V		●		●	●	
	4	220 V		●		●	●	
	7	240 V		—		—	—	
	8	48 V		—		—	—	
DC	J	230 V	—	—	—	●	—	—
	5	24 V	●	●	●	DC spec. is not available.		
	6	12 V	●	—	—	DC spec. is not available.		

Note) Option "S", "Z" are not available as surge voltage suppressor is integrated into the AC/Class B coil, as a standard.

Series VXD21/22/23

UL-compliant * Refer to the table shown below for UL-compliant.

For Air

VXD21 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	1	G	R	1	Nil
	4		G		03	T	3	GS			B
	5		04		F	5					
			06		N	6					
			8								

For Air

VXD21 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	5	D	1	Nil
	4		G		03	T	6	B		
	5		04		F					
			06		N					

For Air

VXD21 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	G	R	1	Nil
	5		03		T	3	B				
			04		F	8					
			06		N						

For Air

VXD21 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	C	R	1	Nil
	5		03		T	2	B				
			04		F	3					
			06		N	4					
			7								
			8								
			J								

For Air

VXD22 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
22	6	0	Nil	Nil	10	Nil	1	G	R	1	Nil
			G			T	3	GS			B
			F			5					
			N			6					
			8								

Pilot Operated 2 Port Solenoid Valve *Series VXD21/22/23*

For Air

For Air

VXD22 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket	
22	6	0	Nil	Nil	10	Nil	5	D	1	Nil	
			G			T	6				B
						F					
						N					

For Air

VXD22 Valve: N.C., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket		
22	6	0	Nil	Nil	10	Nil	1	C	Nil	1	Nil		
			G			T	2					R	B
						F	3						
						N	4						
							5						
							6						
							7						
							8						
							J						

For Air

VXD22 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	2	Nil	Nil	10	Nil	1	G	R	1	Nil	
			G			T	3					B
						F	8					
						N						

For Air

VXD22 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	2	Nil	Nil	10	Nil	1	C	R	1	Nil	
			G			T	2					B
						F	3					
						N	4					
							7					
							8					
							J					

VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH□

VDW

VQ

LVM

VCA

VCB

VCL

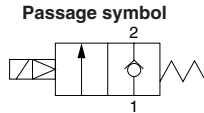
VCS

VCW

For Water

Model/Valve Specifications

Normally closed (N.C.)



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics		Max. system pressure (MPa)	Mass ^{Note 2)} (g)		
				AC	DC	Av x 10 ⁻⁶ m ²	Cv converted				
Thread (Nominal size)	1/4 (8A)	10	VXD2130-02	0.02	0.7	0.5	46	1.9	1.5	420	
		10	VXD2130-03				58	2.4			
	3/8 (10A)	15	VXD2140-03		1.0	1.0	110	4.5			670
		10	VXD2130-04		0.7	0.5	58	2.4			500
	1/2 (15A)	15	VXD2140-04		1.0	1.0	130	5.5			670
		20	VXD2150-06				230	9.5			1150
Flange	1 (25A)	VXD2260-10	310	13			1650				
	32A	VXD2270-32	550	23			5400				
	40A	VXD2380-40	740	31			6800				
	50A	VXD2390-50	1200	49			8400				

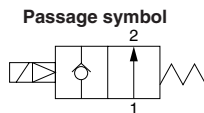


Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Normally open (N.O.)



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) ^{Note 1)}	Max. operating pressure differential (MPa)		Flow characteristics		Max. system pressure (MPa)	Mass ^{Note 2)} (g)
				AC, DC	Av x 10 ⁻⁶ m ²	Cv converted			
Thread (Nominal size)	3/8 (10A)	VXD2142-03	0.02	0.7	110	4.5	1.5	690	
	1/2 (15A)	VXD2142-04			130	5.5			
	3/4 (20A)	VXD2152-06			230	9.5			1170
	1 (25A)	VXD2262-10			310	13			1690
Flange	32A	VXD2272-32	0.03	0.7	550	23	5400		
	40A	VXD2382-40			740	31	6800		
	50A	VXD2392-50			1200	49	8400		



Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Power source	Fluid temperature (°C)		Ambient temperature (°C)
	Solenoid valve option symbol		
	Nii, G, L	E, P ^{Note 1)}	
AC	1 to 60	1 to 99	-10 to 60
DC		—	

Note 1) 1 to 80°C for 32A to 50A.

Note 2) With no freezing

Valve Leakage Rate

Internal Leakage

Seal material	Leakage rate (Water)	
	1/4 to 1	32A to 50A
NBR, FKM, EPDM	0.2 cm ³ /min or less	1 cm ³ /min or less

External Leakage

Seal material	Leakage rate (Water)	
	1/4 to 1	32A to 50A
NBR, FKM, EPDM	0.1 cm ³ /min or less	0.1 cm ³ /min or less

Pilot Operated 2 Port Solenoid Valve Series VXD21/22/23

For Water



Note) Refer to "How to Order" for UL-compliant.

How to Order

DC/AC (Except VXD2130 AC/Class B)

AC/Class B coil (Built-in full-wave rectifier type)

* For the AC (Class B coil) of the VXD2130, built-in full-wave rectifier type is only applicable.

Model
Refer to the table (1) shown below for availability.

Valve/Body configuration

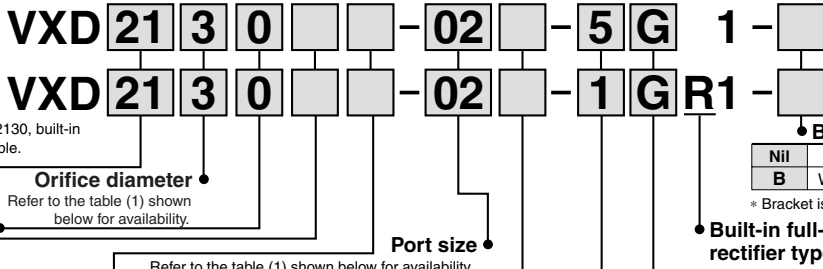
0	N.C. / Single unit
2	N.O. / Single unit

Solenoid valve option

Refer to the table (2) shown below for availability.

Note) Class B oil-free AC coils are applicable to the full-wave rectifier type only. Select the built-in full-wave rectifier type.

Nil	—
Z	Oil-free spec.



Nil	Rc
T	NPTF
F	G
N	NPT

1	100 VAC 50/60 Hz	6	12 VDC
2	200 VAC 50/60 Hz	7	240 VAC 50/60 Hz
3	110 VAC 50/60 Hz	8	48 VAC 50/60 Hz
4	220 VAC 50/60 Hz	J	230 VAC 50/60 Hz
5	24 VDC		

* Refer to the table (3) shown below for availability.



Refer to page 75 for ordering coil only.

Table (1) Model/Orifice diameter/Port Size Normally closed (N.C.)

Solenoid valve (Port size)			Orifice symbol (Diameter)						Material			
Model	VXD21	VXD22	VXD23	3 (10 mmø)	4 (15 mmø)	5 (20 mmø)	6 (25 mmø)	7 (35 mmø)	8 (40 mmø)	9 (50 mmø)	Body	Seal
Port no. (Port size)	Thread	02 (1/4)	—	—	●	—	—	—	—	—	Brass (C37), Stainless steel	NBR FKM EPDM
		03 (3/8)	—	—	●	●	—	—	—	—		
		04 (1/2)	—	—	●	●	●	—	—	—		
	06 (3/4)	—	—	—	—	●	—	—	—			
	—	10 (1)	—	—	—	—	●	—	—			
	—	32 (32A)	—	—	—	—	—	●	—			
Flange	—	—	40 (40A)	—	—	—	—	—	●	—	CAC407	
	—	—	50 (50A)	—	—	—	—	—	●	—		
	—	—	—	—	—	—	—	—	●	—		

Normally open (N.O.)

Solenoid valve (Port size)			Orifice symbol (Diameter)						Material		
Model	VXD21	VXD22	VXD23	4 (15 mmø)	5 (20 mmø)	6 (25 mmø)	7 (35 mmø)	8 (40 mmø)	9 (50 mmø)	Body	Seal
Port no. (Port size)	Thread	03 (3/8)	—	—	●	—	—	—	—	Brass (C37), Stainless steel	NBR FKM EPDM
		04 (1/2)	—	—	●	—	—	—	—		
		06 (3/4)	—	—	—	●	—	—	—		
	—	10 (1)	—	—	—	●	—	—	—		
	—	32 (32A)	—	—	—	—	●	—	—		
	—	—	40 (40A)	—	—	—	—	●	—		
—	—	50 (50A)	—	—	—	—	—	●			
—	—	—	—	—	—	—	—	●			

Table (2) Solenoid Valve Option

Option symbol	Seal material	Body/ Shading coil material	Coil insulation type	Note
Nil	NBR	Brass (C37)/Cu ^{Note 2)}	B	—
G		Stainless steel/Ag		
E	EPDM	Brass (C37)/Cu ^{Note 2)}	H	Heated water (AC only)
P		Stainless steel/Ag		
L ^{Note 1)}	FKM	Stainless steel/Ag	B	High corrosive, Oil-free

Note 1) Select nil because option "L" is the oil-free treatment.
Note 2) CAC407 for 32A to 50A.

Table (3) Rated Voltage – Electrical Option

Rated voltage			Class B			Class H		
AC/DC	Voltage symbol	Voltage	With surge voltage suppressor	With light	With light and surge voltage suppressor	With surge voltage suppressor	With light	With light and surge voltage suppressor
AC	1	100V	●	●	●	●	●	●
	2	200V	●	●	●	●	●	●
	3	110V	●	●	●	●	●	●
	4	220V	●	●	●	●	●	●
	7	240V	●	—	—	●	—	—
	8	48V	●	—	—	●	—	—
DC	J	230V	●	—	—	●	—	—
	5	24V	●	●	●	DC spec. is not available.		
	6	12V	●	—	—			

Note) Option "S", "Z" are not available as surge voltage suppressor is integrated into the AC/Class B coil, as a standard.

- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

Series VXD21/22/23

UL-compliant * Refer to the table shown below for UL-compliant.

For Water

VXD21 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	1	G	R	1	Nil
	4		G		03	T	3	GS			B
	5		E		04	F	5				
			L		06	N	6				
			8								

For Water

VXD21 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	5	D	1	Nil
	4		G		03	T	6	B		
	5		E		04	F				
			L		06	N				

For Water

VXD21 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	G	R	1	Nil
	5		G		03	T	3	B			
			E		04	F	8				
			L		06	N					

For Water

VXD21 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	C	R	1	Nil
	5		G		03	T	2	B			
			E		04	F	3				
			L		06	N	4				
			7								
			8								
			J								

For Water

VXD22 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	0	Nil	Nil	10	Nil	1	G	Nil	1	Nil	
			G			T	3	GS			R	B
			E			F	5					
			L			N	6					
			8									

For Water

VXD22 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket
22	6	0	Nil	Nil	10	Nil	5	D	1	Nil
			G			T	6			B
			E			F				
			L			N				

For Water

VXD22 Valve: N.C., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	0	Nil	Nil	10	Nil	1	C	Nil	1	Nil	
			G			T	2				R	B
			E			F	3					
			L			N	4					
						5						
						6						
						7						
						8						
						9						
						J						

For Water

VXD22 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
22	6	2	Nil	Nil	10	Nil	1	G	R	1	Nil
			G			T	3				B
			E			F	8				
			L			N					

For Water

VXD22 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	2	Nil	Nil	10	Nil	1	C	R	1	Nil	
			G			T	2				B	
			E			F	3					
			L			N	4					
						7						
						8						
						9						
						10						
						J						

VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH□

VDW

VQ

LVM

VCA

VCB

VCL

VCS

VCW

Series VXD21/22/23

⚠ When the fluid is oil.

The dynamic viscosity of the fluid must not exceed 50 mm²/s.

The special construction of the armature adopted in the built-in full-wave rectifier type gives an improvement in OFF response by providing clearance on the absorbed surface when it is switched ON.

Select the DC spec. or AC spec. built-in full-wave rectifier type when the dynamic viscosity is higher than water or when the OFF response is prioritized.

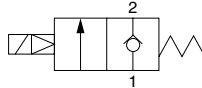


For Oil

Model/Valve Specifications

Normally closed (N.C.)

Passage symbol



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) <small>Note 1)</small>	Max. operating pressure differential (MPa)		Flow characteristics		Max. system pressure (MPa)	<small>Note 2)</small> Mass (g)			
				AC	DC	Av x 10 ⁻⁶ m ²	Cv converted					
Thread (Nominal size)	1/4 (8A)	10	0.02	0.5	0.4	46	1.9	1.5	420			
	3/8 (10A)	10				VXD2130-03	58			2.4		
		15				VXD2140-03	110			4.5		
	1/2 (15A)	10				VXD2130-04	0.5			0.4	58	2.4
		15				VXD2140-04	130			5.5		
	Flange	3/4 (20A)				20	0.03			0.7	0.7	230
1 (25A)		25	VXD2260-10	310	13							
32A		35	VXD2270-32	550	23							
40A		40	VXD2380-40	740	31							
50A		50	VXD2390-50	1200	49							



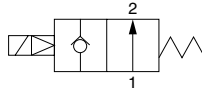
Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Normally open (N.O.)

Passage symbol



Port size	Orifice dia. (mmø)	Model	Min. operating pressure differential (MPa) <small>Note 1)</small>	Max. operating pressure differential (MPa)		Flow characteristics		Max. system pressure (MPa)	<small>Note 2)</small> Mass (g)	
				AC, DC		Av x 10 ⁻⁶ m ²	Cv converted			
Thread (Nominal size)	3/8 (10A)	15	0.02	0.6		110	4.5	1.5	690	
	1/2 (15A)	VXD2142-03				130	5.5			
	3/4 (20A)	VXD2152-06				230	9.5			
	1 (25A)	VXD2262-10				310	13			
Flange	32A	35	0.03			550	23	1.5	5400	
	40A	40				VXD2382-40	740			31
	50A	50				VXD2392-50	1200			49



Note 1) Be aware that even if the pressure difference is above the Min. operating pressure differential when the valve is closed, the pressure difference may fall below the Min. operating pressure differential when the valve opens depending on the power of the supply source (pumps, compressors etc.) or the type of pipe restrictors used.

Note 2) Mass of grommet type. Add 10 g for conduit, 30 g for DIN terminal, and 60 g for conduit terminal type respectively.

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Power source	Fluid temperature (°C)		Ambient temperature (°C)
	Solenoid valve option symbol		
AC	A, H	D, N	-10 to 60
DC			

Note) Dynamic viscosity: 50 mm²/s or less

Valve Leakage Rate

Internal Leakage

Seal material	Leakage rate (Oil)	
	1/4 to 1	32A to 50A
FKM	0.2 cm ³ /min or less	1 cm ³ /min or less

External Leakage

Seal material	Leakage rate (Oil)	
	1/4 to 1	32A to 50A
FKM	0.1 cm ³ /min or less	0.1 cm ³ /min or less

Pilot Operated 2 Port Solenoid Valve Series VXD21/22/23

For Oil

How to Order



Note) Refer to "How to Order" for UL-compliant.

DC/AC (Except VXD2130 AC/Class B)
AC/Class B coil (Built-in full-wave rectifier type)

Model Refer to the table (1) shown below for availability.
Orifice diameter Refer to the table (1) shown below for availability.
Valve/Body configuration
Port size Refer to the table (1) shown below for availability.
Thread type Refer to the table (1) shown below for availability.
Suffix
Rated voltage
Electrical entry Refer to the table (3) for the available combinations between each electrical option (S, L, Z) and rated voltage.
Bracket * Bracket is not removable.
Built-in full-wave rectifier type

Table (1) Model/Orifice diameter/Port Size Normally closed (N.C.)

Solenoid valve (Port size)			Orifice symbol (Diameter)							Material		
Model	VXD21	VXD22	VXD23	3 (10 mmø)	4 (15 mmø)	5 (20 mmø)	6 (25 mmø)	7 (35 mmø)	8 (40 mmø)	9 (50 mmø)	Body	Seal
Port no. (Port size)	Thread	02 (1/4)	—	—	●	—	—	—	—	—	Brass (C37), Stainless steel	FKM
		03 (3/8)	—	—	●	●	—	—	—	—		
		04 (1/2)	—	—	●	●	●	—	—	—		
	Flange	06 (3/4)	—	—	—	—	●	—	—	—		
		10 (1)	—	—	—	—	●	—	—	—		
		32 (32A)	—	—	—	—	—	●	—	—		
40 (40A)	—	—	—	—	—	—	●	—	—	CAC407		
50 (50A)	—	—	—	—	—	—	—	●	—			

* Refer to the table (3) shown below for availability.
 Refer to page 75 for ordering coil only.

Table (1) Model/Orifice diameter/Port Size Normally closed (N.C.)

Table (2) Solenoid Valve Option

Option symbol	Seal material	Body/ Shading coil material	Coil insulation type
A	FKM	Brass (C37)/Cu ^{Note 2)}	B
H		Stainless steel/Ag	H
D		Brass (C37)/Cu ^{Note 2)}	
N		Stainless steel/Ag	

Table (3) Rated Voltage – Electrical Option

AC/DC	Voltage symbol	Voltage	Class B			Class H		
			S	L	Z	S	L	Z
AC	1	100V	●	●	●	●	●	●
	2	200V	●	●	●	●	●	●
	3	110V	●	●	●	●	●	●
	4	220V	●	●	●	●	●	●
	7	240V	●	—	—	●	—	—
	8	48V	●	—	—	●	—	—
	J	230V	●	—	—	●	—	—
DC	5	24V	●	●	●	DC spec. is not available.		
	6	12V	●	—	—	DC spec. is not available.		

Table (3) Rated Voltage – Electrical Option

Note 1) The additives contained in oil are different depending on the manufacturer, so the durability of the seal materials will vary. For details, please consult with SMC.
 Note 2) CAC407 for 32A to 50A.

Note) Option "S", "Z" are not available as surge voltage suppressor is integrated into the AC/Class B coil, as a standard.

- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

Series VXD21/22/23

UL-compliant * Refer to the table shown below for UL-compliant.

For Oil

VXD21 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	1	G	R	1	Nil
	4		A		03	T	3	GS			B
	5		H		04	F	5				
					06	N	6				
							8				

For Oil

VXD21 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket
21	3	0	Nil	Nil	02	Nil	5	D	1	Nil
	4		A		03	T	6	B		
	5		H		04	F				
					06	N				

For Oil

VXD21 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	G	R	1	Nil
	5		A		03	T	3	B			
			H		04	F	8				
					06	N					

For Oil

VXD21 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
21	4	2	Nil	Nil	02	Nil	1	C	R	1	Nil
	5		A		03	T	2	B			
			H		04	F	3				
					06	N	4				
							7				
							8				
							J				

For Oil

VXD22 Valve: N.C., Electrical entry: Grommet, With grommet surge voltage suppressor

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket
22	6	0	Nil	Nil	10	Nil	1	G	R	1	Nil
			A			T	3	GS			B
			H			F	5				
						N	6				
							8				

For Oil

VXD22 Valve: N.C., Electrical entry: DIN terminal

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Identification symbol	Bracket	
22	6	0	Nil	Nil	10	Nil	5	D	1	Nil	
			A			T	6				B
			H			F					
						N					

For Oil

VXD22 Valve: N.C., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket		
22	6	0	Nil	Nil	10	Nil	1	C	Nil	1	Nil		
			A			T	2					R	B
			H			F	3						
						N	4						
							5						
							6						
							7						
							8						
		J											

For Oil

VXD22 Valve: N.O., Electrical entry: Grommet

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	2	Nil	Nil	10	Nil	1	G	R	1	Nil	
			A			T	3					B
			H			F	8					
						N						

For Oil

VXD22 Valve: N.O., Electrical entry: Conduit

Model	Orifice diameter	Valve/Body configuration	Solenoid valve option	Suffix	Port size	Thread type	Rated voltage	Electrical entry	Full-wave rectifier	Identification symbol	Bracket	
22	6	2	Nil	Nil	10	Nil	1	C	R	1	Nil	
			A			T	2					B
			H			F	3					
						N	4					
							7					
							8					
							J					

VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH□

VDW

VQ

LVM

VCA

VCB

VCL

VCS

VCW

Series VXD21/22/23

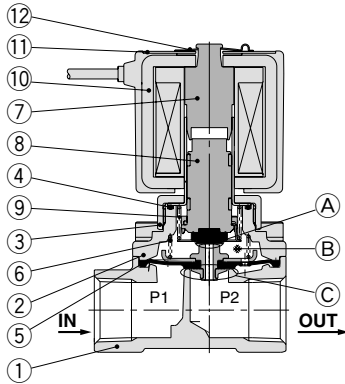
For Air, Water, Oil

Construction

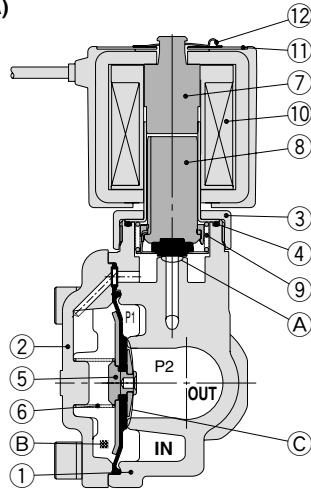
Normally closed (N.C.)

Body material: Brass (C37) (32A or larger: CAC407), Stainless steel (32A or larger: not available)

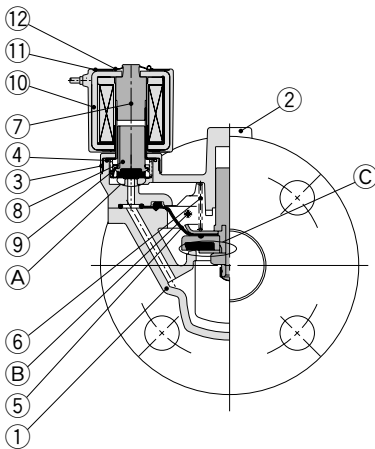
VXD2130 (8A/10A)



VXD2140, 2150, 2260
(10A to 25A)



VXD2270, 2380, 2390 (32A to 50A)



Operation

<Valve opened> When the coil ⑩ is energized, the armature assembly ⑧ is attracted into the core of the tube assembly ⑦ and the pilot valve ⑨ opens. Then the pressure in the pressure action chamber ⑤ falls to open the main valve ⑥.

<Valve closed> When the coil ⑩ is not energized, the pilot valve ⑨ is closed and the pressure in the pressure action chamber ⑤ rises and the main valve ⑥ closes.

Component Parts

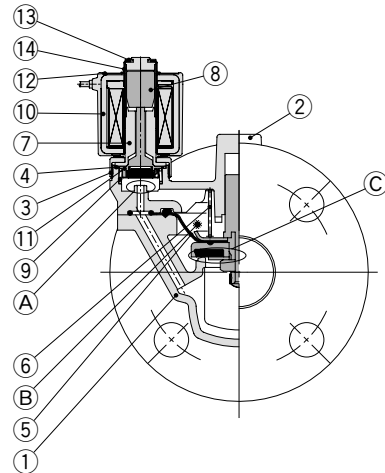
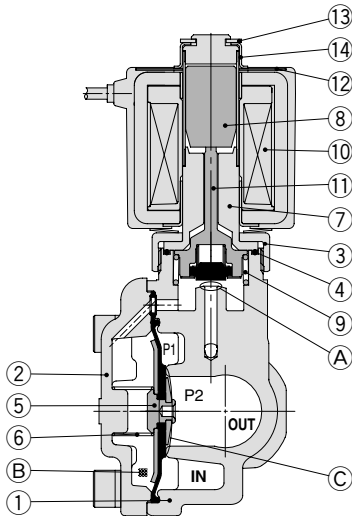
No.	Description	Size	Material	
			Standard	Option
1	Body	8A to 25A	Brass (C37)	Stainless steel
		32A to 50A	CAC407	
2	Bonnet	8A to 25A	Brass (C37)	Stainless steel
		32A to 50A	CAC407	
3	Nut	8A to 50A	Brass (C37)	Brass (C37), Ni plated
4	O-ring	8A to 50A	NBR	FKM, EPDM
5	Diaphragm assembly	8A to 25A	Stainless steel, NBR	Stainless steel, FKM / Stainless steel, EPDM
		32A to 50A	Stainless steel, Brass (C37), NBR	Stainless steel, FKM, EPDM
6	Valve spring	8A to 50A	Stainless steel	
7	Tube assembly	8A to 25A	Stainless steel, Cu	Stainless steel, Ag
		32A to 50A		—
8	Armature assembly	8A to 50A	Stainless steel, PPS, NBR	Stainless steel, PPS, FKM Stainless steel, EPDM
9	Return spring	8A to 50A	Stainless steel	
10	Solenoid coil	8A to 50A	Class B molded	Class H molded
11	Name plate	8A to 50A	Aluminum	
12	Clip	8A to 50A	SK	

Normally open (N.O.)

Body material: Brass (C37) (32A or larger: CAC407), Stainless steel (32A or larger: not available)

VXD2142, 2152, 2262
(10A to 25A)

VXD2272, 2382, 2392 (32A to 50A)



Operation

<Valve opened> When the coil ⑩ is energized, the opened pilot ① closes, the pressure in pressure action chamber ② rises and the main valve ③ closes.

<Valve closed> When the coil ⑩ is not energized, the closed pilot valve ① opens, the pressure in pressure action chamber ② drops and the main valve ③ opens.

Component Parts

No.	Description	Size	Material	
			Standard	Option
1	Body	10A to 25A	Brass (C37)	Stainless steel
		32A to 50A	CAC407	
2	Bonnet	10A to 25A	Brass (C37)	Stainless steel
		32A to 50A	CAC407	
3	Nut	10A to 25A	Brass (C37)	Brass (C37), Ni plated
4	O-ring	10A to 50A	NBR	FKM, EPDM
5	Diaphragm assembly	10A to 25A	Stainless steel, NBR	Stainless steel, FKM / Stainless steel, EPDM
		32A to 50A	Stainless steel, NBR	Stainless steel, FKM, EPDM
6	Valve spring	10A to 25A	Stainless steel	
7	Tube assembly	10A to 25A	Stainless steel, Cu	Stainless steel, Ag
		32A to 50A		—
8	Armature assembly	10A to 50A	Stainless steel	
9	Return spring	10A to 50A	Stainless steel	
10	Solenoid coil	10A to 50A	Class B molded	Class H molded
11	Push rod assembly	10A to 50A	NBR, PPS, Stainless steel	FKM, EPDM, Stainless steel
12	Name plate	10A to 50A	Aluminum	
13	Clip	10A to 50A	SK	
14	Cover	10A to 50A	Stainless steel	

- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH □
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

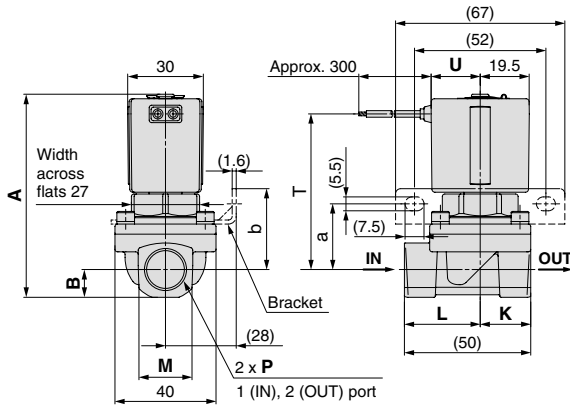
Series VXD21/22/23

For Air, Water, Oil

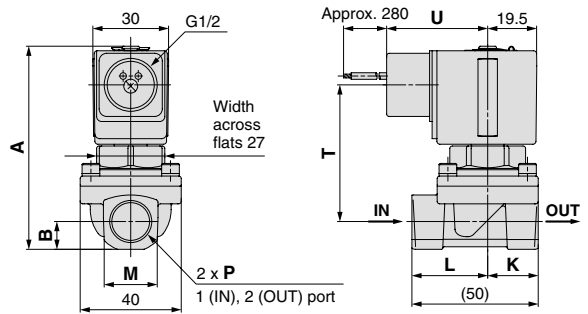
Dimensions: Body Material: Brass (C37), Stainless Steel

Normally closed (N.C.): VXD2130

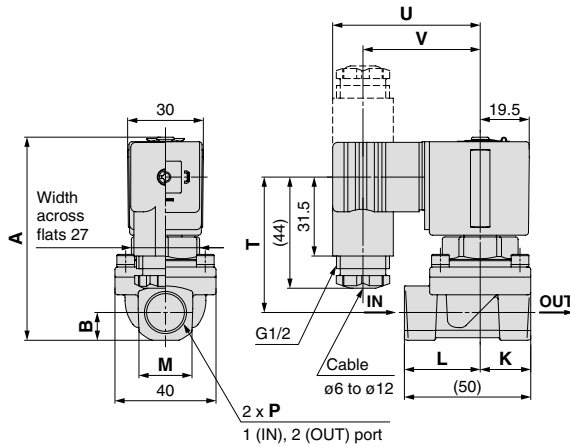
Grommet: G



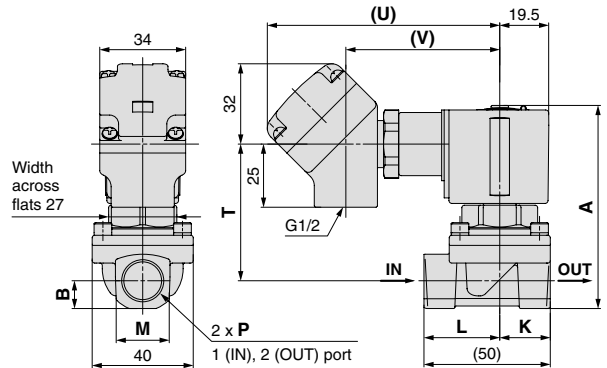
Conduit: C



DIN terminal: D

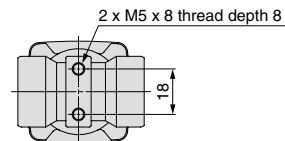


Conduit terminal: T



VXD2130□□-04□-□□□□

Note) A thread is drilled on the bottom of the body of the VXD2130 with port size 04 (1/2).



Model	Port size P	A	B	K	L	M	Electrical entry											
							Grommet			Conduit			DIN terminal			Conduit terminal		
							T	U	V	T	U	V	T	U	V	T	U	V
VXD2130	1/4, 3/8	80.5	11	20	30	22	62	19.5	54.5	40	54	58.5	46.5	54.5	92	61		
	1/2	86	14.5	24	26	28	64	19.5	56.5	40	56	58.5	46.5	56.5	92	61		

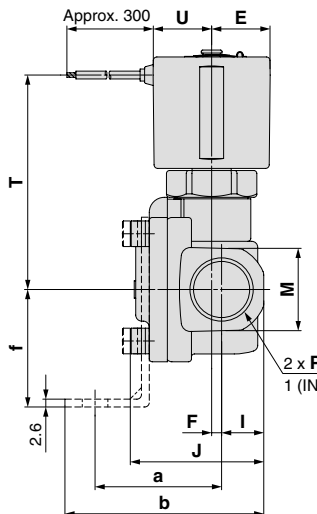
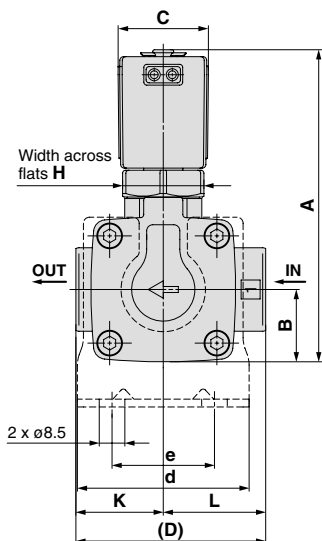
Model	Port size P	Electrical entry (Built-in full-wave rectifier type)										Bracket mounting			
		Grommet			Conduit			DIN terminal			Conduit terminal			a	b
		T	U	V	T	U	V	T	U	V	T	U	V		
VXD2130	1/4, 3/8	58	30	53	48.5	54	65.5	53.5	53	100.5	69.5	26	32		
	1/2	60	30	55	48.5	56	65.5	53.5	55	100.5	69.5	28	34		

Dimensions: Body Material: Brass (C37), Stainless Steel

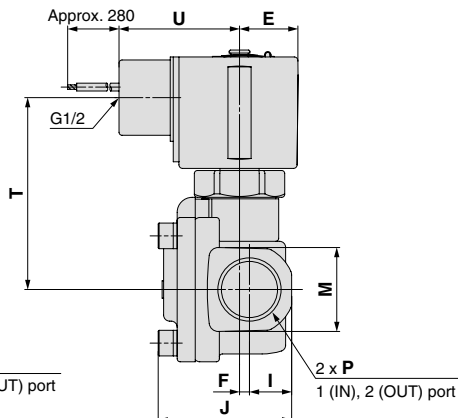
Normally closed (N.C.): VXD2140/VXD2150/VXD2260

Normally open (N.O.): VXD2142/VXD2152/VXD2262

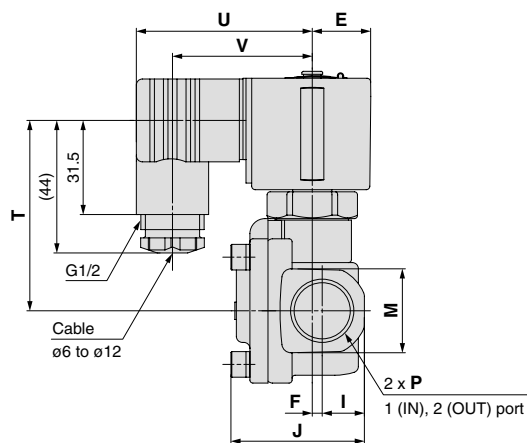
Grommet: G



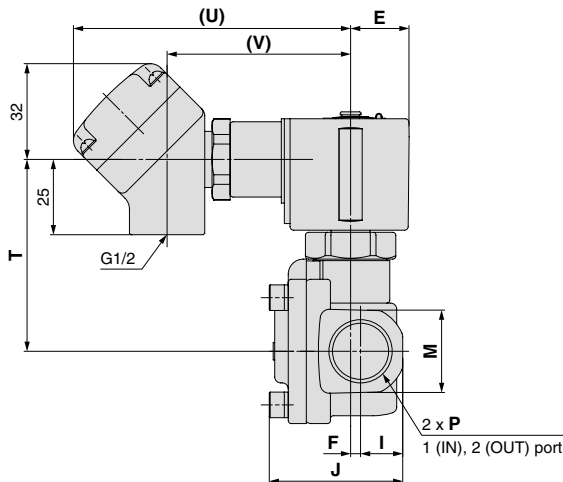
Conduit: C



DIN terminal: D



Conduit terminal: T



- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH□
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

Model		Port size P	A	B	C	D	E	F	H	I	J	K	L	M	Electrical entry									
N.C.	N.O.														Grommet		Conduit		DIN terminal		Conduit terminal			
				T	U	T	U	T	U	V	T	U	V	T	U	V	T	U	V					
VXD2140	VXD2142	3/8, 1/2	103.5 (110.5)	24	30	63	19.5	3.5	27	14	44.5	29	34	28	71.5 (73)	19.5	64 (65.5)	40	63.5 (65)	58.5	46.5	64 (65.5)	92	61
VXD2150	VXD2152	3/4	115 (122)	29	30	80	19.5	4.5	27	17	51.5	37	43	35	78 (79.5)	19.5	70.5 (72)	40	70 (71.5)	58.5	46.5	70.5 (72)	92	61
VXD2260	VXD2262	1	133 (140.5)	33	35	90	22.5	4.5	32	20	60	43	47	42	92 (93.5)	22.5	84.5 (86)	43	84 (85.5)	61.5	49.5	84.5 (86)	95	64

() denotes the value for N.O.

(mm)

Model		Port size P	Electrical entry (Built-in full-wave rectifier type)								Bracket mounting							
N.C.	N.O.		Grommet		Conduit		DIN terminal		Conduit terminal		a	b	d	e	f			
				T	U	T	U	T	U	V	T	U	V	a	b	d	e	f
VXD2140	VXD2142	3/8, 1/2	67.5 (69)	30	62.5 (64)	48.5	63.5 (65)	65.5	53.5	62.5 (64)	100.5	69.5	42	66	57	34	39	
VXD2150	VXD2152	3/4	74 (75.5)	30	69 (70.5)	48.5	70 (71.5)	65.5	53.5	69 (70.5)	100.5	69.5	51	78	74	51	45.5	
VXD2260	VXD2262	1	88 (89.5)	33	83 (84.5)	51.5	84 (85.5)	68.5	56.5	83 (84.5)	103.5	72.5	56	86	81	58	49.5	

() denotes the value for N.O.

Series VXD21/22/23

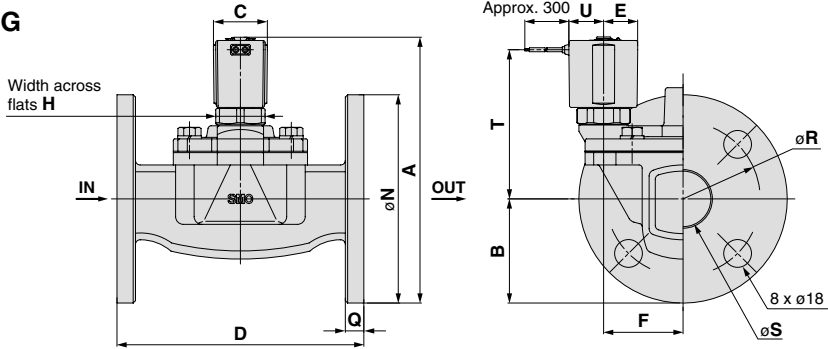
For Air, Water, Oil

Dimensions: Body Material: Brass (C37) , Stainless Steel

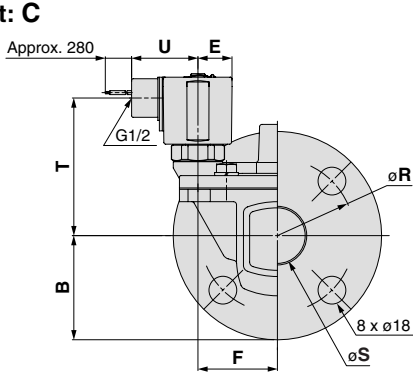
Normally closed (N.C.): VXD2270/VXD2380/VXD2390

Normally open (N.O.): VXD2272/VXD2382/VXD2392

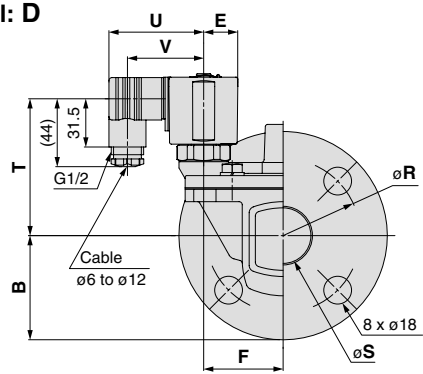
Grommet: G



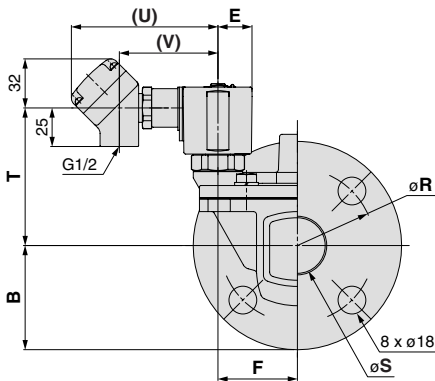
Conduit: C



DIN terminal: D



Conduit terminal: T



Model		Applicable flange															Electrical entry							
N.C.	N.O.		A	B	C	D	E	F	H	N	Q	R	S	Grommet		Conduit		DIN terminal		Conduit terminal				
			T	U	T	U	T	U	V	T	U	V	T	U	V									
VXD2270	VXD2272	32A	172.5 (180)	67.5	35	160	22.5	51.5	32	135	12	100	36	97 (98.5)	22.5	89.5 (91)	43	89 (90.5)	61.5	49.5	89.5 (91)	95	64	
VXD2380	VXD2382	40A	185 (192.5)	70	40	170	25	54.5	36	140	14	105	42	107 (108.5)	25.5	99.5 (101)	46	99 (100.5)	64	52	99.5 (101)	98	67	
VXD2390	VXD2392	50A	198 (205.5)	77.5	40	180	25	59	36	155	14	120	52	112.5 (114)	25.5	105 (106.5)	46	104.5 (106)	64	52	105 (106.5)	98	67	

() denotes the value for N.O.

(mm)

Model		Applicable flange	Electrical entry (Built-in full-wave rectifier type)									
N.C.	N.O.		Grommet		Conduit		DIN terminal		Conduit terminal			
			T	U	T	U	T	U	V	T	U	V
VXD2270	VXD2272	32A	93 (94.5)	33	88 (89.5)	51.5	89 (90.5)	68.5	56.5	88 (89.5)	103.5	72.5
VXD2380	VXD2382	40A	103 (104.5)	36	98 (99.5)	54	99 (100.5)	71	59	98 (99.5)	106	75
VXD2390	VXD2392	50A	108.5 (110)	36	103.5 (105)	54	104.5 (106)	71	59	103.5 (105)	106	75

() denotes the value for N.O.

Replacement Parts

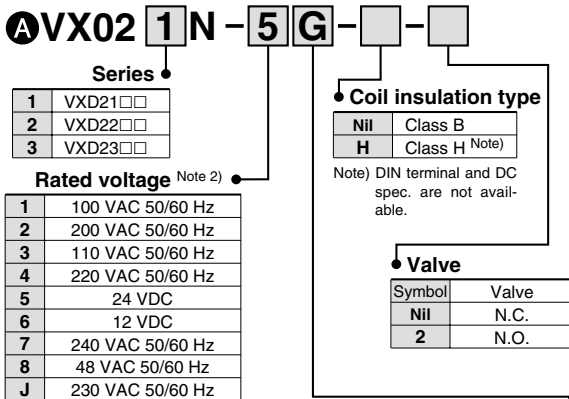
● Solenoid coil assembly part no.

Table (1) Model and Solenoid Coil Type

Select the coil type from **A** to **C**, and refer to "How to Order" below.

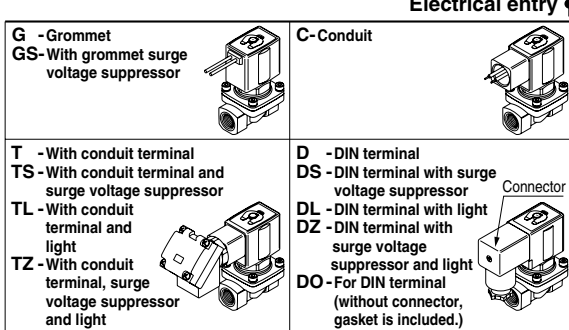
Voltage type	AC		AC (Built-in full-wave rectifier type)	DC
	Class B	Class H	Class B	Class H
Coil insulation type	Class B	Class H	Class B	Class H
(Solenoid valve option)	(Nil, A, B, G, H, J, L)	(D, E, N, P)	(Nil, A, B, G, H, J, L)	(Nil, A, B, G, H, J, L)
Model	VXD2130	— Note)	A	B
	VXD21 $\frac{1}{2}$ □	A	A	A
	VXD22 $\frac{1}{2}$ □	A	A	A
	VXD23 $\frac{1}{2}$ □	A	A	A

DC, AC (Except VXD2130 AC/Class B) Note 1)

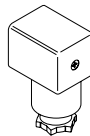
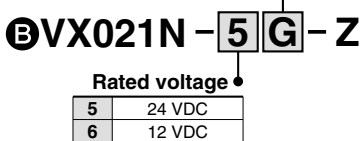


Note 1) For the AC (Class B coil) of the VXD2130, built-in full-wave rectifier type is only applicable.

Note 2) Refer to the table (2) for the available combinations.



For VXD2130 DC



Electrical option

S	With surge voltage suppressor
L	With light
Z	With light/surge voltage suppressor

* Refer to the table (1) for the available combinations between each electrical option (S, L, Z) and rated voltage.

Table (2) Rated Voltage – Electrical Option

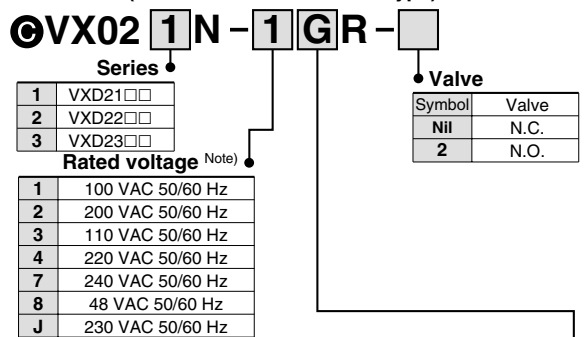
AC/DC	Voltage symbol	Voltage	Class B			Class H		
			S	L	Z	S	L	Z
AC	1	100 V	●	●	●	●	●	●
	2	200 V	●	●	●	●	●	●
	3	110 V	●	●	●	●	●	●
	4	220 V	●	●	●	●	●	●
	7	240 V	●	—	—	●	—	—
	8	48 V	●	—	—	●	—	—
DC	J	230 V	●	—	—	●	—	—
	5	24 V	●	●	●	DC spec. is not available.		
	6	12 V	●	—	—	DC spec. is not available.		

* Option "S", "Z" are not available as surge voltage suppressor is integrated into the AC/Class B coil, as a standard.

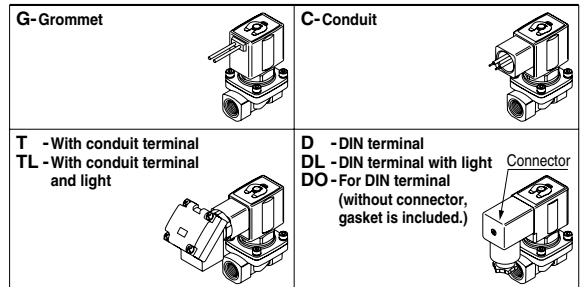
* Replacement of solenoid coils:

- DC and AC coils cannot be interchanged in order to change the voltage.
- DC and AC (built-in full-wave rectifier type) coils can be interchanged in order to change the voltage.
- All DC coil voltages are interchangeable. • All AC coil voltages are interchangeable.

AC/Class B (Built-in full-wave rectifier type)



Note) Refer to the table (2) for the available combinations.



● DIN connector part no.



Rated voltage

1	100 VAC, 110 VAC
2	200 VAC, 220 VAC, 230 VAC, 240 VAC
5	24 VDC
6	12 VDC
15	48 VAC

● Gasket part no. for DIN connector **VCW20-1-29-1**

- VX2
- VXD
- VXZ
- VXE
- VXP
- VXR
- VXH
- VXF
- VX3
- VXA
- VCH□
- VDW
- VQ
- LVM
- VCA
- VCB
- VCL
- VCS
- VCW

Series VXD21/22/23

For Air, Water, Oil

Replacement Parts

- Name plate part no.

AZ-T- Valve model

↑ Enter by referring to
"How to Order".

- Clip part no. (For N.C.)

For VXD21: **VX021N-10**

For VXD22: **VX022N-10**

For VXD23: **VX023N-10**

- Clip part no. (For N.O.)

For VXD21: **ETW-7**

For VXD22: **ETW-8**

For VXD23: **ETW-9**

