

Series VXD21/22/23

The VX* series will be revised shortly.

Normally Closed (N.C.)

JIS Symbol



Fluid

Standard specifications	Option (1)	Made to Order (2)						
Water (Standard)	High temperature water ··· (D, E, N, P)	Air						
Turbine oil	High temperature oil (D, N)	Vacuum (up to 1.3 x 10 ² Pa) X44						
Note 1) Refer to page 17-3-9 "Applicable Fluids Check List" for details of special fluids outside of the standard options and specifications.								

Note 2) Please contact SMC for details.

Model/Valve Specifications <Normally Closed>

Connection	Orifice		Min. operating	Max.	operatin	g pressi	ure diffe	rential (MPa)		Flo	w characterist	ics		Max. system Work	Waisht
Thread Size		Model	pressure differential	Wa	ater	A	lir	C	Dil	Wate	er, Oil		Air		pressure	
Threau	(mmø)		(MPa)	AC	DC	AC	DC	AC	DC	Av x 10 ⁻⁶ (m ²)	Cv converted	C [dm³/(s·bar)]	b	Cv	(MPa)	(9)
1/4	10	VXD2130-02	0.02	0.7	0.5	0.9	0.7	0.5	0.4	46	1.9	8.5	0.35	2.0		420
2/ 10	10	VXD2130-03	0.02	0.7	0.5	0.9	0.7	0.5	0.4	58	2.4	9.2	0.35	2.4		420
9/8	15	VXD2140-03	0.02	1.0	1.0	1.0	1.0	0.7	0.7	110	4.5	18	0.35	5.0	15	670
1/-	10	VXD2130-04	0.02	0.7	0.5	0.9	0.7	0.5	0.4	58	2.4	9.2	0.35	2.4	1.5	500
72	15	VXD2140-04	0.02	1.0	1.0	1.0	1.0	0.7	0.7	130	5.5	20	0.35	5.5		670
3⁄4	20	VXD2150-06	0.02	1.0	1.0	1.0	1.0	0.7	0.7	230	9.5	38	0.30	9.5		1150

Conn	ection	Orifice		Min. operating	Max.	Max. operating pressure differential (MPa)			Flo	w characterist	ics	Max system			
Thread Elang	F 144444	size	Model	pressure differential	ifferential Water		A	Air Oil		Water, Oil		Air	pressure	Weight	
Inread	Flange	(mmø)		(MPa)	AC	DC	AC	DC	AC	DC	Av x 10 ⁻⁶ (m ²)	Cv converted	Effective area (mm ²)	(MPa)	(g)
1	—	25	VXD2260-10	0.02	1.0	1.0	1.0	1.0	0.7	0.7	310	13	225		1650
—	32A	35	VXD2270-32	0.03	1.0	1.0	1.0	1.0	0.7	0.7	550	23	415	1 5	5400
—	40A	40	VXD2380-40	0.03	1.0	1.0	1.0	1.0	0.7	0.7	740	31	560	1.5	6800
_	50A	50	VXD2390-50	0.03	1.0	1.0	1.0	1.0	0.7	0.7	1200	49	880		8400

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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" on page 17-3-15 for details of max. operating pressure differential and max. system pressure.

Solenoid Specifications

Madal	Power	Frequency	Apparent p	ower (VA)	Power consumption	Temperature rise (°C)
woder	source	(Hz)	Inrush	Holding	(W) (Holding)	(Rated voltage)
	40	50	20 (32)	11	4.5	45
VXD21	AC	60	17 (28)	7	3.2	35
	DC	—	—	—	6	55
	AC	50	40	18	7.5	60
VXD22	70	60	35	12	6	50
	DC	_	_	_	8	60
	40	50	50	21	11	65
VXD23	AC	60	45	17	9.5	60
	DC	_	_	_	11.5	65

Note) • The return voltage is 20% or more of the rated voltage for AC and 2% or more for DC.

 \bullet The allowable voltage fluctuation rate is $\pm 10\%$ of the rated voltage value for both AC and DC.

 \bullet When the ambient temperature is 20°C \pm 5°C and rated voltage is applied.

 Changing coils from AC to DC and vice versa is impossible, because of different core shapes. VXD21⁶₄0, 22⁷₆0, 23⁹₆0 are possible to exchange coil from AC to DC, but impossible from DC to AC.

(Hum sound may generate because of no shading coil for DC.)

• The value of the apparent power volt ampere in parentheses is that of VXD2130.

Operating Fluid and Ambient Temperature

			Operating fluid temperature (°C)							
Temperature	Power source	Water	Water Air		Oil High temperature water ⁽³⁾		temperature			
conditions		(Standard)	(Standard)	(Standard)	(D, E, N, P)	(D, N)	(°C)			
Maxima	AC	60	80	60	99 ⁽⁴⁾	100(4)	60			
Maximum	DC	40	60	40	—	—	40			
Minimum	AC/DC	1	-10 ⁽¹⁾	-5(2)	—	—	-10			

Note 1) Dew point: -10°C or less

Note 3) "D", "E", "N", "P" etc. in parentheses are option symbols. Note 4) 32A to 50A are 80°C.



Note 2) 50 cSt or less



SMC

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Normally Open (N.O.)

JIS Symbol



Standard specifications	Option (1)	Made to Order (2)
Water (standard)	High temperature water ··· (D, E, N, P)	AirX44
Turbine oil	High temperature oil (D, N)	
Note 1) Refer to	page 17-3-9 "Applicable Fluids Check Lis	t" for details of special fluids outside of the
standa	rd options and specifications.	

Note 2) Please contact SMC for details.

Model/Valve Specifications <Normally Open>

Con	onnection Orifice Min. operating Max. operating pressure differe		erating		Flow characteristics								
Thread	Size Model		pressure differential	(MPa)		Water, Oil, Steam		Air			pressure		
Inread	Flange	(mmø)		(MPa)	Water, Air	Oil	Av x 10 ⁻⁶ (m ²)	Cv converted	C [dm ³ /(s·bar)]	b	Cv	(MPa)	(9)
3⁄8	-	15	VXD2142-03	0.02	0.7	0.6	110	4.5	18	0.35	5.0		690
1/2	-	15	VXD2142-04	0.02	0.7	0.6	130	5.5	20	0.35	5.5	1.5	690
3⁄4	-	20	VXD2152-06	0.02	0.7	0.6	230	9.5	38	0.30	9.5		1170

Con	nection	Orifice		Min. operating	Max. operating pressure differential		Flo	ics	Max avatam		
Throad	size Model		differential	(MPa)		Water, Oil, Steam		Air	pressure	weight	
IIIIedu	Flange	(mmø)		(MPa)	Water, Air	Oil	Av x 10 ⁻⁶ (m ²)	Cv converted	Effective area (mm ²)	(MPa)	(9)
1	-	25	VXD2262-10	0.02	0.7	0.6	310	13	225		1690
-	32A	35	VXD2272-32	0.03	0.7	0.6	550	23	415	15	5400
-	40A	40	VXD2382-40	0.03	0.7	0.6	740	31	560	1.5	6800
-	50A	50	VXD2392-50	0.03	0.7	0.6	1200	49	880		8400

Fluid

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" on page 17-3-15 for details of max. operating pressure differential and max. system pressure.

Solenoid Specifications

Madal	Power	Frequency	Apparent p	ower (VA)	Power consumption	Temperature rise (°C)
Model	source	(Hz)	Inrush	Holding	(W) (Holding)	(Rated voltage)
	10	50	25	12	5	50
VXD21	AC	60	20	8	3.5	35
	DC	-	—	—	6	50
	10	50	45	20	8	55
VXD22		60	40	15	6.5	45
	DC	—	—	—	8	50
	10	50	60	25	10.5	60
VXD23	AC	60	50	20	9.5	50
	DC	_	_	_	11.5	55

Note) • They are values in an ambient temperature of 20°C ± 5°C and application of rated voltage.

• Changing coils from AC to DC and vice versa is impossible, because of different core shapes.

• Return voltage is 20% or more of the rated value at AC power and 5% or more at the DC power.

 \bullet The allowable voltage fluctuation rate is $\pm 10\%$ of the rated voltage value for both AC and DC.

Operating Fluid and Ambient Temperature

T	Devier		Operating fluid temperature (°C)							
conditions	FOWER	Water	Air	Oil	High temperature water ⁽³⁾	High temperature oil (3)	temperature			
conditions	Source	(Standard)	(Standard)	(Standard)	(D, E, N, P)	(D, N)	(°C)			
Movimum	AC	60	80	60	99 ⁽⁴⁾	100(4)	60			
Maximum	DC	40	60	40	-	_	40			
Minimum	AC, DC	1	-10 ⁽¹⁾	-5 ⁽²⁾	—	—	-10			

Note 1) Dew point: -10°C or less

Note 2) 50 cSt or less

Note 3) "D", "E", "N", "P" etc. in parentheses are option symbols.

Note 4) 32 A to 50 A are 80°C.



DIN terminal or class H coil not available.

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Series VXD21/22/23

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Construction/Principal Parts Material

Normally Closed (N.C.)



Operation

<Valve opened> When the coil (9) is energized, the armature assembly (7) is attracted into the core of the core assembly (6) and the pilot valve (A) opens. Then the pressure in the pressure action chamber (B) falls to open the main valve (C).

<Valve closed> When the coil ③ is not energized, the pilot valve A is closed and the pressure in the pressure action chamber B rises and the main valve C closes.

No	Description	Cizo	N	laterial
INO.	Description	Size	Standard	Option
	Padu	10A to 25A	Brass	Stainless steel
\bigcirc	Бойу	32A to 50A	BC6	_
0	Ponnot	10A to 25A	Brass	Stainless steel
	Donnet	32A to 50A	BC6	—
3	O-ring	—	NBR	FKM/EPDM
•	Diaphragm	10A to 25A	Stainless steel,	Stainless steel, FKM Stainless steel, EPDM
(4)	assembly	32A to 50A	Brass, NBR	Stainless steel, Brass FKM/EPDM
(5)	Valve spring	—	Stainless steel	—
	Coro accombly	10A to 25A	Stainless steel,	Stainless steel, Silver
0	Core assertibly	32A to 50A	Copper	—
	Armature	_	Stainless steel,	Stainless steel, FKM
0	assembly	_	NBR	Stainless steel, EPDM
8	Return spring	_	Stainless steel	_
9	Coil assembly	_	Class B molded	Class H molded



Operation

 \langle **Valve opened** \rangle When the coil \bigcirc is energized, the opened pilot \bigcirc closes, the pressure in pressure action chamber B rises and the main valve \bigcirc closes.

<Valve closed> When coil O is not energized, the closed pilot valve A opens, the pressure in pressure action chamber B drops and the main valve C opens.

No	Description	Sizo	N	laterial
INO.	Description	Size	Standard	Option
	Body	15A to 25A	Brass	Stainless steel
0	воцу	32A to 50A	BC6	_
0	Ponnot	15A to 25A	Brass	Stainless steel
	Donnet	32A to 50A	BC6	_
3	O-ring	-	NBR	FKM/EPDM
	Diaphragm	15A to 25A	Stainless steel,	Stainless steel, FKM Stainless steel, EPDM
4	assembly	32A to 50A	Brass, NBR	Stainless steel, Brass FKM/EPDM
(5)	Valve spring	-	Stainless steel	—
6	Core	15A to 25A	Stainless steel, Copper, NBR	Stainless steel, Silver FKM/EPDM, PTFE
0	assembly	32A to 50A	Polyacetal PTFE	Stainless steel, Copper, FKM/EPDM, PTFE
7	Coil assembly	_	Class B molded	Class H molded

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(2.3)

(33) 36

(28)

22 28

40

4

VDW

VQ

VX2

VX

VX3

VXA

VN

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/ TIL

PA

PAX

PΒ

Dimensions (Orifice Size: 10 mmø)

Normally closed: VXD2130



DIN terminal: D





SMC

: Port size Rc 1/2

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Dimensions (Orifice Size: 15 mmø, 20 mmø, 25 mmø)

Normally Closed: VXD2140/2150/2160 Normally Open: VXD2142/2152/2262





The VX* series will be revised shortly.

Dimensions (Orifice Size: 35 mmø, 40 mmø, 50 mmø)

Normally Closed: VXD2270/2380/2390 Normally Open: VXD2272/2382/2392



DIN terminal: D

Conduit: C





Conduit terminal: T



Model		Applicable	A	в	с	D	Е	F	н	J	к	Г	Electrical entry									
													Grommet		Conduit		DIN terminal			Conduit terminal		
Normally closed	Normally open	liange											М	Ν	М	Ν	М	Ν	Q	М	Ν	Q
VXD2270	VXD2272	32A	160	135	67.5	168 (185)	51.5	100	36	23	35	12	90 (100)	25.5	82 (92)	41.5	82 (92)	60	48	82 (92)	95	62
VXD2380	VXD2382	40A	170	140	70	182 (197)	54.5	105	42	25.5	40	14	101 (111)	28	93 (103)	44.5	93 (103)	62	50	93 (103)	97	64
VXD2390	VXD2392	50A	180	155	77.5	194 (209)	59	120	53	25.5	40	14	106 (116)	28	98 (108)	44.5	98 (108)	62	50	98 (108)	97	64
(): N.O.																						
	6010														17-3-41							



VDW VQ VX2 VX VX3 VXA **VN** LVC LVA LVH LVD LVQ LQ LVN TI/ TIL PA PAX PΒ