

Coolant Valve

Series VNC

Air Operated/External Pilot Solenoid



Cylinder actuation by pilot air

Wide selection of port
size and variations

Threaded type (6A to 50A)
Flange type (32F to 80F)

Low water hammer

For details, refer to page 407.



Large valve capacity

Av factor 30×10^{-6} to 1600×10^{-6}
(VNC1 to VNC7)
Cv factor 49 to 100
(VNC8 to VNC9)

VNA

VNB

SGC

VNC

VNH

VND

VCC

Coolant Valve: Air Operated/External Pilot Solenoid Series VNC



[Option]

Note) CE compliant: For D or DZ only

How to Order

Seal material

A	NBR seals
B	FKM seals

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Bracket (Valve size: 1/2/3/4)

Nil	None
B [Note]	With bracket (VN□-16)

[Note] Only valve sizes 1, 2, 3 and 4. Shipped after assembled at our factory.
Bracket part no.
Valve size 1: VN1-A16 (with thread)
Valve sizes 2 to 4: VN□-16
2 to 4

Air operated VNC **2** **0** **1** **A** - **15A** - (Except valve size 8, 9)

External pilot solenoid VNC **2** **1** **1** **A** - **15A** - **1** **T** - - -

Valve size

Symbol	Orifice diameter (mm)	Symbol			Symbol	Port size Rc
		1 N.C. 0.5 MPa	2 N.O. 1 MPa	4 N.C. 1 MPa		
1	ø7	—	●	●	6A	1/8
		—	●	●	8A	1/4
		—	●	●	10A	3/8
2	ø15 (ø11)	●	●	●	10A	3/8
		●	●	●	15A	1/2
3	ø20 (ø14)	●	●	●	20A	3/4
4	ø25 (ø16)	●	●	●	25A	1
		●	●	●	32A	1 1/4
5	ø32 (ø22)	●	●	●	32F	1 1/4 B Flange
		●	●	●	40A	1 1/2
6	ø40 (ø28)	●	●	●	40F	1 1/2 B Flange
		●	●	●	50A	2
7	ø50 (ø33)	●	●	●	50F	2B Flange
		●	—	●	65F	2 1/2 B Flange
8	ø65 (ø45)	●	—	●	65F	2 1/2 B Flange
9	ø80 (ø56)	●	—	●	80F	3B Flange

Values in parentheses are N.C. at 1 MPa.

Rated voltage

Nil	Air operated
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
Note 2) 3	110 VAC 50/60 Hz
Note 2) 4	220 VAC 50/60 Hz
5	24 VDC
Note 2) 6	12 VDC
Note 2) 7	240 VAC 50/60 Hz
Note 2) 9	Other

Note 1) Electrical entry: D or DZ only
Note 2) Semi-standard

CE compliant

Nil	—
Q	CE compliant

Note) Electrical entry: D or DZ only

Manual override

Nil: Non-locking push type

A: Non-locking * push type A (projecting)

B: Slotted locking type B * (tool required)

Nil: Non-locking push type

Valve size 1

Valve size 2 to 9

* Semi-standard

Electrical entry/With light/surge voltage suppressor

Symbol	Electrical entry	Valve size
G	Grommet	Valve size 1
GS	Grommet with surge voltage suppressor	
E	Grommet terminal	
EZ	Grommet terminal with light/surge voltage suppressor	
T	Conduit terminal	
TZ	Conduit terminal with light/surge voltage suppressor	Valve size 2 to 9
D	DIN terminal	
DZ	DIN terminal with light/surge voltage suppressor	
T	Conduit terminal	
TS	Conduit terminal with surge voltage suppressor	
Note 1) TZ	Conduit terminal with light/surge voltage suppressor	Valve size 2 to 9
Note 1) TL	Conduit terminal with indicator light	

CE compliant

Symbol	Electrical entry	Valve size
D	DIN terminal*	Valve size 1 to 9
DZ	DIN terminal with light/surge voltage suppressor*	

Note 1) Except rated voltage: 6, 7 and 9.
Note 2) For valve sizes 2 to 9 of the D DIN terminal and the DZ DIN terminal with light/surge voltage suppressor, be sure to add suffix -X200 at the end of the part number. (For CE compliant product, -X200 is not required.) In this case, the pilot solenoid valve is VO307-□D□.

Coolant Valve: Air Operated/External Pilot Solenoid **Series VNC**



Model

Model	Port size		Orifice dia. ø (mm)	Flow characteristics		Mass (kg)	
	Threaded	(Note) Flange		Av x 10 ⁻⁶ m ²	Air operated	External pilot solenoid	
VNC1□□□-6A	1/8	—	7	30	0.2	0.3	
VNC1□□□-8A	1/4	—		32			
VNC1□□□-10A				36			
VNC2□4□-10A	3/8	—	11	95	0.5	0.7	
VNC2□□□-10A			15	120			
VNC2□4□-15A	1/2	—	11	110			
VNC2□□□-15A			15	140	0.8	1.0	
VNC3□4□-20A	3/4	—	14	170			
VNC3□□□-20A			20	260			
VNC4□4□-25A	1	—	16	220	1.2	1.4	
VNC4□□□-25A			25	370			
VNC5□4□-32A	1 1/4	—	22	400			
VNC5□□□-32A			32	560	2.2	2.4	
VNC5□4□-32F	—	32	22	400			
VNC5□□□-32F			32	560			
VNC6□4□-40A	1 1/2	—	28	630	3.6	3.8	
VNC6□□□-40A			40	820			
VNC6□4□-40F	—	40	28	720			
VNC6□□□-40F			40	960	6.8	7.0	
VNC7□4□-50A	2	—	33	990			
VNC7□□□-50A			50	1500			
VNC7□4□-50F	—	50	33	1000	10.2	10.4	
VNC7□□□-50F			50	1600			



Note) The companion flange is JIS B 2210 10K (standard) or its equivalent.

Model	Port size Flange (Note)	Orifice dia. ø (mm)	Flow characteristics		Mass (kg) External pilot solenoid
			Cv	Effective area (mm ²)	
VNC814□-65F	65	45	49	880	15.7
VNC811□-65F		65	70	1260	
VNC914□-80F	80	56	73	1400	21.2
VNC911□-80F		80	100	1800	



Note) The companion flange is JIS B 2210 10K (standard) or its equivalent.

JIS Symbol

Valve type	N.C.	N.O.
Operation		
Air operated	VNC□0□□	VNC□02□
External pilot solenoid	VNC□1□□	VNC□12□

Specifications

Fluid (Main piping)		Coolant (Note 2)
Fluid	VNC□□□A	—5 to 60°C (Note 1)
temperature	VNC□□□B	—5 to 99°C (Air operated type only) (Note 1)
Ambient temperature		—5 to 50°C (Air operated type: 60°C) (Note 1)
Proof pressure		1.5 MPa
Applicable pressure range	VNC□□1□	0 to 0.5 MPa
	VNC□□2□	0 to 1 MPa
External pilot air	Pressure	0.25 to 0.7 MPa
	VNC□□1□	0.1 + 0.25 x (Operating pressure) to 0.7 MPa Refer to "Graph (1)".
	Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)
	Temperature	—5 to 50°C (Air operated type: 60°C) (Note 1)
Mounting orientation		Unrestricted (Note 3)

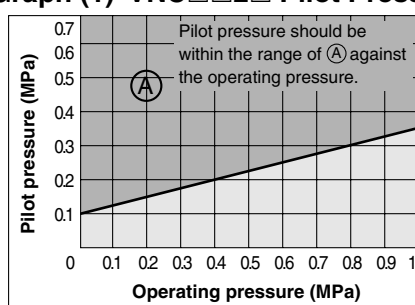


Note 1) No freezing

Note 2) This product cannot be used in water.

Note 3) For external pilot solenoid, it is recommended that the pilot solenoid valve be oriented either vertically upward or horizontally.

Graph (1) VNC□□2□ Pilot Pressure (N.O. type)



Pilot Solenoid Valve Specifications

Model		VNC1	VNC2 to 9	VNC2 to 9 (CE compliant)
Pilot solenoid valve		SF4-□□□-23	VO301-00□□-X302	VO307-00□□□□-Q
Electrical entry		Grommet Grommet terminal Conduit terminal DIN terminal	Conduit terminal	DIN terminal
Coil rated voltage (V)	AC (50/60 Hz)	100 V, 200 V, Other voltage (Option)		
	DC	24 V, Other voltage (Option)		
Allowable voltage fluctuation		-15% to +10% of rated voltage		
Temperature rise		35°C or less (when rated voltage is applied.)	70°C or less (when rated voltage is applied.)	50°C or less (when rated voltage is applied.)
Apparent power	AC	Inrush	5.6 VA (50 Hz) 5.0 VA (60 Hz)	12 VA (50 Hz) 10.5 VA (60 Hz)
		Holding	3.4 VA (50 Hz) 2.3 VA (60 Hz)	7.5 VA (50 Hz) 6 VA (60 Hz)
	DC		12 VA (50 Hz) 10.5 VA (60 Hz)	12.7 VA (50 Hz) 10.7 VA (60 Hz)
			7.5 VA (50 Hz) 6 VA (60 Hz)	7.6 VA (50 Hz) 5.4 VA (60 Hz)
Power consumption	DC	1.8 W (without light), 2 W (with light)	4.8 W (without light), 5 W (with light)	
Manual override		Non-locking push type, Other (Option)	Non-locking push type	

Note) Refer to page 406 for how to order pilot solenoid valves.

VNA

VNB

SGC

VNC

VNH

VND

VCC