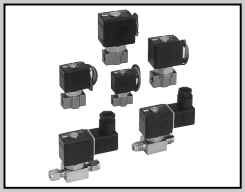


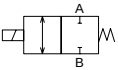
Solenoid valve for high vacuum

HVB$^{2}_{3}_{4}_{5}$12 Series

- Orifice: ϕ 1, ϕ2, ϕ 3, ϕ4.5, ϕ 6
- NC (normally closed) type

JIS symbol

● NC (normally closed) type



Common specifications

Descriptions	HVB*12
Working fluid	Air, vacuum, inert gas (*1)
Withstanding pressure MPa	5.0
Fluid temperature ℃	5 to 55
Ambient temperature ℃	0 to 55 (no freezing)
Heat proof class	B
Allowable voltage fluctuation	Rated voltage ±10%
Atmosphere	Not in explosive or corrosive environment
Valve structure	Direct acting poppet structure
Valve seat leakage Pa·m^3/sHe	1.0 x 10^{-9} or less
External leakage Pa·m^3/sHe	1.0 x 10^{-9} or less
Mounting attitude	Free
Number of endurance times	2,000,000 times

Individual specifications

Descriptions / Model no.	Port size	Orifice (mm)	Cv flow factor (*4)	Working pressure range Pa (abs)	Max. working pressure (*5) (MPa)	Back pressure (*6) (MPa)	Rated voltage	Power consumption (W) AC	Power consumption (W) DC	Weight (*8) (kg)
NC (normally closed) type										
HVB212	1/4" JXR male joint 1/4" double barbed joint NPT 1/8	1	0.04	1.0 x 10^{-6} to 1.0 x 10^{6}	1.0	0.6	100 VAC 50/60Hz 200 VAC 50/60Hz 24 VDC 12 VDC	4.3	4	0.16
		2	0.17	1.0 x 10^{-6} to 0.3 x 10^{6}	0.3	0.15				
HVB312	1/4" JXR male joint 1/4" double barbed joint NPT 1/8, 1/4	2	0.17	1.0 x 10^{-6} to 0.8 x 10^{6}	0.8	0.5		6.5	6	0.29
		3	0.33	1.0 x 10^{-6} to 0.3 x 10^{6}	0.3	0.25				
HVB412	1/4" JXR male joint 1/4" double barbed joint NPT 1/4	3	0.33	1.0 x 10^{-6} to 1.0 x 10^{6}	1.0	0.4		8.3	8 (*7)	0.50
		4.5	0.6	1.0 x 10^{-6} to 0.3 x 10^{6}	0.3	0.2				
	3/8" JXR male joint 3/8" double barbed joint NPT 3/8	6	1.05	1.0 x 10^{-6} to 0.2 x 10^{6}	0.1	0.05				
HVB512	1/4" JXR male joint 1/4" double barbed joint NPT 1/4	4.5	0.6	1.0 x 10^{-6} to 0.8 x 10^{6}	0.8	0.2		11.8	11.5	0.69
	3/8"JXR male joint 3/8" double barbed joint NPT 3/8	6	1.05	1.0 x 10^{-6} to 0.3 x 10^{6}	0.3	0.15				

*1: The durability may drop remarkably depending on the degree of dryness.
*2: The JXR joint can be connected with the VCR joint.
*3: Keep the leakage current at value below or less.
*4: The listed Cv values are for the NPT connection.
*5: The maximum working pressure difference indicates the difference of the port B (high pressure side) and port A (low pressure side).
*6: Pressurizing from the A port with the B port released to atmosphere is possible.
*7: 12 VDC is 8.6 (W).
*8: The listed weights are for the grommet lead wire and NPT connection.

Leakage current: Voltage / Model no.	100 VAC	200 VAC	24 VDC	12 VDC
HVB*12	2mA or less	1mA or less	1mA or less	2mA or less

How to order

HVB 2 12 - 4RM - 2 - 2C B - DC24V

Ⓐ Series size (Coil width)
Ⓑ Connection
Ⓒ Orifice
Ⓓ Coil option *1 *2
Ⓔ Other G.P. systems Option
Ⓕ Voltage

Symbol	Descriptions	Model no. HVB212	HVB312	HVB412	HVB512
Ⓐ Series size					
2	22mm	●			
3	28mm		●		
4	34mm			●	
5	40mm				●
Ⓑ Connection method (Refer to Table 1)					
4RM	1/4" JXR male joint	●	●	●	●
6RM	3/8" JXR male joint			●	●
4S	1/4" double barbed joint	●	●	●	●
6S	3/8" double barbed joint			●	●
6N	NPT 1/8	●	●		
8N	NPT 1/4		●	●	●
10N	NPT 3/8			●	●
Ⓒ Orifice (Refer to Table 1)					
Z	ϕ 1	●			
2	ϕ 2	●	●		
3	ϕ 3		●	●	
5	ϕ 4.5			●	●
6	ϕ 6			●	●
Ⓓ Coil option					
For AC					
2CR	Standard: With grommet lead wire and all wave rectifier	●	●	●	●
For DC					
2C	Standard: Grommet lead wire	●	●	●	●
2CS	Option: Grommet lead wire Surge suppressor	●	●	●	●
2G	Option: DIN terminal box (Pg11)	●	●	●	●
2HS	Option: DIN terminal box + light Surge suppressor (Pg11)	●	●	●	●
Ⓔ Other options					
Blank	Standard: Blank	●	●	●	●
B	Option: Mounting plate	●	●	●	●
Ⓕ Voltage					
100 VAC	100 VAC 50/60Hz	●	●	●	●
200 VAC	200 VAC 50/60Hz	●	●	●	●
24 VDC	24 VDC	●	●	●	●
12 VDC	12 VDC	●	●	●	●

Select from the combinations marked with a ● above.

Table 1: Joint type and orifice combinations

	Ⓑ Connection			Ⓒ Orifice Z	2	3	5	6
	Ⓑ	Joint type	Size	ϕ1	ϕ2	ϕ3	ϕ4.5	ϕ6
HVB212	**4RM**	JXR male	1/4"	●	●			
	4S	Double barbed	1/4"	●	●			
	6N	NPT	1/8"	●	●			
HVB312	**4RM**	JXR male	1/4"		●	●		
	4S	Double barbed	1/4"		●	●		
	6N	NPT	1/8"		●	●		
	8N	NPT	1/4"		●	●		
HVB412	**4RM**	JXR male	1/4"			●	●	
	6RM	JXR male	3/8"					●
	4S	Double barbed	1/4"			●	●	
	6S	Double barbed	3/8"					●
	8N	NPT	1/4"			●	●	
	10N	NPT	3/8"					●
HVB512	**4RM**	JXR male	1/4"				●	
	6RM	JXR male	3/8"					●
	4S	Double barbed	1/4"				●	
	6S	Double barbed	3/8"					●
	8N	NPT	1/4"				●	
	10N	NPT	3/8"					●

<Example of model number>

HVB212-4RM-2-2CB-DC24V

Series: HVB212

Ⓐ Series size : 22mm
Ⓑ Connection : 1/4" JXR male joint
Ⓒ Orifice : ϕ 2
Ⓓ Coil option : Grommet lead wire
Ⓔ Other options : Mounting plate
Ⓕ Voltage : 24 VDC

*1: The surge suppressor is incorporated as a standard with the full wave rectifier type.
*2: The compact terminal box (Pg9) is used when HVB212 (D) 2G/2HS is selected.