

Air operated 2-port valve for low pressure (coolant valve)

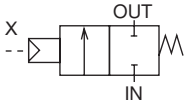
CVSE2/CVSE22-05/10 Series
CVE2/CVE22-05/10 Series

- NC (normally closed), NO (normally open)
- Port size: Rc3/8 to Rc2, 32 to 80 flange
- Low pressure 0.5MPa, 1.0MPa

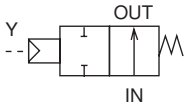
CE Refer to the Ending for details. RoHS CAD

JIS symbol

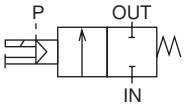
● CVE2 (air operated)
: NC



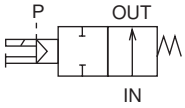
● CVE22 (air operated)
: NO



● CVSE2 (with solenoid valve)
: NC



● CVSE22 (with solenoid valve)
: NO



Common specifications for 0.5 MPa

Model No.	CVE2/CVSE2	CVE22/CVSE22
Actuation	NC (normally closed)	NO (normally open)
Working fluid	Coolant/other non-corrosive liquids (*1)	
Fluid viscosity mm²/s	500 or less	
Working pressure MPa	0 to 0.5	
Proof pressure (water pressure) MPa	2.0	
Fluid temperature °C	−10 to 60 (no freezing)	
Ambient temperature °C	−10 to 60	
Valve seat leakage cm³/min	20 or less (water pressure) (*2)	
Mounting orientation	Unrestricted	
Pilot fluid	Air	
Pilot pressure MPa	0.25 to 0.7	
Water hammer value (for reference) MPa	1 or less (steel pipe 10 m, total pressure 0.5 MPa, flow rate 5 m/sec.)	

*1: Fluids that do not affect cast iron (nickel plating), stainless steel, nitrile rubber or fluoro rubber
*2: 1 cm for port size 10 A (Rc3/8)³/min or less

Electrical specification (with solenoid valve/common specifications)			
Rated voltage		100 VAC (50/60 Hz)/110 VAC(60 Hz), 200 VAC (50/60 Hz)/220 VAC (60 Hz), 24 VDC	
Apparent power (VA)	When holding	3.6(50Hz), 2.8(60Hz)	
	When starting	11(50Hz), 9(60Hz)	
Power consumption (W)	AC	1.9(50Hz), 1.5(60Hz)	
	DC	2.0	
Thermal class		Class 130(B)	
Degree of protection (IEC standards 529)		Grommet lead wire	IPX2
		With DIN terminal box (Pg9)	IPX5
		With DIN terminal box (M12-4P connector)	IPX5
		With T type terminal box (G1/2)	IPX5

*3: The voltage fluctuation range must be within ±10% of the rated voltage.

Individual specifications for 0.5 MPa

Item / Model No.	Port size	Orifice size (mm)	Cv	Pilot port size	Weight (kg) CVE2(2)	Weight (kg) CVSE2(2)
CVE2(2)/CVSE2(2)-10A-05	Rc 3/8	10	2.8	Rc 1/8	0.35	0.45
CVE2(2)/CVSE2(2)-15A-05	Rc 1/2	14	6.5		0.6	0.7
CVE2(2)/CVSE2(2)-20A-05	Rc 3/4	19	11		1.2	1.3
CVE2(2)/CVSE2(2)-25A-05	Rc 1	24	18		1.8	1.9
CVE2(2)/CVSE2(2)-32A-05	Rc 1¼	31	28		2.7	2.8
CVE2(2)/CVSE2(2)-32F-05	32 flange	31	28		5.3	5.4
CVE2(2)/CVSE2(2)-40A-05	Rc 1½	40	43		4.4	4.5
CVE2(2)/CVSE2(2)-40F-05	40 flange	40	43		7.0	7.1
CVE2(2)/CVSE2(2)-50A-05	Rc 2	50	70		6.5	6.6
CVE2(2)/CVSE2(2)-50F-05	50 flange	50	70		9.6	9.7
CVE2(2)/CVSE2(2)-65F-05	65 flange	65	70		19.5	19.5
CVE2(2)/CVSE2(2)-80F-05	80 flange	79	100		24.0	24.0

Common specifications for 1.0 MPa

Model No.	CVE2/CVSE2	CVE22/CVSE22
Actuation	NC (normally closed)	NO (normally open)
Working fluid	Coolant/other non-corrosive liquids (*1)	
Fluid viscosity mm²/s	500 or less	
Working pressure MPa	0 to 1.0	
Proof pressure (water pressure) MPa	2.0	
Fluid temperature °C	-10 to 60 (no freezing)	
Ambient temperature °C	-10 to 60	
Valve seat leakage cm³/min	20 or less (water pressure) (*2)	
Mounting orientation	Unrestricted	
Pilot fluid	Air	
Pilot pressure MPa	0.25 to 0.7	
Water hammer value (for reference) MPa	2andDown(SteelTube10 m, allPressure1 MPa, flowSpeed5m/secto)	

*1: Fluids that do not affect cast iron (nickel plating), stainless steel, nitrile rubber or fluoro rubber
*2: 1 cm for port size 10 A (Rc3/8)³ /min or less

Electrical specification (with solenoid valve/common specifications)			
Rated voltage		100 VAC (50/60 Hz)/110 VAC(60 Hz), 200 VAC (50/60 Hz)/220 VAC (60 Hz), 24 VDC	
Apparent power (VA)	When holding	3.6(50Hz), 2.8(60Hz)	
	When starting	11(50Hz), 9(60Hz)	
Power consumption (W)	AC	1.9(50Hz), 1.5(60Hz)	
	DC	2.0	
Thermal class		Class 130(B)	
Degree of protection (IEC standards 529)		Grommet lead wire	IPX2
		With DIN terminal box(Pg9)	IPX5
		With DIN terminal box (M12-4P connector)	IPX5
		With T type terminal box (G1/2)	IPX5

*3: The voltage fluctuation range must be within ±10% of the rated voltage.

Individual specifications for 1.0 MPa

Item / Model No.	Port size	Orifice size (mm)	Cv	Pilot port size	Weight (kg)	
					CVE2(2)	CVSE2(2)
CVE2(2)/CVSE2(2)-10A-10	Rc 3/8	7	1.7	Rc 1/8	0.35	0.45
CVE2(2)/CVSE2(2)-15A-10	Rc 1/2	10	4.5		0.6	0.7
CVE2(2)/CVSE2(2)-20A-10	Rc 3/4	14	7		1.2	1.3
CVE2(2)/CVSE2(2)-25A-10	Rc 1	17	11		1.8	1.9
CVE2(2)/CVSE2(2)-32A-10	Rc 1¼	23	20		2.7	2.8
CVE2(2)/CVSE2(2)-32F-10	32 flange	23	20		5.3	5.4
CVE2(2)/CVSE2(2)-40A-10	Rc 1½	29	30		4.4	4.5
CVE2(2)/CVSE2(2)-40F-10	40 flange	29	30		7.0	7.1
CVE2(2)/CVSE2(2)-50A-10	Rc 2	35	48		6.5	6.6
CVE2(2)/CVSE2(2)-50F-10	50 flange	35	48		9.6	9.7
CVE2(2)/CVSE2(2)-65F-10	65 flange	49	50		19.5	19.5
CVE2(2)/CVSE2(2)-80F-10	80 flange	57	73		24.0	24.0

How to order

● Air operated

CVE2 2 - 20A - 10 - 0 B -

● With solenoid valve

CVSE2 2 - 15A - 05 - 0 2G S - - 1

Ⓐ Actuation
Ⓑ Port size
Ⓒ Working pressure
Ⓓ Body/sealant combination
Ⓔ Coil *1 *2
Ⓕ Other Option *3 *4 *5 *6 *7 *8
Ⓖ Assembled components *8 Direction
Ⓗ Voltage

Model No.	
Air operated (2-port)	CVE2
With solenoid valve (2-port)	CVSE2

[Example of model No.]

CVSE22-15A-05-02GS-1

Model: CVSE2 : With solenoid valve (2-port)
Ⓐ Actuation : NO (Normally open)
Ⓑ Port size : Rc 1/2
Ⓒ Working pressure : 0 to 0.5 MPa
Ⓓ Body/sealant combination : Body - cast iron(plating), sealant - nitrile rubber
Ⓔ Coil : DINEndWith slave box (Pg9)
Ⓕ Other options : With surge suppressor
Ⓖ Assembly direction: No option
Ⓗ Voltage : 100 VAC (50/60Hz), 110 VAC (60Hz)

*1 : Surge suppressor is not available for Item Ⓔ 2J.
*2 : Item Ⓔ 2K is available only for the type with surge suppressor and should be specified as 2KS.
*3 : The mounting plate (Item Ⓕ B) is provided and can be assembled to port size 10A, 15A, 20A and 25A only.
*4 : Top mounted solenoid valve (Item Ⓕ T) is available only for port sizes 15A, 20A and 25A.
*5 : To add both the surge suppressor and mounting plate options, specify Item Ⓕ as SB. For a solenoid valve mounted on top, indicate as STB.
*6 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*7 : A manual override (non-locking) is provided as standard for the solenoid valve mounted.
*8 : Assembly direction option cannot be selected for the type with top mounted solenoid valve (Item Ⓕ T).

Code	Description	Model No. CVE2	Model No. CVSE2
Ⓐ Actuation			
Blank	NC (normally closed)	●	●
2	NO (normally open)	●	●
Ⓑ Port size			
10A	Rc 3/8	●	●
15A	Rc 1/2	●	●
20A	Rc 3/4	●	●
25A	Rc 1	●	●
32A	Rc 1¼	●	●
32F	32 flange	●	●
40A	Rc 1½	●	●
40F	40 flange	●	●
50A	Rc 2	●	●
50F	50 flange	●	●
65F	65 flange	●	●
80F	80 flange	●	●
Ⓒ Working pressure			
05	0 to 0.5 MPa	●	●
10	0 to 1.0 MPa	●	●

Code		Body	Seal	Model No. CVE2	Model No. CVSE2
Ⓓ Body/sealant combination					
0	Standard	Cast iron (plating)	Nitrile rubber	●	●
B	Option	Cast iron (plating)	Fluoro rubber	●	●

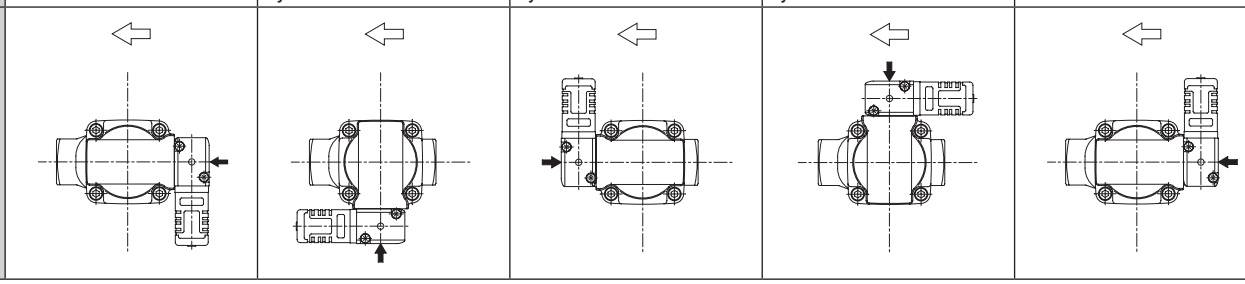
Code		Description	Model No. CVE2	Model No. CVSE2
Ⓔ Coil				
2C	Standard	Grommet lead wire		●
2G	Option	With DIN terminal box (Pg9)		●
2H	Option	DIN terminal box with lamp (Pg9)		●
2J	Option	DIN terminal box (M12-4P connector)		●
2K	Option	DIN terminal box with lamp (M12-4P connector)		●
3T	Option	With T type terminal box (G1/2)		●
3R	Option	T type terminal box with lamp (G1/2)		●
Ⓕ Other options				
Blank		No option	●	●
S		With surge suppressor		●
T		Top mounted solenoid valve		●
B		Mounting plate	●	●

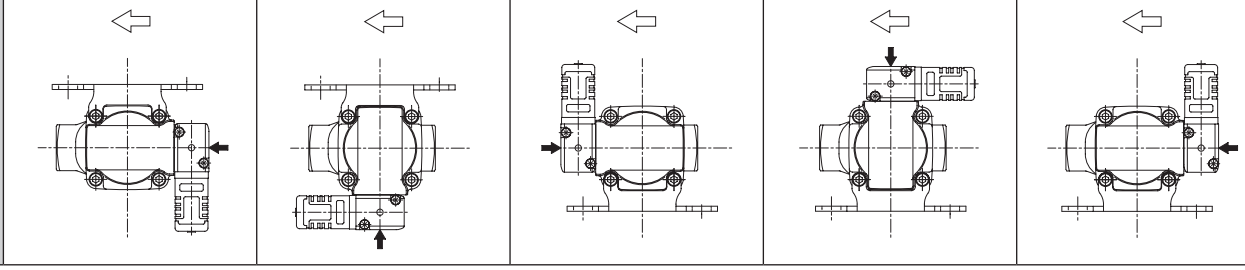
Code	Description	Model No. CVE2	Model No. CVSE2
Ⓖ Assembly direction			
Blank	No option	●	●
X	Cylinder cover rotated 90°		●
Y	Cylinder cover rotated 180°		●
Z	Cylinder cover rotated 270°		●
R	Mounting plate reversed 180° [air operated]/ coil reversed 180° [with solenoid valve] Mounting plate/coil reversed 180° [with solenoid valve]	●	●

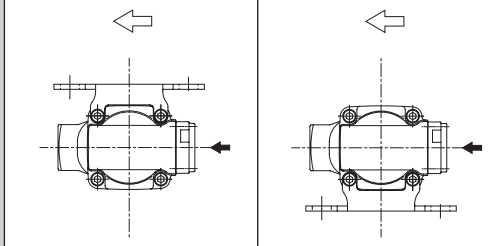
Refer to page 859 for the layout drawing.

Code	Description	Model No. CVE2	Model No. CVSE2
Ⓗ Voltage			
1	100 VAC(50/60 Hz) 110 VAC(60 Hz)		●
2	200 VAC(50/60 Hz) 220 VAC(60 Hz)		●
3	24 VDC		●

Item G Assembly direction

CVSE2 [With solenoid valve] *9					
Code	Blank (standard)	X *10	Y *10	Z *10	R *10
Direction	No rotation	Cylinder cover rotated 90°	Cylinder cover rotated 180°	Cylinder cover rotated 270°	Coil reversed
Layout					

CVSE2 [With solenoid valve] *3/9					
Code	B (with mounting plate)	B-X	B-Y *11	B-Z *11	B-R *12
Direction	No rotation	Cylinder cover rotated 90°	Cylinder cover rotated 180° Mounting plate reversed	Cylinder cover rotated 270° Mounting plate reversed	Coil reversed Mounting plate reversed
Layout					

CVE2 [Air operated] *3/9		
Code	B (with mounting plate)	B-R *13
Direction	No rotation	Mounting plate reversed
Layout		

⇦shows flow path direction and ⬅ shows pilot port IN.

*9 : Clockwise angle when viewed from above with the IN port on the right.
*10 : Not available for port size 65F/80F.
*11 : The mounting plate will be reversed 180° and attached.
*12 : The mounting plate for port size 10A is installed at the bottom, so only the coil position is reversed.
*13 : Not available for port size 10A.