

Electro Pneumatic Regulator EVS2 Series Variations added



High Precision and High Response Control from high to negative pressures

Wide variation of workpiece control



Pressure variation added



High precision



Negative pressure
-100
kPa

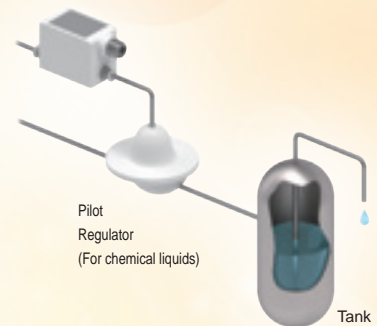
Medium pressure
200
kPa

High pressure
900
kPa

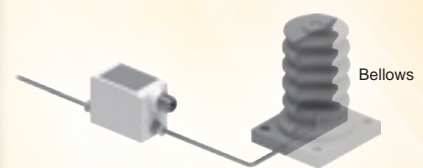
High resolution
0.05
%

Examples of applications

Chemical liquid discharge control

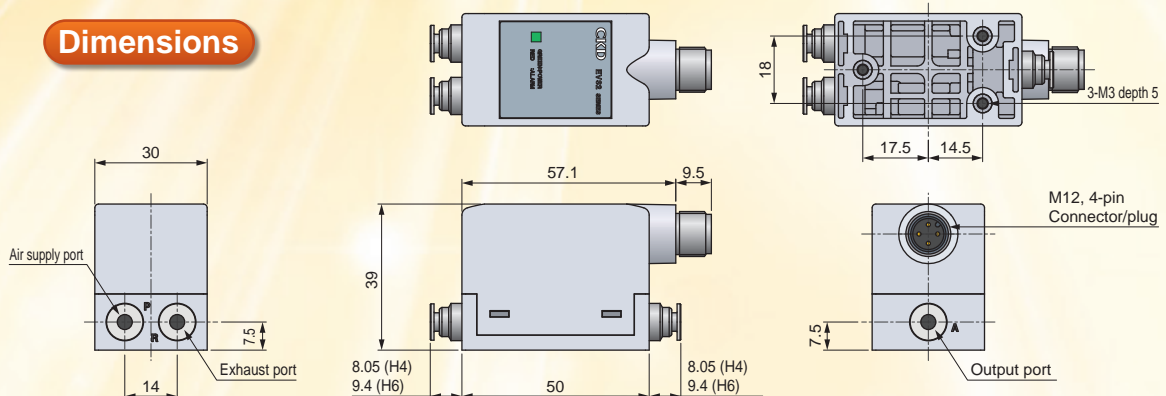


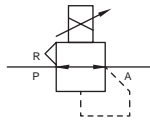
Micro position control



Space-saving and fine control

Dimensions





Specifications

Item	EVS2-10V	EVS2-100	EVS2-200	EVS2-500	EVS2-900
Working fluid	Clean compressed air (JIS B8392-1:2012 (ISO 8573-1:2010) [1.3.2])				
Max. working pressure kPa	-101.3	200	350	700	1,000
Min. working pressure kPa	-96.0	Set pressure +10	Set pressure +50		
Proof pressure kPa	Inlet	150	300	525	1,050
	Output side	150	150	300	750
Pressure control range (*1) kPa	-5.3 to -91.2	1 to 100	2 to 200	5 to 500	9 to 900
Power supply voltage	24 VDC \pm 10% (stabilized power supply with ripple rate 1% or less)				
Current consumption	0.1 A or less (0.6 A rush current when power is ON)				
Input signal (input impedance)	0	0 to 10 VDC (6.7 k Ω)			
	1	0-5 VDC (10 k Ω)			
	2	4 to 20 mADC (250 Ω)			
	3	0-20 mADC (250 Ω)			
	4	1-5 VDC (10 k Ω)			
Analog output (load impedance)	AV	1 to 5 VDC (50 k Ω)			
	AA	4 to 20 mADC (300 Ω or less)			
Accuracy (*2)	Hysteresis	0.3% F.S. or less			
	Linearity	\pm 0.5% F.S. or less			
	Resolution	0.05% F.S. or less			
	Repeatability	0.3% F.S. or less			
Temperature Properties	Zero point fluctuation	\pm 0.06% F.S./ $^{\circ}$ C or less			
	Span fluctuation	\pm 0.06% F.S./ $^{\circ}$ C or less			
Max. flow rate (*3)	0.3L/min(ANR)	2L/min(ANR)		8L/min (ANR)	
Step response (*4)	No load	0.6 s or less		0.1 s or less	
	15cm ³ Load	-	0.5 s or less		
Operating ambient temperature	0 to 50 $^{\circ}$ C				
Operating ambient humidity	45 to 90% RH (no condensation)				
Mounting orientation	Free				
Degree of protection	IP64 equivalent				
Weight (body)	90g				

*1: Up to 1%F.S. input signal cannot be controlled.

*2: The conditions for the values above are: 24.0 \pm 0.1 VDC power supply voltage, 25 \pm 3 $^{\circ}$ C ambient temperature, no load, working pressure within the following range and 10% or higher control pressure.
Working pressure:
EVS2-10V(-101.3 to -96.0kPa)
EVS2-100(110 to 200kPa)
EVS2-200(250 to 350kPa)
EVS2-500(550 to 700kPa)
EVS2-900(950 to 1,000kPa)

*3: Working pressure: Maximum working pressure, Control pressure: Maximum control pressure (20%F.S. for EVS2-10V only).

*4: Working pressure: Max. working pressure,

Step amount: EVS2-10V

50% F.S. \rightarrow 90% F.S.
50% F.S. \rightarrow 60% F.S.
50% F.S. \rightarrow 40% F.S.

EVS2-100/200/500/900

50% F.S. \rightarrow 100% F.S.
50% F.S. \rightarrow 60% F.S.
50% F.S. \rightarrow 40% F.S.

*5: The specification values are obtained in a static state only. The control pressure may differ if air is consumed on the output side.

How to order

EVS2 - 10V - 0 H4 AV - C11 - 3

A Pressure control range

B Input signal

C Port size

D Analog output

E Cable option

● Discrete option model No. (cable option)

EVR - S1

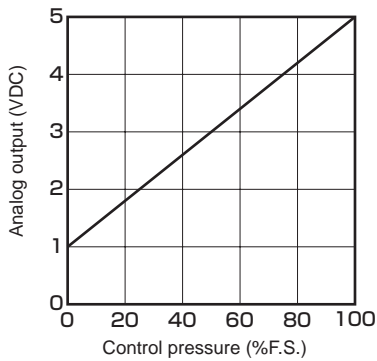
Code	Description
Cable option	
S1	Straight (1 m)
S3	Straight (3 m)
L1	L type (1 m)
L3	L type (3 m)

F Power supply voltage

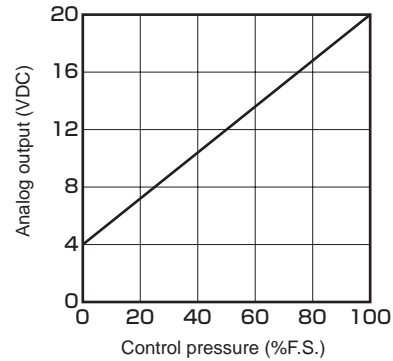
Code	Description
A Pressure control range	
10V	-5.3 to -91.2 kPa
100	1 to 100 kPa
200	2 to 200 kPa
500	5 to 500 kPa
900	9 to 900 kPa
B Input signal	
0	0 to 10 VDC
1	0 to 5 VDC
2	4 to 20 mADC
3	0 to 20 mADC
4	1 to 5 VDC
C Port size	
H4	Cartridge fitting (ϕ 4)
H6	Cartridge fitting (ϕ 6)
D Analog output	
AV	1 to 5 VDC
AA	4 to 20 mADC
E Cable option	
Blank	None
C11	Straight 1 m
C13	Straight 3 m
CL1	L type 1 m
CL3	L type 3 m
F Power supply voltage	
3	24 VDC

Analog output

● When selecting voltage output (AV)

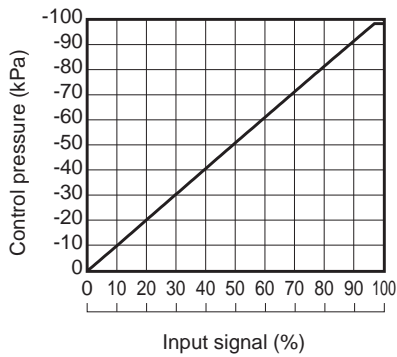


● When selecting current output (AA)

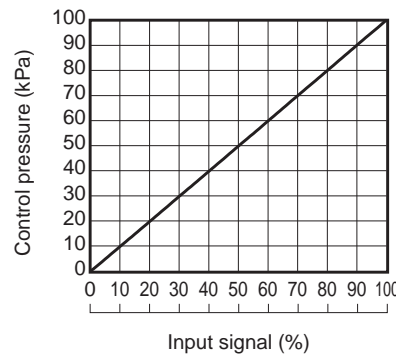


I/O characteristics

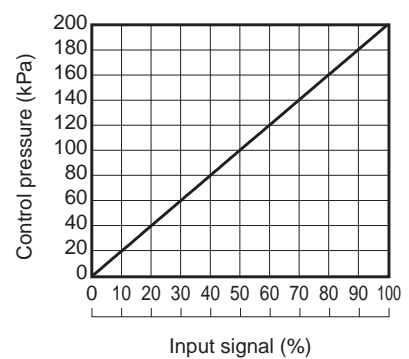
● EVS2-10V



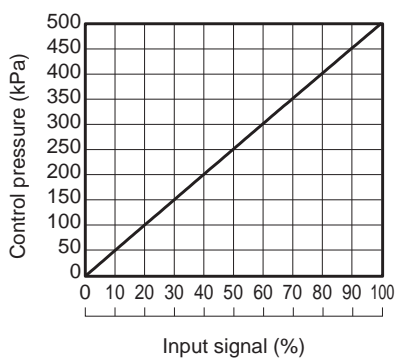
● EVS2-100



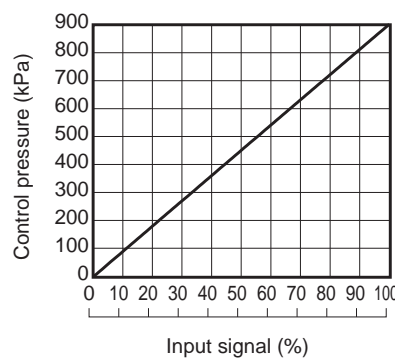
● EVS2-200



● EVS2-500



● EVS2-900

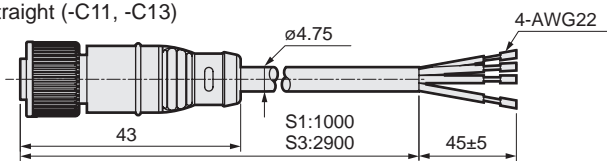


● Input signal specifications table

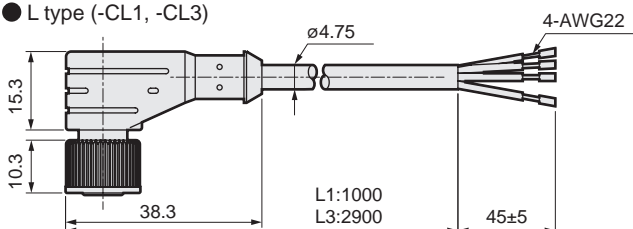
	Input signal			
	0%	50%	100%	
Input signal specifications	0	0.0 VDC	5.0 VDC	10.0 VDC
	1	0.0 VDC	2.5 VDC	5.0 VDC
	2	4.0mADC	12.0mADC	20.0mADC
	3	0.0mADC	10.0mADC	20.0mADC
	4	1.0 VDC	3.0 VDC	5.0 VDC

Cable option

● Straight (-C11, -C13)



● L type (-CL1, -CL3)



-C1* Cable/connector

Pin No	Insulator color	Applications	Type of input signal				Weight g
			0-10V	0-5V	4 to 20mA	0-20mA	
1	Brown	Power	24V				C11:50 C13:135 CL1:55 CL3:140
2	Black	Analog output	Analog output				
3	Blue	Common	0V				
4	White	Input signal	0-10V	0-5V	4-20mA	0-20mA	

Safety precautions: EVS2 Series

Also refer to the precautions in "Pneumatic, Vacuum and Auxiliary Components (No.CB-024SA)".

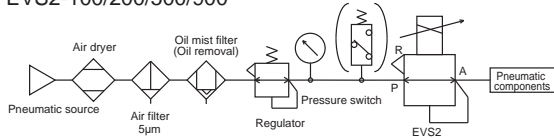
Design/selection

CAUTION

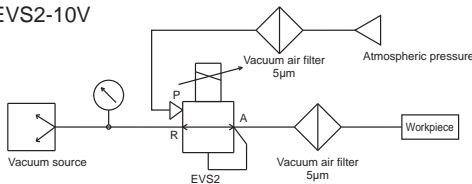
- Poor air quality will cause poor characteristics and adversely affect the durability.

- The pneumatic source should use clean compressed air obtained by removing solid particles, moisture and oil from the fluid using air dryers, filters and oil mist filters.(JIS B8392-1:2012(ISO 8573-1:2010)(1:3:2))

• EVS2-100/200/500/900



• EVS2-10V



If the control pressure is reduced, air on the secondary side will pass through inside the product and exit from the exhaust port (port R). Contamination on the

secondary piping and on the inside of the load will have an adverse effect on the characteristics, etc., Thus, keep the inside of the piping as clean as possible.

- If the regulator is left with the power OFF and the supply pressure applied, the secondary pressure could rise to the primary pressure level. If this poses a safety hazard, take system safety measures by reducing the primary side pressure to 0 or installing a valve on the primary side to shut the supply source.
- If power is turned OFF under pressure, control pressure is held.
 - To discharge pressure, lower set pressure and turn power OFF, or use a residual pressure exhaust valve, etc. This holding state is not guaranteed for extended periods of time.
- The working pressure is applied to supply the specified pressure for the control pressure. Ensure that the working pressure stays within the specified range.
 - Especially when the control pressure has been set from 0%F.S. to 12%F.S. and the working pressure is not supplied. If the working pressure becomes near or lower than the control pressure, unnecessary operation of the solenoid valve will occur resulting in a shorter service life.
- Control of this product will not be possible if the input signal range is only set from 0% F.S. to 1% F.S.
- Applying an input signal outside the specifications will cause unnecessary operation of the solenoid valve, resulting in a shorter service life and deteriorated performance. Keep the signal within the specifications.

Mounting, installation and adjustment

CAUTION

- The exhaust port (port R) should be open to the atmosphere to discharge air.(For EVS2-10V, port P is open to the atmosphere)
- Min. tube length
As a guideline, the output port (A) pipe length should have a capacity of 1 cc and over. (Otherwise, vibration may result.)
(Reference) Tube size $\phi 4$...Min. length 320mm
For tube size $\phi 6$...Min. length 80mm
- Do not use the product if there is leakage on the secondary side, the secondary side is open for blowing, or the

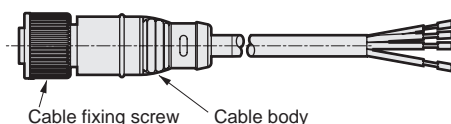
secondary side is open to the atmosphere. Otherwise the set pressure cannot be maintained, causing a loud buzzing noise and resulting in a shorter service life.

- In the wiring of the product, the ground line of the power supply serves as the signal common line. When driving several EVS2 units with one PLC and D/A unit, depending on the D/A unit circuit, wiring could prevent the correct signal from being output. Consult with the PLC manufacturer.
- The optional cable connector is a 4-conductor cable. Insulate wires not being used so that they do not contact other wires.

Use/maintenance

CAUTION

- Insulate wires not used in the EVS2 Series so that they do not come into contact with other wires. Unintended connection to the ground, etc., could cause malfunction or damage to the product. Also, the wiring must be kept away from noise sources such as intense electric fields. Otherwise an external induction noise added to the analog output will cause product damage.
- When connecting the cable connector, keep the cable body stable and fasten the cable fixing screw by hand. If the cable is not kept stable, the connector on the product body side will turn and may be damaged.



- Regularly inspect the product at least once a year to check that it operates correctly.
 - This product uses a small solenoid valve as an actuator. The service life may change depending on the frequency of operation triggered by pressure switching, the working conditions, etc.
- The term of warranty is set as one year or 3 million repeated operations, whichever comes first, so use this as an inspection guideline.
 - * The conditions for the 3 million operations listed in the term of warranty are as follows. When repeatedly applying a stepped input signal which causes the control pressure to rise from zero to the maximum control pressure. The air quality at the time is clean compressed air from the recommended air circuit and the secondary side load capacity is 15 cm³ for the EVS2 Series.

If the goods and/or their replicas, the technology and/or software found in this catalog are to be exported from Japan, Japanese laws require the exporter makes sure that they will never be used for the development and/or manufacture of weapons for mass destruction.

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