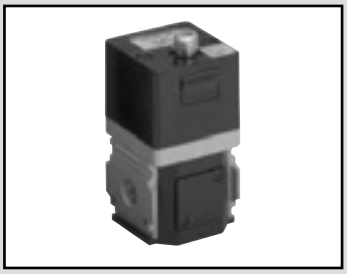
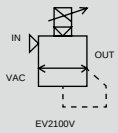


Electro pneumatic regulator (solenoid valve vacuum)

EV2100V Series

JIS symbol



RoHS CAD

Overview

For electro pneumatic regulator EV2100V Series, feedback control with semiconductor pressure sensor and electronic control circuit is used to enable continuous and precise vacuum pressure control with electric signals.

Features

- Compact and lightweight
- Module can be connected
- Non-bleed
- High relief
- High precision/high-speed response
- Manifold available
- Various input signals
- Easy wiring
- Pressure monitor available
- Degree of protection: IP64 or equivalent

Specifications

1 MPa = 10 bar

Item		EV2100V	EV2109V
Working fluid		Air (according to the recommended air circuit on page 667)	
Working pressure range		-96 kPa (≈-14 psi, -0.96 bar) to -101.3 kPa (≈-15 psi, -1.013 bar)	
Proof pressure	Inlet	196 kPa (≈28 psi, 1.96 bar)	
	Output side	196 kPa (≈28 psi, 1.96 bar)	
Guaranteed pressure accuracy range *5		-10.1 (≈-1.5 psi) to -91.2 kPa (≈-13 psi) (10 to 90% F.S)	
Power supply voltage		24 VDC ± 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 to 10 VDC (20 kΩ) / 0 to 5 VDC (10 kΩ) / 4 to 20 mA DC or 1 to 5 VDC (250 Ω) *1 / 10 kΩ variable resistance or 0 to 10 VDC (20 kΩ)	
Analog output		1 to 5 VDC (none for 10 kΩ variable resistance input)	
Hysteresis		1% F.S. or less *2	
Linearity		±0.5% F.S. *2	
Resolution		0.5% F.S. or less *2	
Repeatability		0.5% F.S. or less *2	
Temperature characteristics	Zero point fluctuation	±0.15% F.S./°C or less	
	Span fluctuation	±0.07% F.S./°C or less	
Max. flow rate (ANR)		150 ℓ/min	120 ℓ/min
Step response *3	No load	0.6 sec or less	
	1ℓ Load	2.0 sec or less	
Vibration resistance		98 m/s^2 or less (JIS C60068-2-6)	
Ambient temperature		5 (41°F) to 50 (122°F)°C	
Degree of protection		IP64 or equivalent (body), IP67 (cable connector) *4	
Port size		Rc1/4	
Weight		300 g	320 g

*1: When used with a signal voltage of 1 to 5 VDC, 4 to 20 mA of current flows into the EV interior from the signal source. Confirm specifications of the signal source before use.

*2: The characteristics above are: -96.0 to -101.3 kPa working pressure, 24 ± 0.1 VDC power supply voltage, 25 ± 3°C ambient temperature, no load, and 10 to 90% control pressure. In addition, the secondary side must be a closed circuit. Vacuum pressure may become lower or fluctuate if the secondary side is open to the atmosphere.

*3: Working pressure: -100 kPa, step rate: 50% F.S. → 90% F.S. / 50% F.S. → 60% F.S. / 50% F.S. → 40% F.S.

*4: The degree of protection of body IP64 is applied only when installed with facing connector upward.
The above characteristics are those within the working pressure range. If used outside the working pressure range, please contact CKD.

*5: There is 0 to 5 kPa residual pressure when the input signal is 0%.
Refer to the input/output characteristics graph (page 628).

How to order

EV210 (A)0 V - (B)1 (C)08 - (D)C11

- (A) Body shape
- (B) Input signal
- (C) Port size
- (D) Option *1 *3

Code	Description
(A) Body shape	
0	Single unit
9	Discrete manifold
(B) Input signal	
0	0 to 10 VDC
1	0 to 5 VDC
2	4 to 20 mA or 1 to 5 VDC
3	10 kΩ variable resistance or 0 to 10 VDC (connected to 10 VDC built-in power supply)
(C) Port size	
08	Rc1/4
(D) Option	
Cable option	
Blank	None
C11	1 m attached
C13	3 m attached
Intake option	
Blank	Intake block 1
K1	Intake block 2
Bracket option	
Blank	None
B4	B type bracket
T	T type bracket

Precautions for model selection

*1: How to order an option only:
EV2000- Option code

*2: However, the combination of optional "intake block 1" and " T type bracket" is not available.

*3: The bracket option B4 cannot be used when using the EV2109V (manifold).

Clean-room specifications (Catalog No. CB-033SA)

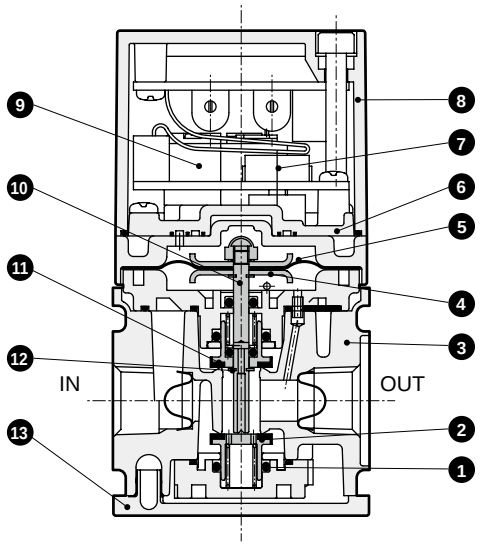
- Anti-dust generation structure for use in cleanrooms

EV2100V – ..... – P70

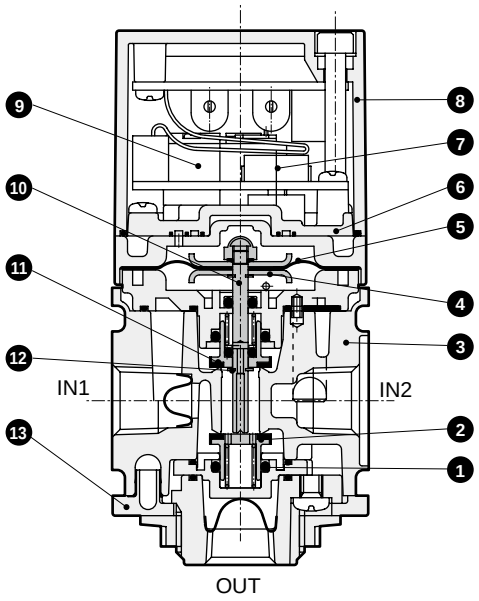
EV2109V – ..... – P70

Internal structure and parts list

● EV2100V



● EV2109V

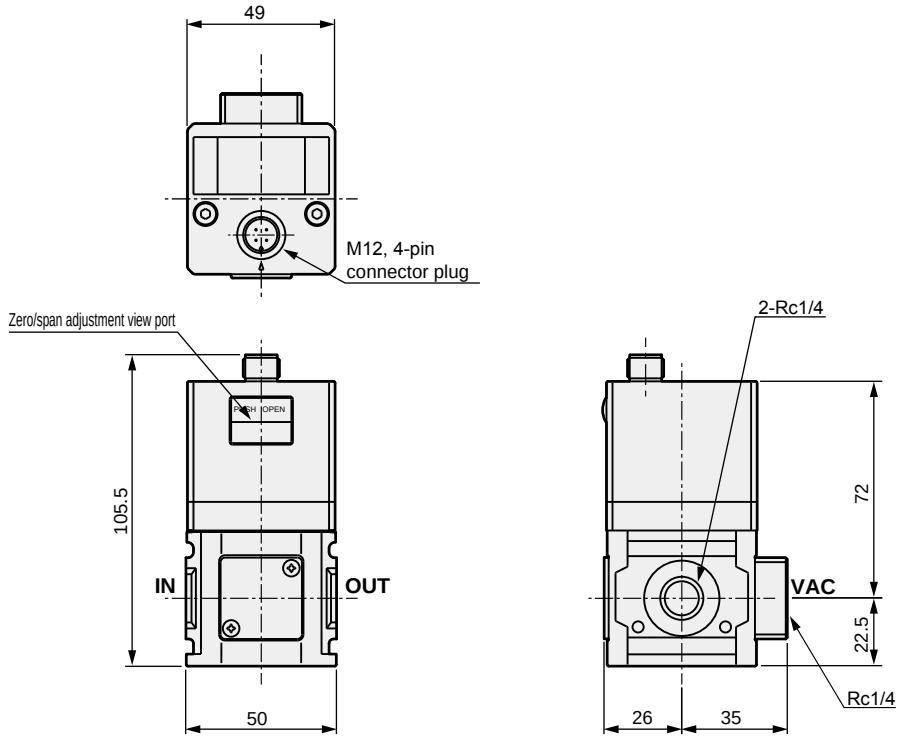


Cannot be disassembled

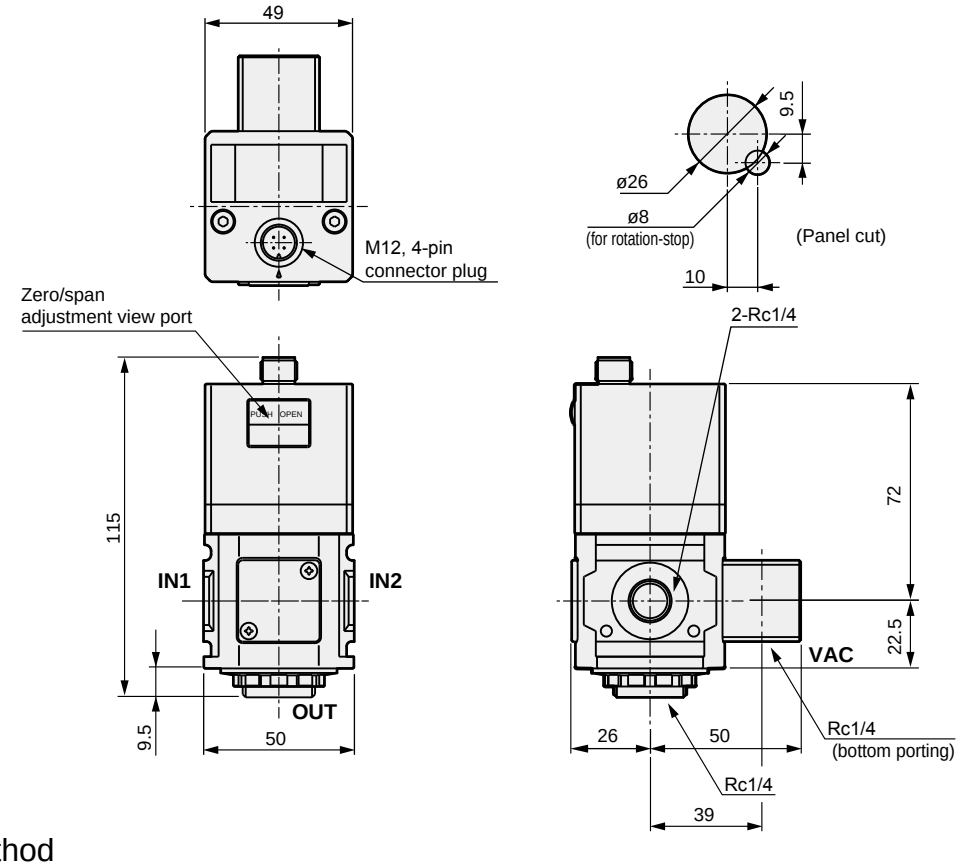
No.	Part name	Material	No.	Part name	Material
1	O-ring	Fluoro rubber	8	Housing	ABS resin
2	Bottom valve	Copper alloy, special nitrile rubber	9	3-way valve	
3	Body	Aluminum alloy die-casting	10	Rod	Stainless steel
4	Disc	Aluminum alloy	11	Top valve	Copper alloy, special nitrile rubber
5	Diaphragm	Special nitrile rubber	12	E-type snap ring	Steel
6	Valve base	Polyphenylene sulfide resin	13	Plate cover	ABS resin
7	Pressure sensor	Diffused semiconductor			

Dimensions

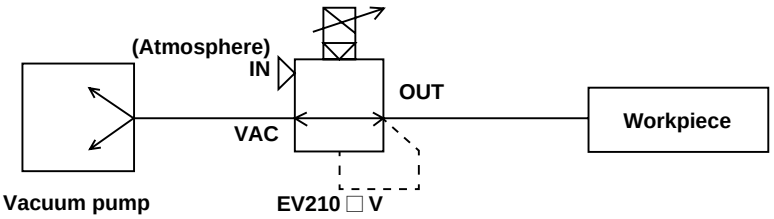
● EV2100V



● EV2109V



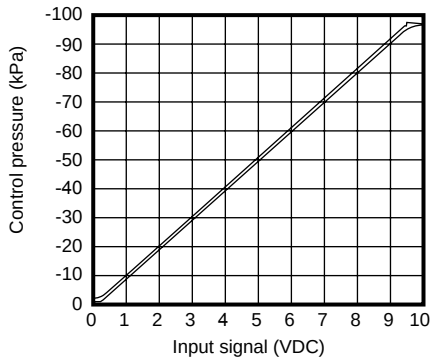
Piping method



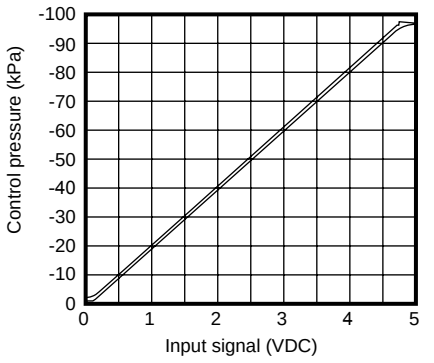
* Refer to the precautions for [Recommended circuit] on page 667 for details.

I/O characteristics

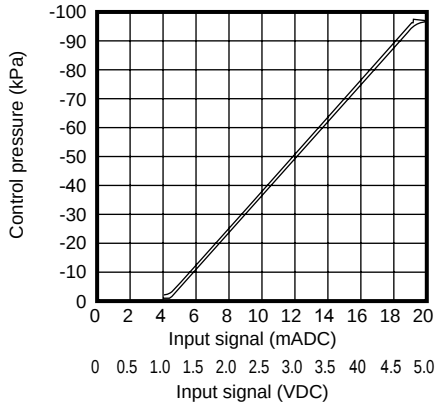
● Input signal 0 to 10 VDC



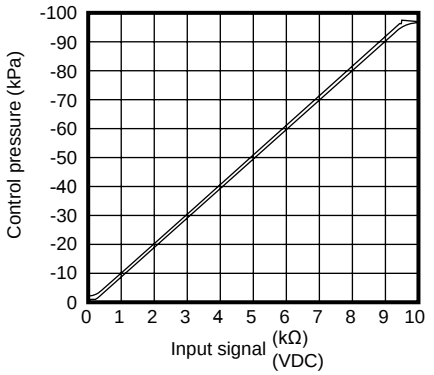
● Input signal 0 to 5 VDC



● Input signal 4 to 20 mADC or 1 to 5 VDC

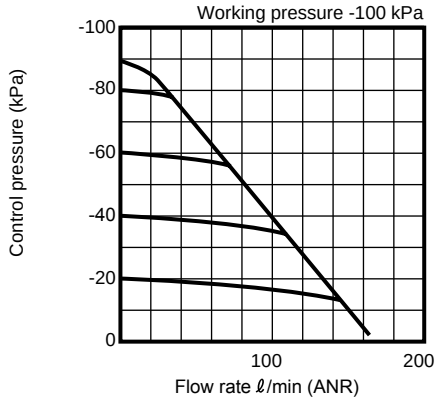


● Input signal 10 kΩ variable resistance or 0 to 10 VDC

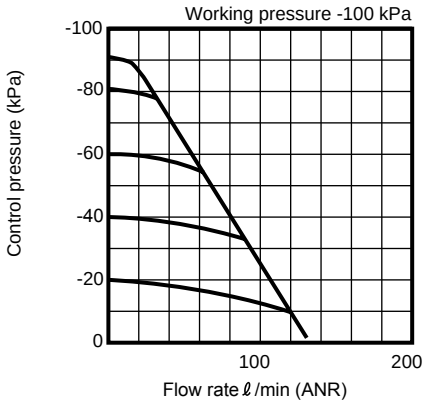


Flow characteristics

● EV2100V

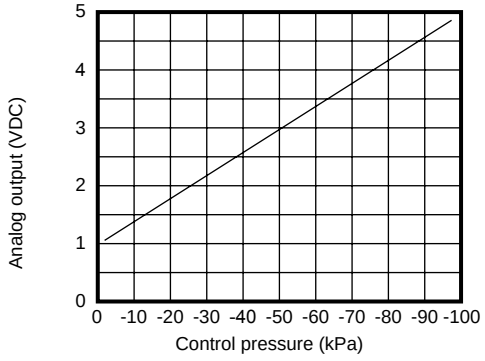


● EV2109V



Analog output

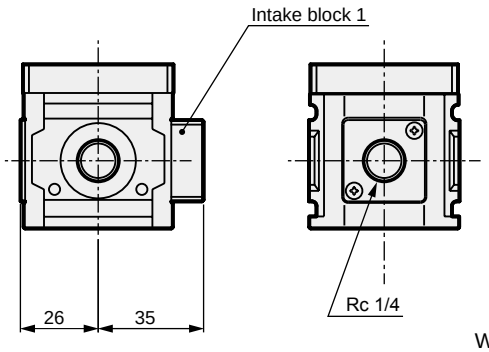
● EV2100V,EV2109V



Optional models

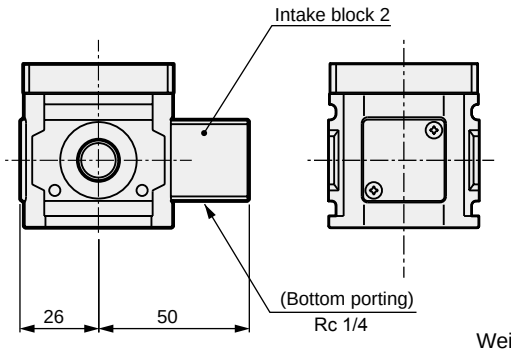
Embedded type intake option

● Standard (blank)



Weight: 24g

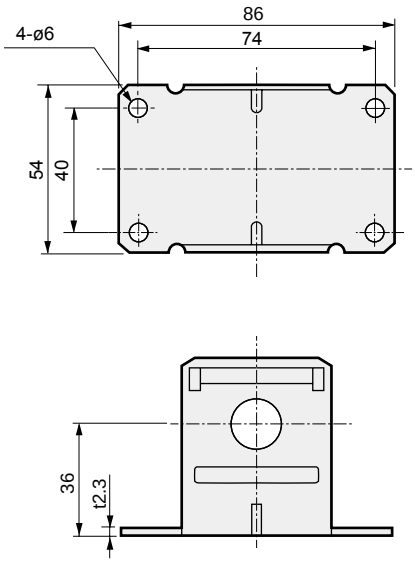
● -K1



Weight: 50g

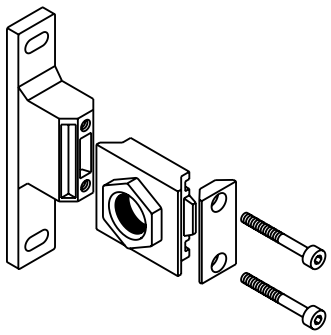
Bracket option

● Floor mounted: **-B4 (B type bracket)



Material: SPCC
Treatment: Black painted
Weight: 165g

● Wall mounted: **-T (T type bracket)

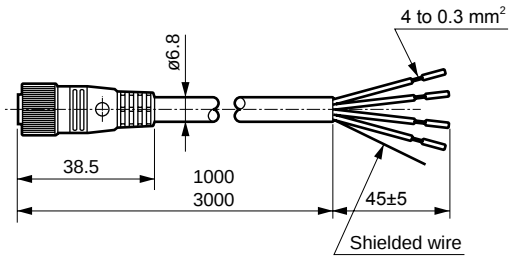


* An O-ring and a gasket are included.

Note: Refer to page 346 for dimensions of T type bracket.

Weight: 135g

Cable option



-C1* Shield/cable/connector

*Pin No.	Insulator color	Applications	Type of input signal				Weight g
			0 to 10 V	0 to 5 V	4 to 20 mA 1 to 5 V	10 kΩVR (0 to 10 V)	
1	Red	Power supply ⊕	24 V				C11: 79 C13:212
2	Green	——	Analog output 1 to 5 V			VR input terminal	
3	Black	Common	0 V			VR input terminal 0 V	
4	White	Input signal	0 to 10 V	0 to 5 V	4 to 20 mA 1 to 5 V	VR output terminal (0 to 10 V)	

If a cable connector is not used, the following recommended cable sockets can be used. Use a shielded wire cable.

Screw fixing type	ELW1KA4012 Correns (Hirschmann)
Straight (solder)	XS2C-D421 OMRON
L type (solder)	XS2C-D422 OMRON