

Electro pneumatic regulator (solenoid valve type medium flow)

EV2000 Series

High precision air pressure proportional control valve enabling ultimate space saving of device.



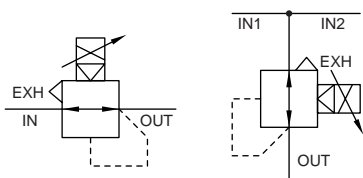
Overview

In this electro pneumatic regulator EV2000 Series, feedback control with semiconductor pressure sensor and electronic control circuit is used. Using electric signals, continuous and precise air pressure control are achieved.

Features

- Compact and light weight
- Compact module design
- Non-bleeding
- High-relief
- High precision / high speed response
- Manifold type available
- Embedding type option
- Various input signal
- Easy wiring
- Pressure monitor available
- Equivalent to protective structure IP64
- Common exhaust

JIS symbol



Specifications

Descriptions	EV2500	EV2509
Working fluid	Clean compressed air (refer to page 753 for recommended air circuits)	
Max. working pressure	0.7MPa	
Min. working pressure	Control pressure + 0.05MPa	
Withstanding pressure	(Inlet side)	1.05MPa
	(Output side)	0.75MPa
Control pressure range	0 to 0.49MPa	
Power voltage	24 VDC $\pm 10\%$ (safety power supply with ripple ratio 1% or less)	
Current consumption	0.1A or less (power supply rush current 0.6A when power turned ON)	
Input signal (Input impedance)	0-10 VDC (20k Ω)	
	0-5 VDC (10k Ω) 4-20mA DC or 1-5 VDC (250 Ω) Note 1 10k Ω variable resistance or 0-10 VDC (20k Ω)	
Monitor output	1-5 VDC (none for 10k Ω variable resistance input)	
Hysteresis	1%F.S. or less Note 2	
Linearity	$\pm 0.5\%$ F.S. or less Note 2	
Resolution	0.5%F.S. or less Note 2	
Repeatability	0.5%F.S. or less Note 2	
Temperature characteristics	(Zero point variation)	0.15%F.S./ $^{\circ}$ C or less
	(Span variation)	0.07%F.S./ $^{\circ}$ C or less
Maximum flow rate (ANR)	800 ℓ /min	
Step response	(Loadless)	0.6s or less
Note 3	(1 ℓ load)	0.6s or less
Mechanical vibration proof	98m/S 2 or less (JIS C60068-2-6)	
Ambient temperature	5 to 50 $^{\circ}$ C	
Protective structure	IP64 or equivalent, IP67(cable connector) Note 4	
Port size	Rc1/4	
Weight (body)	300g	320g

Note 1: When used with signal voltage 1-5 VDC, 4-20 mA of current flows into inside of EV from the signal source. Confirm specifications of the signal source before starting use.

Note 2: The above characters apply for a control pressure of 10 to 100% when power voltage is 24VDC, and working pressure range is 0.54 to 0.7MPa. Also, limited to a closed circuit in the secondary side, and the pressure may vary if used as air blow etc.

Note 3: Working pressure: Max. working pressure and step rate: $\begin{cases} 50\%F.S. \rightarrow 100\%F.S. \\ 50\%F.S. \rightarrow 60\%F.S. \\ 50\%F.S. \rightarrow 40\%F.S. \end{cases}$

Note 4: Protective structure IP64 is applied only when installed with facing connector upward.

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

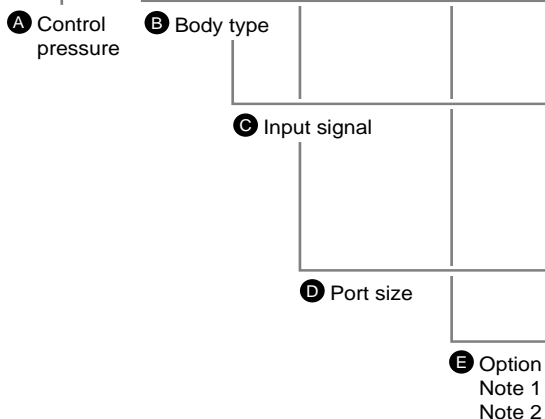
- Dust generation preventing structure for use in cleanrooms

EV2500 - - **P70**

EV2509 - - **P70**

How to order

EV2 **5** **0** **0** - **0** **08** - **C11E2B**



Symbol	Descriptions
A Control pressure	
5	0-0.49MPa
B Body type	
0	Discrete
9	Discrete manifold
C Input signal	
0	0-10 VDC
1	0-5 VDC
2	4-20mA DC or 1-5 VDC
3	10kΩ variable resistance or 0-10 VDC
D Port size	
08	Rc1/4
E Option	
Cable option	
Blank	None
C11	1m attached
C13	3m attached
Exhaust option	
Blank	Rc1/4 port
E1	φ 8 push-in joint
E2	With silencer
Bracket option	
Blank	None
B	C type bracket attached
B4	B type bracket attached

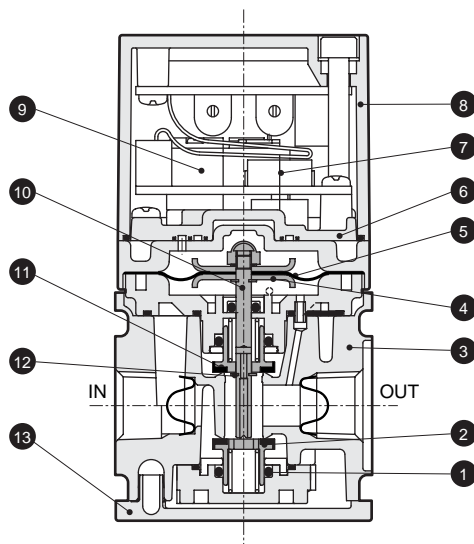
Note 1: Piping adaptor can be used for Rc3/8 or larger, but B type, C type bracket can not be used (refer to other peripheral devices on page 790).

Note 2: Model no. for option is EV2000-option symbol.

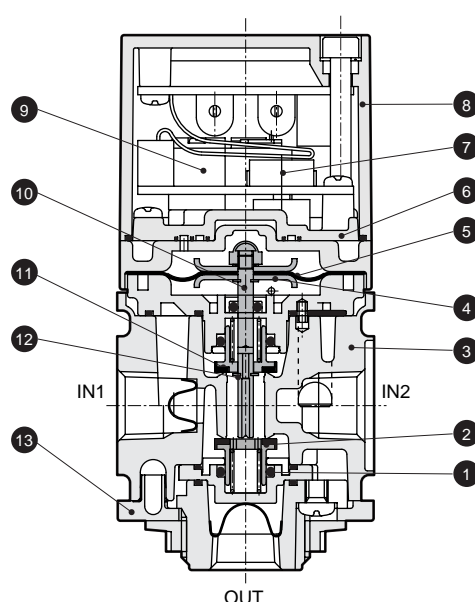
Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Internal structure and parts list

● EV2500



● EV2509



No.	Parts name	Material	No.	Parts name	Material
1	O ring	Fluoro rubber	8	Housing	ABS resin
2	Bottom valve	Brass, special nitrile rubber	9	3 way valve	
3	Body	Aluminum alloy die-casting	10	Rod	Stainless steel
4	Disk	Aluminum alloy	11	Top valve	Brass, 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	(Diffusion semiconductor)			

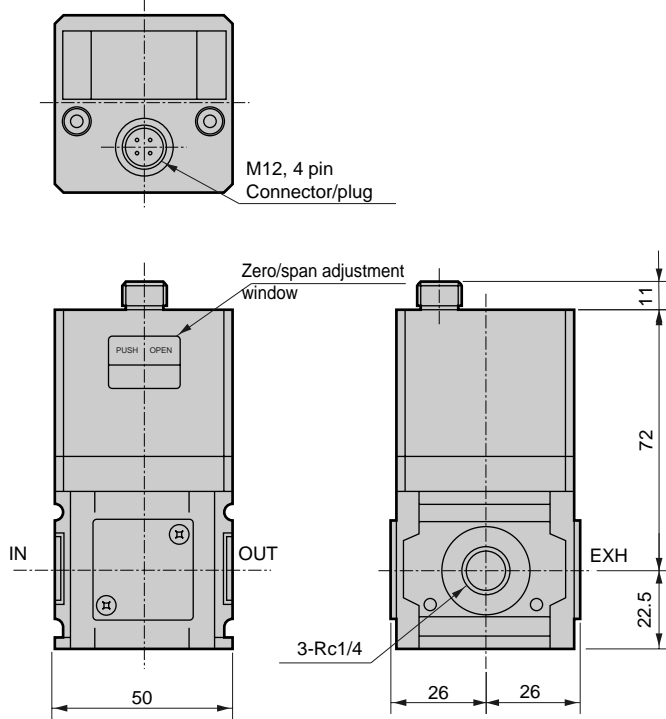
Electro pneumatic regulator
F.R.L. unit

EV2000 Series

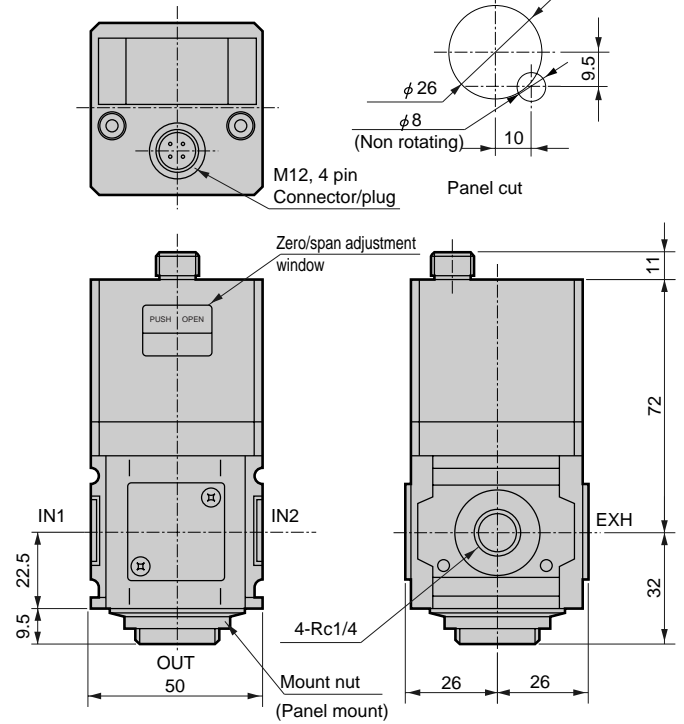
Dimensions



● EV2500



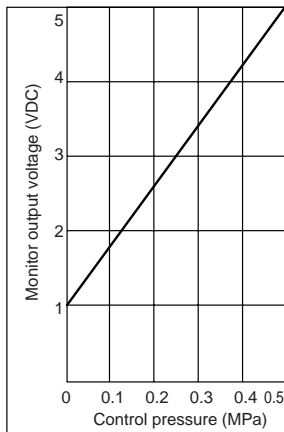
● EV2509



Refer to "cable option" on page 790 for how to wire.
Refer to pages 789 to 790 for optional dimensions.

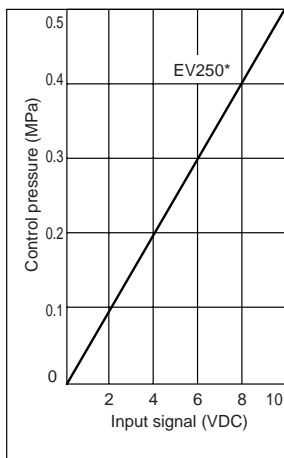
Monitor output

● EV2500/2509

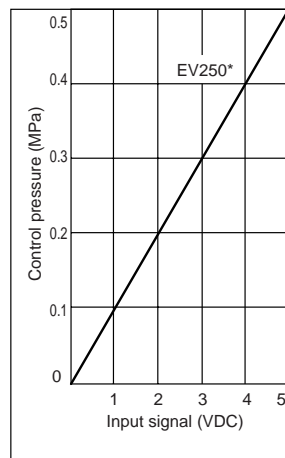


I/O characteristics

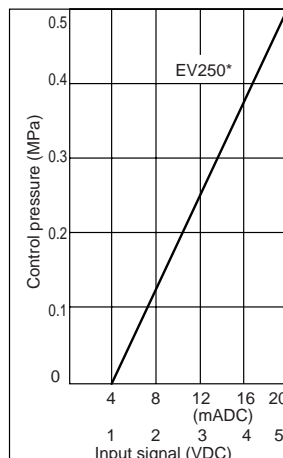
● Input signal 0-10 VDC



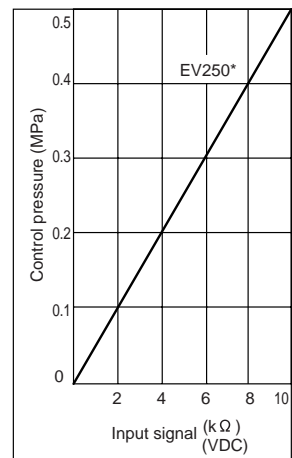
● Input signal 0-5 VDC



● Input signal 4-20mA DC or 1-5 VDC



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

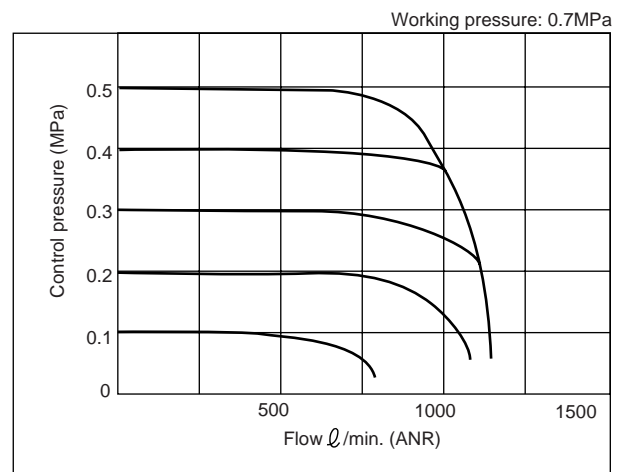
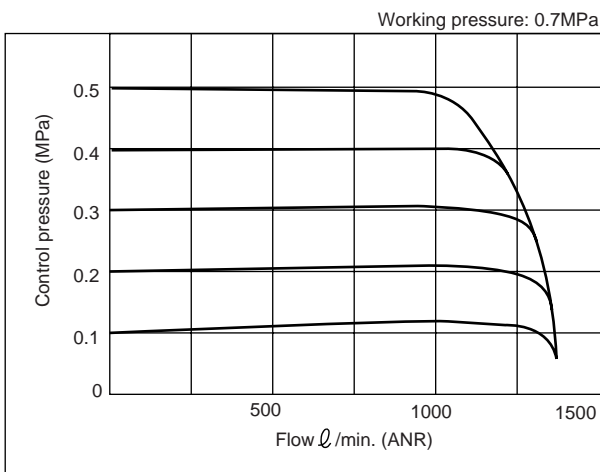


Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
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Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Flow characteristics

● EV2500

● EV2509



Optional dimensions

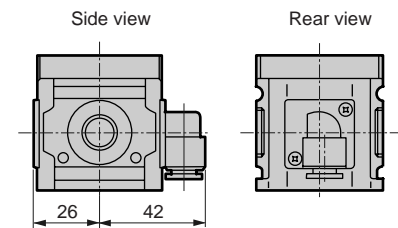
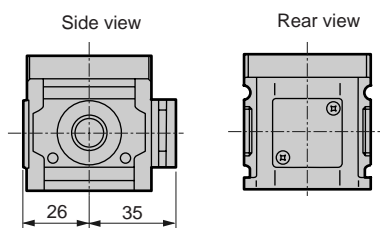
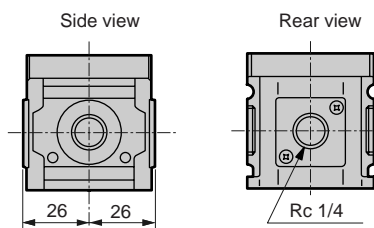
EV2000 Series common option

Embedding type option

● Standard (blank)

● Dedicated silencer: **-E2

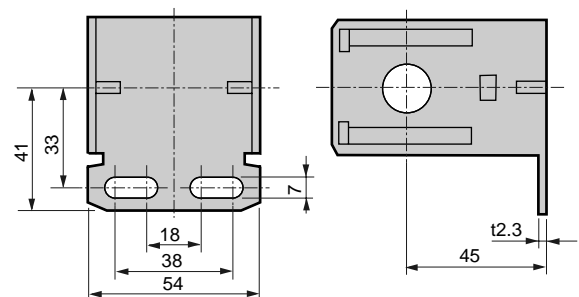
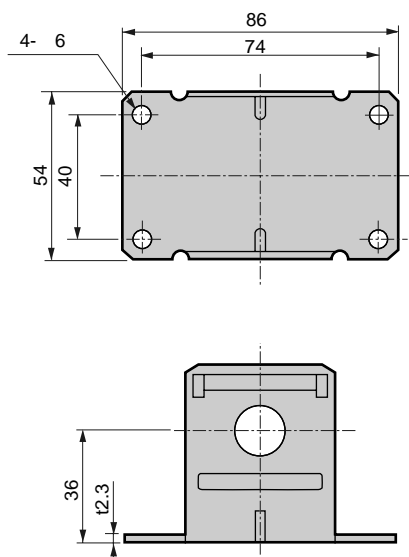
● ϕ 8 push-in: **-E1



Bracket option

● B type bracket (-B4): Floor installation type

● C type bracket (-B): Wall installation type



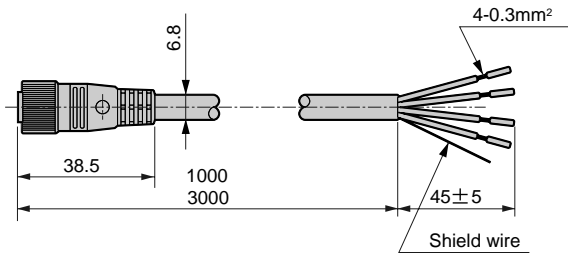
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Total air system (Gamma)

Ending

Electro pneumatic regulator
F.R.L. unit

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- Total air system (Gamma)
- Ending

Cable option



-C1* shield/cable/connector

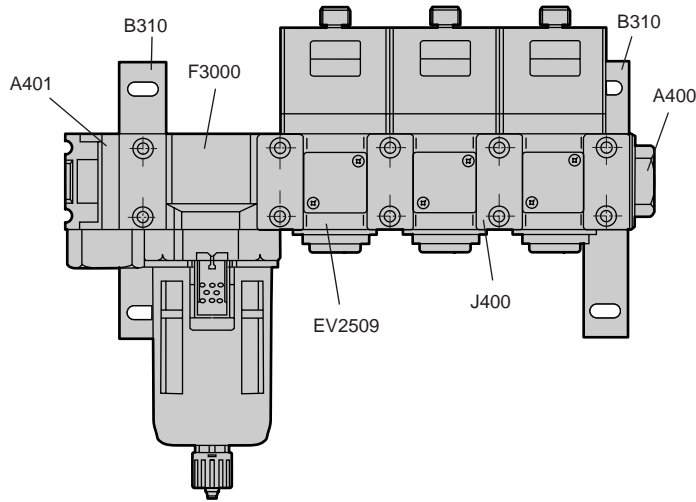
* Pin No.	Isolator color	Applications	Type of input signal			
			0-10V	0-5V	4-20mA 1-5V	10k Ω VR (0-10V)
1	Red	Power supply ⊕	24V			
2	Green	--	Monitor output 1-5V			VR input terminal
3	Black	Common	0V			VR input terminal 0V
4	White	Input signal	0-10V	0-5V	4-20mA 1-5V	VR output terminal (0-10V)

If a cable connector is not used, following recommended cable sockets can be used. Anyway, use a shield wire cable.

- Set screw type ELW1KA4012 CORRENS (HIRSHMAN)
- Axial type (solder) XS2C-D421 OMRON
- L type (solder) XS2C-D422 OMRON

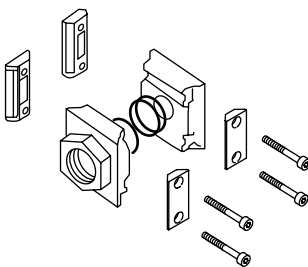
Other peripheral devices

● Example of system up grading



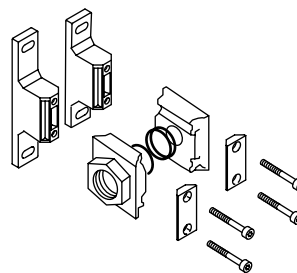
● A400-8/10/15

Piping adaptor set



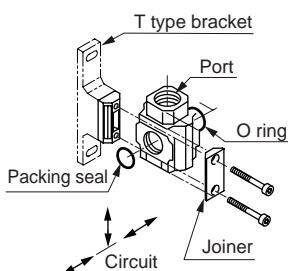
● A400-8/10/15-B31

Piping adaptor set



● D401-00-8/10/15- (B31)

Distributor



● A401-8/10/15- (B31)

L type piping adaptor

