

# Ever advancing evolution!

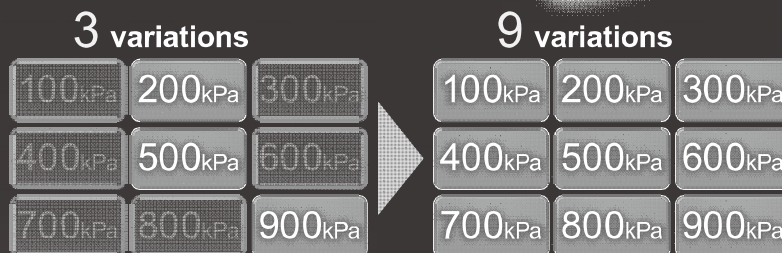
F.R.L  
F (Filtr)  
R (Reg)  
L (Lub)  
PresSW  
Shutoff  
SlowStart  
FlmResistFR  
Oil-ProhR  
MedPresFR  
No Cu/  
PTFE FRL  
Outdrs FR  
F.R.L  
(Related)  
CompFRL  
LgFRL  
PrecsR  
VacF/R  
Clean FR  
ElecPneuR  
AirBoost  
SpdContr  
Silncr  
CheckV/  
other  
Jnt/tube  
AirUnt  
PrecsCompn  
Mech/  
ElecPresSw  
ContactSW  
AirSens  
PresSW  
Cool  
AirFlwSens/  
Contr  
WaterRtSens  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
RefrDry  
DesicDry  
HiPolymDry  
MainFiltr  
Dischrg  
etc  
Ending

## Far more variations of pressure control available



The ideal pressure for your equipment can now be selected.

You can better optimize your equipment's air pressure control.



## High-precision pressure control

Top class in the industry

The new control method, with built-in microcomputer, achieves higher-precision pressure control.

Unit: kPa

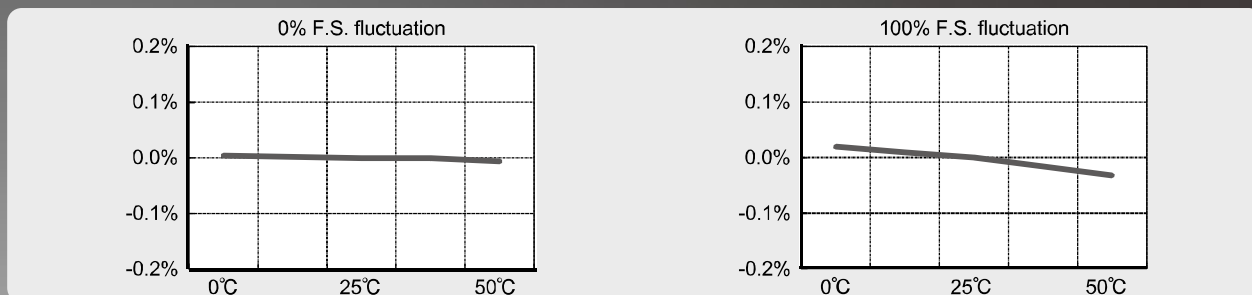
Control pressure	100	200	300	400	500	600	700	800	900
Hysteresis	0.3	0.6	1.5			3			
Linearity	±0.5	±1	±2.5			±5			
Resolution	0.1	0.2	0.5			0.9			
Repeatability	0.2	0.4	1			1.8			

Note: Values at F.S.

## Temperature stability

Improved stability

Built-in temperature compensation reduces the influence of ambient temperatures. No need for pressure correction due to equipment temperature increases.



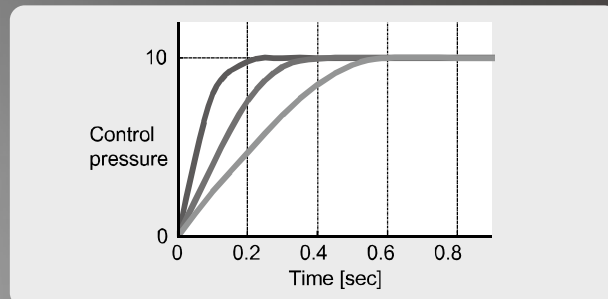
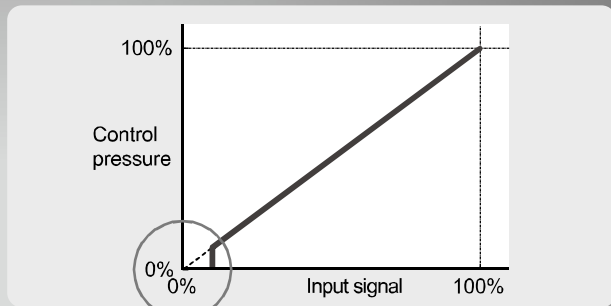
\* These are typical values and not guaranteed values.

## Pressure stability

New function

Residual pressure 0 when the input signal is 0%.

Newly added function allows selection of pressure control patterns.



\* These are typical values and not guaranteed values.

# EVR Series

High precision electro pneumatic regulator

# Astounding accuracy and stability!

## Easy operation

Visualized operational status

### Two switches allow various settings

#### Zero point adjustment

Input signal 0% pressure adjustment

#### Span point adjustment

Input signal 100% pressure adjustment

#### Pressure control pattern selection

Selection from three patterns

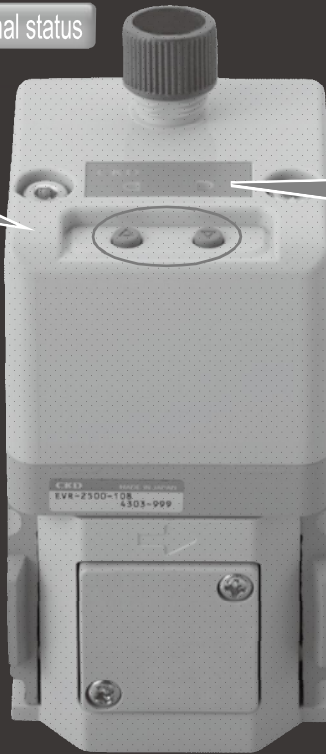
### Operation indicator

"Green" displayed at control pressure  
"Red" displayed when outside the adjusting range

#### Normal status



#### Abnormal



## Compatibility/installation

Easy replacement

- **Compatible mounting** with the conventional product (EV2500).
- **Two types of connectors** are available.

Straight



L-type

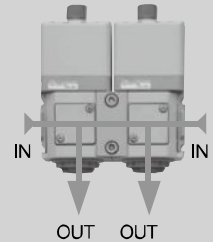


- **Manifold is also usable.**

Normal piping (EVR-2500)

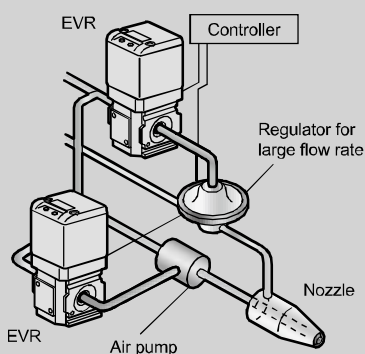


Manifold piping (EVR-2509)

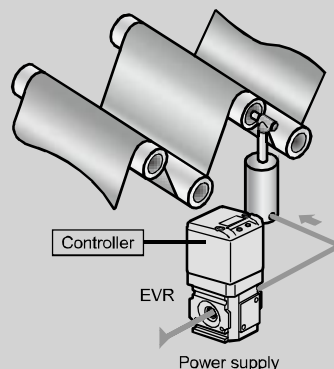


## System application examples

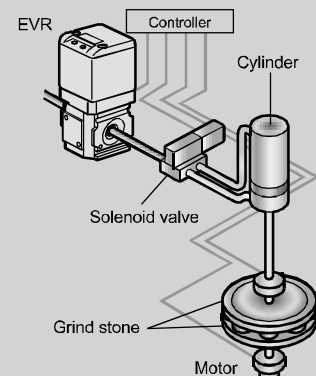
### Fluid pressure control



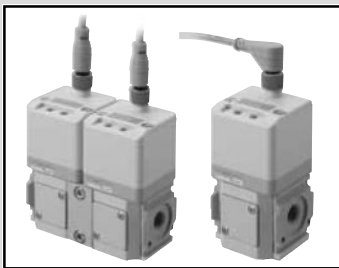
### Balancer tension control



### Grinding force control



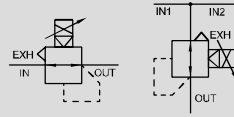
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MedPresFR
No Cu/ PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/ other
Jnt/tube
AirUnt
PresCompn
Mech/ ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/ Contr
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending



High precision electro pneumatic regulator

# EVR Series

JIS symbol



## Specifications

1 MPa = 10 bar

Model No.	EVR-2100 (2109)	EVR-2200 (2209)	EVR-2300 (2309)	EVR-2400 (2409)
<b>Descriptions</b>				
Working fluid	Clean compressed air (JIS B8392-1:2012 (ISO 8573-1:2010) [1:3:2])			
Max. working pressure	200 kPa (≈29 psi, 2 bar)	400 kPa (≈58 psi, 4 bar)	450 kPa (≈65 psi, 4.5 bar)	600 kPa (≈87 psi, 6 bar)
Min. working pressure	Set pressure +50 kPa (≈7.3 psi, 0.5 bar)			
Proof pressure	Inlet	300 kPa (≈44 psi, 3 bar)	600 kPa (≈87 psi, 6 bar)	650 kPa (≈94 psi, 6.5 bar)
	Output side	150 kPa (≈22 psi, 1.5 bar)	300 kPa (≈44 psi, 3 bar)	450 kPa (≈65 psi, 4.5 bar)
Pressure control range *1	5 (≈0.8 psi) to 100 kPa (≈15 psi)	5 (≈0.8 psi) to 200 kPa (≈29 psi)	5 (≈0.8 psi) to 300 kPa (≈44 psi)	5 (≈0.8 psi) to 400 kPa (≈58 psi)
Power supply voltage	24 VDC ± 10% (stabilized power supply with ripple rate 1% or less)			
Current consumption	0.1A or less			
Input signal (input impedance)	0 to 10 V(6 kΩ)			
	0 to 5 V(10 kΩ) 4 to 20 mA or 1 to 5 V (250 Ω)			
Analog output (load impedance)	1 to 5 VDC (10 kΩ and over)			
Performance *2 (Setting 1)	Hysteresis	0.3 kPa (≈0.05 psi) or less	0.6 kPa (≈0.09 psi) or less	1.5 kPa (≈0.22 psi, 0.015 bar) or less
	Linearity	Within ±0.5 kPa (≈0.07 psi)	Within ±1.0 kPa (≈0.14 psi)	Within ±2.5 kPa (≈0.36 psi, 0.025 bar)
	Resolution	0.1 kPa (≈0.02 psi) or less	0.2 kPa (≈0.03 psi) or less	0.5 kPa (≈0.08 psi, 0.005 bar) or less
	Repeatability	0.2 kPa (≈0.03 psi) or less	0.4 kPa (≈0.06 psi) or less	1.0 kPa (≈0.15 psi, 0.01 bar) or less
Temperature characteristics (Setting 1)	Zero point fluctuation	±0.06kPa (≈0.009 psi)/°C	±0.12kPa (≈0.018 psi)/°C	±0.30 kPa (≈0.044 psi, 0.003 bar)/°C
	Span fluctuation	±0.06kPa (≈0.009 psi)/°C	±0.12kPa (≈0.018 psi)/°C	±0.30 kPa (≈0.044 psi, 0.003 bar)/°C
Max. flow rate (l/min (ANR))	250	400	480	600
Step response (Setting 1)	No load *3 0.2 sec. or less			
Ambient temperature	5 (41°F) to 50 (122°F)°C			
Mounting orientation	Free			
Degree of protection	IP64 or equivalent (body), IP67 (cable connector) *4			
Weight	300 g(320 g)			

Model No.	EVR-2500 (2509)	EVR-2600 (2609)	EVR-2700 (2709)	EVR-2800 (2809)	EVR-2900 (2909)
<b>Descriptions</b>					
Working fluid	Clean compressed air (JIS B8392-1:2012 (ISO 8573-1:2010) [1.3.2])				
Max. working pressure	700 kPa (≈100 psi)	750 kPa (≈110 psi)	850 kPa (≈120 psi)	950 kPa (≈140 psi)	1,000 kPa (≈150 psi)
Min. working pressure	Set pressure +50 kPa (≈7.3 psi, 0.5 bar)				
Proof pressure	Inlet	1,050 kPa (≈150 psi)	1,120 kPa (≈160 psi)	1,200 kPa (≈170 psi)	1,400 kPa (≈200 psi)
	Output side	750 kPa (≈110 psi)	900 kPa (≈130 psi)	1,050 kPa (≈150 psi)	1,200 kPa (≈170 psi)
Pressure control range *1	5 (≈0.8 psi) to 500 kPa (≈73 psi)	10 (≈1.5 psi) to 600 kPa (≈87 psi)	10 (≈1.5 psi) to 700 kPa (≈100 psi)	10 (≈1.5 psi) to 800 kPa (≈120 psi)	10 (≈1.5 psi) to 900 kPa (≈130 psi)
Power supply voltage	24 VDC ± 10% (stabilized power supply with ripple rate 1% or less)				
Current consumption	0.1A or less				
Input signal (input impedance)	0 to 10 V(6 kΩ)				
	0 to 5 V(10 kΩ) 4 to 20 mA or 1 to 5 V (250 Ω)				
Analog output (load impedance)	1 to 5 VDC (10 kΩ and over)				
Performance *2 (Setting 1)	Hysteresis	1.5 kPa (≈0.22 psi) or less		3.0 kPa (≈0.44 psi, 0.03 bar) or less	
	Linearity	Within ±2.5 kPa (≈0.36 psi)		Within ±5.0 kPa (≈0.72 psi, 0.05 bar)	
	Resolution	0.5 kPa (≈0.08 psi) or less		0.9 kPa (≈0.14 psi, 0.009 bar) or less	
	Repeatability	1.0 kPa (≈0.15 psi) or less		1.8 kPa (≈0.27 psi, 0.018 bar) or less	
Temperature characteristics (Setting 1)	Zero point fluctuation	±0.30 kPa (≈0.044 psi)/°C		±0.60 kPa (≈0.088 psi, 0.006 bar)/°C	
	Span fluctuation	±0.30 kPa (≈0.044 psi)/°C		±0.60 kPa (≈0.088 psi, 0.006 bar)/°C	
Max. flow rate (l/min (ANR))	800	850	900	950	1,000
Step response (Setting 1)	No load *3 0.2 sec. or less				
Ambient temperature	5 (41°F) to 50 (122°F)°C				
Mounting orientation	Free				
Degree of protection	IP64 or equivalent (body), IP67 (cable connector) *4				
Weight	300 g(320 g)				

\*1 : 1% F.S. or less input signal stops control.

\*2 : The condition of the values above is: 24 ± 0.1 VDC power supply voltage, 25 ± 3°C ambient temperature, no load, working pressure from +0.05 MPa max. control pressure to the max. working pressure, and 10 to 100% control pressure.

In addition, when the secondary side is a closed circuit, pressure fluctuations will occur if the product is used for blowing or for similar applications.

\*3 : Working pressure: Max. working pressure, step amount:

- 50% F.S. → 100% 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.

### How to order

EVR-2 **50** **0** - **0** **8** - **E2** - **S1** **C**

**A** Pressure control range

**B** Body

**C** Input signal

**D** Port size

**E** Option

Code	Content	
<b>A Pressure control range</b>		
10	5 to 100 kPa	
20	5 to 200 kPa	
30	5 to 300 kPa	
40	5 to 400 kPa	
50	5 to 500 kPa	
60	10 to 600 kPa	
70	10 to 700 kPa	
80	10 to 800 kPa	
90	10 to 900 kPa	
<b>B Body</b>		
0	Single unit	
9	Manifold	
<b>C Input signal</b>		
0	0 to 10 VDC	
1	0 to 5 VDC	
2	4 to 20 mADC or 1 to 5 VDC	
<b>D Port size</b>		
8	Rc1/4	
8G	G1/4 (*1)	
8N	NPT1/4 (*1)	
<b>E Option</b>		
<b>Exhaust option</b>		
Blank	Rc1/4 port	
E2	With silencer	
<b>Cable option</b>		
Blank	None	
S1	Straight	1 m attached
S3		3 m attached
L1	L type	1 m attached
L3		3 m attached
<b>Bracket option</b>		
Blank	None	
C	C type bracket attached	
B	B type bracket attached (*2)	

### ⚠ Precautions for model No. selection

\*1: Port size: Port size of IN port and OUT port. E2 exhaust option will be supplied with "8G" and "8N".

\*2: 9 (manifold) body and B (B type bracket) cannot be selected at the same time together.

● Discrete option (cable, exhaust, bracket) model No.

EVR- **S1**

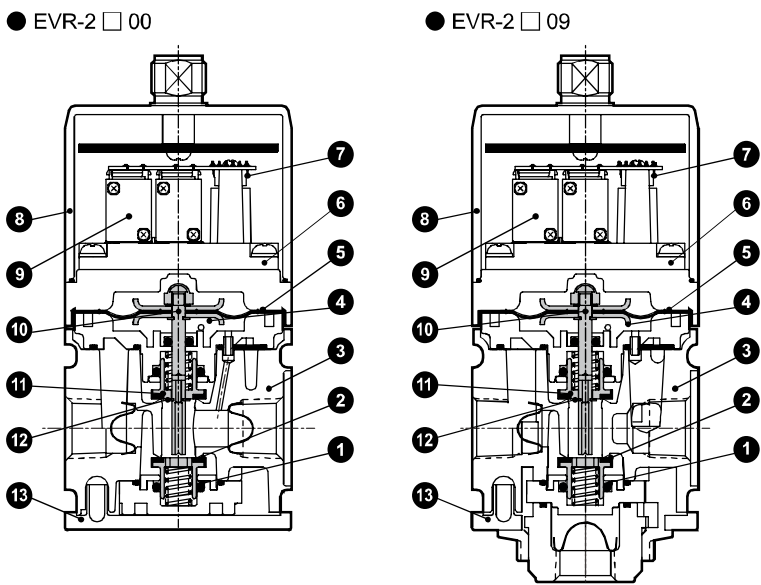
**E** Option

(Note) Discrete exhaust option model No. for Rc1/4 is EVR-E.

F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FmResistFR
Oil-ProhR
MedPresFR
No Cu/PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrescR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/other
Jnt/tube
AirUnt
PresCompn
Mech/ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/Contr
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

## F.R.L Internal structure and parts list

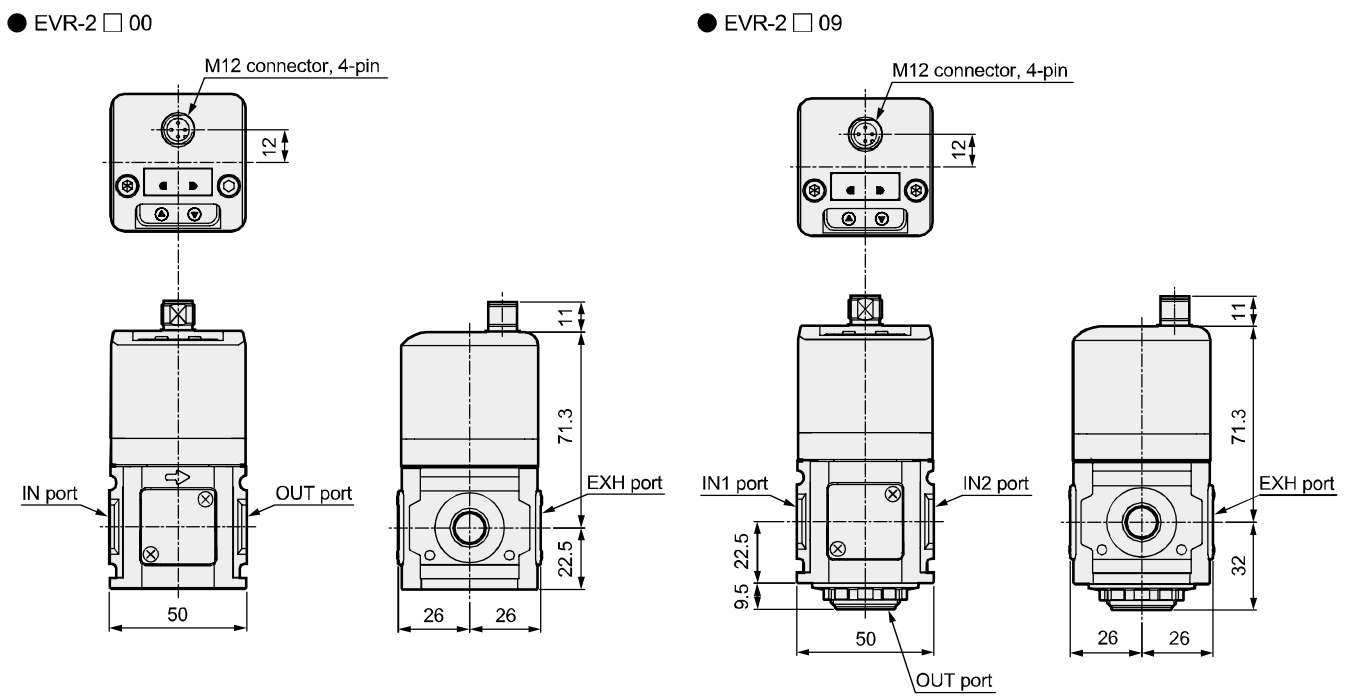
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- R (Reg)
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- Shutoff
- SlowStart
- FmResistFR
- Oil-ProhR
- MedPresFR
- No Cu/ PTFE FRL
- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- SpdContr
- SiIncr
- CheckV/ other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/ ElecPresSw
- ContactSW
- AirSens
- PresSW Cool
- AirFloSens/ Contr
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending



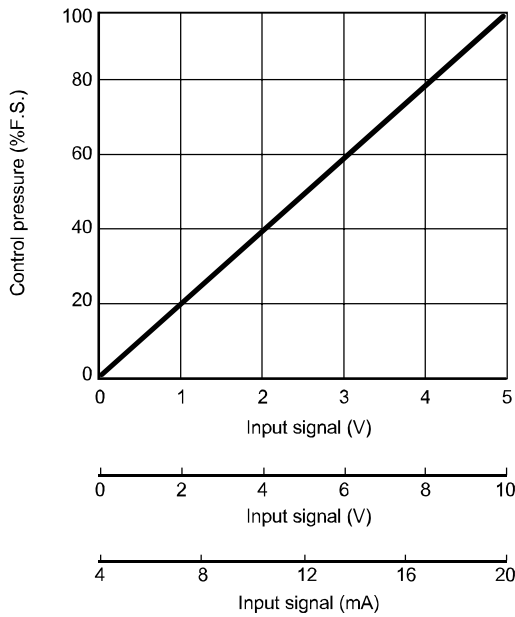
No.	Part name	Material
1	O-ring	Fluoro rubber
2	Bottom valve	Copper alloy, special nitrile rubber
3	Body	Aluminum alloy die-casting
4	Disc	Aluminum alloy
5	Diaphragm	Special nitrile rubber
6	Valve base	Polyphenylene sulfide resin
7	Pressure sensor	(Diffused semiconductor)
8	Housing	ABS resin
9	2-way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

**Cannot be disassembled**

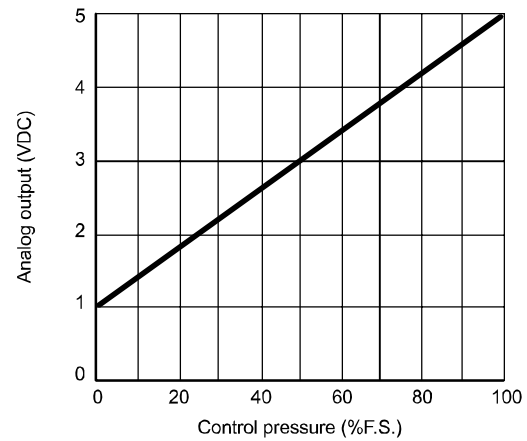
## Dimensions



### I/O characteristics

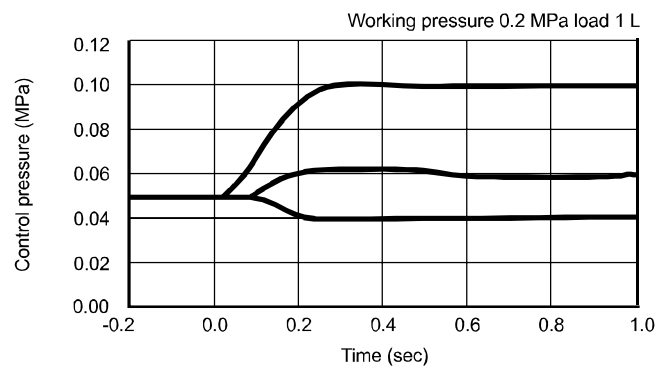
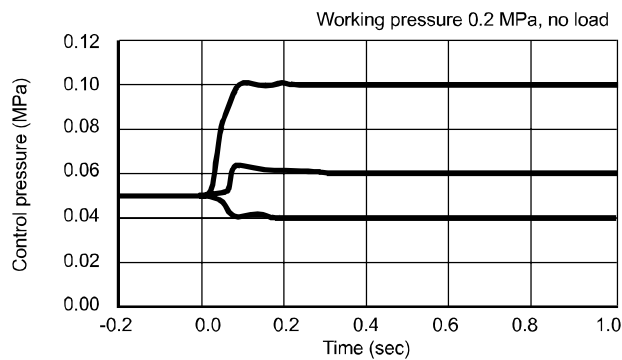


### Analog output

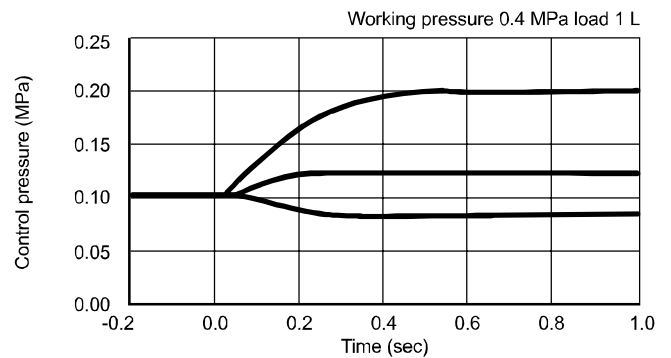
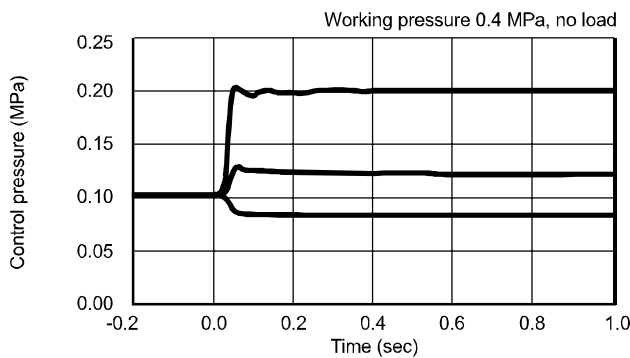


### Step response characteristics (Setting 1)

#### ● EVR-2100



#### ● EVR-2200

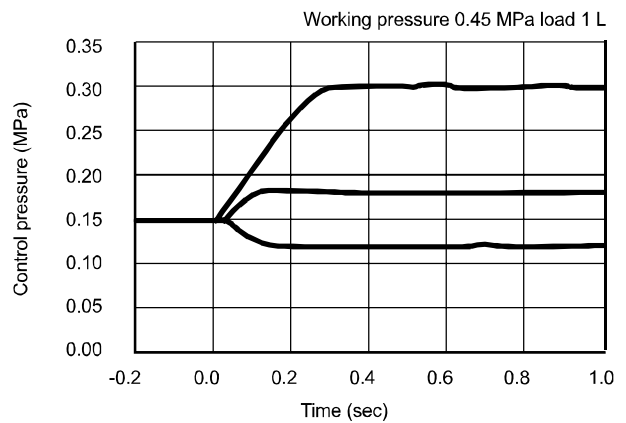
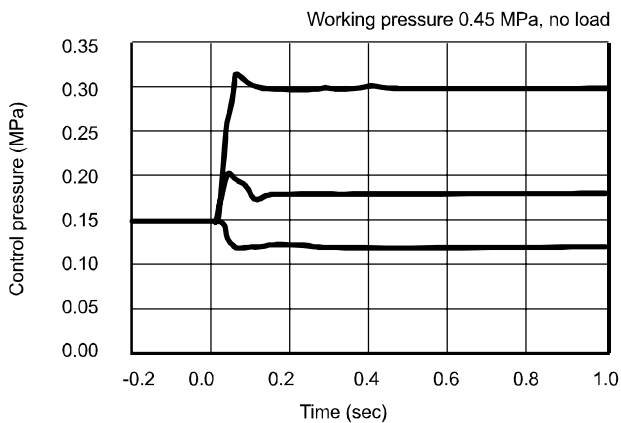


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F (Filtr)
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Outdrs FR
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VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/other
Jnt/tube
AirUnt
PresCompn
Mech/ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/Contr
WaterRtSens
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TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

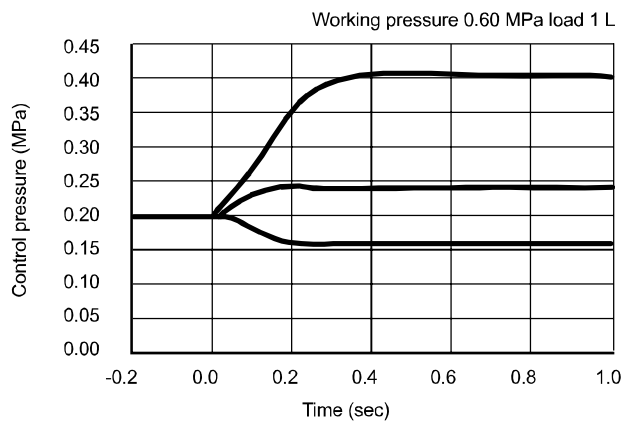
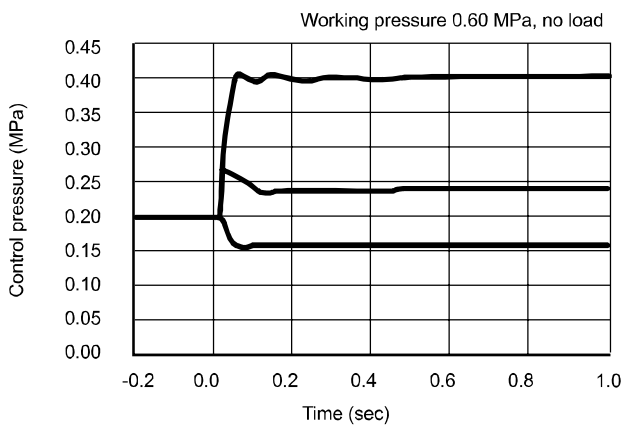
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- MedPresFR
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- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- SpdContr
- SiIncr
- CheckV/other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/ElecPresSw
- ContactSW
- AirSens
- PresSW Cool
- AirFloSens/Contr
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
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- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

## Step response characteristics (Setting 1)

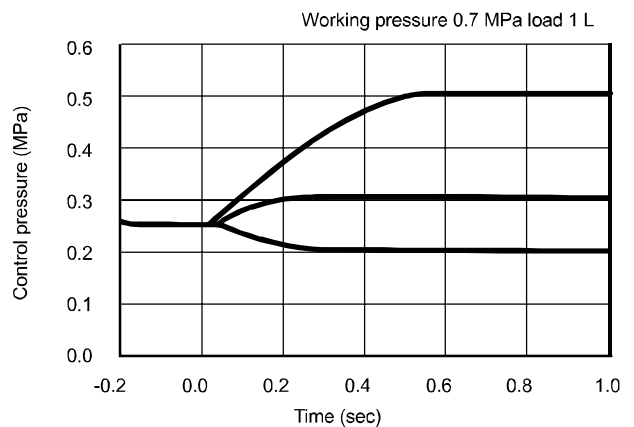
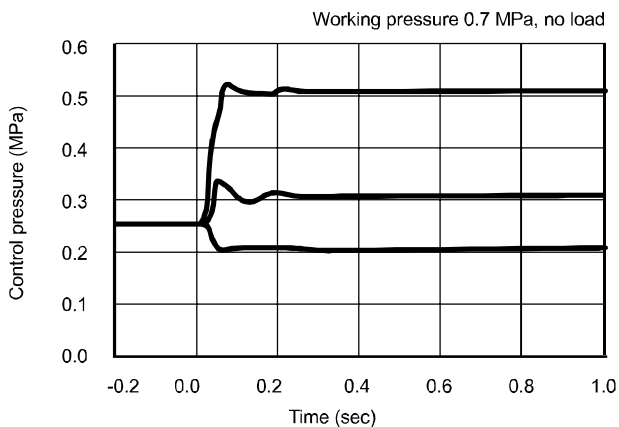
### ● EVR-2300



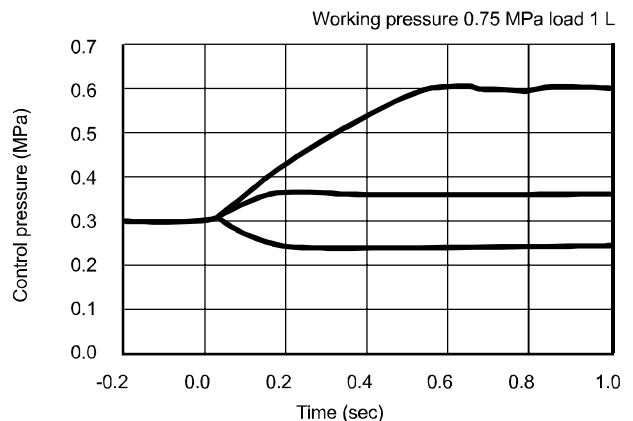
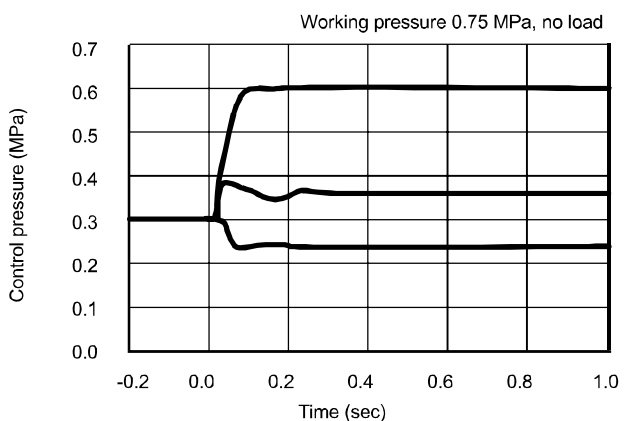
### ● EVR-2400



### ● EVR-2500

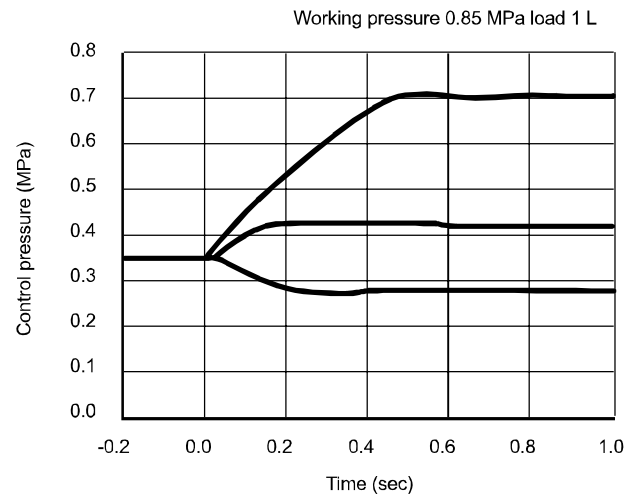
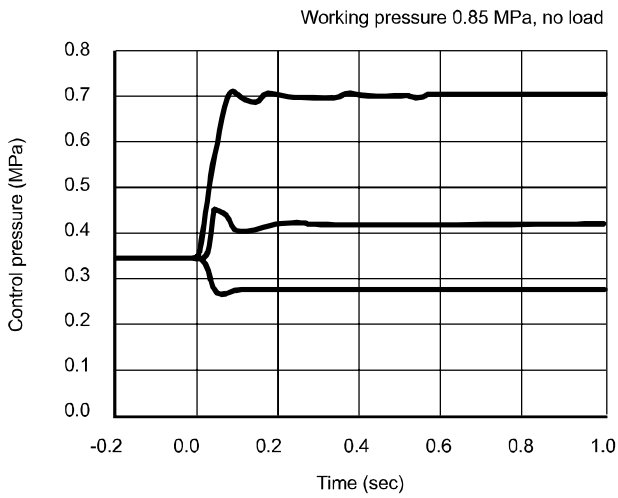


### ● EVR-2600

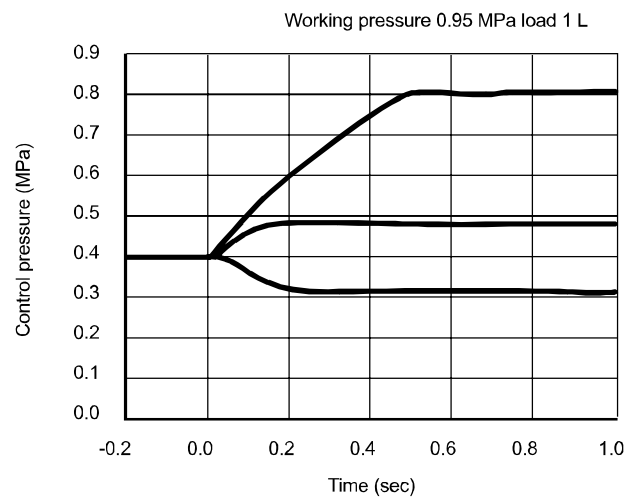
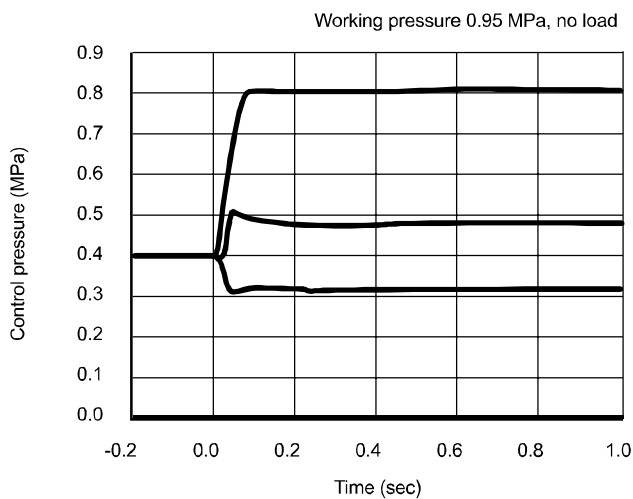


### Step response characteristics (Setting 1)

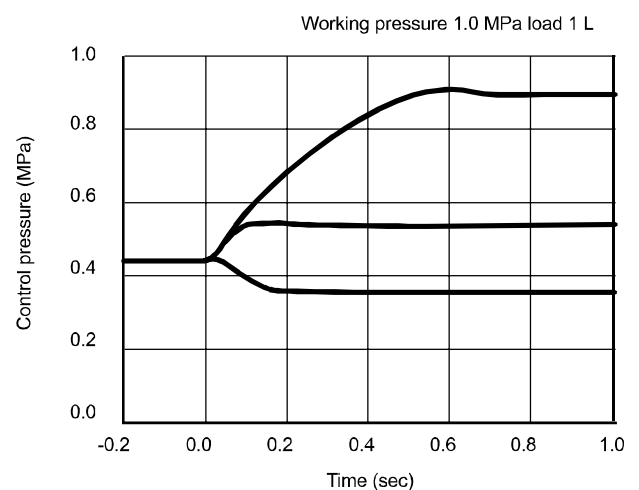
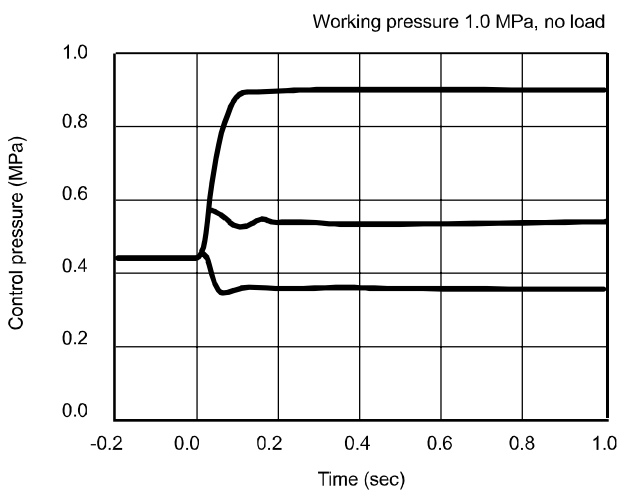
#### ● EVR-2700



#### ● EVR-2800



#### ● EVR-2900



F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FmResistFR
Oil-ProhR
MedPresFR
No Cu/ PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrcsR
VacF/R
Clean FR
<b>ElecPneuR</b>
AirBoost
SpdContr
Silncr
CheckV/ other
Jnt/tube
AirUnt
PresCompn
Mech/ ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/ Contr
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

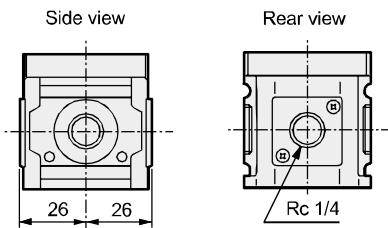


## F.R.L Optional dimensions

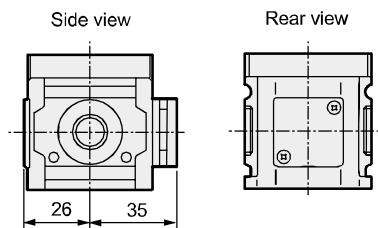
- F (Filtr)
- R (Reg)
- L (Lub)
- PresSW
- Shutoff
- SlowStart
- FlmResistFR
- Oil-ProhR
- MedPresFR
- No Cu/PTFE FRL
- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- SpdContr
- SiIncr
- CheckV/other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/ElecPresSw
- ContactSW
- AirSens
- PresSW Cool
- AirFloSens/Contr
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

### Embedded type option

● Standard: Blank (-E)



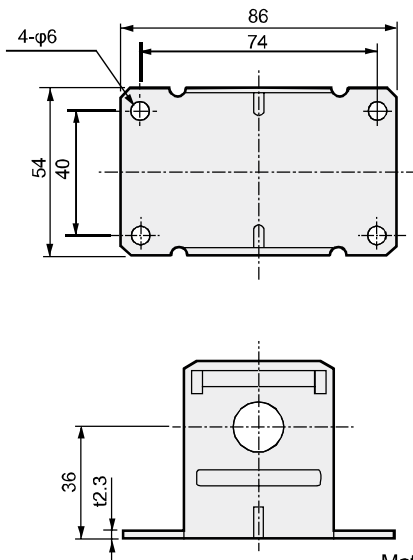
● Dedicated silencer: -E2



Weight: 10g

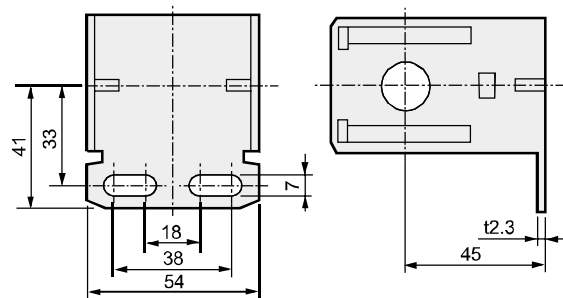
### Bracket option

● B type bracket (Floor mounted): -B



Material : SPCC  
Treatment : Zinc plated  
Weight : 165g

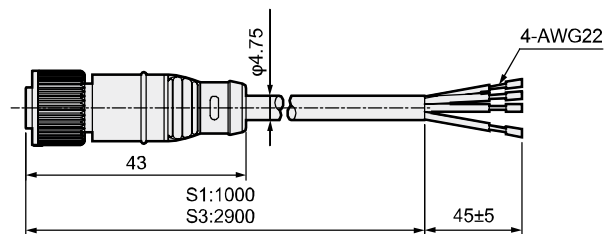
● C type bracket (Wall mounted): -C



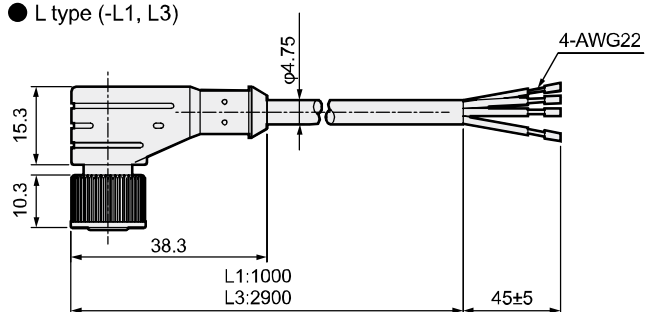
Material : SPCC  
Treatment : Zinc plated  
Weight : 148g

### Cable option

● Straight (-S1, -S3)



● L type (-L1, L3)



\* 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	
1	Brown	Power supply ⊕	24 V			S1:50 S3:135 L1:55 L3:140
2	Black	—	Analog 1 to 5 V			
3	Blue	Common	0 V			
4	White	Input signal	0 to 10 V	0 to 5 V	4 to 20 mA 1 to 5 V	

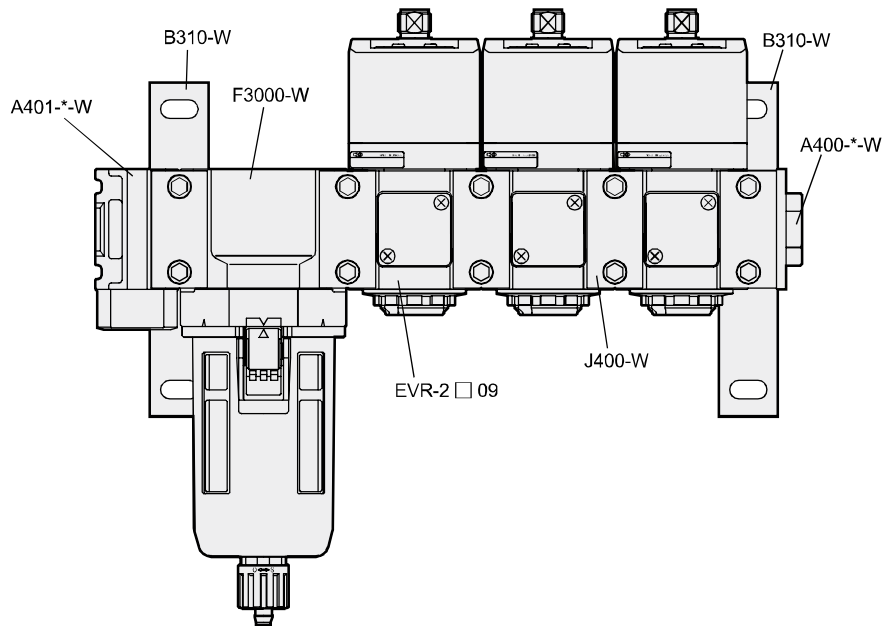
If a cable connector is not used, the following recommended cable sockets can be used.

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

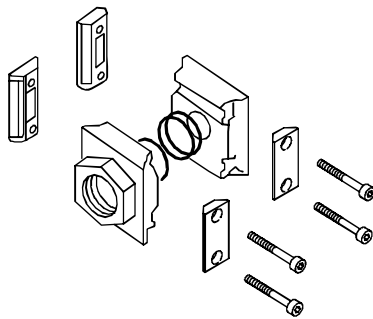
Optional dimensions

Other peripheral devices

- Example of system upgrading

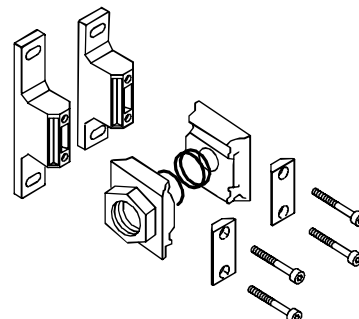


- A400-8/10/15-W  
Pipe adaptor set



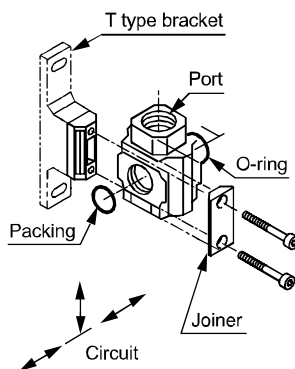
Weight: 160g  
Material: Aluminum alloy die-casting  
Painting

- A400-8-W/10-W/15-W-B31W  
Pipe adaptor set



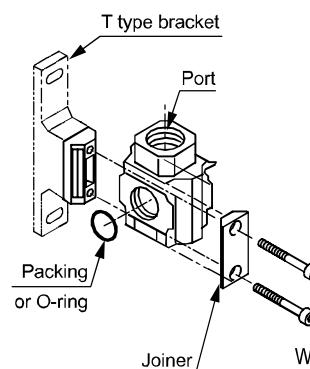
Weight: 270g  
Material: Aluminum alloy die-casting  
Painting

- D401-00-8/10/15-W-(B31W)  
Distributor



Weight: 161g  
216 g(B31W)  
Material: Aluminum alloy die-casting  
Painting

- A401-8/10/15-W-(B31W)  
L type pipe adaptor



Weight: 161g  
216 g(B31W)  
Material: Aluminum alloy die-casting  
Painting

F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FmResistFR
Oil-ProhR
MedPresFR
No Cu/ PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/ other
Jnt/tube
AirUnt
PresCompn
Mech/ ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/ Contr
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

## Operating method

Power ON

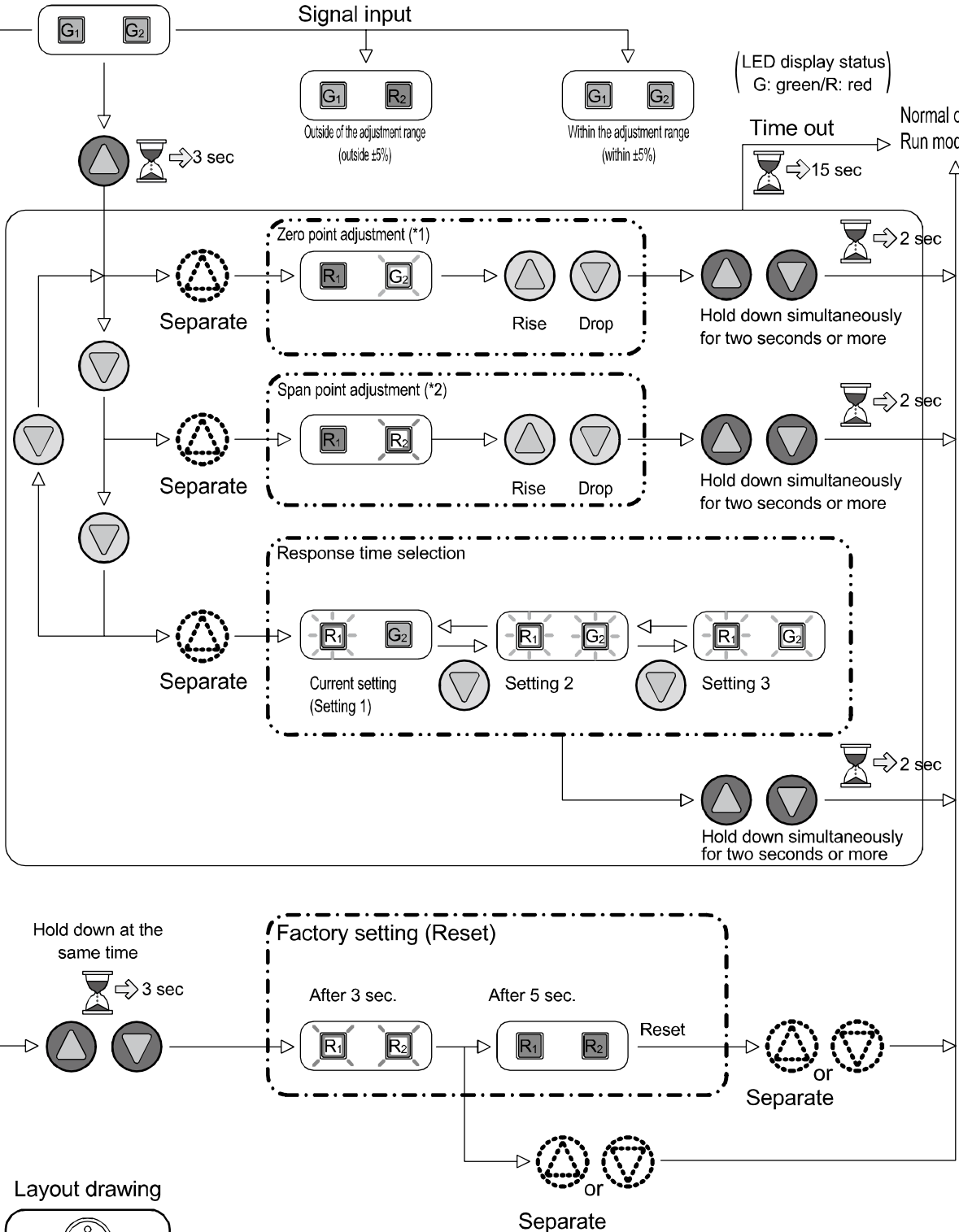
Normal operation  
Run mode

Signal input

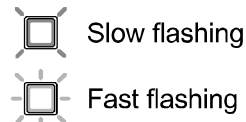
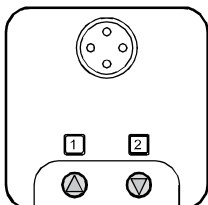
(LED display status)  
G: green/R: red

Time out  
⇒ 15 sec

Normal operation  
Run mode



Layout drawing



Reference values for the adjusting range of each point are as shown below.

\*1 Zero point: -5 to +5% F.S.  
\*2 Span point: 95 to 105% F.S.