

CVAR series Electronic Vacuum Regulator

Product Features

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Feature

- HD OLED display and user-friendly menu interface
- Adjusted continuously for air pressure
- Simplified system components, effectively reducing labor costs
- Realize remote control and program control
- Applicable fluid: air, nitrogen, argon, carbon dioxide



Specification

Item	Model	CVAR2900 <small>Note: 4</small>
Min. pressure <small>Note: 1</small>	kPa	Set pressure -13.3kPa
Max. pressure	kPa	-101kPa
Pressure range setting	kPa	-1.3 ~ -80kPa
Maximum supply flow	L/min	80(-30kPa)
Power	Voltage	DC24V±10%
	Current consumption <small>Note:2</small>	Power supply voltage DC24V: 0.12A or less
Input signal	Current type	4~20mA
	Voltage type	DC0~5V, DC0~10V
Input impedance	Current type	0.25kΩ or less <small>Note:2</small>
	Voltage type	about 75.75kΩ
Output signal (Display output) <small>Note: 3</small>	Analog output	DC1~5V(Load impedance: 20kΩ) DC4~20mA(Load impedance: 0.3kΩ)
	Switch output	NPN open collector output: Max. 30V, 80mA PNP open collector output: Max. 30V, 80mA
Linearity		±1%F.S. or less
Hysteresis		0.5%F.S. or less
Repeatability		±0.5%F.S. or less
Sensitivity		0.2%F.S. or less
Temperature characteristics		0.2%F.S./°C or less
Output pressure indication	Accuracy	±2%F.S. ±1digit or less
	Minimum unit	MPa: 0.001, kgf/cm ² : 0.01, bar: 0.01, psi: 0.1, kPa: 1
Operating temperature range		0 ~ 50°(No condensation)
Enclosure		IP65
Weight	CVAR2900	360g



Note: 1. The minimum supplied vacuum pressure is the set pressure value to 13.3kPa

2. The circuit overcurrent data not included, input voltage is in

3. Analogue output and switch output is option. Switch output has NPN and PNP in option for users.

4. It's an uncontrollable area when pressure 0~-2.5kPa within precise range of zero point.

Code of order

CVAR	29	0	2	1	1	2	N	B	S																																																																													
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1-4.18

■ Cable code: 850616010060

■ Cable code: 850616010061

CVAR series Electronic Vacuum Regulator

Product Features

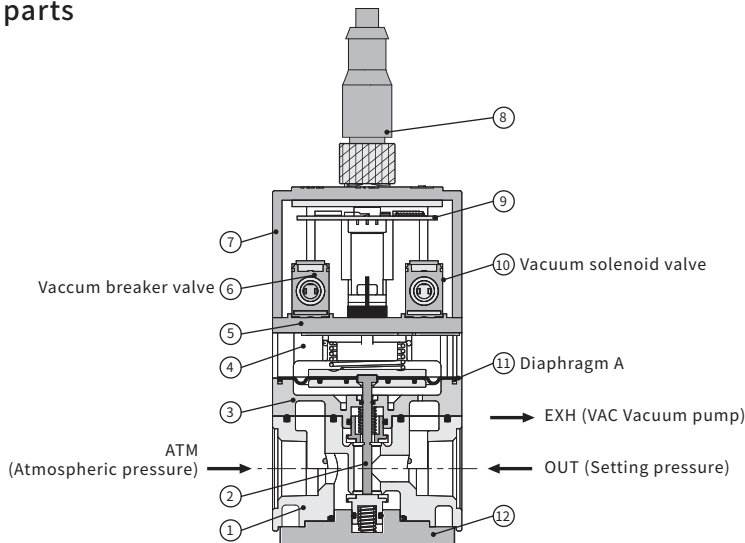
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Working principle

When the input signal rises, the air supply solenoid valve turns ON, and the exhaust solenoid valve turns OFF. Therefore, supply pressure passes through the air supply solenoid valve and is applied to the pilot chamber. The pressure in the pilot chamber increases and operates on the upper surface of the diaphragm A. As a result, the air supply valve linked to the diaphragm opens, and a portion of the supply pressure becomes output pressure. This output pressure feeds back to the control circuit via the pressure sensor. Here, a correct operation functions until the output pressure is proportional to the input signal, making it possible to always obtain output pressure proportional to the input signal.

The correction happens here until vacuum pressure and input pressure consisting to proportional condition, therefore, the correction will have input signal and proportional vacuum pressure.

Component parts



Components and Material list

No.	Item	Material
01	Body	Aluminum alloy
02	Valve assembly	Stainless steel
03	Valve guide cover	Aluminum alloy
04	Valve guide cover	Aluminum alloy
05	Valve guide	Aluminum alloy
06	Air supply valve	—
07	Cover	Plastic
08	Cable connector	PVC
09	Display panel	—
10	Exhaust valve	—
11	Diaphragm	Rubber
12	Base	Aluminum alloy

CVTR

CVAR

CMT

CMA

FP

FPX

FC

FC-D

FC-R

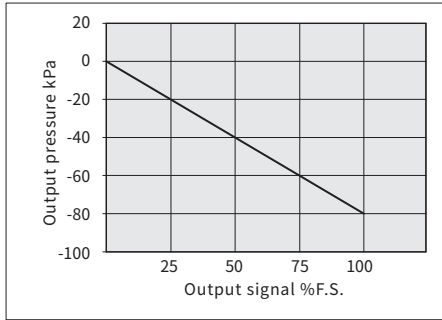
CVAR series Electronic Vacuum Regulator

Characteristics graph

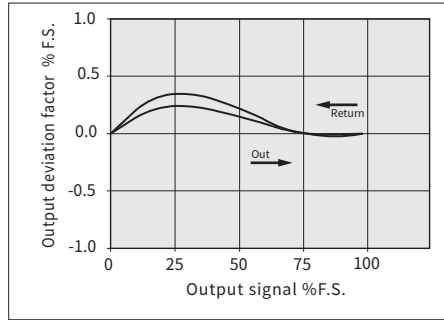
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CVAR2900 series

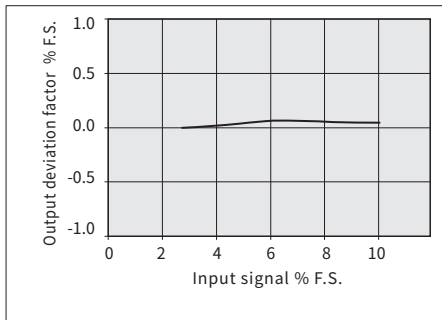
Linearity



Hysteresis

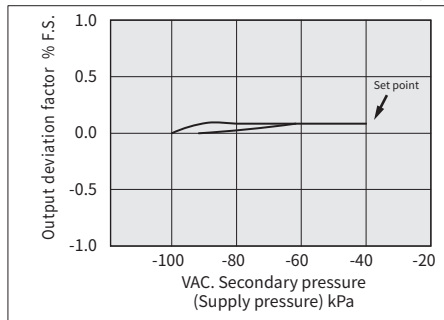


Repeatability



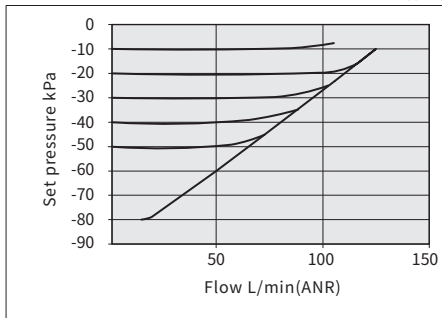
Pressure characteristics

Set pressure:
-20kPa



Flow rate characteristics

Supply vacuum pressure:
-100 kPa

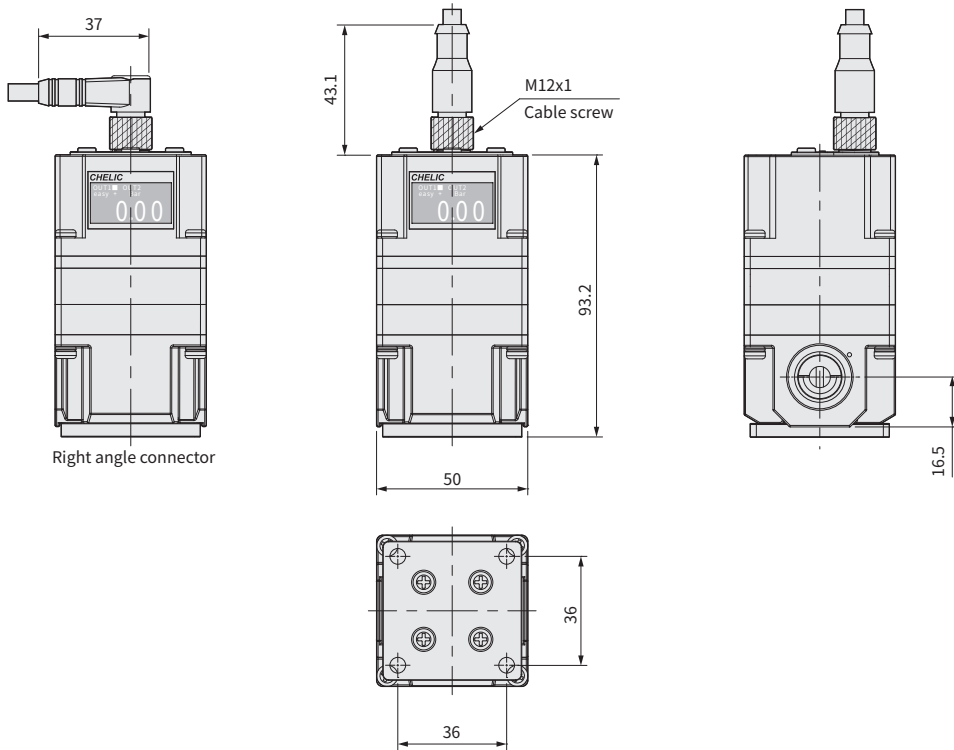


CVAR series Electronic Vacuum Regulator

Dimensions

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CVAR2900



CVTR

CVAR

CMT

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FP

FPX

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FC-D

FC-R

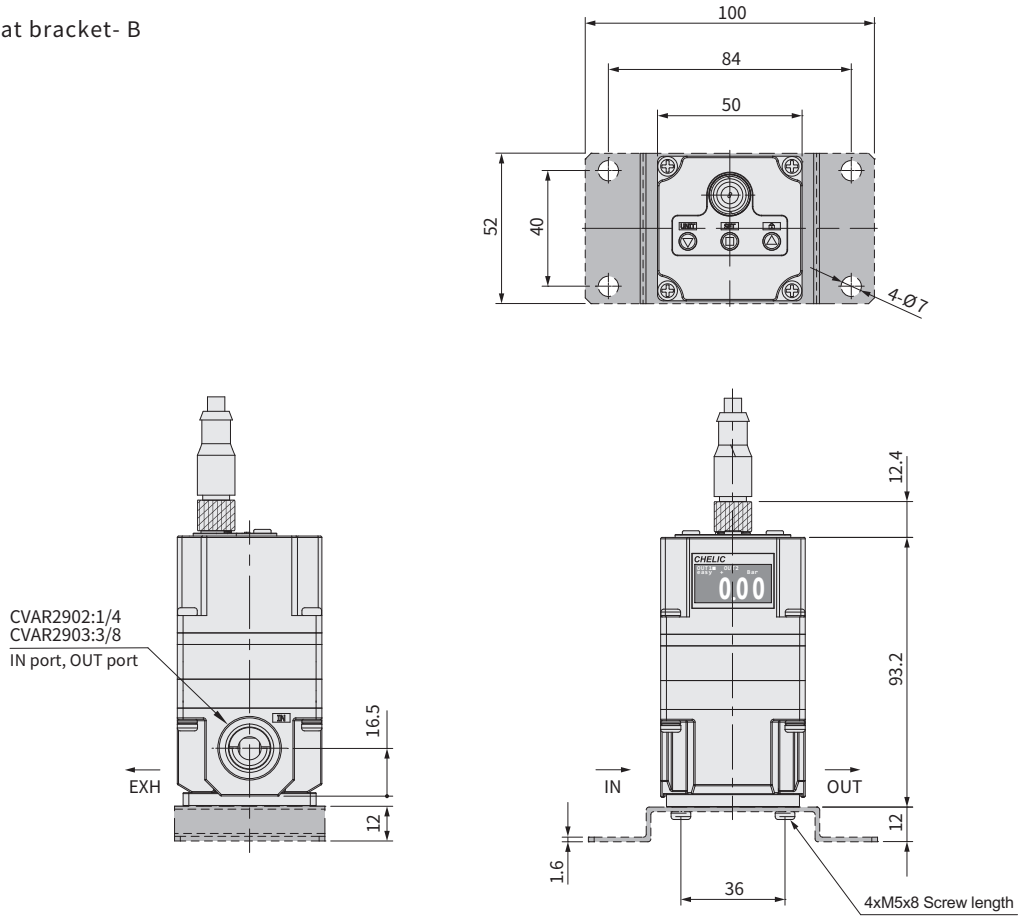
CVAR series Electronic Vacuum Regulator

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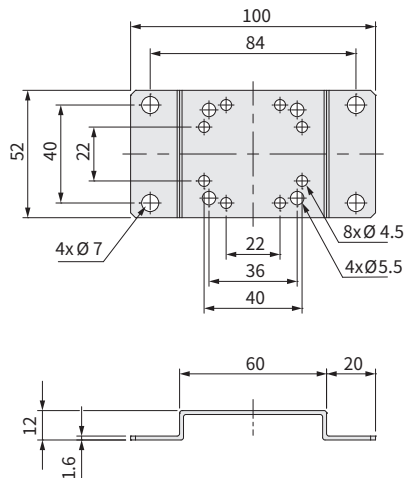
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CVAR2900 Bracket

Flat bracket- B



Flat bracket- B Dimensions



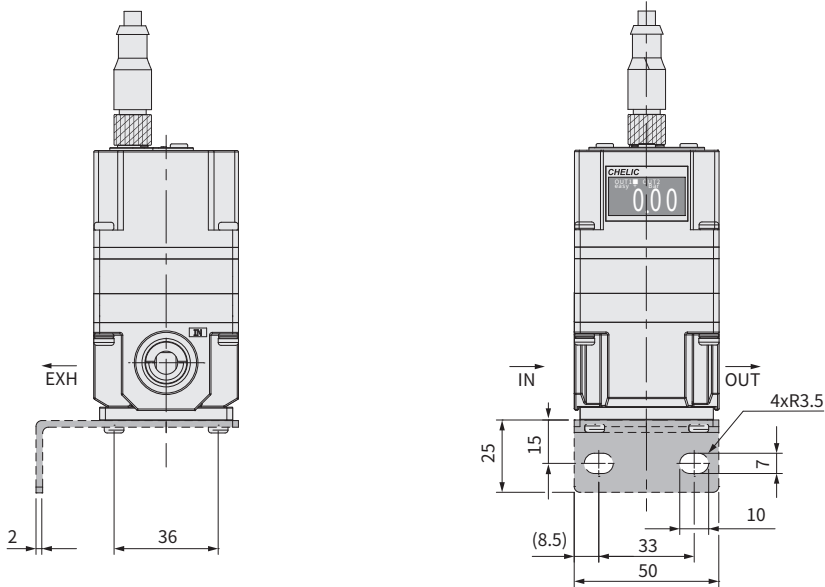
CVAR series Electronic Vacuum Regulator

Dimensions

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CVAR2900 Bracket

● L type bracket- L



CVTR

CVAR

CMT

CMA

FP

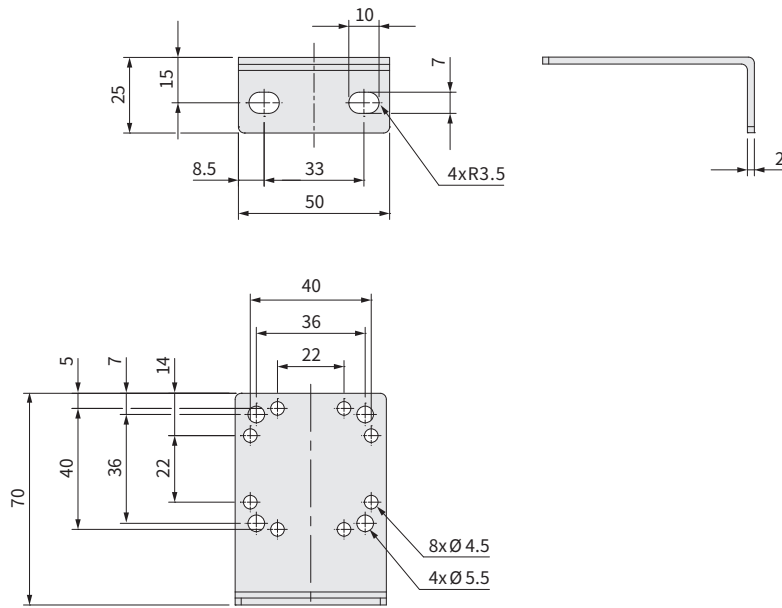
FPX

FC

FC-D

FC-R

● L type bracket- L Dimensions



General Cautions for CVAR series

Specific Product Precautions

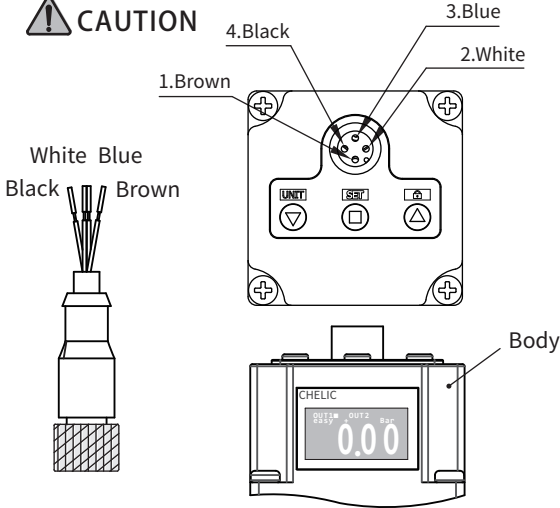
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Safety notice

Wiring

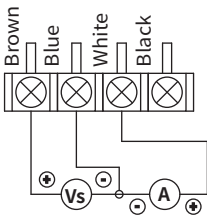


CAUTION



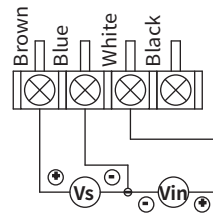
Terminal No.	1	2	3	4
Wire color	Brown	White	Blue	Black
Wiring	Power	Signal	COM	Monitor

▼ Electric current wiring



Vs: Power supply
DC24V ± 10%
A : Input signal DC4~20mA

▼ Voltage wiring



Vs: Power supply
DC24V ± 10%
Vin : Input signal DC0~5V
DC0~10V

Air supply



CAUTION

1. Install air filter near this product on the supply side.
Select a filtration degree of 8 um or less
2. Compressed air containing large amounts of drainage can cause malfunction of this product and other pneumatic equipment. As a countermeasure install an aftercooler, air dryer or Drain Catch, etc.
3. If large amounts of carbon dust are generated by the compressor, it can accumulate inside this product and cause malfunction.

Operating

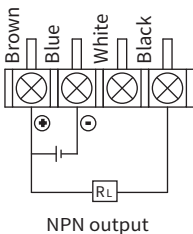


CAUTION

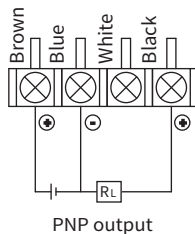
1. Malfunction will be caused when the oil feeder connects on the supply side (IN) of the body. Please make the oil feeder link to output side (OUT) when oil is required by the end product.
2. When the power is off under pressurization, the pressure around output side (OUT) can be ensured. To stay at exhaust condition, please set the pressure lower, cut the power and exhaust remaining air via throttle.
3. When the sudden power cut occurs, the pressure around output side (OUT) can keep at the same level. Please be reminded that pressure will keep dropping until to the same level as atmosphere pressure when the pressure is open to the atmosphere.
4. If the pressure around input side cuts by power off, the solenoid valve will keep operating with sounds. Doing so will damage solenoid valve's life; therefore, please always cut the pressure and also switch the power off.
5. Do not dismantle by yourself which may cause malfunction since all products were all set as specification before shipment.
6. The pressure might be changed due to air consumption at output side (OUT).
The characteristic happens only in stillness mode.
7. For detailed instructions on the use of this product, please refer to the attached manual.
8. The brightness decline of the OLED screen is normal, not affect the functions of the product.

● Monitor output wiring

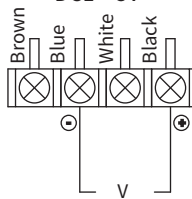
● NPN output



● PNP output



● Analog output DC1 ~ 5V



● Analog output DC4~20mA

