Proportional Vacuum Regulator

QKL-B4HV

Features

- Compact
- High Precision
- High Sensitivity
- Positive & Vacuum Dual-Range Platform

Industrial application

- Semiconductor & Electronics
- Automation & Robotics
- Packaging & Lamination
- Testing & Laboratory Equipment

Product Description

QKL-B4HV is a proportional pressure regulator specifically developed for vacuum applications. It is available in a -1 to 0 bar vacuum pressure range, as well as compound pressure ranges of -1 to 6 bar and -1 to 9 bar, enabling precise and stable control of vacuum pressure to ensure consistent and highly repeatable process conditions.

It adopts a closed-loop control architecture, providing real-time pressure feedback and automatically correcting the output to effectively minimize the impact of vacuum pressure fluctuations on the process. Compared to conventional vacuum valves with mechanical adjustment, QKL-B4HV delivers higher control accuracy and improved system stability, making it particularly suitable for automation and precision processes with stringent vacuum requirements.

QKL-B4HV supports multiple control signals, including 0–10 V, 4–20 mA, and RS485 (Modbus), allowing easy integration into PLCs and industrial control systems. It is widely applied in vacuum-related applications such as semiconductor and electronics manufacturing, automation equipment, packaging and lamination processes, as well as inspection and laboratory equipment, making it an ideal vacuum pressure control solution for equipment development and system upgrades.

All our products have CE, SGS, RoHS certification with ISO13485 quality system.

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Specifications

Type	QKL-B4HV	QKL-B4HV-P6	QKL-B4HV-P9
Input Signal	0-10V / 4-20mA / RS485		
Output Range	-1~0 bar(-100~0 kPa)	-1~6 bar	-1~9 bar
Monitor Output	0-10V / 4-20mA / RS485		
Supply	DC24V (≦14W)		
Response	200 msec		
Medium	Vacuum		
Repeatability	±0.25% F.S.		
Hysteresis	±0.25% F.S.		
Linearity	±0.25% F.S.		
Accuracy	±0.25% F.S.		
Sensitive	±0.25% F.S.		
Max. Flow Rate	90 L/min @1bar		
Temp. Range(Operating)	-196 ~ 70 °C (-320 ~ 158 °F)		
Port Size	1/8"PT		
Manifold Material	Aluminum		
Mounting Bracket Material	Galvanized Steel		
Electrical Connection	M12 Connector(2m)		
Ingress Protection	IP 65		
Weight	800 g		

Ordering Code

QKL – □ – □ – □ – □ – □ – □

Type

B4HV	Internal Feedback	1/8”PT

Input Signal

*E	0 – 10 V
A	4 – 20 mA
R	RS485 Modbus

Monitor Output

C	0 – 10 V
A	4 – 20 mA
R	RS485 Modbus

Mounting Bracket

M	M type

Pressure Range

—	-1~0 bar (-100~0 kPa)
P6	-1 ~ 6 bar
P9	-1 ~ 9 bar

Display Unit

S	kPa
U	bar

* For Command Signal type 0-10V, the minimum driving current is 3mA.

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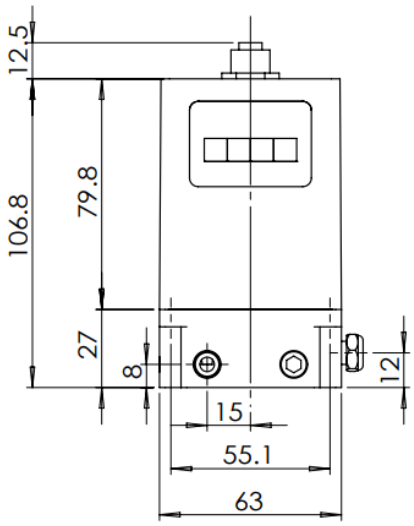
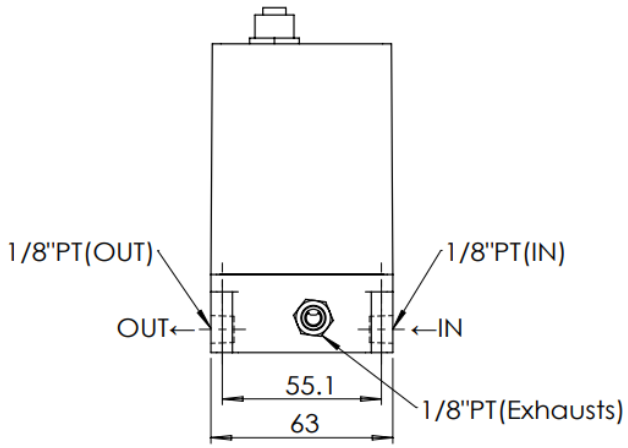
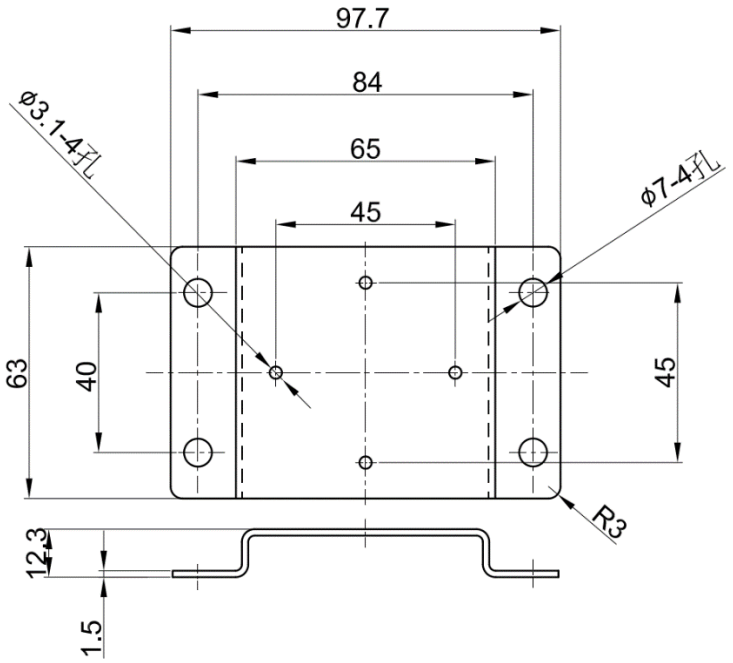
Overall Dimension

◆ QKL-B4H





◆ Bracket M Type



Proportional Vacuum Regulator

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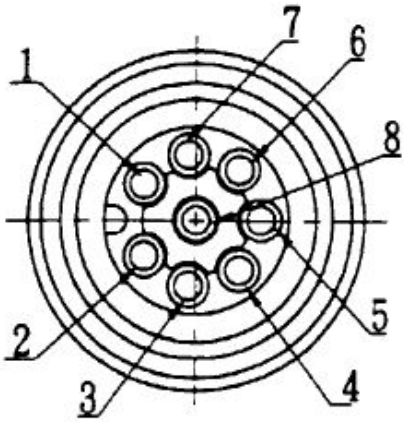
Wiring Description



No.	Color	Function
1	Blue	24V DC Power (-)
2	Brown	24V DC Power (+)
3	Black	Monitor output (+)
4	White	0-10 V Command (+) 4-20 mA Command (+)
5	Gray	RS485(D-)
6	-	-
7	purple	Command (-) Monitor output (-)
8	Red	RS485(D+)

※The wiring diagram shows from top view

Warning: Do not rotate the connection socket when connected, to avoid damage to the internal sensor.

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Product Precautions

Installation

The valve can be mounted in any position. For very low pressure control, works best when mounted upright.
And Ensure a minimum closed end volume of 40c.c. to allow proper functioning.

Preparation Before Piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

Wrapping of Sealant Tape

When screwing together pipes and fittings, etc., be certain that chips from the pipe threads and sealing material do not get inside the piping. When sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

Operating Environment

1. Do not operate in locations having an atmosphere of corrosive gases, chemicals, sea water, or where there will be contact with the same.
2. In locations where the body is exposed to water, steam, dust, etc., there is a possibility that moisture or dust could enter the body through the EXH port, solenoid valve EXH port and/or built-in regulator EXH port, thereby causing problems.
3. In locations which receive direct sunlight, provide a protective cover etc.
4. In locations near heat sources, block off any radiated heat.
5. Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.

Air Supply

1. Compressed air, nitrogen, oxygen or argon can be used as a fluid.
2. Do not use compressed air which includes chemicals, synthetic oils containing organic solvents, salt, or corrosive gases, etc., as this can cause damage or malfunction.
3. If oxygen is used as the fluid, it can lead to serious and unforeseen risks. However, it is possible to manage and control the risk of hazards and economic loss. In order to use the product safely, it should only be handled by personnel with appropriate knowledge, with support from a suitably qualified specialist.
4. Oxygen gas increases the susceptibility of substances to burning; Oxygen gas can be ignited by frictional heat and static electricity. If oxygen is ignited, the metal and seal materials burn. Therefore, flush the piping thoroughly and mount a suitable filter to prevent foreign matter such as metal powder and dust from entering the product.
5. Take safety measures by installing safety devices (e.g. a circuit that stops the supply of oxygen gas) to prevent fire and explosion in the event of failure, taking flameproof safety standards into consideration.
6. Since there are some exhaust ports on the product, connect the piping in order to exhaust oxygen. Do not block the exhaust port.

Warranty

KaoLu Enterprise Co., Ltd. products are warranted to the original purchaser only against defects in material or workmanship for 6 months from the date of manufacture. The extent of KaoLu's liability under this warranty is limited to repair or replacement of the defective unit at KaoLu's option. KaoLu shall have no liability under this warranty where improper installation or filtration occurred.