High Pressure Proportional Regulator

QKL-B1S.B2S/QKL-B3H

Features

- Compact
- High Precision
- High Sensitivity
- Wide Pressure Range

Industrial application

- Laser Cutter
- Leak Tester
- Tension Control
- PET bottle molding machine
- Multi-Stage Pressure Control

Product Description

This series is a complete closed loop servo system consisting of two solenoid valves, an internal pressure transducer, and electronic controls. Based on analog signal, the pressure is controlled by two solenoid valves to maintain precise pressure; one valve functions as inlet control, the other as exhaust. The pressure output is measured by an internal or an external feedback pressure transducer that provides a feedback signal to the electronic controls. The regulator is suitable for industries that require precise pressure changes at any time and monitor pressure values. Available with 3 selections of input signal: 0-10VDC, 4-20mA, or RS485 Modbus. Monitor signal can be chosen from 1-5V, 0-10V, or 4-20mA. Internal pressure transducer comes with B1S, B3H-1 series, whereas B2S and B3H-2 uses an external pressure transducer for feedback (ideal for when the vessel is distant away from the regulator).
All our products have CE, SGS, RoHS certification with ISO13485 quality system.

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Specifications

系列 Type	B1S、B2S	B3H-1、B3H-2
Input Signal	0-10V / 4-20mA/ RS485	
Output Range	0-30bar(0-435psi)	
Supply Pressure Max	34bar(493psi)	
Monitor Output	1-5V / 0-10V / 4-20mA / RS485	
Supply	DC24V (≦4W)	
Response	2S	0.5S
Medium	Clean compressed air or with 5 μm filter	
Repeatability	±0.1% F.S.	±0.2% F.S.
Hysteresis	±0.1% F.S.	±0.3% F.S.
Linearity	±0.3% F.S.	±0.2% F.S.
Accuracy	±0.2% F.S.	±0.3% F.S.
Flow Rate	40 L/min@ 30bar	6000 L/min@ 30bar
Temp. Range(Operating)	0-70°C (32-158 °F)	
Port Size	PT1/8"	G3/8"
Manifold Material	Aluminum	
Wetted Materials	Aluminum, Stainless steel, NBR	
Electrical Connection	M12 Connector(2m)	
Ingress Protection	IP65	
Life Cycle	Over 1 Billion Times	
Weight	420 g	750 g

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Ordering Code

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Type

B1S	Low flow with internal feedback	PT 1/8”
B2S	Low flow with external feedback	PT 1/8”
B3H-1	High flow with internal feedback	G3/8”
B3H-2	High flow with external feedback	G3/8”

Monitor Output

C	0 – 10 V
A	4 – 20 mA
D	1-5 V
R	RS485 Modbus

Input Signal

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

Display Unit

S	psi
U	bar

Mounting Bracket

M	M type
L	L type

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

※ Please consult us for customized pressure range.

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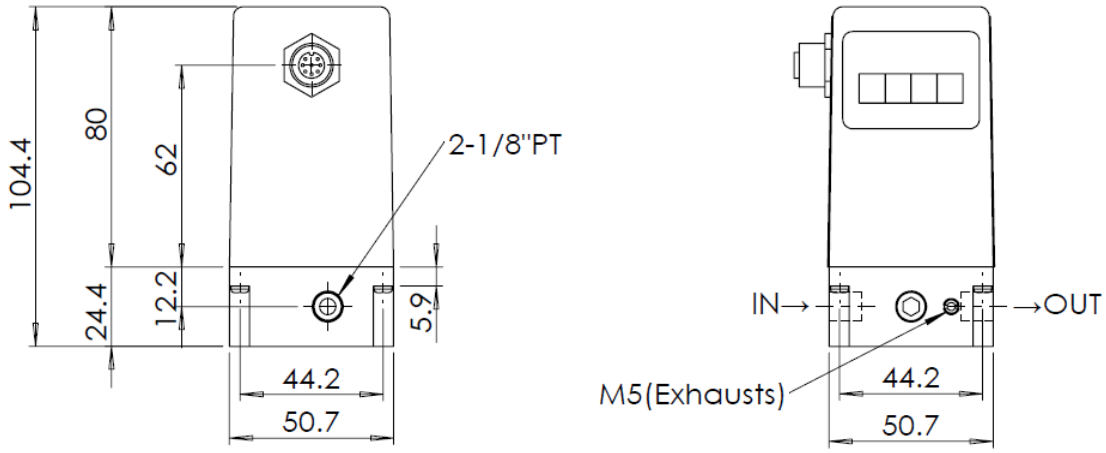
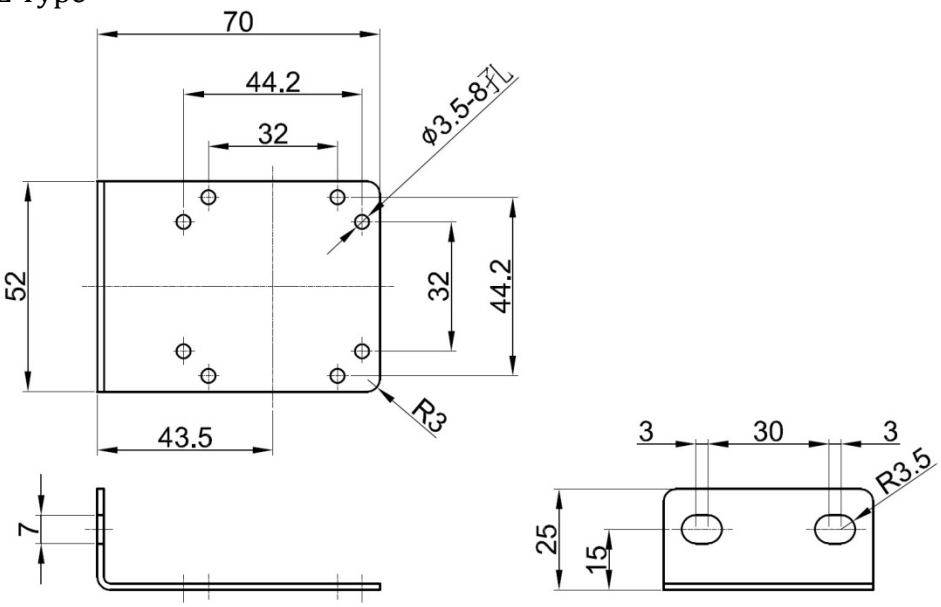
Overall Dimension

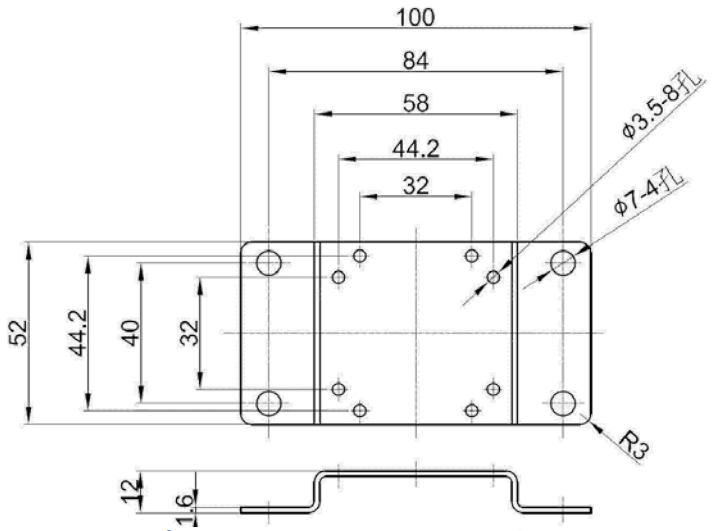
◆ QKL-B1S、QKL-B2S



◆ Bracket L Type



◆ Bracket M Type



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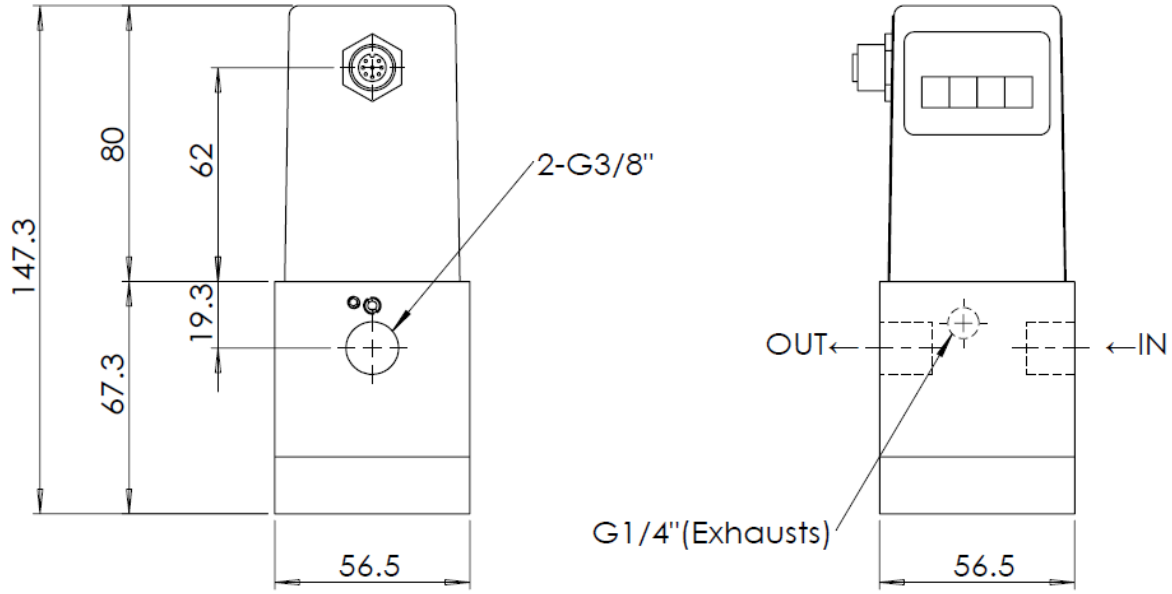
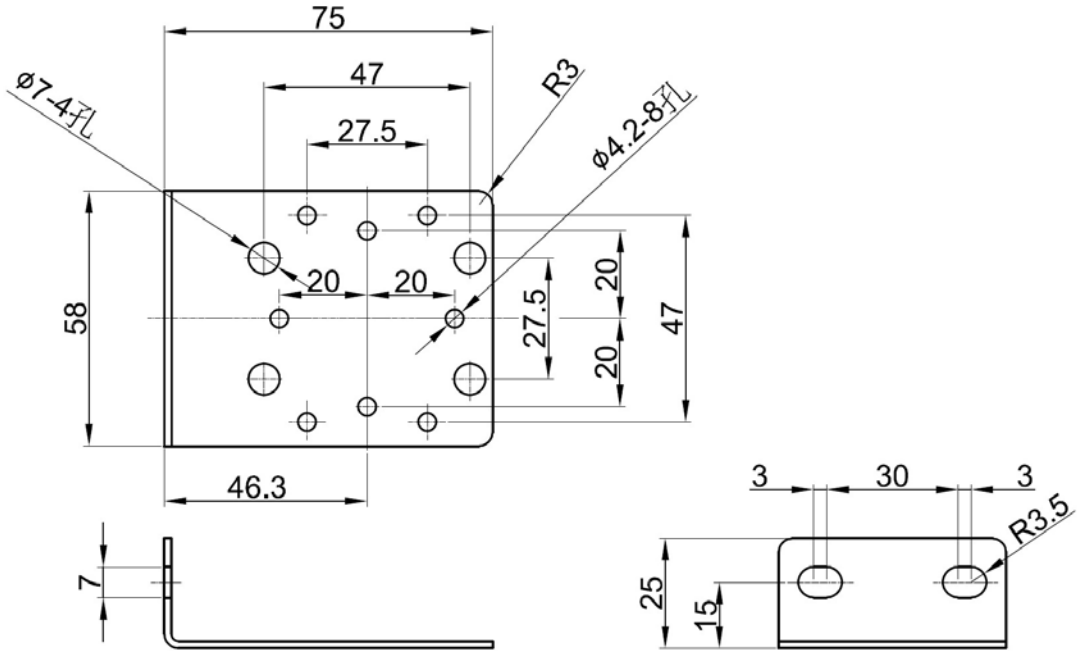
Overall Dimension

◆ QKL-B3H-1、QKL-B3H-2



◆ Bracket L Type



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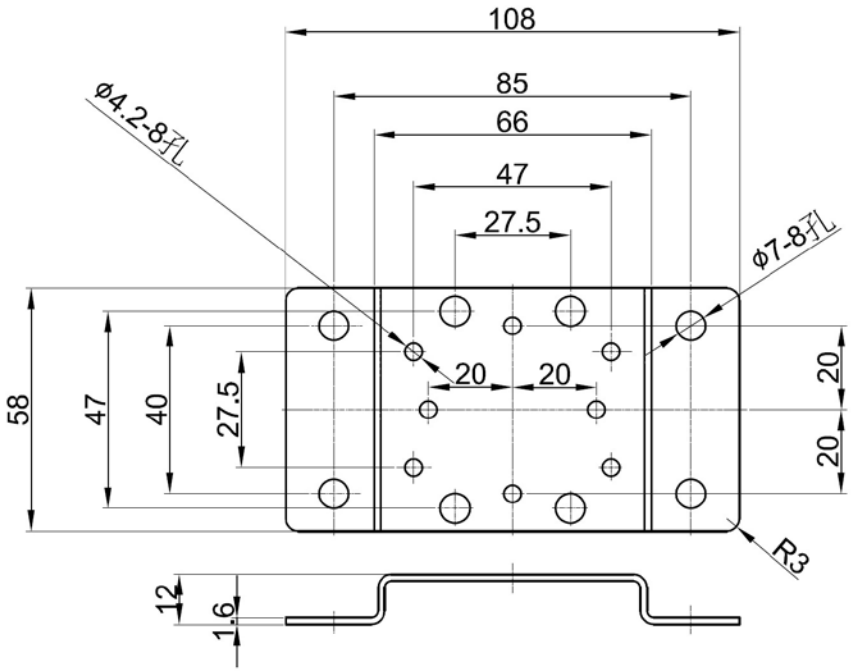
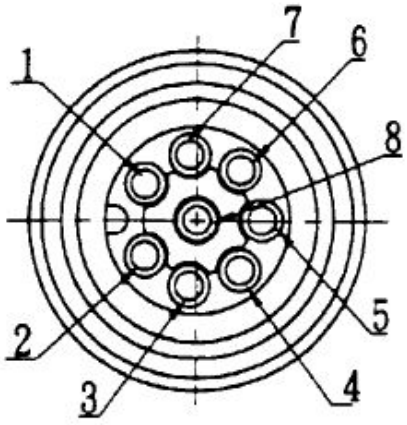
◆ Bracket M Type



Wiring Description



The wiring diagram shows from top view

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

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 1 year 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.