Extremely High Resolution Proportional Pressure Regulator	
QKL-B1TR	**KAO LU**

CE 、 SGS 、 RoHS 、 ISO 13485:2016

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 an electronic control board. Based on input analog signal, the output pressure is controlled by two solenoid valves; one valve functions as inlet control, the other as exhaust. The output pressure is measured by an internal or an external feedback pressure transducer that provides a feedback signal to the electronic board. KaoLu regulator offers 3 selections of input and output signal: 0-10VDC, 4-20mA, and RS485 ModBus. This ultra-high resolution pressure regulator provides a step control of ± 0.015%， ideal for pressure sensitive applications.

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

Ordering Code

QKL - ☐ - ☐ - ☐ - ☐ - ☐

Type

B1TR	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

Display Unit

S	psi
U	bar

Mounting Bracket

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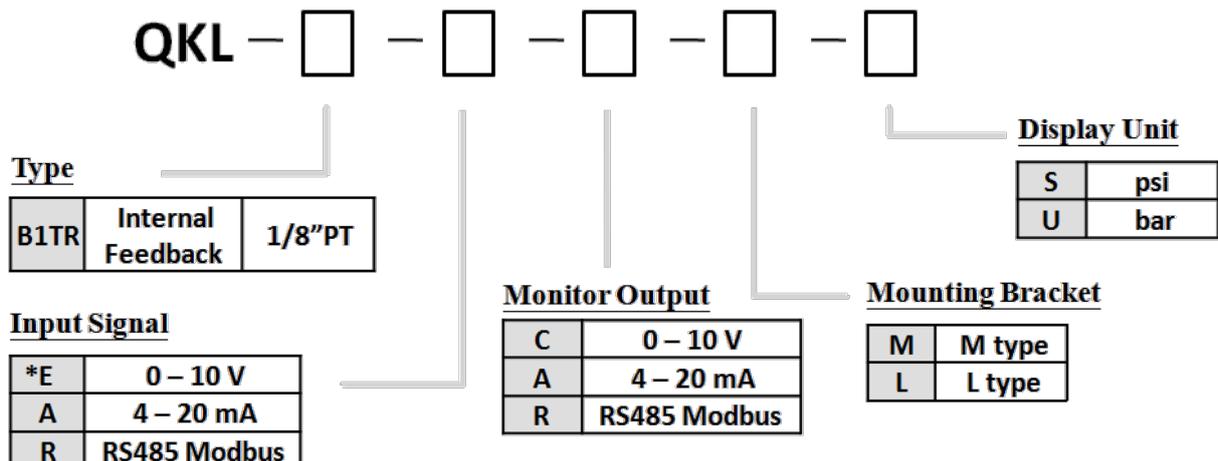
*For Command Signal type 0-10V, the minimum driving current is 3mA.

Specifications

| Type	B1TR
Input Signal	0-10V / 4-20mA / RS485
Output Range	10 bar (0-150 psi)
Supply Pressure Max	11.5 bar (165 psi)
Monitor Output	0-10V / 4-20mA / RS485
Supply	DC24V (≦4W)
Response	0.8 S
Medium	Clean compressed air or with 5 μm filter
Repeatability	±0.02% F.S.
Resolution(max)	±0.015% F.S.
Accuracy	±0.25% F.S.
Hysteresis	±0.2% F.S.
Flow Rate	16L/min @ 8bar (116psi)
Temp. Range(Operating)	0 ~ 70 ^{o}C (32 ~ 158 ^{o}F)
Port Size	1/8" PT
Manifold Material	Aluminum
Wetted Materials	Aluminum, Stainless steel, Brass, NBR
Electrical Connection	M12 Connector(2m)
Ingress Protection	IP 65
Weight	420 g

Overall Dimension
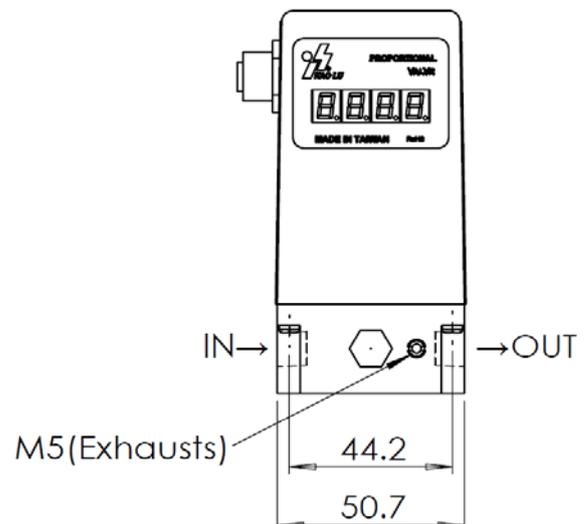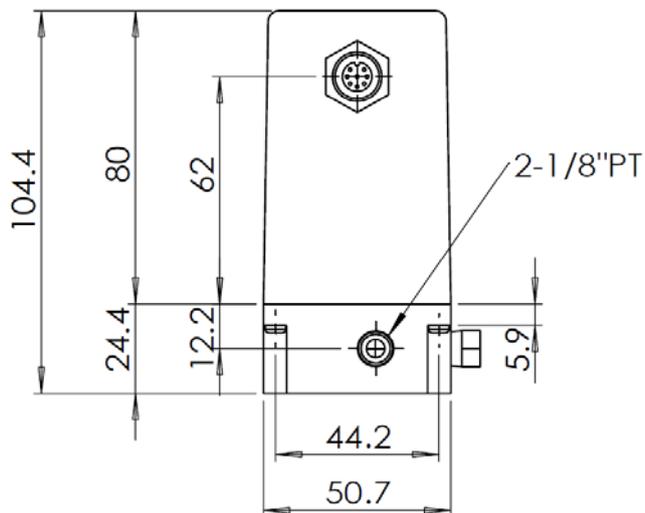
Wiring Description
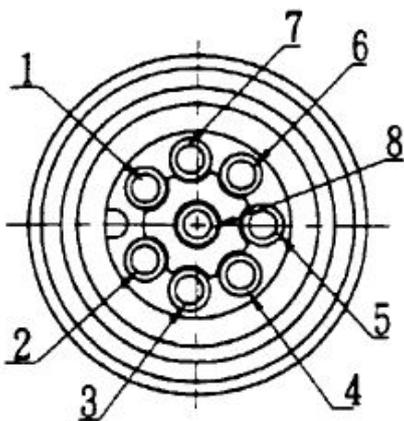
※The wiring diagram shows from top view

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 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.