



超高精度压力比例阀

Ultra High Resolution Proportional Pressure Regulator

QKL-B1TR • QKL-B4HR



产品特点 Features

- ◆ 轻巧易安装
Compact
- ◆ 高精度
High Precision
- ◆ 高灵敏度
High Sensitivity
- ◆ 广泛压力范围
Wide Pressure Range

产业应用 Applications

- ◆ 低压泄漏测试
Leak Testing At Low Pressure
- ◆ 微流控流量控制
Microfluidics Flow Control
- ◆ 点胶设备
Dispensing
- ◆ 多段压力控制
Multi-Stage Pressure Control

QKL-B1TR/QKL-B4HR 为一款超高分辨率电控压力比例阀，可提供 $\pm 0.005\%$ 的移动精度，该比例阀适合针对随时需要精准调控压力变化与监控压力值的产业。。

此系列为一个死循环回路设计，由两个电磁阀、压力传感器以及电子回路控制所组成，且配有极小的 0.1mm 排气孔(1/8"PT 牙孔)。根据输入讯号，两个电磁阀一个作为入气控制，另一个作排气控制及恒定的出气，以保持精确的压力输出。该系列具有高速、高分辨率的压力变化；压力输出由内部压力传感器测量，该传感器再向电子控制器提供反馈讯号。

我们的比例阀输入信号及监控讯号皆提供了 0-10VDC(电压) 与 4-20mA(电流) 及 RS485 ModBus 通讯可选择。所有的产品皆有 CE、SGS、RoHS 及 ISO13485 品质认证。

QKL-B1TR/QKL-B4HR is ultra high resolution electro-pneumatic proportional pressure control valves provides a step control of $\pm 0.005\%$ F.S. , ideal for very sensitive applications.

This series is a complete closed loop servo system consisting of two solenoid valves, an internal pressure transducer, and electronic controls.

A bleed orifice of 0.1mm (M5 exhaust) comes with this series. Based on input signal, the pressure is controlled by two solenoid valves and the bleed to maintain precise pressure; one valve functions as inlet control, the other as exhaust, and a constant bleed. This series features fast and high resolution pressure change. The pressure output is measured by an internal feedback pressure transducer that provides a feedback signal to the electronic controls. There are 3 selections of input signal and monitor signal: 0-10VDC, 4-20mA or RS485 ModBus.

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

型号选择 Ordering Code

QKL — — — — — —

Type

B1TR	Internal	1/8"PT
B4HR	Feedback	

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

Output Pressure

P2	2 bar
P5	5 bar
P10	10 bar

Display Unit

S	psi
U	bar

Mounting Bracket

M	M type
L	L type

*若控制讯号选择 0-10V，请留意最小的驱动电流为 3mA。

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



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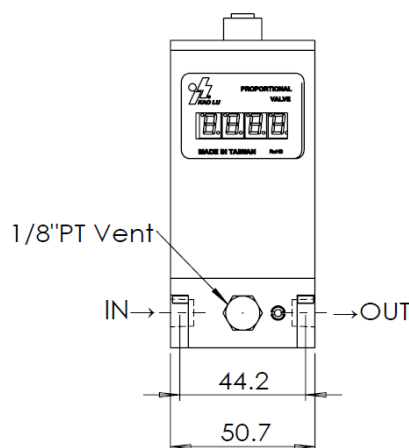
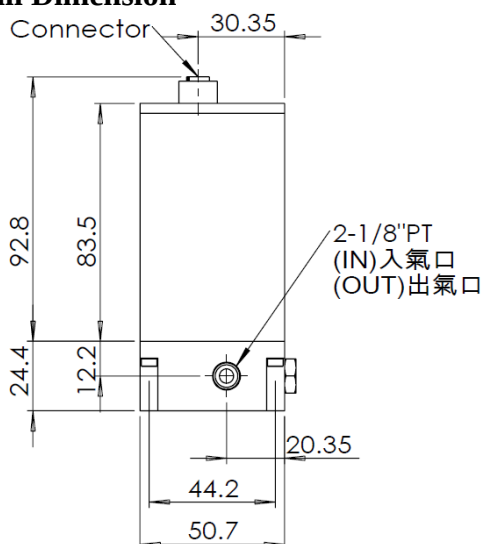
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产品规格 Specifications

系列 Type	QKL-B1TR			QKL-B4HR		
输出压力Output Range	2 bar (29psi)	5 bar (72psi)	10 bar (145psi)	2 bar (29psi)	5 bar (72psi)	10 bar (145psi)
最大入气压力Supply Pressure Max.	4 bar (58psi)	7 bar (101.5psi)	12 bar (174psi)	3 bar (43.5psi)	10 bar (145psi)	12 bar (174psi)
输入讯号Input Signal	0-10V / 4-20mA / RS485					
监控信号Monitor Output	0-10V / 4-20mA / RS485					
工作电源Power Supply	DC24V (≤3W)			DC24V (≤5W)		
介质 Medium	Clean compressed air or with 5 μm filter					
重复精度Repeatability	±0.02% F.S.			±0.05% F.S.		
分辨率 Resolution(max.)	±0.005% F.S.			±0.01% F.S.		
综合精度 Accuracy	±0.1% F.S.			±0.1% F.S.		
迟滞Hysteresis	±0.1% F.S.			±0.1% F.S.		
流量 Flow Rate	2.5L/min @ 1bar (orifice: 0.45mm)			3L/min @ 1bar(orifice: 0.5mm) 120L/min@1bar(orifice: 3.0mm)		
使用温度范围Temp. Range(Operating)	0 ~ 70 °C (32 ~ 158 °F)					
口径 Port Size	1/8" PT					
底座材质 Manifold Material	铝合金 Aluminum					
接液材质 Wetted Materials	铝合金、不锈钢、铜、氟橡胶 Aluminum, Stainless steel, Brass, FKM					
电器连接 Electrical Connection	M12电气端子(2米) M12 Connector(2m)					
防护等级 Ingress Protection	IP 65					

外观尺寸 Overall Dimension

QKL-B1TR





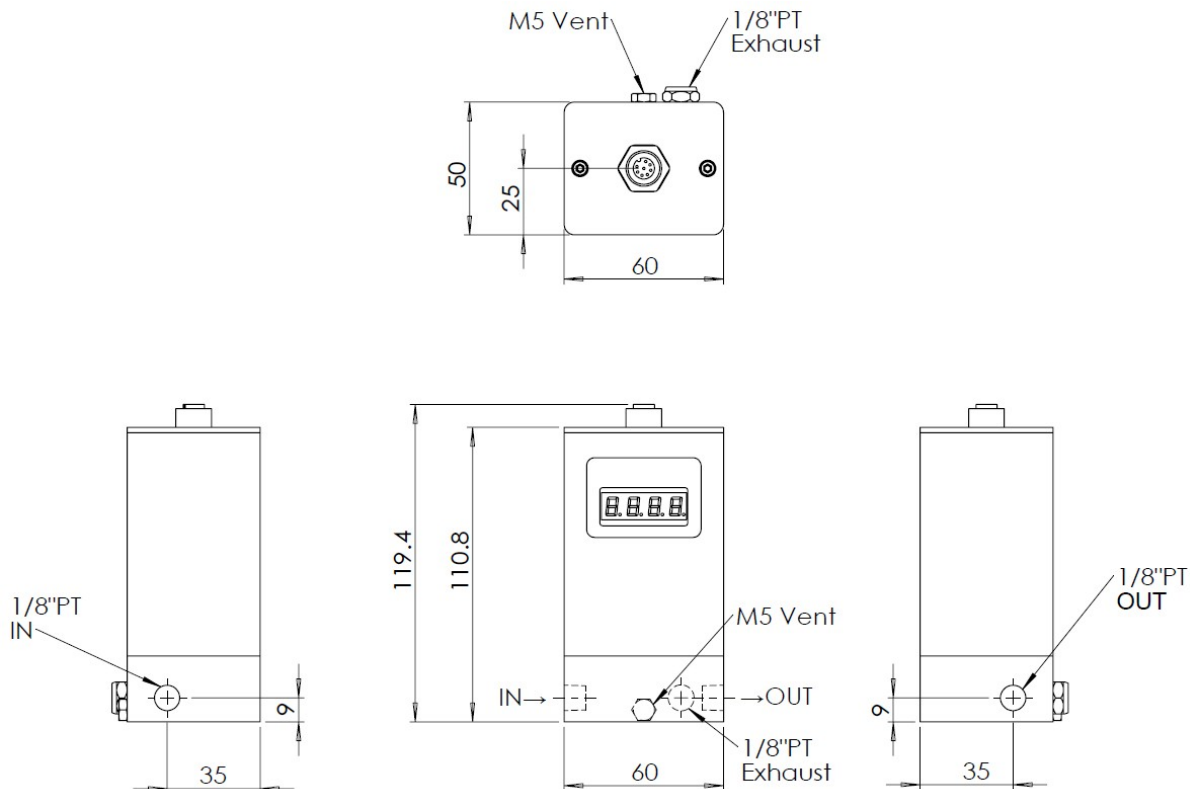
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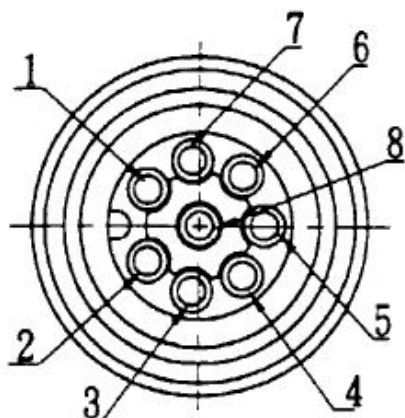
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外观尺寸 Overall Dimension

QKL-B4HR



接线方式 Wiring Description



※此接线图为线材公座俯视图
The wiring diagram shows from top view.

编号 No.	颜色 Color	功能 Function
1	蓝色 Blue	电源(-) 24V DC Power (-)
2	棕色 Brown	电源(+) 24V DC Power (+)
3	黑色 Black	监控输出(+) Monitor output (+)
4	白色 White	模拟讯号(+) 0-10 V Command (+) 4-20 mA Command (+)
5	灰色 Gray	RS485(D-)
6	-	-
7	紫色 purple	模拟讯号(-) Command (-) 监控输出(-) Monitor output (-)
8	红色 Red	RS485(D+)



警告: 当安置完成信号线后,切勿旋转拉扯插头,以避免内部传感器受到损害,造成产品功能异常或故障。

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