



流量控制器

Pressure-Controlled Flow Controller(non-relief)

QKL-B1HF



产品特点 Features

- ◆ 微流量控制
Micro Flow Control
- ◆ 高精度
High Precision
- ◆ 高灵敏度
High Sensitivity

产业应用 Applications

- ◆ 高分辨率压力控制
High resolution pressure control
- ◆ 动态比例压力控制
Dynamic proportional pressure control
- ◆ 高分辨率流量控制
High resolution flow rate control

QKL-B1HF 为一款超高分辨率压力比例阀，是将命令讯号转换为客户所设定压力的控制器。该系列为一个闭循环回路设计，由一个电磁阀、整合式压力传感器以及电子回路控制所组成；控制板将命令讯号与传感器进行比较，进而驱动电磁阀，即使所需的流量有变化，也能保持所设定的压力。

此系列有两种版本可选择：内建排气的压力控制或没有内建排气的压力控制。内建排气控制系指在应用上不会消耗任何气体，在压力调节上排气量很小。没有内建排气指应用上会消耗气体或适用于易燃气体的流量控制；此版本有由红宝石制成的多种不同排气孔径可供选择，不同孔径排气孔径作用为将此压力比例阀转换为高精度和高分辨率的气体流量控制器。若有需求请向我们咨询合适您应用的孔径大小。

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。

The QKL-B1HF is an ultra-high resolution proportional control valve. This series is an electronically controlled closed loop pressure regulator. The device converts a command signal to customers' specified pressure range. The QKL-B1HF consists of a control circuit board, one solenoid valve, an integral electronic pressure sensor. The control board compares the command signal to the integral pressure sensor, then drives the solenoid valve so that desired pressure is maintained even if the required flow rate varies. Two types of pressure regulator can be selected: pressure controller with built-in bleed, or pressure controller without built-in bleed. With built-in bleed version, the application does not consume any gas. The valve acts as pressure regulator with small exhaust capacity. Without built-in bleed version, the application consume gas or the gas is flammable. There is also a selection of different venting orifice made from ruby, converting this pressure regulator to a high accuracy and high resolution gas flow rate controller. Please consult us for suitable orifice.

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

型号选择 Ordering Code

QKL-□-□-□-□-□-□

Type

B1HF	Internal Feedback	G1/8"
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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
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Display Unit

S	psi
U	bar

Output Pressure

P2	2 bar
P5	5 bar
P10	10 bar

*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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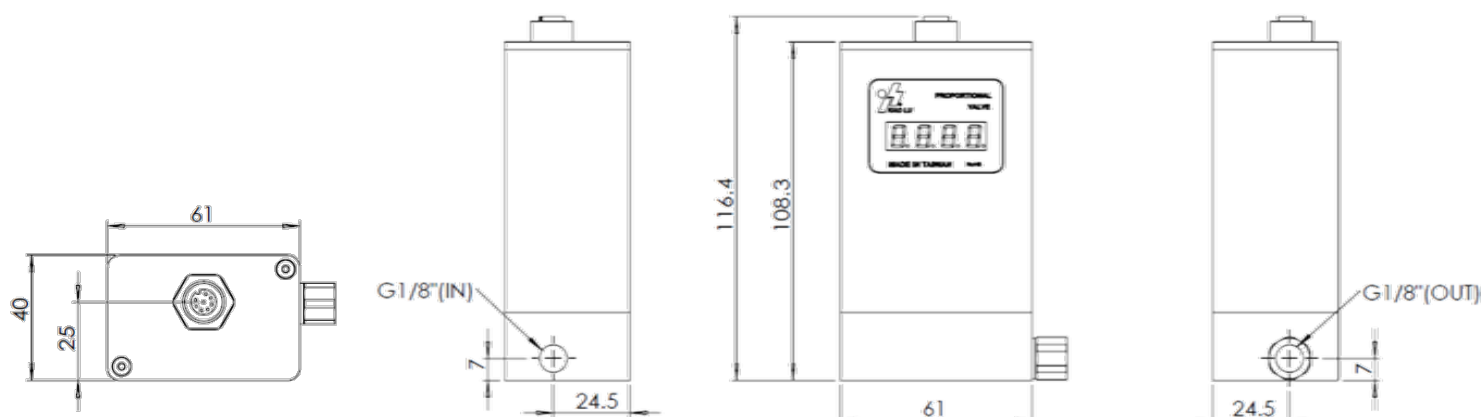
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产品规格 Specifications

Type	QKL-B1HF		
输出压力Output Range	2 bar(29psi)	5 bar(72psi)	10 bar(145psi)
最大入气压力Supply Pressure Max	3 bar(43.5psi)	10 bar(145psi)	20 bar(290psi)
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 ($\leq 5W$)		
介质 Medium	Clean compressed air or with 5 μm filter		
重复精度Repeatability	$\pm 0.05\%$ F.S.		
分辨率 Resolution(max)	$\pm 0.03\%$ F.S.		
综合精度 Accuracy	$\pm 0.1\%$ F.S.		
迟滞Hysteresis	$\pm 0.1\%$ F.S.		
流量 Flow Rate	3L/min @ 1bar (orifice: 0.5mm) 60L/min@1bar(orifice: 3.0mm)		
使用温度范围Temp. Range(Operating)	0 ~ 70 $^{\circ}C$ (32 ~ 158 $^{\circ}F$)		
口径 Port Size	G1/8"		
底座材质 Manifold Material	Aluminum		
接液材质 Wetted Materials	Aluminum, Stainless steel, Brass, FKM		
电器连接 Electrical Connection	M12 Connector(2m)		
流量孔径 Ruby orifice selection (无内建排气版本选择 without built-in bleed)	0.2 / 0.3 / 0.4 / 0.5 / 0.6 mm		

外观尺寸 Overall Dimension





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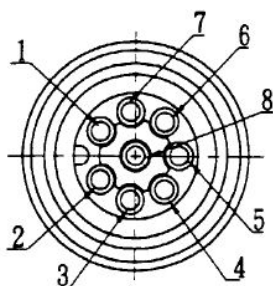
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流量特性 Flow capability with various orifice size

流通孔径 Orifice(mm)	入气压 Inlet pressure(Bar)	最小流量 Min. starting flow(ml/min)	最大流量 Max. flow(ml/min)	分辨率 Resolution(ml/min)
0.05	2	2.1	51	0.8
	5	3.3	103	1.3
	10	4.7	193	1.8
0.1	2	8	205	3.2
	5	13	413	5.1
	10	18.5	772	7.2
0.2	2	33.6	820	12.8
	5	53	166	21
	10	74	3,090	29
0.3	2	75.6	1,850	29
	5	118	3,710	45.6
	10	167	6,954	64.5
0.4	2	134	3,290	51.2
	5	210	6,602	81
	10	296	12,360	115
0.5	2	210	5,140	80
	5	327	10,310	127
	10	463	19,310	179
0.6	2	300	7,400	115
	5	471	14,850	183
	10	666	27,817	258
1	2	840	20,550	320
	5	1,310	41,250	507
	10	1,850	77,270	715

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.