Ultra High Resolution
Proportional Pressure Regulator

QKL-UHR · QKL-B1HF

Features

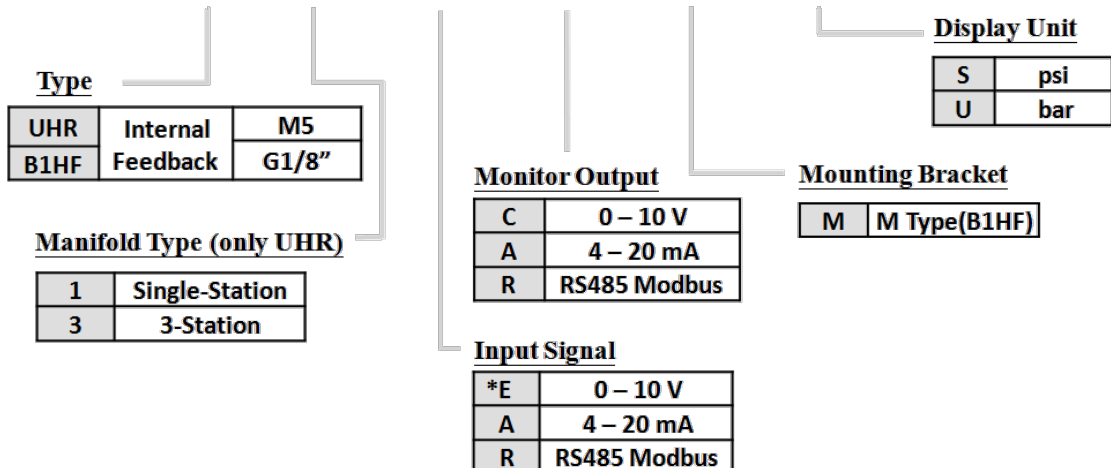◆ Compact

◆ High Precision

◆ High Sensitivity

Applications

◆ Compact high resolution pressure control

◆ Multiple manifold configurations

◆ Dynamic proportional pressure control

◆ High resolution flow rate control

The QKL-UHR/QKL-B1HF is an ultra-high resolution proportional control valve that can be mounted panel or sub-base manifold. This series is an electronically controlled closed loop pressure regulator. The device converts a command signal to customers' specified pressure range. The QKL-UHR/QKL-B1HF consists of a control circuit board, one solenoid valve, an integral electronic pressure sensor, and a manifold. 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.

Ordering Code

QKL – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Type

UHR	Internal	M5
B1HF	Feedback	G1/8"

Manifold Type (only UHR)

1	Single-Station
3	3-Station

Monitor Output

C	0 – 10 V
A	4 – 20 mA
R	RS485 Modbus

Input Signal

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

Mounting Bracket

M	M Type(B1HF)

Display Unit

S	psi
U	bar

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

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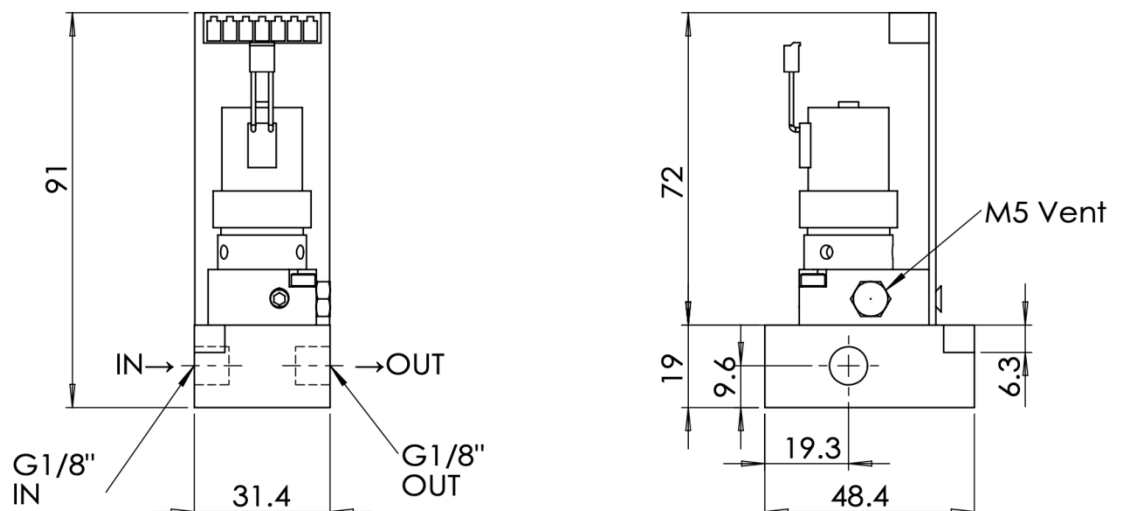## QKL-UHR · QKL-B1HF

Specifications (with built-in bleed)

Type	QKL-UHR			QKL-B1HF		
Output Range	2 bar (29psi)	5 bar (72psi)	10 bar (145psi)	2 bar (29psi)	5 bar (72psi)	10 bar (145psi)
Supply Pressure Max	4 bar (58psi)	7 bar (101.5psi)	12 bar (174psi)	3 bar (43.5psi)	10 bar (145psi)	20 bar (290psi)
Input Signal	0-10V / 4-20mA / RS485					
Monitor Output	0-10V / 4-20mA / RS485					
Supply	DC24V ($\leqq$3W)			DC24V ($\leqq$5W)		
Medium	Clean compressed air or with 5 µm filter					
Repeatability	±0.02% F.S.			±0.05% F.S.		
Resolution(max)	±0.015% F.S.			±0.03% F.S.		
Accuracy	±0.25% F.S.			±0.1% F.S.		
Hysteresis	±0.02% F.S.			±0.1% F.S.		
Flow Rate	2.5L/min @ 1bar (orifice: 0.45mm)			3L/min @ 1bar (orifice: 0.5mm) 120L/min@1bar(orifice: 3.0mm)		
Temp. Range(Operating)	0 ~ 70 ºC (32 ~ 158 ºF)					
Port Size	M5 and G1/8"			G1/8"		
Manifold Material	Aluminum					
Wetted Materials	Aluminum, Stainless steel, Brass, FKM					
Electrical Connection	EDZ1550/7			M12 Connector(2m)		
Ruby orifice selection	0.2 / 0.3 / 0.4 / 0.5 / 0.6 mm					

Overall Dimension

QKL-UHR-1

Overall Dimension
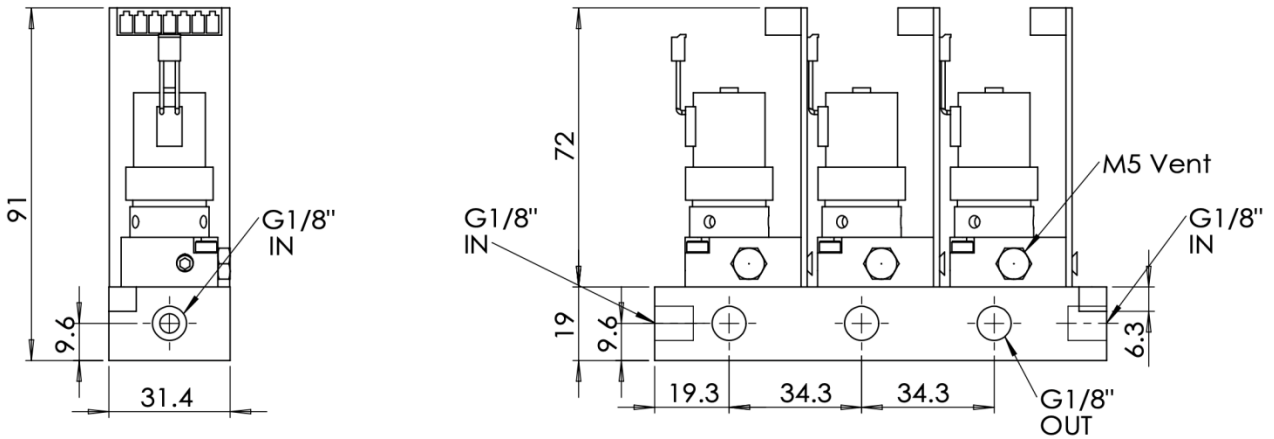
QKL-UHR-3

QKL-B1HF
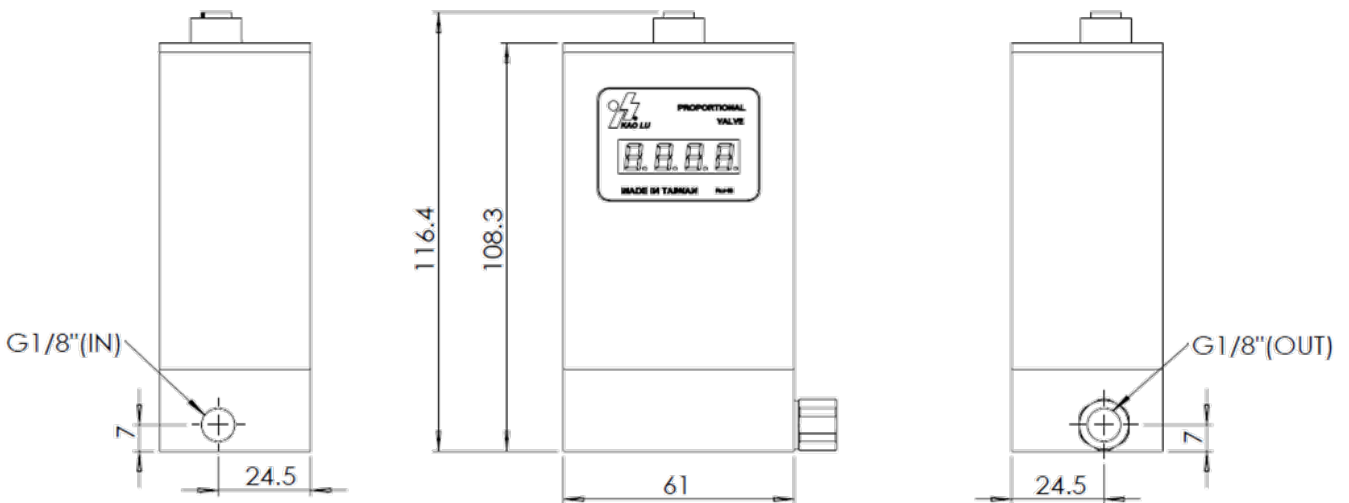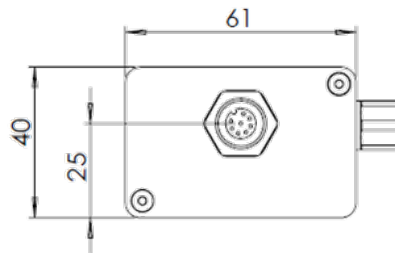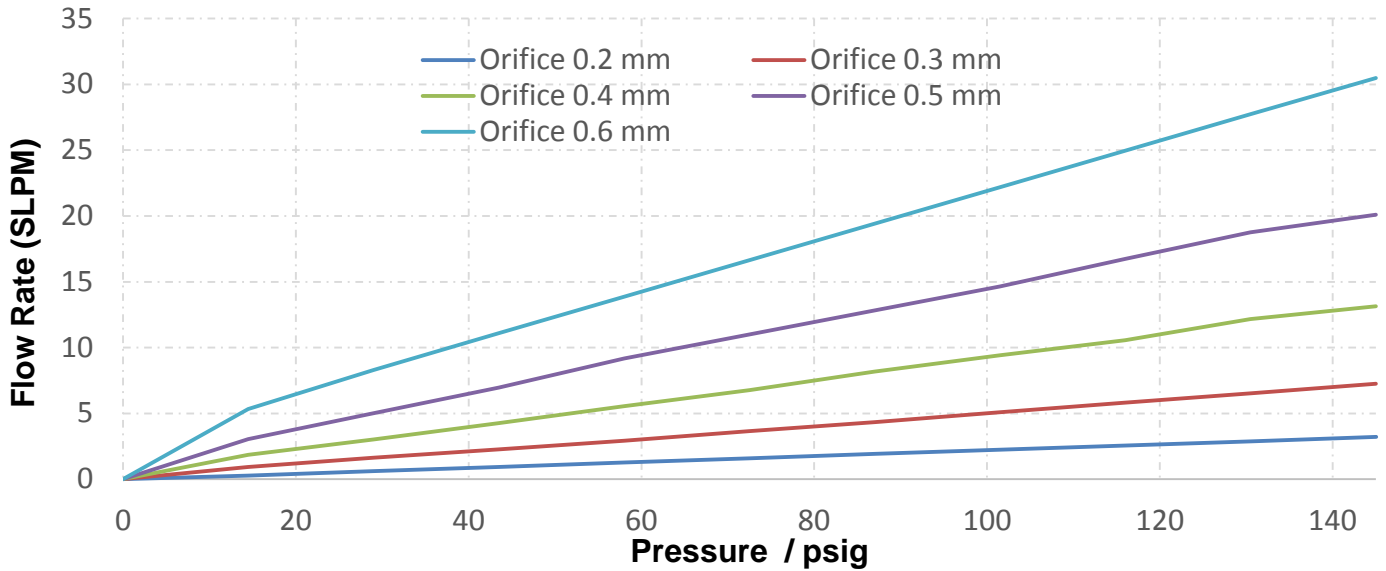
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Flow capability with various orifice size

*Flow Rate (SLPM) vs Pressure / psig chart with orifice sizes 0.2 mm, 0.3 mm, 0.4 mm, 0.5 mm, 0.6 mm*

Wiring Description
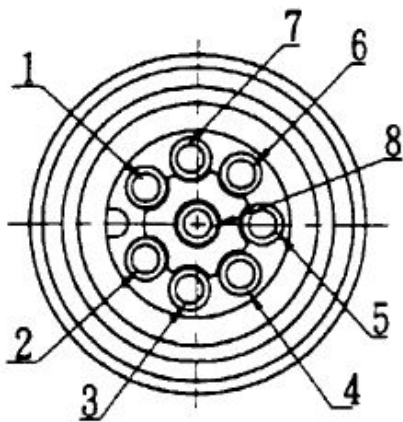
The wiring diagram shows from top view.

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+)

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

EDZ1550/7
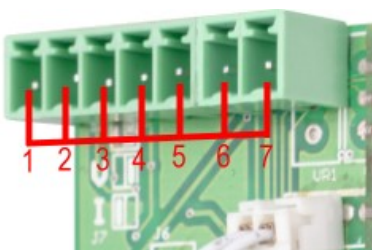
No.	1	2	3	4
Color	Brown	Blue	White	Black
Function	DC24V +	DC24V -	Command+	Monitor+
No.	5	6	7	
Color	Purple	Red	Grey	
Function	Command- Monitor-	RS485+	RS485-	