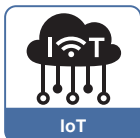
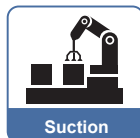


KF02 SERIES Digital Flow Sensor

Features

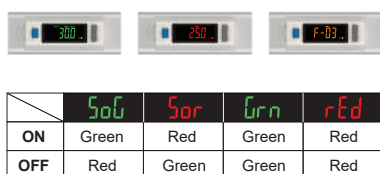
- Design for large flow
- Display can be vertically inverted. To set and watch monitor easily.
- 8 digit 7 segment LCD display. Accumulated flow rate display at a glance.
- Real-time monitoring
- 200 : 1 ratio covers a wider flow range

RS485 MODBUS CONTROL

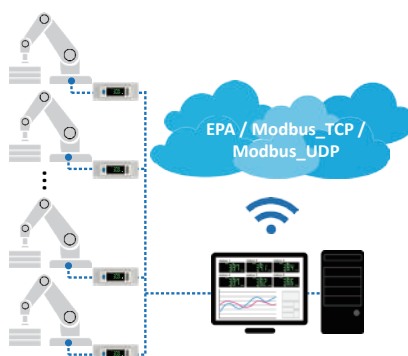


Features Highlight

1 3-color LED display



2 Real-time monitoring



3 High Performance

- High Precision

Indicator accuracy $\pm 3\%$ F.S.

Repeatability $\pm 1\%$ F.S.

- Multiple Output Function

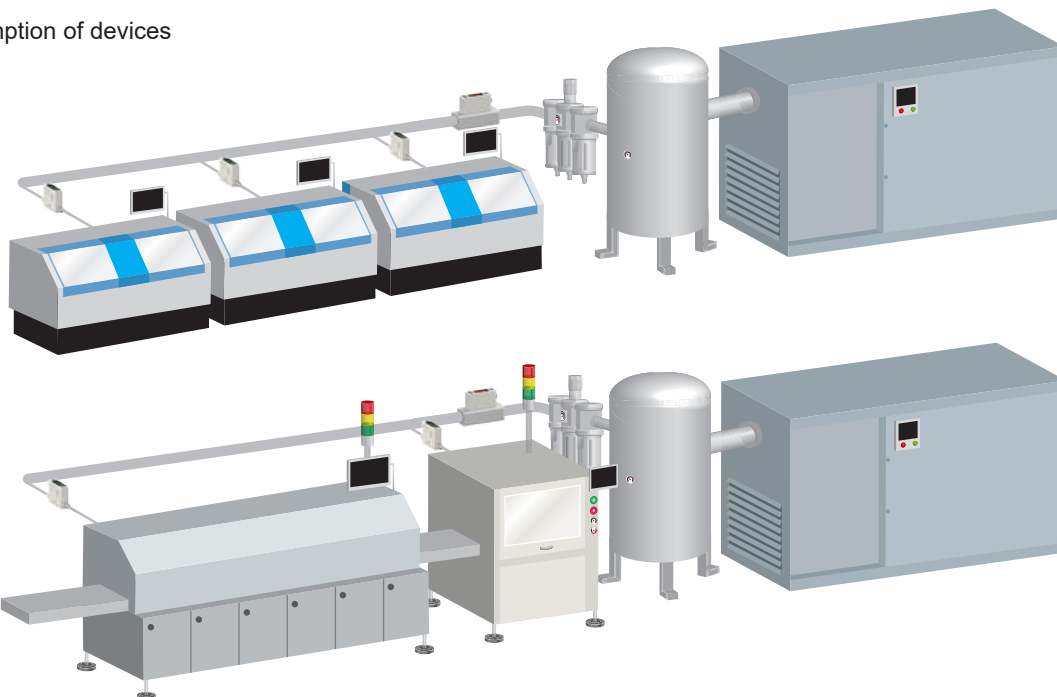
Digital Display	Instantaneous flow value
	Accumulated flow value
Switch Output	NPN output
	PNP output
Analog output	Voltage output 1~5 V
	Current output 4~20 mA
Accumulated Pulse Output	50ms pulse output

4 Air Consumption Monitoring

- Monitor air consumption of devices



+



Specifications

Model				501	102	202
Fluid				Dry air, N ₂ , Non-corrosive / Non-flammable gas		
Sensor Element		Measured Flow Rate Range		2 ~ 500 L/min	5 ~ 1000 L/min	10 ~ 2000 L/min
		Flow Direction		Unidirection		
Display	Instant Flow Rate	Display Range		4 digital (Flow) / 8 digital (Accumulated Flow), 7 segment LCD display (Red / Green / Orange)		
		Minimum Setting Scale	LPM	0 ~ 525 L/min	0 ~ 1050 L/min	0 ~ 2100 L/min
			CFM	1 L/min		
	Accumulated Flow	Display Range		0.1 ft ³ /min		
		Minimum Setting Scale	99999999 L			
			1 L			
Accuracy		Guaranteed Range		0.1 ft ³		
		Indicator Accuracy		2 ~ 100 % F.S.		
		Analog Output Accuracy		± 3 % F.S. ± 1 digit ※1		
		Repeatability		± 5 % F.S. ※1		
		Linearity		± 1 % F.S. ± 1 digit (± 2 % F.S. when response time is set to 50 ms) ※2		
		Temp. Characteristic		± 3 % F.S. ※2		
		Pressure Characteristic		± 5 % F.S. (compare with ※2)		
Switch Output				2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 28 V DC Voltage Drop : ≤ 1.5 V		
		Response Time		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V		
		Output Mode		800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)		
		Hysteresis		Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output		
		Output Short Circuit Proterction		Adjustable		
		Accumulated Pulse Output		Yes		
Analog Output		Voltage Output		5 L/Pulse	10 L/Pulse	10 L/Pulse
		Current Output		20 ft ³ /Pulse	40 ft ³ /Pulse	40 ft ³ /Pulse
		Response Time		Voltage Output Range : 1 ~ 5 V Output Impedance : 1 KΩ		
External Input		Non-voltage input, ≤ 0.4 V, ≥ 30 ms				
Communication Interface		RS485 ※4				
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
		Current Consumption		≤ 50 mA		
Environment	Working Pressure Range		0 ~ 1.0 MPa			
	Withstand Pressure		1.5 MPa			
	Enclosure		IP40			
	Working Fluid Temp.		0 ~ 50 °C (No condensation or freezing)			
	Ambient Temp. Range		Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range		Operation / Storage : 35 ~ 85 % R.H. (No condensation)			
	Insulation Resistance		≥ 2 MΩ (50 V DC, between case and lead wire)			
	Withstand Voltage		250 V AC in 1-min (between case and lead wire)			
	Vibration		Total amplitude 1.5 mm or 10 G, 10 Hz ~ 55 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z			
	Shock		100 m/s ² (10 G), 3 times each in direction of X, Y and Z			
EMC		IEC 61000-6-2, IEC 61000-6-4				
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 6 cores				
Weight (without 2 Meter Lead Wire)		Approx. 281.7 g (500 / 1000 L) ; Approx. 344 g (2000 L)				

NOTE

※1 : CONDITION : Inlet Pressure : 600 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C

※2 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C

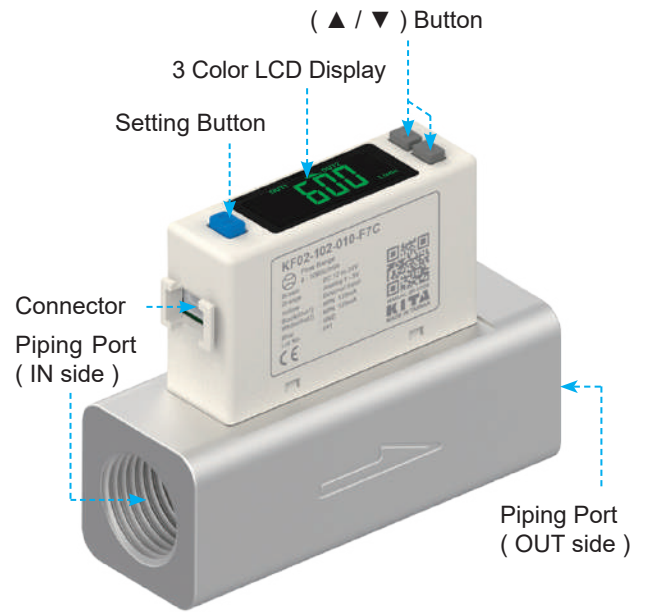
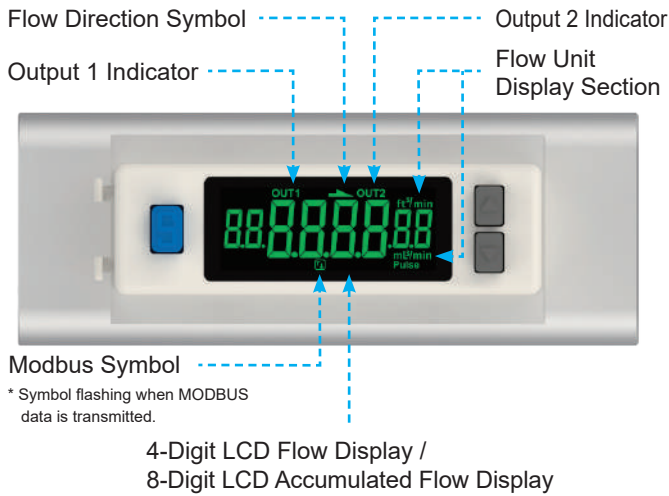
※3 : 0 ~ 1.0 MPa, Outlet Pressure : 1 atmospheric pressure, 25 °C

※4 : This function only available for Output Specification -02 and -04.

KF02 SERIES

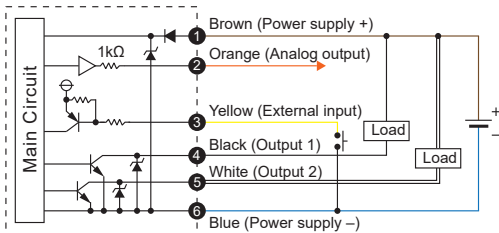
Digital Flow Sensor

Panel Description

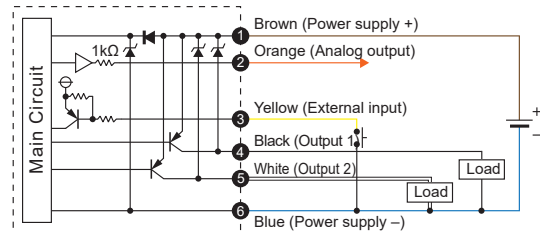


Output Circuit Wiring Diagrams

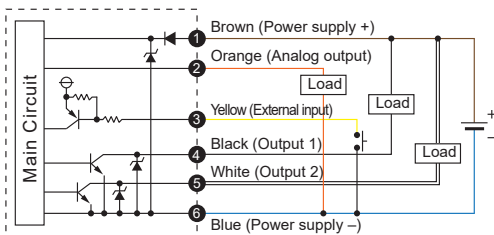
NPN Output / Analog Voltage Output / External Input



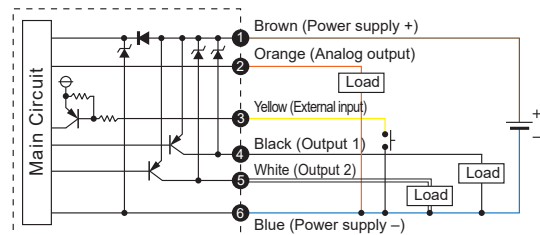
PNP Output / Analog Voltage Output / External Input



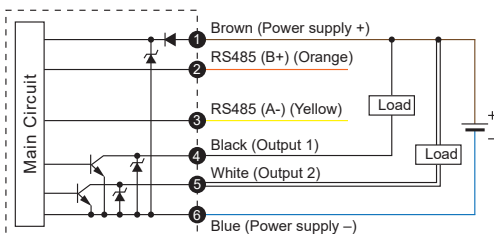
NPN Output / Analog Current Output / External Input



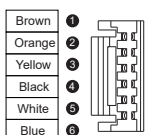
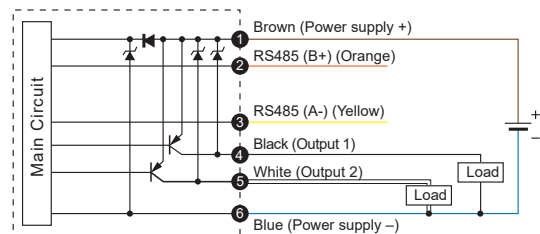
PNP Output / Analog Current Output / External Input



NPN Output / RS485 MODBUS Mode



PNP Output / RS485 MODBUS Mode



Pin No.	Line color	Content
1	Brown	Power supply (12 ~ 24 V DC)
2	Orange	Analog voltage output : 1 ~ 5 V Analog current output : 4 ~ 20 mA RS485 (B+)
3	Yellow	External input RS485 (A-)
4	Black	Output 1 (Max. load current : 125 mA)
5	White	Output 2 (Max. load current : 125 mA)
6	Blue	0 V (GND)

* Procedure to wiring RS485 products : To prevent product damage due to short circuit , MUST do RS485 line conneciton BEFORE power line connection.

Ordering Information

K F 0 2 - 5 0 1 - 0 1 0 - F 7 C

Flow Rate Range

501 : 500 L/min
102 : 1000 L/min
202 : 2000 L/min

Output Specifications

010 : 2 NPN output + Analog output 1 ~ 5 V
011 : 2 NPN output + Analog output 4 ~ 20 mA
02 : 2 NPN output + RS485
030 : 2 PNP output + Analog output 1 ~ 5 V
031 : 2 PNP output + Analog output 4 ~ 20 mA
04 : 2 PNP output + RS485

Port Size

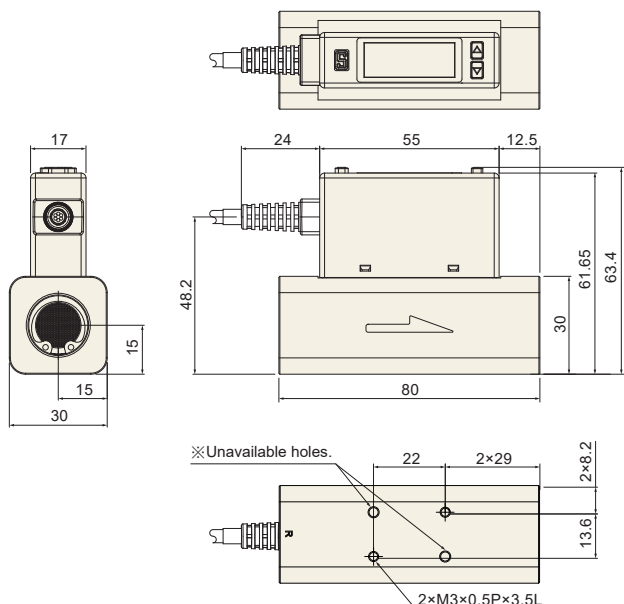
F7C : Rc $\frac{1}{2}$, for Flow Rate Range 501/102.
F9C : G $\frac{1}{2}$, for Flow Rate Range 501/102.
F10C : Rc $\frac{3}{4}$, for Flow Rate Range 202.
F12C : G $\frac{3}{4}$, for Flow Rate Range 202.

Optional Parts

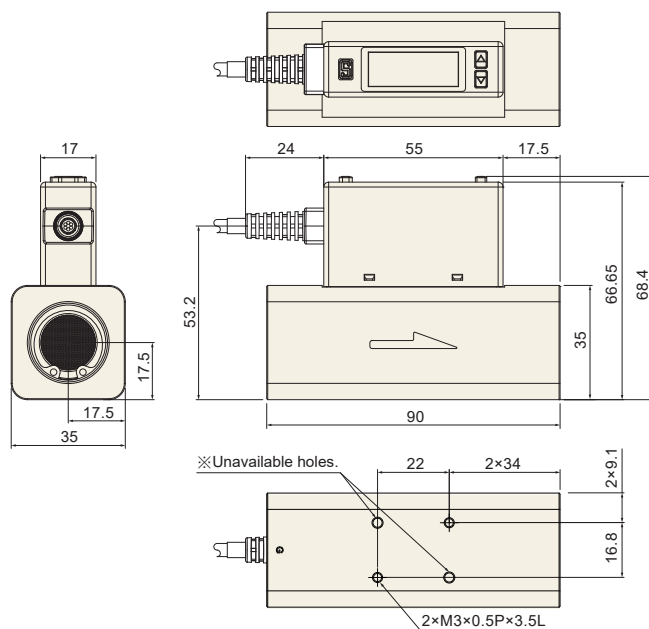
BT-27 : Mounting bracket,
for Flow Rate Range
501/102.
BT-28 : Mounting bracket,
for Flow Rate Range 202.

Dimensions

Flow Rate Range 501, 102 (Port Size : Rc $\frac{1}{2}$, G $\frac{1}{2}$)

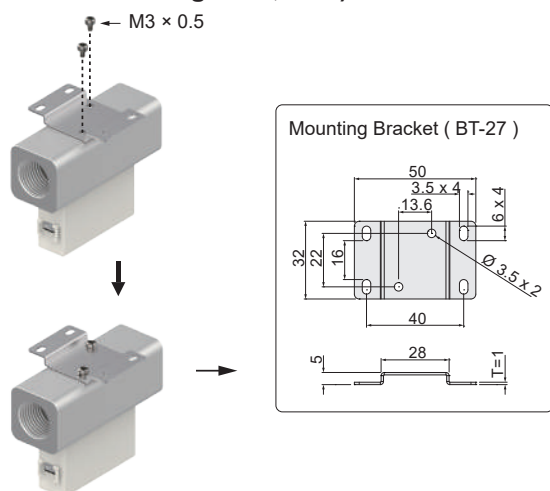


Flow Rate Range 202 (Port Size : Rc $\frac{3}{4}$, G $\frac{3}{4}$)

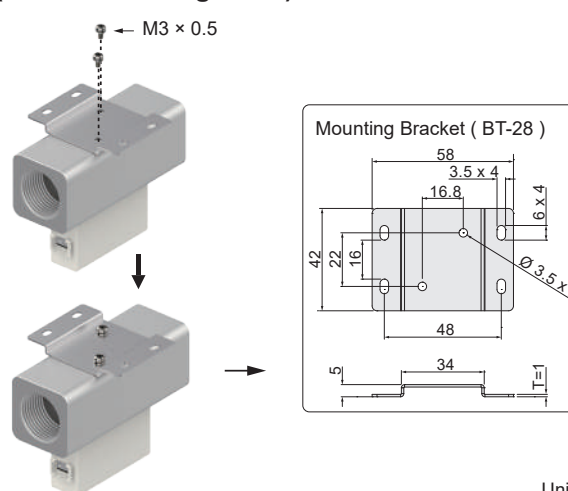


Optional Parts Dimensions

Mounting Bracket : BT-27 (Flow Rate Range 501, 102)



Mounting Bracket : BT-28 (Flow Rate Range 202)



Unit : mm