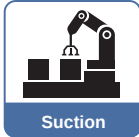


Features

- Display can be vertically inverted. To set and watch monitor easily
- 7 segment 8 digit LCD display. Accumulated flow rate display at a glance
- Real-time monitoring

Patented

RS485 MODBUS CONTROL



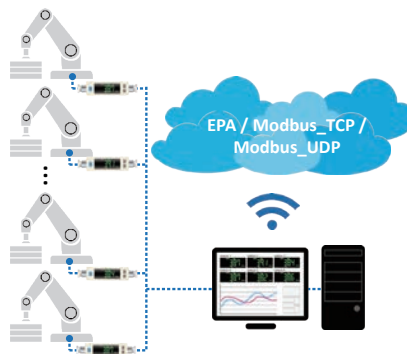
Features Highlight

1 3-color LED display



	SoG	SoR	Grn	Red
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

2 Real-time monitoring



3 High Performance

- High Precision

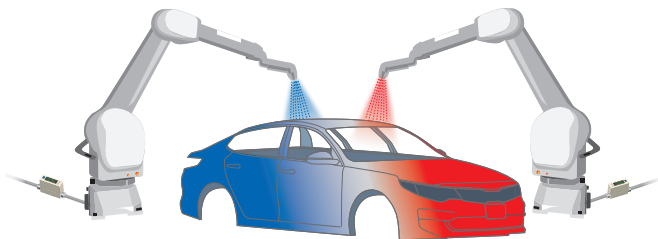
Indicator accuracy	$\pm 3\%$ F.S.
Repeatability	$\pm 1\%$ F.S.

- Multiple Output Function

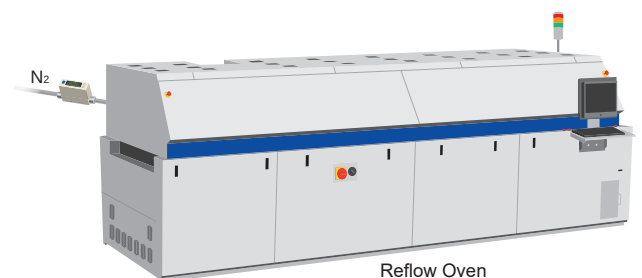
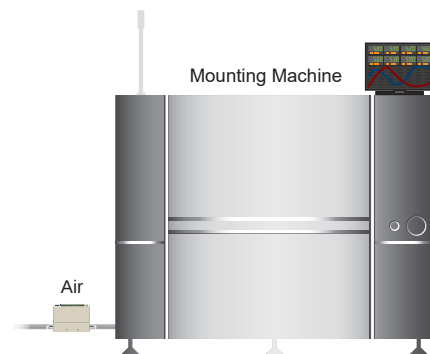
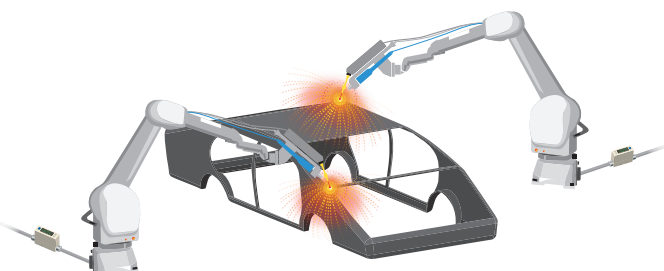
Digital Display	Instantaneous flow value Accumulated flow value
Switch Output	NPN output PNP output
Analog output	Voltage output 1~5 V Current output 4~20 mA
Accumulated Pulse Output	50ms pulse output

4 Wide range of applications

- Painting Robot :
Air flow management of paint and coating processes
- Reflow Oven / Mounting Machine :
N₂ & Air consumption of the whole equipment management



- Laser Welding Robot :
Management of shielding gas, flow rate



Specifications

Model				005	010	050	100	500	101	201				
Fluid				Dry air, N ₂ , Non-corrosive / Non-flammable gas										
Sensor Element		Measured Flow Rate Range		0 ~ 500 mL/min	0 ~ 1000 mL/min	0 ~ 5 L/min	0 ~ 10 L/min	0 ~ 50 L/min	0 ~ 100 L/min	0 ~ 200 L/min				
		Flow Direction		Unidirection										
Display				4 digital (Flow) / 8 digital (Accumulated Flow), 7 segment LCD display (Red / Green / Orange)										
				Instant Flow Rate		Display Range		0 ~ 525 mL/min	0 ~ 1050 mL/min	0 ~ 5.25 L/min	0 ~ 10.50 L/min	0 ~ 52.5 L/min	0 ~ 105.0 L/min	0 ~ 210 L/min
						Minimum Setting Scale		LPM	1 mL/min	1 mL/min	0.01 L/min	0.01 L/min	0.1 L/min	0.1 L/min
				Accumulated Flow		Display Range		99999999 mL	99999999 mL	999999.99 L	999999.99 L	9999999.9 L	9999999.9 L	99999999 L
						Minimum Setting Scale ※1			1 mL	1 mL	0.01 L	0.01 L	0.1 L	0.1 L
					0.01 ft ³	0.01 ft ³	0.1 ft ³	0.1 ft ³	1 ft ³	1 ft ³	1 ft ³			
Accuracy				Guaranteed Range		2 ~ 100 % F.S.								
				Indicator Accuracy		± 3 % F.S. ± 1 digit ※2								
				Analog Output Accuracy		± 5 % F.S. ※2								
				Repeatability		± 1 % F.S. ± 1 digit ※3								
				Linearity		± 3 % F.S. ※3								
				Temp. Characteristic		± 2 % F.S. (15 ~ 35 °C) ; ± 5 % F.S. (0 ~ 15 °C, 35~ 50 °C) (compare with ※3)								
				Pressure Characteristic		± 5 % F.S. ± 1 digit ※4								
Switch Output						2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 28 V DC Voltage Drop : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V						
				Response Time		800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)								
				Output Mode		Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output								
				Hysteresis		Adjustable								
				Output Short Circuit Proterction		Yes								
				Accumulated Pulse Output ※1		5 mL/Pulse	10 mL/Pulse	0.05 L/Pulse	0.1 L/Pulse	0.5 L/Pulse	1 L/Pulse	2 L/Pulse		
0.02 ft ³ /Pulse	0.04 ft ³ /Pulse	0.2 ft ³ /Pulse	0.4 ft ³ /Pulse			2 ft ³ /Pulse	4 ft ³ /Pulse	7 ft ³ /Pulse						
Analog Output				Voltage Output		Voltage Output Range : 1 ~ 5 V Output Impedance : 1 KΩ								
				Current Output		Current Output Range : 4 ~ 20 mA Load Impedance : ≤ 300 Ω								
				Response Time		≤ 100 ms								
External Input				Non-voltage input, < 0.4 V, ≥ 30 ms										
Communication Interface				RS485 ※5										
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %										
		Current Consumption		≤ 50 mA										
Environment				Working Pressure Range		-0.09 ~ 0.8 MPa								
				Withstand Pressure		1 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		≥ 50 MΩ (500 V DC, between case and lead wire)								
				Withstand Voltage		1000 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 (with 2 Meter Lead Wire)				Approx. 109.3 g (Ø6 port) ; Approx. 112.7 g (Ø8 port) ; Approx. 118 g (Rc1/4" port) ; Approx. 128.5 g (Rc1/8" port)										

NOTE

※1 : CFM (ft³/min*10⁻²) and ft³*10⁻²

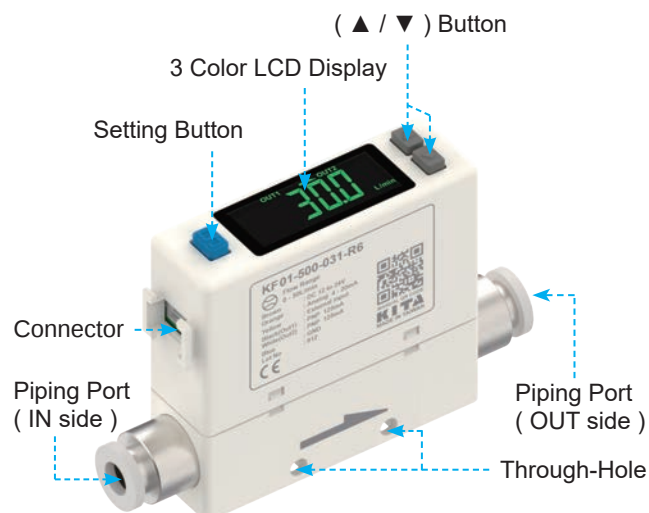
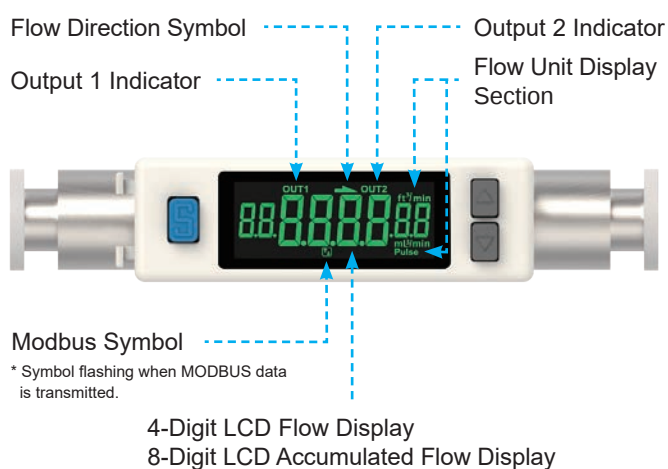
※4 : -0.09 ~ 0.8 MPa, Outlet Pressure : 1 atmospheric pressure, 25 °C

※2 : CONDITION : Inlet Pressure : 300 kPa , Outlet Pressure : 1 atmospheric pressure, 25 °C

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

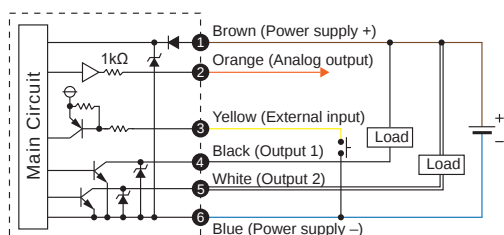
※3 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C

Panel Description

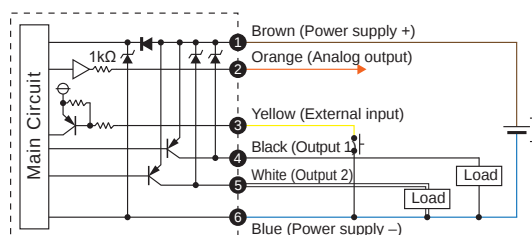


Output Circuit Wiring Diagrams

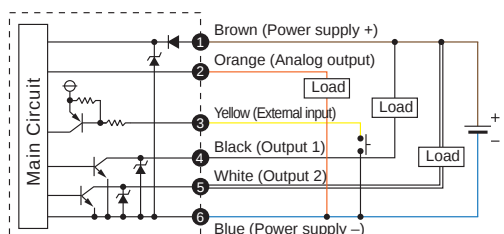
NPN Output / Analog Voltage Output / External Input



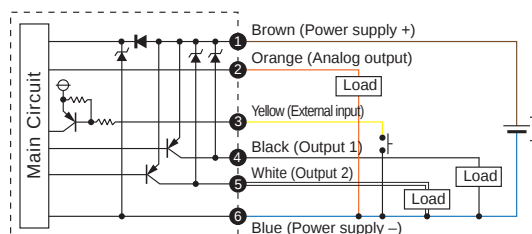
PNP Output / Analog Voltage Output / External Input



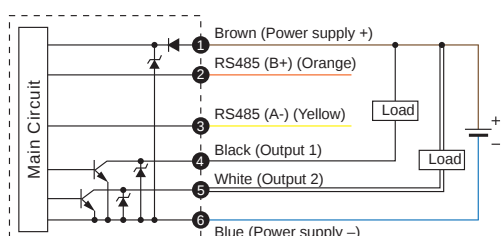
NPN Output / Analog Current Output / External Input



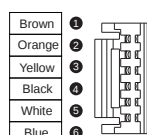
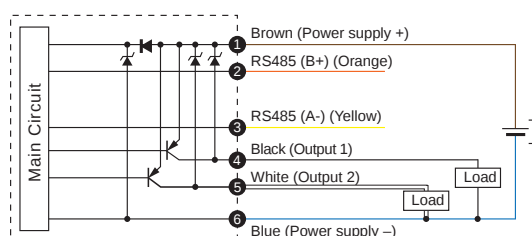
PNP Output / Analog Current Output / External Input



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 connection BEFORE power line connection.

Ordering Information

K F 0 1 - 0 0 5 - 0 1 0 - R 6

Flow Rate Range

005 : 500 mL/min
010 : 1000 mL/min
050 : 5 L/min
100 : 10 L/min
500 : 50 L/min
101 : 100 L/min
201 : 200 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

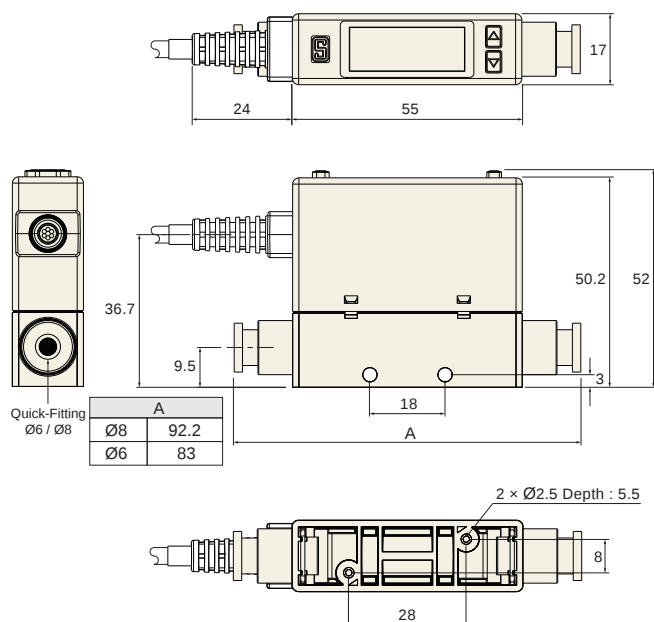
R6 : Ø6 mm, for Flow Rate Range 005, 010, 050, 100, 500
R8 : Ø8 mm, for Flow Rate Range 101, 201
F1C : Rc1/8", with internal threads, for Flow Rate Range 005, 010, 050, 100, 500
F4C : Rc1/4", with internal threads, for Flow Rate Range 101, 201

Optional Parts

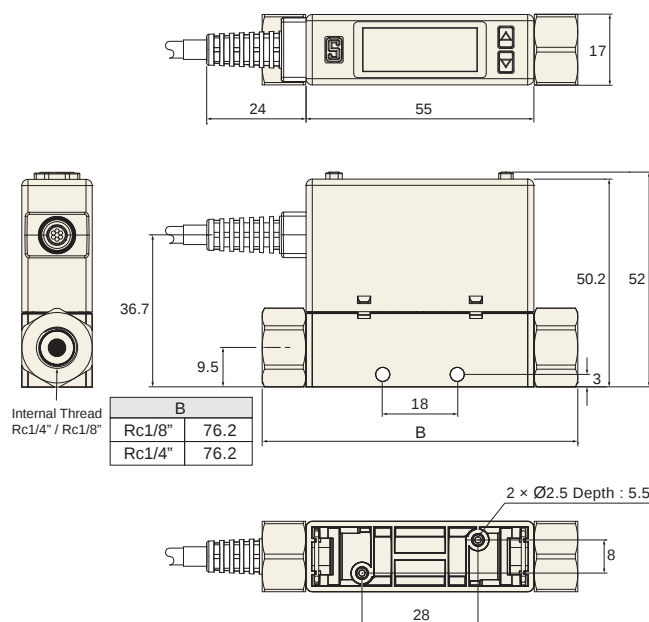
BT-26 : Mounting bracket
PA-H : Panel adapter + Front protective lid
PA-G : Panel adapter

Dimensions

Port Size : Ø6, Ø8

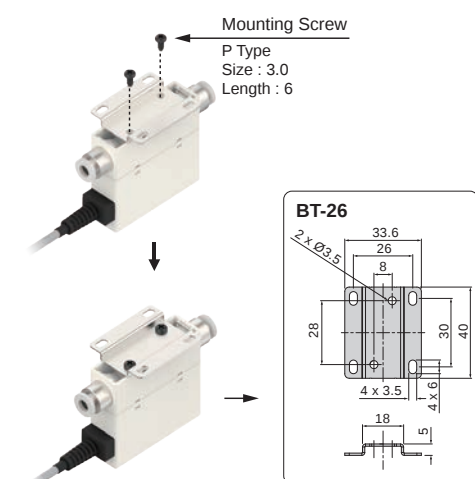


Port Size : Rc1/8", Rc1/4"

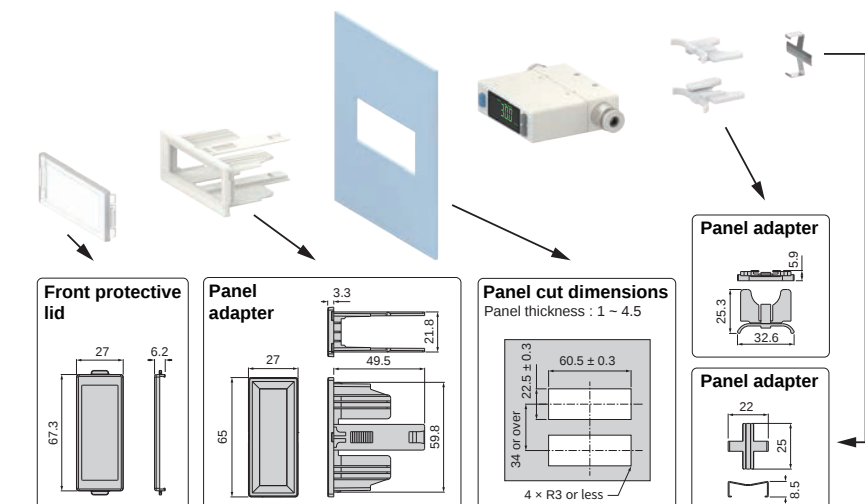


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



Unit : mm