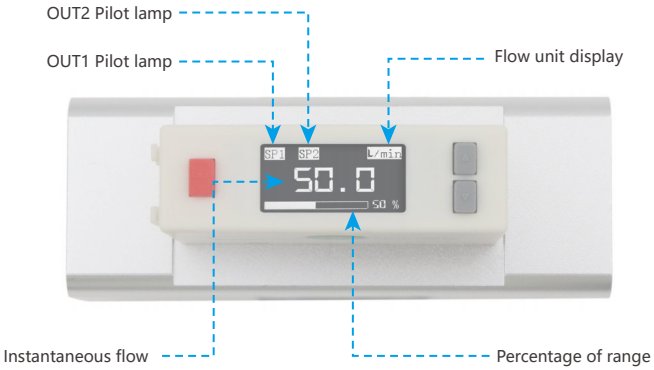
Principle characteristics

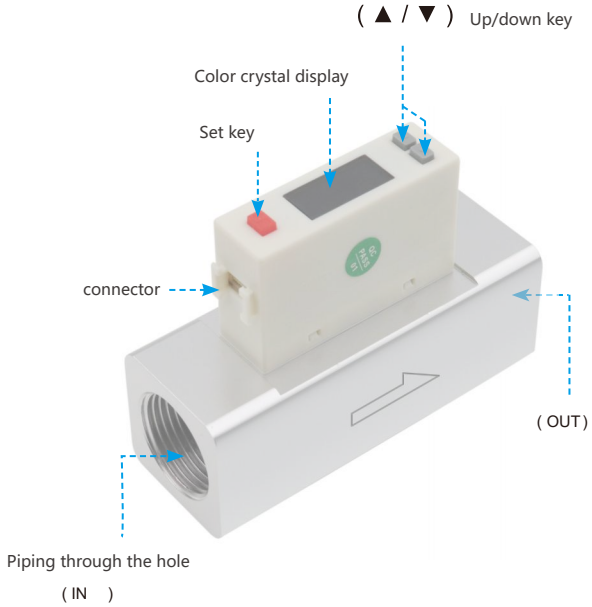
Hot principle, gas mass flowmeter, display direction can be reversed 180°, easy to set and watch color crystal display, cumulative flow data at a glance instant monitoring

Technical specification

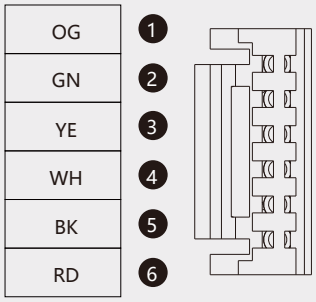
Display accuracy ± 3% F.S.
Repeatability ± 1% F.S.
Electronic display of instantaneous flow
Cumulative flow
Switch output PNP/NPN output
Analog output
Frequency pulse output

面板说明





Wiring diagram



Two switches + one analog (voltage output 1-5V)		
color	**stitch**	**Instructions**
RD	6	power supply（+）
OG	1	power supply（-）
BK	5 (OUT1)	SP1 switch PNP（Factory default) SP1 switch NPN
WH	4 (OUT2)	SP2 switch PNP（Factory default) SP2 switch NPN
YE	3 (OUT3)	/
GN	2 (OUT4)	Analog voltage output：1-5V

Two switches + one analog (current output 4-20mA)		
color	**stitch**	**Instructions**
RD	6	power supply（+）
OG	1	power supply（-）
BK	5 (OUT1)	SP1 switch PNP（Factory default) SP1 switch NPN
WH	4 (OUT2)	SP2 switch PNP（Factory default) SP2 switch NPN
YE	3 (OUT3)	/
GN	2 (OUT4)	Analog voltage output：4-20mA

Two switches +RS485		
color	**stitch**	**Instructions**
RD	6	power supply（+）
OG	1	power supply（-）
BK	5	RS485(A)
WH	4	RS485(B)
YE	3 (OUT1)	SP1 switch PNP（Factory default) SP1 switch NPN
GN	2 (OUT2)	SP2 switch PNP（Factory default) SP2 switch NPN

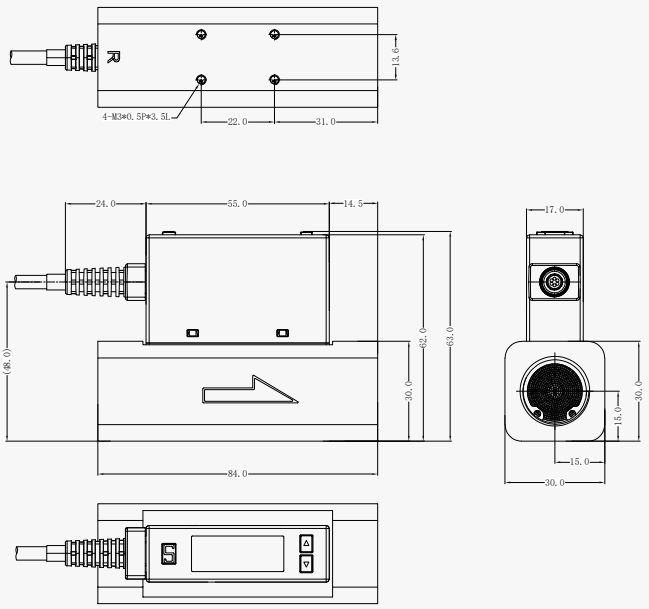
Technical parameter

Model number				01	02	03
Applicable gas				Dry air, nitrogen (N2), non-corrosive, non-flammable		
Sensing element		Rated flow range		2 ~ 500 L/min	5 ~ 1000 L/min	10 ~ 2000 L/min
		Detection direction		unidirectional		
Display	Instantaneous flow	Display range		0 ~ 525 L/min	0 ~ 1050 L/min	0 ~ 2100 L/min
		Display min unit	**LPM**	1 L/min		
			CFM	0.1 ft3/min		
	Cumulative flow	Display range		99999999 L		
		Display min unit		1 L		
				1 ft3		
accuracy		Accuracy guarantee range		2 ~ 100 % F.S.		
		Display accuracy		± 3 % F.S. ± 1 digit ※1		
		Analog output accuracy		± 5 % F.S. ※1		
		repeatability		± 1 % F.S. ± 1 digit (± 2 % F.S. at 50 ms) * 2		
		straightness		± 3 % F.S. ※2		
		Temperature characteristic		± 5 % F.S. (※2 Compare)		
		Pressure characteristic		± 5 % F.S. ± 1 digit ※3		
				2 NPN open collector output		2 PNP open collector output
				Max load current: 125 mA Max supply voltage: 28 V DC Internal voltage drop: ≤ 1.5 V		Max load current: 125 mA Max supply voltage: 24 V DC Internal voltage drop: ≤ 1.5 V
Switching output	Reaction time			800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms Can be Selected)		
	Output mode			Differential mode, window comparison mode, cumulative flow output mode, cumulative flow pulse output mode		
	Accept an assignment			tunable		
	Output short-circuit protection			yes		
	Cumulative pulse output			5 L/Pulse	10 L/Pulse	10 L/Pulse
				20 ft3/Pulse	40 ft3/Pulse	40 ft3/Pulse
Linear analog output	Voltage output			Output voltage range: 1 ~ 5 V		
				Output impedance: 1 KΩ		
	Current output			Output current range: 4 ~ 20 mA		
				Load impedance: ≤ 300Ω		
	Reaction time			≤ 100 ms		
External input				No voltage input, ≤ 0.4V, ≥ 30ms		
Communication interface				RS485 ※4		
power supply		Voltage supply		12 ~ 24 V DC ± 10%, ripple peak ≤ 10%		
		Consumption current		≤ 50 mA		
Environmental requirement	Service pressure range			0 ~ 1.0 MPa		
	Pressure resistance			1.5 MPa		
	Class of protection			IP40		
	Medium temperature			0 ~ 50 °C (no water dew and no ice)		
	temperature			Action: 0 ~ 50 °C; Storage: -10 ~ 60 °C (no water dew and no freezing condition)		
	humidness			Operation and preservation: 35 ~ 85% R.H. (waterless dew)		
	Insulation impedance			≥ 2 MΩ (50 V DC, between leads and plastic housing)		
	Withstand voltage			250 V AC 1 min (between lead and plastic case)		
	Vibration resistance			The amplitude is 1.5 mm or 10 G, 10 Hz ~ 55 Hz ~ 10 Hz every 1 minute, 2 hours in each direction X, Y and Z		
	Impact resistance			100 m/s2 (10 G), measured 3 times in X, Y and Z directions		
	EMC			IEC 61000-6-2, IEC 61000-6-4		
Wire specification				Ø4 Oil resistant PVC-26 AWG (0.15 mm2) -6 cores		
Weight (including 2 m of wire)				About 281.7 g (500/1000 L); About 344 g (2000 L)		

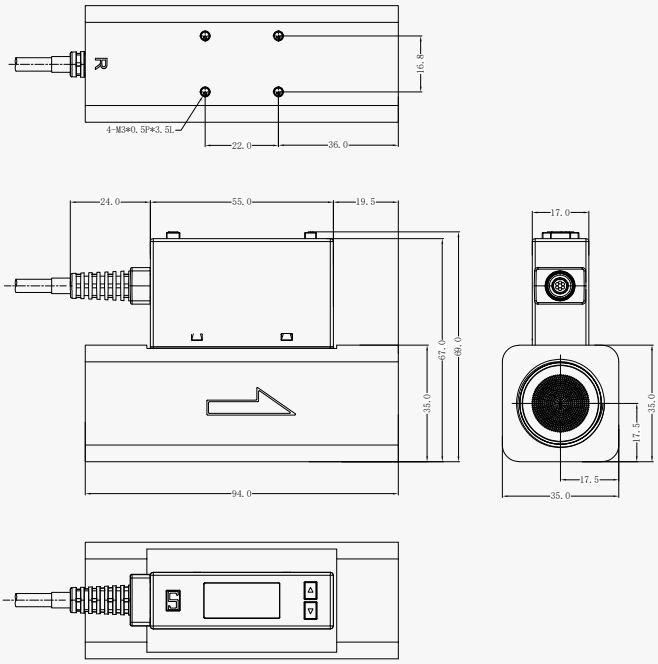
※1: The standard is the inlet end pressure of 600 kPa, the outlet end of 1 atmospheric pressure release, the temperature condition is 25 °C
※2: The standard is 1 atmosphere pressure release at the outlet and 25 °C temperature condition
※ 3:0 ~ 1.0MPa, outlet at 1 atmospheric pressure release, temperature condition is 25 °C
※4: Only output type 02, 04 can have this setting function

Size drawing (mm)

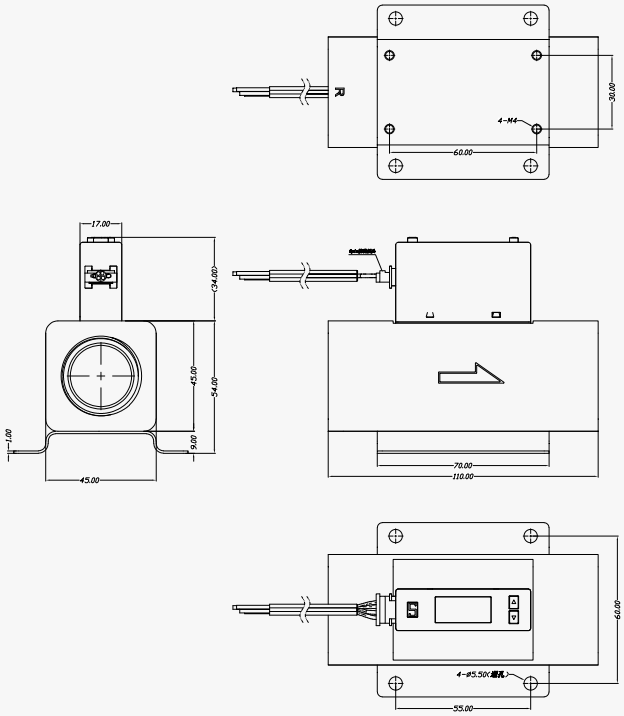
■ Joint aperture ： Rc½， G½



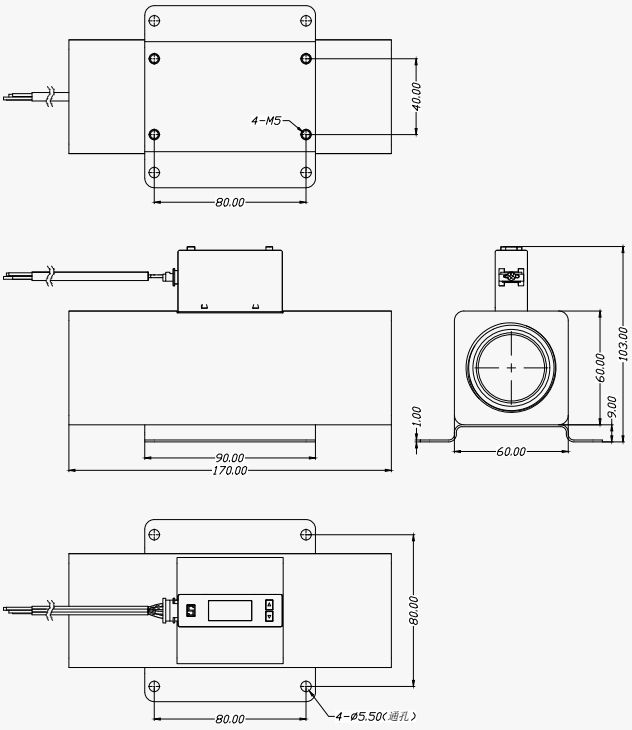
■ Joint aperture : Rc¾, G¾



■ 3000L/min

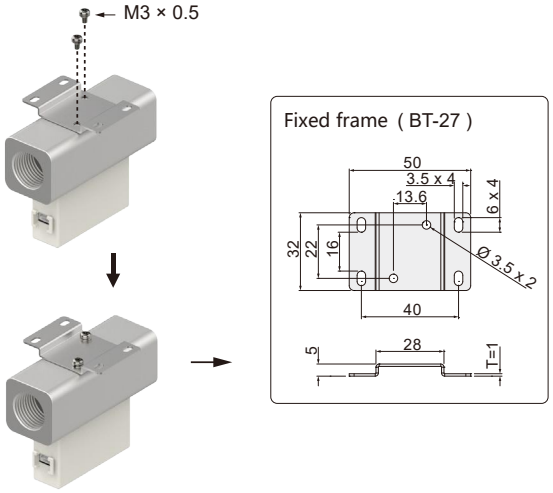


■ 6000L/min

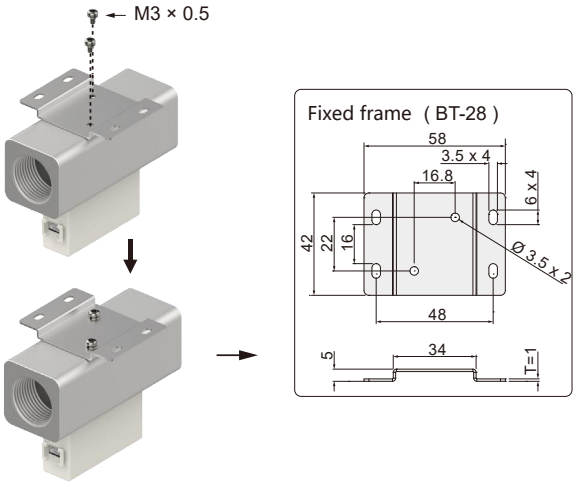


Mounting accessories

■ Fixed frame BT-27 (flow range ≤1000L/min)



■ Fixed frame BT-28 (flow range ≤2000L/min)



Selection list

FM313-	01	SV	R12K	-	expatiate
FM313-					FM313 Gas flow sensor
	01				Flow range: 500 L/min
	02				Flow range: 1000 L/min
	03				Flow range: 2000 L/min
	04				Flow range: 3000 L/min
	05				Flow range: 6000 L/min
		SV			Output signal: 2 switches + analog 1 ~ 5 V
		SA			Output signal: 2 switches + analog 4 ~ 20 mA
		SR			Output signal: 2 switches + RS485
			R12K		Nozzle diameter: Rc½ pipe tooth wire connector, flow range ≤1000L/min
			G12K		Nozzle diameter: G½ pipe tooth wire connector, flow range ≤1000L/min
			R34K		Nozzle diameter: Rc - inner wire connector, flow range ≤2000L/min
			G34K		Nozzle diameter: G - tube tooth wire connector, flow range ≤2000L/min
			G1K		Nozzle diameter: G1 tube tooth wire connector, flow range ≤3000L/min
			R1K		Nozzle diameter: R1 inner wire connector, flow range ≤3000L/min
			G112K		Nozzle diameter: G1-½ pipe tooth wire connector, flow range ≤6000L/min
				-	optional
				BT-27	BT-27: fixed frame (suitable for flow range ≤1000L/min)
				BT-28	BT-28: fixed frame (suitable for flow range ≤2000L/min)
				BT-29	BT-29: fixed frame (suitable for flow range ≤3000L/min)
				BT-30	BT-30: fixed frame (suitable for flow range ≤6000L/min)