



principle characteristics

The FM110B explosion-proof gear flow sensor is equipped with a built-in double gear, which can calculate the volume of medium through the high-precision gear volume and measure the micro-fluid medium. It is a new type of positive displacement flow sensor, which is used to measure the liquid flow or instantaneous flow in the pipeline in a precise continuous or intermittent manner.

- multi-function signal output
- LCD LCD display
- high pressure (10~400bar)
- high and low temperature resistance (-30°C...140°C)
- can measure various viscous media
- high precision and repeatability
- range specific width (1:100)
- wide range of measurement
- strong anti-corrosion and anti-pollution ability (acid and alkali)

product application

FM110B explosion-proof gear flow sensor is widely used in various industries for the accurate measurement of low flow, suitable for media: additive fuels, water treatment flotation tanks, corrosion inhibitors, catalysts, emulsifiers, oils, oils, spices, adhesives, solvents, inks and pesticides and other parts of high viscosity media. Application industries include automobile, aviation, mining, electric power, chemical, pharmaceutical, food, paint, petroleum, environmental protection, printing and other industries. . Particularly suitable for heavy oil. Polyvinyl alcohol resin, etc. The flow measurement of high viscosity medium. (can measure the viscosity is as high as 10000 pa. S fluid) small volume, light weight, runtime vibration noise and stable operation. Can also be used to measure the diameter of small flow measurement. Pick up small flow, range than wide, suitable for use in measuring conform to the changes of fluid flow, measuring accuracy is not affected by pressure and flow change, stable performance and long service life, large flow capacity.

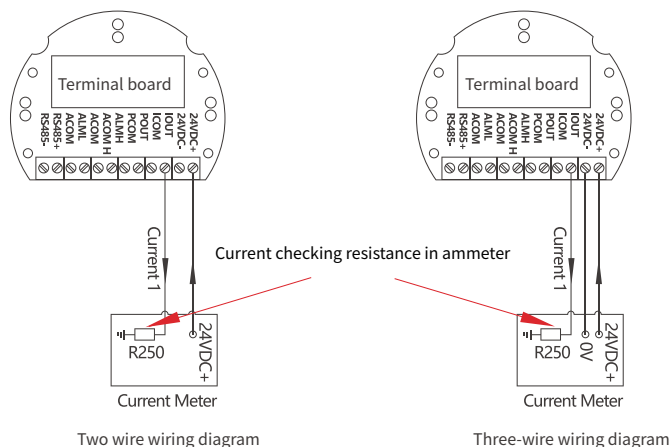
- Resin and glue measurement
- Measurement of hydraulic oil, lubricating oil and grease
- Fuel oil measurement
- Ink and asphalt measurement
- Measurement of liquid nitrogen, refrigerant and solvent
- Edible oil, fish oil
- Fluid measurement for chemical and anti-corrosion requirements

Technical parameter

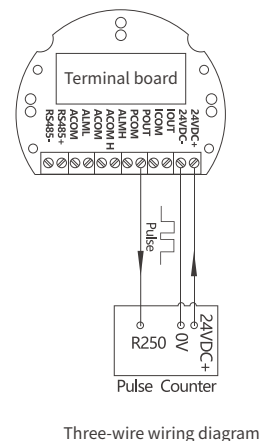
◇ Measurement range:	Refer to the range table
◇ Output signal:	4-20mA, RS485, pulse, high and low alarm switches
◇ Measurement accuracy:	0.5% F.S
◇ Reproducibility:	0.1% F.S
◇ Power supply:	16~30VDC
◇ Medium temperature:	-30 to 120°C (customizable up to -50 to 140°C)
◇ Voltage resistance:	Aluminum (40 bar); Stainless steel (100 bar/250 bar/400 bar); PP (with a pressure resistance of 10 bar)
◇ Material:	Shell: Aluminum, Stainless steel, PP Display: Cast aluminum

wiring diagram

4-20mA Current output wiring diagram



Pulse output wiring diagram

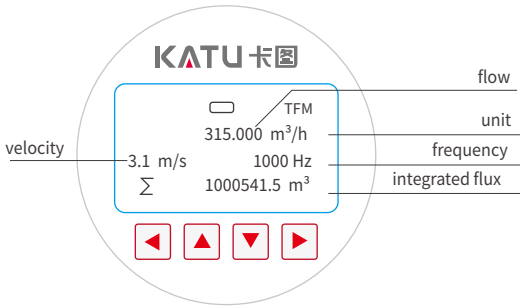
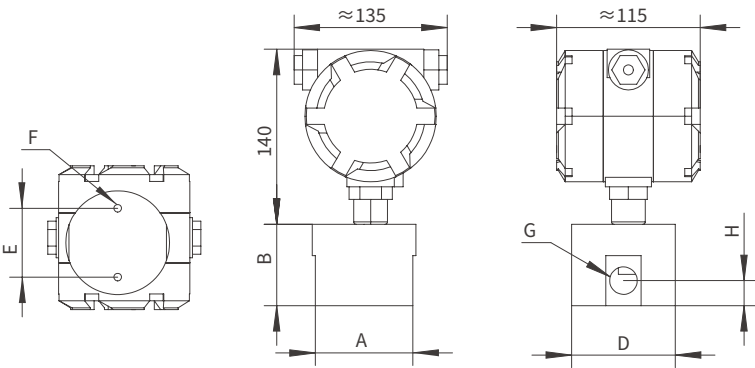


Connector terminal

Terminal screen printing	function	note
24V +	DC 18 - 36V +	power supply 24V +
24-	DC 18~ 36v-	power supply 24V -
IOUT	4~20M a+	Load charge <= -500 ohms
ICOM	4~ 20mA -	
POUT	Frequency & pulse output +	
PCOM	Frequency & pulse output common	
ALM H	High alarm +	It is recommended to use 24VDC intermediate relay with load current ≤ 30mA
ACOM	High alarm public end	
ALM L	Low alarm +	
ACOM	Low alarm public -	
RS+	RS485 +	RS485 terminal
RS-	RS485 -	

Size chart (mm)

Panel diagram



Model number	A	B	D	H	E	F	G	Measuring range
M 2	83	45	88	13	45	2 * M 6	G 1/4	50-2000 m L/m in
M 2S	83	43	88	10	44	2 * M 5	G 1/4	5-2000 m L/m in
M 4	80	55	83	16	55	2 * M 6	G 3/8	0.1-4 L/m in
M 6	80	62	83	14	55	2 * M 6	G 1/2	0.15-8 L/m in
M 10	80	65	83	14	55	2 * M 6	G 1/2	0.5-20 L/m in
M 15	110	65	113	28	90	2 * M 6	G 3/4	2-50 L/m in
M 25	124	70	138	29	100	2 * M 8	G 1"	5-150 L/m in

Selection table

FM110B-	M2	S	F	L	-	Explanation
FM110B-						FM110B Explosion-proof High Precision Gear Flowmeter
	M2					Measurement range: 50 - 2000 mL/min
	M2S					Measurement range: 5 - 2000 mL/min (Pressure resistance < 150 bar)
	M4					Measurement range: 0.1 - 4 L/min
	M6					Measurement range: 0.15 - 8 L/min
	M10					Measurement range: 0.5 - 20 L/min
	M15					Measurement range: 2 - 50 L/min
	M25					Measurement range: 5 - 150 L/min
		S				Output signal: Analog + Pulse + RS485 communication + Switch (Non-explosion-proof)
		E				Output signal: Analog + Pulse + RS485 communication + Switch (Explosion-proof Ex d II C T6 Gb)
			F			Sealing material: FKM (Standard type)
			P			Sealing material: PTFE polytetrafluoroethylene (Corrosion-resistant type)
			G			Sealing material: Silicone (Low-temperature resistant -50°C)
				L		Body material: Alumina (Pressure resistance 40 bar)
				S		Body material: 304SS (Pressure resistance 100 bar)
				S1		Body material: 304SS (Pressure resistance 250 bar) (M2S not available)
				S2		Body material: 304SS (Pressure resistance 400 bar) (M2S not available)
				S3		Body material: 316SS (Pressure resistance 100 bar) (M2S not available)
				S4		Body material: 316SS (Pressure resistance 250 bar) (M2S not available)
				S5		Body material: 316SS (Pressure resistance 400 bar) (M2S not available)
				P		Body material: PP (Pressure resistance 10 bar) (M2S not available)
					-	Medium temperature: < 120°C
					T	Medium temperature: < 140°C Note: Aluminum/PP materials do not support high-temperature option

Flow calculation method

The K coefficient (flow coefficient) of FM110B explosion-proof gear flow sensor accurately defines the number of pulses per liter in unit flow.

$$Q = f \times 60 / K$$

Q= instantaneous flow liters per minute

F= output pulse frequency HZ

K= coefficient pulse per minute of gear flowmeter