



Principle characteristics

FMG500 gear flow sensor built-in double gear operation, through the high precision gear wheel volume to calculate the medium through the volume, to achieve the micro fluid medium measurement. Is a new type of positive displacement flow sensor, used for precision continuous or intermittent measurement of liquid flow in the pipeline or instantaneous flow.

- Analog switch dual output
- PNP/NPN Switchover is optional
- Color crystal display unit
- Withstand pressure (10~400bar)
- High and low temperature resistance (-30°C~140°C)
- Can measure various viscous media
- High precision and repeatability
- The range is wider than that
- Support communication function
- Strong anti-corrosion and anti-fouling ability (acid and alkali)

Product application

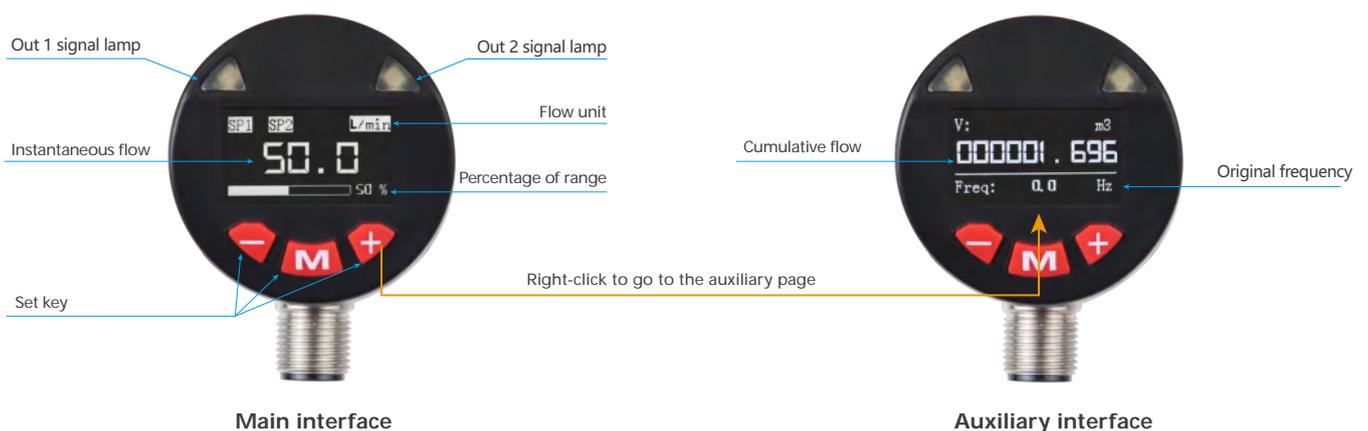
FMG500 gear flow sensors are widely used for low-flow accurate measurement in various industries, suitable for additives fuel, water treatment flotation cells, corrosion inhibitors, catalysts, emulsifiers, oils, oils, fragrances, adhesives, solvents, inks and pesticides and other high-viscosity media. Application industries include automobile, aviation, mining, electric power, chemical, pharmaceutical, food, paint, petroleum, environmental protection, printing and other industries. Especially suitable for heavy oil. Flow measurement of high viscosity media such as polyvinyl alcohol. (can measure the viscosity of up to 10000Pa.s fluid) small size, light weight, low vibration noise and stable operation. It can also be used to measure small flow rates of small pipe diameters. Small starting flow, wide range ratio, suitable for measuring liquid flow with large changes, measurement accuracy is not affected by pressure and flow changes, stable performance, long life, large flow capacity.

- Resin, glue measurement
- Hydraulic oil, lubricating oil, grease measurement
- Fuel oil measurement
- Ink, asphalt measurement
- Liquid nitrogen, refrigerant, solvent measurement
- Edible oil, fish oil and food filling measurement
- Chemical and anti-corrosion requirements fluid measurement
- Fluid quantitative control system

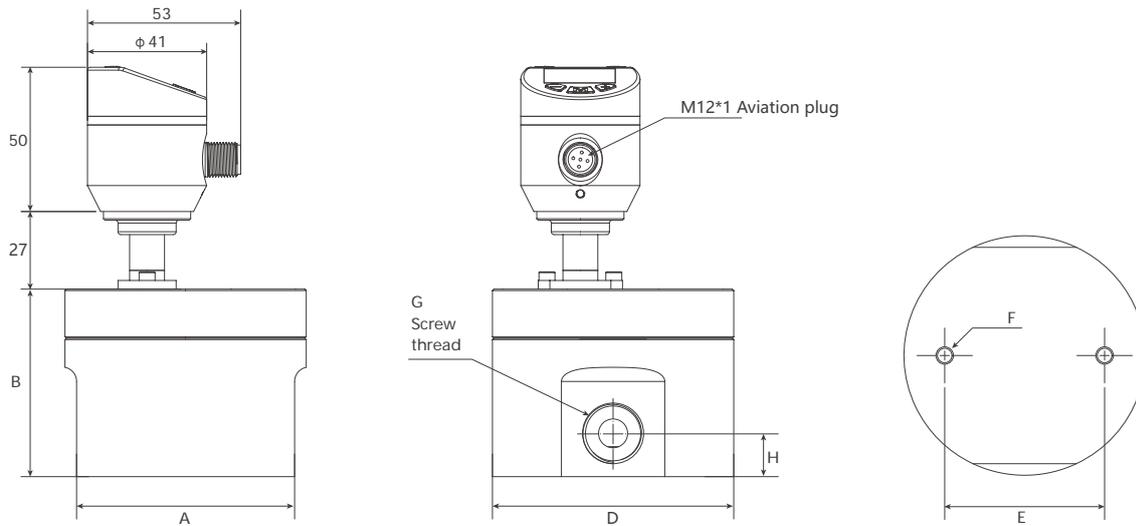
Technical parameter

- ◇ Measuring range: See range table
- ◇ Output signal: 4-20mA, PNP/NPN
- ◇ Measuring accuracy: 0.5%F.S
- ◇ Repeatability: 0.2%F.S
- ◇ Power supply: 12~30VDC
- ◇ Medium temperature: -30~120°C
(high temperature customized 140°C)
- ◇ Pressure resistance: Aluminum (40bar)
stainless steel (100bar/250bar/400bar),
PP/PE (pressure 10bar)
- ◇ Material
Housing: aluminum, stainless steel,
display: stainless steel/engineering plastic

Panel diagram

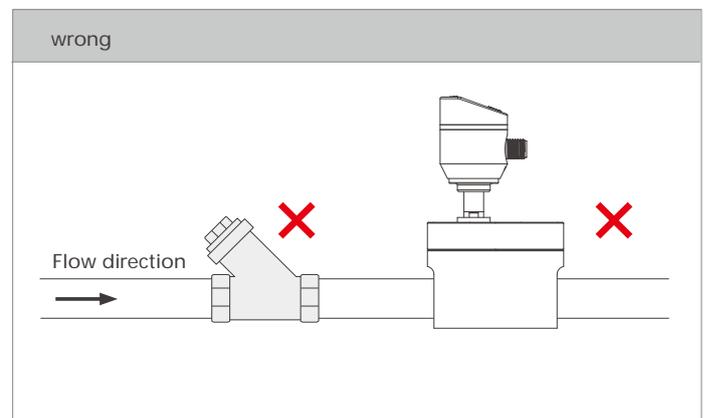
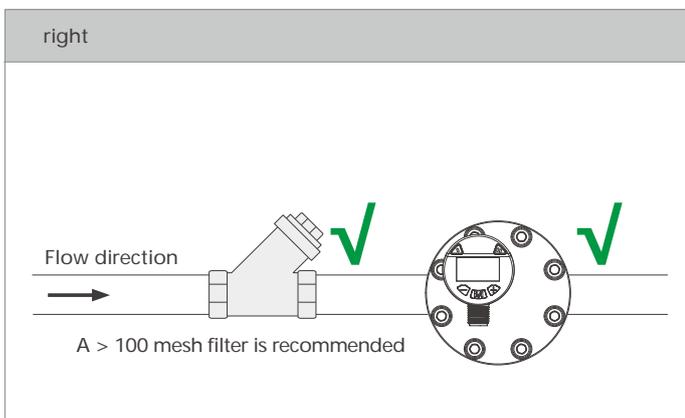


Dimension drawing (mm)

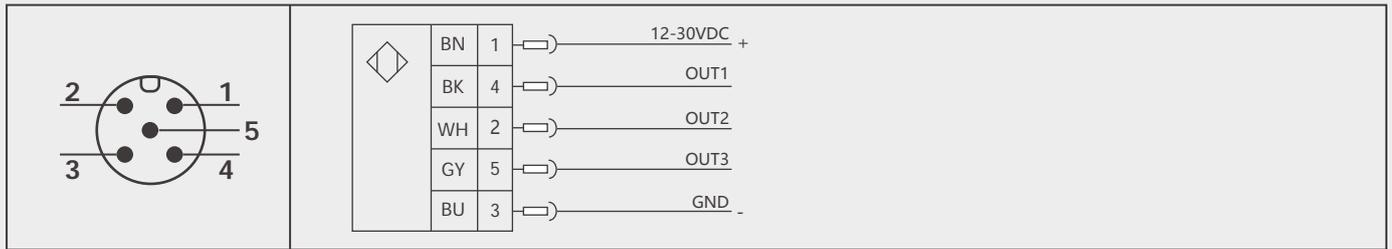


Model number	A	B	D	H	E	F	G	Measuring range	Reference coefficient (P/L)
M2	83	45	88	15	40	2*M6	G1/4	50-2000mL/min	≈ 3500
M2S	83	43	88	10	44	2*M5	G1/4	5-2000mL/min	≈ 34000
M4	80	55	83	15	55	2*M6	G3/8	0.1-4L/min	≈ 2450
M6	80	55	83	15	55	2*M6	G1/2	0.15-8L/min	≈ 1650
M10	80	55	83	15	55	2*M6	G1/2	0.5-20L/min	≈ 1500
M15	110	65	113	28	90	2*M6	G3/4	2-50L/min	≈ 430
M25	124	70	138	29	100	2*M8	G1"	5-150L/min	≈ 70

Filter installation diagram (for reference only)



Wiring diagram

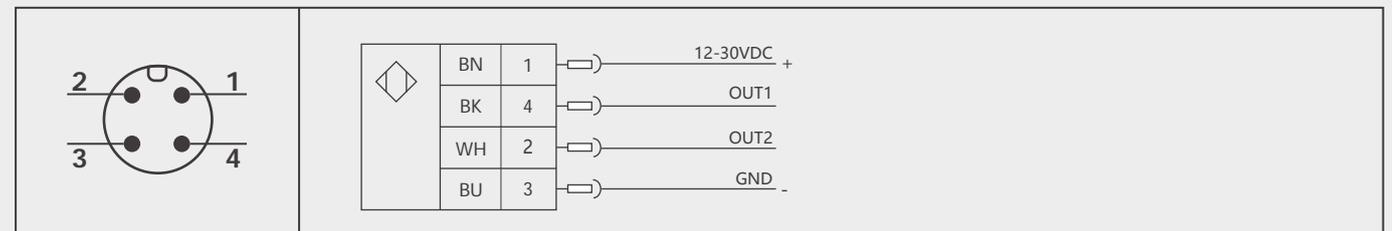


A3: Two switches + one analog

colour	stitch	instructions	Colour	stitch	instructions	Colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Flow: 4-20mA (factory default) Flow: 1-5v Flow : 0-10v
BK	4 (OUT1)	Flow switch PNP (Factory default) Flow switch NPN Linear pulse (full scale 100Hz) Original pulse Quantitative pulse (full scale *0.1)	WH	2 (OUT2)	Flow switch PNP (Factory default) Flow switch NPN			

AR: RS485 communication/analog

colour	stitch	instructions	colour	stitch	instructions	colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Flow: 4-20mA (factory default) Flow: 1-5v Flow : 0-10v
BK	4 (OUT1)	RS485(B)	WH	2 (OUT2)	RS485(A)			



SA: Analog (flow/temperature)/switch/pulse/frequency /IO-Link

colour	stitch	instructions	colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Temperature: 4-20mA(Factory default) Temperature: 1-5v Temperature: 0-10v Flow switch PNP Flow switch NPN Temperature switch PNP Temperature switch NPN Linear pulse (full scale 100Hz) Original pulse Quantitative pulse (full scale *0.1) IO-Link	WH	2 (OUT2)	Flow: 4-20mA (factory default) Flow: 1-5v Flow: 0-10v Temperature: 4-20mA Temperature: 1-5v Temperature: 0-10v

Selection list

FMG500-	M2	A3	F	L	-	Instructions
FMG500-						High precision gear flowmeter
	M2					Measurement range: 50-2000mL/min
	M2S					Measurement range: 5-2000mL/min
	M4					Measurement range: 0.1-4L/min
	M6					Measurement range: 0.15-8L/min
	M10					Measurement range: 0.5-20L/min
	M15					Measurement range: 2-50L/min
	M25					Measurement range: 5-150L/min
		A3				Output signal: Two way switch/pulse/frequency + analog
		SA				Output signal: Analog (flow/temperature)/switch/pulse/frequency /IO-Link
		AR				Output signal: RS485 communication + analog
			F			Sealing material FKM (Standard type) Only used for pressure ≤200bar
			P			Sealing material: PTFE polytetrafluoroethylene (anti-corrosion) Used for > 200bar
				L		Body material: Alumina (pressure 40bar)
				S		Body material: 304SS (pressure 100bar)
				S1		Body material: 304SS (pressure 250bar)
				S2		Body material: 304SS (pressure 400bar)
				S3		Body material: 316SS (pressure 100bar)
				S4		Body material: 316SS (pressure 250bar)
				S5		Body material: 316SS (pressure 400bar)
				P		Body material: PP (pressure 10bar)
					-	Medium temperature < 120°C
					T	Medium temperature < 140°C Note: Aluminum /PP material does not support high temperature option

Flow calculation method

K-factor of FMG500 gear flow sensor

(Flow coefficient) precisely defines the number of pulses per liter per unit flow. $Q=f \times 60/K$

Q= instantaneous flow liters per minute

F= output pulse frequency HZ

K= Coefficient pulse/min of gear flowmeter

Optional accessories - Electrical accessories (M12-5Pin: Factory default ZL05-PC02G)

name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire	M12*1-4Pin/5Pin self-connector/Dimensions (Unit:mm)	Model number		
M12*1-5Pin (2m cable)		PUR	ZL05-PU02G	-P		GL04 (4 Pin connector)		
M12*1-5Pin (5m cable)			ZL05-PU05G					
M12*1-5Pin (10m cable)			ZL05-PU010G					
M12*1-5Pin (2m cable)		PUR	ZL05-PC02G		-P		GL05 (4 Pin connector)	
M12*1-5Pin (5m cable)			ZL05-PC05G					
M12*1-5Pin (10m cable)			ZL05-PC010G					
M12*1-5Pin (2m cable)		PVC	ZL05-PU02W			-P		WL04 (4 Pin connector)
M12*1-5Pin (5m cable)			ZL05-PU05W					
M12*1-5Pin (10m cable)			ZL05-PU010W					
M12*1-5Pin (2m cable)		PVC	ZL05-PC02W	-P				WL05 (5 Pin connector)
M12*1-5Pin (5m cable)			ZL05-PC05W					
M12*1-5Pin (10m cable)			ZL05-PC010W					

Optional accessories - Electrical accessories (M12-4Pin: Factory default ZL04-PC02G)

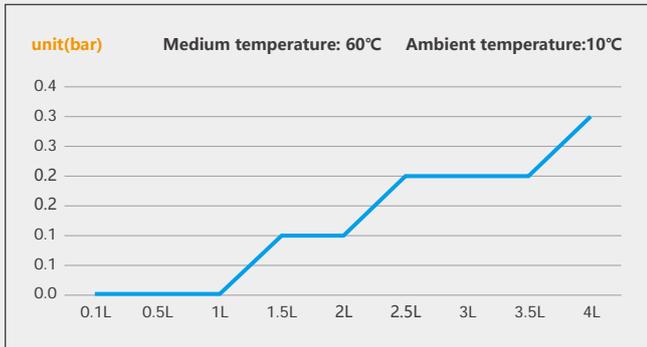
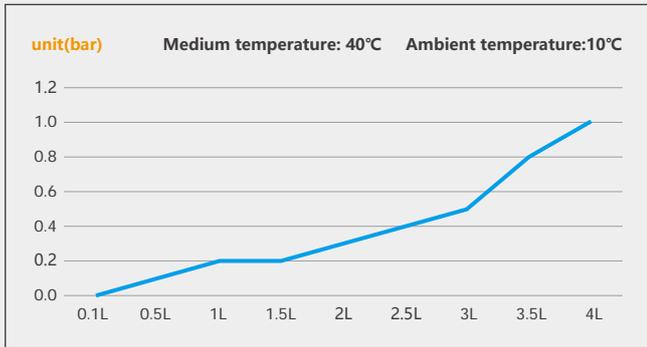
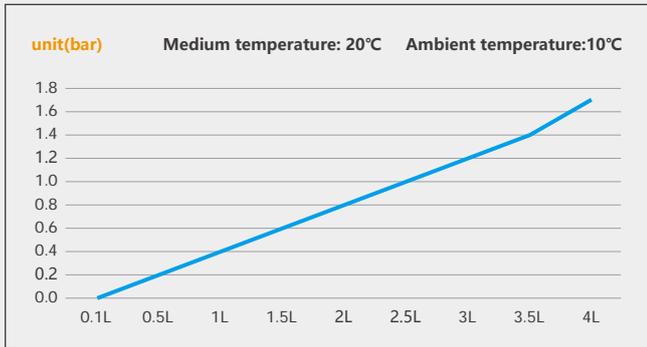
name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire		
M12*1-4Pin (2m cable)		PUR	ZL04-PU02G	-P		
M12*1-4Pin (5m cable)			ZL04-PU05G			
M12*1-4Pin (10m cable)			ZL04-PU010G			
M12*1-4Pin (2m cable)		PUR	ZL04-PC02G		-P	
M12*1-4Pin (5m cable)			ZL04-PC05G			
M12*1-4Pin (10m cable)			ZL04-PC010G			
M12*1-4Pin (2m cable)		PVC	ZL04-PU02W			-P
M12*1-4Pin (5m cable)			ZL04-PU05W			
M12*1-4Pin (10m cable)			ZL04-PU010W			
M12*1-4Pin (2m cable)		PVC	ZL04-PC02W	-P		
M12*1-4Pin (5m cable)			ZL04-PC05W			
M12*1-4Pin (10m cable)			ZL04-PC010W			

Optional accessories - Protective cover

Color crystal screen series (switch) sensor

Order number: STCS33661

M4 pressure loss meter (medium: 46# oil)



M4 pressure loss meter (medium: 320# oil)

