

Introduction

The ACU20FE series Coriolis mass flow controller/flowmeter is a precision instrument designed for high-precision measurement of fluids by ACCU using Coriolis technology and through a series of technological innovations. Compared with other technologies, Coriolis technology is characterized by the fact that the measurement is completely unaffected by the characteristics of the fluid, resulting in extremely high accuracy. The technique is therefore suitable for very accurate measurement of very small flow rates.

ACU20FE series not only measures mass flow, but also simultaneously measures the density and temperature of a fluid, and offers two different levels of accuracy: For liquids, the measurement accuracy can reach $\pm 0.25\%$. For gases, the measurement accuracy can reach $\pm 0.5\%$. This level of accuracy is sufficient to meet various experimental scenarios in the laboratory, and it can also calmly deal with complex and ACU20FE Features changeable industrial environments.



ACU20FE Features

Measuring principle

As fluid flows through the sensor circuit, the Coriolis force causes a variable phase shift, which is detected by the sensor and transmitted to an integrated circuit board where a DSP chip processes the signal.

The DSP processor operates on this signal to derive the actual mass flow rate of the fluid. This calculation is proportional to the mass flow rate of the fluid and has nothing to do with how the fluid properties change, so the ACU20FE series of products can measure the mass flow rate of the fluid very accurately. Different from similar instruments, ACU20FE series products integrate PID controller and batch function, which can realize accurate flow control and quantitative feeding.

Product Application












1. Semiconductor manufacturing: Control the flow of gas and liquid to ensure the accuracy of the chip manufacturing process.
2. Food processing: control the flow of food additives, spices, dairy products and other fluids to ensure product quality and consistency.
3. Scientific experiments: chemical reactions, formula experiments and other experiments that require precise control of fluid volume.
4. Petrochemical energy: precise control of the flow of energy reactants and products, improve production efficiency and product quality.
5. Atmospheric monitoring: measurement of pollutant emissions, environmental monitoring.
6. Fuel cell technology: control the flow of hydrogen and oxygen to improve the efficiency and life of fuel cells.
7. Pharmaceutical industry: precisely control the flow of drug ingredients to ensure drug quality and safety.

1. High precision, good repeatability; Because the product directly measures the mass flow of the fluid and has no thermal drift, the temperature shift and time drift can be ignored. The measurement accuracy of gas can reach ± 0.5 F.S, and the measurement accuracy of liquid can reach ± 0.25 , covering most high-precision measurement scenarios.
2. High reliability and stability, can withstand extreme environmental tests: When the product is working in a vibration environment, if it is subject to accidental physical interference such as object collision or bumps, the measurement can be immediately restored to a stable working state within 400 milliseconds.
3. millisecond response and regulation speed: Compared with similar measurement technology, the product takes advantage of Coriolis technology and controls the control and measurement response time within 500ms and 100ms respectively.
4. Can measure high viscosity fluid and high density gas: The product measures a wide range of fluids, such as lubricating oil, liquid nitrogen and other high-density fluids, can also be accurately measured.
5. Function automation: integrated PID controller to adjust the flow: The product integrates a PID controller to accurately adjust the flow, and at the same time, the embedded batch function can realize the flow control and quantitative feeding.
6. Simultaneous output of fluid density and temperature: Not only the mass flow data of the fluid can be obtained, but also the density and temperature data of the fluid can be obtained at the same time, which is suitable for industrial scenarios where the density and temperature of the fluid are measured at the same time.

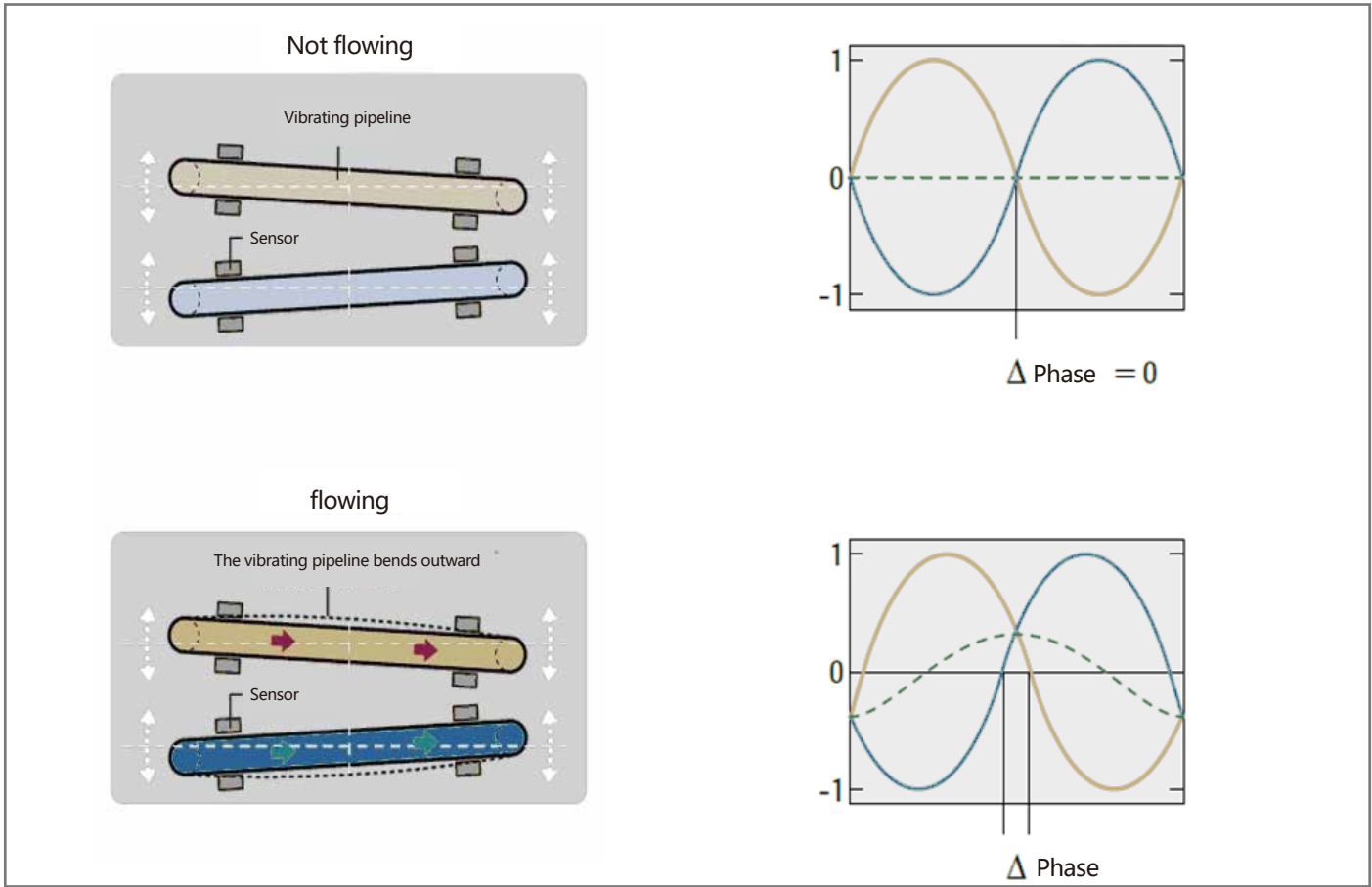
Specification

Technical indicators	Mass flow controller		Mass flow meter	
	Range	0~(40g/h...1000kg/h)		
	Measurement and control rang	controller valve control range50:1	flow meter range ratio100:1	
	Accuracy (gas)	±0.5%F.S(full scale)		
	Accuracy (liquid)	±0.25%F.S(full scale)		
	Repeatability	±0.05%F.S		
	Stability	<±0.1%F.S		
	Response time	<0.2s	<0.1s	
	Temperature accuracy	±0.5°C		
	Working temperature	0 ~ 70°C		
	Maximum withstand voltage	3MPa/10MPa		
	Leakage rate	<2×10 ⁻⁹ Pa m ³ /S		
	Mechanical components	Base material	304L/316L	
		Connector	φ8、φ10、φ12, sleeve, flange installation, etc	
External seal material		metal		
Shell protection level		IP40		
Installation position		Installation in any position		
Electrical Performance	Monochrome LED display	Display traffic and Settings at the same time		
	Electrical connection	DB9 hole, RJ11, 5.5×2.1 power quick plug		
	Display status	With or without LCD display		
	Digital quantity	RS232/485 Modbus protocol, Profibus protocol, EtherCAT protocol, etc		
	Analog quantity	0 ~ 5V, 4-20mA, 1-5V		
	Power supply	±15VDC, 24VDC		

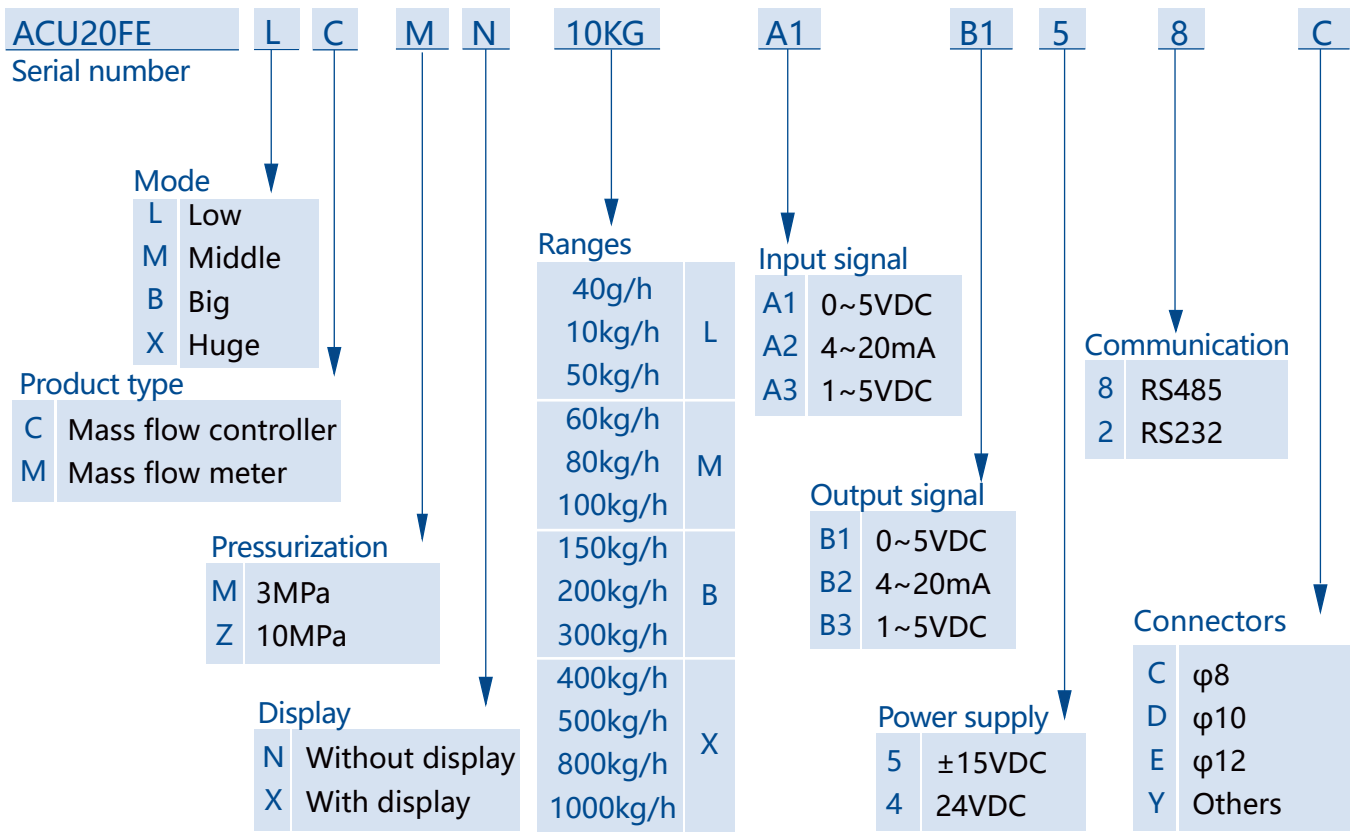
ModelNo.&Ranges

Product Picture						
Models	ACU20FE-SC	ACU20FE-LC	ACU20FE-MC	ACU20FE-BC	ACU20FE-XC	ACU20FE-XC
Ranges	0~(40g/h...50kg/h)	0~(40g/h...50kg/h)	0~(50kg/h...100kg/h)	0~(100kg/h...300kg/h)	0~(300kg/h...1000kg/h)	0~(300kg/h...1000kg/h)
Product Picture						
Models	ACU20FE-SM	ACU20FE-LM	ACU20FE-MM	ACU20FE-BM	ACU20FE-XM	
Ranges	0~(40g/h...50kg/h)	0~(40g/h...50kg/h)	0~(50kg/h...100kg/h)	0~(100kg/h...300kg/h)	0~(300kg/h...1000kg/h)	

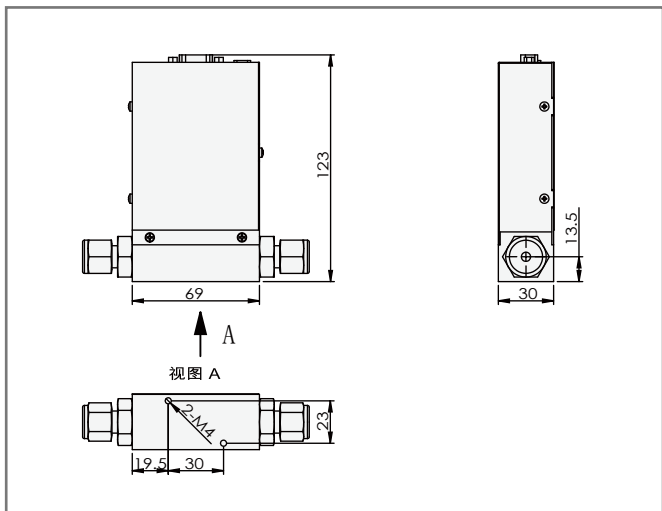
Sensor waveform



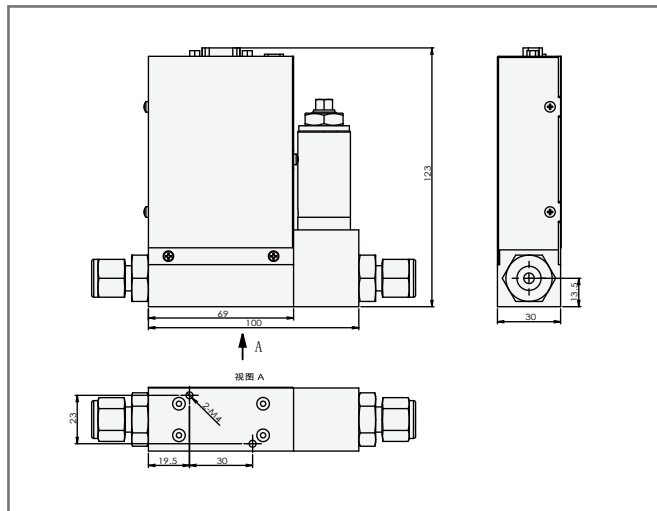
Modelchart



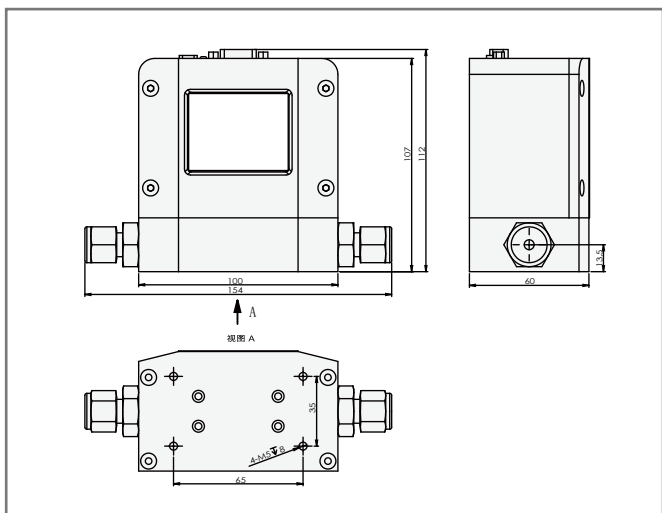
Dimensions(mm)



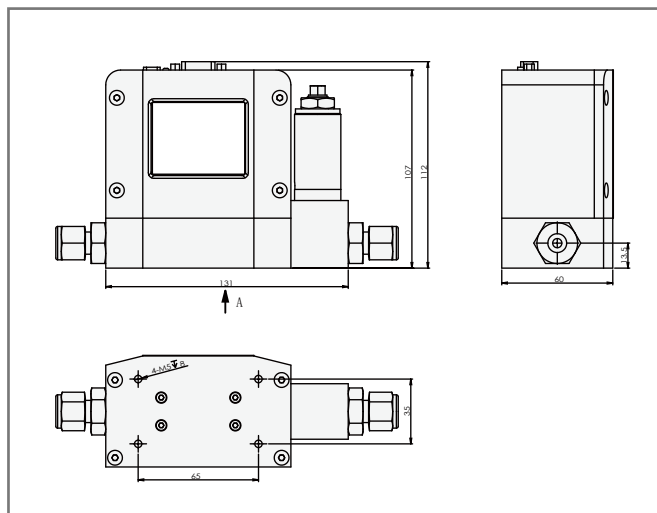
▲ ACU20FE-SM



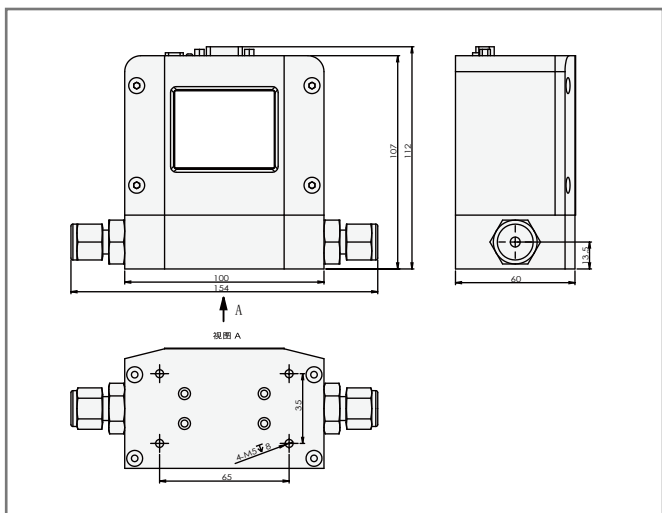
▲ ACU20FE-SC



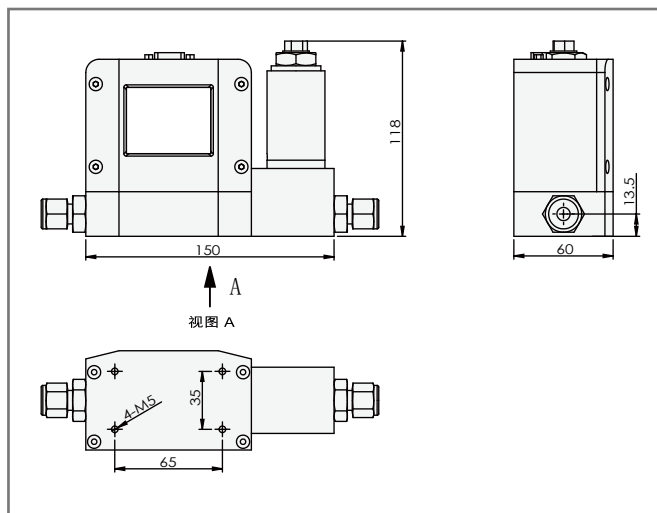
▲ ACU20FE-LM



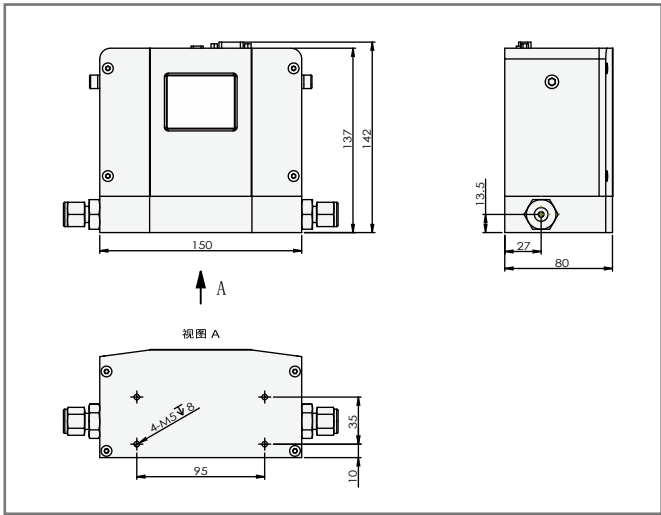
▲ ACU20FE-LC



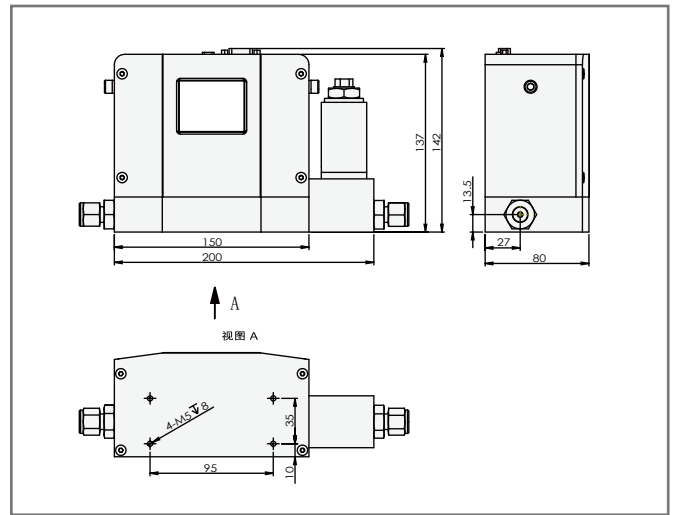
▲ ACU20FE-MM



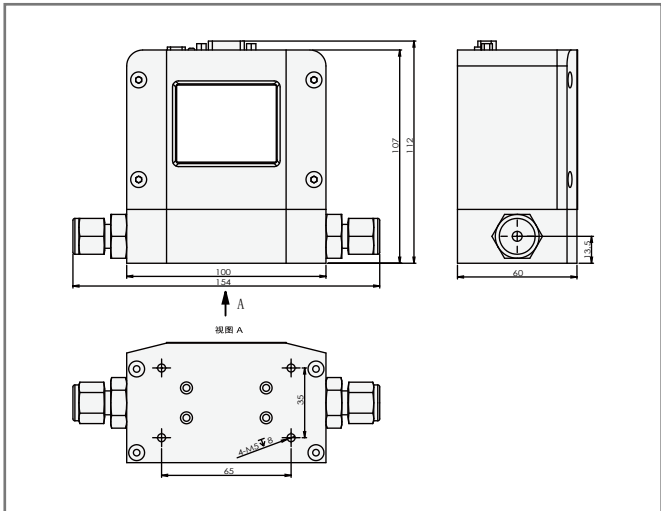
▲ ACU20FE-MC



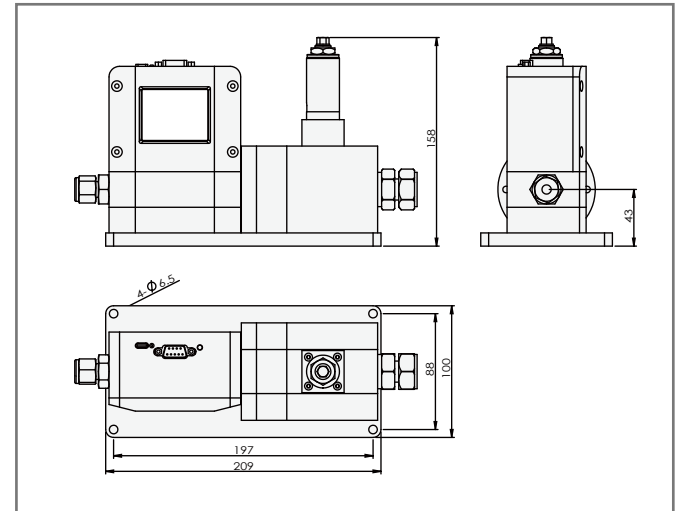
▲ ACU20FE-BM



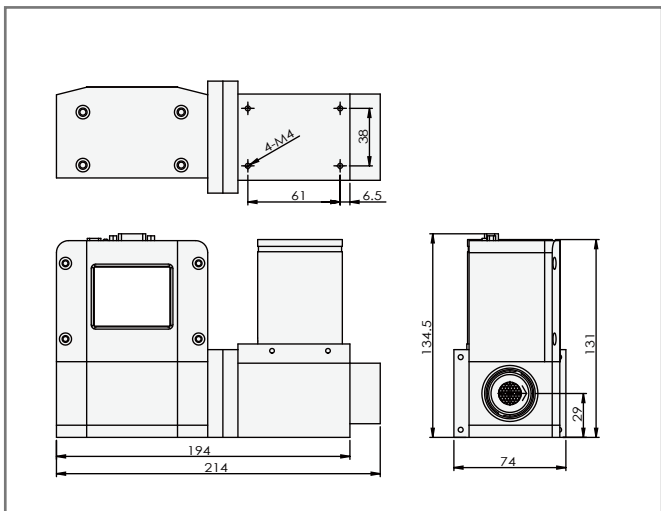
▲ ACU20FE-BC



▲ ACU20FE-XM



▲ ACU20FE-XC



▲ ACU20FE-XC