ACU20FEH

Coriolis Mass Flow Controllers & Meters

Introduction

ACCU (Beijing Accu Flow Technology Co., Ltd.) specializes in the research, development, and manufacturing of gas and liquid mass flowmeters and controllers. These instruments are customized based on customers' specific working conditions and technical requirements.

The products are designed for widespread application across various industries, enabling precise measurement and control of gas and liquid mass flow rates. While conventional Coriolis flowmeters are typically used for measuring relatively high flow rates, the ACU20FE successfully adapts this technology for accurate measurement of very low flow rates, with the PID controller and batch function integrated internally. These features allow for precise flow control and quantitative dosing operations. In addition, ACCU offers split-type Coriolis mass flowmeters, which are primarily used for measuring and controlling the flow of media under extreme temperature conditions, including both high and low temperatures.

Performance and Principle

Coriolis mass flow controllers are widely recognized for their high measurement accuracy and their ability to remain unaffected by variations in fluid properties. The ACU20FEH model features a uniquely designed single-loop sensor, which constitutes an integral part of the oscillation system. As fluid flows through the sensor tube, the Coriolis force induces a phase shift that varies in proportion to the mass flow rate. This phase shift is detected by the sensor and transmitted to the DSP processor located on the integrated circuit board for precise computation. Consequently, the resulting output signal maintains a strictly proportional relationship with the actual mass flow rate. Even under fluctuating conditions such as changes in pressure, temperature, density, electrical conductivity, and viscosity, the device delivers exceptional and reliable performance.

When deployed in environments involving extreme fluid temperatures—either high or low—the controller adopts a split structure, separating the control unit from the electrical components. It simultaneously measures and outputs mass flow rate, fluid density, and temperature.

Applied to laboratories and industrial environments

The ACU20FEH series of mass flow measurement instruments offer an accuracy of ±0.25%, which is adequate to meet the requirements of most customers. These instruments are suitable not only for a wide range of laboratory testing applications but also for deployment in complex industrial environments. To ensure reliable performance in harsh conditions, certain models are available with IP67-rated dust and water resistance. In addition to standard analog input/output interfaces, these models also support RS-485 and RS-232 communication interfaces, utilizing the standard Modbus RTU protocol for seamless integration into industrial systems.

Applications

The ACU20FEH instrument can be applied in food, (petroleum) chemical andPharmaceutical industry, fermentation equipment, semiconductor processing and fuel cell technology Intraoperative process fluid measurement or control system.

ACU20FEH Features

- Directly measure the mass flow rate
- The accuracy can reach ±0.5%
- No Dead zone
- Fast response speed and fast adjustment speed
- High precision and good repeatability
- The integrated PID controller regulates the flow
- High/low temperature fluids can be measured
- High reliability and long service life
- No thermal drift, negligible temperature shift and time drift
- It can simultaneously output fluid density and temperature
- High-viscosity fluids and high-density gases can be measured
- It has no obvious effect on environmental vibration

Specification

		Mass flow controller	Mass flow meter
Technical indicators	Range	0~(40g/h...1000kg/h)	
	Measurement and control rang	controller valve control range 50:1	flow meter range ratio 100:1
	Accuracy (liquid)	±0.25%F.S (full scale)	
	Repeatability	±0.05%F.S	
	Stability	<±0.1%FS	
	Response time	<0.2s	<0.1s
	Temperature accuracy	±0.5°C	
	Working temperature	0～70°C	
	Maximum withstand voltage	3MPa/10MPa	
	Leakage rate	$<2\times10^{-9}$ Pa m^3 /S	
Mechanical components	Base material	304L/316L	
	Connector	φ6, 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	
	Analog quantity	0～5V、4-20mA、1-5V	
	Power supply	±15VDC, 24VDC	

ModelNo.&Ranges

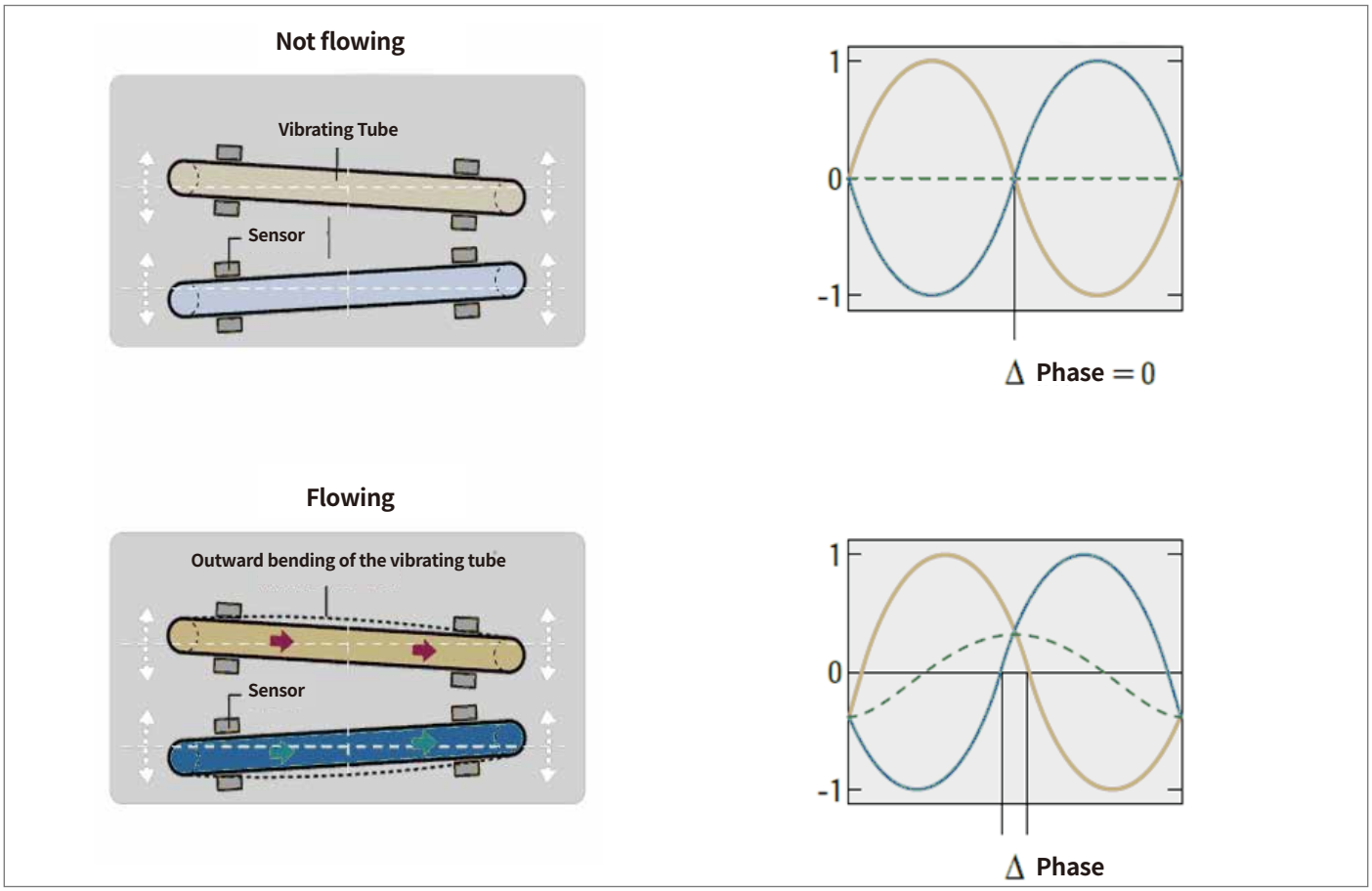


▲ ACU20FEH-LM Coriolis Mass Flow Meter



▲ ACU20FEH-LCCoriolis Mass Flow Controlers

Sensor waveform



Modelchart

ACU20FEH | L | C | M | N | 10KG | A1 | B1 | 5 | 8 | C

Serial number

Mode

L	Low
M	Middle
B	Big
X	Ultra-High

Product type

C	Mass flow controller
M	Mass flow meter

Pressurization

M	3MPa
Z	10MPa

Display

N	Without display
X	With display

Ranges

40g/h 10kg/h 50kg/h	L
60kg/h 80kg/h 100kg/h	M
150kg/h 200kg/h 300kg/h	B
400kg/h 500kg/h 600kg/h 800kg/h 1000kg/h	X

Input signal

A1	0~5VDC
A2	4~20mA
A3	1~5VDC

Output signal

B1	0~5VDC
B2	4~20mA
B3	1~5VDC

Power supply

5	±15VDC
4	24VDC

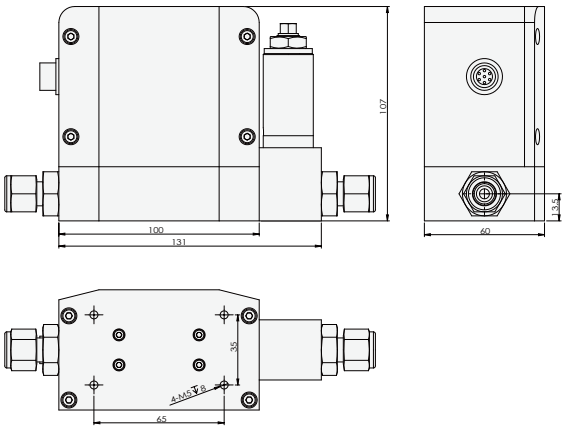
Communication

8	RS485
2	RS232

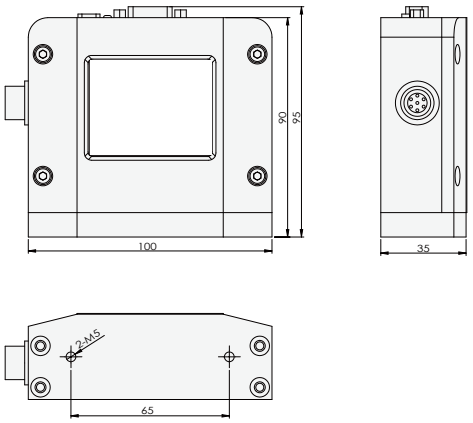
Connectors

C	φ8
D	φ10
E	φ12
Y	others

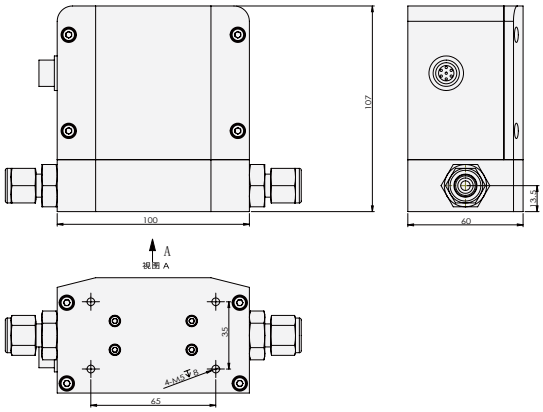
Dimensions(m



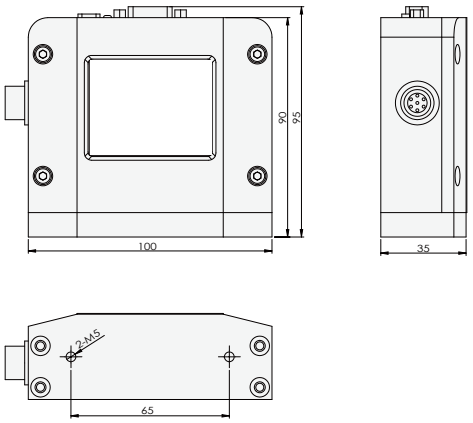
▲ ACU20FEH-LC Dimension drawing of the Mass Flow Controller part



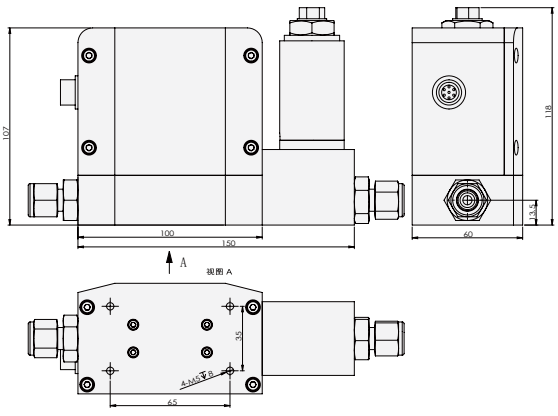
▲ ACU20FEH Dimension drawing of the electrical part



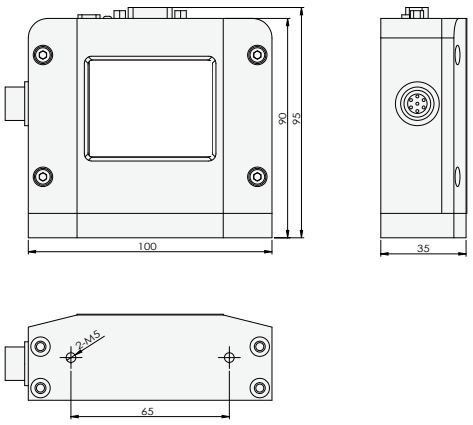
▲ ACU20FEH-LM Dimension drawing of the Flow Meter part



▲ ACU20FEH Dimension drawing of the electrical part

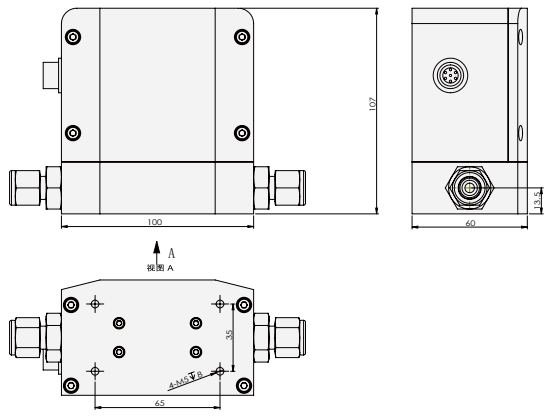


▲ ACU20FEH-MC Dimension drawing of the Mass Flow Controller part

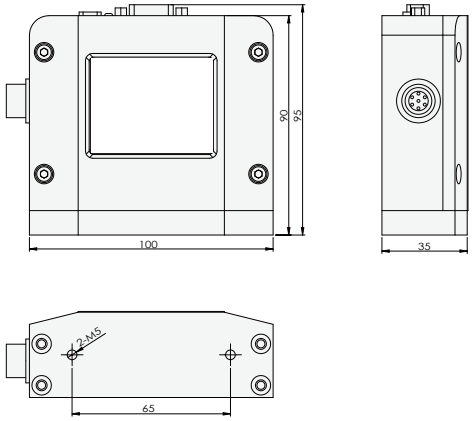


▲ ACU20FEH Dimension drawing of the electrical part

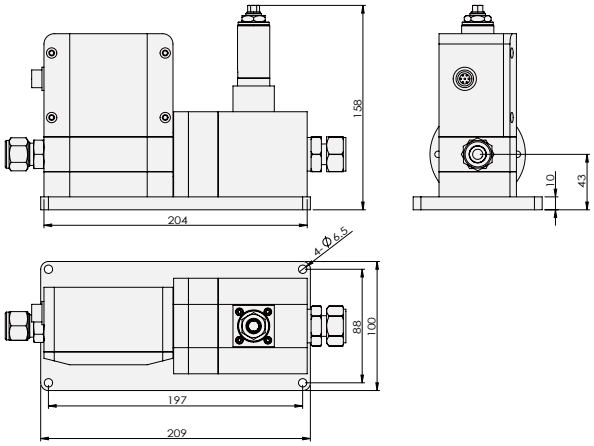
Dimensions(m



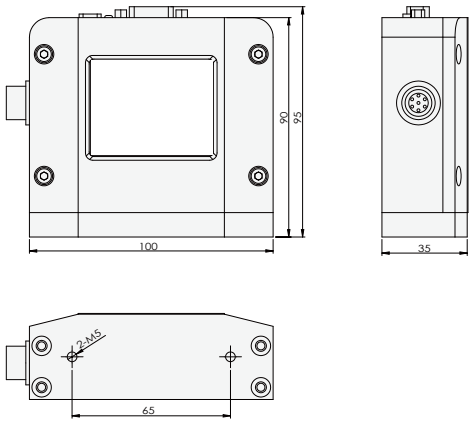
▲ ACU20FEH-MM Dimension drawing of the Flow Meter part



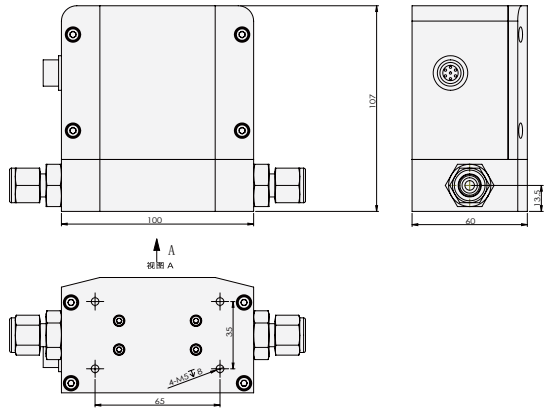
▲ ACU20FEH Dimension drawing of the electrical part



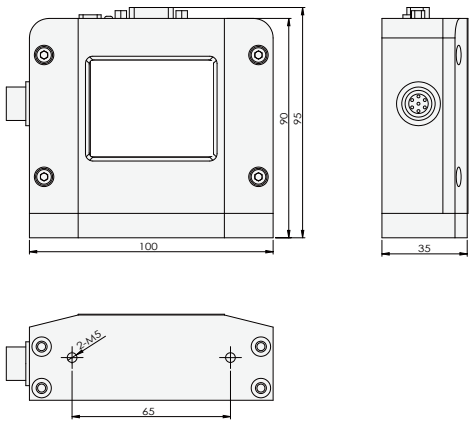
▲ ACU20FEH-XC Dimension drawing of the Mass Flow Controller part



▲ ACU20FEH Dimension drawing of the electrical part



▲ ACU20FEH-XM Dimension drawing of the Flow Meter part



▲ ACU20FEH Dimension drawing of the electrical part