ACU30FC Series

Differential Pressure
Mass Flow Controller/Flow Meter



Features

- No "specific heat capacity" error, high-precision data real-time feedback
- Compact design, large screen experience is more intuitive
- Support multi-parameter measurement to facilitate data analysis
- Adopt DSP master control to further improve accuracy and reliability
- Nearly 100 kinds of gases can be switchedfreely without factorycalibration
- Supports USB Type C and Bluetooth, flexible and diverse device connection

Applications

Vacuum Coating Solar energy Various analyzers Petroleum and petrochemical

Gas production distribution and environment protection Semiconductor Coal metallurgy

Performance and Principle

The ACU30FC series flowmeter uses the differential pressure principle to calculate the flow rate through the pressure difference generated when the fluid passes through the throttling element. The product has a built-in PID adjustment function and is used in conjunctionwith an electromagnetic proportional control valve to achieve precise control of the flow rate.

When the fluid flows from the pipeline through the throttling element, the flow rate increases and the static pressure decreases, thereby generating a differential pressure before and after the throttling element. The sensor measures the differential pressure, converts the differential pressure signal into an electrical signal and outputs it. The controller calculates the output differential pressure signal using the flow equation(Hagen-Poiseuille formula) to ultimately obtain the fluid flow rate.

ACU30FC can measure multiple parameters such as gas mass flow, volume flow, pressure and temperature, and display a series of parameters through touch screen or other external devices and control systems through RS485/232 and other communication methods to facilitate data monitoring and analysis.

Specifications

		High accuracy mass flow controller	High accuracy mass flow meter
Technical specifications	Range	0~(2SCCM...3000SLM)	
	Measurement and control range	controller valve control range50:1	flow meter range ratio100:1
	Accuracy	±0.5%F.SS（full scale）	
	Linearity	±0.5%F.S	
	Repeatability	±0.2%F.S	
	Stability	<±0.1%F.S	
	Response time	50mS	
	Temperature coefficient	±0.015%F.S/℃	
	Working temperature	-10℃～60℃	
	Working pressure	working differential pressure: 0.05~0.5Mpa	
	Max. operating pressure	1MPa	
	Leakage rate	1 X 10^{-9} Pa m^3 /S	
Mechanical parts	Base material	stainless steel	
	Connector	LOK, quick plug, pagodas,VCR, flange installation, etc	
	Sealing material	FFKM,Vilton,NBR,EPDM,Metal seal,Others	
	Shell protection level	IP40	
	Installation position	horizontal installation	
Electrical properties	Monochrome LED display screen	simultaneously displaying flow, setting	
	Electrical connections	DB9 hole, RJ11, 5.5×2.1 power fast plug	
	Display status	with display, without display	
	Digital output	Modbus protocol（RS232/485），ProfiBus protocol，DeviceNet protocol	
	Analog output	0～5V、4-20mA、1-5V	
	Power supply	±15VDC，24VDC	

Model No.& Ranges

				
Model No.	ACU30FC-SC	ACU30FC-LC	ACU30FC-MC	ACU30FCR-BC
Ranges	0~(2SCCM...30SLM)	0~(2SCCM...30SLM)	0~(30SLM...300SLM)	0~(300SLM...3000SLM)
				
Model No.	ACU30FC-SM	ACU30FC-LM	ACU30FC-MM	ACU30FCR-BM
Ranges	0~(2SCCM...30SLM)	0~(2SCCM...30SLM)	0~(30SLM...300SLM)	0~(300SLM...3000SLM)

Model chart

ACU30F | C | L | C | M | N | 200L | A1 | B1 | 5 | 8 | V | C

Serial number

Range select

C	Differential Pressure
CR	DP Low Loss Valve

Range select

S	Small
L	Low
M	Middle
B	Big

Product type

C	Mass flow controller
M	Mass flow meter

Pressurization

M	1MPa

Display

N	Without display
X	With display

Ranges

002C	2 SCCM	L
001L	1 SLM	
10L	10 SLM	
20L	20 SLM	
30L	30 SLM	
50L	50 SLM	M
100L	100 SLM	
200L	200 SLM	
300L	300 SLM	
500L	500 SLM	B
1000L	1000 SLM	
3000L	3000 SLM	
0000L	User Specified	

Input signals

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

Output signals

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

Power

5	±15VDC
4	24VDC

Communication

8	RS485
2	RS232

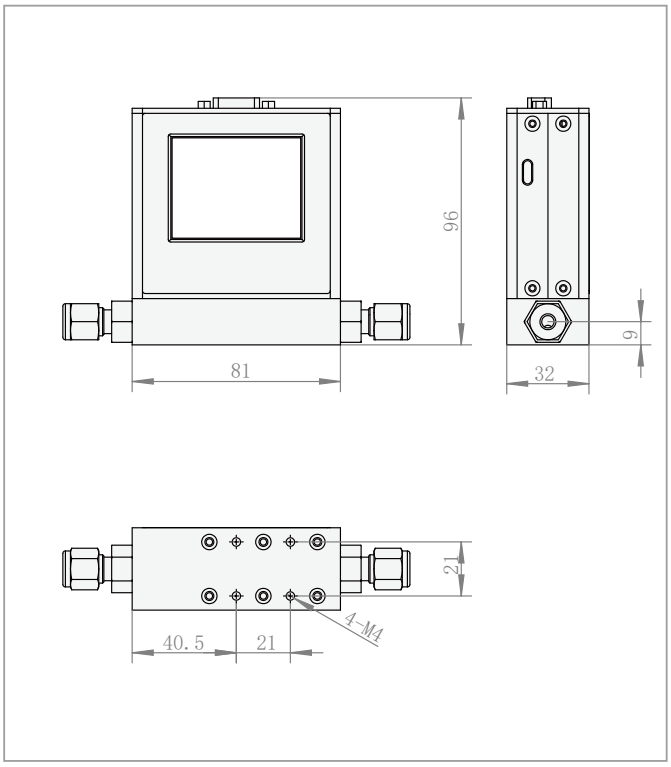
Sealing material

P	FFKM
V	Vilton
N	NBR
E	EPDM
Y	Others

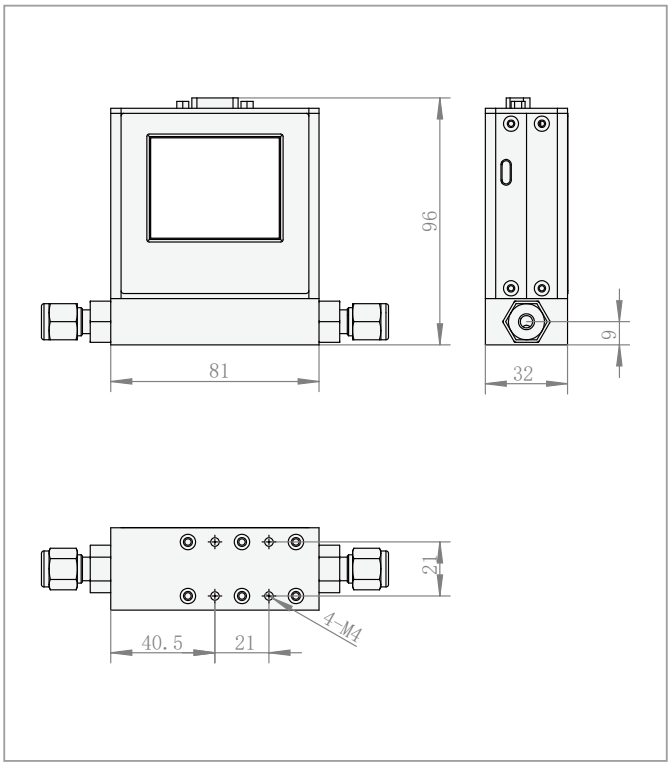
Connectors

C	φ8
D	φ10
E	φ12
Y	Others, Contact with manufacturer

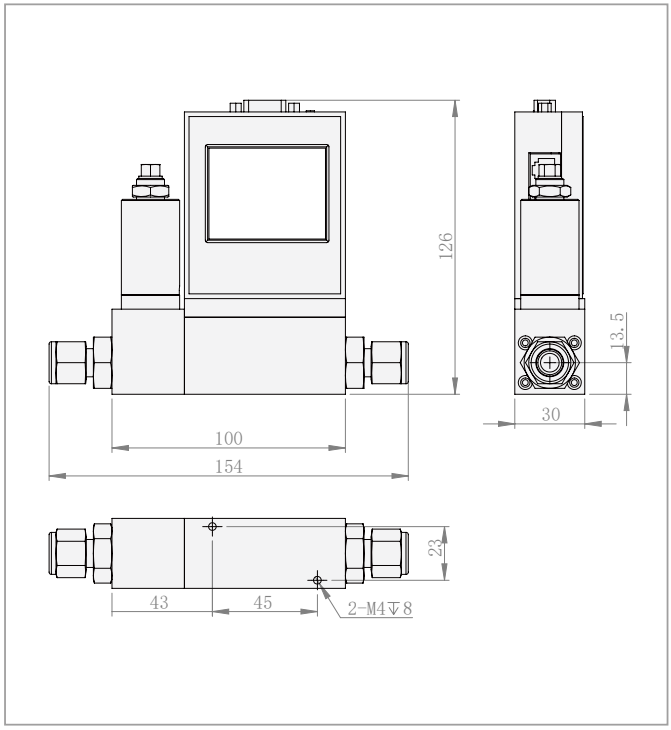
Dimensions (mm)



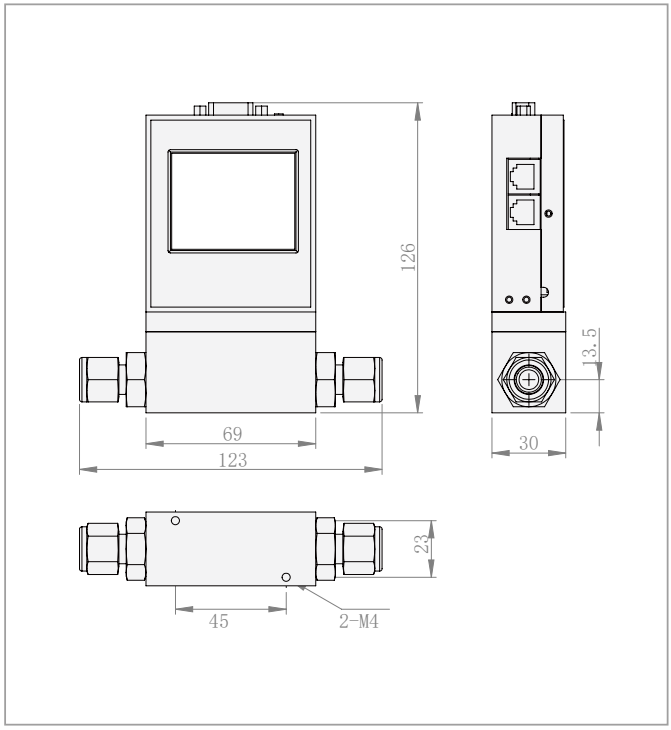
▲ACU30FC-SC Differential Pressure Mass Flow Controller



▲ACU30FC-SM Differential Pressure Mass Flow Meter

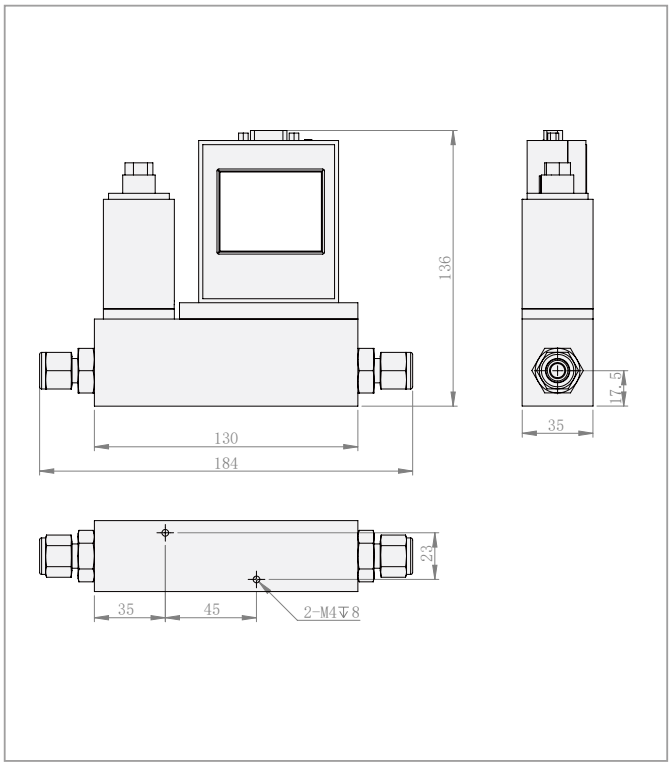


▲ACU30FC-LC Differential Pressure Mass Flow Controller

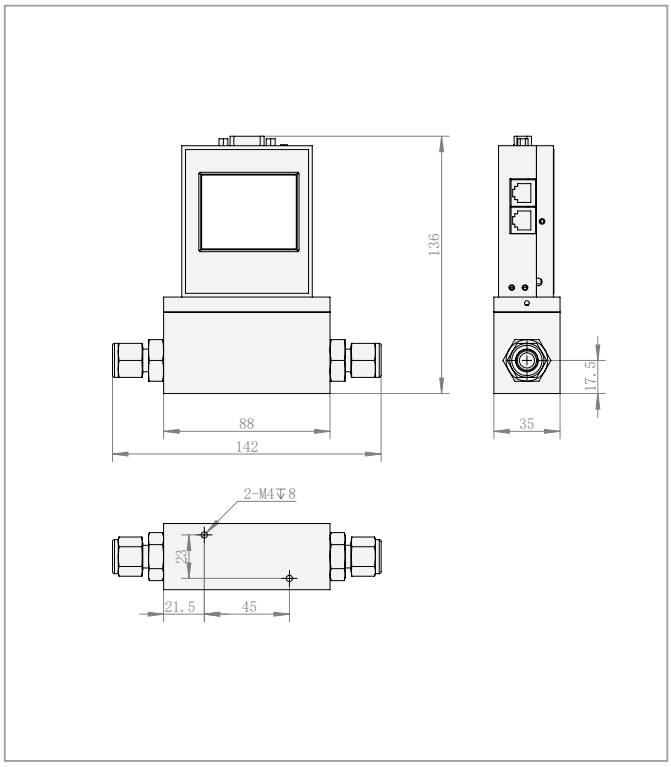


▲ACU30FC-LM Differential Pressure Mass Flow Meter

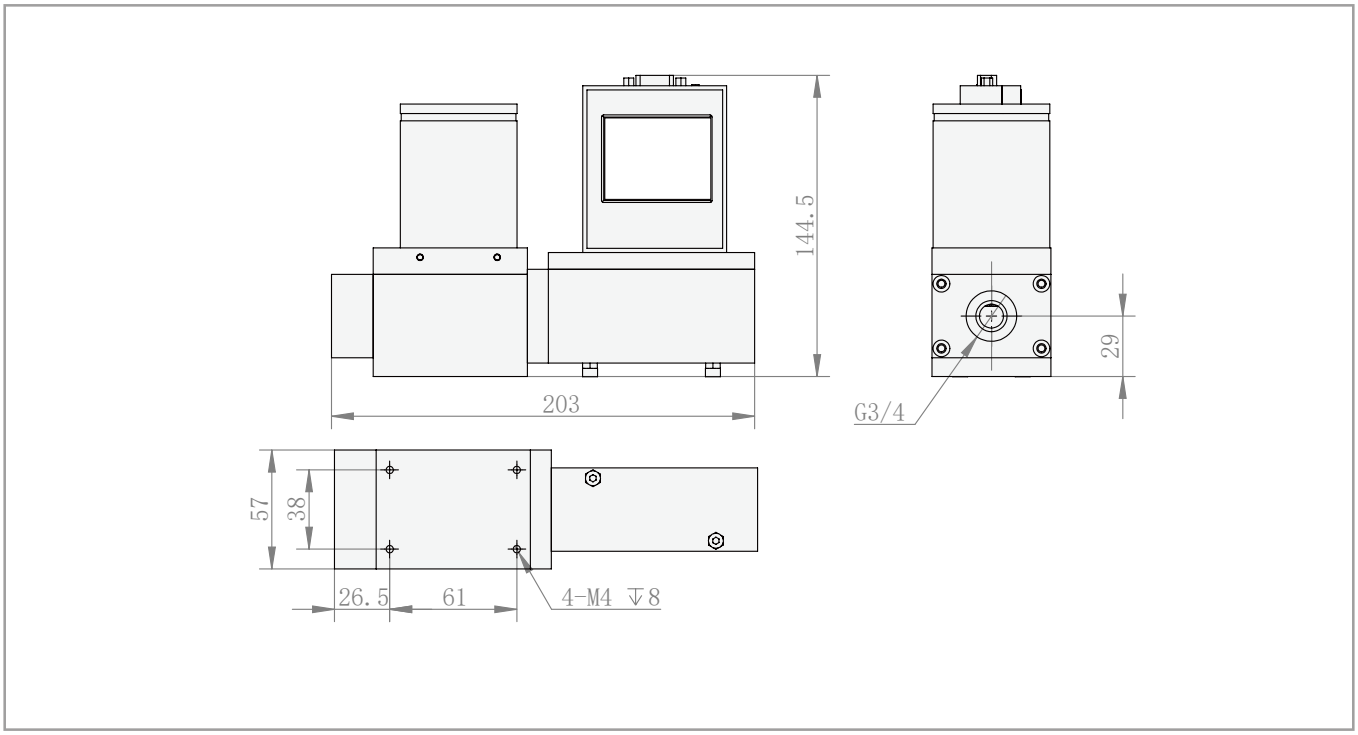
Dimensions (mm)



▲ACU30FC-MC Differential Pressure Mass Flow Controller

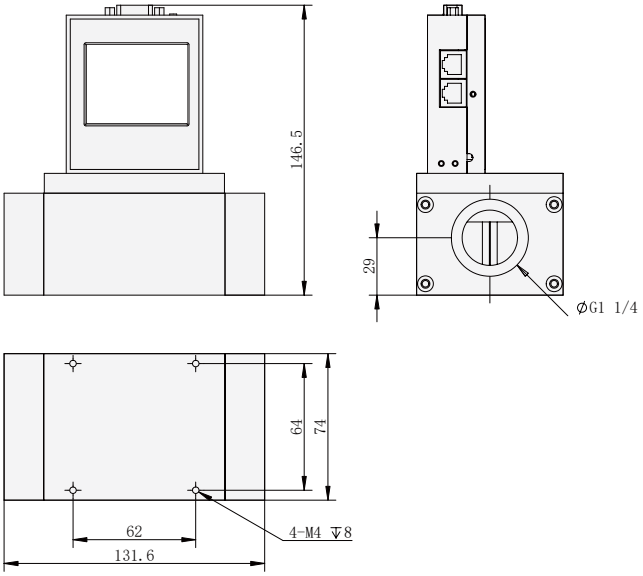


▲ACU30FC-MM Differential Pressure Mass Flow Meter



▲ACU30FCR-BCDifferential Pressure Mass Flow Controller

Dimensions (mm)



▲ACU30FCR-BM Differential Pressure Mass Flow Meter