ACU10FA Analog Mass Flow Meter/Controller (LOW)

- ◆Thermal principle, fast response, high accuracy
- ◆Tubular shunt design, resistant to clogging
- ◆Suitable for various low-pressure and high-pressure pipelines
- ◆Short preheating time, minimal zero drift, high reliability
- ◆Analog input/output, compatible with secondary meters or flow computers for flow control and display

The ACU10FA Mass Flow Controller (MFC) is composed of several key components, including a mass flow sensor, laminar flow element, flow control valve, and an amplification control circuit. It operates based on the thermal conduction distribution effect, where the flowing fluid transfers heat, thereby altering the temperature distribution along the walls of the measuring capillary.

The ACU10FA utilizes the calorimetric principle, measuring the temperature difference before and after heat transfer in the capillary to determine the mass flow rate of the gas. This method ensures that the measurements are unaffected by variations in temperature and pressure. The flow signal detected by the sensor is amplified and then compared with a set voltage. The resulting difference is used to drive the control valve, creating a closed-loop system that adjusts the flow through the channel to match the preset flow rate.

Product Applications

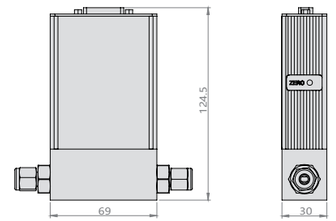
Glass Industry	Atmospheric Monitoring	Industrial Manufacturing	Petrochemicals	Solar Energy
Coal and Metallurgy	Gas Production and Distribution	Environmental Protection	Various Instrumental Analysis	

Specifications

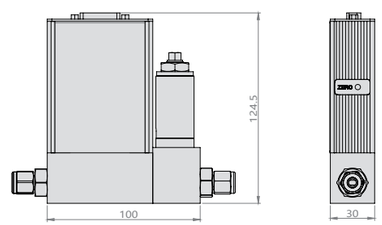
Specifications	ACU10FA-LC Mass Flow Controller	ACU10FA-LM Mass Flow Meter
Flow Range	5 SCCM to 30 SLM	
Accuracy	±1.0% F.S.	
	Temperature：±1℃	
Linearity	±0.5% F.S.	
Repeatability	±0.2% F.S.	
Response Time	<2 s (Controller)	<1.5 s (Meter)
Analog Output	0 – 5 V, 4 – 20 mA	
Power Supply	±15 VDC, 24 VDC	
Temperature	0 to 50°C	
Operating Pressure	Working Pressure Difference:0.05 to 0.5 MPa	Working Pressure Drop: <30 kPa
Max. Pressure Resistance	3 MPa / 10 MPa	
Electrical Connection	DB9 Female	
Leak Rate	1×10^{-9} Pa m^3/S	
Temperature Coefficient	±0.015% F.S./°C	
Base Material	Stainless Steel	
Sealing Materials	Fluororubber, Neoprene, Nitrile Rubber	
Connector	φ3，φ6，1/8"，1/4"	



Dimensions (mm)



ACU10FA−LM mass flow meter



ACU10FA−LC mass flow controller

Model chart

ACU10FA-L **C** **M** **500C** **007** **A1** **B1** **5** **V** **E**

Serial number

Product type
- C Mass flow controller
- M Mass flow meter

Pressurization
- M 3MPa
- Z 10MPa

Ranges
- 005C 5 SCCM
- 010C 10 SCCM
- 020C 20 SCCM
- 030C 30 SCCM
- 050C 50 SCCM
- 100C 100 SCCM
- 200C 200 SCCM
- 300C 300 SCCM
- 500C 500 SCCM
- 001L 1 SLM
- 002L 2 SLM
- 003L 3 SLM
- 005L 5 SLM
- 010L 10 SLM
- 020L 20 SLM
- 030L 30 SLM

Measured medium
- code See media reference table for details

Input signal
- A1 0~5VDC
- A2 4~20mA

Output signal
- B1 0~5VDC
- B2 4~20mA

Power supply
- 5 ±15VDC
- 4 24VDC

Sealing material
- V Vilton
- T NBR
- N Neoprene
- Y Others

Connectors
- A φ3
- B φ6
- F 1/8″
- G 1/4″
- Y Others

ACU10FA Analog Mass Flow Meter/Controller (Middle)

- ◆Thermal principle, fast response, high accuracy
- ◆Tubular shunt design, resistant to clogging
- ◆Suitable for various low-pressure and high-pressure pipelines
- ◆Short preheating time, minimal zero drift, high reliability
- ◆Analog input/output, compatible with secondary meters or flow computers for flow control and display

The ACU10FA Mass Flow Controller (MFC) is composed of several key components, including a mass flow sensor, laminar flow element, flow control valve, and an amplification control circuit. It operates based on the thermal conduction distribution effect, where the flowing fluid transfers heat, thereby altering the temperature distribution along the walls of the measuring capillary.
The ACU10FA utilizes the calorimetric principle, measuring the temperature difference before and after heat transfer in the capillary to determine the mass flow rate of the gas. This method ensures that the measurements are unaffected by variations in temperature and pressure. The flow signal detected by the sensor is amplified and then compared with a set voltage. The resulting difference is used to drive the control valve, creating a closed-loop system that adjusts the flow through the channel to match the preset flow rate.

Product Applications

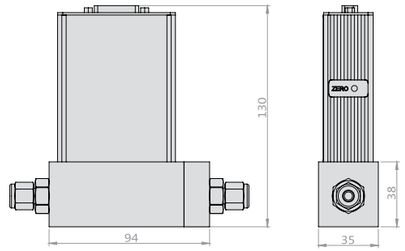
Glass Industry	Atmospheric Monitoring	Industrial Manufacturing	Petrochemicals	Solar Energy
Coal and Metallurgy	Gas Production and Distribution	Environmental Protection	Various Instrumental Analysis	

Specifications

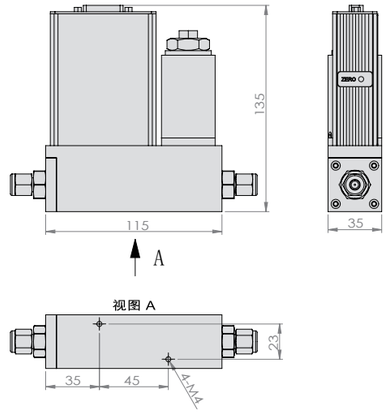
Specifications	ACU10FA-LC Mass Flow Controller	ACU10FA-LM Mass Flow Meter
Range	30 SLM to 150 SLM	
Accuracy	±1.0% F.S.	
	Temperature：±1℃	
Linearity	±0.5% F.S.	
Repeatability	±0.2% F.S.	
Response Time	<2 s	<1.5 s
Analog Output	0 – 5 V, 4 – 20 mA	
Power Supply	±15 VDC, 24 VDC	
Temperature	0 to 50°C	
Operating Pressure	Working Pressure Difference:0.05 to 0.5 MPa	Working Pressure Drop: <30 kPa
Max. Pressure Resistance	3 MPa / 10 MPa	
Electrical Connection	DB9 Female	
Leak Rate	1×10^{-9} Pa m^3/S	
Temperature Coefficient	±0.015% F.S./°C	
Base Material	Stainless Steel	
Sealing Materials	Fluororubber, Neoprene, Nitrile Rubber	
Connector	φ8，φ10，φ12	



Dimensions（mm）



ACU10FA−LM mass flow meter



ACU10FA−LC mass flow controller

Model chart

ACU10FA-M C M 030L 007 A1 B1 5 V C

Serial number

Product type
- C Mass flow controller
- M Mass flow meter

Pressurization
- M 3MPa
- Z 10MPa

Ranges
- 030L 30 SLM
- 050L 50 SLM
- 100L 100SLM
- 150L 150SLM

Measured medium
- code See media reference table for details

Input signal
- A1 0~5VDC
- A2 4~20mA

Output signal
- B1 0~5VDC
- B2 4~20mA

Power supply
- 5 ±15VDC
- 4 24VDC

Sealing material
- V Vilton
- T NBR
- N Neoprene
- Y Others

Connectors
- C φ8
- D φ10
- E φ12
- Y Others