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Coriolis Mass Flow Meter

FCC600

flow measurement instrument developed according to the principle of Coriolis force, which can directly measure the mass flow rate of the fluid in the closed pipeline, the density and temperature of the medium.

It can be widely used in chemical, petroleum, food, pharmaceutical, paper-making and other industries.

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Application

- Chemical industries
- Petroleum industries
- Food industries
- Pharmaceutical industries
- Paper-making industries

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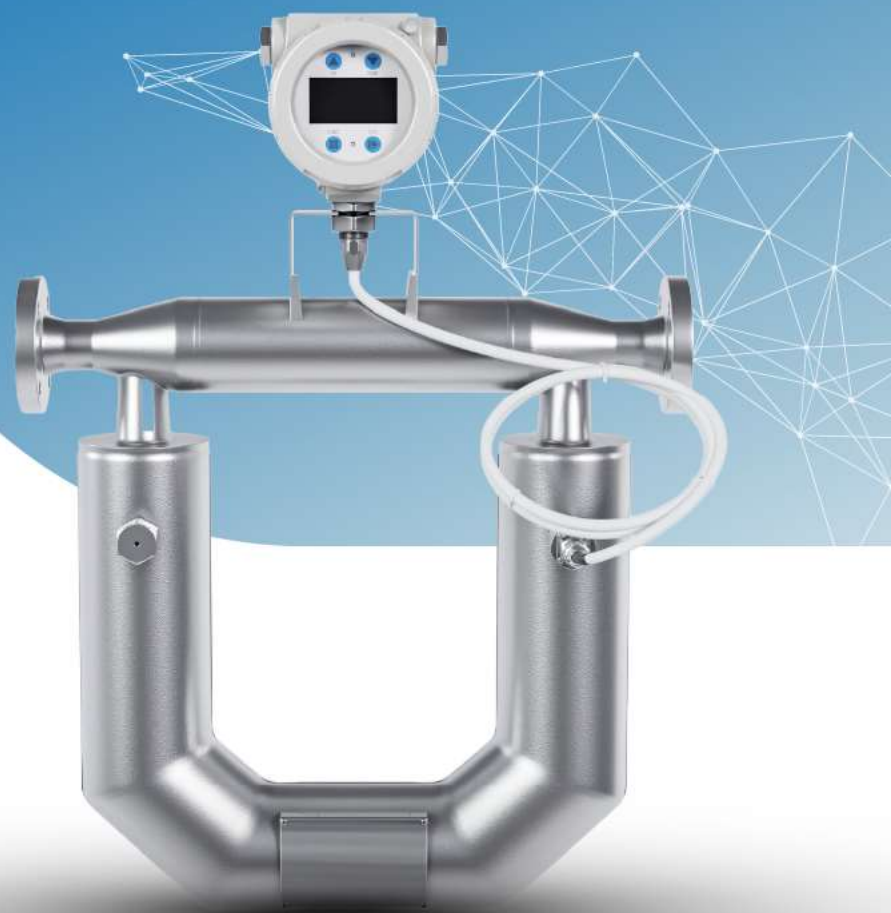
Features

- Can directly measure the mass flow of the fluid.
- Wide measuring range and high accuracy.
- Low installation requirements and the front and rear straight pipes are not required.
- Wide applications ranges; can measure not only normal fluid but also industrial media that are difficult to be measured by general fluid measuring instruments, such as high viscosity fluids, various slurries, suspensions, etc.
- The density, temperature and other parameters of the measured medium can be measured online, and derived from this measurement of the solute concentration in the solution.
- Reliable operation, low maintenance rate.



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Parameters

Measured variable	Mass flow, density, temperature
Nominal caliber	Straight pipe type: DN8~DN80 U-type: DN20~DN150 Triangular type: DN3 to DN15
Flow range (L/min)	Refers to Tables 1 and 2
Density measuring range	(0.3～3.000)g/cm3
Temperature measuring range	(-200～300)°C
Converter output	(4 to 20) mA, output load (250 to 600) Ω
Communication output	RS485 interface, MODBUS-RTU communication protocol; Hart
Frequency (pulse) output	Pulse width: 50% Active: Output current 10mA, open circuit voltage 24V
Power supply	24VDC/220VAC

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Parameters

Power consumption	≤15W
Electrical interface	M20*1.5
Accuracy	Flow rate: 0.2, 0.5 Density: ±0.002g/cm3 Temperature: ±1°C
Repeatability	1/2 of the measurement error
Medium temperature	Standard type: (-50 ~ 200)°C , (-20 ~ 200) °C High temperature type: (-50 ~ 350) °C Low temperature type: (-200 ~ 200) °C
Process pressure	The maximum flow rate corresponds to the pressure loss of 100kPa (water as the medium)
Temperature	-40°C～+60°C
Humidity	35%～95%
Ingress protection	IP67

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Table 1 Flow range of straight tube mass flow meter

Diameter (mm)	Conventional flow meter flow range (kg/h)	Sanitary flow meter flow range (kg/h)	Zero point stability (kg/h)
8	0～960～1440	/	0.096
10	0～1500～2250	/	0.15
15	0～3000～4500	/	0.3
20	0～6000～9000	0～4500	0.6
15	0～9600～14400	0～9000	0.96
32	0～18000～27000	0～14400	1.8
40	0～30000～45000	0～27000	3
50	0～48000～72000	0～45000	4.8
80	0～120000～180000	/	12

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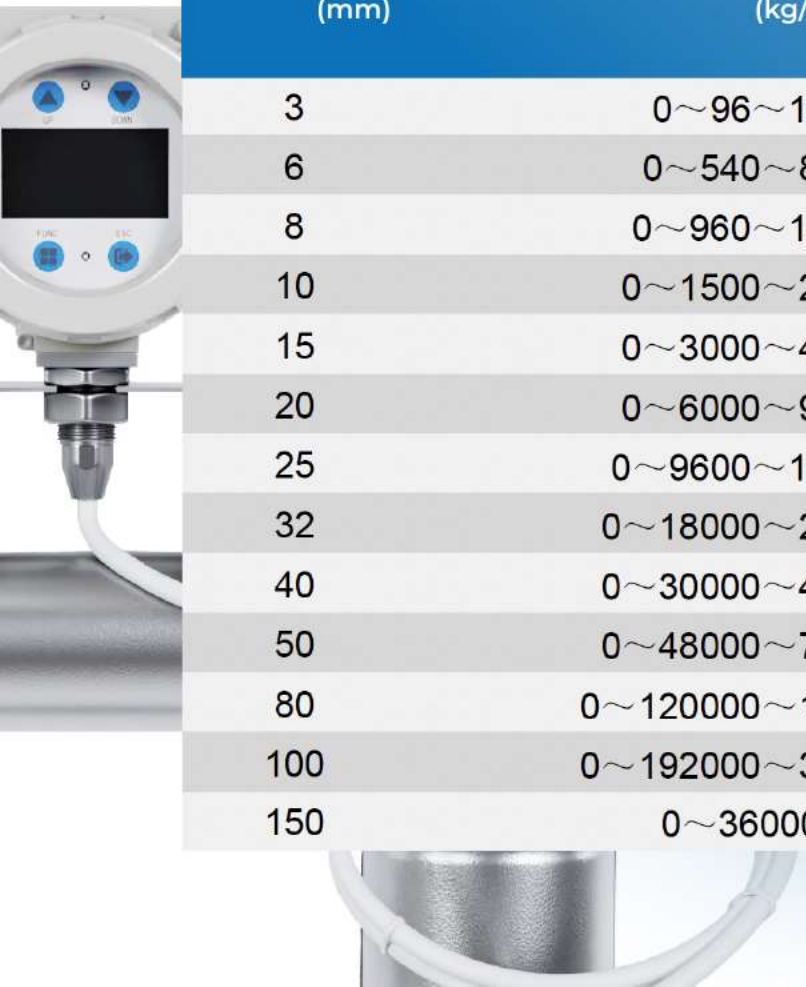
Table 2 Flow range of non-straight tube mass flowmeter



Diameter (mm)	Conventional flow meter flow range (kg/h)	High pressure flow range flow meter Flow range (kg/h)	Zero point stability (kg/h)
3	0～96～144	/	0.0096
6	0～540～810	/	0.054
8	0～960～1440	/	0.096
10	0～1500～2250	/	0.15
15	0～3000～4500	/	0.3
20	0～6000～9000	0～3000～4500	0.6
25	0～9600～14400	0～6000～9000	0.96
32	0～18000～27000	0～9600～14400	1.8
40	0～30000～45000	0～18000～27000	3
50	0～48000～72000	0～30000～45000	4.8
80	0～120000～180000	0～75000～90000	12
100	0～192000～300000	/	19.2
150	0～360000	/	36

Note:

Two parameters are given in the flow range, the middle parameter is the standard flow range, the general factory inspection is carried out according to this range, and it is also recommended that users choose instruments within this range; The latter parameter is the upper limit flow range to ensure the stable operation of the flow meter.

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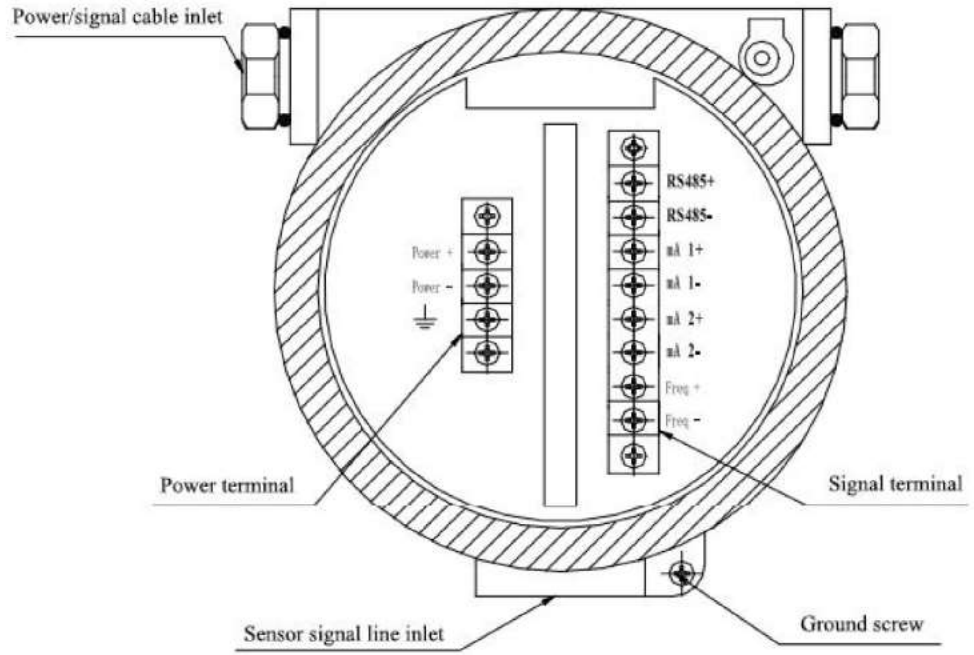
WIRING

Flow meter terminal



Symbol	Instructions
RS485+、RS485-	RS485 serial communication interface
mA1+、mA1-	First (4 to 20) mA output port
mA2+、mA2-	Second (4 to 20) mA output port Hart output interface (optional)
Freq+、Freq-	Frequency (pulse) output interface
Power+、Power-	Power interface
⏚	Converter instrument protection ground

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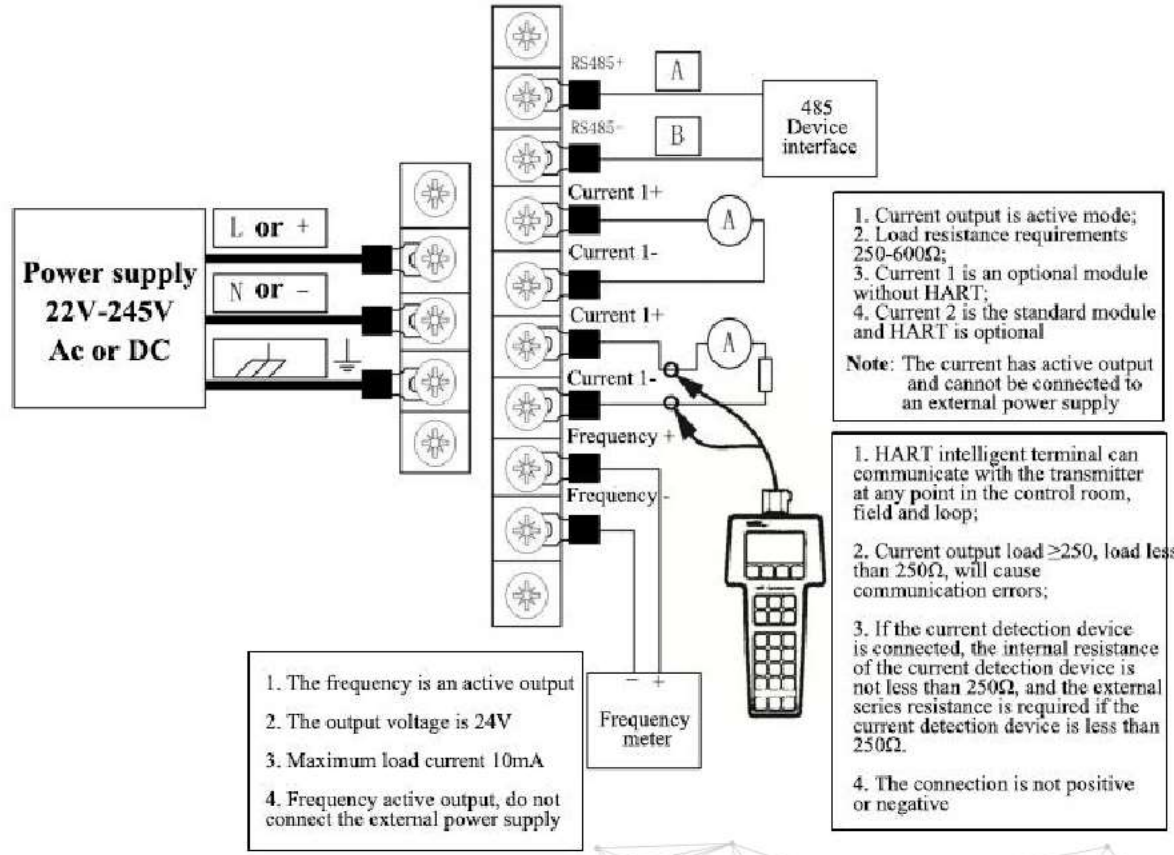
WIRING

Transmitter wiring



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Specific requirements for electrical wiring

1 Use special cables

The connection between the terminal box and the converter should be a special cable, can not be used with other cables, so as not to affect the measurement error (separate installation).

2 Separate cabling

The lead between the sensor and the converter should be routed separately. Do not cover the motor and other power equipment to avoid the impact of electromagnetic field on the measurement. The length of the lead should not exceed the maximum allowable distance of 100 meters (separate installation).

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3 Grounding

- If the sensor terminal is grounded, for example, the pipeline system is connected to the ground, the sensor grounding terminal can be directly connected to the pipeline system.

- The converter ground terminal can be connected directly to the meter protection ground access point through the converter ground, such as the pipe is not conducting or floating. Improper grounding may increase measurement errors. The grounding cable should be as short as possible, and the grounding resistance should be less than 1 Ω.

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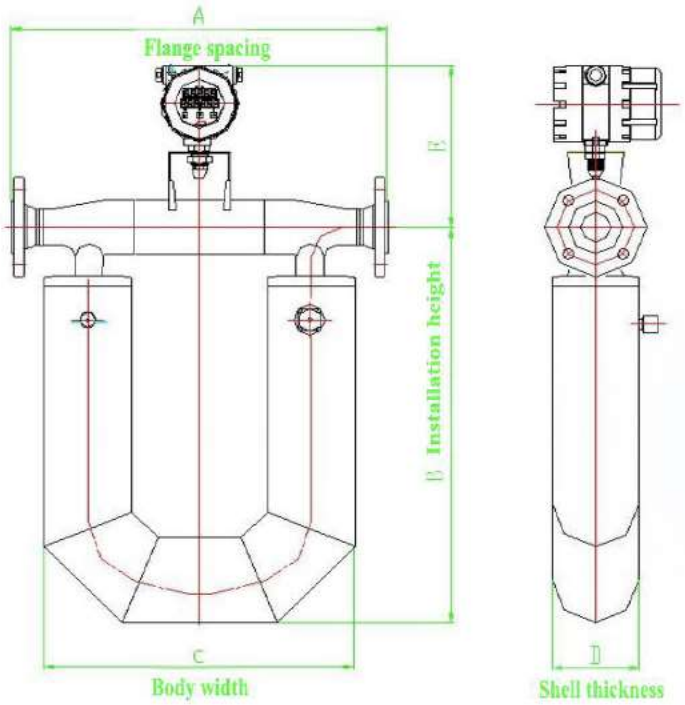
4 Drip protection

- All housing screws, housing covers and cable inlet gran heads must be tightened.
- Keep the shell sealing gasket clean and intact when inserting it into the sealing slot. The gasket can be dried, cleaned and replaced if necessary.
- Drip protection should be installed on all cables. That is, the cable inlet of the flowmeter and the cable and conduit should be bent downward to avoid water and short circuit.
- All cable inlet faces must not face upward without protective measures.
- Seal unnecessary cable inlets with plugs.

Dimension

U-type Coriolis mass flow meter dimensions Figure



Diameter (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Weight (KG)
DN10	450	324	380	60	236	7.2
DN15	456	324	380	60	236	7.5
DN20	540	478	468	108	245	17
DN25	540	492	468	108	245	17.5
DN32	544	517	468	108	245	24
DN40	600	635	500	140	267	32
DN50	606	653	500	140	267	36
DN80	866	857	779	219	316	87.5
DN100	950	977	833	273	340	165
DN150	1300	1223	1144	324	340	252

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