Insertion Density Meter

- The measurements of the insertion density meters will NOT be affected by the density, temperature, pressure, viscosity.
- The standard accuracy of the insertion density meters is guaranteed to reach ±0.2%. And for the highest we could reach ±0.1%.
- The accuracy of ±0.2% is the accuracy under any circumstances. And the compensation calculation is not required.
Coriolis Mass Flow Meter

- Measure Minuscule flow rate of 1kg/h
- We can measure any Gas including hydrogen gas
- Our superior formula of production of pipeline with very stable zero point
Thermal Gas Mass Flow Meter

- One solid piece with non movable parts
- Durability that you can count on
- High accuracy that you can trust of 1.0%
Connections
Standard RS 485/4-20mA/0-10KHz/HART

Circuit board
High precision DSP transmitter

Measuring pipeline material
SS316L/HC276/titanium alloy, etc.

Touch screen
Cumulative flow rate + Instantaneous flow rate + temperature + density

Easy to remove

ANSI Flanges/ threaded connection, etc.
Flange customized

We support OEM Label

Waterproof & Explosion-proof Threading hole
**Principle of Measurement**

Mass Flow is the integral and remote type Coriolis Mass Flowmeter. Both types have highly refined digital signal processing electronics, so that accurate and stable mass flow measurement is achieved.

Mass Flow employs a flame-proof type converter case suitable for use in the hazardous area together with its intrinsically safety type detector.

Mass Flow signal processing, housing protection and its detector’s special decoupling system against external loads and vibrations, realize high performance in real applications.

Mass Flow Measurement according to the Coriolis principle. Almost all flowing materials including multi phase fluids, high viscosity liquids (pastes and slurries) and liquid with a certain content of gas. For difficult fluids (e.g. abrasive or highly corrosive fluids) and gases:

- **High Accuracy**
- **Wide Range**
- **High Sensitivity**
- **High Stability**

**WARNING**

- Please read the instruction manual in details before using the instrument.
- With the correct usage, the mass flow meter will perform perfectly according to the customers’ needs.
- Inappropriate installation and operations under dangerous environment can cause dangers.
- For the technical parameters under the dangerous situations, please refer to the explosion-proof section.

**Technical Parameters**

Field transmitter type mass flowmeter for nearly all fluids, including high viscosity liquids, slurries and multi phase media.

Refined digital signal processing enables accurate and stable measurement.

Simple flow path means self-draining, food capable and simple to clean.

Choice of tube materials: Stainless Steel 316L, Hastelloy C, etc.

Pressure: standard 2.5MPa 4MPa, customer specified pressure can be ordered. 100MPa maximum.

Wide temperature range -200°C to 350°C.

Accurate flow measurement, up to +/- 0.1%.

Ambient temperature range: -41~80°C.

Accurate density measurement, up to +/- 0.001g/cm³.

Repeatability: ≤ ±0.05%

Power supply: 24VDC 220VAC universal power supply, no polarity distinguish

Output: 4~20mA 0~10KHz. pulse output.

Standard RS 485 Communication Protocol, HART Communication function.

Available in explosion proof: Ex d II B T5 Gb.

High visibility LCD display.

ANSI GB or Jis flanges as standard, others on request.
**Product Features**

01. Dual Symmetric Differential Structure

02. High Sensitivity

03. Non-linear Vibration Suppression Technology

04. Smooth Flow designed for Anti-interference

05. Classic U-shape tube designed for High Sensitivity

06. All touch screen operation. The inner technical parameters can be modified by the touch screen

07. Engineer’s password and the operator’s password makes easy modification of the instrument

08. Power Supply: 220VAC, 24VDC optional, with no distinguish of power terminal polarity

09. The latest V-shape design, with high stability, and the pressure loss is low

10. Full digital closed-up controlling function and DSP digital processing circuit, realized the high stability and high two-phase flow measurement accuracy

11. Balance matching technology of the dynamic vibration improves the system stability.


---

**Applications**

- Trade Transaction
- Material Proportion
- Concentration Measurement
- Bulk Filling
- Chemical Production
- Process Control
Technical Indicators and Performance Parameters

**Technical Data**

- **Liquid**
  - Liquid Mass Flow / Volume Flow
  - Accuracy: ±0.1% ±0.15% ±0.20%
  - Repeatability: ≤±0.05%

- **Gas**
  - Accuracy: ±0.2% ±0.5%
  - Repeatability: ≤±0.25%

- **Density Performance Indicators**
  - Liquid Resolution: ±0.0005 g/cm³ (0.5 kg/m³)
  - Repeatability: ≤±0.002 g/cm³ (0.2 kg/m³)
  - Measurement Accuracy: ±0.002 g/cm³ (2 kg/m³)

- **Temperature Performance Indicators**
  - Error: ±0.5°C
  - Repeatability: ≤±0.05°C

- **Temperature Measurement Range**
  - Zero Stability
    - Flow Rate x Measurement Uncertainty (e.g. 0.1%) ± Zero Stability
    - Maximum Measurement Error (%) = Measurement Uncertainty
    - Repeatability: ±1/2 ± Zero Stability / Measurement Value x 100%
    - ±1/2 Zero Stability / Measurement Value x 100%

- **Process Temperature Effect**
  - Medium temperature: -200 ~ 150°C, -50 ~ 150°C, -50 ~ 250°C, -50 ~ 350°C
  - Storage temperature: -50 ~ 70°C

**Factory Calibration Conditions**

Performance indicators are based on the working conditions (Normal 20-30°C, Pressure 0.2-0.4MPa), measured medium: water

---

**Calibration and Operations**

- **System menu password**
  - Current system menus contain system set numbers, it is not recommended to be deleted. If needed, please contact customer service and we shall direct you.

- **Operator Menu**
  - The password for the operator is “20”.
  - Within this password, the functions of “Checking Records”, “Setting Modification”, “Output Test”, “Error Clearance” can be accomplished. Within the interface of “Setting Modification”, the functions of “Total Data Clearing”, “Zero Adjustment”, “Unit Selection”, “Decimal Digits”, “Response Time”, “Current Output”, “Data Signal Cut” can be modified.

- **Measuring unit selection**
  - The flow range modification is automatically accomplished by the software after selecting the displayed units.
  - t/h, kg/h, g/min, kg/min, g/min, g/s, m³/h, L/h, m³/min, m³/min, L/min, L/s, m³/s
  - B/h, oz/h, lb/min, oz/min, lb/min, oz/min, gal/h, gal/min, gal/s
  - Decimal Digits: 0~3 decimal digits can be selected.

- **Current Output**
  - Instant Flow / Density output optional

- **Frequency Output**
  - Instant Flow rate (0~10KHz) or pulse (g/Ls, mL/Ls) output optional
Planning and Installation Hints

- The working principle of the coriolis mass flow meters is vibration. So the it is recommended to install the mass flow meters where has less vibrations. And the solid support for the installation pipelines is required. If the vibration source could not be ignored, then it is recommended to use the hose connection.

- The connection pipelines and the mass flow meters’ interface should be installed in the same axis. Do not impose an additional force on the instrument. Unnecessary additional force will affect the measurement accuracy of the instrument.

- Please stay away from the heating source for the installation locations to prevent overheating of the transmitters.

- If the throttle device is required, such as the flow control valves, etc. Then it must be installed in the outlet of the mass flow meters.

- Zero Point can be adjusted by setting the switches on display or with status input when the fluid is stopped and the detector filled. To ensure no flow conditions isolation valves should be installed in the outlet of the mass flow meters.

- The flow meters should be kept a certain distance away from the outlet of the pumps, especially the reciprocating pumps. If the installations getting too close to the valves may cause the measurement value fluctuations.

- Risk of electronics overheating! Make sure that the maximum permissible ambient temperature for the transmitter is not exceeded. Consequently, make sure that the adapter between the sensor and transmitter and the connection housing of the remote version always remain free of insulating material. Special heating jackets which can be ordered as accessories from Beijing Sincerity are available for the sensors.

- The measured介质 should be in the right flow state. If the flow status of the fluid is not suitable under the natural environment conditions, then the external improvements should be adopted. The temperature of the fluid can be taken to regulate, eg. Heating/ Cooling, heat preservation, etc.

- Make sure that the direction of the arrow on the nameplate of the sensor matches the direction of flow direction in which the fluid flows through the pipe.

- The serial number of the sensor and the transmitter has to be one to one corresponded. And it must not be replaced randomly. Otherwise the error may occur.

Protocol settings and Signal Address

Factory Parameters

- Modbus RTU basic Settings
- Baud Rate: 9600
- Digital Check: None
- Data Bits: 8
- Stop Bits: 1
- All data are floating point numbers
- Customer specified settings are available

Signal Address

By inputting “1.0” into area 41049 will result in total data clearance. After clearance the signal address will go back to “0.0”.

All the other addresses that are not opened are belong to the inner parameters of the instrument. If it is required to be changed,

<table>
<thead>
<tr>
<th>S/N</th>
<th>Holding Register</th>
<th>Address/Hexadecimal (Decimal)</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41001</td>
<td>0x03E8 / 1000</td>
<td>Mass Flow</td>
</tr>
<tr>
<td>2</td>
<td>41003</td>
<td>0x03EA / 1002</td>
<td>Volume Flow</td>
</tr>
<tr>
<td>3</td>
<td>41005</td>
<td>0x03EC / 1004</td>
<td>Total Mass Flow</td>
</tr>
<tr>
<td>4</td>
<td>41007</td>
<td>0x03EE / 1006</td>
<td>Total Volume Flow</td>
</tr>
<tr>
<td>5</td>
<td>41009</td>
<td>0x03FD / 1008</td>
<td>Density</td>
</tr>
<tr>
<td>6</td>
<td>41011</td>
<td>0x03F2 / 1010</td>
<td>Temperature</td>
</tr>
<tr>
<td>7</td>
<td>41049</td>
<td>0x0418 / 1048</td>
<td>Total Data Clearance</td>
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## Dimensions

**Large-Scale Flow Meters**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weld Neck Flanges ANSI B16.5</th>
<th>Unit:mm</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>W</th>
<th>G</th>
<th>K</th>
<th>d</th>
<th>D</th>
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<tbody>
<tr>
<td></td>
<td>100</td>
<td>lb</td>
<td>150</td>
<td>670</td>
<td>510</td>
<td>740</td>
<td>858</td>
<td>1092</td>
<td>260</td>
<td>19.1</td>
<td>190.5</td>
<td>157.2</td>
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<tr>
<td></td>
<td>125</td>
<td>lb</td>
<td>150</td>
<td>670</td>
<td>510</td>
<td>740</td>
<td>858</td>
<td>1092</td>
<td>260</td>
<td>22.4</td>
<td>215.9</td>
<td>185.7</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>lb</td>
<td>150</td>
<td>680</td>
<td>670</td>
<td>950</td>
<td>1130</td>
<td>1370</td>
<td>280</td>
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<td>241.3</td>
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**Medium-Scale Flow Meters**

<table>
<thead>
<tr>
<th>Model</th>
<th>Flange GB / T 9113-2000</th>
<th>Unit:mm</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>W</th>
<th>G</th>
<th>K</th>
<th>d</th>
<th>D</th>
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<table>
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<th>Model</th>
<th>Weld Neck Flanges ANSI B16.5</th>
<th>Unit:mm</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>W</th>
<th>G</th>
<th>K</th>
<th>d</th>
<th>D</th>
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<td>585</td>
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<td>73.15</td>
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<td>540</td>
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<td>150</td>
<td>560</td>
<td>440</td>
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<td>127</td>
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**Micro Flow Meters**

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<tr>
<th>Model</th>
<th>Pipeline Size</th>
<th>PN(MPa)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>W</th>
<th>G</th>
<th>K</th>
<th>d</th>
<th>D</th>
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<tbody>
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<td>6</td>
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<td>160</td>
<td>165</td>
<td>140</td>
<td>150</td>
<td>53</td>
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<td>7</td>
<td></td>
<td></td>
<td></td>
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**Series Mass Flow Meters**

<table>
<thead>
<tr>
<th>Model</th>
<th>DN</th>
<th>A</th>
<th>E</th>
<th>W</th>
<th>F</th>
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<tbody>
<tr>
<td>10</td>
<td>550</td>
<td>160</td>
<td>68</td>
<td>360</td>
<td></td>
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<tr>
<td>15</td>
<td>560</td>
<td>170</td>
<td>68</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>640</td>
<td>200</td>
<td>68</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>780</td>
<td>320</td>
<td>100</td>
<td>520</td>
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<td>900</td>
<td>230</td>
<td>108</td>
<td>460</td>
<td></td>
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<tr>
<td>80</td>
<td>995</td>
<td>260</td>
<td>140</td>
<td>515</td>
<td></td>
</tr>
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<tr>
<td>250</td>
<td>1920</td>
<td>510</td>
<td>282</td>
<td>825</td>
<td></td>
</tr>
</tbody>
</table>
Installation

It is recommended to release and empty the gas that possibly stored in the pipeline of the Coriolis Mass Flow Meters before installation.

<table>
<thead>
<tr>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
<th>L7</th>
<th>L8</th>
<th>L9</th>
<th>H4</th>
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</thead>
<tbody>
<tr>
<td>Transmitter</td>
<td>156</td>
<td>125</td>
<td>118</td>
<td>130</td>
<td>54</td>
<td>102</td>
<td>180</td>
<td>45.5</td>
<td>85</td>
</tr>
</tbody>
</table>

Horizontal Orientation, Transmitter head up

Horizontal Orientation, Transmitter head down

It is recommended to use the inverted installation for the measurement of Gas (e.g. steam). Because only in this way, the liquid that possibly stored in the Coriolis Mass Flow Meters could be released and emptied.
Recommended orientation with upward direction of flow. When fluid is not flowing, entrained solids will sink down and gases will rise away from the measuring tube. The measuring tubes can be completely drained and protected against solids buildup.

The proposed configuration in the following diagram, however, permits installation in a vertical pipeline. Pipe restrictors or the use of an orifice plate with a smaller cross-section than the nominal diameter prevent the sensor from running empty during measurement.

**MODEL-, SUFFIX- AND OPTION-CODES**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Process connection size/Measuring range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRS-DWF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suffix Code</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>DN3, 0-40kg/h</td>
</tr>
<tr>
<td>1B</td>
<td>DN6, 0-100kg/h</td>
</tr>
<tr>
<td>2A</td>
<td>DN8, 0-200kg/h</td>
</tr>
<tr>
<td>3A</td>
<td>DN10, 0-500kg/h</td>
</tr>
<tr>
<td>3B</td>
<td>DN15, 0-1000kg/h</td>
</tr>
<tr>
<td>4</td>
<td>DN20, 0-3000kg/h</td>
</tr>
<tr>
<td>5A</td>
<td>DN25, 0-100t/h</td>
</tr>
<tr>
<td>5B</td>
<td>DN40, 0-200t/h</td>
</tr>
<tr>
<td>6A</td>
<td>DN50, 0-300t/h</td>
</tr>
<tr>
<td>6A</td>
<td>DN50, 0-300t/h</td>
</tr>
<tr>
<td>6B</td>
<td>DN80, 0-500t/h</td>
</tr>
<tr>
<td>6C</td>
<td>DN100, 0-1500t/h</td>
</tr>
<tr>
<td>6D</td>
<td>DN125, 0-2000t/h</td>
</tr>
<tr>
<td>6E</td>
<td>DN150, 0-5000t/h</td>
</tr>
<tr>
<td>6F</td>
<td>DN200, 0-6000t/h</td>
</tr>
<tr>
<td>6G</td>
<td>DN250, 0-10000t/h</td>
</tr>
</tbody>
</table>

**Code: Output**

- A: 4-20mA (Instant flow rate/density) 0-10KHz Instant flow pulse output, RS485 Modbus RTU, HART

**Code: Sensor Housing**

- B: Decoded aluminum alloy housing

**Code: Pressure**

- 16: 1.6MPa
- 40: 4.0MPa
- XX: With customer specified pressure

**Code: Temperature**

- A: -50-150°C
- B: -50-250°C
- C: 0-350°C
- D: -200-150°C

**Code: Accuracy**

- N: 0.25% ±0.05%
- M: 0.05% ±0.01%
- H: 0.10% ±0.05%

**Code: Process Connection**

- W: Female type
- L: Threaded connection
- T: With customer specified flange

**Code: Test Certificate**

- F: Quality Control Factory certificate
- I: GB. Third party certificate

**Code: Material of Wetted Parts**

- A: Stainless Steel 316L
- C: Hastelloy C
- F: Inner Wall Surface with PTFE spray (large size only)
- T: Special Order: With customer specified material

**Code: Installation**

- A: Integrative Installation
- B(XX): Separate Installation (connector length), with holder

**Code: EXPLOSION-PROOF**

- A: Ex d IIC T5 Gb

**Process connection size/Measuring range**

- DN3(0-40kg/h) A B 40 A N F F A B(10) A Special order information
our products connect the pipe, we connect the world!

Loading & Unloading system

Vessel/Ship: Measurement of Oil consumption of main engines & Generators.

Chemical: Measurement of liquid chlorine
5% DISCOUNT FOR NEW CUSTOMERS