Aera® FC-R7800 Series
Mass Flow Controllers
Precise, reliable, metal-sealed design

Hitachi Metals, Ltd.
Hitachi Metals Aera® FC-R7800 series delivers precise flow control, as well as the corrosion resistance and high leak integrity of metal seals, to suit the majority of gas-controlled applications.

Convenience-enhancing features, such as standard electrical connectors and standardized critical dimensions allow quick-and-easy replacement of existing mass flow controllers (MFCs).

**Fast Response**

Advances in the FC-R7800 series’ technical design deliver enhanced operation compared to competing mass flow controllers. These advances include a highly sensitive, rapid-response, small-diameter sensor. Further, the FC-R7800 series’ normally-open or normally-closed solenoid design supplies superior response times. These speed enhancements minimize over-shoot and under-shoot, and produce an actual-flow settling time of < 1 sec between set points. (Less than 3sec for FC-R7820CD, FC-R7820D).

**Superior Reliability**

High-quality electronic components and a robust, minimal-parts design stand up to the effects of strong RF fields and other operational demands, delivering outstanding long-term zero-drift stability — < 0.5% of full-scale flow over one year. With over 70,000 units delivered in FC78X FCR78X series MFCs, < 0.5% are returned within a year of shipment.

**Easy Integration**

Obtain the performance and reliability advantages of Aera MFCs by replacing other brands—with no installation hassles. Certain models feature standard electrical connectors and critical dimensions to easily fit existing systems.
### Specifications

<table>
<thead>
<tr>
<th>Physical</th>
<th>FC-R7800CD/FC-R7800D Series</th>
<th>FC-R7810CD/FC-R7810D Series</th>
<th>FC-R7820CD/FC-R7820D Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Valve Type</td>
<td>Normally-open or normally-closed solenoid</td>
<td>Normally-open or normally-closed solenoid</td>
<td>Normally-open or normally-closed solenoid</td>
</tr>
<tr>
<td>Seals</td>
<td>Metal—316L</td>
<td>Metal—316L</td>
<td>Metal—316L</td>
</tr>
<tr>
<td>Materials</td>
<td>Stainless-steel type 316(L), 316, PTFE, Magnetic Stainless(Fluoro Rubber, Chloroprene Rubber)</td>
<td>Stainless-steel type 316(L), 316, PTFE, Magnetic Stainless(Fluoro Rubber, Chloroprene Rubber)</td>
<td>Stainless-steel type 316(L), 316, PTFE, Magnetic Stainless(Fluoro Rubber, Chloroprene Rubber)</td>
</tr>
<tr>
<td>Standard Fittings</td>
<td>1/4&quot; VCR® and Swagelok® compatible</td>
<td>1/4&quot; VCR®, 3/8&quot; VCR®</td>
<td>1/4&quot; VCR®, 3/8&quot; VCR®</td>
</tr>
<tr>
<td>Attitude Sensitivity</td>
<td>May be mounted in any position</td>
<td>Top Connector Position Recommended</td>
<td>Top Connector Position Recommended</td>
</tr>
<tr>
<td>Weight</td>
<td>1.0 kg (2.2 lb)</td>
<td>1.5 kg (3.3 lb)</td>
<td>2.27 kg (5.0 lb)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical</th>
<th>FC-R7800CD/FC-R7800D Series</th>
<th>FC-R7810CD/FC-R7810D Series</th>
<th>FC-R7820CD/FC-R7820D Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>+15 VDC ±2% at 25 mA</td>
<td>-15 VDC ±2% at 180 mA</td>
<td>+15 VDC ±2% at 25 mA</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>3.1 W max</td>
<td>3.5 W max</td>
<td></td>
</tr>
<tr>
<td>Command Signal</td>
<td>0 to 5 VDC</td>
<td>0 to 5 VDC</td>
<td>0 to 5 VDC</td>
</tr>
</tbody>
</table>

* N/O: Normally Open Valve Model, ** N/C: Normally Closed Valve Model

1: Less than ±1% for Full Scale Flow greater than 30SLM
2: 5~100% for Full Scale Flow greater than 150SLM
3: 26~43 psiD for Full Scale Flow greater than 150SLM
Before using any of the products introduced in this catalog, please read the respective user manuals thoroughly.

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The addresses and contact points listed in this catalog are as of December 2011. Because changes may occur, if the telephone or fax number you are trying to reach is not in service, please contact us at the following.

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