Compact orifice plate
For the direct mounting of differential pressure transmitters
Model FLC-CO

Applications
- Chemical and petrochemical industries
- Process plants and power generation
- Water treatment and distribution
- Gas processing and transport
- Oil production and refining

Special features
- Compact and robust design per ISO 5167-2
- Installation between existing flanges (ASME/EN)
- Complete measuring point consisting of orifice plate, valve manifold and differential pressure transmitter available
- Simple installation without differential pressure lines
- Accuracy ≤ ±0.5 % of the actual flow rate and a repeatability of the measurement of 0.1 %

Description
Compact orifice plates can be used without difficulty for the measurement of liquids, gases and vapours.

Differential pressure flow meters are used in many technical applications. As primary flow elements, orifice plates represent the most common solution. Orifice plates are notable for their easy installation and management.

The differential pressure generated by the primary flow element is normally transformed into an electrical signal proportional to the flow rate by a differential pressure transmitter.

Compact orifice plates enable the simple assembly of the measuring arrangement as a plug-and-play solution, through which significant cost savings can be achieved. Differential pressure transmitters and valve manifolds are attached via compact pressure tappings. These measuring arrangements have the advantage that differential pressure lines can be eliminated.

The compact orifice plates are offered as standard in two beta ratios. In the case of customer-specific requirements for the beta ratio, our software simplifies the design and selection process.
General specifications

The opening is concentric to the carrier ring and its leading edge is designed with a quarter round profile. The pressure tapping points are designed as corner taps. Two different versions are available:

<table>
<thead>
<tr>
<th>Pressure tapping points for the direct mounting of differential pressure transmitters</th>
<th>Pressure tapping points in carrier ring</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Pressure tapping example" /></td>
<td><img src="image2.png" alt="Carrier ring example" /></td>
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</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Beta ratio</td>
<td>Standard 0.40 or 0.65, customer-specific values are individually calculated</td>
</tr>
<tr>
<td>Centring</td>
<td>Via flange studs</td>
</tr>
<tr>
<td>Sealing face finish</td>
<td>3.2 ... 6.3 μm (125 ... 250 AARH)</td>
</tr>
</tbody>
</table>

Further bore variants on request

### Specifications (version for direct mounting)

**Pipe size**
2 ... 14" per ANSI/ASME
DN 50 ... 350 per EN

**Pressure ratings**
Class 150, 300, 600 raised face (RF) per ANSI/ASME B16.5
PN 16, 40, 100 raised face (RF) per EN 1092

**Material**
AISI 316/L

**Orifice plate body**
Manufactured from bar stock
Main body thickness: 30 mm for all sizes
Orifice plate thickness: 3 or 6 mm

**Pressure tap**
Same shape and dimensions for all sizes and connection options

**Maximum operating pressure**
600# per ANSI B16.5
PN 100 per EN 1092

**Maximum operating temperature**
Limited by the maximum permissible temperature of the differential pressure transmitter
## Connection variants

<table>
<thead>
<tr>
<th>For valve manifold IEC type A (with spigot)</th>
<th>For valve manifold IEC type B (without spigot)</th>
<th>With integrated 3-way valve manifold IEC type B for differential pressure transmitter (without spigot)</th>
</tr>
</thead>
</table>

Customer-specific connections on request

## Options

- Mounted differential pressure gauge or transmitter
- Mounted thermowell with thermometer
- Flat gaskets and valve manifold seal in Graphoil (standard: PTFE)
- Studs and nuts for pipelines in accordance with customer requirements

## Examples for differential pressure transmitters

## Example for thermometers
Specifications (carrier ring)

Pipe size
2 ... 24" per ANSI/ASME
DN 50 ... 600 per EN
Other sizes on request

Pressure rating
Class 150 ... 2500 with raised face (RF) and ring-type joint (RTJ) per ANSI/ASME B16.5
PN 10 ... 400 with raised face (RF) per EN 1092

Materials
AISI 316/316L
Special alloys on request

Orifice plate body
Welded or turned from one piece
Main body thickness: 25 ... 65 mm

Pressure taps
- NPT thread
- Weld stub
- Nipple

Max. operating pressure and temperature
Depending on material, pressure rating and applicable flange standard

Options
Customer-specific versions on request (e.g. vapour measurement via nipple, condensate vessels, valves)