Venturi tube
Model FLC-VT-BAR, from bar stock
Model FLC-VT-WS, from welded sheet

Applications
- Power generation
- Oil production and refining
- Water treatment and distribution
- Gas processing and transmission
- Chemical and Petrochemical Industries

Special features
- Suitable for liquid, gas and steam flow measurement
- Accuracy ≤ ±0.5 % of actual flow rate
- Repeatability of measurement 0.1 %
- Lowest pressure loss in the family of primary flow elements
- Calibration may be performed if required

Description
High pressure recovery and low upstream and downstream requirements
Venturi tubes are reliable, easy to use and low-maintenance. Venturi tubes are particularly suitable for the measurement of clean liquids and gases.

The main advantages of a Venturi tube over other differential pressure flow meters are the higher pressure recovery and the lower upstream and downstream pipe requirements.

At the upstream side, the instrument consists of a gradually decreasing nozzle, through which the medium in a pipe is accelerated. The downstream side is a gradually increasing diffuser section, which enables a high pressure recovery.

Flow measurement with low differential pressures
Due to the fact that a major part of the output pressure is regained, the Venturi tube is particularly suited for measurement in systems with a low pressure differential.

Thanks to the low pressure loss the cost of pumping the medium can be reduced to a minimum.
General data

Design
The design is calculated in accordance with the following standards
- ISO 5167-4
- ASME MFC3

Nominal size and pipe schedule
All nominal sizes are available in accordance with relevant standards.
The pipe schedule must be specified by the customer.

Standards cover diameters from 2 ... 48" (50 ... 1,200 mm), larger diameters are available on request.

Nominal pressure rating
Available in accordance with all relevant standards.

Materials
A wide range of materials is available.

Mounting options

<table>
<thead>
<tr>
<th>Butt weld</th>
<th>Welding neck flange</th>
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Sealing faces for flanged version

<table>
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<tr>
<th>Raised face (RF)</th>
<th>Ring joint (option)</th>
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Pressure tappings
The best solution depends on the application and will be created individually.

<table>
<thead>
<tr>
<th>NPT tap / weld stub</th>
<th>Tap with flanged ends</th>
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</thead>
<tbody>
<tr>
<td>Annular chamber tap, welded ring</td>
<td>Annular chamber tap, from pipes</td>
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Venturi tube, model FLC-VT-BAR, from bar stock

Description
Model FLC-VT-BAR is manufactured from a bar of solid-body material. In this model the convergent sections, i.e. the throat section and the entrance cylinder, are machined from this solid-body material.

Nominal size
50 ... 250 mm

Beta ratio
0.4 ... 0.75

Reynolds number
$2 \times 10^5$ ... $1 \times 10^6$

Accuracy
$\leq \pm 0.5 \%$ of full scale flow rate

Venturi tube, model FLC-VT-WS, from welded sheet

Description
Model FLC-VT-WS is a classical Venturi tube, which is manufactured from welded sheets. For smaller nominal sizes the throat section is machined from a single piece.

Nominal size
200 ... 1,200 mm

Beta ratio
0.4 ... 0.7

Reynolds number
$2 \times 10^5$ ... $1 \times 10^6$

Accuracy
$\leq \pm 1.5 \%$ of full scale flow rate

Ordering information
Model / Nominal size / Pipe schedule / Nominal pressure rating / Sealing face / Pressure tappings / Material