Flow rate measurement in open channel

VENTURI CHANNEL DEBITFLO

- According to ISO 4359
- 10 ranges
- From 7 to 2500 m³/h
- Construction: composite material
- Easier civil engineering
- Options:
  - Complete measurement system
  - Logger and transmitter
  - Inserted channel in PE module

**PRINCIPLE**

Manufactured Venturi channels are dedicated for flow rate measurement in open flumes, and totalization on effluents. They are useful either on waste water, contaminated fluid even with solids/ particles or chemically aggressive.

Venturi channel is a channel with a width narrowing. Correlation exists between flow rate value and the height of upstream fluid when the difference of height between upstream and downstream is greater than 0.25 h.

Flow rate calculation:

\[ Q = \left( \frac{b}{h} \right)^{3/2} \sqrt{g \cdot C_v \cdot b \cdot h^{3/2}} \]

- \( Q \) : Flow rate [m³/s]
- \( C_v \) : \( \left( \frac{h_e}{h} \right)^{3/2} \)
- \( b \) : Venturi width [m]
- \( h \) : Effluent height [m]

The curve \( Q(h) \) is joined with each Venturi channel.

**DESCRIPTION**

In our standard models, you may choose between 4 types of instruments, all with an ISO 4359 Venturi, with or without approach and tranquilization flumes. They are manufactured in reinforced polyester fibreglass for flow rates from 2 to 2500 m³/h.

For the smallest flow ranges, we can provide a PE module allowing an easiest installation on site. For the greater flow rates we can provide just the Venturi channel, without approach and tranquilization flumes.
## CODE NUMBERS AND REFERENCES

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<th>Max flow rate Q/l s</th>
<th>Max flow rate Q m³/h</th>
<th>h max (mm)</th>
<th>Overflow Q m³/h</th>
<th>B (mm)</th>
<th>I (mm)</th>
<th>Z (mm)</th>
<th>L (A) (mm)</th>
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*Note: smaller VENTURI DF7A, AV07A, DF20A and AV25A do not correspond to ISO 4359 on specified width of the throat < 100 mm.

DF7A and DF20A: their upstream flumes have a 20 mm raised bottom with a sided well measurement (allows the use of a bubbling level transmitter).

DF1000A, DF1500A and DF2500A (length A) are delivered in three parts.

### Venturi with integrated approach and tranquillization flumes

**Measurement well for DF7A & DF20A only**

![Venturi with integrated approach and tranquillization flumes](image1)

### Venturi channel only, without flume

**Requirement:** Please see the instruction manual

![Venturi channel only, without flume](image2)

### NOTES

According to requirements installation, the accuracy is ±2% or ±3% of the reading between the higher and lower limits specified for each channel.

The error between 0 and the minimal flow rate value corresponds to ±2% or ±3% of the lower flow rate value.

Venturi channels accept an overflow rate with no risk of overflowing.

The higher heights of fluids are rough values indicated for an easy model selection.