VENTURI TUBES
Type: SVT

TECHNICAL INFORMATION

October 2008
GENERAL DESCRIPTION:
Comparing with orifices and flow nozzles, the Venturi tube generally is of a little more complicated structure, requires more material and costs and tends to be larger in size. However, Venturi tubes offer advantages including an extremely low pressure loss, a higher durability and a lower chance of catching a sludge media and sediment than other throttle elements. The Venturi tube is mostly used for measurements of flow wherever a minimal loss of pressure is important.

The Intra-Automation Venturi Tube is designed and manufactured in full compliance with ISO-5167 and ASME MFC-3M standards.

SPECIFICATIONS
- Venturi tube type: machined type, welded type, tetragon duct type
- End connection: butt-weld, flanged (slip-on & welding neck)
- $\beta$-ratio-range: machined type: $\beta$ between 0.4 and 0.75 incl.
  welded type: $\beta$ between 0.4 and 0.7 incl.
- Options-1: Pressure tappings leading into piezometer ring
- Options-2: Full Jacket or Semi Jacket for Heating or Cooling
DRAWINGS:

Generally, Venturi tube with a machined convergent can be used in pipes of size between 2” and 10”. However, in the case that the machined type is of large size (8” or 10”), they have disadvantages because of required higher costs due to huge material consume.

Intra-Automation Design Standards:

- **Conical Convergent Angle:** 21° ± 1°
- **Conical Divergent Angle:** 14° ± 1°
- **End connection:** butt-welds
  - flanged connection is available on request as welding-neck or slip-on-type
- **Tapping adaptors:** ½” NPT
  - Others are available on request (i.e. ½” SW, ¾” NPT or SW, etc)
- **Tapping Nos:** 1 (one) upstream pressure tapping and 1(one) downstream pressure Tapping
  - There may be used with several sets of pressure tappings on request.
TETRAGON DUCT & TAPLESS TYPE VENTURI

Tetragon Duct

The tetragon is designed and manufactured in order to fit into tetragon duct type piping and the throat have the same area with its throat diameter calculated by ISO-5167, ASME MFC-3M or L.K.SPINK.-standards.

Tapless

The tapless Venturi tube, which has no need of pressure tappings for differential pressure measurement, can be effectively used (with less pressure drop) for flow measurem. of a slurry fluid, a fluid with suspensions, or a corrosive fluid. It can alsoj measure a liquid which solidifies at low temperatures, or a liquid which vaporizes at high temperatures.

♦ max. temperature: -40...+280 °C
♦ pressure rating: up to JIS 20K RF
  up to ANSI 300 lb
# DATA SHEET FOR VENTURI TUBES:

<table>
<thead>
<tr>
<th>VENTURI TUBES</th>
<th>FLANGES</th>
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<tbody>
<tr>
<td><strong>No.</strong></td>
<td><strong>Contract No.</strong></td>
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<td><strong>By</strong></td>
<td><strong>Date</strong></td>
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<td><strong>Rev.</strong></td>
<td><strong>Quotation/Order-No.</strong></td>
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<td><strong>Intra-Automation GmbH</strong></td>
<td><strong>By</strong></td>
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<td><strong>Checked</strong></td>
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### VENTURI TUBES

1. **Type:** Weld-in □ other:__________
2. **Std:** ISO-5167 □ other:__________
3. **Bore:** max. rate □ nearest 1/8" □ 316SS □ other:__________
4. **Mat.:** 304SS □ 316SS □ other:__________
5. **ring mat. & type:** ____________________
6. **type no. & mfr.:** ____________________
7. **Taps:** Troat □ Tapless □ other:__________
8. **Tap size:** ½" SW □ other:__________
9. **Type:** weld neck □ slip on □ threaded □
10. **Mat.:** steel □ other:__________
11. **Flange include** □ other:__________
12. **Flange rating:** ANSI 150# RF other:__________

### FLANGES

13. **TAG-No.**
14. **Service**
15. **Line No.**
16. **Fluid name**
17. **Fluid state**
18. **max. Flow [m³/h]**
19. **normal Flow [m³/h]**
20. **pressure @ max. / norm.**
21. **temp. @ max. / norm.**
22. **Sp.Gr. / Density at base**
23. **Sp.Gr. / Density at oper.**
24. **Super Comp. Factor [Z]**
25. **Mol.W.T.** C_p / C_v
26. **Operating viscosity [cp]:**
27. **Base press.:** Base Temp.:  

### METER

28. **Type of Meter:**
29. **Diff. Range [mm H2O]:**
30. **Static Pressure Range:**
31. **Full Scale Range [m³/h]:**
32. **Chart Multiplier:**

### VETURI & FLANGE OR PIPE

33. **Flange Rating:**
34. **Line Size:** □ Sch.:  
35. **Line material:**
36. **Pair[s] of Tapping:**
37. **End connection:**
38. **Divergent angle:**

### ACCESSORIES

39. **Nipple:**
40. **Block valve:**

### MANUF. DATA

41. **Type code:**
42. **Manufacturer:** INTRA INTRA INTRA INTRA INTRA
43. **Quantity:**

Remark: Lines marked with a “★” must be filled out by customer, if possible.
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- IntraSonic IS200 Ultrasonic Flow Meters

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- MAGLINK level indicators

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- IntraDigit digital indicators
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