

# FITD

## Metal Tube VA Flow Meters



## OVERVIEW

### Operation

Bass Instruments FITD series VA meter operation is based on the variable area principle. The all metal meter is ideal for a variety of gas, liquid and steam applications. These meters are indispensable where high pressure and/or high temperature operating conditions exist. The primary meter is available in 316/316L stainless steel as well as with a PTFE liner. But a wide range of corrosion resistant materials of construction are available which makes it a perfect fit for metering of aggressive applications. A broad range of connection sizes and types such as ASME, DIN and JIS flange choices along with several threaded options provide for flexible installations.

### Features

- Easy to install
- High accuracy
- Stainless steel rigid design
- Broad range of connection sizes
- Cost-effective solution
- Easy reading
- High sensitivity

### Application

- Pharmaceutical industry
- Chemical processes
- Mechanical engineering
- Liquid filling machines



## OPERATING DATA

### Working Pressure

40 Bar, 320 Bar on request  
DN15-DN50  
16 Bar, 100 Bar on request  
DN80-DN250

### Temperature Limit

-80°C...+300°C standard

### FITD.PK

0°C...+80°C for PTFE  
HighTemperature 400°C

### FITD.BT/SK/GK

-40°C...120°C  
0°C...+80°C for PTFE

### Ambient Temperature

High temperature 400°C

### FITD.PK

-40°C...+120°C

### FITD.BT/SK/GK

-20°C...+60°C

### Accuracy

±1%, ±1.6%, ±2%, ±2.5% of FS

### Enclosure

IP67

### Turndown Ratio

10:1

### Straight Run Pipe Req

Inlet : ≥5D Outlet : ≥250 mm

### Viscosity Range

≤5 cPs  
≤100 cPs  
≤200 cPs

### Hazardous Area

EEx ia II CT5  
EEx d II CT6

## MATERIALS

### Tube

AISI 304, AISI 316L, PV, PP, Hastelloy

### Flange

AISI 304, AISI 316L, PV, PP

### Float

AISI 304, AISI 316L, PV, PP, Hastelloy, Cu, Al



## MEASURING RANGES

### Water

20°C, 10-300000 L/h others on request

### Air

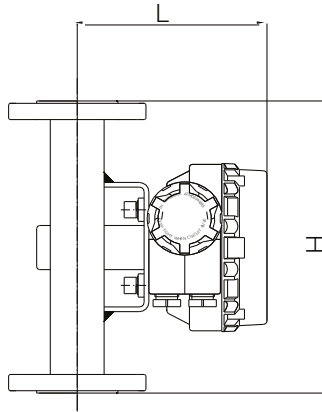
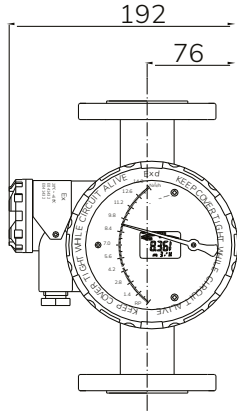
0.1013 MPa, 20°C,

0.7-3000 Nm³/h others on request

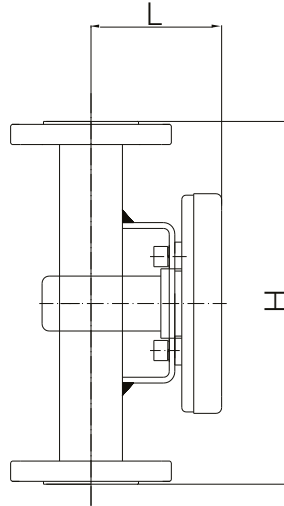
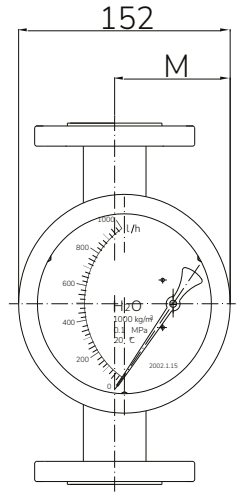
| Type        | Water            | Air              | Connection |
|-------------|------------------|------------------|------------|
| FITD.PK.015 | 1...10 l/h       | 0,03...0,3 Nm³/h | DN15       |
|             | 2,5...25 l/h     | 0,06...0,6 Nm³/h |            |
|             | 6...60 l/h       | 0,1...1 Nm³/h    |            |
|             | 10...100 l/h     | 0,16...1,6 Nm³/h |            |
|             | 16...160 l/h     | 0,75...7 Nm³/h   |            |
|             | 25...250 l/h     | 1...10 Nm³/h     |            |
|             | 40...400 l/h     | 1,5...15 Nm³/h   |            |
|             | 60...600 l/h     | 1,8...18 Nm³/h   |            |
|             | 100...1000 l/h   | 2,4...24 Nm³/h   |            |
| FITD.PK.020 | 160...1600 l/h   | 4,8...48 Nm³/h   | DN20       |
|             | 250...2500 l/h   | 7,5...75 Nm³/h   |            |
| FITD.PK.025 | 160...1600 l/h   | 7,5...75 Nm³/h   | DN25       |
|             | 250...2500 l/h   | 10...100 Nm³/h   |            |
|             | 400...4000 l/h   | 15...150 Nm³/h   |            |
|             | 600...6000 l/h   | 18...180 Nm³/h   |            |
| FITD.PK.040 | 600...6000 l/h   | 18...180 Nm³/h   | DN40       |
|             | 800...8000 l/h   | 24...240 Nm³/h   |            |
|             | 1000...10000 l/h | 30...300 Nm³/h   |            |
| FITD.PK.050 | 800...8000 l/h   | 30...300 Nm³/h   | DN50       |
|             | 1...10 m³/h      | 48...480 Nm³/h   |            |
|             | 1,6...16 m³/h    | 60...600 Nm³/h   |            |
|             | 2...20 m³/h      | 75...750 Nm³/h   |            |
| FITD.PK.065 | 1,6...16 m³/h    | 60...600 Nm³/h   | DN65       |
|             | 2...20 m³/h      | 75...750 Nm³/h   |            |
|             | 2,5...25 m³/h    | 90...900 Nm³/h   |            |
| FITD.PK.080 | 2,5...25 m³/h    | 120...1200 Nm³/h | DN80       |
|             | 3...30 m³/h      | 150...1500 Nm³/h |            |
|             | 6...60 m³/h      | 180...1800 Nm³/h |            |
| FITD.PK.100 | 8...80 m³/h      | 210...2100 Nm³/h | DN100      |
|             | 10...100 m³/h    | 240...2400 Nm³/h |            |
| FITD.PK.125 | 12,5...125 m³/h  | 300...3000 Nm³/h | DN125      |
|             | 15...150 m³/h    | 380...3800 Nm³/h |            |
| FITD.PK.150 | 15...150 m³/h    | 380...3800 Nm³/h | DN150      |
|             | 18...180 m³/h    | 450...4500 Nm³/h |            |
|             | 20...200 m³/h    | 500...5000 Nm³/h |            |



## TECHNICAL DRAWINGS AND DIMENSIONS



| Dimensions | H   | L   |
|------------|-----|-----|
| DN15       | 250 | 150 |
| DN20       | 250 | 156 |
| DN25       | 250 | 159 |
| DN32       | 250 | 165 |
| DN40       | 250 | 171 |
| DN50       | 250 | 174 |
| DN65       | 250 | 181 |
| DN80       | 250 | 188 |
| DN100      | 250 | 197 |
| DN125      | 400 | 207 |
| DN150      | 400 | 221 |
| DN200      | 450 | 246 |
| DN250      | 500 | 273 |



| Dimensions | H   | L   | M   |
|------------|-----|-----|-----|
| DN15       | 250 | 56  | 78  |
| DN20       | 250 | 62  | 83  |
| DN25       | 250 | 65  | 87  |
| DN32       | 250 | 71  | 93  |
| DN40       | 250 | 77  | 98  |
| DN50       | 250 | 80  | 101 |
| DN65       | 250 | 88  | 110 |
| DN80       | 250 | 95  | 115 |
| DN100      | 250 | 103 | 125 |
| DN125      | 400 | 113 | 134 |
| DN150      | 400 | 127 | 150 |
| DN200      | 450 | 152 | 174 |
| DN250      | 500 | 178 | 200 |

## ELECTRICAL DATA(FOR GK, SK, BT)

### Signal Output

Pulse (push-pull)  
4...20mA or 0...10VDC on request

### Power Supply

5-70 VDC, 220 VAC/45-65 Hz

### Electrical Connection

M20x1.5, 1/2"G, 1/2"NPT, 3/4"G, 3/4"NPT  
(for type GK and SK)

### Display" relay operating"

LED

### Ex Electrical Information

$U_i = 28V$ ,  $I_i = 93mA$ ,  $P_i = 0.65W$ ,  $C_i \leq 5 nF$ ,  $L_i = 0mH$

### Ex Barrier Information

$U_o \leq 28V$ ,  $I_o \leq 93 mA$ ,  $P_o \leq 0.65 W$ ,  $C_o \geq C_i + C_c$   
 $L_o \geq L_i + L_c$



## ORDERING

| Model |                           |
|-------|---------------------------|
| FITD  | Metal Tube VA Flow Meters |

| Type    |                                                    |
|---------|----------------------------------------------------|
| FITD.PK | Mechanical indicator                               |
| FITD.GK | Mechanical indicator with LCD display              |
| FITD.SK | Mechanical indicator with switches selectable      |
| FITD.BT | Mechanical indicator battery powered (LCD display) |

| Pipe Diameter |                                                                  |
|---------------|------------------------------------------------------------------|
| XXX           | Specify in standard pipe diameter max. DN250 (example DN50: 050) |

| Tube Material |                           |
|---------------|---------------------------|
| 04            | AISI 304 stainless steel  |
| 16            | AISI 316L stainless steel |
| PV            | PVC                       |
| PP            | PP (Polypropylene)        |
| HA            | Hastelloy                 |

| Flange Material |                           |
|-----------------|---------------------------|
| 04              | AISI 304 stainless steel  |
| 16              | AISI 316L stainless steel |
| PV              | PVC                       |
| PP              | PP (Polypropylene)        |

| Float Material |                           |
|----------------|---------------------------|
| 04             | AISI 304 stainless steel  |
| 16             | AISI 316L stainless steel |
| PV             | PVC                       |
| PP             | PP (Polypropylene)        |
| HA             | Hastelloy                 |
| CU             | Copper                    |
| Al             | Aluminum                  |

| Accuracy |          |
|----------|----------|
| 10       | ±1% FS   |
| 16       | ±1.6% FS |
| 20       | ±2% FS   |
| 26       | ±2.5% FS |

| Connection |          |
|------------|----------|
| F          | Flange   |
| T          | Thread   |
| H          | Sanitary |

| Enclosure |      |
|-----------|------|
| 1         | IP67 |
| 2         | IP68 |

| Viscosity |          |
|-----------|----------|
| A         | ≤5 cPs   |
| B         | ≤100 cPs |
| C         | ≤200 cPs |

| Hazardous Area |               |
|----------------|---------------|
| N              | None          |
| Xi             | EEx ia II CT5 |
| Xd             | EEx d II CT6  |

