FCI ST75 Series Flow Meters

Small Line, Mass Flow Meters for Industrial and Commercial Process Gases

Low cost, easy installation flow measuring
for 1/4 inch to 2 inch [6 mm to 51 mm] line sizes

Burner/Boiler Fuel and Air Feed Lines
Industrial Furnaces, Kilns and Oven Fuel/Air Controls
Heat Treating Gas Controls
Air Compressor System Control and Point-of-Use Monitoring
Chiller Air Flow Measurements
Co-Gen and Turbine Generator Fuel Flow Measurements
Dosing and Gas Injection Rate Controls
ST75 Series Features

- Direct mass, standard volumetric or standard velocity flow measurement
- Triple outputs: flow rate, temperature & total flow
- Non-clogging, no moving parts
- Wireless IR communications
- 2 line digital display option
- Small, compact design
- Easy installation
- Built-in Vortab® flow conditioning in Model ST75V

Superior Air and Gas Flow Measurement

ST75 is an accurate, no moving parts, direct mass flow measurement and monitoring solution for fuel gases, air, compressed air, inert and other gas flows within industrial processes. There are two base models in the series — Model ST75, and Model ST75V which include built-in Vortab flow conditioners. They are available in six different sizes for direct, in-line installation in line sizes from 1/4 inch to 2 inch [6 mm to 51 mm].

By combining precision lithography structured platinum RTD sensors embedded in FCI’s equal mass thermowells with microprocessor electronics and precise actual gas calibration, the ST75 achieves outstanding flow measurement performance. Using FCI’s proven thermal dispersion technology, the ST75’s direct mass flow measurement eliminates the cost and space of additional sensors required by inferred technologies. With its 100:1 turndown and flow ranges from 0.01 SCFM to 559 SCFM [0.01 NCMH to 950 NCMH], the ST75 measures over a wide flow range, from low to high flow conditions. The ST75 is available in specific calibrations for most gases including natural gas, methane and other hydrocarbon gases, as well as nitrogen, CO₂, argon and all inert gases, compressed air and more.

Easy to Install, Easy to Use

Model ST75 standard “T” fitting design allows for fast, simple in-line installation. Standard NPT line size selections include 1/4 inch, 1/2 inch, 3/4 inch, 1 inch, 1 1/2 inch and 2 inch. For compression fitting tube applications, selections include 1/4 inch, 1/2 inch and 1 inch. For installations with inadequate straight-run or obstructed flows that prevent a fully developed profile for accurate flow measurement with the standard ST75, Model ST75V provides the solution. FCI’s Model ST75V includes all of the features and functionality of the ST75 plus built-in Vortab flow conditioning.

Vortab flow conditioners are the flow conditioning technology proven and recommended by flow measurement experts to eliminate both swirl and velocity profile distortions to ensure accurate flow measurement. Vortab flow conditioners also are the lowest pressure loss solution of all flow conditioning techniques. FCI is the exclusive provider of Vortab flow conditioners for use with thermal mass flow meters such as the ST75V.

To serve a variety of application and installation requirements the ST75 and ST75V are available in three standard configurations as shown at left. (Other display options are described in Accessory Remote Digital Display section.)

To provide convenient and easy access for wire-up and signal isolation, the instrument’s enclosure features dual conduit ports in either NPT or M20 threads, as well as removable front and rear covers. ST75 can be ordered for DC (18 V to 36 V) or AC (85 V to 265 V) power.
Extensive Outputs Assure Application Compatibility

ST75 provides the most comprehensive selection of outputs in its class. Dual analog outputs, a pulse output and a digital, serial I/O are all standard.

Dual 4-20 mA analog outputs are field assignable to flow rate and/or temperature. These outputs are user scalable to the instrument’s full calibrated range or any subset. Flow rate is selectable for reading in mass flow or standard volumetric engineering units. Also provided for interface to totalizers is a 0-1000 Hz pulse output of flow.

In all models a standard RS232C serial I/O link is provided for instrument configuration, service/troubleshooting data, and measured readings. Also included in all models is a wireless IR sensor to enable wireless connectivity to PDA devices.

Designed and Built to Last

ST75 will significantly reduce maintenance costs and time. ST75 is a no moving parts design that virtually eliminates the wear out, clogging and excessive pressure drop associated with other flow metering techniques. The sensor element is all-welded stainless steel with Hastelloy-C tips that provide extra protection against invasive conditions within the pipe. The instrument’s electronics are housed in an all-metal, NEMA 4X (IP67) rated enclosure to provide the ruggedness and dust/weather proof protection needed to ensure long-life in industrial and commercial installations.

Accessory Remote Digital Displays

For remote mounted digital readouts of flow, temperature and/or total flow, three types of accessory displays are available:

Model DM10 is an LCD readout meter which can be inserted and located anywhere in the 4-20 mA output loop from the ST75. It requires no separate powering as it derives its power directly from the 4-20 mA loop. The DM10 is user scalable to ±1999 digits and features oversized, 1 inch [25 mm] characters for an easy-to-read display. NEMA 4X rated. FM and CSA certified models optional.

Size: 3.15” H x 5.51” W x 2.56” D [80 mm H x 140 mm W x 65 mm D]
Mounting: Wall. Panel mount or pipe mount kit optional
Wire-Up: Screw terminals via 1/2” conduit hole at bottom of case

Model DM15 is a high accuracy, 1/8 DIN panel mount, AC line powered meter with a bright red LED readout. It features a user scalable, ±9999 digit display and will accept both the 4-20 mA or 0-10 Vdc signals from the ST75. Optionally available with DM15 is a user programmable alarm setpoint with a Form C relay output.

Size: 1.89” H x 3.78” W x 5.35” D [48 mm H x 96 mm W x 136 mm D]
Mounting: Panel. Standard 1/8 DIN, 45 mm H x 92 mm W cutout
Wire-Up: Screw terminals at rear of instrument

Model DM20 is a miniature sized totalizer counter that accepts the pulse output from the ST75. It features an 8-digit (0 to 99999999 counts) LCD that can be reset via its front-panel push-button. It is a panel-mount style that can be located in the field, in a separate enclosure or in the control room. It is self-powered by a lithium battery (included, 10 year life).

Size: 0.94” H x 1.89” W x 1.20” D [24 mm H x 48 mm W x 30.5 mm D]
Mounting: Panel. 22.5 mm H x 45 mm W cutout
Wire-Up: Screw-terminals at rear of instrument
ST75 Series Flow Meter General Specifications

**Instrument**

- **Media:** Air, compressed air, nitrogen, oxygen, argon, CO₂, ozone, other inert gases, natural gas, other hydrocarbon gases, and hydrogen
- **Pipe/Line Size Compatibility:** 1/4" to 2" (6 mm to 51 mm)
- **Range**
  
<table>
<thead>
<tr>
<th>NPT Line Size:</th>
<th>Min. SCFM</th>
<th>Min. NCMH</th>
<th>Max. SCFM</th>
<th>Max. NCMH</th>
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<table>
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<th>Max. SCFM</th>
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<td>0.25</td>
<td>[0.42]</td>
<td>99.08</td>
<td>[168.33]</td>
</tr>
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</table>

- **Accuracy**
  
  - **Model ST75**
    Standard: ±2% reading, ±0.5% full scale
    Optional: ±1% reading, ±0.5% full scale
  
  - **Model ST75V**
    Standard: ±1% reading, ±0.5% full scale

- **Repeatability:** ±0.5% reading
- **Turndown Ratio:** 3:1 to 100:1
- **Temperature Compensation**
  
  Standard: 40 °F to 100 °F [4 °C to 38 °C]
  Optional: 0 °F to 250 °F [-18 °C to 121 °C]

- **Agency Approvals**
  
  - **FM/CSA:** Class 1, Div. 1, Groups B,C,D;
    Class 1, Div. 2, Groups A-D
  
  - **ATEX/IECEx:** Zone 1, II 2 G Ex d IIC T6…T3;
    II 2 D Ex tD A21, IP67 T90°…T300°
  
  - **CPA, CE Mark**
  
- **Warranty:** One year

**Flow Element**

- **Installation:** In-line "T," NPT or tube
- **Type:** Thermal dispersion
- **Material of Construction**
  
  All-welded 316 stainless steel probe element with Hastelloy-C thermowells; 316 stainless steel NPT and tube fittings. ST75V flow body is schedule 40 stainless steel.

- **Maximum Operating Pressure**
  
  T-fitting [NPT female]: 240 psi [16.5 barg]
  Tube: 600 psi [41 barg]

- **Operating Temperature (Process)**
  
  0 °F to 250 °F [-18 °C to 121 °C]

- **Process Connection**
  
  **Model ST75**
  
  T-fitting [NPT female]: 1/4", 1/2", 3/4", 1", 1 1/2" or 2"
  Tubing: 1/4", 1/2" or 1"

  **Model ST75V**
  
  Female NPT, Male NPT, ANSI flanges, DIN flanges

**Transmitter**

- **Enclosure:** NEMA 4X [IP67], aluminum, dual conduit ports with either 1/2 inch NPT or M20x1.5 entries. Epoxy coated.

- **Operating Temperature:** 0 °F to 140 °F [-18 °C to 60 °C]

- **Input Power**
  
  DC: 18 Vdc to 36 Vdc (6 watt maximum)
  AC: 85 Vac to 265 Vac (12 watt maximum)
  (CE mark approval from 100 Vac to 240 Vac)

- **Output Signal**
  
  - **Standard**
    (2) 4-20 mA, user assignable to flow rate and/or temperature
    (1) 0-1000 Hz pulse for total flow
  
  - **Communication Port**
    RS232C standard. Wireless IR to PDA ²
  
  - **Digital Display (optional):** 2-line x 16 characters LCD. Displays measured value and engineering units. Top line assigned to flow rate. Second line is user assignable to temperature reading, as flow totalizer or alternating. Display can be rotated in 90° increments for optimum viewing orientation.

  1 Actual range subject to gas type and specific conditions
  2 Requires user supplied PDA and FCI software P/N 019819-01

Specifications at reference operating conditions of 70 °F, 14.7 psia [21.1 °C, 1.013 bar(a)] and for Model ST75 straight pipe run 20d upstream, 10d downstream.

FCI is a continuous improvement company. Specifications subject to change without notice.
ST75 Series Features

In-line, Mass Flow Measurement

With premium components and attention to detail, FCI's ST75 series provides long-lasting flow meter quality and value. Its features and functions ensure application compatibility, maximum installation convenience, superior industrial durability and lowest maintenance.

- Three analog outputs and RS232C digital output
- Dual conduit ports facilitate power and signal wire run isolation
- Selection of NPT or M20 threads
- 1/4” to 2” [6 to 51 mm] sizes for both pipe and tubing installations
- Fully calibrated system includes temperature compensation
- Premium Hastelloy-C sensor tips
- Easy access to all wiring terminations with removable front and rear covers
- 2-line x 16 characters LCD
  - Displays measured value and engineering units
  - Top line assigned to flow rate
  - Second line is user assignable to temperature reading, as flow totalizer or alternating
  - Display can be rotated in 90° increments for optimum viewing orientation
- Compact, rugged NEMA 4X (IP67), all metal enclosure and agency approvals for Div. 1, Zone 1 hazardous location installations
- No moving parts technology is
  - Non-clogging
  - Maintenance free
  - Minimal pressure drop
- DC or AC powered
- Wireless IR link to PDA
- Built-in Vortab flow conditioner in Model ST75V
- Built-in Vortab® flow conditioner in Model ST75V

ST75V
Model ST75 Pipe (NPT) Tee Configuration

<table>
<thead>
<tr>
<th>Configuration</th>
<th>DIM A</th>
<th>DIM B</th>
<th>DIM C</th>
<th>DIM D</th>
</tr>
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<tbody>
<tr>
<td>ST75-AXXX</td>
<td>1/4&quot;</td>
<td>6.5 [164.8] Max.</td>
<td>0.35 [8.9]</td>
<td>2.35 [59.7]</td>
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<tr>
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Model ST75 Tube Tee Configuration

<table>
<thead>
<tr>
<th>Configuration</th>
<th>DIM A</th>
<th>DIM B</th>
<th>DIM C</th>
<th>DIM D</th>
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<tbody>
<tr>
<td>ST75-XXX</td>
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<td>7.8 [198.1] Max.</td>
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<td>8.0 [203.2] Max.</td>
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Model ST75V Male NPT

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</tr>
</thead>
<tbody>
<tr>
<td>ST75V-XXXCE</td>
<td>1/4&quot;</td>
<td>5.50 [140]</td>
<td>0.35 [8.9]</td>
<td>5.00 [127]</td>
</tr>
<tr>
<td>ST75V-XXXEE</td>
<td>1/2&quot;</td>
<td>5.69 [144.5]</td>
<td>0.57 [14.5]</td>
<td>7.50 [190.5]</td>
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<td>0.69 [17.5]</td>
<td>9.00 [229]</td>
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<tr>
<td>ST75V-XXXEN</td>
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<td>6.44 [163.5]</td>
<td>0.86 [22]</td>
<td>9.00 [229]</td>
</tr>
<tr>
<td>ST75V-XXXEN</td>
<td>1 1/2&quot;</td>
<td>6.43 [163]</td>
<td>1.25 [31.8]</td>
<td>13.50 [343]</td>
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<tr>
<td>ST75V-XXXEN</td>
<td>2&quot;</td>
<td>6.43 [163]</td>
<td>1.50 [38]</td>
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Model ST75V Female NPT

<table>
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<tr>
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<th>DIM C</th>
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<td>2.50 [64]</td>
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<td>6.43 [163]</td>
<td>3.00 [76]</td>
<td>18.00 [457]</td>
</tr>
</tbody>
</table>
More Air / Gas Mass Flow Meter Solutions

In addition to the ST75 Series, FCI manufactures a broad line of thermal dispersion flow meter products for industrial and plant applications. From general-purpose air flow measurement to special-function, mixed gas flare flows; from small line sizes to the largest stacks and ducts, FCI has the selection to best solve your applications and ensure optimum solutions. Contact your local FCI representative or visit www.fluidcomponents.com for detailed product information and specifications on these products.

- **ST50 Series** models are compact and economical, yet full featured air and gas meters designed for air, compressed air, nitrogen (ST50) and biogas, digester gas, natural gas (ST51) applications.

- **ST98 Series** combines high-performance measurement, an extensive selection of options and the widest selection of gas calibrations.

- **GF Series** offers an extensive feature suite and unique 3-gas calibration option that solves the toughest industry application requirements.

- **MT Series** “multi-point” flow measuring systems can be configured with two (2) to sixteen (16) flow sensing elements to optimize measurements within the largest of pipe and duct sizes.

FCI Calibration Ensures Installed Accuracy

The ST75 Series is tested and calibrated to rigorous standards to ensure you get the instrument that does the job you specified. To design and produce the highest quality flow instrumentation, FCI operates a world-class NIST traceable flow calibration laboratory certified to meet such stringent standards as MIL-STD 45662A and ANSI/NCSL Z-540.

For most gases, FCI thermal dispersion flow meters are calibrated using the actual gas as well as the actual temperature and process conditions matching your application. Other suppliers are limited to air calibration with un-validated theoretical equivalencies for gases. FCI has demonstrated this procedure to be inferior and subject to installed errors well outside published specifications. For most other suppliers to perform actual gas calibrations equal to FCI, their flow meter must be sent to an outside laboratory resulting in extra costs and shipping delays to you.

FCI’s calibration results in a flow meter you can install with total confidence and assurance that it meets your application needs.

More than 16 precision flow stands to match fluids, process conditions, flow rates and line sizes specified in your application.
ST75V Mass Flow Meter
with Vortab® Flow Conditioners

For installations with inadequate straight-run or obstructed flows that prevent a fully developed profile for accurate flow measurement with the standard ST75, the Model ST75“V” provides the solution. FCI’s Model ST75V includes all of the features and functionality of the ST75 plus built-in Vortab flow conditioning. Vortab flow conditioners are the flow conditioning technology proven and recommended by flow measurement experts to eliminate both swirl and velocity profile distortions to ensure accurate flow measurement.

Vortab flow conditioners also are the lowest pressure loss solution of all flow conditioning techniques. FCI is the exclusive provider of Vortab flow conditioners for use with thermal mass flow meters such as the ST75V.

In applications with limited space for pipe straight-run or when obstructors such as valves, bends, couplings or any other disturber which alters the flow profile are present, the ST75V is the solution to ensure the highest accuracy and repeatability.

ST75V Specifications

- Process Connections: Choice of Female NPT, Male NPT, ANSI flanges, DIN flanges
- Media Compatibility: Air, compressed air, nitrogen, oxygen, argon, CO₂, ozone, other inert gases, natural gas and other hydrocarbon gases, hydrogen.
- Accuracy: ±1% of reading, ±0.5% full scale
- Repeatability: ±0.5%
- Temperature Compensation:
  - Standard: 40 °F to 100 °F [4 °C to 38 °C]
  - Optional: 0 °F to 250 °F [-18 °C to 121 °C]
- Turndown Ratio: 10:1 to 100:1
- Agency Approvals:
  - FM/CSA: Class 1, Div. 1, Groups B,C,D; Class 1, Div. 2, Groups A-D
  - ATEX/IECEx: Zone 1, II 2 G Ex d IIC T6…T3; II 2 D Ex tD A21, IP67 T90°…T300°
- Element Materials of Construction: All-welded 316 Stainless Steel with Hastelloy-C thermowells.
- Enclosure: NEMA 4X [IP67], aluminum, dual conduit ports with either ½ inch NPT or M20x1.5 entries. Epoxy coated.
- Output Signal:
  - Standard: (2) 4-20 mA, user assignable to flow rate and/or temperature
  - Optional: 0-1000 Hz pulse for total flow
- Maximum Operating Pressure: 240 psi [16.5 bar(g)]
- Input Power:
  - DC: 18 Vdc to 36 Vdc (6 Watts maximum)
  - AC: 85 Vdc to 265 Vac to 85 to 265 Vac (12 Watts maximum) (CE approval for 100 Vac to 240 Vac)
- Operating Temperature Range: 0°F to 140°F [-18°C to 60°C]
- Digital Display (Optional): Two-line x 16 characters LCD. Displays measured value and engineering units. Top line assigned to flow rate. Second line is user assignable to temperature reading, as flow totalizer or alternating. Display can be rotated in 90° increments for optimum viewing orientation.

ST75V Specifications

<table>
<thead>
<tr>
<th>Configuration</th>
<th>DIM A Pipe Size</th>
<th>DIM B Top to Flow CL</th>
<th>DIM C Flow CL to Bottom</th>
<th>DIM D VMR Length</th>
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</thead>
<tbody>
<tr>
<td>ST75V-XXXCE</td>
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<td>5.50 (140)</td>
<td>0.38 (9,5)</td>
<td>5.00 (127)</td>
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<tr>
<td>ST75V-XXXEE</td>
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<td>0.57 (14)</td>
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<td>1.50 (38)</td>
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<tr>
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<th>DIM D VMR Length</th>
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<td>ST75V-XXXFF</td>
<td>3/4&quot;</td>
<td>6.45 (164)</td>
<td>1.94 (49)</td>
<td>9.00 (229)</td>
</tr>
<tr>
<td>ST75V-XXXGF</td>
<td>1&quot;</td>
<td>6.44 (163,5)</td>
<td>2.12 (54)</td>
<td>9.00 (229)</td>
</tr>
<tr>
<td>ST75V-XXXHF</td>
<td>1 1/2&quot;</td>
<td>6.42 (163)</td>
<td>2.50 (64)</td>
<td>13.50 (343)</td>
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<tr>
<td>ST75V-XXXJF</td>
<td>2&quot;</td>
<td>6.43 (163)</td>
<td>3.00 (76)</td>
<td>18.00 (457)</td>
</tr>
</tbody>
</table>
### Ordering Guide: ST75V Mass Flow Meter with Vortab® Flow Conditioners

<table>
<thead>
<tr>
<th>Block No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model ST75V-</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### Base Unit, Enclosure Style (Block 1)
- Blind, Integral Transmitter, with two 3/4" FNPT cable entries
- Integral Transmitter with Local Digital Display, with two 3/4" FNPT cable entries
- Remote Transmitter w/ two 3/4" FNPT cable entries and w/Digital Display. (Specify cable length in Block 10)

#### Vertical Pipe
- Side mnt R, display face frwd, flow down
- Vertical Pipe

#### Horizontal Pipe
- Top mnt, display face frwd, flow L-R
- Side mnt, display face up, flow L-R
- Side mnt, display face down, flow L-R
- Side mnt, display face frwd, flow up
- Side mnt, display face down, flow up
- Side mnt, display face frwd, flow down

#### Line Size (Block 4)
- 1/4" (Available only with NPT, Block 5 must be Code E or N)
- 1/2"
- 3/4"
- 1"
- 1-1/2"
- 2"

#### Process Connection Type (Block 5)
- Female NPT
- Male NPT
- Flanged, #150 CLASS
- Other, agency approved, customer specified (all selected, Block 6 and 7 which follow must also be Code WW only)

#### Process Connection Size, Material, Rating, Finish Details (Block 6 & 7)
- 1/4" NPT (must be selected if Block 4 is Code C)
- 1/2" NPT
- 3/4" NPT
- 1" NPT
- 1-1/2" NPT
- 2" NPT
- 1/2" ANSI flanged 150 lb RF ANSI 16.5, 316L Stainless steel
- 3/4" ANSI flanged 150 lb RF ANSI 16.5, 316L Stainless steel
- 1" ANSI flanged 150 lb RF ANSI 16.5, 316L Stainless steel
- 1-1/2" ANSI flanged 150 lb RF ANSI 16.5, 316L Stainless steel
- 2" ANSI flanged 150 lb RF ANSI 16.5, 316L Stainless steel
- DN15 DIN flanged PN40, Form C or DIN2528 or Form B1 per DIN EN1092-1 in 316L ss
- DN25 DIN flanged PN40, Form C or DIN2528 or Form B1 per DIN EN1092-1 in 316L ss
- DN40 DIN flanged PN40, Form C or DIN2528 or Form B1 per DIN EN1092-1 in 316L ss
- DN50 DIN flanged PN16, Form C or DIN2528 or Form B1 per DIN EN1092-1 in 316L ss

#### Power Supply (Block 3)
- DC, 18 - 36 V
- AC, 85 - 265 V, 50/60 Hz

#### Calibration ¹ and Calibration Temperature Conditions (Block 9)
- High Accuracy 1% Calibration and Standard Conditions +40 °F to 100 °F (+4 °C to 38 °C) w/Vortab
- High Accuracy 1% Calibration and Extended Temperature Compensation +0 °F to 250 °F [-18 °C to 121 °C] w/Vortab

#### Interconnecting Cable Length for Remote Configurations ⁴ (Block 10)
- Not required
- 10' [3 meters]
- 25' [7.6 meters]
- 50' [15 meters]

#### Optional Accessories
- Software Interface Package for PDA/PalmOS
- PC Interface Communications Kit, For RS232 serial port connection
- Digital Display/Readout, 8-digit LCD Pulse totalizer/counter
- Digital Display/Readout, LED 115/230 Vac powered
- Digital Display/Readout, LCD, 4-20 mA loop powered
- Digital Display/Readout, 8-digit LCD Pulse totalizer/counter

#### Notes
1. Must use FCI’s AVAL program to determine letter code. AVAL is a custom flow meter optimizer program which considers gas medium, flow range, pipe size and other conditions to determine best calibration and supplies FCI letter code to be used here. AVAL is available on-line at www.fluidcomponents.com or consult local FCI representative/distributor.
2. Calibration accuracy is ±% of reading, ±0.5% of full scale.
3. Fixed cable length with instrument calibrated together as a matched set.
4. Fixed cable length with instrument calibrated together as a matched set.
5. Fixed cable length with instrument calibrated together as a matched set.

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**Locally Represented By:**

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HORIZONTAL MOUNTINGS

- CODE F: TOP MNT, DISPLAY FORWARD
- CODE G: TOP MNT, DISPLAY FORWARD
- CODE H: SIDE MOUNT, DISPLAY UP
- CODE J: SIDE MOUNT, DISPLAY UP
- CODE K: SIDE MOUNT, DISPLAY DOWN
- CODE L: SIDE MOUNT, DISPLAY DOWN

FLOW LEFT TO RIGHT
FLOW RIGHT TO LEFT
FLOW LEFT TO RIGHT
FLOW RIGHT TO LEFT
FLOW LEFT TO RIGHT
FLOW RIGHT TO LEFT

VERTICAL MOUNTINGS

- CODE M: SIDE MOUNT LEFT
- CODE N: SIDE MOUNT RIGHT
- CODE P: SIDE MOUNT LEFT
- CODE R: SIDE MOUNT RIGHT

DISPLAY FORWARD
DISPLAY FORWARD
DISPLAY FORWARD
DISPLAY FORWARD

FLOW UP
FLOW UP
FLOW DOWN
FLOW DOWN

FLOW ARROW ON TOP AS SHOWN

1. THIS DRAWING IS GENERIC IN NATURE, FOR SPECIFIC MODEL TYPE, ORIENTATION, CUSTOMER PROCESS CONNECTION, ETC., REFER TO IDBM MANUAL.

NOTES: UNLESS OTHERWISE SPECIFIED