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Mass Flow Meter Summary

The ST50 Series Flow Meters are an accurate, easy to install, no moving parts mass flow meter solution. Model ST50 is used for compressed air and nitrogen flow. Model ST51 is used for measuring biogas, digester gas, methane and natural gas. The ST50 Series utilizes FCI proven thermal dispersion technology to provide direct mass flow measurement resulting in higher performance at a lower cost than orifice plates, DP, Vortex shedding and other thermal devices. The meter installs in line sizes ranging from 2 to 24 inches [51 to 610mm] with 1/2" or 3/4" NPT.

The ST50 Series uses precision, lithography structured platinum RTD sensors embedded in FCI's equal mass small diameter, all metal thermowells. Combined with microprocessor electronics and precision calibration, the ST50 achieves excellent accuracy, fast response and virtually maintenance free operation.

Model ST50 Applications

- ▶ Wastewater Treatment Aeration Control
- ▶ Blower and Dryer Air Flow Control
- ▶ Burner and Furnace Air Flow Control
- ▶ Lake, Pond and Aquaculture Aeration
- ▶ HVAC Duct/Damper Control
- ▶ Compressed Air Distribution Measurements

Model ST51 Applications

- ▶ Landfill Gas Recovery (LMG)
- ▶ Wastewater Treatment Plant Digester
- ▶ Coal Mine Methane Recovery
- ▶ Livestock and Dairy Farm
On-Farm Biogas Recovery
- ▶ Biogas: Biomass Fermentation and Recovery
- ▶ Biomass Gasification

Specifications

| | Model ST50 | Model ST51 |
|-----------------------------------|--|--|
| Media Compatibility | Air, Compressed Air, Nitrogen | Biogas, Digester Gas, Methane, Methane Composition Gases, Natural Gas, Air, Compressed Air, Nitrogen |
| Agency Approvals FM/CSA | Class 1, Div.2, Groups A,B,C,D; T4 | Class 1, Div.1, Groups B,C,D, Class 1, Div.2, Groups A,B,C,D; T4 |

ATEX

Output Signals

Dual 4-20mA Analog
0-1kHz pulse for totalizer

Digital Display (optional)

| | Zone 2 | Zone 1 |
|--|--|---|
| | II 3 G EEx nA IIT6 II 3 D T65C | II 2 G Ex d IIC T6...T3, II 2 D Ex tD A21 IP67 T90°...T300° |
| | Yes Optional | Yes Yes |
| | LCD, °999 counts, user scaleable to flow rate engineering units or 0-100%. | LCD, 2 line x 16 Characters. First line is flow rate and engineering units. Second line user selectable as temperature or flow totalizer, or alternating. |

Pipe/Line Size Compatibility: 2" to 24" [51 mm to 610 mm]

Flow Rate:

- ▶ **ST50:** 0.75 to 400 sfps [0.23 to 122 mps]
- ▶ **ST51:** 0.3 to 400 sfps [0.08 to 122 mps]

Accuracy:

- ▶ **Standard:** ± 2% reading, ± 0.5% full scale
- ▶ **Optional:** ± 1% reading, ± 0.5% full scale

Repeatability: °0.5% reading

Temperature Compensation:

- ▶ **Standard:** 40° to 100°F [4° to 38°C];
- ▶ **Optional:** 0° to 250°F [-18° to 121°C]

Turndown Ratio: 10:1 to 100:1

Flow Element

Installation: Insertion

Type: Thermal Dispersion

Material of Construction: 316 stainless steel body with Hastelloy C thermowell sensors, 316 stainless steel compression fitting with teflon or stainless steel ferrule.

Pressure (Maximum Operating without Damage):

- ▶ Stainless steel ferrule: 500 psig [34 bar(g)]
- ▶ Teflon ferrule: 150 psig [10 bar(g)]

Operating Temperature:

- ▶ Stainless steel ferrule: 0° to 250°F [-18° to 121°C]
- ▶ Teflon ferrule: 0° to 200°F [-18° to 93°C]

Process Connection: 1/2" MNPT or 3/4" MNPT with stainless steel or Teflon ferrule.

Insertion Length (Field Adjustable) 1:

- ▶ 1 to 6 inches [25 to 152 mm]

▶ 1 to 12 inches [25 to 305 mm]

▶ 1 to 18 inches [25 to 457 mm]

Flow Transmitter

Enclosure: NEMA4X (IP67) aluminum, Epoxy coated

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

Input Power:

▶ DC: 18 to 36 Vdc

▶ AC: 85 to 265 Vac (CE Mark Approval from 100 to 240 Vac).

Communication Port: RS-232C, Wireless IR to PDA with optional digital display models

Installation: Integral or Remote (50'[15m] max.)

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