

# MASS FLOW METERS

## TSF SERIES – Flow Rate & Totalizer LCD Display – Flow Rate With or Without LCD Display

- ±2% Accuracy
- Linear Output
- Thermal Technology
- For Using in Non Corrosive Gas
- For Flow Rates up to 2500 SLM
- Power Supply Included

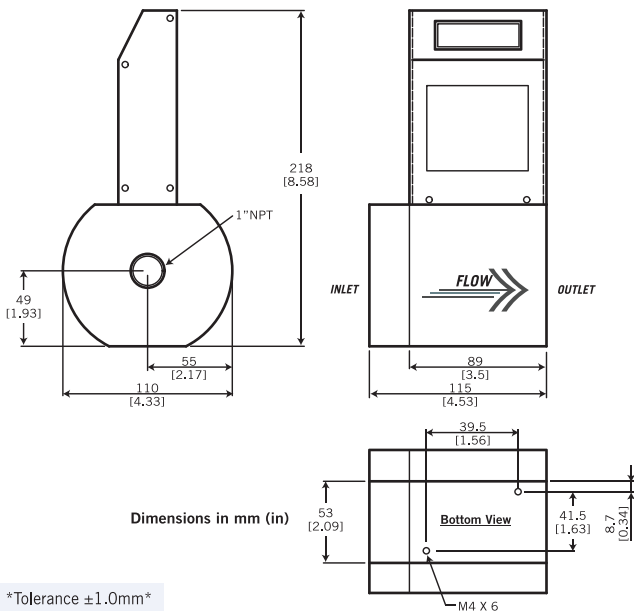
The NEW-FLOW Thermal Mass Flow Meters provide high performance. Thermal Technology offers advantages in accuracy, sensitivity and turn quality components and the latest technology are combined to provide reliable, compact meters and controllers. The TSF Series comes With or Without an LCD Display; or Flow Rate with Totalizer LCD Display. All models come with linear 0-5VDC and 4-20mA output. The TSF Series measures the mass flow rate of gases in 5 ranges from 0-750 SLM to 0-2500 SLM as shown in the range table.

### Technical Data

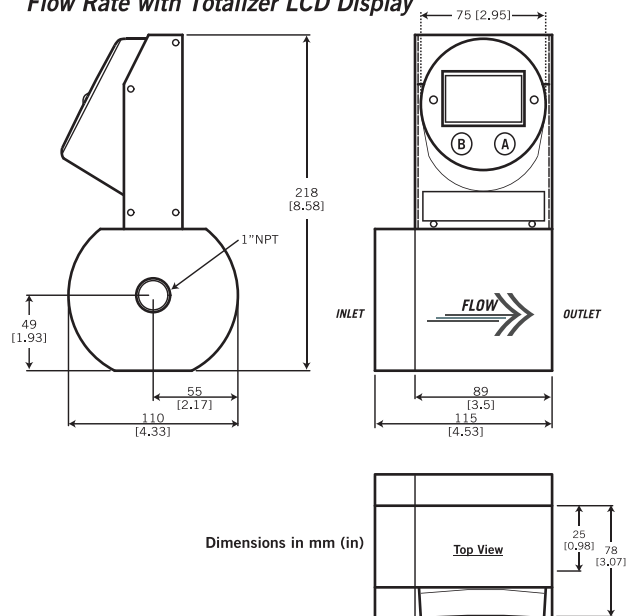
- Type:** Without LCD Display; Flow Rate with LCD Display; Flow Rate with LCD Display & Blue Back Lighted; Flow Rate with Totalizer LCD Display & Blue Back Lighted
- Wetted Parts Material:** Standard flowbody—SS316, option available. O-ring: Viton or FFKM available
- Output Signal:** 0-5 VDC Linear min. load 1000Ω or 4-20 mA Linear, loop resistance 500Ω
- Input Power:** 24VDC standard; optional power supply 15VDC 115VAC, 220VAC @500mA
- Accuracy:** ±2% F.S. (including linearity)
- Turn Down Ratio:** 100:1
- Repeatability:** ±0.15% F.S. or Better
- Electric Connection:** 9 Pin Sub "D"
- Process Connection:** 1" NPT female
- Range:** 0-750 SLM to 0-2500 SLM
- Minimum Pressure:** 100" H<sub>2</sub>O
- Max. Pressure:** 500 psig
- Temperature Range:** 0~50°C
- Response Time:** 1 Second
- Temp. Coefficient:** 0.05% Full Scale per 1°C or Better
- Pressure Coefficient:** 0.01% Full Scale per PSIG or Better
- Flow Unit:** Kg, GAL, Nℓ, Nm<sup>3</sup>, cc, ℓ, M<sup>3</sup>  
(Flow rate with LCD display: Label by manufacturer; Flow rate with totalizer LCD display: Unit LCD display)
- Weight:** app. 6.5 kg with power supply  
app. 6.64 kg with power supply & totalizer

### Dimensions

Flow Rate with LCD Display (without LCD available)



Flow Rate with Totalizer LCD Display

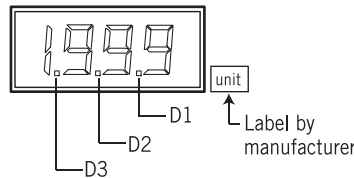


### Approvals:



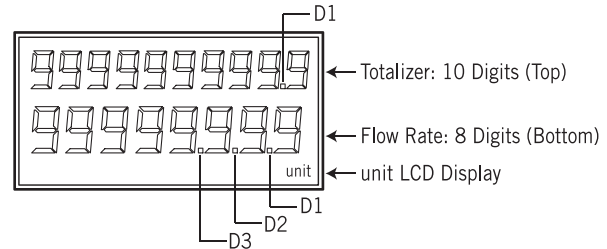
### Display Digital Decimal Point Function

#### Flow Rate with LCD Display:



| Range        | Decimal Point |
|--------------|---------------|
| 0 ~ 1.999    | D3            |
| 2.0 ~ 19.99  | D2            |
| 20.0 ~ 199.9 | D1            |
| 200 ~ 1999   | None          |

#### Flow Rate with Totalizer LCD Display:



### Range Table

| Code | SLM               | ACCURACY |
|------|-------------------|----------|
| 00   | 0-750             | ±2% F.S. |
| 01   | 0-1000            | ±2% F.S. |
| 02   | 0-1250            | ±2% F.S. |
| 03   | 0-1500            | ±2% F.S. |
| 04   | 0-2500            | ±3% F.S. |
| 05   | *Custom Flow Rate |          |

**NOTE.**

\*Please notice that the max. flow rate is 2500 SLM.

### Ordering Information

| TSF | Code        | Flow Range  |
|-----|-------------|---|
|     | 00          | 0~750 SLM   |
|     | 01          | 0~1000 SLM  |
|     | 02          | 0~1250 SLM  |
|     | 03          | 0~1500 SLM  |
|     | 04          | 0~2500 SLM  |
|     | 05          | *Custom range (please directly fill in the requested range) |
|     | <b>Code</b> | <b>Wetted Parts Material</b>                                |
|     | A           | SS316 (Viton o-ring)  |
|     | B           | SS316 (FFKM o-ring)   |
|     | O           | option  |
|     | <b>Code</b> | <b>Process Connection</b>                                   |
|     | 1           | 1"NPT(F)  |
|     | <b>Code</b> | <b>Display</b>  |
|     | W           | Flow Rate with LCD Display                                  |
|     | B           | Flow Rate with LCD Display & Blue Back Lighted              |
|     | T           | Flow Rate with Totalizer LCD Display & Blue Back Lighted    |
|     | O           | Without LCD Display   |
|     | <b>Code</b> | <b>Output Signal</b>  |
|     | (1)         | 0~5 VDC   |
|     | (2)         | 4~20mA  |
|     | <b>Code</b> | <b>Input Power</b>  |
|     | (1)         | 24 VDC  |
|     | (2)         | 15 VDC  |
|     | <b>Code</b> | <b>Power Supply for 24 VDC</b>                              |
|     | (1)         | With  |
|     | (2)         | Without   |

|     |  |  |  |  |  |  |  |  |  |                        |
|-----|--|--|--|--|--|--|--|--|--|------------------------|
| TSF |  |  |  |  |  |  |  |  |  | Complete Ordering Code |
|-----|--|--|--|--|--|--|--|--|--|------------------------|