

# THERMAL INSERTION MASS FLOW METER EXPLOSION PROOF TDF SERIES

**Flow Rate & Totalizer LCD Display**  
**Wide Turndown Ratio of 100:1**  
**Full Range Temperature Compensate**

TDF Series is assembled with a thermal dispersion sensor. The sensors use three ratio: temperature detector, reference sensor, compensation sensor through a Wheatstone Bridge to provide a output signal 4~20mA, for measuring temperature when the sensor is immersed into process gases.

## Style Types

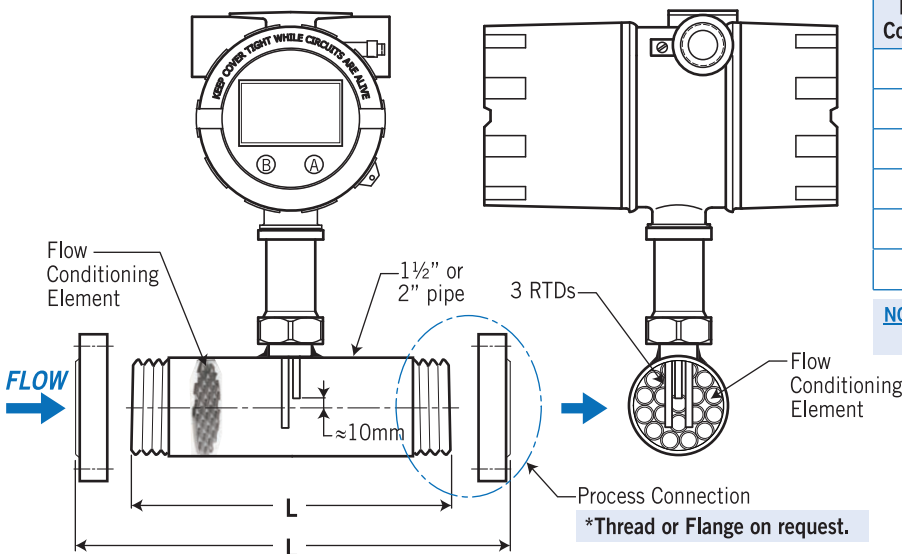
- **TDF-IN: Insertion Style**
  - Application for the large diameter, duct and chimney.
  - Measuring the flow in pipe or air channel which inner diameter bigger than 2".
  - Pipe/Line size compatibility is from 2" to 60"; bigger than 60" is on request.
  - Measuring Range: 0.6 M/S to 60 M/S
  - Calibrated in mass flow range or mass flow rate.
  - Thread and Flange type available
- **TDF-CP: Combine Pipe Style**
  - Application for the measuring pipe, and the pipe size is from 1/2" to 2".
  - Measuring Range: Air / 0.6 SCFM (1 NCMH) ~ 410 SCFM (700 NCMH).
  - Calibrated in mass flow range.

## Technical Data

**Function Type:** Flow Rate with Totalizer LCD Display & Blue Back Lighted  
**Enclosure Material:** Aluminum or SS316 available  
**Wetted Parts Material:** 316 stainless steel  
**LCD Display:** Totalizer 10 digital (top); Flow rate 8 digital (bottom)  
**Output Signal:** 0-5 VDC Linear min. load 1000Ω or 4-20mA Linear, loop resistance 500Ω  
**Input Power:** 24VDC or 110/220VAC  
**Process Connection:** **TDF-IN:** 3/4"NPT, BSP male thread; or flange 1"~3" JIS, ANSI, DIN and clamp available  
**TDF-CP:** 1/2"~2" NPT, BSP male thread; or flange type available  
**Conduit Connection:** 1/2" or 3/4"NPT female, or M20 x P1.5 (with adaptor); others option available  
**Detection Length:** Standard 1 3/4"; and option 2"~60"  
**Working Temperature:** 0~80°C  
**Working Pressure:** maximum 40 kg/cm<sup>2</sup>  
**Housing:** IP68  
**Explosion Proof:** Class I, Groups A, B, C, D; Class II, Groups E, F, G; NEMA 4X  
**Response Time:** 1 second  
**Accuracy:** ±1% of reading +0.5% of full scale  
**Repeatability:** ±0.2% of full scale  
**Wide Turndown Ratio:** 100:1  
**Unit:** Flow unit: Kg, GAL, Nℓ, Nm<sup>3</sup>, cc, ℓ, M<sup>3</sup>; Time unit: Day, Hr, Min, Sec

## Dimensions

**Model: TDF-CP (Combine Pipe Type)**



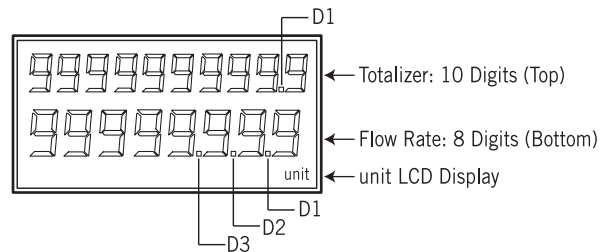
### Approvals:



TD0400TJ

## Display Digital Decimal Point Function

Flow Rate with Totalizer LCD Display :



## Insertion Length / Flow Rate

Process Connection	Connection Type	" L " Length	Max. Flow Rate
1/2"	NPT / BSP or Flange Type Available	13"	350 NLPM
3/4"		13"	1,500 NLPM
1"		13"	2,500 NLPM
1 1/4"		13"	4,000 NLPM
1 1/2"		13"	5,000 NLPM
2"		13"	11,500 NLPM

**NOTE:** L is standard length.  
Other L length please consult with the factory.

\*Thread or Flange on request.

unit=mm

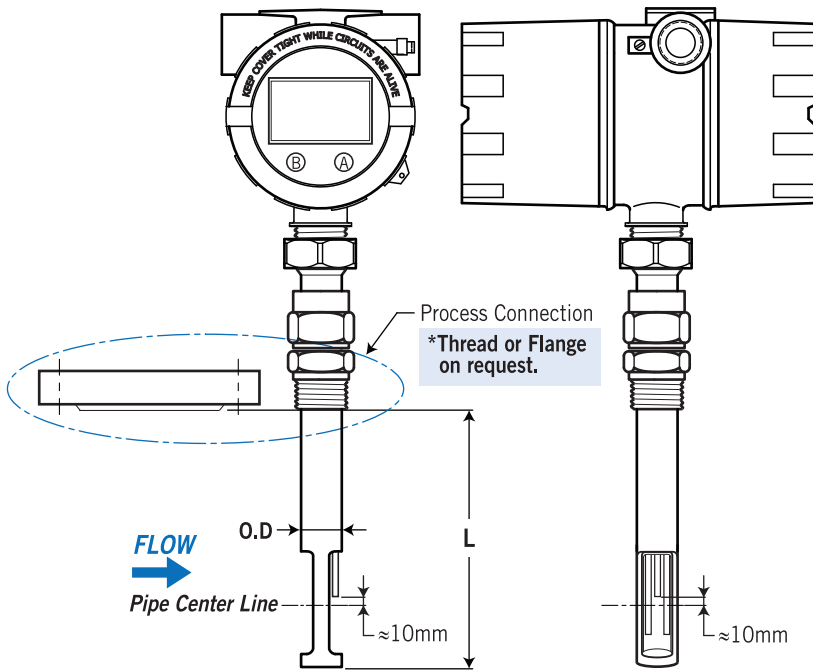
Dimensions

Model: TDF-IN (Insertion Type)

Insertion Length / Flow Rate

" O.D "	Length " L "	Max. Flow Rate	Pipe Size
ø20mm	Standard 1¾", option 2"~60"	600 Nm³/Hr	2"
		800 Nm³/Hr	2½"
		1200 Nm³/Hr	3"
		2000 Nm³/Hr	4"

\*Other pipe size is on request.



unit=mm

Ordering Information

TDF	Code	Style Types
	<b>IN</b>	Insertion Style
	<b>CP</b>	Combine Pipe Style
	<b>Code</b>	<b>Process Connection Type</b>
		(1) Thread Type (2) Flange Type (3) Clamp Type (4) Coupling Type
	<b>Code</b>	<b>Connection Size</b>
		For TDF-IN: (A) ¾" (thread only) (B) 1" (C) 1½" (D) 2" (E) 3" (O) Option
		For TDF-CP: (F) ½" (G) ¾" (H) 1" (I) 1¼" (J) 1½" (K) 2"
	<b>Code</b>	<b>Connection Rating</b>
		Thread Type: (1) NPT, male (2) BSP, male Flange Type: (3) JIS 10K (4) JIS 20K (5) ANSI 150# (6) ANSI 300# (7) PN10 (8) PN16 (9) PN25 (O) Option: please fill in the requested rating _____
	<b>Code</b>	<b>Electronic Connection</b>
		(E) ¾"NPT Female, Standard (F) ½"NPT Female (G) M20xP1.5 (O) Option
	<b>Code</b>	<b>Flow Range</b>
		Please fill in the requested flow range directly, ie: 4,000 NLPM. (Please refer to the table of Insertion Length / Flow Rate.)
	<b>Code</b>	<b>Length of L</b>
	<b>I</b>	(for TDF-IN) Please fill in the requested length directly, ie: L=14".
	<b>C</b>	(for TDF-CP) Please fill in the standard length, ie: L=13".
	<b>Code</b>	<b>Output Signal</b>
		(1) 4~20 mA
	<b>Code</b>	<b>Input Power</b>
		(A) 110VAC (B) 220VAC (C) 24VDC
	<b>Code</b>	<b>Housing Material / Explosion Proof</b>
	<b>A</b>	Aluminum alloy / (Ex. Certificate on Housing Only) Class I, Groups A, B, C & D; Class II, Groups E, F & G; NEMA 4X
<b>TDF</b>		<b>Complete Ordering Code</b>