

## Average Flow Measuring Tube



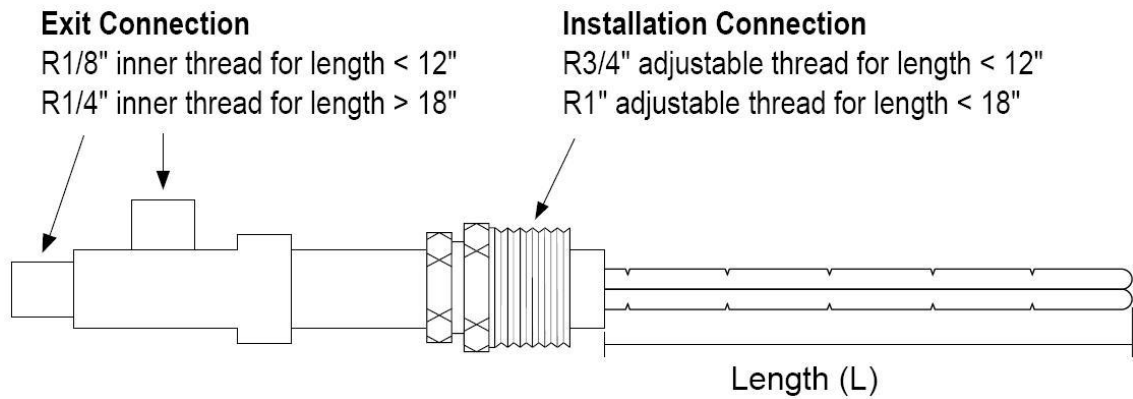
### Application

MAFMT and differential pressure transmitter are often being used in the measurement of flow. With several pressure detecting holes on the MAFMT, we can get the average of the flow inside the duct and improve the problem happened in the flow measuring where disturbance occurs when there's no adequate space inside the straight inlet.

### Technical Sheet

Media measured	air
Operating pressure	Max.10 bar
Operating temperature	Max. 250°C
Installation connection	R3/4" adjustable thread for length < 12" R1" adjustable thread for length > 18"
Exit connection	R1/8" inside thread for length < 12" R1/4" inside thread for length > 18"
Measuring material	Stainless steel 316
Connection thread material	cooper or option: stainless steel

## Dimension



## Measuring Principle

MAFMT is a probe we insert into the duct ( along with the whole diameter ) to measure the flow. When the probe encounters the flow, several pressure detecting holes will sense and get the average total pressure  $P_1$  in windward side and static pressure  $P_2$  in leeward.

MAFMT then gets the flow velocity by measuring the difference between total pressure and static pressure ( i.e. dynamic pressure ).

By Bernoulli theory, we can get the output dynamic pressure ( $\Delta P$ ) and flow average velocity ( $V$ ).

## Connection Diagram

### ※ Basic Formula of Flow Velocity

$$V = K \sqrt{\frac{2}{\rho} \Delta P}$$

### ※ Basic Formula of Flow

$$q_v = K \varepsilon A \sqrt{\frac{2}{\rho} \Delta P}$$

$$q_m = q_v \times \rho$$

$V$  = Flow velocity of fluid, m/s

$\Delta P$  = Difference between total pressure and static pressure ( dynamic pressure ), Pa

$\rho$  = Flow density, kg /m<sup>3</sup>

$K$  = Flow coefficient

$q_v$  = Volume flow of liquid, m<sup>3</sup>/s

$q_m$  = Mass flow of liquid, kg /s

$K$  = Flow coefficient of average flow measuring tube during operation

$\varepsilon$  = Inflation coefficient of liquid going thru measuring tube during operation

$A$  = Cross-sectional area of duct during operation, m<sup>2</sup>

## Order information

MAFMT - 04 2 - 450  
A B C

(A) Installation	(B) Material	(C) Length (L) / mm	
04 : duct-mounting	2 : SUS316	100 : 4"	450 : 18"
		150 : 6"	600 : 24"
		200 : 8"	800 : 32"
		300 : 12"	1000 : 40"

## Contact

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