AFMT

Average Flow Measuring Tube

APPLICATIONS

- AFMT and differential pressure transmitter are often being used in the measurement of flow. With several pressure detecting holes on the AFMT, 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.

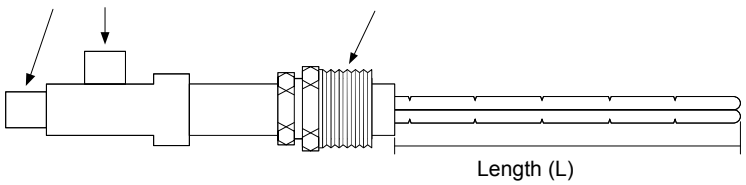
AFMT - 04 2 - 450

Installation	Material	Length(L)/mm	
04 : duct-mounting	2 : SUS316	050 : 2"	450 : 18"
		100 : 4"	600 : 24"
		150 : 6"	800 : 32"
		200 : 8"	1000 : 40"
		300 : 12"	

DIMENSION

Exit Connection
R1/8" inner thread for length < 12"
R1/4" inner thread for length > 18"

Installation Connection
R3/4" adjustable thread for length < 12"
R1" adjustable thread for length < 18"



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

CONNECTION DIAGRAM

Basic Formula of Flow Velocity

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

Basic Formula of Flow

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

$$qm = qv \times \rho$$

V = Flow velocity of fluid, m/s
ΔP = Difference between total pressure and static pressure (dynamic pressure), Pa
ρ = Flow density, kg /m3
K = Flow coefficient
qv = Volume flow of liquid, m3/s
qm = Mass flow of liquid, kg /s
K = Flow coefficient of average flow measuring tube during operation
ε = Inflation coefficient of liquid going thru measuring tube during operation
A = Cross-sectional area of duct during operation, m2

MEASURING PRINCIPLE

AFMT 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 P1 in windward side and static pressure P2 in leeward. AFMT 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(ΔP) and flow average velocity(V).

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