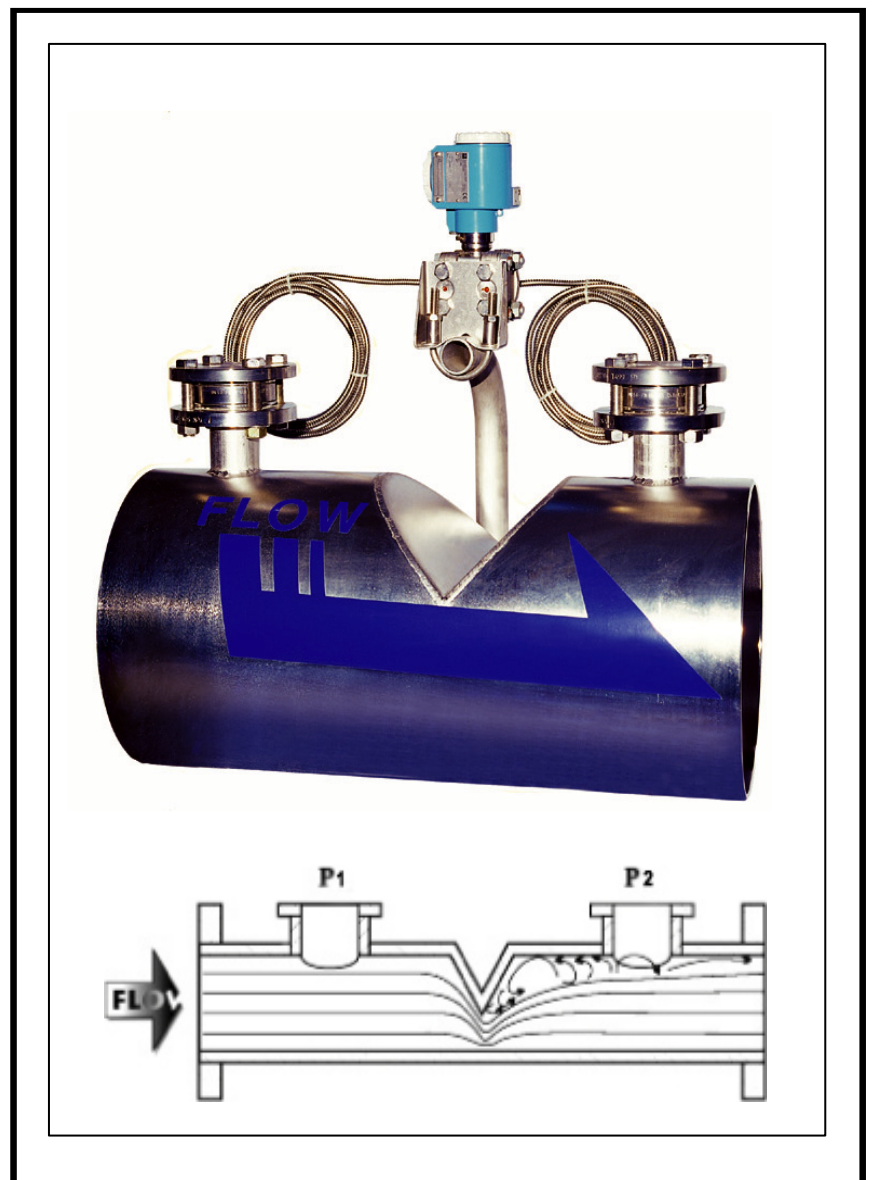


General Information

HWFM-Series

Wedge Type DP Flowmeter



HITROL CO., LTD.

General

HWFM-Series DP flow meter is a high precision DP flow meter with a very high accuracy developed using fluid mechanics. This innovative DP flow meter is designed to have different locations to measure differential pressure according to its diameter ratios, and these locations are selected according to fluid mechanics. Therefore, this flow meter has a very high accuracy of less than $\pm 0.5\%$. This flow meter may be the only substitute for existing magnetic flow meter. In addition to this, this flow meter is produced and delivered after wet calibration using government-approved

flow calibration facilities.

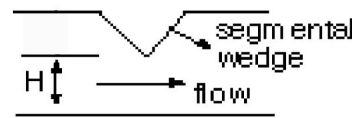
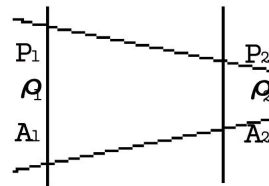
HWFM-Series flow meter can generate differential pressure using a V-shaped wedge in the pipeline. An ordinary DP gage can be used for clean fluids not containing particles and dusts such as water and air, and a diaphragm seal type DP gage can be used for dirty fluids containing particles and dusts such as slurries and etc. Therefore, this flow meter completely solved plugging problems of pressure measuring tubes which is frequently occurred for the other DP flow meters.

Measurement Principle

Q_v : volumetric flow rate
 β : diameter ratio
 A_2 : cross sectional area of reduced area
 E : approach-velocity coefficient
 ρ : density of fluid
 C_d : discharge coefficient (from calibration)
 α : expansion coefficient
 ΔP : differential pressure

Measuring principle of HFSW-Series DP flow meter is that if flow path is reduced using segmental wedge and fluid flows this reduced section of pipe, the flow velocity is increased (continuity equation), and pressure is decreased (Bernoulli equation) there, differential pressure is generated between A and B. The following equation yields between generated differential

pressure and the volumetric flow rate, and therefore, flow rate can be measured when differential pressure is measured. The equation for the diameter ratio of the segmental wedge DP flow meter is very complicated with other DP flow meter, and hence, the equation for diameter ratio of segmental wedge DP flow meter is not introduced here.



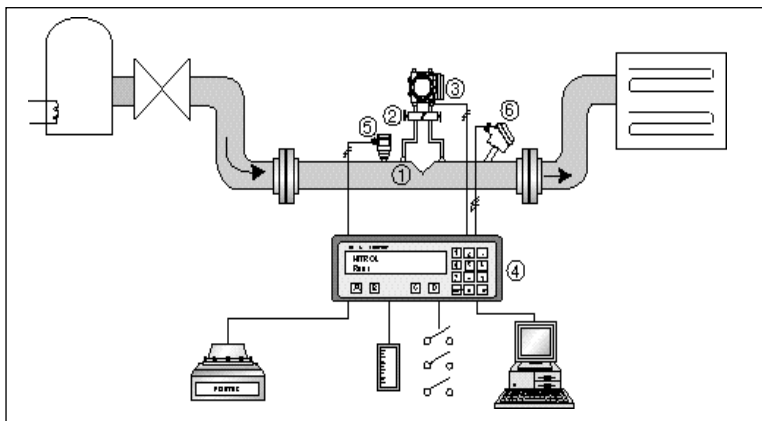
Specifications

Measuring Fluid	liquid, gas, steam, slurries, and other fluids containing particles and dusts.
Material	SUS 304, (option : SUS 316, PVC, Acryl, etc.)
Operating Pressure	STD. : 10 kgf/cm ² (option : over 10 kgf/cm ²)
Operating Temp.	Max. 350 °C
Accuracy	$\pm 0.5\%$ RD
Reproducibility	$\pm 0.1\%$ RD
Measurement Range	20 : 1
Length of straight pipe	upstream-5D, downstream-3D
Range of H/D ratio	0.25-0.8

Features

- Excellent repeatability and accuracy $\pm (0.1\%RD \text{ and } \pm 0.5\%RD)$
- Very wide flow measurement range (20:1)
- High reliability due to no moving parts
- If diaphragm seal type DP gage is used, problems such as plugging of pressure measuring tubes never occurs.
- Very suitable to measure not only clean fluids but also dirty fluids such as slurries.
- Requires shorter length of straight pipe for upstream and downstream compared to other DP flow meters (upstream : 6~10D, downstream : 3D)
- Can be applied to liquids, gases and steam, etc.

Flow Measurement System



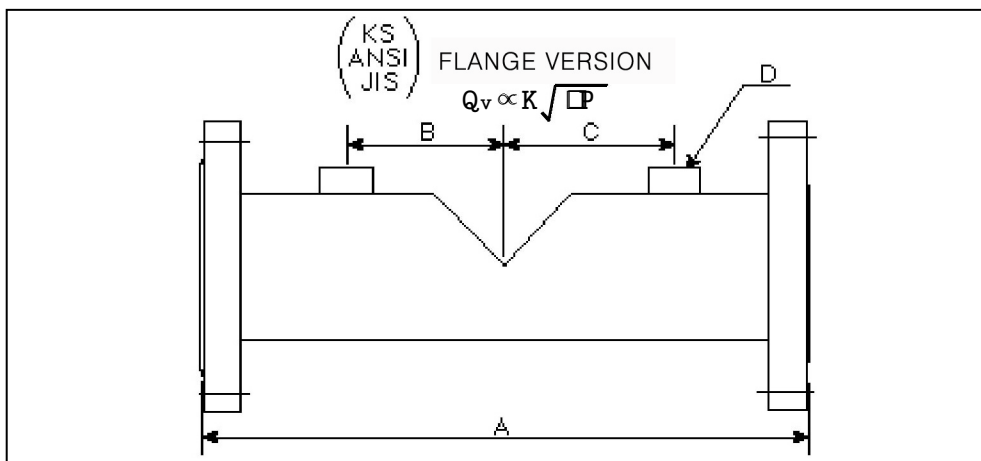
Measuring the incompressible fluids

- ① HWFM-Series DP flow meter
- ② Equalizing valve
- ③ DP transmitter
- ④ Flow computer or flow indicator

Measuring the compressible fluids

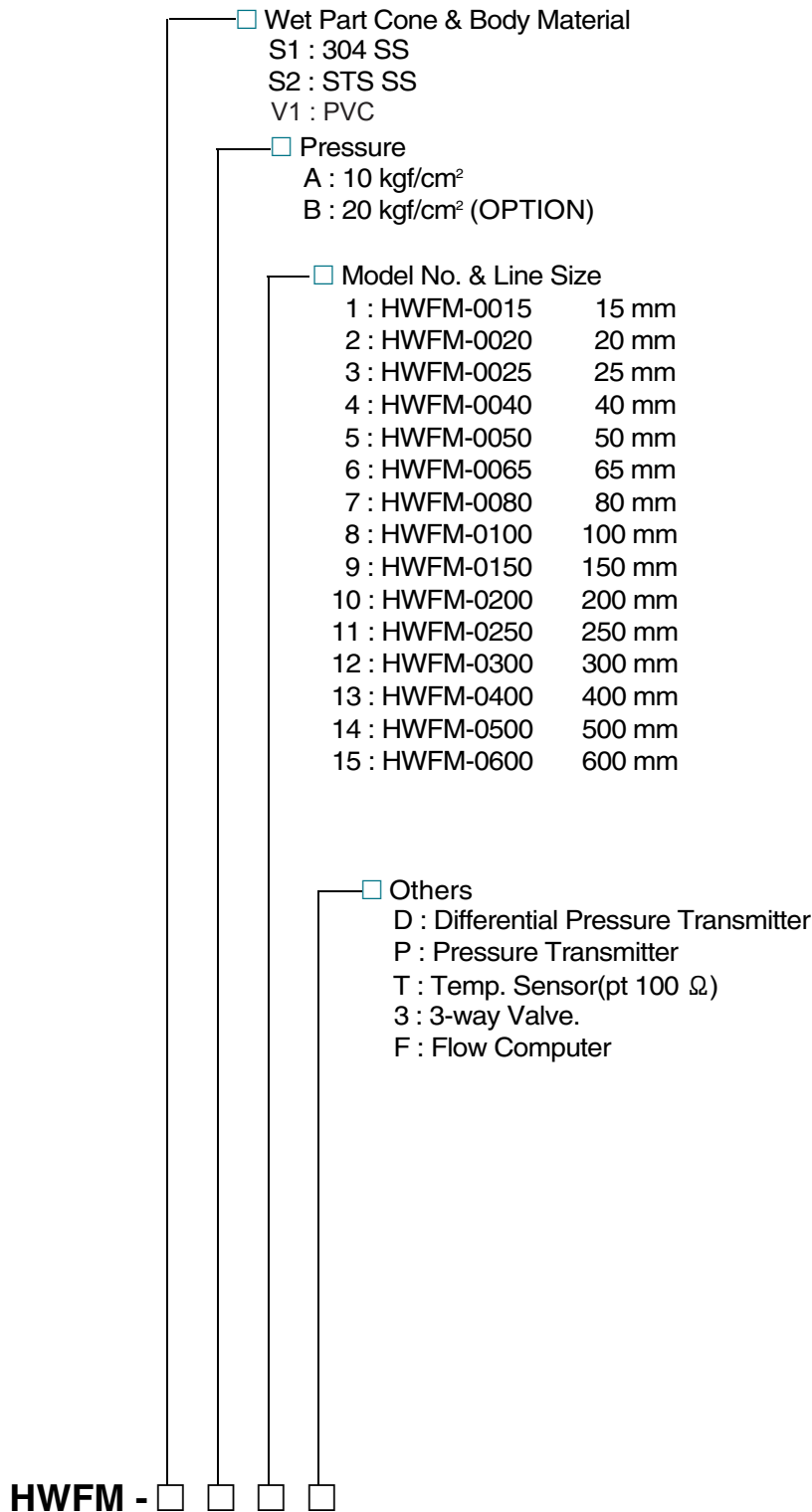
- ① HWFM-Series DP flow meter
- ② Equalizing valve
- ③ DP transmitter
- ④ Flow computer or flow indicator
- ⑤ Pressure gage
- ⑥ Temperature gage

Dimension



Model	Size	A(mm)	B(mm)	C	D
HWFM-0015	15A	820			
HWFM-0020	20A				
HWFM-0025	25A	1120			
HWFM-0040	40A	1525			
HWFM-0050	50A	595			
HWFM-0065	65A				
HWFM-0080	80A	588			
HWFM-0100	100A	736			
HWFM-0125	125A				
HWFM-0150	150A	815			
HWFM-0200	200A	914			
HWFM-0250	250A	990			
HWFM-0300	300A	1070			
HWFM-0350	350A				
HWFM-0400	400A				
HWFM-0450	450A				
HWFM-0500	500A				
HWFM-0600	600A				

ORDER CODES



HEAD OFFICE · FACTORY · R & D INSTITUTE
62-182 BONGILCHEON-RI CHORI-MYUN
PAJU CITY KYUNGGI-DO KOREA
TEL : (031) 943-0875~7
FAX : (031) 943-0878, 5600
<http://www.hitrol.co.kr> hitrol@hitrol.co.kr