CONDITIONING PITOT TUBE

■ MODEL : DHIF-PT600 SERIES **DAEHAN & DS INSTRUMENT CO.,LTD**

■ PERFORATED GRILLE TYPE

■ APPLICATIONS

The Most Accurate and Reliable
Technology for Measuring Gas, Liquid and Steam
Superior Signal Stability and Greater Resistance to Clogging
Bi-directional flow measurement.

■ SPECIFICATIONS

☐ Average Pitot Tube Type
- Single Support Flange Type
- Double Support Flange Type
- Isolation Valve Type
- Isolation Valve & Rod Type
- Integral Conditioner Type

☐ Flange Ratings
- JIS 10, 16, 20, 30, 40 and 63K
- ANSI class 150, 300, 600,900,1500,2500#

☐ Nominal pipe sizes available
- 15mm ~ 3200 mm(1/2"~128")

☐ MATERIAL
- Carbon steel
- Stainless Steel (304SS,316SS,321SS,321H)
- Low Alloy (A335-P5,P9,P11,P12,P22,P91)

☐ Flow Turndown
- Typically > 10:1

☐ Required Straight length
- Upstream : 2D (*Integral Conditioner Type: 3D)
- Downstream : 1D (*Integral Conditioner Type: 1D)

☐ Accuracy
- Typically ±1~1.5% un-Calibrated
- Typically ±0.5% Calibrated.(It's the Liquid examination)
- Typically ±1% Calibrated.(It's the Gas examination)

■ DESCRIPTION

As not all ductwork allows for proper upstream and downstream straight duct runs, a flow conditioning device is often needed for profiling air flow at the point of flow measurement. "CONDITIONING PITOT TUBE" flow Conditioner is a proprietary-designed flow conditioning device, designed to eliminate cyclonic, turbulent and reverse flow, while minimizing pressure loss in almost any installation, including those with relatively few or almost no straight duct runs either upstream or downstream. "CONDITIONING PITOT TUBE" integrates flow-straightening vanes and a flow-profiling section with the precise measurement accuracy of the PT is Pitot to offer flow conditioning and accurate air flow measurement, even when placed directly downstream of an elbow, damper or other duct obstruction.

■ BENEFITS

- Short upstream and downstram straight pipe lengths.
- Dual averageing for better accuracy.
- One-piece outer tube for optimum strength
- Suitable for pipe sizes from 10mm to 5000mm (and larger with a special 2 piece construction)
- Optional direct mounting transmitter arrangement
- Low permanent pressure loss means low energy consumption - and significant cost benefits

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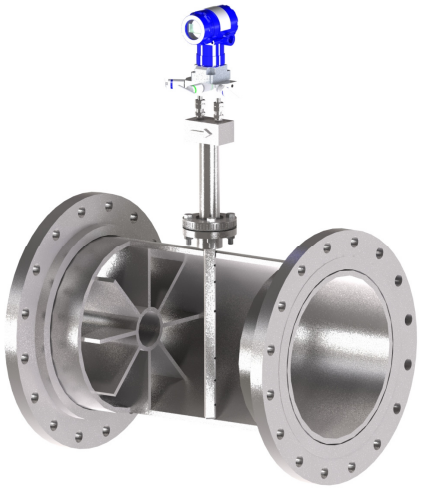
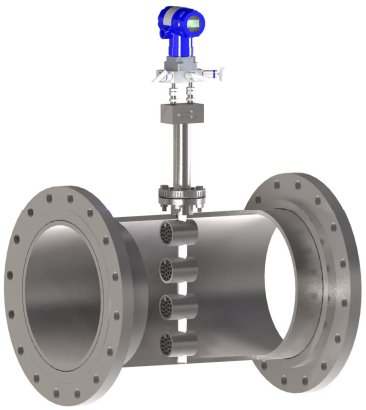
■ ELEMENT TYPE

▶ AVERAGE PITOT TUBE TYPE (DHIF-PT661/662/663/664)



▶ INTEGRAL CONDITIONER TYPE(DHIF-PT665/666)

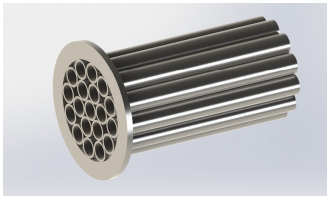
■ DHIF-PT665 TYPE



■ DHIF-PT666 TYPE

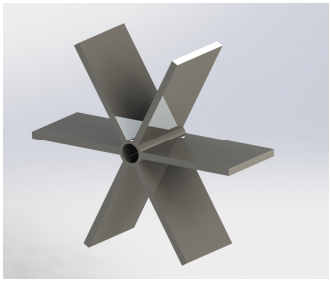
■ FLOW CONDITIONER TYPE

▶ TUBE BUNDLE TYPE



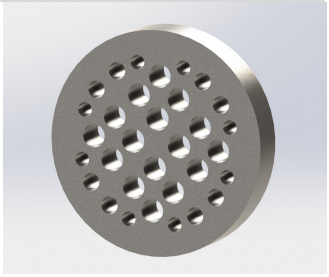
■ The tube bundle flow straightener consists of a bundle of parallel and tangential tubes fixed together and held rigidly in the pipe. It is important to ensure that the various tubes are parallel to each other and to the pipe axis since, if this requirement is not met, the straightener itself might introduce swirl to the flow.
There should be at least 19 tubes. Their length should be greater than or equal to 10dt, where the diameter of the tube dt is shown on Figure

▶ ETOILE TYPE



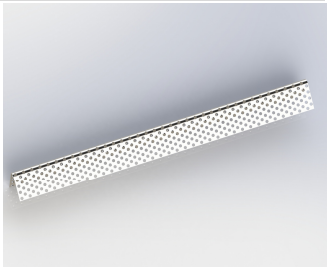
■ The Etoile straightener consists of eight radial vanes at equal angulal spacing with a length equal to twice the diameter of the pipe (see Figure).
The vanes should be as thin as possible but should provide adequate strength.
The pressure loss coefficient, K, for the Etoile straightener is approximately equal to 0,25.

▶ ZANKER PLATE TYPE



■ The Zanker flow conditioner plate has the same distribution of holes in a plate but does not have the egg-box honeycomb attached to the plate; instead the plate thickness has been increased to D/8.
The perforated plate thickness, tc, is such that 0,12D ≤ tc ≤ 0,15D. The flange thickness depends on the application; the outer diameter and flange face surfaces depend on the flange type and application.

▶ PERFORATED GRILLE TYPE



■ The Perforated Grille Type is made of stainless steel withstand corrosion and stress.
The shapes are formed at equal intervals in a circle.
The conditioner should be as thin as possible but should provide adequate strength.
The pressure loss coefficient, K, for the Etoile straightener is approximately equal to 2.1.

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■ GENERAL

- Maximum Pressure : 50 kg/cm2G
- Fluid : GAS
- Flow Rate
- Range Table of Line size (Air 760mmHgA, 20℃)

LINE SIZE		FLOW RANGE (Nm3/h)	AVERAGE PITOT TUBE TYPE Distance between the surface Length(mm)		REQUIRED STRAIGHT LENGTH(mm)			
			CONDITIONER TYPE		ELEMENT TYPE			
A	B		Eeoile/ Tube Bundle	Zanker Plate	AVERAGE PITOT TUBE TYPE		INTETRAL CONDITIONER TYPE	
					UPSTREAM	DOWNSTREAM	UPSTREAM	DOWNSTREAM
40	1 1/2	18~90	254	200	2D	1D	3D	1D
50	2	35~175	305	200	2D	1D	3D	1D
65	2 1/2	60~300	305	200	2D	1D	3D	1D
80	3	80~400	356	250	2D	1D	3D	1D
100	4	160~800	406	250	2D	1D	3D	1D
125	5	250~1250	406	250	2D	1D	3D	1D
150	6	350~1700	559	250	2D	1D	3D	1D
200	8	600~2800	660	350	2D	1D	3D	1D
250	10	900~5000	711	350	2D	1D	3D	1D
300	12	1600~7800	762	350	2D	1D	3D	1D
350	14	2000~9500	762	350	2D	1D	3D	1D
400	16	3000~14500	762	450	2D	1D	3D	1D
450	18	4000~19000	762	450	2D	1D	3D	1D
500	20	5000~24000	914	450	2D	1D	3D	1D
550	22	5000~24000	914	450	2D	1D	3D	1D
600	24	6000~30000	1220	600	2D	1D	3D	1D
650	26	7000~36000	1220	600	2D	1D	3D	1D
700	28	8000~42000	1220	600	2D	1D	3D	1D
750	30	9000~48000	1220	600	2D	1D	3D	1D
800	32	10000~54000	1220	600	2D	1D	3D	1D
850	34	11000~60000	1520	600	2D	1D	3D	1D
900	36	12000~69000	1520	600	2D	1D	3D	1D
950	38	13000~76000	1520	600	2D	1D	3D	1D
1000	40	15000~85000	1820	800	2D	1D	3D	1D
1050	42	16000~94000	1820	800	2D	1D	3D	1D
1100	44	18000~103000	1820	800	2D	1D	3D	1D
1200	48	21000~120000	1820	800	2D	1D	3D	1D
1300	52	24000~145000	2110	800	2D	1D	3D	1D
1400	56	29000~170000	2110	1000	2D	1D	3D	1D
1500	60	32000~190000	2110	1000	2D	1D	3D	1D
1600	64	37000~220000	2530	1000	2D	1D	3D	1D
72B~240B		*According to operation condition						

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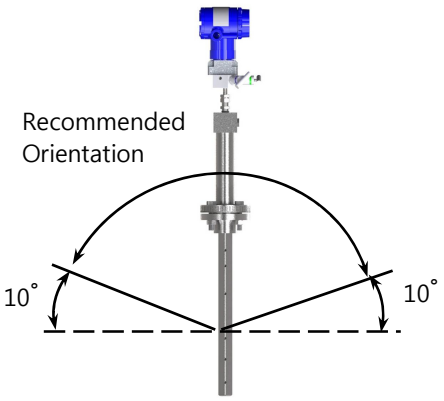
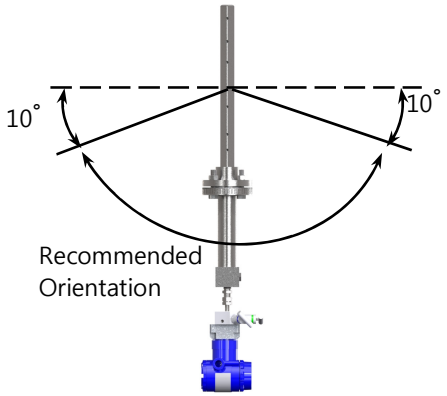
■ PRESSURE TAP ORIENTATION

▶ HORIZONTAL PIPING

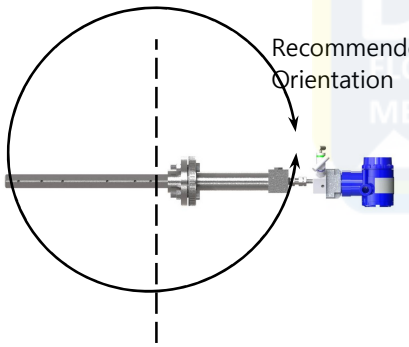


■ GASES & STEAM(With Condensate Pot)



■ LIQUIDS & STEAM(Without Condensate Pot)

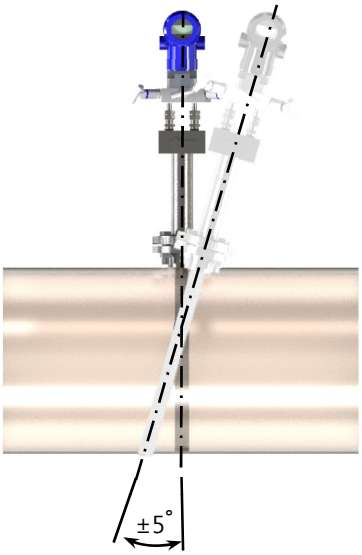
▶ VERTICAL PIPING



■ LIQUIDS & GAS & STEAM

• Vertical Piping mounting- All applications any lateral - mounting angle is suitable

■ LIMITS OF TOLERANCE



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■ ORDERING INFORMATION

MAIN ORDER	CODE	DESCRIPTION	
1. Base Model	DHIF - PT600 SERIES	Base Model	
2. Type	PT661	Average Pitot Tube Type	Single Support Flange Type
	PT662		Double Support Flange Type
	PT663		Isolation Valve Type
	PT664		Isolation Valve Type & Rod Type
	PT665	Integral Conditioner Type	Meter run Excluded
	PT666		Meter run Included
3. Pipe Type	P	Pipe	
	RE	Rectangular Duct	
4. Line Size	□□□ A	Pipe Size (mm)	
5.Probe/Conditioner/Body /Flange Material	A	316SS(316LSS)	
	B	304SS(304LSS)	
	C	Carbon steel	
	OP	Option	
6. Mounting Connection	1	ANSI/ASME 150# 1-1/2" (15A ~ 350A)	
	2	ANSI/ASME 150# 2" (400A ~ 650A)	
	3	ANSI/ASME 150# 3" (700A ~ 3200A)	
	4	ANSI/ASME 300# 1-1/2" (15A ~ 350A)	
	5	ANSI/ASME 300# 2" (400A ~ 650A)	
	6	ANSI/ASME 300# 3" (700A ~ 3200A)	
	7	ANSI/ASME 150# 4" (PT665/666 Type)	
	8	ANSI/ASME 300# 4" (PT665/666 Type)	
	O	Option	
7. Flange Rating	15	ANSI/ASME 150LB	
	30	ANSI/ASME 300LB	
	0	Option	
8. Flow Conditioner	T	Tube Bundle	
	E	Etoile	
	Z	Zanker	
	P	Perforated Grille Type	
	O	Option	
9. DP Transmitter	T	Transmitter Include.	
	E	Transmitter Exclude.	
10. Probe Quantity	1	1 Pair	
	2	2 Pair	
	3	3 Pair	
	4	4 Pair	
11. Option	OP	Option	