

MCMENON ENGINEERING SERVICES | DATA SHEET

FPD350 MAPT

Averaging pitot tubes



Economical flow metering solutions for gases, liquids and steam

Unique profile shape

Offers high flow turndown

No drift in co-efficient

Ensures long term stability

One-piece outer tube

- For pipes up to 5000 mm (197 in.) diameter
- Ensures optimum strength

Low permanent pressure loss

- Means low energy consumption & cost
- Reduced carbon footprint

Suitable for wide range of pipe sizes

- For circular, square or rectangular section ducts of
- 10 to 8000 mm (0.4 to 315 in.) diameter

Dual averaging

For improved accuracy with asymmetric flow profiles

Hot-tap versions available

Allows insertion into pressurized pipes

McMenon Averaging Pitot Tubes

The MAPT is a multiport self-averaging flow meter with a design based on the classical pitot tube concept of fluid flow measurement and with thousands having been installed into a large variety of industries world wide.

The MAPT produces an averaged differential pressure (DP) signal proportional to the square of the flow rate.

The DP output is normally piped to a Differential Pressure transmitter in order to generate an electrical signal proportional to the flow rate. For certain applications, the DP transmitter can be mounted directly on to the MAPT via an integral valve manifold.

Each MAPT is designed to span the process pipe diameter and comprises four basic components:

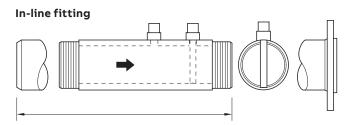
- Outer impact tube ONE PIECE CONSTRUCTION 1
- Internal averaging tube 2
- · Low pressure chamber
- · Head with HP and LP impulse connections

The outer impact tube has a number of pressure sensing holes facing upstream which are positioned at equal annular points in accordance with a log-linear distribution. The 'total pressures' developed at each upstream hole by sum of the impact of the flowing medium and the static pressure are firstly averaged within the outer impact tube and then to a second order (and more accurately) averaged within the internal averaging tube. This pressure is represented at the head as the high pressure component of the DP output. The low pressure component is generated from a single sensing hole located on the downstream side of the outer impact tube, measuring static pressure. For bi-directional flow measurement, the MAPT can be supplied with the same number of downstream ports as upstream.

The MAPT is an improvement on the round sensor design due to the unique profiled flats which are positioned around the downstream hole in order to define the separation point at which the flow lines separate as the fluid passes around the outer impact tube. This feature creates a stable pressure area at the downstream pressure sensing hole thereby maintaining a more constant flow coefficient at high velocities enabling a very wide range of flow measurement (turndown).

- ¹ due to manufacturing constraints, units longer than 5 m (16.4 ft) will be of 2-piece construction.
- ² due to manufacturing constraints, not available for models FPD350.T1/T3 or for any units coded to include integral temperature elements.

Permanently installed types



In-line fitting dimensions

Basic model FPD350.T1.	End fittings	Fits pipe sizes mm (in.)
W1	Butt weld	
T1	Threaded	13 to 50 (0.5 to 2)
F1	Flanged	

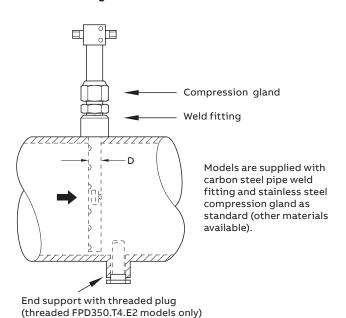
All models are supplied with a pipe section in the same material as MAPT probe

Pipe size	'A'	'A'
NB	mm (in.)	mm (in.) flanged
½ in.	200 (8)	400 (16)
³⁄₄ in.	200 (8)	400 (16)
1 in.	225 (8.8)	425 (16.8)
1¼ in.	250 (10)	450 (18)
1½ in.	300 (12)	500 (20)
2 in.	400 (16)	600 (24)

Model FPD350.T1.	Maximum pressure / temperature
W1	50 bar / 450 °C (725 psi / 840 °F)
T1	50 bar / 200 °C (725 psi / 392 °F)
F1	As flange rating to Class 900 ANSI

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Threaded fitting



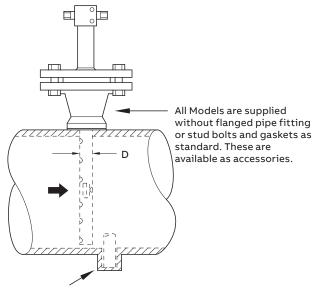
Threaded FPD350.T3 and FPD350.T4 models

Threaded model FPD350.	Fluid	D mm (in.)	Fits pipe sizes mm (in.)
T3.E1	All	13 (0.5)	50 to 150 (2 to 6)
T4.E1	Gas / vapour	25 (1)	100 to 1800 (4 to 72)
T4.E1*	Liquid	25 (1)	100 to 600 (4 to 24)
T4.E2 **	All	25 (1)	100 to 3500 (4 to 140)

- * For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 250 mm (10 in.) internal diameter.
- ** With end support

Maximum pressure / temperature		
Threaded models	50 Bar @ 400 °C	
FPD350.T3.E1 and FPD350.T4	(725 psi @ 752 ºF)	

Flanged fitting - standard



Weld Cup End Support (Flanged FPD350.T4.E2 models only)

Flanged FPD350.T3 and FPD350.T4 models

Flanged model FPD350.	Fluid	D mm (in.)	Fits pipe sizes mm (in.)
T3.E1	All	13 (0.5)	50 to 150 (2 to 6)
T4.E1	Gas / vapour	25 (1)	100 to 1800 (4 to 72)
T4.E1*	Liquid	25 (1)	100 to 600 (4 to 24)
T4.E2 **	All	25 (1)	100 to 3500 (4 to 140)

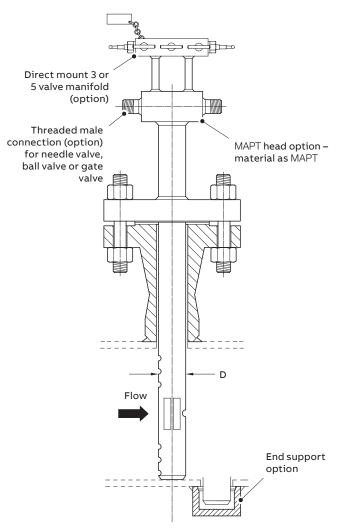
- For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 250 mm (10 in.) internal diameter.
- ** With end support

Standard flange size		
Flanged model FPD350.T3	1 in. (DN 25)	
Flanged model FPD350.T4	1½ in. (DN 40)	
Other sizes available		

Maximum pressure / temperature

All models as flange rating to class 1500 ANSI. For higher pressures / temperature consult factory.

Flanged fitting – extra strength





Basic model FPD350	Fluid	D mm (in.)	Fits pipe sizes mm (in.)
T5.E1	Gas / vapour	60 (2.36)	250 to 1800 (10 to 72)
T5.E1*	Liquid	60 (2.36)	250 to 800 (10 to 32)
T5.E2**	Gas / vapour	60 (2.36)	400 to 8000 (16 to 320)
T5.E2 **	Liquid	60 (2.36)	400 to 5000 (16 to 200)

- * For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 600 mm (24 in.) internal diameter.
- ** With end support



Standard flange size	·
Model FPD350.T5	3 in. (DN 80)
Other sizes available	
Maximum pressure / temperature	
All models as flange rating to class 2500 ANSI.	

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Options

Probe material	Code
316 Stainless Steel	SS
304L Stainless Steel	S4
Alloy 400	M4
Alloy C276	U7

Probe material	Code
6MO	M1
Duplex	D1
Super Duplex	D2, D3
Other	Z9 (specify)

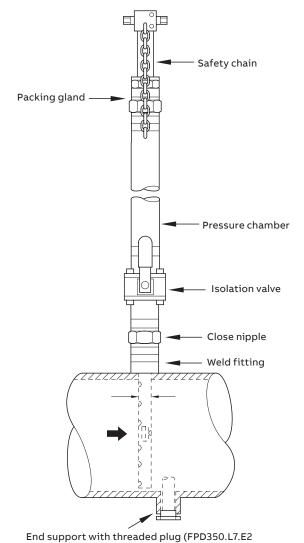
Male without valves	Female without valves	Flanged without valves
With needle valves	With ball vales	With gate valves
Direct mount head	Direct mount separate manifold	Direct mount integral manifold

DP output connections / valves

Withdrawable types (Hot Tap)

Models FPD350.L7/H7/H8 with end supports must not be installed via hot-tap methods into a pressurized pipe because of the requirement to fit an end support. However, once installed, they can be inserted and withdrawn under pressure.

Threaded fitting - low pressure



Models FPD350.L6 and FPD350.L7

Basic model FPD350.	Fluid	D mm (in.)	Fits pipe sizes mm (in.)
L6	All	13 (0.5)	50 to 150 (2 to 6)
L7.E1	Gas / vapour	25 (1)	100 to 1800 (4 to 72)
L7.E1 *	Liquid	25 (1)	100 to 600 (4 to 24)
L7.E2 **	All	25 (1)	100 to 3000 (4 to 120)

- For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 250 mm (10 in.) internal diameter.
- ** With end support

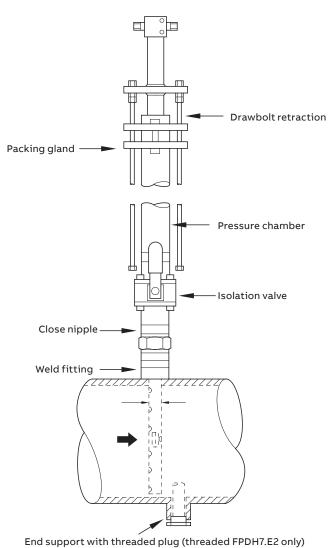
Supplied with weld fittings, isolation valve and pressure chamber with safety chain as standard. Gland packing material is supplied as non-asbestos graphite ribbon as standard. PTFE is available. Please specify at time of order. For isolation valve details refer to page 10.

Maximum pressure / temperature		
With standard ball valve:	10 bar and 200 °C (145 psi and 392 °F)	
With standard gate valve:	10 bar and 400 °C (145 psi and 752 °F) (Temperature is at valve)	



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Threaded fitting - high pressure



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FPD350.H7 threaded models

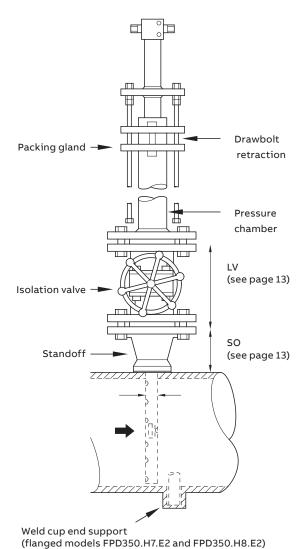
Threaded model FPD350.	Fluid	D mm (in.)	Fits pipe sizes mm (in.)
H6	All	13 (0.5)	50 to 150 (2 to 6)
H7.E1	Gas / vapour	25 (1)	100 to 1800 (4 to 72)
H7.E1 *	Liquid	25 (1)	100 to 600 (4 to 24)
H7.E2 **	All	25 (1)	100 to 3000 (4 to 120)

- * For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 250 mm (10 in.) internal diameter.
- ** With end support

Supplied with weld fittings, isolation valve, pressure chamber and draw bolt retraction (illustrated) as standard. Gland packing material is supplied as non-asbestos graphite ribbon as standard. PTFE is available (specify at time of order). Geared retraction — Optional. For isolation valve details refer to page 10.

Maximum pressure / temperature		
With standard ball valve:	40 bar and 200 °C (580 psi and 392 °F)	
With standard gate valve:	40 bar and 400 °C (580 psi and 752 °F) (Temperature is at valve)	

Flanged fitting



Flanged models FPD350.H6, FPD350.H7 and FPD350.H8

Flanged model FPD350	Fluid	D mm (in.)	Fits pipe sizes mm (in.)	Standard flange size
H6.E1	All	13 (0.5)	50 to 150 (2 to 6)	1½ in. (DN40)
H7.E1	Gas / vapour	25 (1)	100 to 1800 (4 to 72)	
H7.E1 *	Liquid	25 (1)	100 to 600 (4 to 24)	
H7.E2 **	All	25 (1)	300 to 3000 (12 to 120)	
H8.E1	Gas / vapour	60 (2.36)	300 to 1800 (12 to 70)	3 in. (DN80)
H8.E1 *	Liquid	60 (2.36)	300 to 800 (12 to 32)	
H8.E2 **	All	60 (2.36)	600 to 3000 (24 to 120)	

Other sizes available

- * For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, the end-support model should always be selected for pipe sizes over 250 mm (10 in.) (Model FPD350.H7.E2) 600 mm (24 in.) (Model FPD350.H8.E2) internal diameter.
- ** With end support

Supplied with isolation valve and pressure chamber, and draw bolt retraction assembly and without flanged pipe fitting or stud bolts and gasket (Available as accessories). Gland packing material is supplied as non-asbestos graphite ribbon as standard. PTFE is available. Please specify at time of order. Geared retraction – Optional. For isolation valve details refer to page 10.

Maximum pressure / temperature		
With standard ball valve	100 bar and 200 °C (1450 psi and 392 °F)	
With standard gate valve	100 bar and 400 °C (1450 psi and 752 °F)	

(Temperature is at valve)

(Pressure is 35 bar [500 psi] for FPD350.H8.E1 and FPD350.H8.E2)

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Process isolation valves

Valve type	MAPT model FPD350.	Valve size	Code (* is material – see below)	Maximum temperature at valve
Threaded ball	L6	³/₄ in.	B*5	200 °C (392 °F)
	H6 (threaded) L7.E1 L7.E2 H7 (threaded)	1¼ in.	В*7	
Threaded gate	H6 L7.E1 L7.E2 H7 (threaded)	1¼ in.	G*7	400°C (752°F)
Flanged ball	H6 (flanged)	40 mm (1½ in.)	B*8	200 °C (392 °F)
	H7.E2 (flanged)	50 mm (2 in.)	B*6	
	H8.E1 H8.E2	80 mm (3 in.)	B*9	
Flanged gate	H6 (flanged)	40 mm (1½ in.)	G*8	400 °C (752 °F)
	H7.E1 (flanged)			
	H7.E2 (flanged)	50 mm (2 in.)	G*6	
	H8.E1 H8.E2	80 mm (3 in.)	G*9	

Code * defines valve material

316SS – (S) carbon steel – (C) Alloy 400 – (M) for other material specify

(Example: GC7 is $1\frac{1}{4}$ in. gate valve in carbon steel).

When valve is supplied by purchaser, whole code is: BZ9

Accessories

Description	Models FPD350.	Illustration
For vertical process pipe	T3 T4 T5 L6 L7 H6 H7 H8	
	T1	
Head for direct mounting of valve manifold or transmitter	T3 T4 T5 L6 L7 H6 H7	O O 41.2 O O 41.2 O 54
Direct mounting head fitted with 3- or 5-valve manifold**	T3 T4 T5 L6 L7 H6 H7	
Head with integral 3- or 5-valve manifold for fitting of transmitter by others.	T3 T4 T5 L6 L7 H6 H7	32 mm Thick
PT100 temperature element fitted through MAPT neck. For Hazardous Area Installations specify certification required. Maximum pressure 70 bar.	T4 T5 L7 H7	

^{*} Default option is PNH – Horizontal Pipe

^{**} Heads with an integral (welded) manifold are recommended rather than those with a direct-mounted (bolted) manifold – direct-mounted manifolds do not enable isolation of the transmitter when dismantling

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Accessories

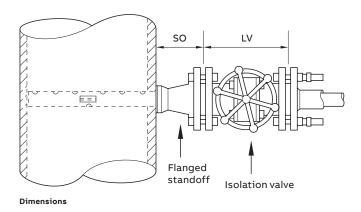
Description	Models FPD350.	Illustration
Flanged Pipe Fittings (Stand-Off). Material is specified by 'Pipe Fitting Material' in Model Number. Type, Size and Rating is specified with Model Number	Flanged versions of: T3 T4 T5 H6 H7 H8	so so
Stud Bolts, Nuts and Gasket	Flanged versions of: T3 T4 T5 H6 H7 H8	Standard Materials: Stud, Bolts and Nuts: A193-B7/A 194-2H Gasket: Asbestos-free Glass/Aramid Fibre/Nitrile Gasket Material: 316 Stainless Steel Spiral Wound
Thin duct wall Mounting Plate. Recommended for large ducts with wall thickness of less than 2 mm Max. temp 200 °C (392 °F)	Threaded versions of: T3 T4 L6 L7 H6 H7	Optional: 100 x 100 x 2 mm (4 x 4 x 0.08 in.) thick
Gear Retraction Assembly (Material: 316 Stainless Steel)	Н6 Н7 Н8	
Bi-Directional Probe	T4 T5 L7 H7 H8	

Dimensional information

Flanged standoff dimensions overall length SO mm (in.)				
ANSI Class —		Size	!	
ANSI Class —	1 in.	1½ in.	2 in.	3 in.
150	83 (3.3)	95 (3.7)	102 (4)	118 (4.6)
300	89 (3.5)	100 (4)	108 (4.3)	127 (5)
600	95 (3.7)	109 (4.3)	117 (4.6)	137 (5.4)
900	106 (4.2)	122 (4.8)	146 (5.7)	156 (6.1)
1500	106 (4.2)	122 (4.8)	146 (5.7)	171 (6.7)
2500	122 (4.8)	150 (6)	171 (6.7)	222 (8.7)

		Size		
DIN Class —	DN25	DN40	DN50	DN80
PN10	67 (2.6)	78 (3)	86 (3.4)	98 (3.9)
PN16	67 (2.6)	78 (3)	86 (3.4)	98 (3.9)
PN25	67 (2.6)	78 (3)	86 (3.4)	98 (3.9)
PN40	67 (2.6)	78 (3)	86 (3.4)	106 (4.2)
PN64	89 (3.5)	101 (4)	108 (4.3)	127 (5)
PN100	89 (3.5)	103 (4)	111 (4.4)	131 (5.2)
PN160	100 (4)	116 (4.6)	140 (5.5)	150 (6)
PN260	100 (4)	116 (4.6)	140 (5.5)	165 (6.5)

Flanged isolation valve Overall length LV mm (in.)						
		ANSI Class				
Size	150	300	600	1500		
1 in.	127 (5)	165 (6.5)	216 (8.5)	254 (10)		
1⅓ in.	165 (6.5)	191 (7.5)	241 (9.5)	305 (12)		
2 in.	178 (7)	216 (8.5)	292 (11.2)	368 (14.5)		
3 in.	203 (8)	283 (11.1)	355 (14)	381 (15)		



Note. Actual values of LV, SO must be supplied to McMenon if the stand-off or process isolation valves are to be supplied by the customer.

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... MAPT dimensional information

FPD350.L6	Inserted Retracted	ID + 236 (9.3) Inserted + ID + Wall + 211 (8.3)		
FPD350.L7.E1	Inserted Retracted	ID + 346 (13.6) Inserted + ID + Wall + 208 (8.2)		
FPD350.L7.E2	Inserted Retracted	ID + Wall + 371 (14.6) Inserted + ID + Wall + 233 (9.2)	Inserted	
FPD350.H6.E1 (threaded) FPD350.H7.E1 (threaded)	Inserted Retracted	ID + 493 (19.4) Inserted + ID + 355 (14)	su Julian	Retracted
FPD350.H7.E2 (threaded)	Inserted Retracted	ID + Wall + 518 (20.4) Inserted + ID + Wall + 380 (15)		
FPD350.H6.E1 (flanged) FPD350.H7.E1 (flanged)	Inserted Retracted	ID + Wall + 2(SO + LV) + 340 (13.4) Inserted + ID + Wall + SO + LV		
FPD350.H7.E2 (flanged)	Inserted Retracted	ID + 2 (Wall + SO + LV) + 380 (15) Inserted + ID + 2 x Wall + SO + LV + 40 (1.6)		
FPD350.H8.E1	Inserted Retracted	ID + Wall + 2 (SO + LV) + 355 (14) Inserted + ID + Wall + SO + LV		
FPD350.H8.E2	Inserted Retracted	ID + 2 (Wall + SO + LV) + 419 (16.5) Inserted + ID + 2 x Wall + SO + LV + 60 (2.4)		

For geared retraction units (accessory TP4) add 100 mm (4 in.) to above dimensions

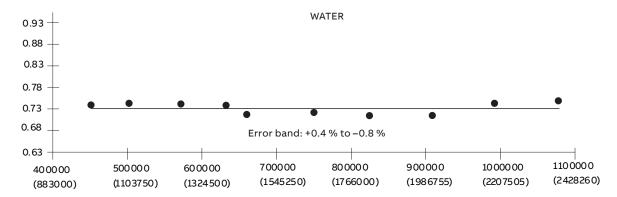
Inserted and retracted lengths mm (in.) (approximate values for information only – do not use for construction)

Lengths maybe affected if flanged end support fitted

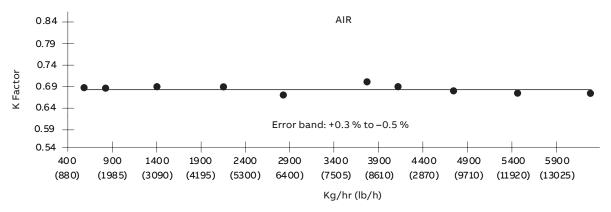
Withdrawable types (Hot-Taps)

Independent test reports

A range of MAPT models and sizes have been tested at Independent Flow Laboratories to determine the accuracy and repeatability of measurement. Those tests were conducted in both Air and Water.



Model FPD350.T4 (401) - size: 16 in. - serial no. Test 597



Model FPD350.T4 (401) - size: 12 in. - serial no. 20153

Full details of the test results above and of those shown in the table below are available on request.

Test fluid	Model FPD350.	Size mm (in.)	Serial number	Error band
Water	T1.F1	50 (2)	Test 197	+0.2 to -0.43 %
Water	T3.E1	100 (4)	Test 297	+1 to -1 %
Air	T4.E1 (threaded)	150 (6)	Test 397	+0.1 to -0.5 %
Air	T4.E2 (threaded)	450 (18)	20186	+0.6 to -0.5 %
Water	T4.E1 (flanged)	600 (24)	Test 697	+0.3 to -0.4 %

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Differential pressure calculations and resonance frequency check

	MAPT coefficient K		
	Model no	umber FPD350.	
Pipe size (internal diameter) mm (in.)	T3 L6 H6	T4 L7 H7	T5 H8
50 (2)	0.6483		
75 (3)	0.7027		
100 (4)	0.7497	0.6174	
150 (6)	0.7671	0.6505	
200 (8)		0.6647	
250 (10)		0.6794	0.6876
300 (12)		0.6941	0.7024
350 (14)		0.7160	0.7303
400 (16)		0.7380	0.7564
450 (18)		0.7402	0.7699
600 (24)		0.7468	0.7815
900 (36)		0.7473	0.7847
1200 (48)		0.7475	0.7849
1500 (60)		0.7476	0.7850
1800 (72)	and above	0.7476	0.7850

For sizes not shown above, determine K by extrapolation.

If using classical flow equations from ISO5167, multiply K by 0.9091.

Copies of derivation of equations available on request.

For models FPD350.T1 (all sizes) K = 1
MAPT coefficients

Flow to DP

Liquids (volumetric)

$$DP = \left[\frac{Q_A x \sqrt{D}}{K x A x 4.6285}\right]^2 mbar$$

Gases (volumetric)

$$DP = \frac{S \times Pf}{(Tf + 273) \times Z} \times \left(\frac{Q_A \times 4.0323}{K \times A} \right)^2$$

DP =
$$\left[\frac{Sx(Tf + 273)}{Pf}\right] \left[\frac{Q_B}{KxAx66.839}\right]^2 x \ Z \ mbar$$

Liquids / gases / steam (mass)

$$DP = \left[\frac{Qc}{KxAx\sqrt{D}x4.6285}\right]^2 mbar$$

DP to flow

Liquids (volumetric)

Flow (Q) =
$$\sqrt{DP}x \left[\frac{KxAx4.6285}{\sqrt{D}} \right] m^3/h$$

Gases (volumetric) – actual conditions

Flow (Q) =
$$\sqrt{DP}x \left[\frac{KxAx\sqrt{(Tf+273)}}{\sqrt{5}x4.0323x\sqrt{Pf}} \right] x \sqrt{Z} Am^3/h$$

Gases (volumetric) - normal conditions

Flow (Q) =
$$\sqrt{DP}x \left[\frac{KxAx66.839x\sqrt{Pf}}{\sqrt{Sx}\sqrt{(Tf+273)}x\sqrt{Z}} \right] Nm^3/h$$

Liquids / gases / steam (mass)

Flow (Q) = $\sqrt{DP}x(KxAx\sqrt{D}x4.6285)kghr$

Symbols and units

Q_A = Flow (m³/h)
Q_B = Flow (Nm³/h) at 0 °C, 1 atm (1.01325 bar)
Q_C = Flow (kg/h)
S = Specific gravity (Air = 1)
D = Density at actual conditions (kg/m³)
Base Density of water at
4 °C = 999.972 kg/m³
Density of water at
15.555 °C = 999.012 kg/m³
Base Density of Air at 0 °C

1 atm (1.01325 bar) = 1.293 kg/m³

A = Pipe internal cross-section area (cm²)

Tf = Actual temperature (°C)

Pf = Actual pressure (bar Absolute)

K = MAPT coefficient (see table)

Z = Compressibility factor (usually = 1)

DP = Differential Pressure (mbar)

Statement of accuracy

The calculated differential pressure will lie within an uncertainty band of $\pm\,1\,\%$ with 95 % confidence if the MAPT is installed strictly in accordance with the published Installation Instructions. For applications which do not conform to those instructions, it is recommended that an on site calibration is performed in order to achieve the optimum accuracy.

Resonance frequency check

This check is not necessary for liquid flows because the maximum allowable DP is reached before resonance occurs (see table opposite), or for Models FPD350.T1. For Gas and Vapor flows a Resonance Frequency Check MUST be made. Equations have been derived for the various MAPT models to determine low and high critical velocities (VL and VH) which define the narrow resonance band of velocities which should be outside the continuous operating flow range of the MAPT.

The following table lists the equations to calculate the values of VL and VH. If the calculation shows VL to VH to be within the continuous operating flow range, then an alternative, suitable model of MAPT should be selected to give acceptable values of VL and VH.

Always check that the maximum flow DP is less than the 'Maximum Allowable DP' as shown in the table on page 18.

MAPT model	Critical v	elocities	Unsupported length L (m)
FPD350.	VL (m/s) V	′H (m/s)	
T3.E1 threaded	0.472 ÷ L ²	0.728 ÷ L²	ID + Wall + 0.05
T3.E1 flanged	0.472 ÷ L ²	0.728 ÷ L ²	ID + Wall + SO
L6.E1 threaded	0.472 ÷ L ²	0.728 ÷ L ²	ID + Wall + 0.02
T4.E1 threaded	1.843 ÷ L²	2.840 ÷ L ²	ID + Wall + 0.08 (3)
T4.E2 threaded	8.08 ÷ L ²	12.44 ÷ L²	ID + 2 x Wall + 0.115
T4.E1 flanged	1.843 ÷ L²	2.840 ÷ L ²	ID + Wall + SO
T4.E2 flanged	8.08 ÷ L²	12.44 ÷ L²	ID + 2 x Wall + SO + 0.05
L7.E1	1.843 ÷ L²	2.840 ÷ L ²	ID + Wall + 0.05
L7.E2	8.08 ÷ L ²	12.44 ÷ L²	ID + 2 x Wall + 0.10
H6.E1 threaded	0.472 ÷ L ²	0.728 ÷ L ²	ID + Wall + 0.05
H7.E1 threaded	1.843 ÷ L²	2.840 ÷ L ²	ID + Wall + 0.05
H7.E2 threaded	8.08 ÷ L ²	12.44 ÷ L²	ID + 2 x Wall + 0.10
H6.E1 flanged	0.472 ÷ L ²	0.728 ÷ L ²	ID + Wall + SO + LV + 0.05
H7.E1 flanged	1.843 ÷ L²	2.840 ÷ L ²	ID + Wall + SO + LV + 0.05
H7.E2 flanged	8.08 ÷ L ²	12.44 ÷ L²	ID + 2 x Wall + SO + LV + 0.10
T5.E1	10.88 ÷ L²	16.766 ÷ L ²	ID + Wall + SO
T5.E2	47.65 ÷ L²	73.43 ÷ L²	ID + 2 x Wall + SO + 0.08
H8.E1	10.88 ÷ L²	16.766 ÷ L²	ID + Wall + SO + LV + 0.05
H8.E2	47.65 ÷ L²	73.43 ÷ L²	ID + 2 x Wall + SO + LV + 0.13

L = unsupported length (m)

ID = pipe internal diameter (m)

Wall = pipe wall thickness (m)

SO = overall length of flanged pipe fitting (m) - see page 10

LV = Overall length of isolation valve (m) – see page 10

The above equations are derived from MAPT resonance frequency data and calculations.

Critical velocity calculation

McMenon Averaging Pitot Tubes

Maximum allowable DP

Depending on the model and size of MAPT there is a maximum figure of Differential Pressure above which the MAPT should NOT be used due to the imposition of excessive mechanical stresses. Check the table below to ensure that the application is suitable. If the calculated DP exceeds the maximum shown below, then select an other appropriate model to suit the application. For bi-directional configurations (accessory code TP5), use 50 % of the figures in this table.

For liquid flow applications where there is a possibility of process pulsations or intermittent excessive flow velocity, then the end-support models should always be selected for pipe sizes over 250 mm (10 in.) diameter (T4, L7 and H7 series) and 600 mm (24 in.) (T5 and H8 series).

Pipe siz	е		MAPT ba	ase model number FPD35	D. *	
(interna	al dia.)	T3, L6 and H6	T4, L7 and H7 (without end support)	T4, L7 and H7 (with end support)	T5 and H8 (without end support)	T5 and H8 (with end support)
 in.	mm			m allowable DP in mbar (i		(with end support)
			Maximu	II allowable DP III IIIbai (I	ii.wg)	
2	50	6250 (2509)				
3	75	2790 (1120)				
4	100	1565 (628)	5100 (2047)			
6	150	695 (279)	2285 (917)			
8	200		1285 (516)			
10	250		820 (329)	3250 (1305)	3400 (365)	
12	300		570 (229)	2250 (903)	2350 (943)	
14	350		415 (167)	1680 (674)	1725 (693)	
16	400		320 (128)	1285 (516)	1335 (536)	
18	450		250 (100)	1015 (407)	1055 (424)	4225 (1696)
24	600		140 (56)	570 (229)	590 (237)	2375 (953)
36	900		50 (20)	250 (100)	265 (106)	1055 (424)
48	1200		30 (12)	140 (56)	145 (58)	590 (237)
60	1500		20 (8)	90 (36)	90 (36)	380 (153)
72	1800		10 (4)	60 (24)	65 (26)	265 (106)

^{*} For models FPD350.T1 (all sizes), maximum DP value is 2500 mbar. (84 in.wg)

Above 1800 mm (72 in.) - consult factory

For sizes not shown above determine maximum allowable DP by extrapolation

The above figures are theoretically derived and include a x10 safety factor over and above basic standards and specification.

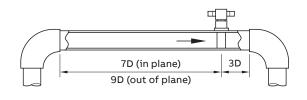
Installation and location

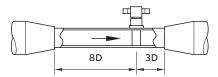
Recommended upstream and downstream distances

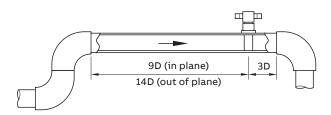
Correct location of the MAPT in the piping system is important in order to optimize performance. Flow that is disturbed by upstream configurations such as elbows, T's and valves may have an adverse effect on accuracy unless the MAPT is located at recommended positions shown in the table opposite. The diagrams illustrate the distances in multiples of pipe bore 'D' between the MAPT and the upstream and downstream disturbances.

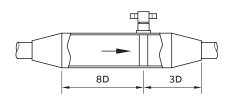
If the MAPT is fitted within distances less than those shown, then absolute accuracy may be downgraded BUT repeatability of measurement will still be excellent due to inherent averaging characteristics.

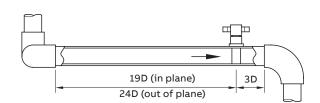
Where it is not possible to provide the specified distances and maximum accuracy is required, the use of a flow straightening spool piece allows for shorter distance

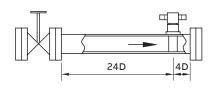








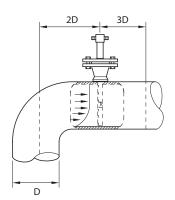




Installation pipe lengths

Elbow installation

The MAPT can be installed 2 diameters downstream of a 90° elbow at the exit of the elbow to give an accuracy of ± 3 % to ± 5 %.



Elbow installation

McMenon Averaging Pitot Tubes

Orientation in pipe

The MAPT must be installed at right angles to the pipe run and across a pipe diameter within the tolerances shown in the diagrams opposite.

To avoid 'noisy' signal outputs, do not locate the MAPT in a pulsating flow. A vibrating pipe can also distort the output signal and affect the structural limits of the MAPT. This limitation particularly applies to the integrally mounted transmitter option DM3V and to the TRIBAR configuration.

For vertical pipe applications, the 'head' of the MAPT is repositioned to ensure that DP connections are at the same vertical level. This is option VS. It is necessary to specify this option when ordering the MAPT.

It is essential that in all steam installations the entire MAPT head and fitting assembly are well lagged to prevent the formation of condensate in the MAPT head. The MAPT will not function correctly with condensate in the head. Filling tees or condensate pots should be fitted as appropriate.

Before installation or removal of a MAPT it is imperative that careful reference is made to the appropriate installation instructions that are supplied with each MAPT shipment. The installation instructions are also available separately on request.

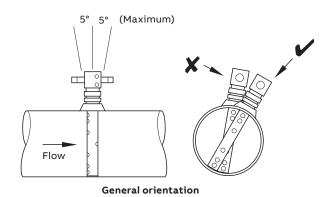
Warning. Refer to instruction manual before installing any MAPT flowmeter.

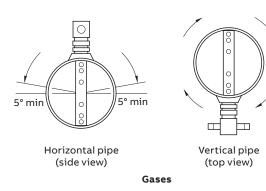
FPD585 StackFlowMaster – stack gas flow metering system

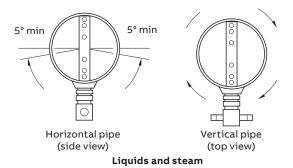
Introduction

The FPD585 StackFlowMaster series is a flow measurement system with integral purge to be used with the MAPT for the measurement of gas flow rates in chimneys and stacks where the dust concentration is higher than 20 mg/m³ or where any moisture content may be a problem. The purge duration and frequency is programmable to keep the MAPT sensing holes clean of contaminants.

The FPD585 StackFlowMaster is available with or without a DP transmitter and can be supplied with temperature and pressure compensation of the flow reading and separate stack pressure and temperature outputs when required. Other options and accessories are available.







Orientation of MAPT in pipe

Ordering information

FPD350 series 100 inline MAPT averaging pitot tube

	FPD350. XX	XX	XXX	XX	XX	XX	XX	XX	XX	**	XX	XXX	XX	***	^^^	. ^^	^^	XXX	XX	XX
Product design																				
Inline MAPT	T1																			
Measurement design]																		
Welded ends with integral end support		W1																		
Threaded ends with integral end support		T1																		
Flanged ends with integral end support		F1																		
Line nominal bore																				
DN 15 (½ in.)			015																	
DN 20 (¾ in.)			020																	
DN 25 (1 in.)			025																	
DN 32 (1 ¹ / ₄ in.)			032																	
DN 40 (1½ in.)			040																	
DN 50 (2 in.)			050																	
Others			999																	
Probe material																				
316 / 316L stainless steel				S 6																
304 / 304L stainless steel				S4																
321 stainless steel				S2																
304H stainless steel				H4																
310 stainless steel				S 3																
321H stainless steel				S1																
904L stainless steel				S 9																
Alloy C276 (UNS N010276)				U7																
Alloy 400 (UNS N04400)				M4																
Alloy 625 (UNS N06625)				N2																
22 % Cr duplex (UNS S31803)				D1																
25 % Cr super duplex (UNS \$32750)				D2																
25 % Cr super duplex (UNS S32760)				D3																
6 % Mo SS (UNS S31254)				М1																
Alloy 600 (UNS N06600)				U3																
Alloy 800 (UNS N08800)				U4																
Alloy 825 (UNS N08825)				U5																
Others				Z9																
Pipe fitting material																				
316 / 316L stainless steel					S 6															
304 / 304L stainless steel					S4															
321 stainless steel					S2															
304H stainless steel					H4															
310 stainless steel					S3															
321H stainless steel					S1															
904L stainless steel					S9 U7															
Alloy C276 (UNS N010276)					07 Μ4															
Alloy 400 (UNS N04400)					N2															
Alloy 625 (UNS N06625) 22 % Cr duplex (UNS S31803)					D1															
25 % Cr super duplex (UNS \$31750)					D2															
25 % Cr super duplex (UNS \$32750)					D3															
6 % Mo SS (UNS S31254)					M1															
Alloy 600 (UNS N06600)					U3															
Alloy 800 (UNS N08800)					U4															
Alloy 825 (UNS N08825)					U5															
Others					Z 9															
Standoffs, etc						_														
None – In line design						Y0														
inic design						. 0											1			1

\dots Ordering information | FPD350 series 100 inline MAPT averaging pitot tube

	FPD350. XX XX XXX XX XX XX XX	(X X	X	ххх	X	хх	XXX	XX	xxx	XXX	хх	ХΧ	XXX	хх	XXX
	See page 21														
Process connection type															
Weld prepared ends	P	1													
Threaded BSPT	Т	1													
Threaded NPT	Т	72													
Raised face DN 15 (½ in.)		₹1													
Raised face DN 20 (¾ in.)		2													
Raised face DN 25 (1 in.)		3													
Raised face DN 32 (11/4 in.)		₹6													
Raised face DN 40 (1½ in.) Raised face DN 50 (2 in.)		₹4 ₹5													
Flat face DN 15 (½ in.)		1													
Flat face DN 20 (¾ in.)		2													
Flat face DN 25 (1 in.)		3													
Flat face DN 32 (1¼ in.)	F	6													
Flat face DN 40 (1½ in.)	F	4													
Flat face DN 50 (2 in.)		5													
RTJ DN 25 (1 in.)		11													
RTJ DN 40 (1½ in.)		12													
RTJ DN 50 (2 in.)		13													
Others		29													
Process connection rating															
Not flanged			0												
ASME Class 150			1												
ASME Class 300 ASME Class 600			13												
ASME Class 900			7												
DIN PN 6			00												
DIN PN 10			01												
DIN PN 16			2												
DIN PN 25		D	03												
DIN PN 40		D)4												
DIN PN 63		D)5												
DIN PN 100			6												
DIN PN 160 (not fully rated)			7												
Others		Z	29												
Tapping type															
Flanged DP connections (no valves)				F1											
Welded DP connections (no valves)				W1											
Threaded DP connections (no valves)				T1											
Direct mounting head				D1											
3-Valve integral (welded) manifold DM3V 5-Valve integral (welded) manifold DM5V				D2 D3											
3-Valve direct-mounted (bolted) manifold 3VDM				D3 D4											
5-Valve direct-mounted (bolted) manifold 5VDM				D5											
Ball valves				V1											
Needle valves				V2											
Gate valves			١	V3											
Globe valves			١	V4											
Double block and bleed valves			١	V5											
Tapping size				_											
Not applicable				Т	0										
¼ in. NPT male				Т											
¼ in. NPT female					2										
¼ in. BSP male					3										
1/4 in. BSP female					4										
½ in. NPT male					5										
½ in. NPT female ½ in. BSP male					7										
½ in. BSP female					8										
½ in. flanged (specification as mounting flange)					1										
3/4 in. flanged (specification as mounting flange)					2										
½ in. socket weld					1										
Others				Z	29										
Tapping / Valve material															
As probe					,	YO									
316 stainless steel						S6									
Carbon steel						C3									
Alloy C276 (UNS N010276)						U7									
Alloy 400 (UNS N04400)					١	М4									
22 % Cr Duplex (UNS S31803)						D1									
25 % Cr Super Duplex (UNS S32750)						D2									
Others						Z9									
	Continued	d on	n ne	ext p	ag	e									
								-	-					-	-

... Ordering information | FPD350 series 100 inline MAPT averaging pitot tube

FPD350. XX XX XX XX XX XX XX	(X XX XX X	XX XX XX]XXX	XX	XXX	XXX	XX	XX	XXX	XX
See page 21	See p	age 22	1							
Pipe orientation and shape			_							
Horizontal, circular pipe / duct			PNH							
Vertical, circular pipe / duct			PNV							
Process isolation valve										
No isolation valve				Y0						
Bolt type and material					1					
ASTM A193 B7 / ASTM A194 2H					BGC					
ASTM A193 B8M / ASTM A194 8MA					BGS					
Others					BZ9					
Gasket material										
Asbestos-free 1.6 mm						GT1				
Spiral wound – stainless steel windings with carbon steel outer; 4.5 mm						GT2				
Soft Iron						GP3				
Others						GZ9				
Surface treatment										
Oxygen cleaning Others							P1 Z9			
Certification							23			
Material certificates acc. EN 10204 3.1								C2		
Material certificates acc. EN 10204 3.2								C3		
Material certificates acc. NACE, latest revision								CN		
Dye penetrant inspection								C9		
Radiography (available on flanged units only)								C8		
Positive material identification								CA		
100 % dimensional check								C6		
Others								CZ		
Testing										
Impact testing @ -46 °C									CH1	
Impact testing @ -196 °C									CH2 CH3	
Hardness survey HIC testing									CH4	
Magnetic particle inspection									CH5	
Ultrasonic inspection									CH6	
Heat treatment trace									CH7	
Pressure test									СН8	
Others									CHZ	
Documentation language (default = English)										
German										M1
talian										M2
Spanish										М3
French										M4
Chinese Others										M6 MZ
Added requirements										1712
·										
Material source limitations apply										

...Ordering information | FPD350 series 300 MAPT averaging pitot tube

FPD350	.xx	XX	XXX	XX	XX	(X)	(X)	(X)	K X	XX	(X	ΚX	XXX	XX	XXX	XXX	XXX	. X.	ХХ	ХХ	ХХ	XXX	XX	XXX
Product design	_																							
Permanently installed MAPT – 13 mm (1/2 in.) OD probe	Т3																							
Measurement design		,																						
- Unsupported version		E1																						
Supported version		E2																						
Line nominal bore																								
DN 50 (2 in.)			050																					
DN 80 (3 in.)			080																					
DN 100 (4 in.)			100																					
DN 125 (5 in.)			125																					
DN 150 (6 in.)			150																					
Others			999																					
Probe material																								
316 / 316L stainless steel				S6																				
304 / 304L stainless steel 321 stainless steel				S4 S2																				
304H stainless steel				52 H4																				
310 stainless steel				S3																				
321H stainless steel				S1																				
904L stainless steel				S 9																				
Alloy C276 (UNS N010276)				U7																				
Alloy 400 (UNS N04400)				M4	L .																			
Alloy 625 (UNS N06625)				N2																				
22 % Cr duplex (UNS S31803)				D1																				
25 % Cr super duplex (UNS \$32750)				D2																				
25 % Cr super duplex (UNS S32760) 6 % Mo SS (UNS S31254)				D3 M1																				
Alloy 600 (UNS N06600)				U3																				
Alloy 800 (UNS N08800)				U4																				
Alloy 825 (UNS N08825)				U5																				
Others				Z 9																				
Pipe fitting material																								
Carbon steel					C 3	3																		
316 / 316L stainless steel					S 6																			
304 / 304L stainless steel					S4																			
321 stainless steel					S2																			
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-1/4 Cr-1/2 Mo low alloy F11 (UNS K11597)					C4 F4																			
25 % Cr super duplex (UNS \$32750)					D2																			
25 % Cr super duplex (UNS \$32760)					D3																			
316H stainless Steel					Н6	5																		
304H stainless steel					H4	1																		
310 stainless steel					S 3																			
321H stainless steel					S1																			
904L stainless steel					S9																			
22 % Cr Duplex (UNS \$31803)					D1																			
6 % Mo SS (UNS S31254) Alloy 400 (UNS N04400)					M1																			
Alloy 600 (UNS N06600)					U3																			
Alloy 625 (UNS N06625)					N2																			
Alloy 800 (UNS N08800)					U4																			
Alloy 825 (UNS N08825)					U5																			
Alloy C276 (UNS N010276)					U7																			
Others					Z 9	9																		
Standoffs, etc						-																		
Threaded connection without end support						T1																		
Threaded connection with threaded end support						T2																		
Flanged standoff without end support						F1																		
Flanged standoff with weld cup end support						F2																		
Customer supplied (versions with flanged end supports)						F7 F8																		
Customer supplied (versions with flanged end supports)						-≻		1						1	1	1	1	1					1	1

...Ordering information | FPD350 series 300 MAPT averaging pitot tube

FPD350. XX XX XXX XX XX		ХX	хх	xx	XX	XXX	ХX	xxx	xxx	xxx	xxx	ХX	ХX	xxx	XX	XX
See page 24																
Process connection type																
Threaded BSPT	T1															
Threaded NPT	T2															
Raised face DN 25 (1 in.)	R3															
Raised face DN 40 (1½ in.)	R4															
Flat face DN 25 (1 in.)	F3															
Flat face DN 40 (1½ in.)	F4															
RTJ DN 25 (1 in.)	J1															
RTJ DN 40 (1½ in.)	J2															
Others	Z9															
Process connection rating		1														
Not flanged		Y0														
ASME Class 150		Α1														
ASME Class 300		АЗ														
ASME Class 600		Α6														
ASME Class 900		Α7														
ASME Class 1500		Α8														
ASME Class 2500		Α9														
DIN PN 6		D0														
DIN PN 10		D1														
DIN PN 16		D2														
DIN PN 25		D3														
DIN PN 40		D4														
DIN PN 63		D5														
DIN PN 100		D6														
DIN PN 160		D7														
DIN PN 250		D8														
Others		Z 9														
Tapping type																
			F1													
Flanged DP connections (no valves) Welded DP connections (no valves)			W1	1 1												
Threaded DP connections (no valves)			T1													
Direct mounting head			D1	1 1												
3-Valve integral (welded) manifold DM3V			D2													
5-Valve integral (welded) manifold DM5V			D3	1 1												
3-Valve direct-mounted (bolted) manifold 3VDM			D4	1 1												
5-Valve direct-mounted (bolted) manifold 5VDM			D5													
Ball valves			V1													
Needle valves			V2	1 1												
Gate valves			VZ	1 1												
Globe valves			V4	1 1												
Double block and bleed valves			V4 V5	1 1												
Tapping size				_												
Not applicable				то												
1/4 in. NPT male				T1												
/4 in. NPT female				T2												
1/4 in. BSP male				T3												
11. BSP finale				T4												
½ in. NPT male				T5												
½ in. NPT female				T6												
½ in. BSP male				T7												
½ in. BSP female				T8												
½ in. flanged (specification as mounting flange)				F1												
% in. flanged (specification as mounting flange)				F2												
½ in. socket weld				S1												
Others				Z9												
Tapping / Valve material																
					VO											
As probe					Y0											
316 stainless steel					S6											
Carbon steel Carbon steel					C3											
NI 6276 (UNG NO10276)											1					1
Alloy C276 (UNS N010276)					U7											
Alloy 400 (UNS N04400)					M4											
Alloy 400 (UNS N04400) 22 % Cr Duplex (UNS S31803)					M4 D1											
Alloy 400 (UNS N04400) 22 % Cr Duplex (UNS S31803) 25 % Cr Super Duplex (UNS S32750)					M4 D1 D2											
Alloy 400 (UNS N04400) 22 % Cr Duplex (UNS S31803)					M4 D1											

...Ordering information | FPD350 series 300 MAPT averaging pitot tube

FPD350. XX XX XXX XX XX XX XX XX XX XX XX XX X	^^^		^^ ^		^^
See page 24 See page 25 ipe orientation and shape					
orizontal, circular pipe / duct					
ertical, circular pipe / duct PNV					
orizontal, rectangular pipe / duct RNH					
ertical, rectangular pipe / duct RNV					
rocess isolation valve					
o isolation valve					
apping sets					
wo sets TN2 thers					
olt type and material					
•					
,	BGC BGS				
STM A193 B8M / ASTM A194 8MA others	BZ9				
asket material	523				
	CT1				
sbestos-free 1.6 mm	GT1 GT2				
piral wound – stainless steel windings with carbon steel outer; 4.5 mm oft iron	GP3				
otthori	GZ9				
itting accessories		_			
-		DF1			
uct mounting plate (in carbon steel or stainless steel to match pipe fitting material) ooling fins		CF1			
requency collar		FC1			
ir eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)		AV1			
ir eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose)		AV2			
ir eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)		AV3			
ir eliminator package – pair of DZR air eliminators with valves and fittings for seawater applications (supplied loos	e)	AV4			
air of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)		CP1			
air of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose)		CP2			
air of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)		CP3			
air of condensate pots in stainless steel – ½ in. BSPTF tappings (supplied loose) air of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose)		CP4 CP5			
air of condensate pots in stainless steel = 72 in. NET tappings (supplied loose) air of condensate pots in stainless steel = ½ in. butt weld Schedule 160 tappings (supplied loose)		CP6			
urface treatment					
oxygen cleaning			P1		
thers			Z9		
ertification					
laterial certificates acc. EN 10204 3.1			CZ	:	
laterial certificates acc. EN 10204 3.2			C3		
laterial certificates acc. NACE, latest revision			CN	ı	
ye penetrant inspection			CS)	
adiography (available on flanged units only)			C8		
ositive material identification			CA		
00 % dimensional check others			C6		
				•	
esting					
mpact testing @ -46 °C				CH1	
mpact testing @ –196 °C				CH2	
ardness survey IC testing				CH3	
lagnetic particle inspection				CH4	
Itrasonic inspection				CH6	
eat treatment trace				CH7	
ressure test				CH8	
thers				CHZ	
ocumentation language (default = English)					-
erman					M1
alian					M2
panish					М3
rench					M4
hinese					М6
others					MZ
dded requirements					

Ordering information | FPD350 series 400 MAPT averaging pitot tube

Product design	Ordering information FPD350 series 4			_	_				vv	v	/ vv	/ VVV	, VVV	VVV	VVV	VVV	vv	yvv	vv	vv	YVV	yv	VVV
Permanently installed MAPT = 25 mm (1 in.) OD T4 probe Massurement Design Unsupported version E1 Supported version E2 DN 100 (4 in.) DN 125 (5 in.) 1 125 DN 150 (6 in.) DN 200 (8 in.) DN 200 (8 in.) DN 200 (8 in.) DN 400 (15 in.) DN 400 (15 in.) DN 400 (15 in.) DN 400 (20 in.) DN 500 (30 in.) DN 100 (64 in.) DN 100 (65 in.) DN 100 (66 in.) DN 200 (80 in.)		550.] X X X X			**	**	**	 			(```									XXX	**	***
Massurement Design	_	T4																					
Measurement Design		14																					
Unsupported version E1 Supported version E2 Line nominal bore DN 100 (4 in)	·																						
Supported version E2	_	E1																					
DN 100 (4 in.) DN 125 (5 in.) DN 125 (6 in.) DN 126 (6 in.) DN 200 (8 in.) DN 200 (8 in.) DN 300 (12 in.) 300 DN 350 (12 in.) 300 DN 350 (12 in.) 300 DN 450 (18 in.) DN 400 (18 in.) DN 400 (18 in.) DN 400 (18 in.) DN 500 (20 in.) DN 500 (20 in.) DN 600 (24 in.) DN 100 (44 in.) DN 100 (44 in.) DN 100 (44 in.) DN 1100 (44 in.) DN 1100 (48 in.) DN 1200 (68 in.) DN 1300 (52 in.) DN 1400 (56 in.) DN 1500 (60 in.) DN 1500 (68 in.) DN 1500 (68 in.) DN 100 (48 in.) DN 100 (48 in.) DN 100 (68 in.) DN 100 (68 in.) DN 100 (68 in.) DN 100 (68 in.) DN 100 (18 in.) DN 100 (18 in.) DN 100 (18 in.) DN 200 (18 in.) DN 300 (118 in.) DN 300 (118 in.) DN 300 (138 i																							
DN 152 (6 in.) DN 150 (8 in.) DN 150 (8 in.) DN 250 (10 in.) DN 250 (10 in.) DN 250 (10 in.) DN 250 (10 in.) DN 350 (12 in.) DN 350 (12 in.) DN 350 (12 in.) DN 450 (18 in.) DN 150 (18 in.) D	Line nominal bore																						
DN 152 (6 in.) DN 150 (8 in.) DN 150 (8 in.) DN 250 (10 in.) DN 250 (10 in.) DN 250 (10 in.) DN 250 (10 in.) DN 350 (12 in.) DN 350 (12 in.) DN 350 (12 in.) DN 450 (18 in.) DN 150 (18 in.) D	DN 100 (4 in.)		100																				
DA 200 (Sin.) DA 250 (10 in.) DA 250 (10 in.) DA 350 (12 in.) DA 300 (12 in.) DA 300 (12 in.) DA 300 (15 in.) DA 400 (16 in.) DA 400 (16 in.) DA 400 (20 in.) DA 500 (30 in.) DA 1000 (40 in.) DA 1000 (60 in.) DA 2000 (80 in.) DA 200																							
DN 250 (10 in.) 250	DN 150 (6 in.)		150																				
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DN 450 (18 lm.)																							
DN S00 (20 in.) DN S00 (20 in.) DN S00 (30 in.) DN S00 (30 in.) DN S00 (36 in.) DN S00 (48 in.) DN S00 (56 in.) DN S00 (56 in.) DN S00 (56 in.) DN S00 (56 in.) DN S00 (64 in.) DN S00 (64 in.) DN S00 (64 in.) DN S00 (68 in.) DN S00 (80 in.) DN S00 (10 in.) DN S00																							
DN 750 (30 in.) 900 DN 300 (40 in.) 900 DN 300 (40 in.) 900 DN 100 (44 in.) 101 DN 1200 (48 in.) 201 DN 1300 (55 in.) 301 DN 1400 (55 in.) 301 DN 1400 (55 in.) 501 DN 1500 (60 in.) 501 DN 1500 (60 in.) 701 DN 1500 (60 in.) 701 DN 1500 (60 in.) 701 DN 1500 (60 in.) 901 DN 2000 (80 in.) 901 DN 2000 (80 in.) 901 DN 2000 (80 in.) 102 DN 2000 (10 in.) 103 DN 3000 (130 in.) 10																							
DN 900 (36 in.) 900 DN 1000 (46 in.) 001 DN 1100 (44 in.) 101 DN 1100 (44 in.) 201 DN 1300 (52 in.) 301 DN 1300 (55 in.) 401 DN 1300 (65 in.) 401 DN 1500 (66 in.) 601 DN 1700 (68 in.) 601 DN 1700 (68 in.) 701 DN 1800 (72 in.) 801 DN 1900 (76 in.) 901 DN 200 (80 in.) 102 DN 200 (10 in.) 802 DN 2600 (10 in.) 802 DN 2600 (10 in.) 802 DN 2600 (10 in.) 802 DN 300 (10 in.) 802 DN 300 (11 in.) 802 DN 300 (13 in.) 103 DN 300 (13 in.) 303 DN 300 (13 in.) 303 DN 300 (13 in.) 303 DN 300 (13 in.) 403 DN 300 (13 in.) 503 Others 999 Probe material 316 / 316 L stainless steel 54 304 / 304 L stainless steel 54 321 L stainless steel 51 304 / 304 L stainless steel 51 409 OUT AND (100 N N 04400) M4 Alloy 625 (UNS N0400) M4 Alloy 625 (UNS N0400) M4 Alloy 625 (UNS N0400) M4 Alloy 625 (UNS N04625) D2 25 % Cr super duplex (UNS 532750) D3 26 % Cr super duplex (UNS 532750) D3 26 % Cr super duplex (UNS 532750) D3 Alloy 800 (UNS N08800) U4 Alloy 805 (UNS N08825) U5	DN 600 (24 in.)		600																				
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DN 3500 (138 in.) 503 999																							
Others 999 Probe material 316 / 316L stainless steel 56 304 / 304L stainless steel 54 321 stainless steel 52 304H stainless steel 53 321H stainless steel 51 904L stainless steel 59 Alloy C276 (UNS N010276) U7 Alloy 400 (UNS N04400) M4 Alloy 625 (UNS N06625) N2 22 % Cr duplex (UNS S31803) D1 25 % Cr super duplex (UNS S32750) D2 25 % Cr super duplex (UNS S32760) D3 6 % Mo stainless steel (UNS S31254) M1 Alloy 600 (UNS N08600) U3 Alloy 800 (UNS N08800) U4 Alloy 825 (UNS N08825) U5 Others Z9																							
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316 / 316L stainless steel 304 / 304L stainless steel 31 stainless steel 321 stainless steel 321 stainless steel 332 stainless steel 34 stainless steel 35 steel 36 stainless steel 37 stainless steel 38 steel 39 stainless steel 39 stainless steel 30 stainless steel 30 stainless steel 30 stainless steel 31 stainless steel 32 stainless steel 34 stainless steel 35 steel 36 stainless steel 37 stainless steel 38 stainless steel 39 stainless steel 30 stainless steel 30 stainless steel 31 stainless steel 32 stainless steel 33 stainless steel 34 stainless steel 35 stainless steel 36 stainless steel 37 stainless steel 38 stainless steel 39 stainless steel 30 stainless steel 31 stainless steel 31 stainless steel 31 stainless steel 32 stainless steel 33 stainless steel 34 stainless steel 36 stainless steel 37 stainless steel 38 stainless steel 39 stainless steel 30 stainless steel 30 stainless steel 30 stainless steel 30 stainless steel 31 stainless steel 31 stainless steel 31 stainless steel 32 stainless steel 32 stainless steel 31 stainless steel 32 stainless steel 32 stainless steel 32 stainless steel 31 stainless steel 32 stainless steel 31 stainless steel 31 stainless steel 32 st				_									1										
304 / 304L stainless steel				S 6									1										
304H stainless steel																							
310 stainless steel	321 stainless steel												1										
321H stainless steel													1										
904L stainless steel													1										
Alloy C276 (UNS N010276) U7 Alloy 400 (UNS N04400) M4 Alloy 625 (UNS N06625) N2 22 % Cr duplex (UNS S31803) D1 25 % Cr super duplex (UNS S32750) D2 25 % Cr super duplex (UNS S32760) M1 Alloy 600 (UNS N06600) U3 Alloy 800 (UNS N08800) U4 Alloy 825 (UNS N08825) U5 Others U7 M4													1										
Alloy 400 (UNS N04400)																							
Alloy 625 (UNS N06625) 22 % Cr duplex (UNS S31803) D1 25 % Cr super duplex (UNS S32750) D2 25 % Cr super duplex (UNS S32760) 6 % Mo stainless steel (UNS S31254) Alloy 600 (UNS N06600) Alloy 800 (UNS N08800) U4 Alloy 825 (UNS N08825) Others D1 D2 D3 D4 D4 D5 D6 D7 D7 D8 D8 D8 D9 D9 D9 D9 D9 D9 D9													1										
25 % Cr super duplex (UNS \$32750)													1										
25 % Cr super duplex (UNS S32760)	· · · · · · · · · · · · · · · · · · ·												1										
6 % Mo stainless steel (UNS S31254) M1 Alloy 600 (UNS N06600) U3 Alloy 800 (UNS N08800) U4 Alloy 825 (UNS N08825) U5 Others Z9																							
Alloy 600 (UNS N06600) Alloy 800 (UNS N08800) Alloy 825 (UNS N08825) Others 29																							
Alloy 800 (UNS N08800) U4 Alloy 825 (UNS N08825) U5 Others Z9	· · · · · · · · · · · · · · · · · · ·																						
Alloy 825 (UNS N08825) U5 Others Z9	=																						
Others Z9	=																						
Continued on payt page	=																						
Continued on next page	Contin	ued on ne	xt pa	ge																			

...Ordering information | FPD350 series 400 MAPT averaging pitot tube

FPD350. XX XX XXX XX	(XX	ХX	ХX	XX	XX	XX	ΧX	(XX)	(XXX	XXX	XXX	XXX	XXX	XX	XXX	ХХ	XX	XXX	XX	XXX
See page 27																				
Pipe fitting material	_																			
Carbon steel	C3																			
316 / 316L stainless steel	S 6																			
304 / 304L stainless steel	S4																			
321 stainless steel	S2																			
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6)	C4																			
1-1/4 Cr-1/2 Mo low alloy F11 (UNS K11597)	F4																			
25 % Cr super duplex (UNS S32750)	D2																			
25 % Cr super duplex (UNS S32760)	D3																			
316H stainless steel 304H stainless steel	H6 H4																			
310 stainless steel	п4 S 3																			
321H stainless steel	S1																			
904L stainless steel	S9																			
22 % Cr Duplex (UNS S31803)	D1																			
6 % Mo SS (UNS S31254)	М1																			
Alloy 400 (UNS N04400)	Μ4																			
Alloy 600 (UNS N06600)	U3																			
Alloy 625 (UNS N06625)	N2																			
Alloy 800 (UNS N08800)	U4																			
Alloy 825 (UNS N08825)	U5																			
Alloy C276 (UNS N010276)	U7																			
Others	Z9																			
Standoffs, etc																				
Threaded connection without end support		T1																		
Threaded connection with threaded end support		T2																		
Flanged standoff without end support		F1																		
Flanged standoff with weld cup end support		F2																		
2 flanged standoffs and external flanged end support		F3																		
2 flanged standoffs and internal flanged end support		F4																		
External flanged end support only (no standoffs supplied)		F5 F6																		
Internal flanged end support only (no standoffs supplied) Customer supplied (versions without flanged end supports)		F7																		
Customer supplied (versions without hanged end supports) Customer supplied (versions with flanged end supports)		F8																		
Process connection type		. 0																		
Threaded BSPT			Т1				ľ													
Threaded NPT			T2																	
Raised face DN 40 (1½ in.)			R4																	
Raised face DN 50 (2 in.)			R5																	
Raised face DN 80 (3 in.)			R6																	
Flat face DN 40 (1½ in.)			F4																	
Flat face DN 50 (2 in.)			F5																	
Flat face DN 80 (3 in.)			F6																	
RTJ DN 40 (1½ in.)			J2																	
RTJ DN 50 (2 in.)			J3																	
RTJ DN 80 (3 in.)			J4																	
Others			Z9																	
Process connection rating																				
Not flanged				Y0																
ASME Class 150				A1																
ASME Class 300				А3																
ASME Class 600				A6																
ASME Class 900				A7																
ASME Class 3500				A8																
ASME Class 2500 DIN PN 6				A9 D0																
DIN PN 6 DIN PN 10				D0																
DIN PN 16				D1																
D.11. 11. 10				D2																
DIN PN 25				D3																
DIN PN 25				J+	1	1		1	1	1	1	1	1		1					
DIN PN 40				D5	;															
DIN PN 40 DIN PN 63				D5 D6																
DIN PN 40 DIN PN 63 DIN PN 100				D6	5															
DIN PN 40 DIN PN 63					5															
DIN PN 40 DIN PN 63 DIN PN 100 DIN PN 160				D6 D7	3															

...Ordering information | FPD350 series 400 MAPT averaging pitot tube

Tapping type		FPD350. XX XX XX	хх	xx xx xx xx	ХX	хx	хx	xxx	ххх	ххх	xxx	xxx	XXX	ХX	ххх	хx	хx	ххх	ХX	XXX
Flanged DP connections (no valves)			_																	
Welded DP Commections (no valves)	Tapping type				_															
Threaded DP connections (no valves) Triporter mounting hipsel and antifold DMSV 3-Valve integral (welded) manifold DMSV D1 3-Valve integral (welded) manifold DMSV D2 3-Valve integral (welded) manifold DMSV D3 3-Valve integral (welded) manifold SVDM D5 Ball valves V1 Receil valves V2 Globe valves V3 Globe valves V3 Globe valves V4 V5 V6 V6 V6 V6 V6 V6 V6 V6 V6	Flanged DP connections (no valves)				F1															
Direct mounting head																				
3-Wake Integral (welded) manifold DMAY 3-Wake Integral (welded) manifold SVDM 3-Wake Integral (welded) manifold SVDM 4-Wake Interchounted (botted) manifold SVDM 5-Wake Integral (welded) manifold SVDM 5-Wake Interchounted (botted) manifold SVDM 6-Wake Interchounted (botted) manifold SVDM 6-Wake Interchounted (botted) manifold SVDM 7-Wake Interchounted (botted) manifold SV	•																			
5-Valve integral (welded manifold DMSV	3																			
3 Valve direct-mounted (botted) manifold 3VDM																				
Ball valves		3VDM																		
Needle valves	5-Valve direct-mounted (bolted) manifold	5VDM			D5															
Gate valves Gobbe valves V4 Double block and bleed valves V5 Tapping size Not applicable T1 Vin. NPT female T1 Vin. NPT female T2 Vin. SPS female T3 Vin. SPS female T4 Vin. SPS female T5 Vin. NPT fomale T6 Vin. NPT fomale T7 Vin. NPT female T7 Vin. NPT female T8 Vin. NPT female T9 Vin. SPS female																				
Clobe valves																				
Double block and bleed valves																				
Not applicable Vin. NPT male Vin. NPT male Vin. NPT male Vin. SPP male Vin. Manged (specification as mounting flange) Vin. Inlanged (specification as mounting flange) Vin. Inlanged (specification as mounting flange) Vin. Section vin. SPP male Vin. SPP ma																				
Not applicable Vin. NPT male Vin. NPT male Vin. NPT male Vin. SPP male Vin. Manged (specification as mounting flange) Vin. Inlanged (specification as mounting flange) Vin. Inlanged (specification as mounting flange) Vin. Section vin. SPP male Vin. SPP ma																				
Val. in NPT male	· · · ·					то														
14																				
14. in SPF female																				
14. in. NPT male	¼ in. BSP male					Т3														
14-in.NPT female																				
15-11. S.B.P. male																				
15																				
14																				
Wain, flanged (specification as mounting flange) F2		ange)																		
Others		-																		
As probe	½ in. socket weld					S1														
As probe 316 stainless steel Carbon steel Alloy C276 (UNS NO10276) Alloy C276 (UNS NO10276) Alloy C276 (UNS NO10276) Alloy C276 (UNS NO10276) Alloy C276 (UNS S31803) D1 D2 C5% C7 Super Duplex (UNS S32750) D2 Others D2 Others D2 Pipe orientation and shape Horizontal, circular pipe / duct Vertical, circular pipe / duct PNV Horizontal, circular pipe / duct PNV Horizontal, circular pipe / duct PNV Process isolation valve No isolati						Z 9														
316 stailness steel	· · · ·																			
Carbon steel Alloy C276 (UNS N010276) U7 Alloy 400 (UNS N010276) U7 Alloy 400 (UNS N010400) M4 22 % C7 Duplex (UNS \$33803) D1 25 % C7 Super Duplex (UNS \$33803) D2 Others D2 Others D2 Others D2 Others D3 Pipe orientation and shape Horizontal, circular pipe / duct PNV Vertical, circular pipe / duct PNV Vertical, circular pipe / duct PNV Process isolation with PNV No isolation valve No isolation val	·																			
Alloy 2676 (UNS N010276) Alloy 400 (UNS N04400) Alloy 400 (UNS N04400) Alloy 400 (UNS S31803) D1 25 % Cr Super Duplex (UNS S32750) D2 Pipe orientation and shape Horizontal, circular pipe / duct Vertical, circular pipe / duct PNV Horizontal, rectangular pipe / duct PNV Process isolation valve No isolation valve No isolation valve No isolation valve No isolation valve 19																				
Alloy 400 (UNS N04400)																				
22 % Cr Duplex (UNS \$31803)																				
Others 29 Pipe orientation and shape PNH Horizontal, circular pipe / duct PNH Vertical, rectangular pipe / duct RNH Vertical, rectangular pipe / duct RNV Process isolation valve YO No isolation valve YO 1½ in. flanged ball valve – carbon steel BC8 2 in. flanged ball valve – carbon steel BC6 3 in. flanged ball valve – stainless steel BS6 3 in. flanged ball valve – stainless steel BS6 3 in. flanged ball valve – stainless steel BS9 1½ in. flanged ball valve – Alloy 400 BM8 2 in. flanged ball valve – Alloy 400 BM8 3 in. flanged ball valve – Alloy 276 BH8 2 in. flanged ball valve – Alloy 276 BH6 3 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – carbon steel GC6																				
Pipe orientation and shape	25 % Cr Super Duplex (UNS S32750)						D2													
Horizontal, circular pipe / duct PNV Vertical, circular pipe / duct PNV Vertical, circular pipe / duct PNV Process isolation valve Process isolation Process isolation valve P							Z9													
Vertical, cricular pipe / duct Horizontal, rectangular pipe / duct Vertical, rectangular pipe / duct RNH Process isolation valve No isolation valve No isolation valve Vi in, flanged ball valve – carbon steel Sca in, flanged ball valve – carbon steel Sca in, flanged ball valve – stainless steel Sca in, flanged ball valve – Alloy 400 Sca in, flanged ball valve – Alloy 400 Sca in, flanged ball valve – Alloy 400 Sca in, flanged ball valve – Alloy 276 Sca in, flanged ball valve – aluminium-bronze Sca in, flanged gall valve – carbon steel Sca in, flanged gate valve – stainless steel Sca in, flanged gat																				
Horizontal, rectangular pipe / duct Process isolation valve No i	· · · · · · · · · · · · · · · · · · ·																			
Vertical, rectangular pipe / duct Process isolation valve No isolation valve 1½ in. flanged ball valve – carbon steel 2 in. flanged ball valve – carbon steel 3 in. flanged ball valve – carbon steel 1½ in. flanged ball valve – stainless steel 2 in. flanged ball valve – stainless steel 3 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 400 4 in. flanged ball valve – Alloy 400 5 in. flanged ball valve – Alloy 276 5 in. flanged ball valve – Alloy 276 6 in. flanged ball valve – Alloy 276 7 in. flanged ball valve – Alloy 276 8 in. flanged ball valve – aluminium-bronze 8 in. flanged gate valve – carbon steel 9 in. flanged gate valve – carbon steel 9 in. flanged gate valve – carbon steel 9 in. flanged gate valve – stainless steel 9 in. flanged gate valve – fl																				
Process isolation valve No isolation valve 1½ in. flanged ball valve – carbon steel 21in. flanged ball valve – carbon steel 31in. flanged ball valve – carbon steel 31in. flanged ball valve – stainless steel 32in. flanged ball valve – Alloy 400 31in. flanged ball valve – Alloy 400 31in. flanged ball valve – Alloy 400 31in. flanged ball valve – Alloy 276 31in. flanged ball valve – aluminium-bronze 31in. flanged ball valve – aluminium-bronze 32in. flanged ball valve – aluminium-bronze 33in. flanged ball valve – aluminium-bronze 34in. flanged gate valve – carbon steel 31in. flanged gate valve – car	= ::																			
No isolation valve								KINV												
1½ in. flanged ball valve – carbon steel 2 in. flanged ball valve – carbon steel 3 in. flanged ball valve – stainless steel 3 in. flanged ball valve – Alloy 400 8 M8 2 in. flanged ball valve – Alloy 400 8 M6 3 in. flanged ball valve – Alloy 400 8 M6 3 in. flanged ball valve – Alloy 400 8 M9 1½ in. flanged ball valve – Alloy 276 8 H8 2 in. flanged ball valve – Alloy 276 8 H9 1½ in. flanged ball valve – Alloy 276 8 H9 1½ in. flanged ball valve – aluminium-bronze 8 A8 2 in. flanged ball valve – aluminium-bronze 8 A8 3 in. flanged ball valve – aluminium-bronze 8 A8 3 in. flanged gate valve – arbon steel 9 GC8 2 in. flanged gate valve – carbon steel 9 GC9 1½ in. flanged gate valve – carbon steel 9 GC9 1½ in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS9 Customer supplied 9 VF9 Others 9 VZ9 Pestal Insertion probe 8 ITPS 8 Special neck length 9 TPS 9 Special neck length									VO											
2 in. flanged ball valve – carbon steel 3 in. flanged ball valve – stainless steel 3 in. flanged ball valve – stainless steel 2 in. flanged ball valve – stainless steel 3 in. flanged ball valve – Alloy 400 8 M8 2 in. flanged ball valve – Alloy 400 8 M9 1½ in. flanged ball valve – Alloy 276 8 H8 2 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 8 H9 1½ in. flanged ball valve – Alloy 276 3 in. flanged ball valve – alloy 276 8 H9 1½ in. flanged ball valve – allominium-bronze 8 A8 2 in. flanged ball valve – aluminium-bronze 8 A9 1½ in. flanged gate valve – carbon steel 2 in. flanged gate valve – carbon steel 3 in. flanged gate valve – carbon steel 3 in. flanged gate valve – stainless steel 4 in. flanged gate valve – stainless steel 5 in. flanged gate valve – stainless steel																				
3 in. flanged ball valve – carbon steel 1½ in. flanged ball valve – stainless steel 1½ in. flanged ball valve – stainless steel 2 in. flanged ball valve – stainless steel 3 in. flanged ball valve – stainless steel 1½ in. flanged ball valve – Alloy 400 8M8 2 in. flanged ball valve – Alloy 400 8M6 3 in. flanged ball valve – Alloy 400 8M9 1½ in. flanged ball valve – Alloy 276 8H8 2 in. flanged ball valve – Alloy 276 8H6 3 in. flanged ball valve – Alloy 276 8H7 1½ in. flanged ball valve – Alloy 276 8H8 2 in. flanged ball valve – aluminium-bronze 8A8 2 in. flanged ball valve – aluminium-bronze 8A6 3 in. flanged ball valve – aluminium-bronze 8A7 1½ in. flanged ball valve – aluminium-bronze 8A8 2 in. flanged gate valve – carbon steel 6C8 2 in. flanged gate valve – carbon steel 6C9 1½ in. flanged gate valve – stainless steel 6C9 1½ in. flanged gate valve – stainless steel 6C9 1½ in. flanged gate valve – stainless steel 6C9 1½ in. flanged gate valve – stainless steel 6C9 1½ in. flanged gate valve – stainless steel 7E9 Customer supplied 7F9 Others 7F2 Partial Insertion probe 8d7 8d7 8d7 8d8 8d8 8d8 8d8 8d8 8d8 8d8	=																			
2 in. flanged ball valve – stainless steel 3 in. flanged ball valve – stainless steel 3 in. flanged ball valve – Alloy 400 8 M8 2 in. flanged ball valve – Alloy 400 8 M6 3 in. flanged ball valve – Alloy 400 8 M9 1½ in. flanged ball valve – Alloy 400 8 M9 1½ in. flanged ball valve – Alloy 276 8 H8 2 in. flanged ball valve – Alloy 276 8 H6 3 in. flanged ball valve – Alloy 276 8 H9 1½ in. flanged ball valve – aluminium-bronze 8 A8 2 in. flanged ball valve – aluminium-bronze 8 A6 3 in. flanged ball valve – aluminium-bronze 8 A7 1½ in. flanged ball valve – aluminium-bronze 8 A8 1½ in. flanged gate valve – carbon steel 9 GC8 2 in. flanged gate valve – carbon steel 9 GC6 3 in. flanged gate valve – carbon steel 9 GC9 1½ in. flanged gate valve – stainless steel 9 GS8 2 in. flanged gate valve – stainless steel 9 GS9 Customer supplied 9 VF9 Others 9 V29 Design options Partial Insertion probe 8 TP2 Bidirectional 7 TP5 Special neck length 7 TP6	=																			
3 in. flanged ball valve – stainless steel 1½ in. flanged ball valve – Alloy 400 2 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 8 BH8 2 in. flanged ball valve – Alloy 276 8 BH8 2 in. flanged ball valve – Alloy 276 8 BH9 1½ in. flanged ball valve – Alloy 276 8 BH9 1½ in. flanged ball valve – aluminium-bronze 8 BA8 2 in. flanged ball valve – aluminium-bronze 8 BA6 3 in. flanged ball valve – aluminium-bronze 8 BA6 3 in. flanged gate valve – carbon steel 9 GC8 2 in. flanged gate valve – carbon steel 9 GC6 3 in. flanged gate valve – carbon steel 9 GC9 1½ in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS6 3 in. flanged gate valve – stainless steel 9 GS9 Customer supplied 9 VF9 Others 9 VZ9 Design options TP2 Bidirectional TP5 Special neck length TP6	=								BS8											
1½ in. flanged ball valve – Alloy 400 2 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – aluminium-bronze 8 in. flanged gate valve – carbon steel 9 in. flanged gate valve – stainless steel	5																			
2 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 400 3 in. flanged ball valve – Alloy 276 2 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – aluminium-bronze BH9 1½ in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA6 3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – carbon steel GC9 1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Design options Patial Insertion probe TP2 Bidirectional TP5 Special neck length	=																			
3 in. flanged ball valve – Alloy 400 1½ in. flanged ball valve – Alloy 276 BH8 2 in. flanged ball valve – Alloy 276 BH6 3 in. flanged ball valve – Alloy 276 BH9 1½ in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA6 3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – carbon steel GC7 1½ in. flanged gate valve – stainless steel GC9 1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS7 Customer supplied VF9 Others VZ9 Pasign options TP2 Bidirectional TP5 Special neck length																				
1½ in. flanged ball valve – Alloy 276 2 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA6 3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – carbon steel GC9 1½ in. flanged gate valve – stainless steel GC9 1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length																				
2 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – Alloy 276 3 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA6 3 in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA9 3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC9 1½ in. flanged gate valve – stainless steel GC9 1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length	,																			
3 in. flanged ball valve – Alloy 276 BH9 1½ in. flanged ball valve – aluminium-bronze BA8 2 in. flanged ball valve – aluminium-bronze BA6 3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC9 3 in. flanged gate valve – carbon steel GC9 1½ in. flanged gate valve – stainless steel GC9 1½ in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS7 Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length																				
1½ in. flanged ball valve – aluminium-bronzeBA82 in. flanged ball valve – aluminium-bronzeBA63 in. flanged ball valve – aluminium-bronzeBA91½ in. flanged gate valve – carbon steelGC82 in. flanged gate valve – carbon steelGC63 in. flanged gate valve – carbon steelGC9½ in. flanged gate valve – stainless steelGS82 in. flanged gate valve – stainless steelGS63 in. flanged gate valve – stainless steelGS63 in. flanged gate valve – stainless steelGS9Customer suppliedVF9OthersVZ9Design optionsPartial Insertion probeTP2BidirectionalTP5Special neck lengthTP6																				
3 in. flanged ball valve – aluminium-bronze BA9 1½ in. flanged gate valve – carbon steel 2 in. flanged gate valve – carbon steel 3 in. flanged gate valve – carbon steel 6 GC6 3 in. flanged gate valve – stainless steel 6 GC9 1½ in. flanged gate valve – stainless steel 6 GS8 2 in. flanged gate valve – stainless steel 6 GS6 3 in. flanged gate valve – stainless steel 6 GS6 3 in. flanged gate valve – stainless steel 7 GS9 Customer supplied 7 VF9 Others 7 VZ9 Design options Partial Insertion probe 7 TP2 Bidirectional 7 TP5 Special neck length	,	ze							BA8											
1½ in. flanged gate valve – carbon steel GC8 2 in. flanged gate valve – carbon steel GC6 3 in. flanged gate valve – stainless steel GC9 1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Partial Insertion probe TP2 Bidirectional TP5 Special neck length TP6	9								BA6											
2 in. flanged gate valve – carbon steel 3 in. flanged gate valve – carbon steel 3 in. flanged gate valve – stainless steel 4 in. flanged gate valve – stainless steel 5 in. flanged gate valve – stainless steel 6 in. flanged gate valve – stainless steel 7 in. flanged gate valve – stainless steel 7 in. flanged gate valve – stainless steel 7 in. flanged gate valve – stainless steel 8 in. flanged gate valve – stainless steel 9 in. flanged gate valve – stai	=																			
3 in. flanged gate valve – carbon steel 1½ in. flanged gate valve – stainless steel 2 in. flanged gate valve – stainless steel 3 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length																				
1½ in. flanged gate valve – stainless steel GS8 2 in. flanged gate valve – stainless steel GS6 3 in. flanged gate valve – stainless steel GS9 Customer supplied VF9 Others VZ9 Testial Insertion probe TP2 Bidirectional TP5 Special neck length TP6																				
2 in. flanged gate valve – stainless steel 3 in. flanged gate valve – stainless steel 3 in. flanged gate valve – stainless steel Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length TP6																				
3 in. flanged gate valve – stainless steel Customer supplied VF9 Others Vz9 Design options Partial Insertion probe TP2 Bidirectional Special neck length TP6																				
Customer supplied VF9 Others VZ9 Design options Partial Insertion probe TP2 Bidirectional TP5 Special neck length TP6																				
Design options Partial Insertion probe Bidirectional Special neck length TP6																				
Partial Insertion probe TP2 Bidirectional TP5 Special neck length TP6									VZ9											
Bidirectional TP5 Special neck length TP6	Design options																			
Special neck length TP6	·																			
Dayonet and recing	=																			
Continued on next page	Dayonet end ritting				Con	tin.	اوط	on n	avt n											

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See page 27 See page 28 See page 29									
apping sets									
	TN2								
	TNZ								
olt type and material									
STM A193 B7 / ASTM A194 2H	В	3GC							
STM A193 B8M / ASTM A194 8MA	В	3GS							
thers	В	3Z9							
asket material									
sbestos-free 1.6 mm			GT1						
piral wound – stainless steel windings with carbon steel outer; 4.5 mm			GT2						
oft iron thers			GP3 GZ9						
			GZ9						
emperature element – operating pressure limited to maximum of 70 bar (1015 psi)									
stegral PT100 sensor, neck mounted – aluminium IP65 head without transmitter				T1 T2					
itegral PT100 sensor, neck mounted – aluminium IP65 head with transmitter Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head without transmitter				T3					
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head with transmitter				T4					
itegral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter				T5					
Ex ia integral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter				Т6					
tting accessories					-				
uct mounting plate (in carbon steel or stainless steel to match pipe fitting material)					DF1				
ooling fins					CF1				
requency collar					FC1				
ir eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)					AV1				
ir eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose)					AV2				
ir eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)	الممال				AV3				
ir eliminator package – pair of DZR air eliminators with valves and fittings for seawater applications (supp air of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)	nied id	oose	:)		AV4 CP1				
air of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose)					CP2				
air of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)					CP3				
air of condensate pots in stainless steel – ½ in. BSPTF tappings (supplied loose)					CP4				
air of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose)					CP5				
air of condensate pots in stainless steel – ½ in. butt weld Schedule 160 tappings (supplied loose)					CP6				
urface treatment						D1			
xygen cleaning thers						P1 Z9			
ertification						23			
laterial certificates acc. EN 10204 3.1							<u></u>		
laterial certificates acc. EN 10204 3.1 laterial certificates acc. EN 10204 3.2							C2 C3		
laterial certificates acc. NACE, latest revision							CN		
ye penetrant inspection							C9		
adiography (available on flanged units only)							C8		
ositive material identification							CA		
00 % dimensional check							C6		
thers							CZ		
esting									
npact testing @ –46 °C								CH1	
								CH2 CH3	
npact testing @ –196 °C								CH4	
ardness survey								CH5	
ardness survey IC testing								CH6	
ardness survey IC testing agnetic particle inspection								CH7	
ardness survey IC testing agnetic particle inspection Itrasonic inspection								CH8	
ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test								CHZ	
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ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers									
ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman									М1
ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman alian									M2
ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman alian oanish									M2 M3
ardness survey IC testing agnetic particle inspection trasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman alian banish rench									M2 M3 M4
ardness survey IC testing lagnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman alian panish rench hinese									M2 M3 M4 M6
ardness survey IC testing agnetic particle inspection Itrasonic inspection eat treatment trace ressure test thers ocumentation language (default = English) erman alian panish rench									M2 M3 M4

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	111 233	FPD350.XX				_				ХX	хx	XXX	XXX	XXX	xxx	XXX	XXX	XX	xxx	ХX	XX	xxx	хх	XXX
Product design								'	 1															
Permanently installed MAP (2 in.) OD probe	T – 60 mm	Т5																						
Measurement design			1																					
Unsupported version			E1																					
Supported version			E2																					
Line nominal bore																								
DN 250 (10 in.) DN 300 (12 in.)	250 300	DN 4100 (162 in.) DN 4200 (166 in.)		104 204																				
DN 350 (14 in.)	350	DN 4300 (170 in.)		304																				
DN 400 (16 in.)	400	DN 4400 (174 in.)		404																				
DN 450 (18 in.) DN 500 (20 in.)	450 500	DN 4500 (177 in.) DN 4600 (181 in.)		504 604																				
DN 600 (24 in.)	600	DN 4700 (185 in.)		704																				
DN 750 (30 in.)	750	DN 4800 (189 in.)		804																				
DN 900 (36 in.)	900	DN 4900 (193 in.)		904 005																				
DN 1000 (40 in.) DN 1100 (44 in.)	001 101	DN 5000 (197 in.) DN 5100 (200 in.)		105																				
DN 1200 (48 in.)	201	DN 5200 (204 in.)		305																				
DN 1300 (52 in.)	301	DN 5300 (208 in.)		305																				
DN 1400 (56 in.) DN 1500 (60 in.)	401 501	DN 5400 (212 in.) DN 5500 (216 in.)		405 505																				
DN 1600 (64 in.)	601	DN 5600 (220 in.)		605																				
DN 1700 (68 in.)	701	DN 5700 (224 in.)		705																				
DN 1800 (72 in.) DN 1900 (76 in.)	801 901	DN 5800 (228 in.) DN 5900 (232 in.)		805 905																				
DN 2000 (80 in.)	002	DN 6000 (236 in)		006																				
DN 2100 (84 in.)	102	DN 6100 (240 in.)		106																				
DN 2200 (88 in.) DN 2300 (92 in.)	202 302	DN 6200 (244 in.) DN 6300 (248 in.)		206 306																				
DN 2400 (96 in.)	402	DN 6400 (252 in.)		406																				
DN 2500 (98 in.)	502	DN 6500 (256 in.)		506																				
DN 2600 (102 in.) DN 2700 (106 in.)	602 702	DN 6600 (260 in.) DN 6700 (264 in.)		606 706																				
DN 2800 (110 in.)	802	DN 6800 (268 in.)		806																				
DN 2900 (114 in.)	902	DN 6900 (272 in.)		906																				
DN 3000 (118 in.)	003 103	DN 7000 (276 in.)		007																				
DN 3100 (122 in.) DN 3200 (126 in.)	203	DN 7100 (280 in.) DN 7200 (284 in.)		107 207																				
DN 3300 (130 in.)	303	DN 7300 (288 in.)		307																				
DN 3400 (134 in.)	403	DN 7400 (292 in.)		407																				
DN 3500 (138 in.) DN 3600 (142 in)	503 603	DN 7500 (296 in.) DN 7600 (300 in.)		507 607																				
DN 3700 (146 in)	703	DN 7700 (304 in.)		707																				
DN 3800 (150 in.)	803	DN 7800 (308 in.)		807																				
DN 3900 (154 in.) DN 4000 (158 in.)	903 004	DN 7900 (312 in.) DN 8000 (315 in.)		907 008																				
2.1 1000 (200)		Others		999																				
Probe material					_																			
316 / 316L stainless steel					S6																			
304 / 304L stainless steel 321 stainless steel					S4 S2																			
304H stainless steel					H4																			
310 stainless steel					S 3																			
321H stainless steel 904L stainless steel					S1 S9																			
Alloy C276 (UNS N010276)					U7																			
Alloy 400 (UNS N04400)					M4																			
Alloy 625 (UNS N06625) 22 % Cr duplex (UNS S3180	U2)				N2 D1																			
25 % Cr super duplex (UNS					D2																			
25 % Cr super duplex (UNS	S S32760)				D3																			
6 % Mo stainless steel (UN	S S31254)			M1 U3																			
Alloy 600 (UNS N06600) Alloy 800 (UNS N08800)					U3																			
Alloy 825 (UNS N08825)					U5																			
Others					Z9																			
		Continued on	ne	xt pa	ge																			

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FPD350. XX XX XXX X		,,,,				 		 					
See page 31	_												
Pipe fitting material													
Carbon steel	C3												
316 / 316L stainless steel	S6												
304 / 304L stainless steel	S4												
321 stainless steel	S2												
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6)	C4 F4												
1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750)	D2												
25 % Cr super duplex (UNS 532760)	D2												
316H stainless Steel	H6												
304H stainless steel	H4												
310 stainless steel	S 3												
321H stainless steel	S1												
904L stainless steel	S9												
22 % Cr Duplex (UNS S31803)	D1												
5 % Mo SS (UNS S31254)	M1												
Alloy 400 (UNS N04400)	M4												
Alloy 600 (UNS N06600)	U3												
Alloy 625 (UNS N06625)	N2												
Alloy 800 (UNS N08800)	U4												
Alloy 825 (UNS N08825)	U5												
Alloy C276 (UNS N010276) Others	U7 Z9												
	29												
Standoffs, etc													
Flanged standoff without end support		F1											
Flanged standoff with weld cup end support		F2											
2 flanged standoffs and external flanged end support		F3											
2 flanged standoffs and internal flanged end support		F4											
External flanged end support only (no standoffs supplied)		F5											
Internal flanged end support only (no standoffs supplied)		F6 F7											
Customer supplied (versions without flanged end supports) Customer supplied (versions with flanged end supports)		F8											
		10											
Process connection type													
Raised face DN 80 (3 in.)			₹6										
Raised Face DN 100 (4 in.)			R7										
Raised Face DN 150 (6 in.)			88										
Flat face DN 80 (3 in.)			6										
Flat Face DN 100 (4 in.)			8										
Flat Face DN 150 (6 in.) RTJ DN 80 (3 in.)			4										
RTJ DN 100 (4 in.)			5										
RTJ DN 150 (6 in.)			6										
Others			29										
Process connection rating				1									
ASME Class 150				A1									
ASME Class 300				A3									
ASME Class 600				A6									
ASME Class 900				A7									
ASME Class 1500				A8									
ASME Class 2500				Α9									
DIN PN 6				DO									
DIN PN 10				D1									
DIN PN 16				D2									
DIN PN 25				D3									
DIN PN 40				D4									
DIN PN 63				D5									
DIN PN 100				D6									
DIN PN 160				D7									
DIN PN 250				D8									
Others				Z9									
Tapping type													
Flanged DP connections (no valves)					F1								
Welded DP connections (no valves)					W1								
Threaded DP connections (no valves)					Т1								
Direct mounting head					D1								
3-Valve integral (welded) manifold DM3V					D2								
5-Valve integral (welded) manifold DM5V					D3								
3-Valve direct-mounted (bolted) manifold 3VDM 5-Valve direct-mounted (bolted) manifold 5VDM					D4 D5								
Ball valves					υ5 V1								
Ball valves Needle valves					V1								
Gate valves					۷2 V3								
					۷3 V4								
Globe valves													
Globe valves Double block and bleed valves					V4 V5								

...Ordering information | FPD350 series 500 MAPT averaging pitot tube

FPD350.XXXXXXX	X XX XX XX XX XX	dxx x	XXX	XXX	XXX	XXX	XXX	XXX	(X)	XXX	XX	XX	XXX	XX	XX
See page 31	See page 32														
Tapping size	·	_													
Not applicable		TO													
¼ in. NPT male		T1													
¼ in. NPT female		T2													
¼ in. BSP male		Т3													
¼ in. BSP female		T4													
½ in. NPT male		T5													
½ in. NPT female		Т6													
½ in. BSP male		Т7													
½ in. BSP female		T8													
½ in. flanged (specification as mounting flange)		F1													
3/4 in. flanged (specification as mounting flange)		F2													
½ in. socket weld		S1													
Others		Z9													
Tapping / Valve material															
As probe		Y	-												
316 stainless steel		S	-												
Carbon steel		C													
Alloy C276 (UNS N010276)		U.	7												
Alloy 400 (UNS N04400)		M	4												
22 % Cr Duplex (UNS S31803)		D:	1												
25 % Cr Super Duplex (UNS S32750)		Di	2												
Others		Z	9												
Pipe orientation and shape															
Horizontal, circular pipe / duct			PNH	ı											
Vertical, circular pipe / duct			PNV	,											
Horizontal, rectangular pipe / duct			RNH	ı											
Vertical, rectangular pipe / duct			RNV												
Process isolation valve				_											
No isolation valve				YOY											
3 in. flanged ball valve – carbon steel				BC9											
3 in. flanged ball valve – stainless steel				BS9											
3 in. flanged ball valve – Alloy 400				вм9)										
3 in. flanged ball valve – Alloy 276				ВН9											
3 in. flanged ball valve – aluminium-bronze				BA9											
3 in. flanged gate valve – carbon steel				GC9											
3 in. flanged gate valve – stainless steel				GS9											
Others				VZ9											
Design options					_										
Centre coupling					TP1										
Partial insertion probe					TP2										
Bidirectional					TP5										
Special neck length					TP6										
Bayonet end fitting					TP7										
					1 - 1	1	1	1		1			1	1	1

...Ordering information | FPD350 series 500 MAPT averaging pitot tube

See page 31 See page 32 See page 33								KXX X	
Tapping sets									
Two sets	TN2								
Others	TNZ								
Bolt type and material									
ASTM A193 B7 / ASTM A194 2H		BGC							
ASTM A193 B8M / ASTM A194 8MA		BGS							
Others		BZ9							
Gasket material									
Asbestos-free 1.6 mm			GT1						
Spiral wound – stainless steel windings with carbon steel outer; 4.5 mm			GT2						
Soft iron Others			GP3 GZ9						
			GZ9						
Femperature element – operating pressure limited to maximum of 70 bar (1015 psi)									
ntegral PT100 sensor, neck mounted – aluminium IP65 head without transmitter ntegral PT100 sensor, neck mounted – aluminium IP65 head with transmitter				T1 T2					
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head with transmitter				T3					
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head with transmitter				T4					
ntegral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter				T5					
Ex ia integral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter				T6					
Fitting accessories									
Cooling fins					CF1				
Frequency collar					FC1				
Slotted ports					SH1				
Air eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)					AV1				
Air eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose) Air eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)					AV2 AV3				
kir eliminator package – pair of DZR air eliminators for seawater applications (supplied loose) kir eliminator package – pair of DZR air eliminators with valves and fittings for seawater applications (supp	olied I	ററട	2)		AV4				
Pair of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)	Jiica i	0030	-)		CP1				
Pair of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose)					CP2				
Pair of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)					CP3				
Pair of condensate pots in stainless steel – ½ in. BSPTF tappings (supplied loose)					CP4				
Pair of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose) Pair of condensate pots in stainless steel – ½ in. butt weld Schedule 160 tappings (supplied loose)					CP5 CP6				
Surface treatment					C1 0				
Daygen cleaning						P1			
Others						Z9			
Certification									
Material certificates acc. EN 10204 3.1							C2		
Material certificates acc. EN 10204 3.1							C3		
Material certificates acc. NACE, latest revision							CN		
Dye penetrant inspection							C9		
Radiography (available on flanged units only)							C8		
Pacitive material identification							CA		
Positive material identification							C6 CZ		
.00 % dimensional check							CZ		
.00 % dimensional check Others									
.00 % dimensional check Others Festing								CH1 CH2	
.00 % dimensional check Others Festing mpact testing @ –46 °C							(CH3	
.00 % dimensional check Others Festing mpact testing @ –46 °C mpact testing @ –196 °C							(
.00 % dimensional check Others Festing mpact testing @ -46 °C mpact testing @ -196 °C Hardness survey								CH4	
.00 % dimensional check Others Festing mpact testing @ –46 °C mpact testing @ –196 °C							(
.00 % dimensional check Others Festing mpact testing @ -46 °C mpact testing @ -196 °C Hardness survey HIC testing							(CH4	
200 % dimensional check Others Festing mpact testing @ -46 °C mpact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Ultrasonic inspection Heat treatment trace							(CH4 CH5 CH6 CH7	
200 % dimensional check Others Testing mpact testing @ -46 °C mpact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Ultrasonic inspection Heat treatment trace Pressure test							0	CH4 CH5 CH6 CH7 CH8	
200 % dimensional check Others Testing Impact testing @ -46 °C Impact testing @ -196 °C Idardness survey Id C testing Idagnetic particle inspection Il trasonic inspection Ideat treatment trace Oressure test Others							0	CH4 CH5 CH6 CH7	
Cook dimensional check Others Festing Impact testing @ -46 °C Impact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Ultrasonic inspection Heat treatment trace Pressure test Others Occumentation language (default = English)							0	CH4 CH5 CH6 CH7 CH8 CHZ	
## Compact testing @ -46 °C ## Impact testing @ -46 °C ## Impact testing @ -196 °C ## Impact testing							0	CH4 CH5 CH6 CH7 CH8 CHZ	11
## Compact testing @ -46 °C ## Impact testing @ -46 °C ## Impact testing @ -196 °C ## Impact testing							0	CH4 CH5 CH6 CH7 CH8 CHZ	12
Cothers Testing Impact testing @ -46 °C Impact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Heat treatment trace Pressure test Others Cocumentation language (default = English) German talian Spanish							0	CH4 CH5 CH6 CH7 CH8 CHZ	12 13
Cook dimensional check Others Festing Impact testing @ -46 °C Impact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Heat treatment trace Pressure test Others Cocumentation language (default = English) German talian Spanish French							0	CH4 CH5 CH6 CH7 CH8 CHZ	12 13 14
Cothers Testing Impact testing @ -46 °C Impact testing @ -196 °C Hardness survey HIC testing Magnetic particle inspection Heat treatment trace Pressure test Others Cocumentation language (default = English) German talian Spanish							0	CH4 CH5 CH6 CH7 CH8 CHZ	12 13
Cook dimensional check Others Festing Impact testing @ -46 °C Impact testing @ -196 °C Identify a cook of the co							0	CH4 CH5 CH6 CH7 CH8 CHZ	12 13 14 16

Ordering information | FPD350 series L6 retractable MAPT averaging pitot tube

FPD35	50. XX	XX	XXX	XX	XX	XX	XX	(X)	K X	ΚX	XX	(X	XXX	XXX	XXX	XXX	XXX	XXX	XX	XX	XXX	XX	(XX
Product design	_																						
Low pressure retractable MAPT – 13 mm (½ in.) OD probe	L6																						
Measurement design																							
Unsupported version		E1																					
Line nominal bore																							
			050																				
DN 50 (2 in.) DN 80 (3 in.)			080																				
DN 100 (4 in.)			100																				
DN 125 (5 in.)			125																				
DN 150 (6 in.)			150																				
Others			999																				
Probe material																							
316 / 316L stainless steel				S 6																			
304 / 304L stainless steel				S 4																			
321 stainless steel				S2																			
304H stainless steel				Н4																			
310 stainless steel				S 3																			
321H stainless steel				S1																			
904L stainless steel				S9																			
Alloy C276 (UNS N010276)				U7																			
Alloy 400 (UNS N04400)				M4																			
Alloy 625 (UNS N06625) 22 % Cr duplex (UNS S31803)				N2 D1																			
25 % Cr super duplex (UNS \$32750)				D2																			
25 % Cr super duplex (UNS \$32760)				D3																			
6 % Mo SS (UNS S31254)				M1																			
Alloy 600 (UNS N06600)				U3																			
Alloy 800 (UNS N08800)				U4																			
Alloy 825 (UNS N08825)				U5																			
Others				Z 9																			
Pipe fitting material																							
Carbon steel					C3																		
316 / 316L stainless steel					S6																		
304 / 304L stainless steel					S4																		
321 stainless steel					S2																		
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6)					C4 F4																		
1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750)					D2																		
25 % Cr super duplex (UNS \$32750)					D2																		
316H stainless Steel					H6																		
304H stainless steel					H4																		
310 stainless steel					S 3																		
321H stainless steel					S1																		
904L stainless steel					S 9																		
22 % Cr Duplex (UNS S31803)					D1																		
6 % Mo SS (UNS S31254)					М1																		
Alloy 400 (UNS N04400)					M4																		
Alloy 600 (UNS N06600)					U3																		
Alloy 625 (UNS N06625)					N2																		
Alloy 800 (UNS N08800)					U4																		
Alloy 825 (UNS N08825)					U5																		
Alloy C276 (UNS N010276) Others					U7 Z9																		
Standoffs, etc																							
Standoffs, etc Threaded connection without end support						T1																	

...Ordering information | FPD350 series L6 retractable MAPT averaging pitot tube

FPD350, XX XX XX XX XX XX XX	<u>xx</u> xx	XX	XX	XX	ХX	XXX	XXX	XXX	XXX	XXX	XXX	XX	XX	XXX	XX	X
See page 35																
rocess connection type																
hreaded BSPT	T1															
hreaded NPT	T2															
Others	Z 9															
rocess connection rating																
lot flanged		Y0														
apping type																
Velded DP connections (no valves)			W1													
rhreaded DP connections (no valves)			T1													
pirect mounting head			D1													
-Valve integral (welded) manifold DM3V			D2													
-Valve integral (welded) manifold DM5V			D3													
-Valve direct-mounted (bolted) manifold 3VDM			D4													
-Valve direct-mounted (bolted) manifold 5VDM			D5													
all valves			V1													
leedle valves			V2													
iate valves			V3													
ilobe valves			V4													
ouble block and bleed valves			V5													
apping size				_												
				то												
Iot applicable 4 in. NPT male				T1												
4 in. NPT female				T2												
4 in. NP Fremale				T3												
4 in. BSP female				T4												
in. NPT male				T5												
in. NPT female				T6												
½ in. BSP male				T7												
½ in. BSP female				Т8												
½ in. socket weld				S1												
Others				Z 9												
apping / Valve material																
s probe					Y0											
16 stainless steel					S 6											
arbon steel					C 3											
lloy C276 (UNS N010276)					U7											
lloy 400 (UNS N04400)					Μ4											
2 % Cr Duplex (UNS S31803)					D1											
5 % Cr Super Duplex (UNS S32750)					D2											
thers					Z9											
ipe orientation and shape																
lorizontal, circular pipe / duct						PNH										
ertical, circular pipe / duct						PNV										
Iorizontal, rectangular pipe / duct						RNH										
ertical, rectangular pipe / duct						RNV										
rocess isolation valve																
4 in. threaded ball valve – A216 carbon steel body with 316 stainless steel trim							BC5									
4 in. threaded ball valve – stainless steel							BS5									
Sustomer supplied							VF9									
others							VZ9									
esign options								-								
pecial neck length								TP6								
acking gland material									J							
TFE (replaces the standard graphite material)									PG1							
apping sets																
wo sets										TN2						
others										TNZ						
]					

...Ordering information | FPD350 series L6 retractable MAPT averaging pitot tube

		xx xx xx xxx xxx xxx xxx xxx xxx xxx x				^^
	See page 35	See page 36				
Fitting accessories						
Duct mounting plate (in carbon steel or stainless	11 3	_	F1			
Air eliminator package – pair of stainless steel air			V1			
Air eliminator package – pair of stainless steel air	9 .	• •	V2			
Air eliminator package – pair of DZR air eliminato		The state of the s	.V3			
Air eliminator package – pair of DZR air eliminato			V4			
Pair of condensate pots in carbon steel – ½ in. BS Pair of condensate pots in carbon steel – ½ in. NI			P1 P2			
Pair of condensate pots in carbon steel – ½ in. Ni			.F2			
Pair of condensate pots in carbon steel – ½ in. be		-	.F3			
Pair of condensate pots in stainless steel – ½ in.			P5			
Pair of condensate pots in stainless steel – ½ in.			P6			
Surface treatment			•			
Oxygen cleaning Others			P1 Z9			
Certification			29			
Material certificates acc. EN 10204 3.1				C2		
Material certificates acc. EN 10204 3.2				С3		
Material certificates acc. NACE, latest revision				CN		
Dye penetrant inspection				C9		
Radiography (available on flanged units only)				C8		
Positive material identification				CA		
100 % dimensional check				C6		
Others				CZ		
Testing						
Impact testing @ -46 °C				(CH1	
Impact testing @ –196 °C					CH2	
Hardness survey					СНЗ	
HIC testing					CH4	
Magnetic particle inspection					CH5	
Ultrasonic inspection					CH6	
Heat treatment trace Pressure test					CH8	
Others					CHZ	
Documentation language (default = English)					-112	
German						м1
Italian						M2
Spanish						М3
French					-	Μ4
Chinese					- 1	М6
Others					- 1	ΜZ
Added requirements						
Material source limitations apply						

Ordering information | FPD350 series L7 retractable MAPT averaging pitot tube

Ordering information FPD350 series									_															
	FPD350. XX	XX	(X	(XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX	XXX	XXX	XXX	XXX	XX	XXX	XX	XX	XXX	XX	XXX
Product design																								
Low pressure retractable MAPT – 25 mm (1 in.) OD probe	L7																							
Measurement design		-																						
Unsupported version Supported version		E1																						
Line nominal bore																								
DN 100 (4 in.)			1	100																				
DN 125 (5 in.)				125																				
DN 150 (6 in.)			1	150																				
DN 200 (8 in.)			2	200																				
DN 250 (10 in.)				250																				
DN 300 (12 in.)				300																				
DN 350 (14 in.)				350																				
DN 400 (16 in.)				100																				
DN 450 (18 in.)				150																				
DN 500 (20 in.)				500																				
DN 600 (24 in.) DN 750 (30 in.)				500 750																				
DN 900 (36 in.)				900																				
DN 1000 (40 in.)				001																				
DN 1100 (44 in.)				101																				
DN 1200 (48 in.)				201																				
DN 1300 (52 in.)			3	301																				
DN 1400 (56 in.)			4	101																				
DN 1500 (60 in.)			5	501																				
DN 1600 (64 in.)			6	501																				
DN 1700 (68 in.)				701																				
DN 1800 (72 in.)				301																				
DN 1900 (76 in.)				901																				
DN 2000 (80 in.)				200																				
DN 2100 (84 in.)				202																				
DN 2200 (88 in.) DN 2300 (92 in.)				302																				
DN 2400 (96 in.)				102																				
DN 2500 (98 in.)				502																				
DN 2600 (102 in.)				502																				
DN 2700 (106 in.)				702																				
DN 2800 (110 in.)			8	302																				
DN 2900 (114 in.)			ç	902																				
DN 3000 (118 in.)				003																				
Others			ç	999																				
Probe material																								
316 / 316L stainless steel					S 6																			
304 / 304L stainless steel					S4																			
321 stainless steel					S2																			
304H stainless steel					H4																			
310 stainless steel 321H stainless steel					S3																			
904L stainless steel					S1 S9																			
Alloy C276 (UNS N010276)					59 U7																			
Alloy 400 (UNS N04400)					M4																			
Alloy 625 (UNS N06625)					N2																			
22 % Cr duplex (UNS S31803)					D1																			
25 % Cr super duplex (UNS S32750)					D2																			
25 % Cr super duplex (UNS \$32760)					D3																			
6 % Mo SS (UNS S31254)					М1																			
Alloy 600 (UNS N06600)					U3																			
Alloy 800 (UNS N08800)					U4																			
Alloy 825 (UNS N08825)					U5																			
Others					Z9																			
	Continued or	ne	xt	pag	ge																			

...Ordering information | FPD350 series L7 retractable MAPT averaging pitot tube

FPD350	D. XX XX XXX XX			_	_	_				XXX	XXX	XXX	XXX	XX	XXX	ХX	ХX	XXX	ХX	XX
	See page 38																			
Pipe fitting material		_																		
Carbon steel		С3																		
316 / 316L stainless steel		S6																		
304 / 304L stainless steel		S4																		
321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6)		S2 C4																		
1-\(\frac{1}{4}\) Cr-\(\frac{1}{2}\) Mo low alloy F11 (UNS K11597)		F4																		
25 % Cr super duplex (UNS \$32750)		D2																		
25 % Cr super duplex (UNS S32760)		D3																		
316H stainless Steel		Н6																		
304H stainless steel 310 stainless steel		H4																		
321H stainless steel		S3 S1																		
904L stainless steel		59																		
22 % Cr duplex (UNS S31803)		D1																		
6 % Mo SS (UNS S31254)		М1																		
Alloy 400 (UNS N04400)		M4																		
Alloy 600 (UNS N06600)		U3																		
Alloy 625 (UNS N06625) Alloy 800 (UNS N08800)		N2 U4																		
Alloy 825 (UNS N08825)		U5																		
Alloy C276 (UNS N010276)		U7																		
Others		Z9																		
Standoffs, etc																				
Threaded connection without end support			Т1																	
Threaded connection with threaded end support			T2																	
Process connection type																				
Threaded BSPT				Т1																
Threaded NPT				Т2																
Others				Z9																
Process connection rating																				
Not flanged					Y0															
Tapping type																				
Welded DP connections (no valves)						W1														
Threaded DP connections (no valves)						T1														
Direct mounting head						D1														
3-Valve integral (welded) manifold DM3V						D2														
5-Valve integral (welded) manifold DM5V 3-Valve direct-mounted (bolted) manifold 3VDM						D3 D4														
5-Valve direct-mounted (bolted) manifold 5VDM						D5														
Ball valves						V1														
Needle valves						V2														
Gate valves						٧3														
Globe valves						V4														
Double block and bleed valves						V5														
Tapping size																				
Not applicable							TO													
1/4 in. NPT male 1/4 in. NPT female							T1 T2													
1/4 in. BSP male							T3													
¼ in. BSP female							T4													
½ in. NPT male							T5													
½ in. NPT female							Т6													
½ in. BSP male							Т7													
½ in. BSP female							T8													
½ in. socket weld Others							S1 Z9													
							29													
Tapping / Valve material								V/0												
As probe 316 stainless steel								Y0 S6												
Carbon steel								C3												
Alloy C276 (UNS N010276)								U7												
Alloy 400 (UNS N04400)								M4												
22 % Cr duplex (UNS S31803)								D1												
25 % Cr super duplex (UNS S32750)								D2												
Others								Z9												
Pipe orientation and shape																				
Horizontal, circular pipe / duct									PNH											
Vertical, circular pipe / duct									PNV											
Horizontal, rectangular pipe / duct Vertical, rectangular pipe / duct									RNH											
vertical, rectallydial pipe / duct			_																	
			Cor	ntin	uec	d on	n ne	xt p	age											

...Ordering information | FPD350 series L7 retractable MAPT averaging pitot tube

See page 38 See page 39 In threaded ball valve – A216 carbon steel with 316 stainless steel trim in, threaded ball valve – stainless steel time to the transmitter steel to the transmitter steel for the transmitter steel steeps and the transmitter steel steeps and the transmitter steeps and	57 :9	5							
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at treatment trace ssure test ners								CH6	
ners								CH7	
								CH8	
								CHZ	
cumentation language (default = English)									
man									М1
ian									М2
nish									М3
nch									M4
nese									M6
ners									MZ
ded requirements terial source limitations apply									١

Ordering information | FPD350 series H6 retractable MAPT averaging pitot tube

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Product design																						
High pressure retractable MAPT – 13 mm (1/2 in.) OD probe	Н6																					
Measurement design																						
Unsupported version	Е	1																				
Line nominal bore																						
		05	1																			
DN 50 (2 in.) DN 80 (3 in.)		08																				
DN 100 (4 in.)		10																				
DN 125 (5 in.)		12																				
DN 150 (6 in.)		15	0																			
Others		99	9																			
Probe material																						
316 / 316L stainless steel			S6	5																		
304 / 304L stainless steel			S4	l l																		
321 stainless steel			S2	2																		
304H stainless steel			H4																			
310 stainless steel			S3																			
321H stainless steel			S1																			
904L stainless steel			S9 U7																			
Alloy C276 (UNS N010276) Alloy 400 (UNS N04400)			M ²																			
Alloy 625 (UNS N06625)			N2																			
22 % Cr duplex (UNS S31803)			D1																			
25 % Cr super duplex (UNS S32750)			D2																			
25 % Cr super duplex (UNS S32760)			D3																			
6 % Mo SS (UNS S31254)			M1	ι																		
Alloy 600 (UNS N06600)			U3	3																		
Alloy 800 (UNS N08800)			U4																			
Alloy 825 (UNS N08825)			U5																			
Others			Z9	9																		
Pipe fitting material																						
Carbon steel				C3																		
316 / 316L stainless steel				S6																		
304 / 304L stainless steel				S4																		
321 stainless steel	222.6".6\			S2																		
Low temperature carbon steel (A350 LF2 C1/A	333 Gr 6)			C4 F4																		
1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750)				D2																		
25 % Cr super duplex (UNS \$32750)				D3																		
316H stainless Steel				H6																		
304H stainless steel				Н4																		
310 stainless steel				S 3																		
321H stainless steel				S1																		
904L stainless steel				S 9																		
22 % Cr Duplex (UNS S31803)				D1																		
6 % Mo SS (UNS S31254)				M1																		
Alloy 400 (UNS N04400)				M4																		
Alloy 600 (UNS N06600)				U3																		
Alloy 625 (UNS N06625)				N2																		
Alloy 836 (UNS N08800)				U4																		
Alloy 825 (UNS N08825) Alloy C276 (UNS N010276)				U5 U7																		
Others				Z9																		
Standoffs, etc																						
Threaded connection without end support					T1																	
						1			1									1				1
Flanged Standoff without end support					F1																	

...Ordering information | FPD350 series H6 retractable MAPT averaging pitot tube

FPD350. XX	XX XXX XX XX XX XX	XX	XX	XX	XX	XXX	XX	XX	XXX	XX	(X)							
	See page 41																	
Process connection type																		
Threaded BSPT	T1																	
Threaded BSFT	T2																	
Raised face DN 40 (1½ in.)	R4																	
Raised face DN 40 (172 III.)	R5																	
	F4																	
Flat face DN 40 (1½ in.)	F4 F5																	
Flat face DN 50 (2 in.) RTJ 1½ in.	J2																	
RTJ 2 in.	J3																	
Others	Z9																	
Process connection rating																		
Not flanged		Y0																
ASME Class 150		Α1																
ASME Class 300		А3																
ASME Class 600		Α6																
Others		Z 9																
Tapping type			-															
Flanged DP connections (no valves)			F1															
Welded DP connections (no valves)			W1															
Threaded DP connections (no valves)			T1															
Direct mounting head			D1															
3-Valve integral (welded) manifold DM3V			D2															
5-Valve integral (welded) manifold DM5V			D3															
3-Valve direct-mounted (bolted) manifold 3VDM			D4															
5-Valve direct-mounted (bolted) manifold 5VDM			D5															
Ball valves			V1															
Needle valves			V2															
Gate valves			VZ V3															
Globe valves			۷3 V4															
Double block and bleed valves			V4 V5															
			V 5															
Tapping size																		
Not applicable				TO														
¼ in. NPT male				Τ1														
¼ in. NPT female				T2														
¼ in. BSP male				Т3														
¼ in. BSP female				T4														
½ in. NPT male				T5														
½ in. NPT female				Т6														
½ in. BSP male				T7														
½ in. BSP female				T8														
½ in. flanged (specification as mounting flange)				F1														
3/4 in. flanged (specification as mounting flange)				F2														
½ in. socket weld				S1														
Others				Z 9														
Tapping / Valve material]													
As probe					Y0													
316 stainless steel					56													
Carbon steel					C3													
					U7													
Alloy C276 (UNS N010276)																		
Alloy 400 (UNS N04400)					M4													
22 % Cr Duplex (UNS \$31803)					D1													
25 % Cr Super Duplex (UNS S32750) Others					D2 Z9													
					29													
Pipe orientation and shape																		
Horizontal, circular pipe / duct						PNH												
Vertical, circular pipe / duct						PNV												
Horizontal, rectangular pipe / duct						RNH												
						RNV			1		1	1		1	1			1

...Ordering information | FPD350 series H6 retractable MAPT averaging pitot tube

FPD350. XX XXX XX X	XXX	XXX	XXX	XXX	XXX	XXX	XXX	ХX	ХX	XXX	ХX	X)
See page 41 See page 42												
Process isolation valve												
11/4 in. threaded ball valve – A216 carbon steel with 316 stainless steel trim	вс7											
	BC8											
<u> </u>	BC6											
	BS7											
1½ in. flanged ball valve – stainless steel	BS8											
	BS6											
=	вм8											
2 in. flanged ball valve – Alloy 400	вм6											
1½ in. flanged ball valve – Alloy 276	вн8											
2 in. flanged ball valve – Alloy 276	вн6											
1½ in. flanged ball valve – aluminium-bronze	BA8											
2 in. flanged ball valve – aluminium-bronze	BA6											
$1\frac{1}{2}$ in. flanged gate valve – A216 carbon steel with 316 stainless steel trim	GC8											
2 in. flanged gate valve – A216 carbon steel with 316 stainless steel trim	GC6											
1½ in. flanged gate valve – stainless steel	GS8											
2 in. flanged gate valve – stainless steel	GS6											
Customer supplied	VF9											
Others	VZ9											
Design options		_										
Gear retract		TP4										
Special neck length		TP6										
Packing gland material												
PTFE (replaces the standard graphite material)			PG1									
Tapping sets												
Two sets				TN2								
Others				TNZ								
Bolt type and material					J							
ASTM A193 B7 / ASTM A194 2H					BGC							
ASTM A193 B8M / ASTM A194 8MA					BGS							
Others					BZ9							
Gasket material					DL 3							
Asbestos-free 1.6 mm						GT1						
Spiral wound – stainless steel windings with carbon steel outer; 4.5 mm						GT2						
Soft Iron						GP3						
Others						GZ9						
Fitting accessories												
							FC1					
Frequency collar Air eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)	`						AV1					
Air eliminator package – pair of stainless steel air eliminators, no vaives of rittings (supplied loose). Air eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose).							AV1					
Air eliminator package – pair of stanness steer air eliminators with valves and fittings (supplied loose) Air eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)	/3C)						AV2					
Air eliminator package – pair of DZR air eliminators with valves and fittings for seawater application	ne (e	-unnl	ا لموا	رموما			AV4					
Pair of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)) CI I	suppi	ieu iu	1036)			CP1					
Pair of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose)							CP2					
Pair of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)							CP3					
Pair of condensate pots in stainless steel – 1/2 in. BSPTF tappings (supplied loose)							CP4					
Pair of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose)							CP5					
Pair of condensate pots in stainless steel – ½ in. butt weld Schedule 160 tappings (supplied loose)							CP6					
Surface treatment												
Oxygen cleaning								P1				
												1
Others								Z9				

...Ordering information | FPD350 series H6 retractable MAPT averaging pitot tube

FPD350.)	XX XX XXX XX XX XX	XX XX XX XX XX XXX X	xx xxx xxx xxx xxx xxx xx xx xx	x xxx xx
	See page 41	See page 42	See page 43	
Certification				
Material certificates acc. EN 10204 3.1			C	2
Material certificates acc. EN 10204 3.2			C	3
Material certificates acc. NACE, latest revision			CI	N
Dye penetrant inspection			CS	9
Radiography (available on flanged units only)			C	8
Positive material identification			CA	Α
100 % dimensional check			CE	6
Others			C	Z
Testing				_
Impact testing @ -46 °C				CH1
Impact testing @ -196 °C				CH2
Hardness survey				CH3
HIC testing				CH4
Magnetic particle inspection				CH5
Ultrasonic inspection				CH6
Heat treatment trace				CH7
Pressure test				CH8
Others				CHZ
Documentation language (default = English)				
German				M1
Italian				M2
Spanish				М3
French				M4
Chinese				М6
Others				MZ
Added requirements				
Material source limitations apply				

Ordering information | FPD350 series H7 retractable MAPT averaging pitot tube

Ordering information FPD35	FPD350. XX						_			_		XXX	XXX	XXX	XXX	XX	XXX	XX	XX	XXX	хх	XXX
Product design	1			-				-														
High pressure retractable MAPT – 25 mm (1 in.) OD probe	H7																					
Measurement design		l																				
Unsupported version		E1																				
Supported version		E2																				
Line nominal bore																						
DN 100 (4 in.)			100																			
DN 125 (5 in.)			125																			
DN 150 (6 in.)			150																			
DN 200 (8 in.)			200																			
DN 250 (10 in.)			250																			
DN 300 (12 in.)			300																			
DN 350 (14 in.) DN 400 (16 in.)			350 400																			
DN 450 (18 in.)			450																			
DN 500 (20 in.)			500																			
DN 600 (24 in.)			600																			
DN 750 (30 in.)			750																			
DN 900 (36 in.)			900																			
DN 1000 (40 in.)			001																			
DN 1100 (44 in.)			101																			
DN 1200 (48 in.) DN 1300 (52 in.)			201 301																			
DN 1400 (56 in.)			401																			
DN 1500 (60 in.)			501																			
DN 1600 (64 in.)			601																			
DN 1700 (68 in.)			701																			
DN 1800 (72 in.)			801																			
DN 1900 (76 in.)			901																			
DN 2000 (80 in.)			002																			
DN 2100 (84 in.)			102 202																			
DN 2200 (88 in.) DN 2300 (92 in.)			302																			
DN 2400 (96 in.)			402																			
DN 2500 (98 in.)			502																			
DN 2600 (102 in.)			602																			
DN 2700 (106 in.)			702																			
DN 2800 (110 in.)			802																			
DN 2900 (114 in.)			902																			
DN 3000 (118 in.)			003																			
Others			999																			
Probe material				_																		
316 / 316L stainless steel				S6																		
304 / 304L stainless steel 321 stainless steel				S4 S2																		
304H stainless steel				52 H4																		
310 stainless steel				S3																		
321H stainless steel				S1																		
904L stainless steel				S 9																		
Alloy C276 (UNS N010276)				U7																		
Alloy 400 (UNS N04400)				Μ4																		
Alloy 625 (UNS N06625)				N2																		
22 % Cr duplex (UNS \$31803)				D1																		
25 % Cr super duplex (UNS \$32750) 25 % Cr super duplex (UNS \$32760)				D2 D3																		
6 % Mo SS (UNS S31254)				D3 М1																		
Alloy 600 (UNS N06600)				U3																		
Alloy 800 (UNS N08800)				U4																		
Alloy 825 (UNS N08825)				U5																		
Others				Z 9																		
	Continued on	nex	t pag																			

...Ordering information | FPD350 series H7 retractable MAPT averaging pitot tube

316 / 316L stainless steel 304 / 304L stainless steel 321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-½ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 125 % Cr super duplex (UNS S32760) 1316H stainless Steel 304H stainless steel 310 stainless steel 321H stainless steel	C3 S56 S54 S52 C4 F54 D2 D3 H6 H4 S3											
Pipe fitting material Carbon steel 31.6 / 31.6L stainless steel 30.4 / 30.4L stainless steel 32.1 stainless steel Low temperature carbon steel (A3.50 LF2 C1/A3.33 Gr 6) 1-1/4 Cr-1/2 Mo low alloy F11 (UNS K11.597) 25 % Cr super duplex (UNS S3.2750) 25 % Cr super duplex (UNS S3.2760) 31.6H stainless Steel 30.4H stainless steel 31.0 stainless steel 32.1H stainless steel 32.1H stainless steel	S6 S4 S2 C4 F4 D2 D3 H6											
Carbon steel 316 / 316L stainless steel 304 / 304L stainless steel 321 stainless steel 321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-½ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 25 % Cr super duplex (UNS S32760) 316H stainless Steel 304H stainless steel 321H stainless steel 321H stainless steel	S6 S4 S2 C4 F4 D2 D3 H6											
316 / 316L stainless steel 304 / 304L stainless steel 321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-½ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 125 % Cr super duplex (UNS S32760) 1316H stainless Steel 304H stainless steel 310 stainless steel 321H stainless steel	S6 S4 S2 C4 F4 D2 D3 H6											
304 / 304L stainless steel 321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 1316H stainless Steel 330 stainless steel 321H stainless steel 904L stainless steel	S4 S2 C4 F4 D2 D3 H6											
321 stainless steel Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 25 % Cr super duplex (UNS S32760) 316H stainless Steel 310 stainless steel 321H stainless steel 904L stainless steel	S2 C4 F4 D2 D3 H6											
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) 1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 25 % Cr super duplex (UNS S32760) 316H stainless Steel 310 stainless steel 321H stainless steel 904L stainless steel	C4 F4 D2 D3 H6 H4											
1-¼ Cr-½ Mo low alloy F11 (UNS K11597) 25 % Cr super duplex (UNS S32750) 125 % Cr super duplex (UNS S32760) 1316H stainless Steel 1304H stainless steel 1310 stainless steel 1321H stainless steel 1904L stainless steel	F4 D2 D3 H6 H4											
25 % Cr super duplex (UNS S32750) 25 % Cr super duplex (UNS S32760) 316H stainless Steel 304H stainless steel 310 stainless steel 321H stainless steel 904L stainless steel	D2 D3 H6 H4											
25 % Cr super duplex (UNS S32760) 316H stainless Steel 304H stainless steel 310 stainless steel 321H stainless steel 904L stainless steel	D3 H6 H4											
316H stainless Steel 304H stainless steel 310 stainless steel 321H stainless steel 904L stainless steel	H6 H4											
304H stainless steel 310 stainless steel 321H stainless steel 904L stainless steel	H4											
310 stainless steel 321H stainless steel 904L stainless steel												
321H stainless steel 904L stainless steel												
	S1											
	S 9											
22 % Cr duplex (UNS S31803)	D1											
6 % Mo SS (UNS S31254)	М1											
	М4											
Alloy 600 (UNS N06600)	U3											
Alloy 625 (UNS N06625)	N2											
Alloy 800 (UNS N08800)	U4											
Alloy 825 (UNS N08825)	U5											
Alloy C276 (UNS N010276)	U7											
Others :	Z9											
Standoffs, etc												
Threaded connection without end support	7	1										
Threaded connection with threaded end support		2										
Flanged standoff without end support		1										
= ::		2										
Flanged standoff with weld cup end support		3										
2 flanged standoffs and external flanged end support												
2 flanged standoffs and internal flanged end support		4										
External flanged end support only (no standoffs supplied)		5										
Internal flanged end support only (no standoffs supplied)		6										
Customer supplied (versions without flanged end supports)		7										
Customer supplied (versions with flanged end supports)	F	8										
Process connection type					١.							
Threaded BSPT		Т	1									
Threaded NPT		T	2									
Raised face DN 40 (1½ in.)		R										
Raised face DN 50 (2 in.)		R										
Raised face DN 80 (3 in.)		R										
Flat face DN 40 (1½ in.)		F										
Flat face DN 50 (2 in.)		F:										
Flat face DN 80 (3 in.)		F										
RTJ DN 40 (1½ in.)		J										
RTJ DN 50 (2 in.)		J										
RTJ DN 80 (3 in.)		J										
Others		Z										
Process connection rating												
Not flanged			YC									
ASME Class 150			A1									
ASME Class 300			A3	3								
ASME Class 600			A									
Others			ZS	9								
Tapping type												
Flanged DP connections (no valves)				F1								
Welded DP connections (no valves)				W1								
Threaded DP connections (no valves)				T1								
Direct mounting head				D1								
				D2								
3-Valve integral (welded) manifold DM3V				D2								
5-Valve integral (welded) manifold DM5V												
3-Valve direct-mounted (bolted) manifold 3VDM				D4								
5-Valve direct-mounted (bolted) manifold 5VDM				D5								
Ball valves				V1								
Needle valves				V2								
Gate valves				V3								
Globe valves				V4								
Double block and bleed valves				V5								
Contin	nued	on r	next	page								

...Ordering information | FPD350 series H7 retractable MAPT averaging pitot tube

FPD350. XX		X XXX	XXX	XXX	XXX	XXX	XXX	XXX	ХX	XXX	ХX	хх	XXX	ХX	ХX
See page 45 See page 46	7 "														
Tapping size	_														
Not applicable	то														
¼ in. NPT male	T1														
1/4 in. NPT female	T2														
¼ in. BSP male	Т3														
¼ in. BSP female	T4														
½ in. NPT male	T5														
½ in. NPT female	T6														
½ in. BSP male	T7														
½ in. BSP female	T8														
½ in. flanged (specification as mounting flange)	F1														
3/4 in. flanged (specification as mounting flange)	F2														
½ in. socket weld	S1														
Others	Z9														
Tapping / Valve material															
As probe	Y														
316 stainless steel	S														
Carbon steel	C														
Alloy C276 (UNS N010276)	U														
Alloy 400 (UNS N04400)	М														
22 % Cr duplex (UNS S31803) 25 % Cr super duplex (UNS S32750)	D														
25 % Cr super duplex (UNS S32750) Others	D Z														
Pipe orientation and shape		D													
Horizontal, circular pipe / duct		PNF													
Vertical, circular pipe / duct		PNV													
Horizontal, rectangular pipe / duct		RNF													
Vertical, rectangular pipe / duct		RNV													
Process isolation valve															
1¼ in. threaded ball valve – A216 carbon steel with 316 stainless steel trim			BC7												
1¼ in. threaded ball valve – stainless steel			BS7												
1½ in. flanged ball valve – A216 carbon steel with 316 stainless steel trim			BC8												
1½ in. flanged ball valve – Alloy 276			BH8												
1½ in. flanged ball valve – Alloy 400			BM8												
1½ in. flanged ball valve – aluminium-bronze			BA8												
1½ in. flanged ball valve – stainless steel			BS8												
1½ in. flanged gate valve – A216 carbon steel with 316 stainless steel trim			GC8												
1½ in flanged gate valve – stainless steel			GS8												
2 in. flanged ball valve – A216 carbon steel with 316 stainless steel trim 2 in. flanged ball valve – Alloy 276			BC6 BH6												
2 in. flanged ball valve – Alloy 400			BM6												
2 in. Hanged ball valve – Alloy 400 2 in. flanged ball valve – aluminium-bronze			BA6												
2 in. flanged ball valve – additionable bronze			BS6												
2 in. flanged gate valve – A216 carbon steel with 316 stainless steel trim			GC6												
2 in. flanged gate valve – stainless steel			GS6												
3 in. flanged ball valve – A216 carbon steel with 316 stainless steel trim			BC9												
3 in. flanged ball valve – Alloy 276			BH9												
3 in. flanged ball valve – Alloy 400			BM9												
3 in. flanged ball valve – aluminium-bronze			BA9												
3 in. flanged ball valve – stainless steel			BS9												
3 in. flanged gate valve – A216 carbon steel with 316 stainless steel trim			GC9												
3 in. flanged gate valve – stainless steel			GS9												
Customer supplied			VF9												
Others			VZ9												
Design options															
Partial insertion probe				TP2											
Gear retract				TP4											
Bidirectional				TP5											
Special neck length				TP6											
Packing gland material															
PTFE (replaces the standard graphite material)					PG1										
Tapping sets															
Two sets						TN2									
Others						TNZ									
								1	1						
Bolt type and material															
Bolt type and material ASTM A193 B7 / ASTM A194 2H							BGC								
							BGC BGS								
ASTM A193 B7 / ASTM A194 2H															

...Ordering information | FPD350 series H7 retractable MAPT averaging pitot tube

FPD350. XX XX XXX XX XX XX XX XX XX XX XX XX X	XXX XXX XXX	AA AAA		^ ^^^	^^
See page 45 See page 46 See page 47					
asket material					
sbestos-free 1.6 mm	GT1				
piral wound – stainless steel windings with carbon steel outer; 4.5 mm oft Iron	GT2 GP3				
Ottion	GZ9				
· · · · · · · · · · · · · · · · · · ·	G23				
emperature element – operating pressure limited to maximum of 70 bar (1015 psi)					
ntegral PT100 sensor, neck mounted – aluminium IP65 head without transmitter		T1			
ntegral PT100 sensor, neck mounted – aluminium IP65 head with transmitter Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head without transmitter		T2 T3			
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head with transmitter		T4			
ntegral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter		T5			
Ex ia integral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter		Т6			
itting accessories					
uct mounting plate (in carbon steel or stainless steel to match pipe fitting material)					
lotted ports		DF1			
ir eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)		SH1			
ir eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose)		AV1 AV2			
ir eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)		AV2			
ir eliminator package – pair of DZR air eliminators with valves and fittings for seawater applications (supplied	I	AV4			
pose)		CP1			
air of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)		CP2			
air of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose) air of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)		CP3			
air of condensate pots in carbon steel = ½ in. BSPTF tappings (supplied loose)		CP4			
air of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose)		CP5			
air of condensate pots in stainless steel – ½ in. butt weld Schedule 160 tappings (supplied loose)		CP6			
urface treatment			-		
oxygen cleaning			P1		
Others			Z9		
ertification					
faterial certificates acc. EN 10204 3.1			C	2	
laterial certificates acc. EN 10204 3.2			C		
laterial certificates acc. NACE, latest revision			CI		
ye penetrant inspection			C		
adiography (available on flanged units only) ositive material identification			C:		
00 % dimensional check			C		
ob 76 differsional check			C		
esting					
npact testing @ -46 °C				CH1	
npact testing @ -196 °C				CH2	
ardness survey				CH3	
IC testing				CH4	.
lagnetic particle inspection				CH5	
ltrasonic inspection				CH6	
eat treatment trace				CH7	
ressure test				CH8	
thers				CHZ	
ocumentation language (default = English)					
erman					M1
alian					M2
panish rench					M3
rencn hinese					M4 M6
Others					MZ
dded requirements					
agea requirements					

Ordering information | FPD350 series H8 retractable MAPT averaging pitot tube

	FPD350. XX	хх	XXX	X	(XX	ХX	ХX	ХX	XX	хх	XX	XXX	(XX	XXX	ХX	ХX	XXX	ХX	XXX						
Product design																									
High pressure retractable MAPT – 60 mm (2 in.) OD probe	Н8																								
Measurement design																									
Unsupported version		E1																							
Supported version		E2																							
Line nominal bore																									
DN 250 (10 in.)			250																						
DN 300 (12 in.)			300																						
DN 350 (14 in.)			350																						
DN 400 (16 in.)			400																						
DN 450 (18 in.)			450																						
DN 500 (20 in.)			500																						
DN 600 (24 in.)			600																						
DN 750 (30 in.)			750																						
DN 900 (36 in.)			900																						
DN 1000 (40 in.)			001																						
DN 1100 (44 in.)			101 201																						
DN 1200 (48 in.) DN 1300 (52 in.)			301																						
DN 1400 (56 in.)			401																						
DN 1500 (60 in.)			501																						
DN 1600 (64 in.)			601																						
DN 1700 (68 in.)			701																						
DN 1800 (72 in.)			801																						
DN 1900 (76 in.)			901																						
DN 2000 (80 in.)			002																						
DN 2100 (84 in.)			102																						
DN 2200 (88 in.)			202																						
DN 2300 (92 in.)			302																						
DN 2400 (96 in.)			402																						
DN 2500 (98 in.) DN 2600 (102 in.)			502 602																						
DN 2700 (106 in.)			702																						
DN 2800 (110 in.)			802																						
DN 2900 (114 in.)			902																						
DN 3000 (118 in.)			003																						
Others			999																						
Probe material				_																					
316 / 316L stainless steel				S	5																				
304 / 304L stainless steel				S																					
321 stainless steel				Sã	2																				
304H stainless steel				H	1																				
310 stainless steel				S																					
321H stainless steel				SI																					
904L stainless steel				S																					
Alloy C276 (UNS N010276)				U.																					
Alloy 400 (UNS N04400)				M																					
Alloy 625 (UNS N06625)				N:																					
22 % Cr duplex (UNS S31803) 25 % Cr super duplex (UNS S32750)				D:																					
25 % Cr super duplex (UNS \$32760)				D:																					
6 % Mo SS (UNS S31254)				М.																					
Alloy 600 (UNS N06600)				U.																					
Alloy 800 (UNS N08800)				U																					
Alloy 825 (UNS N08825)				U!																					
Others				Z																					
	Continued on	na	vt na	<u></u>																					

...Ordering information | FPD350 series H8 retractable MAPT averaging pitot tube

FPD350. XX XX XX XX XX	XX	XX	XX	XX	XX	ХX	XXX	XX	XXX	XX	(X X	(XX	ХX	XX						
See page 49																				
Pipe fitting material																				
Carbon steel C	:3																			
316 / 316L stainless steel	6																			
304 / 304L stainless steel	4																			
321 stainless steel S																				
Low temperature carbon steel (A350 LF2 C1/A333 Gr 6) C																				
1-1/4 Cr-1/2 Mo low alloy F11 (UNS K11597) F	4																			
25 % Cr super duplex (UNS S32750) D																				
	3																			
316H stainless Steel H	-																			
304H stainless steel H																				
	3																			
321H stainless steel S																				
	9																			
22 % Cr duplex (UNS S31803) D	-																			
6 % Mo SS (UNS S31254)																				
,	14																			
Alloy 600 (UNS N06600) U																				
Alloy 625 (UNS N06625) N	12																			
Alloy 800 (UNS N08800) U																				
Alloy 825 (UNS N08825) U	15																			
Alloy C276 (UNS N010276) U	17																			
	9																			
Standoffs, etc																				
Flanged standoff without end support	F1																			
Flanged standoff with weld cup end support	F2																			
2 flanged standoffs and external flanged end support	F3																			
2 flanged standoffs and internal flanged end support	F4																			
External flanged end support only (no standoffs supplied)	F5																			
Internal flanged end support only (no standoffs supplied)	F6																			
Customer supplied (versions without flanged end supports)	F7																			
Customer supplied (versions with flanged end supports)	F8																			
Process connection type																				
Raised face DN 80 (3 in.)		R6	i																	
RTJ DN 80 (3 in.)]4	.																	
Flat face DN 80 (3 in.)		F6	5																	
ASME Class 150		Α1	.																	
ASME Class 300		А3	:																	
Others		Z 9																		
Process connection rating																				
ASME Class 150			A1																	
ASME Class 300			A3																	
Others			Z9																	
Fapping type																				
Flanged DP connections (no valves)				F1																
Welded DP connections (no valves)				W1																
Threaded DP connections (no valves)				T1																
Direct mounting head				D1																
3-Valve integral (welded) manifold DM3V				D2																
5-Valve integral (welded) manifold DM5V				D3																
3-Valve direct-mounted (bolted) manifold 3VDM				D4																
5-Valve direct-mounted (bolted) manifold 5VDM				D5																
Ball valves				V1																
Needle valves				V2																
Gate valves				٧3																
Globe valves				V4																
Double block and bleed valves				V5																
		_						1	1	1	1	1		1		1 1				

...Ordering information | FPD350 series H8 retractable MAPT averaging pitot tube

FPD350. XX XX XXX XX XX XX XX XX XX XX XX	xx xx x	XX	XX	XXX	XXX	XXX	XXX	XXX	XXX	XX	XXX	XX	XX	XXX	XX
See page 49 See page 50															
Tapping size															
Not applicable	то														
¼ in. NPT male	T1														
¼ in. NPT female	T2														
¼ in. BSP male	Т3														
¼ in. BSP female	T4														
½ in. NPT male	T5														
½ in. NPT female	T6														
½ in. BSP male	T7														
½ in. BSP female	T8 F1														
½ in. flanged (specification as mounting flange) ¾ in. flanged (specification as mounting flange)	F1 F2														
½ in. socket weld	S1														
Others	Z9														
Tapping / Valve material															
As probe	Y	0													
316 stainless steel	S														
Carbon steel	C														
Alloy C276 (UNS N010276)	U.														
Alloy 400 (UNS N04400)	M														
22 % Cr duplex (UNS S31803)	D:	1													
25 % Cr super duplex (UNS S32750)	Di	2													
Others	Z	9													
Pipe orientation and shape													ĺ		
Horizontal, circular pipe / duct		P١	NH												
Vertical, circular pipe / duct		P١	NV												
Horizontal, rectangular pipe / duct		R۱	NH												
Vertical, rectangular pipe / duct		R۱	NV												
Process isolation valve															
3 in. flanged ball valve – A216 carbon steel with 316 stainless steel trim				BC9											
3 in. flanged ball valve – stainless steel				BS9											
3 in. flanged gate valve – A216 carbon steel with 316 stainless steel trim				GC9											
3 in. flanged gate valve – stainless steel				GS9											
3 in. flanged ball valve – Alloy 400				BM9											
3 in. flanged ball valve – aluminium-bronze				BA9											
3 in. flanged ball valve – Alloy 276				BH9 VF9											
Customer supplied Others				VZ9											
Design options				V 23											
Partial insertion probe					TP2										
Gear retract					TP4										
Bidirectional					TP5										
Special neck length					TP6										
Packing gland material						_									
PTFE (replaces the standard graphite material)						PG1									
Tapping sets															
Two sets							TN2								
Others							TNZ								
Bolt type and material															
ASTM A193 B7 / ASTM A194 2H								BGC							
ASTM A193 B7 / ASTM A194 2H ASTM A193 B8M / ASTM A194 8MA								BGS							
Others								BZ9							
Gasket material															
									CT-						
Asbestos-free 1.6 mm									GT1						
Spiral wound – stainless steel windings with carbon steel outer; 4.5 mm									GT2						
Soft Iron									GP3 GZ9						
Others															

...Ordering information | FPD350 series H8 retractable MAPT averaging pitot tube

FPD350. XX XX XXX XX XX XX XX XX XX XX XX XX X	XX X	ххх	x x	XXX	XX
See page 49 See page 50 See page 51					
emperature element – operating pressure limited to maximum of 70 bar (1015 psi)					
tegral PT100 sensor, neck mounted – aluminium IP65 head without transmitter	T1				
tegral PT100 sensor, neck mounted – aluminium IP65 head with transmitter	T2				
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head without transmitter	T3				
Ex ia integral PT100 sensor, neck mounted – aluminium IP65 head with transmitter	T4				
tegral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter	T5				
Ex ia integral type K thermocouple sensor, neck mounted – aluminium IP65 head with transmitter	T6				
itting accessories					
ir eliminator package – pair of stainless steel air eliminators, no valves or fittings (supplied loose)	A'	V1			
ir eliminator package – pair of stainless steel air eliminators with valves and fittings (supplied loose)	A'	V2			
ir eliminator package – pair of DZR air eliminators for seawater applications (supplied loose)	A'	V3			
ir eliminator package – pair of DZR air eliminators with valves and fittings for seawater applications (supplied loose)	A'	V4			
air of condensate pots in carbon steel – ½ in. BSPTF tappings (supplied loose)	C	P1			
air of condensate pots in carbon steel – ½ in. NPT tappings (supplied loose)	C	P2			
air of condensate pots in carbon steel – ½ in. butt weld Schedule 160 tappings (supplied loose)	C	P3			
air of condensate pots in stainless steel – ½ in. BSPTF tappings (supplied loose)	C	P4			
air of condensate pots in stainless steel – ½ in. NPT tappings (supplied loose)	C	P5			
air of condensate pots in stainless steel – ½ in. butt weld Schedule 160 tappings (supplied loose)	C	P6			
urface treatment					
xygen cleaning		Р	1		
thers		Z	9		
ertification					
laterial certificates acc. EN 10204 3.1			C	2	
laterial certificates acc. EN 10204 3.2			C	3	
laterial certificates acc. NACE, latest revision			CI	1	
ye penetrant inspection			C)	
adiography			C	3	
ositive material identification			C	4	
00 % dimensional check			C	5	
thers			CZ	7	
esting					
npact testing @ -46 °C				CH1	
npact testing @ –196 °C				CH2	
ardness survey				CH3	
IC testing				CH4	
lagnetic particle inspection				CH5	
ltrasonic inspection				CH6	
eat treatment trace				CH7	
ressure test				CH8	
thers				CHZ	
ocumentation language (default = English)					
erman					М1
alian					M2
panish					М3
rench					Μ4
hinese					М6
thers					ΜZ
dded requirements					

Notes

Notes



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