

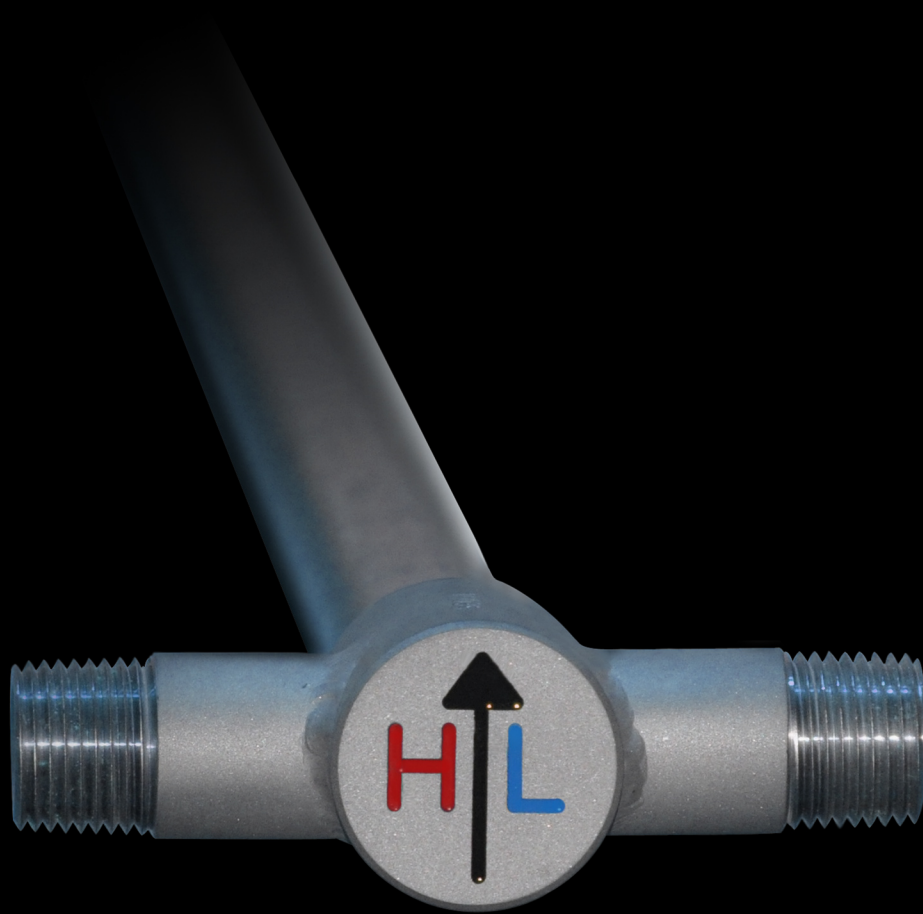
Flow Measuring Element

Differential Pressure - low loss

FMD



AptiFlow Industrial Flow Meter



For Liquids, Gas and Steam

Aptiflow is a universal flow meter designed to measure liquids, gases, and vapours in a wide range of applications.

Wide Ranging

Aptiflow can be used in a wide range of processes and conditions. From high vacuum to high pressure, and sub-zero to 1000 Deg C with selected materials.

Flexible Design

Aptiflow can be engineered to produce solutions for difficult applications. Elements may be machined from solid for high mechanical integrity, made as two piece sections for very large duct diameters (over 6m), headless for fully enclosed installations, and dual manifolds for stacked transmitters.

Economical

Aptiflow provides a low cost solution for measurement in large diameter pipes or ducts:

- **Low permanent pressure loss** - energy lost with use is minimal
- **Robust construction** - long service life and virtually impossible to wear out
- **Negligible wear** - long term stability with zero drift or degradation.



Construction

Aptiflow is manufactured from fully traceable 316L stainless steel (as standard), with options for manufacture in:

304 St Stl	Alloy 400	Duplex St Stl	Inconel 625
321 St Stl	Hastelloy C & B2	Super Duplex	90 / 10 Cu Ni
310 St Stl	6 Mo	Titanium Gr 2	Polypropylene

Quality Assurance

Aptiflow is manufactured under strict Quality Assurance

- ISO 9000 Quality Control
- CE Directive (97/23/EC)
- ASME IX welding

NACE certification, post weld heat treatment, and full NDE is also available.

Every **Aptiflow** is subjected to a post manufacture pressure test to confirm mechanical integrity.



Welding Bay



Fitting Area



Final Inspection

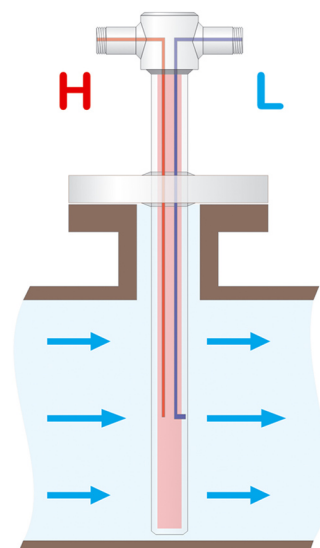
Principle of Operation

AptiFlow generates a differential pressure when placed in the path of a flowing fluid.

The magnitude of the differential pressure generated is a function of the fluid's mean axial velocity, density and the characteristics of the **AptiFlow** probe, commonly referred to as its k-factor.

The differential pressure generated is sensed via the **HP** and **LP** ports and connected to a suitable measuring gauge or transmitter. The instantaneous flow rate can then be derived from the differential pressure.

AptiFlow models 25, 40, and 60 have an internal **HP** tube that further averages any distortion in the flow profile and helps to provide **AptiFlow**'s excellent performance even when installed in the plane of a close upstream bend.

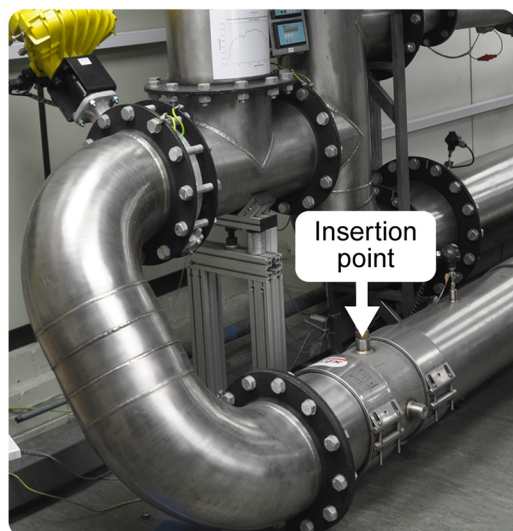


Application-Friendly

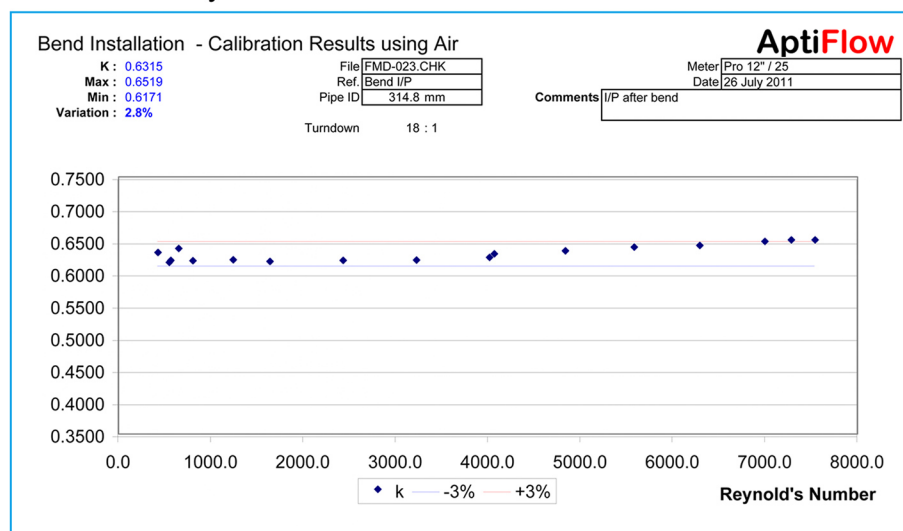
AptiFlow was tested in a flowmeter calibration facility on a 300mm NB pipeline with a "T"-piece and then two 90 Degree bends immediately upstream of the insertion point. The change and overall variation of the k-factor (and therefore overall accuracy) was less than +/- 3% over a turndown greater than 17:1

Difficult Installation

T and two bends

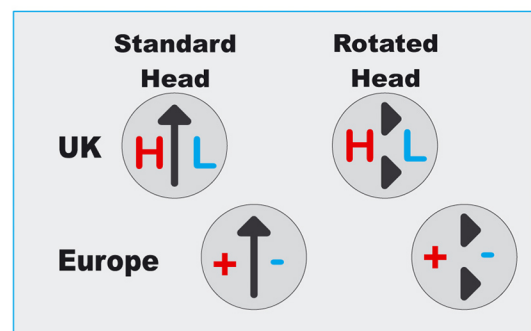


k-factor vs Reynold's number



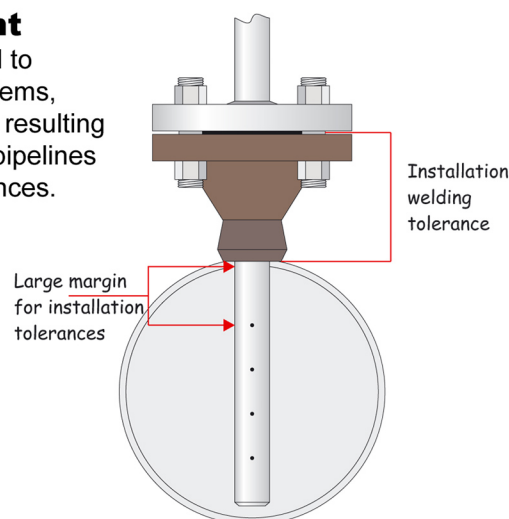
Clear Marking

AptiFlow has distinctive head marking to assist installation, correct orientation and helps eliminate commissioning problems such as reversed DP connections.

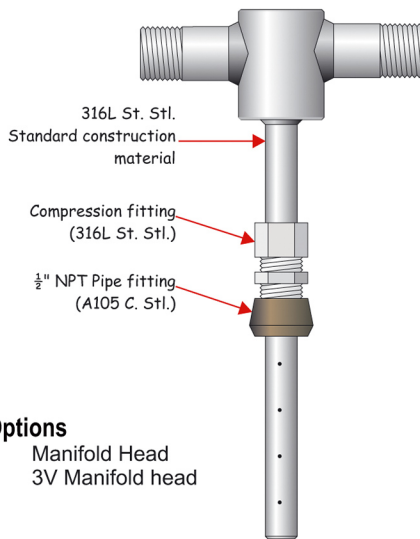


Installation Tolerant

AptiFlow has been designed to accommodate real world problems, such as growth or shrinkage resulting from site welding, ovality of pipelines and standard pipeline tolerances.



13TS 13mm Threaded Single Support



Options

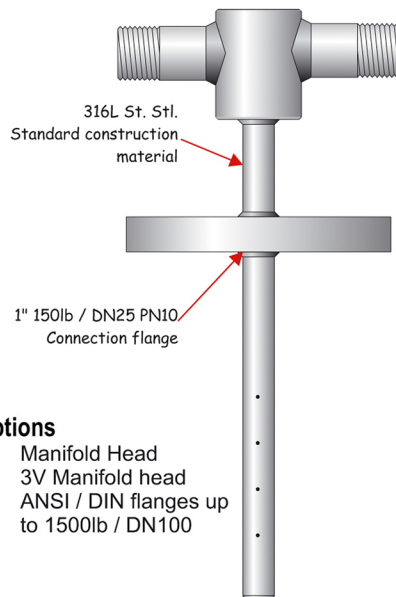
Manifold Head
3V Manifold head

Optional materials

AptiFlow: See table B on final page
Pipe fitting: A105 cs / 316ss / 304ss

Probe Diameter: 13 mm Line Size: DN50 - DN200
Max. Pressure: 40 Bar G Max. Temp: 450 Deg C

13FS 13mm Flanged Single Support



Options

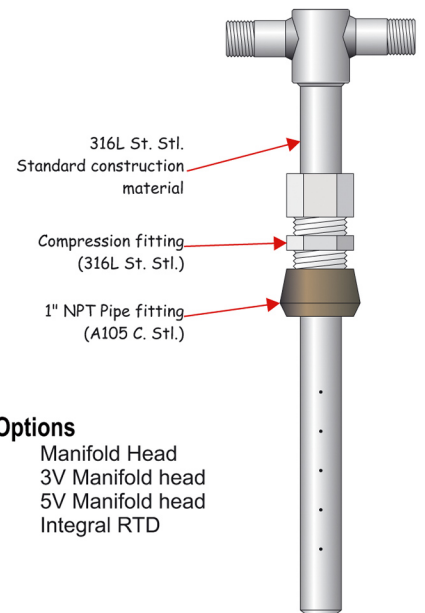
Manifold Head
3V Manifold head
ANSI / DIN flanges up to 1500lb / DN100

Optional materials

AptiFlow: See table B on final page
Pipe fittings: See table F on final page

Probe Diameter: 13 mm Line Size: DN50 - DN200
Max. Pressure: As flange Max. Temp: As flange

25TS 25mm Threaded Single Support



Options

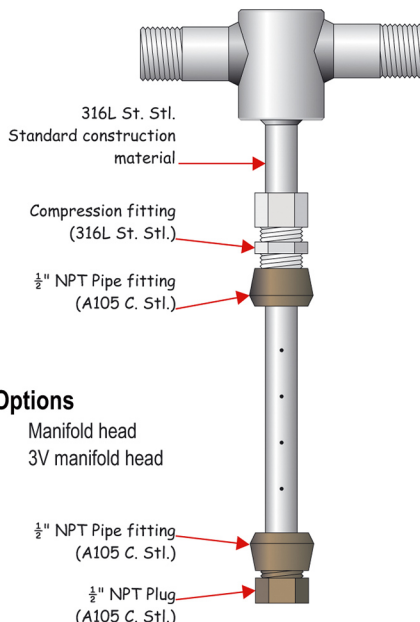
Manifold Head
3V Manifold head
5V Manifold head
Integral RTD

Optional materials

AptiFlow: See table B on final page
Pipe fitting: A105cs / 316ss / 304ss

Probe Diameter: 25 mm Line Size: DN150 - DN1200
Max. Pressure: 40 Bar G Max. Temp: 450 Deg C

13TD 13mm Threaded Double Support



Options

Manifold head
3V manifold head

1/2" NPT Pipe fitting
(A105 C. Stl.)

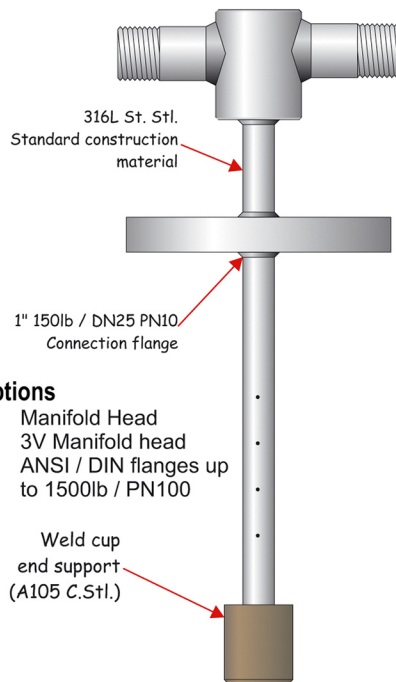
1/2" NPT Plug
(A105 C. Stl.)

Optional materials

AptiFlow: See table B on final page
Pipe fitting: A105cs / 316ss / 304ss

Probe Diameter: 13 mm Line Size: DN100 - DN250
Max. Pressure: 40 Bar G Max. Temp: 450 Deg C

13FD 13mm Flanged Double Support



Options

Manifold Head
3V Manifold head
ANSI / DIN flanges up to 1500lb / PN100

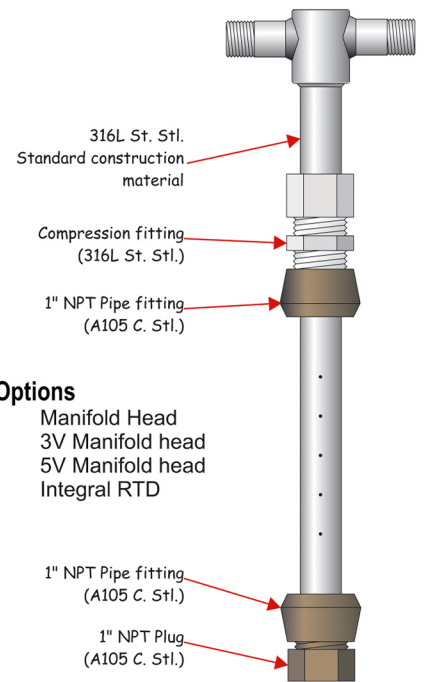
Weld cup
end support
(A105 C.Stl.)

Optional materials

AptiFlow: See table B on final page
Pipe fittings: See table F on final page

Probe Diameter: 13 mm Line Size: DN100 - DN250
Max. Pressure: As flange Max. Temp: As flange

25TD 25mm Threaded Double Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral RTD

1" NPT Pipe fitting
(A105 C. Stl.)

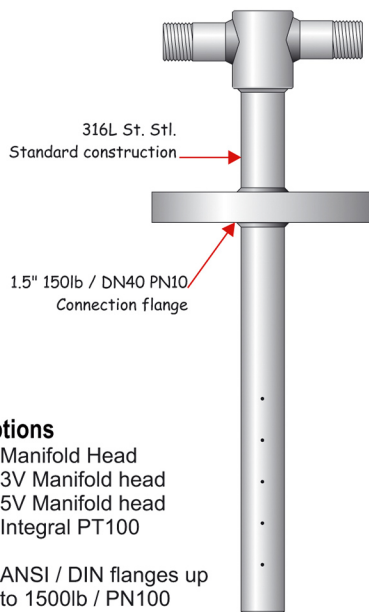
1" NPT Plug
(A105 C. Stl.)

Optional materials

AptiFlow: See table B on final page
Pipe fitting: A105cs / 316ss / 304ss

Probe Diameter: 25 mm Line Size: DN200 - 2400mm ID
Max. Pressure: 40 Bar G Max. Temp: 450 Deg C

25FS 25mm Flanged Single Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

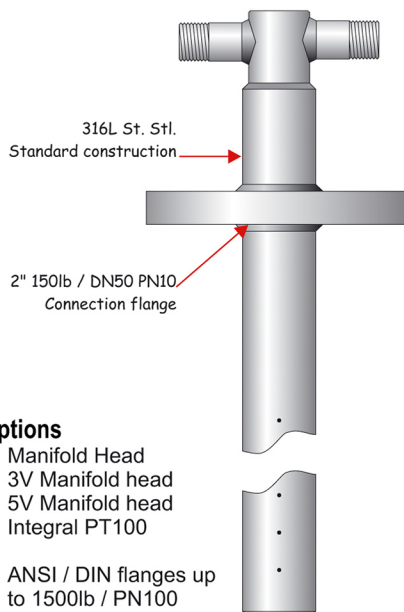
ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B on final page
Pipe fittings: See table F on final page

Probe Diameter: 25 mm Line Size: DN150 - DN1200
Max. Pressure: As flange Max. Temp: As flange

40FS 40mm Flanged Single Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

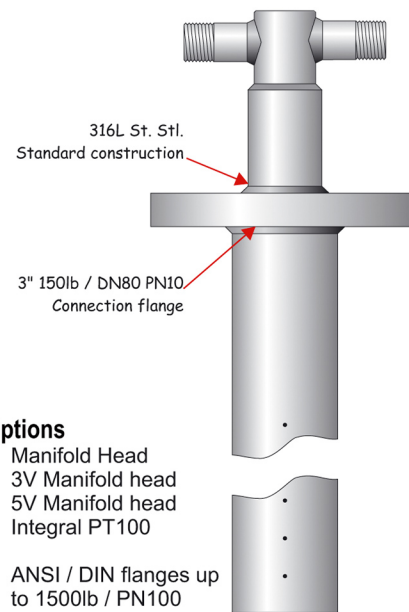
ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B on final page
Pipe fittings: See table F on final page

Probe Diameter: 42 mm Line Size: DN250 - 2400mm ID
Max. Pressure: As flange Max. Temp: As flange

60FS 60mm Flanged Single Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

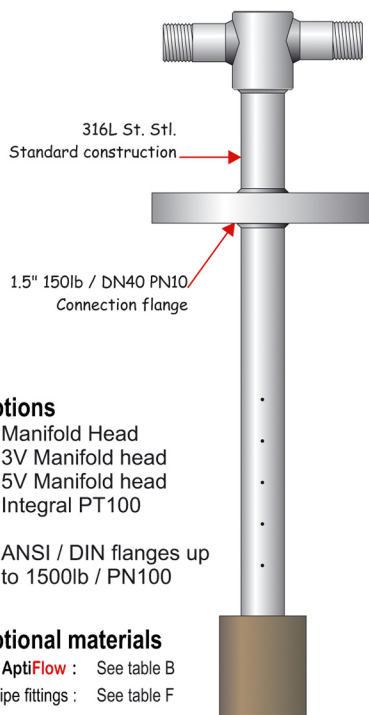
ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B on final page
Pipe fittings: See table F on final page

Probe Diameter: 60 mm Line Size: DN350 - 3500mm ID
Max. Pressure: As flange Max. Temp: As flange

25FD 25mm Flanged Double Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

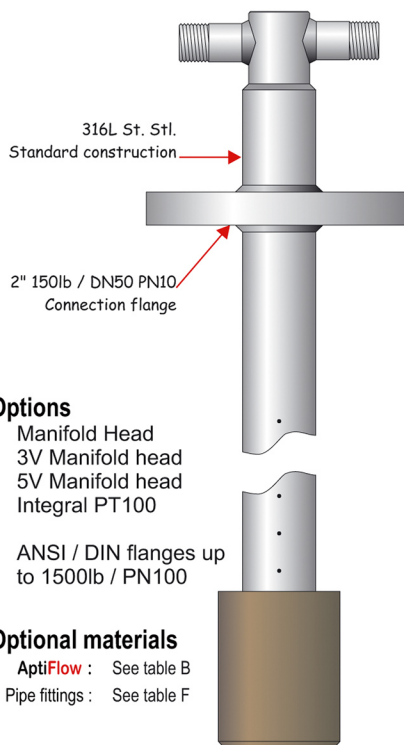
ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B
Pipe fittings: See table F

Probe Diameter: 25 mm Line Size: DN200 - 2400mm ID
Max. Pressure: As flange Max. Temp: As flange

40FD 40mm Flanged Double Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

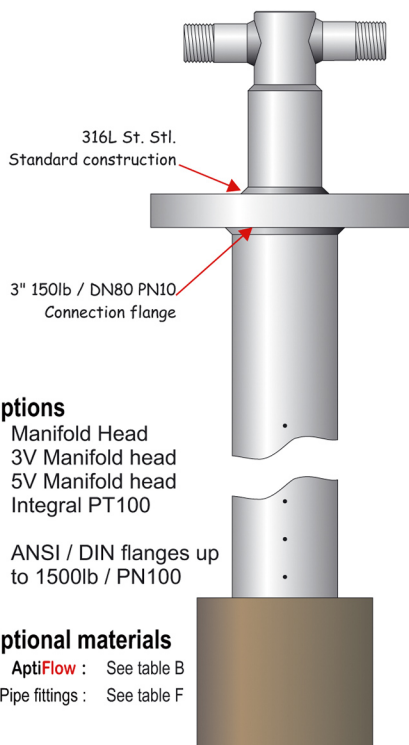
ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B
Pipe fittings: See table F

Probe Diameter: 42 mm Line Size: DN400 - 4000mm ID
Max. Pressure: As flange Max. Temp: As flange

60FD 60mm Flanged Double Support



Options

Manifold Head
3V Manifold head
5V Manifold head
Integral PT100

ANSI / DIN flanges up to 1500lb / PN100

Optional materials

AptiFlow: See table B
Pipe fittings: See table F

Probe Diameter: 60 mm Line Size: DN600 - 6000mm ID
Max. Pressure: As flange Max. Temp: As flange

AptiFlow In-Line-Series

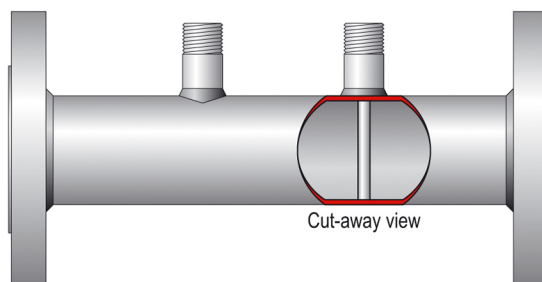
06SF / 06FT / 06SW
6mm Spool Series
General

	06SF	06ST	06SW
Probe Diameter :	6 mm	6 mm	6 mm
End Connection :	Flanged	Threaded	Weld-in
Max. Pressure :	As flange rating	70 Bar G	70 Bar G
Max. Temp. :	As flange rating	450 Deg C	450 Deg C
Line Size :	DN15 - DN80	DN15 - DN80	DN15 - DN80

Options

Manifold Head
3V Manifold head
5V Manifold head
Integral RTD

06 Series are in-line metering sections which have either flanged, threaded or weld-in end connections for attachment to process pipework



Cut-away view

Optional materials

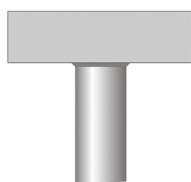
AptiFlow: See table B on final page

AptiFlow Head Options

Manifolds form an integral part of the **AptiFlow** probe

MH

Manifold head



Allows the DP transmitter to be direct mounted and eliminates costs associated with remote mounting and problems introduced by impulse lines.

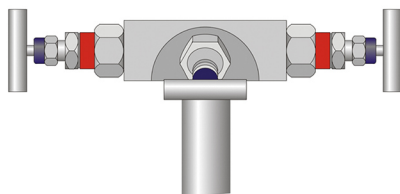
Compatible with flange / flange or bolt-on H-type manifolds.

Materials

Available in all **AptiFlow** materials except polypropylene

3V

Integral 3 valve manifold



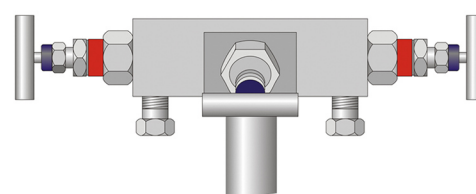
Allows the DP transmitter to be direct mounted. Provides primary isolation to allow the DP transmitter to be removed / zeroed while in service. Eliminates costs associated with remote mounting and problems introduced by impulse lines.

Materials

316L Stainless Steel

5V

Integral 3 valve manifold

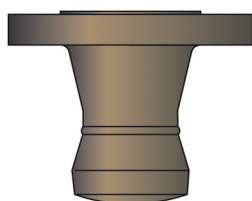


Allows the DP transmitter to be direct mounted. Provides primary isolation to allow the DP transmitter to be removed / zeroed while in service. Provides facility to vent through threaded ports. Eliminates costs associated with remote mounting and problems introduced by impulse lines.

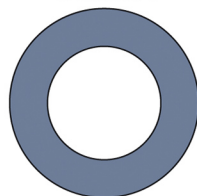
Materials

316L Stainless Steel

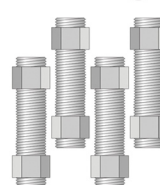
AptiFlow Accessories

Flanged Nozzle

Materials

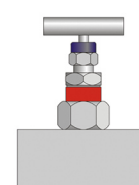
Available in all **AptiFlow** materials except polypropylene

Gasket

Options

1.5mm elastomer or 4.5mm spiral wound

Bolting

Specification

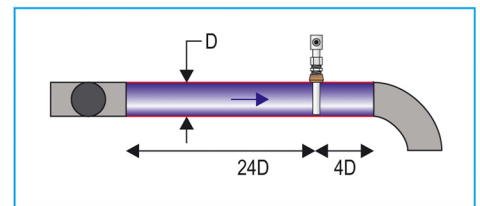
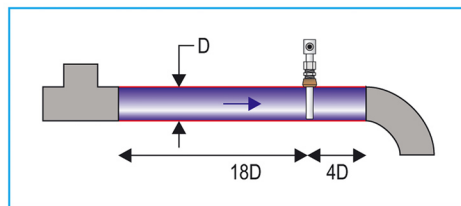
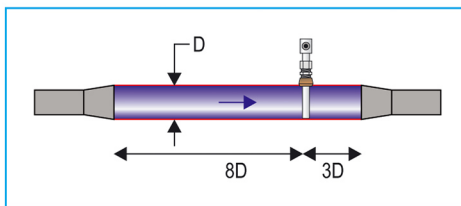
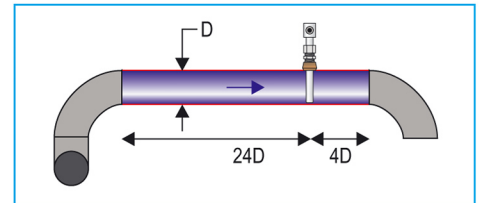
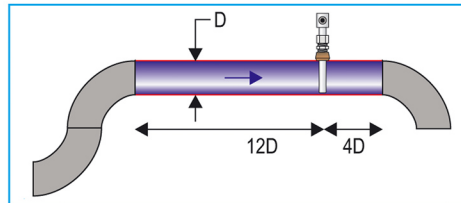
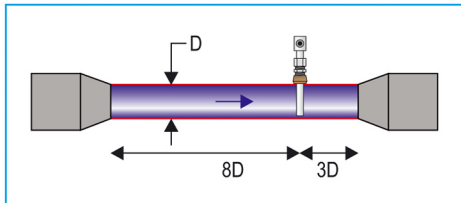
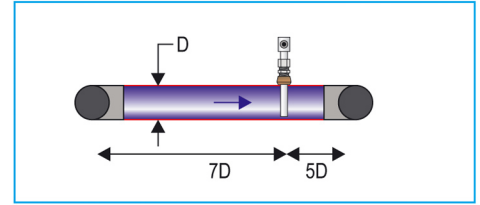
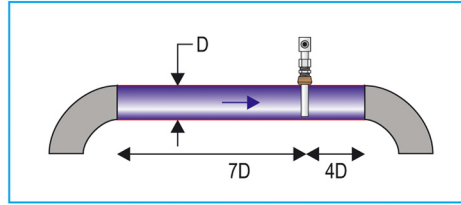
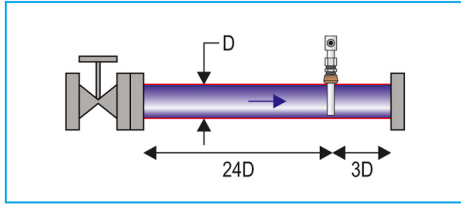
ASTM A 193 B7 Studbolt
ASTM A 194 2H Nuts

DP Isolation Valves

Options

1/4" or 1/2"
316St Stl
Ball / Needle / Gate / Globe

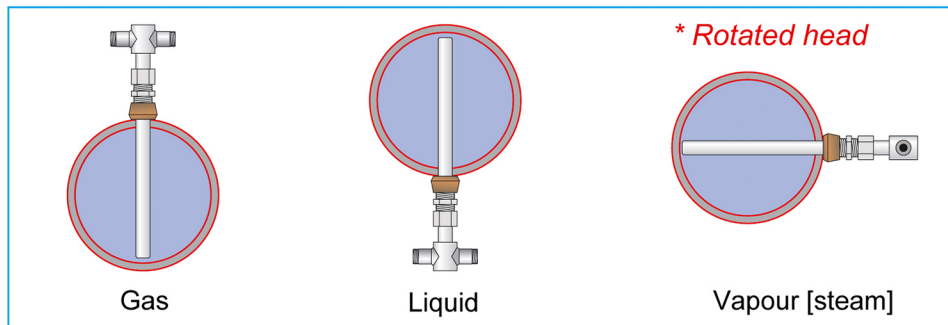
Upstream / Downstream straight length requirements

Dimensions shown are multiples of pipe inside diameter - longer lengths are always preferable



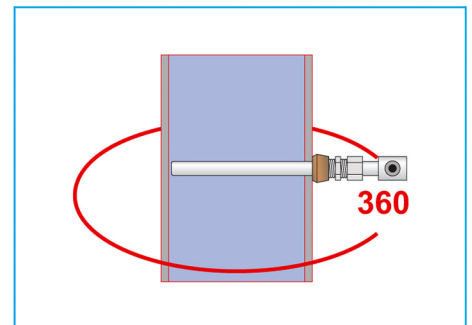
Orientation - Horizontal

Recommended installation orientation for Horizontal Pipelines



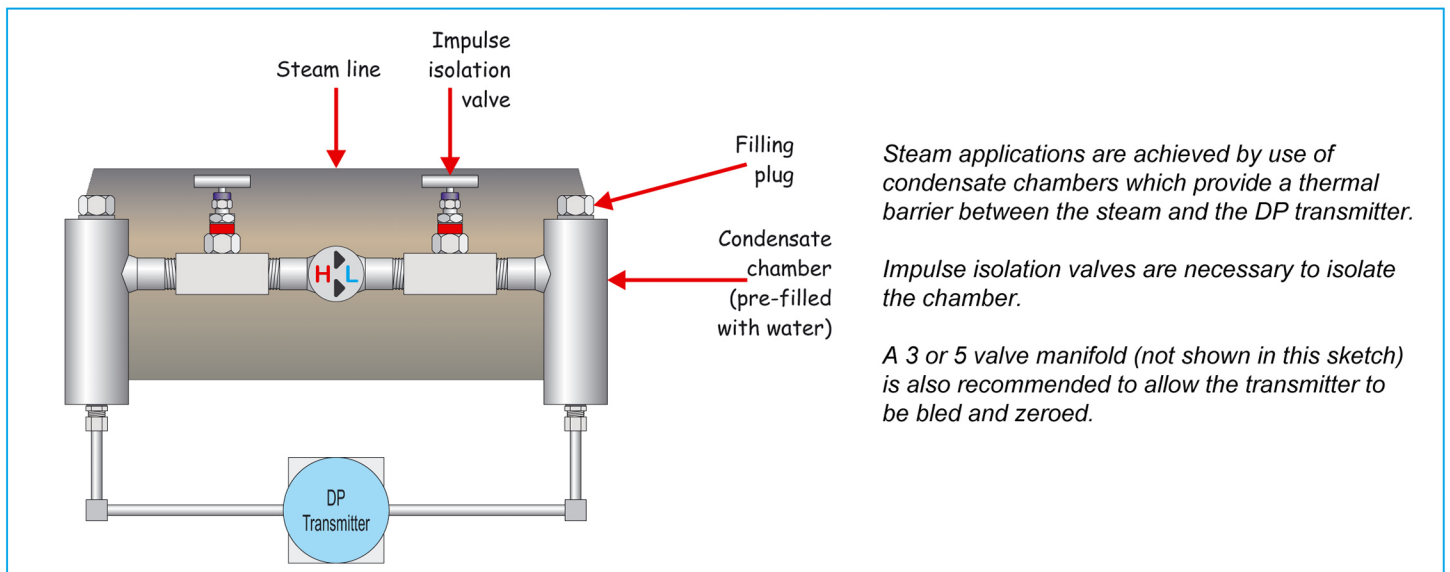
Orientation - Vertical

Any orientation for Vertical Pipelines



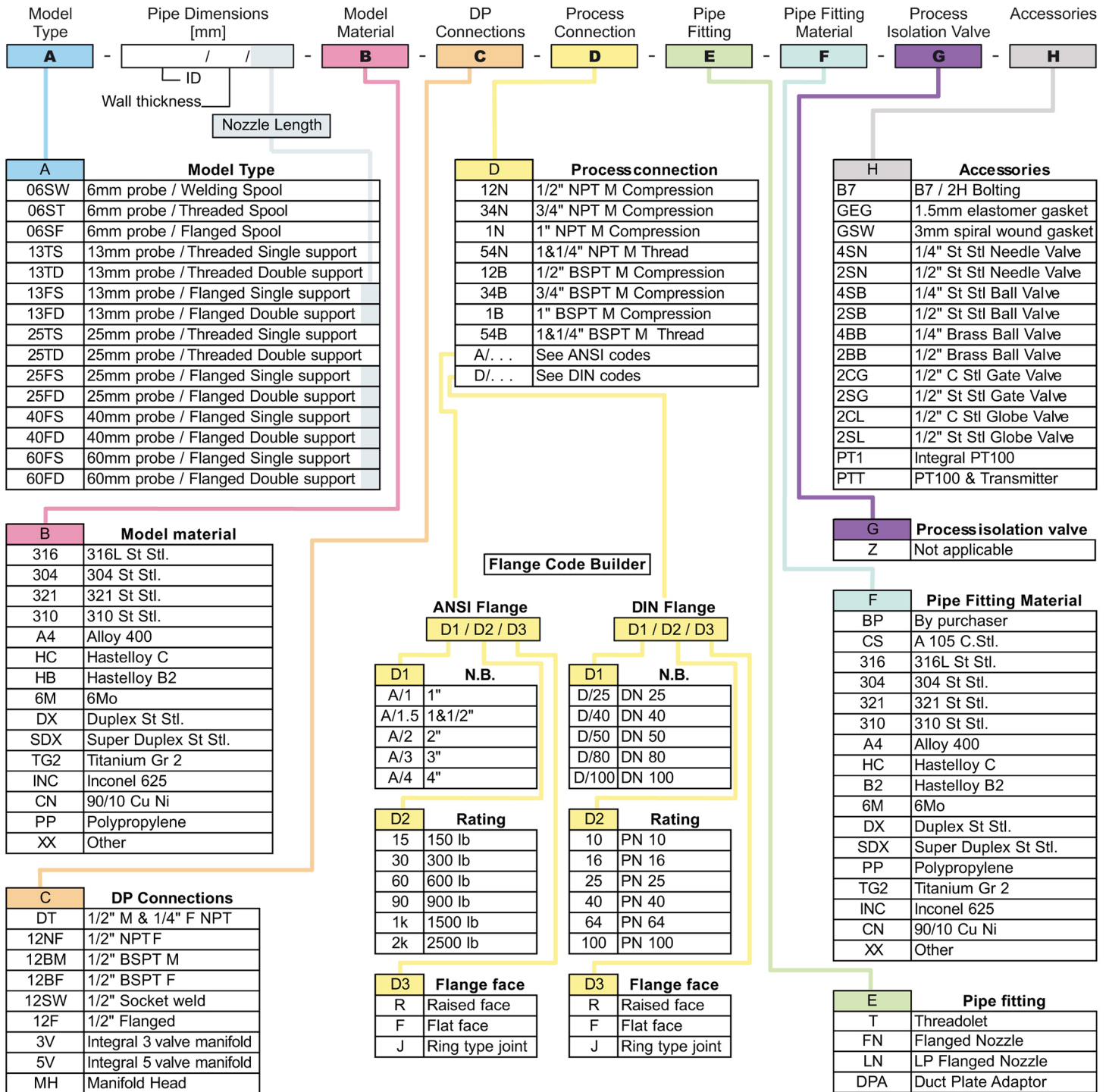
Orientation - Steam

Steam assembly using condensate chambers and remote DP transmitter



AptiFlow Model Coding

Non - retractable models



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