

UNICONTROLS™



ISO 9001-2008 QMS

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DYMOND UNNIBAR..... *flow measurement solutions*



self averaging flow element for gas, liquid and steam flows

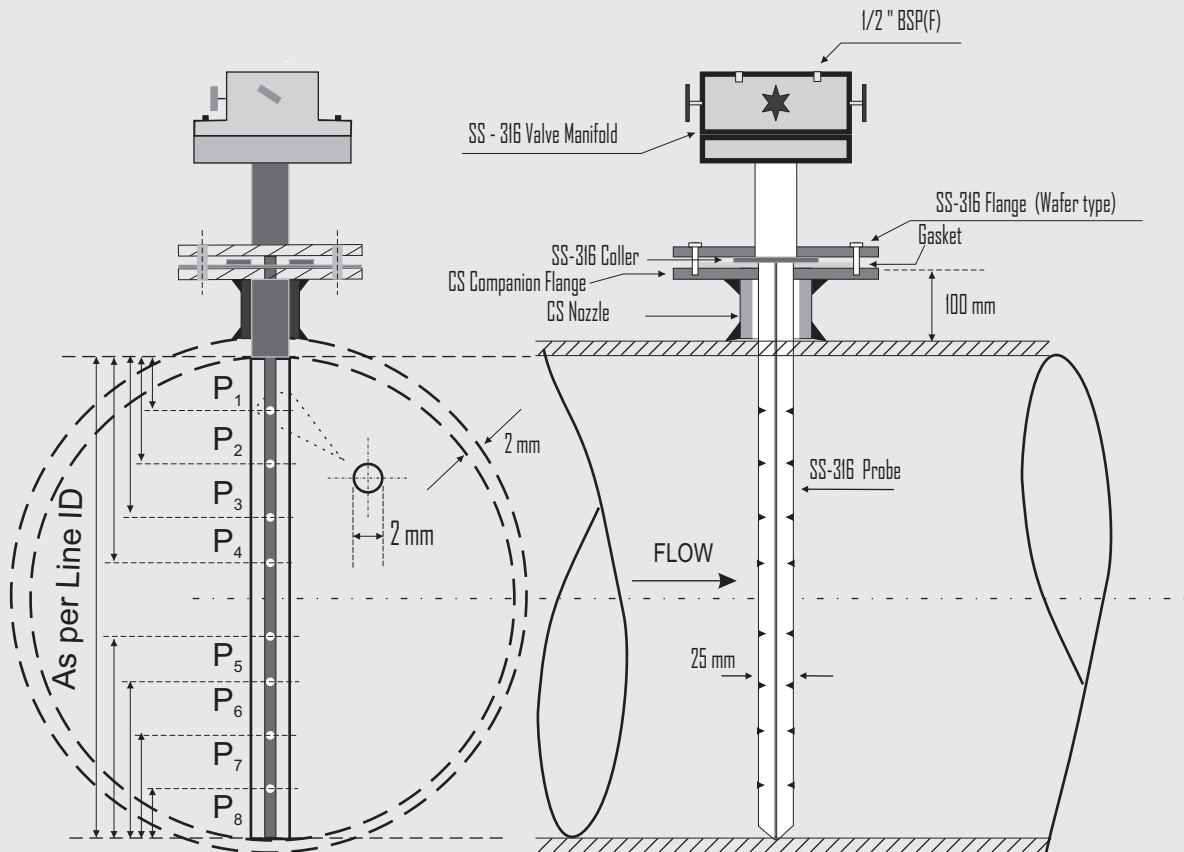
- ★ Bar Stock Construction - any line / duct size
- ★ Square Sensor Design - Excellent repeatability
- ★ Integral 3 Valve Manifold
- ★ Multiple Sensing Ports on both up and down stream sides
- ★ Symetrical Sensors for Bi - Directional Flows
- ★ Integral Mounting for Safety and Reliability
- ★ Long Term Accuracy
- ★ Simple Low Cost Installation
- ★ Energy Savings due to Low Pressure Loss
- ★ Overall Economy and Minimum downtime for Installation & Maintenance

Tested & Evaluated by

**IIT
Delhi**

Salient Features

- ★ Bar Stock Construction - any line / duct size
- ★ Square Sensor Design - Excellent repeatability
- ★ Integral 3 Valve Manifold
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- ☞ Eliminates impulse lines
- ☞ Reduced cost of installation
- ☞ Reduced potential for leakage

UNICONTROLS Dymond Unnibar is self averaging flow sensor designed specifically to measure flow accurately in a wide variety of application covering Gas, Liquid & Steam. The unique design has a number of significant benefits over other averaging Pitot Tubes and flow element which make it the right choice for many applications in the Industries:-

The square sensor profile with it's well defined 'edges' produces a fixed fluid separation point for all liquids and gasses ensuring optimum accuracy independent of Reynolds Number and flow rate. The square shape is key to it's performance, unlike simple round sensor which have a fluid separation point that varies with Reynolds Number (flow rate) leading to unpredictable accuracy.

Symmetrical sensor for Bi-directional flows

The unique design with averaging on both the up and down stream sides leads to a totally symmetrical sensor, this gives the ability for bi-directional flow measurement with the same accuracy & 'K' factor in both directions. Unlike the classic Pitot sensor, which is a single point device typically moved manually around the pipe to build up detail of the flow profile, the Dymond Unnibar is a self averaging element with multiple ports or sensing holes on both the up & down stream sides of the sensor. These ports constantly average the flow profile to generate an accurate DP signal in on site flow conditions. The unique solid construction and manufacturing process ensure precise dimensional Control & reproducibility of the sensor profile, which is key to the accuracy of predicted calibrations.

How it works

The Dymond Unnibar is a primary element device which produces a differential pressure (DP) when inserted into a flow stream in a similar way to orifice plates and venturies. Integral/ Remote mounting Differential Pressure Transmitter converts the DP signal into a 4-20 mA/Hat signal which is proportional to flow rate.



Retractable Mechanism

This invention relates to a manually-operated mechanism for inserting and removing flow measurement probes and the like from a pipeline carrying a flowing fluid, such mechanism being characterized by a hanger subassembly for movement therewith externally of the pipe along with a pair of threaded rods which parallel one another as well as the longitudinal axis of the probe but on opposite sides thereof, a drive subassembly supported in fixed position beneath including a common drive shaft along with a pair of worm gear trains each containing a worm gear threaded onto one of the threaded rods, such drive subassembly operatively interconnecting the shaft and the two threaded rods for simultaneously and synchronously raising or lowering the latter, and a hand crank for turning the drive shaft.

SPECIFICATION

Service	Gas/Liquid/Steam Applications
Pipe Sizes	2 inch to 72 inch (above to consult)
Duct Sizes	up to 6 mtrs. length (above to consult)
Pressure Limit	100 Bar subject to flange rating (above to consult)
Construction	Drill Bar stock
Sensor	Stainless Steel (AISI-316 standard; others on request/application)
Flange with Coller	Stainless Steel (AISI-316 standard; others on request/application)
Manifold Valve	Stainless Steel (AISI-316 standard; others on request/application)
Transmitter Mounting	Directly on Manifold (in case of Integral mounting type)
Process Connection	Flanged (Standard), others on request/applications.
Nozzle with Flange	Carbon Steel (Standard), others on request/applications.
Gasket	CAG /PTFE /SS-304 Spiral wound
Accuracy	±1% of reading
Repeatability	±1% of reading

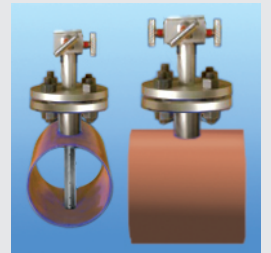
ORDERING / ENQUIRY INFORMATION

1	Tag or Identification No.
2	Application
3	Pipe ID & OD or Pipe Size & Schedule (Specify Units)
4	Pipe Material (4a) Pipe Orientation: Vertical Horizontal others
5	Process Fluid
6	System Design Temperature (Specify Units) (6a) System Design Pressure (Specify Units)

IMPORTANT: Provide Pressure & Temperature @ each flowrate for desired DP Calculation

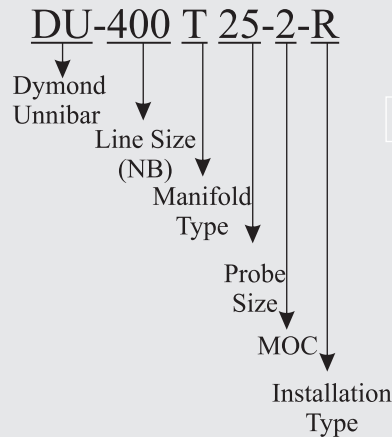
	FLUID — LIQUID Gas STEAM	UNITS	MAXIMUM	NORMAL	MINIMUM
1	Flow Rate (Specify Units)				
2	Pressure @ Flow Conditions Gauge Absolute				
3	Temperature @ Flow Conditions				
4	Specific Gravity or Specific Weight @ Flow Conditions				
5	Absolute Viscosity				

Model Selection



Major Installation

- * Rourkela Steel Plant
- * Bokaro Power Supply
- * Durgapur Steel Plant
- * Tata Steel
- * Jai Balaji
- * SPS Steel & Power
- * SBQ Steel
- * Usha Martin
- * Mitsubishi Chemicals
- * Himadri Chemicals
- * Bihar Caustic



Dymond Unnibar	DU		
Line Size	mm NB		
Manifold Type	'T' type for Remote Transmitter mounting	'H' type for Integral Transmitter mounting	
Probe Size	19 upto 200 NB	25 upto 1000 NB	32 above 1000 NB
Installation Type	'R' for Retractable arrangement	'NR' for Non-retractable arrangement	
Material of Construction	'1' for AISI-304	'2' for AISI-316	'3' for others to specify

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*Prior notification in change of specification is impracticable due to continuous development
Supersedes all previous publications*