

# P S INSTRUMENTS

FLOW • LEVEL • MEASUREMENT

An ISO 9001:2015 Certified Company

Engineered for Precision.  
Built for Performance



**P.S. INSTRUMENTS**

**VARIABLE AREA FLOW METER  
WITH TRANSMITTER**

FLOW=0 NM3/HR  
TOT=297 NM3

MODEL NO. - R-100/D/01/SS316  
I SFI. NO. - 25263  
RANGE - 15 - ISO NM3/HR  
SERVICE - Nitrogen

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## DIGITAL VARIABLE AREA FLOWMETER

The Variable Area Flowmeter is an instrument for measuring the flow of liquids and gases in pipelines. It operates on the principle of Variable Area, the height of the float raised in the taper tube increasing the area of passage of fluid, which is transferred to the indicator by way of magnetic coupling.





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## BENEFITS OF P S INSTRUMENTS VARIABLE AREA FLOW METER

- "Accurate Flow Measurement You Can Trust"
- Provides precise flow measurement with excellent repeatability, reducing process errors.
- "Ready for Automation (PLC/SCADA)" Supports 4-20 mA, Modbus - perfect for modern automated plants.
- **Suitable for Harsh Conditions** Performs reliably in high & Low pressure, high & Low temperature, and corrosive environments.
- **Low Maintenance Cost** Simple design with fewer moving parts ensures long service life and minimal maintenance. Wide Application Range Works efficiently for liquids, gases, and steam, including opaque and aggressive media.
- **Low Pressure Drop** Ensures energy-efficient operation without affecting system performance. Real-Time Monitoring & Control Helps in better process control, improving productivity and reducing wastage.
- **Compact & Rugged Design** Strong metal body construction makes it suitable for industrial installations.
- **Accurate measurement**  
Accurate measurement even at higher flow (150 m3/hr). Suitable for low flow (1 LPH)
- **"Digital Display - No Guesswork"**  
Bright LCD/LED screen for instant, error-free readings even in tough industrial conditions.
- **"Rugged SS Body - Built for Industry"** Made with SS304 / SS316, ensuring long life and corrosion resistance.
- **"Explosion-Proof Available"**  
Safe for hazardous areas (Zone 1 / Zone 2) – ideal for oil & gas and chemical plants. "Compact Design – Easy Installation"  
Fits easily in existing pipelines with minimal modification.
- **"Custom Range & Size Available"** We offer tailor-made solutions as per your exact process requirement.





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## DIGITAL VARIABLE AREA FLOWMETER

**Simple in Design. Powerful in Performance**

A Digital Variable Area Flow Meter is an advanced flow measurement instrument that operates on the variable area principle combined with electronic sensing and digital Display technology. It is designed to provide highly accurate, real-time flow measurement of liquids, gases, and steam in industrial applications.

In this flow meter, a float moves within a tapered tube based on the flow rate. The float position is detected using magnetic coupling or sensor technology, and the signal is converted into a digital output displayed on an integrated indicator

### PRINCIPLE OF OPERATION

The Variable Area Flowmeter measures the flow of liquids and gases using the Variable Area Principle. As fluid flows through the tapered tube, it lifts a float the height of which corresponds to the flow rate. This float movement is transferred via magnetic coupling to an external pointer, which moves over a calibrated scale to indicate the flow. The design ensures safe, accurate measurement without direct contact between the fluid and the indicator.

#### ENGINEERING SPECIFICATION ( Simple in Design. Powerful in Performance)

|                                 |                                                                                        |
|---------------------------------|----------------------------------------------------------------------------------------|
| Rangeability                    | : 10 : 1                                                                               |
| Accuracy                        | : +/-1% of Full Flow for Digital Indication                                            |
| Repeatability                   | : 0.25% of Full Flow                                                                   |
| Pressure Rating                 | : 80 Kg/cm <sup>2</sup> , 250 Bar (Optional)                                           |
| Allowable Fluid Temp.           | : -20° To 450° C for Digital Indication                                                |
| Connection                      | : Flanged, Threaded, Sanitary Fitting                                                  |
| Material Of Construction        | : SS316, SS316L, SS304, PTFE , PP and other on request (Alloy 625 / Hastelloy / Monel) |
| Indicator Box                   | : Die-cast Aluminum IP-68 and Ex d IIB T4 IP- 67, SS304, SS316                         |
| Flow Direction                  | : Bottom to Top , Horizontal                                                           |
| Optional Certification          | PESO, ATEX IIA IIB IIC certification can be provided                                   |
| Heating Jacket on request Range | : LPH , LPM , KG/HR , M3/HR , NM3/HR , CFM , TON/HR , ML/MIN As Per Requirement.       |



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### FLOW RANGE AND PRESSURE LOSS

| Line size NB                       |               | Water (LPH)              |              |                             |                           |
|------------------------------------|---------------|--------------------------|--------------|-----------------------------|---------------------------|
| Flange Or Threaded connection      | Tri clover TC | Material SS 304/316/316L | PTFE         | Air (m³/hr)<br>0° C & 1 atm | Pressure Loss<br>mm of WC |
| 15 NB<br>(½")<br><br>20 NB<br>(¾") | 25 mm<br>1"   | 1 – 10                   | 1 – 10       | 0.15 – 1.5                  | 650                       |
|                                    |               | 10 – 100                 | 2 – 20       | 0.3 – 3                     |                           |
|                                    |               | 20 – 200                 | 10 – 100     | 0.6 – 6                     |                           |
|                                    |               | 30 – 300                 | 20 – 200     | 0.9 – 9                     |                           |
|                                    |               | 40 – 400                 | 30 – 300     | 1.2 – 12                    | 720                       |
|                                    |               | 50 – 500                 | 40 – 400     | 1.5 – 15                    |                           |
|                                    |               | 60 – 600                 | 50 – 500     | 1.8 – 18                    |                           |
|                                    |               | 80 – 800                 | 60 – 600     | 2.4 – 24                    | 790                       |
|                                    |               | 100 – 1000               | 70 – 700     | 3 – 30                      | 950                       |
|                                    |               | 120 – 1200               | 80 – 800     | 3.6 – 36                    |                           |
| 25 mm<br>1"                        |               | 160 – 1600               | 90 – 900     | 4.8 – 48                    |                           |
|                                    |               | 200 – 2000               | 100 – 1000   | 6 – 60                      |                           |
|                                    |               | 250 – 2500               | 150 – 1500   | 7.5 – 75                    |                           |
|                                    |               | 300 – 3000               | 180 – 1800   | 9 – 90                      | 1050                      |
|                                    | 50 mm<br>2"   | 350 – 3500               | 200 – 2000   | 10.5 – 105                  |                           |
|                                    |               | 400 – 4000               | 250 – 2500   | 12 – 120                    |                           |
|                                    |               | 500 – 5000               | 300 – 3000   | 15 – 150                    |                           |
|                                    |               | 600 – 6000               | 400 – 4000   | 18 – 180                    |                           |
| 40 NB<br>(1½")                     |               | 750 – 7500               | 500 – 5000   | 22.5 – 225                  | 1100                      |
|                                    | 2½"           | 1000 – 10000             | 700 – 7000   | 30 – 300                    |                           |
| 50 NB<br>(2")                      | 3"            | 1500 – 15000             | 1000 – 10000 | 45 – 450                    | 980                       |
|                                    |               | 2000 – 20000             | 2000 – 20000 | 60 – 600                    |                           |
| 80 NB<br>(3")                      | 4"            | 2500 – 25000             | 3000 – 30000 | 75 – 750                    |                           |
|                                    |               | 3000 – 30000             | 4000 – 40000 | 90 – 900                    | 1000                      |
|                                    |               | 4000 – 40000             | 6000 – 60000 | 120 – 1200                  |                           |
| 100 NB<br>(4")                     | 6"            | 5000 – 50000             | 6500 – 65000 | 150 – 1500                  |                           |
|                                    |               | 6000 – 60000             | 7000 – 70000 | 180 – 1800                  |                           |
| 125 NB<br>(5")                     |               | 8000 – 80000             | 7500 – 75000 | 240 – 2400                  |                           |
|                                    | NO TC         | 10000 – 100000           | 8000 – 80000 | 300 – 3000                  | 1200                      |
|                                    |               | 12000 – 120000           | 8500 – 85000 | 360 – 3600                  |                           |
|                                    |               | 15000 – 150000           | 9500 – 95000 | 450 – 4500                  |                           |

### MODEL SELECTION





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### MODEL SELECTION

|                                 | 1           | 2  | 3 | 4 | Description                                        |
|---------------------------------|-------------|----|---|---|----------------------------------------------------|
| Model                           | PSI/R-300/D | 1  |   |   | Digital Indication                                 |
| Variants for Digital Indication |             | 2  |   |   | Digital Display with loop powered 4 – 20 mA output |
|                                 |             | 3  |   |   | Totalizer with loop powered transmitter            |
|                                 |             | 4  |   |   | Totalizer & Batch controller – 230 VAC             |
|                                 |             | 5  |   |   | High and Low Switch                                |
|                                 |             |    |   |   | Totalizer and Density correction Facility          |
|                                 |             |    |   |   | SS304/SS316/SS316L/PTFE/PP                         |
| Material Wetted Parts           |             | XX |   |   | Other on Request                                   |
|                                 |             |    |   | J | Steam Jacketing                                    |
| Accessories                     |             |    |   |   |                                                    |

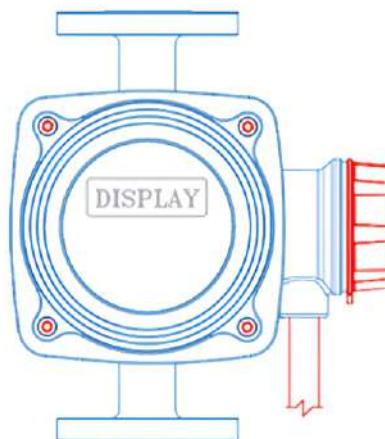
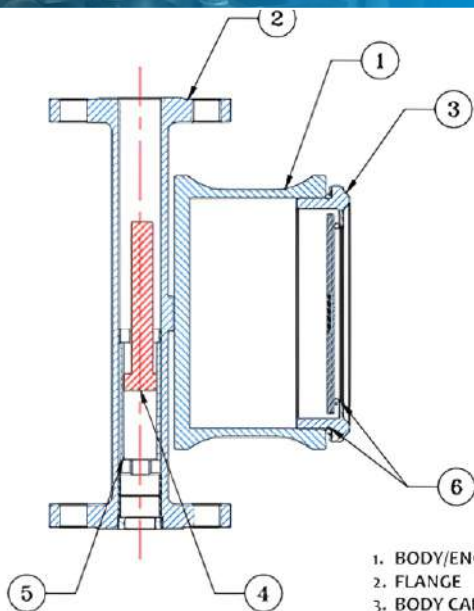




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## APPLICATIONS



### Chemical Industry

- Acid, alkali, corrosive liquids flow measurement
- Dosing & process control systems



### Water & Wastewater Treatment

- Raw water / treated water flow monitoring
- Chemical dosing lines



### Pharmaceutical Industry

- Purified water (PW), WFI systems
- Clean & hygienic process lines



### Water & Wastewater Treatment

- Steam flow measurement
- Feed water & condensate lines



### Power Plants

- Cooling water circuits
- Lubrication oil systems



### Oil & Gas Industry

- Fuel oil, diesel, lubricants flow measurement
- Gas flow monitoring in pipelines



### Process Industries

- Flow indication in pipelines
- Batch & continuous process control



### OEM & Machinery

- Skid-mounted systems
- Panel-mounted flow indication



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## WHY OUR COMPANY ?

- ✓ ISO 9001:2015 Certified
- ✓ Experienced Manufacturing Team
- ✓ Customization Available
- ✓ Competitive Pricing
- ✓ Strong After-Sales Support
- ✓ Quick Response
- ✓ Expert Technical Support
- ✓ On-Time Delivery



“Fast Response.

Expert Support.

Reliable Delivery – Every Time.”





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