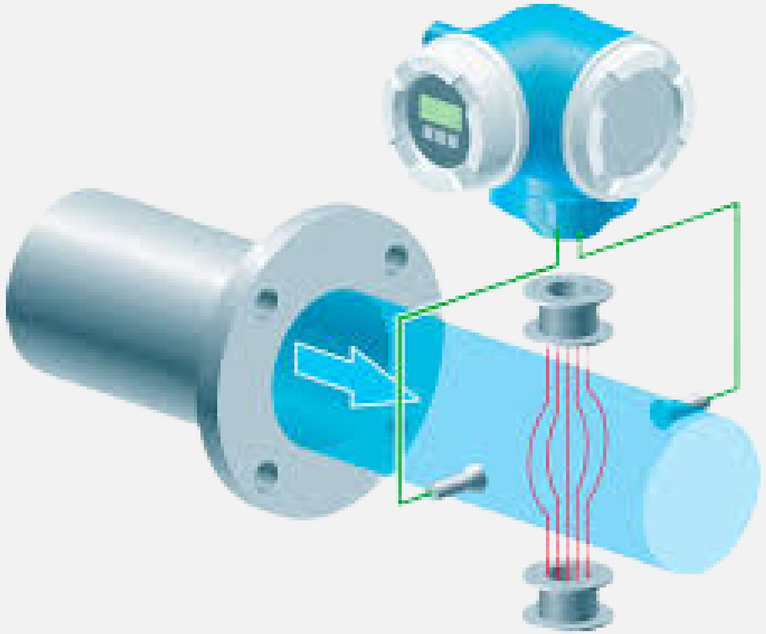
Fateh
Trainings & Consultancy

BASICS OF FLOW & ITS MEASUREMENT

BUILDING COMPETENCE, INSPIRING CONFIDENCE

Course Objectives

- Understand basic flow principles and flow regimes
- Explain working principles of common flow meter
- Select suitable flow measurement devices for industrial applications
- Perform basic flow and transmitter range calculations
- Apply correct installation practices and troubleshoot common issues



Target Audience

- Instrumentation & Control Engineers
- Maintenance and Reliability Engineers
- Process Engineers

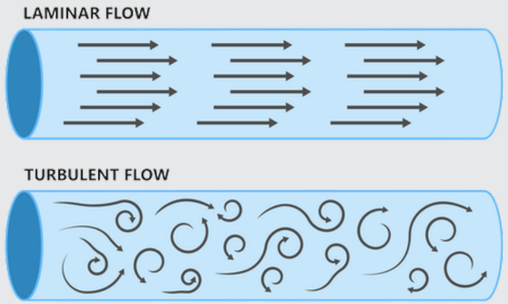
Course Content

Introduction to Flow

- Importance of flow measurement
- Units of flow

Flow Fundamentals

- Laminar and Turbulent Flow
- Reynolds Number



Differential Pressure Flow Measurement

- Orifice Plate
  - Bernoulli’s Theorem
  - STP & NTP
  - Beta (β) Ratio
  - Types: Concentric, Eccentric, Segmental, Quadrant Edge
  - Weep holes (Top / Bottom)
  - Pressure tap positions
  - Integral, Junior & Senior Orifice Plates
  - Orifice plate datasheet
  - DP transmitter flow calculation

Course Content

Other Flow Measurement Devices

- Venturi Tube, Flow Nozzle
- Elbow Meter, Pitot Tube, Target Meter
- Variable Area (Rotameter)
- Turbine, Vortex, Swirl
- Electromagnetic, Coriolis
- Reciprocating Piston
- Weir & Flume
- Sight Flow Meter

Installation, Calculations & Troubleshooting

- Transmitter installation best practices
- Flow formulae and range calculation
- Common problems and troubleshooting

Instructor

Mr. Aftab Ahmed Mazari
Instrumentation Expert

Mr. Aftab Ahmed Mazari has over 43 years of extensive practical experience as an Instrument Engineer. He completed his science graduation from Punjab University and received industrial instrumentation training from Russia.

He began his professional career at Pakistan Steel, where he served for 10 years. He later joined Fauji Fertilizer Company (FFC) and retired after completing 30 years of service with rich and diverse experience. Following his retirement, he worked as an Instrument and Consultant Engineer with SABIC in Saudi Arabia for one year.

Mr. Aftab Ahmed Mazari possesses wide expertise in instrumentation consultancy, Reliability Centered Maintenance (RCM), reliability engineering, and professional training. He has delivered training programs and courses to both local and international clients, including SABIC in Saudi Arabia and multinational companies such as ENI, Lotte, BHP, Engro, and HUBCO.

He has developed several training aids for instrument engineers and technicians, including simulators and training rigs such as vibration simulators, vibration switch testing rigs, speed simulators, compound gear simulators, and SOV training rigs. In addition, he has designed and produced cutaway models of control valves, pressure safety valves (PSV), rotameters, temperature sensors, pressure regulators, volume boosters, and trip relays.

Mr. Aftab Ahmed Mazari has also authored eight industrial instrumentation books for instrument and operations personnel, which are widely referred to in various industrial facilities across Pakistan.

Logistics

Duration

1 day

Location

Client site or Lahore

Training Instructors

Mr. Aftab Ahmed Mazari

Get in Touch

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