



ONE PROCESS IMPROVEMENT

Steam & Compressed Air Flow Measurement

Are you measuring the process, or simply measuring flow?

Flow measurement is only valuable when the measurement helps you understand and improve the process.

Steam and compressed air are common industrial utilities, but the conditions under which they are measured can be very different.

The right flowmeter therefore starts with the **application**, not the instrument.

KNOW THE APPLICATION

Before selecting a flowmeter, consider five basic factors:

MEDIUM

Steam, compressed air, nitrogen, other gas or liquid?

PRESSURE

What are the normal and maximum operating pressures?

TEMPERATURE

What are the normal and maximum process temperatures?

FLOW RANGE

What are the minimum, normal and maximum flow rates?

PIPE & INSTALLATION

What is the pipe size and what are the installation conditions?

These factors help determine which measurement technology is appropriate.

STEAM VS COMPRESSED AIR

STEAM

Steam applications can involve:

- High temperatures
- High pressures

- Saturated or superheated steam
- Changing density
- Process and energy monitoring requirements

Depending on the application, flow measurement can support process control, consumption monitoring and totalisation.

COMPRESSED AIR

Compressed-air applications can involve:

- Variable operating pressure
- Different flow demands
- Dry or wet gas conditions
- Consumption monitoring
- Energy-efficiency considerations

Reliable flow data can help identify changes in demand and provide greater visibility of system consumption.

THE KEY QUESTION

What do you need the measurement to tell you?

Before selecting the instrument, define the purpose.

Process control?

Consumption monitoring?

Totalisation?

Energy management?

Production monitoring?

Identifying abnormal usage?

The measurement objective is just as important as the medium being measured.

FROM MEASUREMENT TO IMPROVEMENT

A flowmeter provides data.

The value comes from what you do with that data.

MEASURE

Obtain reliable flow information.

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UNDERSTAND

Identify consumption patterns and process behaviour.

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CONTROL

Use the information to support better process decisions.

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IMPROVE

Identify opportunities to improve performance and efficiency.

WHICH TECHNOLOGY?

Different applications may call for different flow measurement technologies.

Technology	Typical applications
Vortex	Gas, steam and liquid
Thermal Mass	Dry gas applications
Differential Pressure	Gas, steam and liquid
Coriolis	Direct mass-flow measurement

The most appropriate technology depends on the **process conditions and measurement objective**.

BEFORE YOU SPECIFY A FLOWMETER

Have these details available:

Medium

Minimum / normal / maximum flow

Pressure

Temperature

Pipe size

Installation conditions

Required measurement output

Application objective

Having this information upfront makes the selection process more precise.

THE BOTTOM LINE

Don't start with the flowmeter.

Start with the process.

Understand the application.

Define what needs to be measured.

Select the appropriate technology.

Use the data to improve the process.

Need help with a flow measurement application?

Instek Control supplies **BASS Instruments** flow measurement solutions for industrial applications.

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