PRESSURE MEASUREMENT

A practical guide to selecting the right instrumentation for the application.



Measure | Control | Improve

Pressure measurement is most valuable when it supports a clear process requirement.

START WITH THE APPLICATION

Pressure measurement is not the objective. Understanding and controlling the process is.

PROCESS REQUIREMENT

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What needs to be measured?

Pressure | Vacuum | Differential Pressure | Level

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What does the process need to do with the measurement?

Monitor | Alarm | Control | Protect | Optimise

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Why the application matters

The same pressure variable can serve very different purposes in a process. A transmitter may be required for continuous measurement, a switch for a defined action, or differential pressure measurement to understand what is happening across equipment such as a filter.

The selection should therefore begin with the process objective, operating conditions and the information required by the control system.

Instek application approach

Instek Control focuses on the relationship between the process requirement and the instrumentation solution — helping industry measure the variables that matter, connect those measurements to process control and make better use of process information.

WHAT TYPE OF PRESSURE TECHNOLOGY?

The measurement requirement determines the appropriate technology.

Requirement	Possible technology
Continuous pressure measurement	Pressure transmitter
Smart/digital process information	Smart pressure transmitter
Defined pressure set point	Pressure switch
Local visual indication	Pressure gauge
Difficult media / protection of sensing element	Diaphragm / diaphragm seal
Differential pressure	Differential pressure transmitter / switch

Bass pressure portfolio

Bass Instruments provides a broad pressure portfolio that can be matched to different measurement and process requirements, including pressure transmitters, smart pressure transmitters, pressure switches, pressure gauges, diaphragms and digital pressure gauges.

Application principle: select the technology based on what the process needs the measurement to accomplish — not simply on the pressure range.

THE PROCESS CONDITIONS MATTER

Pressure range is only one part of a pressure-instrument specification.

MEDIA	**TEMPERATURE**
Clean / sticky / dirty / corrosive	Normal / high temperature
PRESSURE	**INSTALLATION**
Range / fluctuations / overpressure	Connection / space / orientation
ENVIRONMENT	**COMMUNICATION**
Indoor / outdoor / wash-down / hazardous	4–20 mA / HART / digital protocols

Examples from the Bass range

The MSP3200 Smart Pressure Transmitter supports 4–20 mA + HART and optional digital communication protocols. It can also be applied to pressurised-tank level measurement and filter-clogging monitoring.

The MPS700 Hygienic Pressure Transmitter is designed for applications involving sticky and dirty fluids, including food and chemical applications.

The selection question

Do not ask only: “What pressure range do we need?”

Also ask: “What will this instrument experience, and what does the process need to do with the measurement?”

THE INSTEK APPLICATION APPROACH

The right instrument is the one that solves the process requirement.

1	**Understand the process** Where does the measurement fit into the operation?
2	**Define the measurement requirement** Pressure, vacuum, differential pressure or level?
3	**Evaluate operating conditions** Media, temperature, pressure, installation and environment.
4	**Select the appropriate technology** Match the process requirement to the appropriate instrument.
5	**Integrate the measurement** Connect useful process information to monitoring and control.

HAVE A PRESSURE APPLICATION TO DISCUSS?

Instek Control can help review the measurement requirement and identify an appropriate instrumentation approach for the process.

INSTEK CONTROL (PTY) LTD

www.instek.co.za | info@instek.co.za | +27 12 998 6326

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