

Product Name :
Pressure Process Control Trainer

Product Code :
CE196



Description :

Pressure Process Control Trainer

Technical Specification :

Pressure Process Control Trainer

The Pressure Process Control Training System is a single loop pneumatic control system. It enables the study of the principles of both pressure regulation of a process and the control of flow in a pressurised system. The system comprises a low-pressure air circuit supported on a bench-mounted panel, making it suitable for individual student work or for group demonstration. The trainer requires a compressed air supply at a recommended input pressure of 40 psi (not supplied). An input filter/drier is used to clean the supplied air. Separately regulated branches provide air for the process and for valve control. The process branch comprises a regulator, a variable area flow meter, a pneumatically operated control valve, an orifice block with changeable orifice plates and both differential and point of measure pressure sensors. The process air flow can be discharged to atmosphere via adjustable diffused outlets. An air receiver tank can be switched in and out of the circuit. The valve control branch comprises a regulator and an electrically operated current to pressure input converter. This is used to regulate the pneumatic control valve in the process line. The input converter operates from a 4-20 mA signal. Signal conditioning for the sensors is provided by pressure transmitters. The Differential Pressure Transmitter gives a linear differential pressure sensor output. The system is fully equipped with pressure gauges to indicate the pressures around the system.

Curriculum Coverage

- Pressure safety, familiarisation & calibration
- I/P converter & pneumatic control valve operation
- Controller familiarisation & calibration
- Automatic control systems

Serial communication
Pressure sensor
Transmitter & I/P converter - linearity & hysteresis
Pneumatic control valve
Characteristics at different pressure ranges
System response & air receiver
Principles of proportioning valve & proportional process control
Study of P, PI and PID control of pressure
Calibration of the differential pressure sensor & transmitter
Flow control in the process rig

Features:

Safe, low pressure operation
Fully gauged for pressure & flow rate
Differential & Gauge pressure sensors
Current controlled (4-20 mA) pneumatically operated control valve
Standard industrial components
Self-sealing outlets for the manometer
Safety valves fitted as standard
Air used as the process fluid
Comprehensive experiment manual

Technical data:

4-20 mA operation
Dimensions (net): width 900 mm x depth 460 mm x height 720 mm
Weight: gross 110 kg, net 72 kg

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