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PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Pressure Control Training System | NexuMation 69

Category: Instrumentation Lab Equipment · **Order Code:** NEXUMATION 69 · **Country of Origin:** India

Product Overview

The Pressure Control Training System NexuMation 69 is an experimental unit for learning control engineering fundamentals using a pressurized tank. This pressure control training system uses a speed controlled diaphragm gas pump rated 29W, 27L/min and 5bar max pressure, with a 400mL pressure tank operating at 2bar. Pressure control range is 0-2bar. A software-activated solenoid valve generates disturbances, and the HSI software connects via USB.

View this product online: https://scienticoindia.com/product/pressure-control-training-system-nexumation-69/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Pressure Control Training System NexuMation 69: Technical Specifications

Parameter	Value
Unit Type	Experimental unit for control engineering experiments
Housing	Accommodates all electronics
Process	Pressure control in a tank
Pump	Speed controlled diaphragm gas pump
Pressure Sensing	Electronic pressure sensor, dial-gauge manometer
Disturbance Generation	Software-activated solenoid valve
Air Consumer Simulation	Flow control valve
Data Acquisition	DAQ via USB, HSI software integration
Controller Configurations	Manual, continuous, two or three-point controller, programmer

Technical Data

Parameter	Value
Diaphragm gas pump power	29W
Diaphragm gas pump max flow rate	27L/min
Diaphragm gas pump max pressure	5bar

Parameter	Value
Pressure tank capacity	400mL
Pressure tank operating pressure	2bar
Pressure tank max pressure	3bar
Pressure control range	0-2bar

Key Features

Key Features

- **Application:** pressure control training system for control engineering fundamentals
- **Housing:** accommodates all electronics
- **Pump:** speed controlled diaphragm gas pump, 29W, 27L/min max, 5bar max pressure
- **Pressure Tank:** 400mL, 2bar operating, 3bar max
- **Pressure Sensing:** electronic pressure sensor with dial-gauge manometer
- **Control Range:** 0-2bar
- **Disturbance Generation:** software-activated solenoid valve
- **Air Consumer:** simulated by flow control valve
- **Software:** hardware/software integration (HSI)
- **Connection:** USB

Experiments

- Fundamentals of control engineering based on the example of a pressure control system with Pt1 behavior
- Open loop control response
- Effects of different controller parameters and methods on the response of the closed loop system
- Recording of step responses (Reference variable / Disturbance variable)

Construction and Design

The Pressure Control Training System NexuMation 69 is mounted on a housing that accommodates all the electronics. A pressure tank is charged with compressed air by a diaphragm gas pump. A dial-gauge manometer allows direct observation of tank pressure.

An electronic pressure sensor measures pressure. Its signal goes to the software controller, which adjusts the pump speed and hence the flow rate. A flow control valve simulates an air consumer. A solenoid valve, activated by the software, releases air to generate disturbance variables.

The experimental unit connects to the PC via a USB port.

Software

- Powerful state-of-the-art software, integral part of the training system
- Hardware/software integration (HSI)
- DAQ via USB
- Process schematic with controller type selection: manual, continuous controller, two or three-point controller, programmer
- Disturbance variable input

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q1. What does the pressure control training system teach?
It teaches the basic fundamentals of control engineering, using a pressure control system with Pt1 behavior as the example.

Q2. How is the tank pressurized?
A diaphragm gas pump rated 29W charges the tank with compressed air, up to a max flow rate of 27L/min and max pressure of 5bar.

Q3. How is pressure measured?

By an electronic pressure sensor, with a dial-gauge manometer for direct observation.

Q4. How are disturbances introduced?

A solenoid valve, activated by the software, allows air to escape from the system.

Q5. What is the pressure control range?

0-2bar, with a tank operating pressure of 2bar and max pressure of 3bar.

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