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PRODUCT DATA SHEET
Catalogue reference for product evaluation

Phone: +91 7015865225 **Email:** info@scienticoindia.com **Web:** scienticoindia.com **Address:** #71, Industrial Area, Ambala Cantt, Haryana, India

Temperature Control Training System (Modular Type) | NexuMation 66

Category: Automation and Control Technology · **Order Code:** NEXUMATION 66 · **Country of Origin:** India

Product Overview

The Temperature Control Training System (Modular Type) NexuMation 66 is a modular trainer on a vertical two-level frame. This temperature control training system supports two-position, three-range, and PID temperature control up to 100°C. PID ranges are Kp = 0 ... 1000, TI = 1ms ... 100s, and TD = 0.2ms ... 20s. A USB DAQ system and management software are included.

View this product online: https://scienticoindia.com/product/temperature-control-training-system-modular-type-nexumation-66/



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

Technical Specifications

emperature Control Training System (Modular Type) NexuMation 66: Technical Specifications

Parameter	Value
Structure	Modular, educational panels on vertical frame
Work Frame	Two-level
Controllers	PID, two position, three-range
Power Supply	+15 V; 0 V; -15 V, 2.4 A (3 A short period)
PID Range	Kp = 0 ... 1000, TI = 1ms ... 100s, TD = 0.2ms ... 20s
Simulated Controlled System	Kp = 0.2 ... 1.5, T1 = 0.1 ... 1000s, T2 = 0.1 ... 1000s
Power Amplifier	30 W max., short-circuit protected
Temperature Control System	Max. 100°C, feedback 2 mA/10°C or 1 V/10°C
Data Acquisition	Computerized DAQ system via USB
Software	Management software
Documentation	Theoretical and practical manual

Technical Data

Module	Specification
DC Power Supply	+15 V; 0 V; -15 V. 2.4 A (3 A short period). Single-phase mains. Two LEDs for nominal voltage. Mains switch with pilot lamp

Module	Specification
Voltage Reference Generator	+15 V; 0 V; -15 V. Continuous and step reference signal: -10 V to +10 V, 0 to +10 V. Switch: internal/external reference. Switch: 0/±10 V or 0/+10 V range
PID Controller	+15 V; 0 V; -15 V. Signal range -10V ... +10V. Kp = 0 ... 1000. TI = 1ms ... 100s. TD = 0.2ms ... 20s. Continuously adjustable, coarse/fine adjustment. Reset input, Input IOff. Output summing node for noise variables. Error signal measurement terminal. Output offset adjustment. Three LED deviation indicators. Over-range LED above 10 V or below -10 V
Summing Point 5 Inputs	+15 V; 0 V; -15 V. Signal range -10V ... +10V. Gain factor 1. LED indicator of over-range
Simulated Controlled System	+15 V; 0 V; -15 V. Input summing point for controlling variable (y) and noise variable (z). Signal range -10V ... +10V. Kp = 0.2 (attenuation) ... 1.5 (amplification). T1 = 0.1 ... 1000s. T2 = 0.1 ... 1000s. Reset input for initial conditions. Coarse rotary switches, potentiometer fine setting. LED indicators of over-range
Manual / Automatic Switch	+15 V; 0 V; -15 V. Signal range -10V ... +10V. Manual/Automatic mode switch. Manual mode potentiometer. Output summing point
Two Position Controller	+15 V; 0 V; -15 V. Input summing point. Signal range -10V ... +10V. Output voltages 0/+5 V; 0/+10 V. Adjustable hysteresis 0 ... ±2.5 V
Power Amplifier	+15 V; 0 V; -15 V. Signal range -10V ... +10V. Output voltage -10 V ... +10 V to ground; 0 ... ±20 V symmetrically. Max. output power 30 W, short-circuit protected
Temperature Control System	+15 V; 0 V; -15 V. Max. temperature 100°C. Bimetallic safety switch intervention 90 ... 100°C. Feedback signal 2 mA/10°C or 1 V/10°C. Apparent dead time TU about 10s. Compensation time TG about 120s
Single Pole Pushbutton	Plug-in element, switch load 2 A, 250 V
Single Pole Switch	Plug-in element, normally open, switch load 2 A, 250V

Key Features

Key Features

- **Structure:** modular panels on vertical frame
- **Application:** temperature control training system for guided experiments
- **Work Frame:** two-level
- **Controllers:** PID, two position, three-range
- **PID Parameters:** Kp = 0 ... 1000, TI = 1ms ... 100s, TD = 0.2ms ... 20s
- **Power Supply:** +15 V; 0 V; -15 V, 2.4 A
- **Power Amplifier:** 30 W max., short-circuit protected
- **Temperature Process:** max. 100°C, feedback 2 mA/10°C or 1 V/10°C
- **Data Acquisition:** computerized DAQ system via USB
- **Software:** management software included

Experiments

- The two-position controller in the temperature process
- The two-position controller with delayed feedback in the temperature process
- The two-position controller with elastic feedback in the temperature process
- The three-range controller in the temperature process
- P, PI and PID controls of the temperature process using the CHR method

Construction and Design

The Temperature Control Training System (Modular Type) NexuMation 66 is built on a vertical frame. Educational panels are installed in a modular arrangement. A two-level work frame organizes the components.

Industrial type components are educationally adapted. The modular panel system permits step-by-step assembly. Students progress from the simplest circuit to the most complex system.

The temperature control training system includes a temperature control system module with a max. temperature of 100°C and a bimetallic safety switch. A simulated controlled system, controller, and switch modules plug into the frame. A connecting leads set is supplied for interconnection.

A computerized DAQ system connects via USB. Management software runs the experiments.

Software

- Computerized DAQ system via USB
- Management software

Scope of Delivery

- DC Power Supply
- Voltage Reference Generator
- PID Controller
- Summing Point 5 Inputs
- Simulated Controlled System
- Manual / Automatic Switch
- Two Position Controller
- Power Amplifier
- Temperature Control System
- Single Pole Pushbutton
- Single Pole Switch
- Computerized DAQ system via USB
- Management software
- Connecting Leads Set
- Two-level work frame
- Theoretical and practical manual

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 is the Temperature Control Training System (Modular Type) NexuMation 66 designed for?
It is designed for the study of temperature control application through guided experiments.

Q2. Which controllers are included in this temperature control training system?
Two-position, three-range, and PID controllers.

Q3. What are the PID controller ranges?
Kp = 0 ... 1000, TI = 1ms ... 100s, and TD = 0.2ms ... 20s.

Q4. What is the max. temperature of the temperature control system?
100°C, with a bimetallic safety switch intervening at 90 ... 100°C.

Q5. How does the temperature control training system connect to a computer?
A computerized DAQ system via USB is included, with management software.

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