SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Temperature Measurement Trainer | Prozessi PX 22

Category: Process Engineering Technology · **Order Code:** PX 22 · **Country of Origin:** India

Product Overview

The Temperature Measurement Trainer Prozessi PX 22 teaches temperature sensor types, characteristics and calibration through hands-on experiments. This Temperature Measurement trainer includes five sensor types: mercury thermometer, bimetal thermometer, PT100 RTD, thermistor and thermocouple. Twelve structured experiments cover sensor characteristics, time constants, Seebeck effect and indicator and transmitter calibration. Includes digital millivoltmeter, multimeter, hot and ice baths, and thermocouple connector. Compact design 550W x 320D x 450H mm with MS Excel analysis templates.

View this product online: https://scienticoindia.com/product/temperature-measurement-trainer-prozessi-px-22/



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

Technical Specifications

Temperature Measurement Trainer Prozessi PX 22 — Technical Specifications

Specification	Value
Product Code	322
Mercury in Glass Thermometer	Range -10 to 0 to 110°C
Bimetal Dial Thermometer	Dial size 100 mm, Range 0-100°C
PT100 RTD Sensor	Sheath diameter 6 mm, Length 100 mm
NTC Thermistor Sensor	Sheath diameter 6 mm, Length 100 mm
Thermocouple Type K	Sheath diameter 6 mm, Length 100 mm, Aluminum head
Temperature Indicator	Input K type thermocouple, Range 0-100°C
Temperature Transmitter	Head mounted two wire, Input PT100 RTD, Range 0-100°C, Output 4-20 mA
Digital Millivoltmeter	Range 0-200 mVDC, Display 4.5 digit
Multimeter	Display 3.5 digit
Thermocouple Connector	Type K with compensating cable
Hot Water Bath	Capacity 0.5 liter, Power 500W, Non-corrosive
Ice Bath	Capacity 0.300 liter
Power Supply	Output 24VDC

Specification	Value
Beeper	Time setting range 2-10 sec
Overall Dimensions	W 550 x D 320 x H 450 mm

Technical Data

Temperature Sensors

Sensor Type	Range/Specification	Application
Mercury in Glass	-10 to 0 to 110°C	Reference standard, time constant study
Bimetal Dial Thermometer	0-100°C, 100 mm dial	Industrial indicator, time constant study
PT100 RTD	Sheath 6 mm x 100 mm	Temperature transmitter input, calibration study
NTC Thermistor	Sheath 6 mm x 100 mm	Characteristics study, time constant measurement
Type K Thermocouple	Sheath 6 mm x 100 mm	Temperature indicator input, Seebeck effect study

Temperature Measurement and Indication

Component	Specification
Temperature Indicator	Thermocouple K type input, 0-100°C range, Direct digital readout
Temperature Transmitter	Two wire head mounted, PT100 RTD input, 4-20 mA output, 0-100°C range
Digital Millivoltmeter	0-200 mVDC range, 4.5 digit display for thermoelectric voltage measurement
Multimeter	3.5 digit display for resistance and voltage measurement

Temperature Conditioning

Component	Specification
Hot Water Bath	Capacity 0.5 liter, 500W electrical heater, Non-corrosive construction
Ice Bath	Capacity 0.300 liter, for sub-zero temperature testing
Power Supply	Output 24VDC for transmitter and indicator operation

Accessories and Connections

Component	Specification
Thermocouple Connector	Type K with compensating cable for safe sensor connection
Beeper	Adjustable time setting 2-10 seconds for observation recording

Key Features

Key Features

- Temperature Measurement: comprehensive multi-sensor platform
- Five different sensor types for comparative study
- Inbuilt digital multimeter and 4.5 digit millivoltmeter
- Temperature indicator and transmitter with calibration capability
- Type K thermocouple connector with compensating cable
- Hot water bath and ice bath for wide temperature range study
- Seebeck effect demonstration with thermocouples
- Beeper with 2-10 second adjustable time setting
- MS Excel sample calculations provided
- Compact tabletop design, 550W x 320D x 450H mm

Experiments

- Study of different types of temperature sensors
- Characteristics of RTD (PT-100)
- Characteristics of Thermistor
- Characteristics of Thermocouple
- Study and calibration of Temperature indicator
- Study and calibration of Temperature Transmitter
- Study of Seebeck effect
- Time constant of mercury in glass thermometer
- Time constant of Bimetal thermometer
- Time constant of RTD (PT100) sensor
- Time constant of Thermistor sensor
- Time constant of Thermocouple sensor

Construction and Design

The Temperature Measurement Trainer Prozessi PX 22 is housed on a compact base measuring 550W x 320D x 450H mm. The trainer includes five different temperature sensors mounted for direct access and testing: a mercury in glass thermometer (range -10 to 0 to 110°C), a bimetal dial thermometer (100 mm dial, range 0-100°C), a PT100 RTD (sheath 6 mm x 100 mm), an NTC thermistor (sheath 6 mm x 100 mm) and two Type K thermocouples (sheath 6 mm x 100 mm, one with aluminum head). A hot water bath (0.5 liter capacity, 500W heater, non-corrosive construction) and an ice bath (0.300 liter capacity) provide controlled temperature environments from sub-zero to 110°C. A temperature indicator with K type thermocouple input displays readings across 0-100°C for calibration verification. A head-mounted two-wire temperature transmitter accepts PT100 RTD input and provides 4-20 mA output, enabling transmitter calibration and transmitter error studies. A digital millivoltmeter (0-200 mVDC, 4.5 digit display) and a multimeter (3.5 digit display) measure thermoelectric voltages and sensor resistances. A Type K thermocouple connector with compensating cable ensures accurate thermocouple measurements. A 24VDC power supply energizes the indicator and transmitter. An adjustable beeper (2-10 second time setting) enables precise timing of transient observations. An optional support table (800W x 800D x 750H mm) is available for laboratory installation.

Software and Calculation Aids

MS Excel sample calculations are provided with the Temperature Measurement trainer for analyzing sensor characteristics, time constants, calibration curves and Seebeck effect data.

Scope of Delivery

- Temperature Measurement Trainer Prozessi PX 22 complete assembly
- Mercury in glass thermometer, range -10 to 0 to 110°C
- Bimetal dial thermometer, 100 mm dial, range 0-100°C
- PT100 RTD sensor, sheath 6 mm x 100 mm
- NTC Thermistor sensor, sheath 6 mm x 100 mm
- Type K Thermocouple sensors (2 units), sheath 6 mm x 100 mm
- Temperature indicator, K type input, 0-100°C range
- Two-wire temperature transmitter, PT100 input, 4-20 mA output
- Digital millivoltmeter, 0-200 mVDC, 4.5 digit display
- Multimeter, 3.5 digit display
- Type K thermocouple connector with compensating cable
- Hot water bath, 0.5 liter capacity, 500W
- Ice bath, 0.300 liter capacity
- Power supply, 24VDC output
- Beeper with 2-10 second time setting
- Base assembly, 550W x 320D x 450H mm
- MS Excel calculation templates
- User documentation and experimental manual
- Power cord
- Distilled water for baths

Optional Accessories

- Support table, size 800W x 800D x 750H mm
- Additional thermocouple sensors Type K
- Replacement compensating cable
- Additional thermometer units

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 are the different temperature sensors included in the Temperature Measurement Trainer?
A: The Temperature Measurement trainer includes five sensor types: mercury in glass thermometer, bimetal dial thermometer, PT100 RTD, NTC thermistor and two Type K thermocouples for comprehensive comparative study.

Q2: What is the purpose of the hot water and ice baths?
A: The hot water bath (500W, 0.5 liter) provides controlled heating up to 110°C, while the ice bath (0.300 liter) provides sub-zero temperatures. Together they enable time constant and characteristic studies across a wide temperature range.

Q3: What is the Seebeck effect experiment on the Temperature Measurement Trainer?
A: The Seebeck effect study demonstrates how temperature differences create electrical voltage in thermocouples, measured using the digital millivoltmeter.

Q4: How is the temperature transmitter calibrated on the Temperature Measurement Trainer?
A: The temperature transmitter accepts PT100 RTD input and outputs 4-20 mA. By comparing transmitter output against reference temperature readings, students can verify and adjust calibration across the 0-100°C range.

Q5: What measurement instruments are provided with the Temperature Measurement Trainer?
A: The trainer includes a 4.5 digit digital millivoltmeter (0-200 mVDC range) for thermoelectric voltage measurement and a 3.5 digit multimeter for measuring sensor resistance and voltage signals.

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