

PTM / PTC

DIGITAL THERMOMETER and TEMPERATURE CONTROLLER

- 100 to + 300 °C

Measurement and control of temperature via the IEC bus



Digital Thermometer PTM

- Precision temperature-measuring device with platinum-resistance sensors
- Indication in °C or K
- IEC-bus interface for use in automatic test systems

IEC 625 Bus



Temperature Controller PTC

- Precision measuring and setting device for temperature control circuits
- Temperature input and indication in °C or K
- IEC-bus-compatible

Specifications

PTM/PTC (blue: PTC only)

Temperature measurement range	- 99.9 ... + 299.9 °C (173.3 ... 573.1 K)
Indication	°C or K, 4-digit LED (switchable between two sensors)
Resolution	0.1 °C (0.1 K)
Measurement error	
Basic error	0.1 °C over entire range
Additional sensor error (Pt 100)	≅ 0.1 °C with adjustment ≅ 0.3 °C without adjustment at 0 °C (tolerance according to DIN 43760)
Non-linearity	< 0.1 °C
Effect of ambient temperature	< 0.1 °C for (23 ± 5) °C < 0.5 °C in the rest of nominal temperature range
Test current	3.3 mA ± 5 %
Rate	30 measurements/s
Sensors	platinum resistance Pt 100 in four-wire circuit
Inputs for sensors	two 5-way female connectors
Input impedance	100 kΩ
Temperature control range	- 100 to + 300 °C (173.2 to 573.2 K)
Nominal temperature setting	with stepping buttons (coarse and fine)
Resolution	0.1 °C (0.1 K)
Switching status indication	lamps for load relay on, measured value > or < nominal value
Control characteristics	two-level controller, response threshold > nominal value + 0.1 °C < nominal value - 0.1 °C (hysteresis variable via IEC bus with 0.1 °C resolution)
Outputs	
AC supply voltage (via internal load relay)	max. current 10 A, leakage current < 20 mA, 4-way AC supply female connector
Control relay (switch)	max. switching current 1 A, max. switching voltage 50 V, max. switching power 20 W/30 VA, telephone jacks
Supply voltage	± 15 V/100 mA via telephone jacks
Analog voltage output	0 to 10 V; 2.49 mV/0.1 °C
Programming	via IEC-bus interface (IEC 625-1), 24-way Amphenol connector
Interface functions	T6, TE6 talker functions with sec. address, serial polling and auto addressing when receiving listener address
	L4 listener function
	RL1 remote/local
	DC1 device clear
General data	
Nominal temperature range	+ 5 to + 45 °C
Storage temperature range	- 45 to + 70 °C
Power supply	115/125/220/235 V ± 10 %, 47 to 440 Hz (30 VA)
Overall dimensions (W x H x D), weight	211 mm x 112 mm x 346 mm, 4 kg
Warmup time until full accuracy is achieved	15 min

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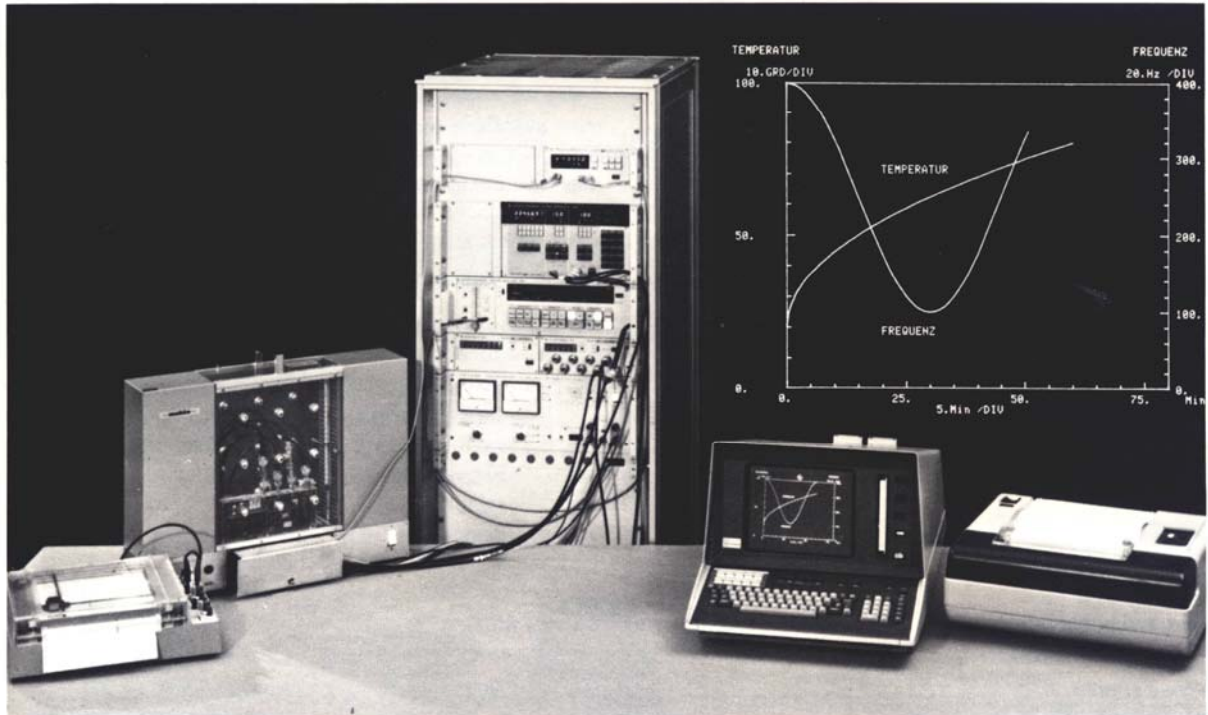
Order designations

PTM (without sensors)	▶ Digital Thermometer PTM 336.8010.02
Accessories supplied	power cable, manual
PTC (without sensors)	▶ Temperature Controller PTC 336.7014.02
Accessories supplied	power connector for heating/cooling; power cable, manual

Recommended extras (for PTM and PTC)

Contact Sensor PTC-Z1	336.7914.02
T_{90} time ¹⁾ : in water 3 s, on copper surface 10 s	
Thermal load capacity: sensor tip 250 °C, cable 80 °C	
Adhesive Sensor PTC-Z2	336.7937.02
T_{90} time ¹⁾ : in water 5 s, on copper surface 10 s	
Thermal load capacity: sensor tip 120 °C, cable 80 °C	
Immersion Sensor PTC-Z3	336.7950.02
T_{90} time ¹⁾ : in water 8 s	
Thermal load capacity: sensor tip 250 °C, cable 80 °C	
19" Adapter ZZA-2 (for mounting max. two PTM's or PTC's in a rack)	078.8174.00

1) Time required to reach 90% of an instantaneous temperature change



Test assembly with IEC-bus-compatible instruments for measuring the parameters of a subassembly as a function of temperature