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Data Sheet

August 13, 2026

STANFORD RESEARCH

Stanford Research PTC321

Stanford Research Systems PTC321 Four Channel Platinum RTD Card The SRS PTC321 is a four-channel platinum RTD input card for the PTC10 programmable temperature controller. Each channel is a 4-wire input with its own 1 mA current source. Current can reverse every reading to cancel parasitic thermocouple EMFs. The 0 to 400 ohm range reads IEC 751 / DIN 43760 Pt100 sensors from about -215 C to 850 C (catalog headline also lists -200 C to 850 C). Initial accuracy is +/-30 mK; noise is 2 mK rms at 25 C and 10 samples/s. The SRS PTC321 is a four-channel platinum RTD input card for the PTC10 programmable temperature controller. Each channel is a 4-wire input with its own 1 mA current source. Current can reverse every reading to cancel parasitic thermocouple EMFs. The 0 to 400 ohm range reads IEC 751 / DIN 43760 Pt100 sensors from about -215 C to 850 C (catalog headline also lists -200 C to 850 C). Initial accuracy is +/-30 mK; noise is 2 mK rms at 25 C and 10 samples/s. Multi-zone Pt100 monitoring in the PTC10 mainframe; oven and chiller control loops; four-wire industrial RTD logging; reversing-excitation thermometry to null DC offsets.

**MODEL****Stanford Research
PTC321****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****PTC321****LISTING**<https://aumictechlabs.com/products/ptc321-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Stanford Research PTC321 is a four-channel RTD input card for the PTC10 Programmable Temperature Controller. It delivers precision temperature measurement for 100 Ω Platinum RTD sensors across a range of -200 $^{\circ}\text{C}$ to 850 $^{\circ}\text{C}$ with ± 30 mK accuracy. Each channel employs four-

wire sensor configuration with dedicated 1 mA excitation current and current reversal to eliminate stray thermoelectric EMFs. The card integrates into the modular PTC10 system, enabling flexible multi-card configurations supporting up to 16 input channels and 6 PID feedback control loops operating at 50 Hz sampling rate.

Technical Specifications

Sensor Type: 100 Ω Platinum RTD (Pt RTD) Input Channels: Four independent channels Wiring Configuration: Four-wire per channel Excitation Current: 1 mA per channel with current reversal Temperature Range: -200 °C to 850 °C Accuracy: ± 30 mK Noise: 2 mKrms at 10 samples/s Temperature Coefficient: 1.4 mK/°C Signal Filtering: Selectable 1-second and 10-second time constant digital low-pass filters Sensor Diagnostics: Open and short circuit detection Calibration: Dual-point calibration at 25 °C and 35 °C circuit board temperatures with microcontroller interpolation Temperature Resolution: 1 mK

Key Features

Four-wire measurement eliminates lead resistance effects Current reversal cancels spurious EMFs for enhanced measurement integrity Modular design integrates with up to three additional I/O cards in PTC10 system Dual-temperature calibration compensates for thermal drift across operating range Low noise performance: 2 mKrms at standard sampling

Typical Applications

Precision cryogenic and thermal research Industrial process temperature control requiring ± 30 mK stability Multi-channel temperature monitoring in scientific instrumentation High-accuracy thermal stability applications across -200 °C to 850 °C range

Compatibility & Integration

The PTC321 is designed exclusively for the Stanford Research Systems PTC10 Programmable Temperature Controller. The PTC10 system supports up to 16 total input channels, 6 PID control channels, USB and Ethernet interfaces, and data logging to removable USB flash media.

Features & description

From manufacturer datasheet

Features

- Four independent 4-wire Pt100 inputs • 1 mA excitation with optional reversal each reading • On-board temperature sensor interpolates 25 C and 35 C factory calibrations • Selectable 1 s and 10 s digital low-pass filters • Open- and short-circuit detection • Optional narrow flange (SRS part 7-01920-720) for slots 5 or 6

PTC321 Characteristics / Specifications

PARAMETER	VALUE
Model	PTC321
Manufacturer	Stanford Research Systems
Instrument Type	Four Channel Platinum RTD Input Card
Parent Instrument	PTC10 Programmable Temperature Controller
Alias	PTC321; SRS PTC321
Number of Inputs	4
Measurement Type	4-wire
Sensor Type	100 ohm platinum RTDs
Connector	5-pin, 3.5 mm header
Resistance Range	0 to 400 ohm (manual also describes 10 to 400 ohm usable span)
IEC751 Temperature Range	-215 C to 850 C
Catalog Temperature Range	-200 C to 850 C
Excitation Current	1 mA
Initial Accuracy	+/-30 mK
Temperature Drift	1.4 mK/C
Time Drift	+/-15 mK/year at 25 C ambient
Noise	2 mK rms at 25 C sensor temperature and 10 samples/s
Signal Conditioning	selectable 1 s and 10 s digital LPF time constants
Fault Detection	open and short circuit
Alpha Coefficient European	0.00385 ohm/ohm/C (IEC751)
Alpha Coefficient American	0.00392 ohm/ohm/C (usable over a smaller range)
Calibration Ambient Points	25 C and 35 C with onboard interpolation
Enclosure Rise Note	PTC10 interior typically 2 to 3 C above ambient; accuracy may degrade if ambient exceeds about 32 C
Fan Control	card can command the PTC10 enclosure fan for PCB temperature stability (Channel.PCB)

PARAMETER	VALUE
Slot Compatibility	standard I/O slots; narrow flange for slot 5 (analog I/O) or slot 6 (digital I/O)
Host Architecture	PTC10 modular controller, up to four I/O cards
Host Control	PID temperature control when paired with heater output cards
Host Features	data logging and alarms (PTC10)
Four Wire Leads	kelvin sense per channel
Current Reversal	available each reading to null thermocouple EMFs
Other Base Resistances	RTDs other than 100 ohm may be used overareduced temperature span Notes Specs from SRS PTC10 product page, PTC10 catalog, and PTC10 user manual. PTC321 is an I/O card, notastand-alone controller. Confirm flange width, slot, and IEC751 versus American alpha setting.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.