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Data Sheet

August 13, 2026

STANFORD RESEARCH SYSTEMS

Stanford Research PRS10 Rubidium Frequency Standard

Stanford Research Systems PRS10 Rubidium Frequency Standard The SRS PRS10 is a 10 MHz rubidium-disciplined crystal oscillator module with ultra-low phase noise (less than -130 dBc/Hz at 10 Hz). It time-tags or phase-locks to a 1 pps input and holds Stratum 1 for 72 hours. RS-232 provides diagnostics, control, and calibration. The physics package is specified for 20 year lamp life. The module is the oscillator used inside the FS725 benchtop standard and is also sold for OEM integration on a 2.00 in x 3.00 in x 4.00 in baseplate. The SRS PRS10 is a 10 MHz rubidium-disciplined crystal oscillator module with ultra-low phase noise (less than -130 dBc/Hz at 10 Hz). It time-tags or phase-locks to a 1 pps input and holds Stratum 1 for 72 hours. RS-232 provides diagnostics, control, and calibration. The physics package is specified for 20 year lamp life. The module is the oscillator used inside the FS725 benchtop standard and is also sold for OEM integration on a 2.00 in x 3.00 in x 4.00 in baseplate. OEM 10 MHz references; network synchronization; synthesizer timebases; GPS 1 pps disciplining; calibration of counters and sources; FS725 spare/replacement oscillator.



MODEL

**Stanford Research
Systems PRS10**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

PRS10

LISTING

<https://aumictechlabs.com/products/prs10-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research Systems PRS10 is a rubidium frequency standard that delivers a 10 MHz sine wave output for precision synchronization and instrumentation applications. Built for environments where frequency stability and low phase noise are critical, the PRS10 achieves phase noise below -130 dBc/Hz at 10 Hz offset and maintains short-term stability of 2×10^{-11} at 1 second. The unit operates from +22 VDC to +30 VDC and draws 50 W, fitting into compact 2.00" $\times$ 3.00" $\times$ 4.00" form factor.

Technical Specifications

Output: 10 MHz sine wave, 0.5 Vrms $\pm 10\%$

Phase Noise (SSB): $\leftarrow 130$ dBc/Hz @ 10 Hz; $\leftarrow 140$ dBc/Hz @ 100 Hz; $\leftarrow 155$ dBc/Hz @ 10 kHz

Spurious Outputs: $\leftarrow 130$ dBc (100 kHz BW)

Harmonic Distortion: $\leftarrow 25$ dBc

Accuracy at Shipment: $\pm 5 \times 10^{-11}$

Aging (monthly, after 30 days): $< 5 \times 10^{-11}$; optional C-option reduces to $< 2.5 \times 10^{-11}$

Short-Term Stability (Allan Variance): $< 2 \times 10^{-11}$ @ 1 s; $< 1 \times 10^{-11}$ @ 10 s; 25 dB return loss

± 30 VDC protection on all pins except RF output

Typical Applications Network synchronization, precision frequency measurement, GPS disciplining, and communication system timing where long-term stability and minimal phase noise are essential.

Compatibility & Integration The PRS10 interfaces via RS-232 for system integration and accepts CMOS-level 1 PPS input (100 k Ω impedance) for phase-locking. Standard CMOS 1 PPS output provides synchronization feedback. Operates on +22 VDC to +30 VDC supply.

Features & description

From manufacturer datasheet

Features

- 10 MHz sine at 0.5 Vrms +/-10 %
- 72 hour Stratum 1 holdover
- 1 pps measurement and output set to +/-10 ns accuracy, +/-1 ns resolution
- Analog trim +/-2e-9 (0 to 5 VDC) and +/-1 ppm via RS-232
- +24 VDC nominal, 2.2 A warm-up, 0.6 A steady-state at 25 C
- Baseplate -20 C to +65 C operation

PRS10 Characteristics / Specifications

PARAMETER	VALUE
Model	PRS10
Manufacturer	Stanford Research Systems
Instrument Type	Rubidium Frequency Standard Module
Alias	PRS10; SRS PRS10
Output Frequency	10 MHz sine wave
Output Amplitude	0.5 Vrms +/-10 %
Phase Noise at Ten Hz	less than -130 dBc/Hz
Phase Noise at One Hundred Hz	less than -140 dBc/Hz
Spurious	less than -130 dBc (100 kHz BW)
Harmonic Distortion	less than -25 dBc
Return Loss	greater than 25 dB at 10 MHz
Accuracy at Shipment	+/-5e-11
Monthly Aging	less than 5e-11 after 30 days
Yearly Aging	less than 5e-10
Allan Variance One Second	less than 2e-11
Allan Variance Ten Seconds	less than 1e-11
Allan Variance One Hundred Seconds	less than 2e-12
Holdover	72 hour Stratum 1 level
Frequency Retrace	+/-5e-11 (72 hrs off then 72 hrs on)
Settability	less than 5e-12
Trim Range Analog	+/-2e-9 (0 to 5 VDC)
Trim Range RS2	+/-1 ppm
Warm Up To Lock	less than 6 minutes
Warm Up To 1ppb	less than 7 minutes
Voltage Sensitivity	less than 2e-11 for 1 VDC supply change

PARAMETER	VALUE
Input Voltage Nominal	+24 VDC
Input Voltage Minimum	+22 VDC
Input Voltage Maximum	+30 VDC
Warm Up Current	2.2 A at 25 C
Steady State Current	0.6 A at 25 C
Cal Reference Output	5.00 +/-0.05 VDC
RS232 Format	9600 baud, 8 bits, no parity, 1 stop bit, 0 to 5 V levels, XON/XOFF
One PPS Measurement Accuracy	+/-10 ns
One PPS Measurement Resolution	+/-1 ns
One PPS Output Set Accuracy	+/-10 ns
One PPS Output Set Resolution	+/-1 ns
Operating Temperature	-20 C to +65 C (baseplate)
Temperature Stability	+/-1e-10 (-20 C to +65 C baseplate)
Storage Temperature	-55 C to +85 C
Magnetic Field Sensitivity	less than 2e-10 for 1 Gauss field reversal
Relative Humidity	95 % non-condensing
Design Life	20 years
Size	2.00 in x 3.00 in x 4.00 in (HWD)
Weight	1.32 lbs
Baseplate Threads	4-40, 4 places
Connector	mates with ITT/Cannon DAM11W1S series Notes Specs from SRS PRS10c catalog. The FS725 benchtop instrument integrates this module with AC power and distribution amplifiers. Confirm 1 pps lock configuration and +24 V current budget during warm-up.
Humidity	95 % non-condensing

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	55 C to +85 C
Operating temperature	20 C to +65 C (baseplate)
Operating Temperature	20 C to +65 C (baseplate)
Humidity	95 % non-condensing
Temperature Stability	+/-1e-10 (-20 C to +65 C baseplate)
Magnetic Field Sensitivity	less than 2e-10 for 1 Gauss field reversal
Relative Humidity	95 % non-condensing
Design Life	20 years
Size	2.00 in x 3.00 in x 4.00 in (HWD)
Weight	1.32 lbs
Baseplate Threads	4-40, 4 places
Connector	mates with ITT/Cannon DAM11W1S series Notes Specs from SRS PRS10c catalog. The FS725 benchtop instrument integrates this module with AC power and distribution amplifiers. Confirm 1 pps lock configuration and +24 V current budget during warm-up.

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	
Specifications	
PARAMETER	VALUE
Model	PRS10
Manufacturer	Stanford Research Systems
Instrument Type	Rubidium Frequency Standard Module
Alias	PRS10; SRS PRS10
Output Frequency	10 MHz sine wave
Output Amplitude	0.5 Vrms +/-10 %
Phase Noise at Ten Hz	less than -130 dBc/Hz
Phase Noise at One Hundred Hz	less than -140 dBc/Hz
Spurious	less than -130 dBc (100 kHz BW)
Harmonic Distortion	less than -25 dBc
Return Loss	greater than 25 dB at 10 MHz
Accuracy at Shipment	+/-5e-11
Monthly Aging	less than 5e-11 after 30 days
Yearly Aging	less than 5e-10
Allan Variance One Second	less than 2e-11
Allan Variance Ten Seconds	less than 1e-11
Allan Variance One Hundred Seconds	less than 2e-12
Holdover	72 hour Stratum 1 level
Frequency Retrace	+/-5e-11 (72 hrs off then 72 hrs on)
Settability	less than 5e-12
Trim Range Analog	+/-2e-9 (0 to 5 VDC)
Trim Range RS232	+/-1 ppm
Warm Up To Lock	less than 6 minutes
Warm Up To 1ppb	less than 7 minutes
Voltage Sensitivity	less than 2e-11 for 1 VDC supply change
Input Voltage Nominal	+24 VDC

PARAMETER	VALUE
Input Voltage Minimum	+22 VDC
Input Voltage Maximum	+30 VDC
Warm Up Current	2.2 A at 25 C
Steady State Current	0.6 A at 25 C
Cal Reference Output	5.00 +/-0.05 VDC
RS232 Format	9600 baud, 8 bits, no parity, 1 stop bit, 0 to 5 V levels, XON/XOFF
One PPS Measurement Accuracy	+/-10 ns
One PPS Measurement Resolution	+/-1 ns
One PPS Output Set Accuracy	+/-10 ns
One PPS Output Set Resolution	+/-1 ns
Operating Temperature	-20 C to +65 C (baseplate)
Temperature Stability	+/-1e-10 (-20 C to +65 C baseplate)
Storage Temperature	-55 C to +85 C
Magnetic Field Sensitivity	less than 2e-10 for 1 Gauss field reversal
Relative Humidity	95 % non-condensing
Design Life	20 years
Size	2.00 in x 3.00 in x 4.00 in (HWD)
Weight	1.32 lbs
Baseplate Threads	4-40, 4 places
Connector	mates with ITT/Cannon DAM11W1S series

Notes

Specs from SRS PRS10c catalog. The FS725 benchtop instrument integrates this module with AC power and distribution amplifiers. Confirm 1 pps lock configuration and +24 V current budget during warm-up.

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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NIST-traceable calibration · SAM registered ·
30-day returns
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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.