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Data Sheet

August 13, 2026

ROCKWELL / ALLEN-BRADLEY

Rockwell / Allen-Bradley 1746sc-NI8u 8 Universal Analog Inputs I/O Module

The Allen-Bradley 1746SC-NI8U is an SLC 500 universal analog input module with 8 single-ended channels. It accepts a variety of voltage and current signals, providing high-resolution data for process monitoring and control applications. This module features individual channel configuration, on-board scaling, and advanced diagnostic capabilities, ensuring reliable and accurate analog input data acquisition.



MODEL

Rockwell / Allen-Bradley 1746SC-NI8U

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

1746SC-NI8U

LISTING

<https://aumictechlabs.com/products/1746sc-ni8u-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Rockwell / Allen-Bradley 1746SC-NI8U is an 8-channel universal analog input module for SLC 500 controllers. It acquires voltage and current signals across multiple ranges with 16-bit resolution and $\pm 0.1\%$ accuracy, delivering scaled engineering units or raw count data. Each channel configures independently for signal type and range, with integrated scaling, channel-to-backplane isolation, and built-in diagnostics for open-circuit and short-circuit detection. Technical Specifications Channels: 8 single-ended Input Signal Types: 0–5 VDC, 0–10 VDC, ± 5 VDC, ± 10 VDC, 0–20 mA, 4–20 mA Resolution: 16-bit Accuracy: $\pm 0.1\%$ of full scale (typical) Input

Impedance: 1 M Ω (voltage, typical); 250 Ω (current, typical) Backplane Current Draw: 120 mA @ 5 VDC (typical) Power Consumption: 0.6 W (typical)Key Features Individual channel configuration for signal type and range User-defined on-board scaling for engineering units Channel-to-backplane isolation LED status indicators for module health and I/O status Removable terminal block for field wiring Fault reporting to SLC 500 controllerTypical Applications Process control for temperature, pressure, flow, and level monitoring High-resolution analog sensor data acquisition and trending Machine monitoring with vibration sensors and load cells Environmental monitoring from analog sensorsCompatibility & Integration Designed for Allen-Bradley SLC 500 controllers and standard 1746 series I/O chassis. Module interfaces via SLC 500 backplane connector.

1746SCNI8U Characteristics / Specifications

PARAMETER	VALUE
Model	1746sc-NI8U
Manufacturer	Spectrum Controls for Allen-Bradley / Rockwell Automation
Instrument Type	SLC 500 Universal Analog Input Module
Series	1746 SLC 500
Alias	1746sc-NI8U; 1746SC-NI8U; NI8U
Channels	8 (two groups of 4)
Thermocouple Types	J, K, T, B, E, R, S, N, C
RTD Types	Pt385, Pt3916, Ni618, Ni672, Cu426
Resistance Range	0 to 3000 ohm
Current Ranges	0-20 mA, 4-20 mA
Voltage Ranges	plus/minus 50 mV, plus/minus 100 mV, plus/minus 0.5 V, plus/minus 2.0 V, 0-5 V, 1-5 V, 0-10 V, plus/minus 10 V
Filter Frequencies	10 Hz, 50 Hz, 60 Hz, 250 Hz selectable per channel
Input Impedance Voltage TC	greater than 10 Mohm
Input Impedance Current	249 ohm
Overvoltage Protection	plus/minus 14.5 Vdc continuous; 250 V pulsed 1 ms
Overcurrent Protection	28 mA continuous; 40 mA 1 ms pulsed 10 percent duty
Backplane Current 5 V	120 mA maximum
Backplane Current 24 V	100 mA maximum
Common Mode Rejection	100 dB at 50/60 Hz
Normal Mode Rejection	100 dB at 50/60 Hz
Power Dissipation Max	3.0 W
Operating Temperature	0 C to 60 C
RTD Wiring	2-wire, 3-wire, or 4-wire; EXC+/EXC-/CH+/CH-
Cable Impedance	25 ohm combined max without exceeding input limits
CJC	onboard for thermocouples

PARAMETER	VALUE
Auto Calibration	full auto-calibration
Open Circuit Detection	most input types
Short Circuit Detection	RTDs
Agency	UL/cUL ANSI ISA 12.12.01 ClassIDiv 2 Groups ABCD, CE
Chassis	1746 I/O rack, SLC 500 fixed and modular
TechConnect	Rockwell TechConnect support path on Spectrum pages Notes Specs from Spectrum Controls 1746sc-NI8U datasheet and user manual. RTD/resistance count is group-limited (not eight independent RTDs). Confirm channel-group configuration in the image table and CJC installation.

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 C to 60 C
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CJC	onboard for thermocouples
Auto Calibration	full auto-calibration
Open Circuit Detection	most input types
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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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Manufacturer	Spectrum Controls for Allen-Bradley / Rockwell Automation
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PARAMETER	VALUE
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Channels	8 (two groups of 4)
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Thermocouple Types	J, K, T, B, E, R, S, N, C
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Resistance Range	0 to 3000 ohm
Specifications	
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Current Ranges	0-20 mA, 4-20 mA
Voltage Ranges	plus/minus 50 mV, plus/minus 100 mV, plus/minus 0.5 V, plus/minus 2.0 V, 0-5 V, 1-5 V, 0-10 V, plus/minus 10 V
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Auto Calibration	full auto-calibration
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Specifications

PARAMETER	VALUE
Short Circuit Detection	RTDs
Agency	UL/cUL ANSI ISA 12.12.01 ClassIDiv 2 Groups ABCD, CE
Chassis	1746 I/O rack, SLC 500 fixed and modular

TechConnect: Rockwell TechConnect support path on Spectrum pages

Notes

Specs from Spectrum Controls 1746sc-NI8U datasheet and user manual. RTD/resistance count is group-limited (not eight independent RTDs). Confirm channel-group configuration in the image table and CJC installation.

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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<https://aumictechlabs.com>

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.