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Data Sheet

August 13, 2026

NI

NI USB-6001 Multifunction I/O Device

The NI USB-6001 is a low-cost, bus-powered USB data acquisition (DAQ) device. It offers 8 analog inputs (14-bit, 20 kS/s), 2 analog outputs, 13 digital I/O lines, and a 32-bit counter. Ideal for basic data logging, measurement, and control applications.



MODEL

NI USB-6001

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

USB-6001

LISTING

<https://aumictechlabs.com/products/usb-6001-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The NI USB-6001 is a bus-powered USB data acquisition device that delivers analog input, analog output, digital I/O, and counter functionality in a compact, portable form factor. It connects via full-speed USB 2.0 with Micro-B receptacle and detachable screw terminal connectors for analog and digital signal routing.

Technical Specifications

Analog Input 8 single-ended channels (configurable as 4 differential) 14-bit resolution Maximum sampling rate: 20 kS/s Input voltage range: ± 10 V Absolute accuracy: 26 mV Differential (DIFF) and Referenced Single-Ended (RSE) modes supported Multiplexer routes one channel at a time to DIFF/RSE input

Analog Output 2 channels Maximum update rate: 5 kS/s per channel

Digital I/O 13 bidirectional channels TTL compatible PFI 0 and PFI 1 configurable as edge counter inputs or digital trigger inputs

Counter/Timer Single 32-bit counter Edge counter (rising or falling edges) Maximum input frequency: 5 MHz Source: PFI 0 or PFI 1 Counts up only; downward counting not supported

Physical & Connectivity Dimensions: 75.4 mm × 86.2 mm × 23.6 mm (without terminals); 93.2 mm

× 86.2 mm × 23.6 mm (with terminals) Weight: 83 g (without terminals); 105 g (with terminals)
Screw terminal wire gauge: 16 to 28 AWG (0.08 to 1.31 mm²) Screw terminal torque: 0.22–0.25 N·m
Power & Electrical Bus-powered via USB; +5 V auxiliary output up to 150 mA
Key Features Fully bus-powered operation eliminates external power supply requirements Detachable screw terminal blocks simplify integration into benchtop and panel-mount systems Compact form factor (23.6 mm height) fits space-constrained applications 32-bit counter with 5 MHz maximum input frequency supports precision event counting TTL-compatible digital I/O enables direct interfacing with standard logic circuits
Typical Applications Data logging and parameter monitoring in laboratory environments Portable measurement and control systems Hardware-in-the-loop testing requiring modest I/O density Edge counting and event detection in embedded systems
Compatibility & Integration Operating system support: Windows 11, Windows 10, Linux (legacy drivers). Operates 0 °C to 45 °C; humidity 5–95% RH noncondensing. Intended for indoor use at altitudes up to 2,000 m. Complies with CISPR 11 Class A equipment standards.

Features & description

From manufacturer datasheet

Features

- 8 SE / 4 DI analog inputs, 14-bit, 20 kS/s aggregate - Single +/-10 V analog input range; greater than 1 Gohm impedance - Two 14-bit analog outputs, +/-10 V, 5 kS/s simultaneous hardware timed - 13 DIO lines; 32-bit counter - Typical full-scale AI accuracy 6 mV; 26 mV maximum over temperature
- USB bus-powered; NI-DAQmx

USB6001 Characteristics / Specifications

PARAMETER	VALUE
Technical Specifications Model	USB-6001 Manufacturer: National Instruments Instrument Type: USB Multifunction DAQ Series: USB-6001/6002/6003 Alias: USB-6001; NI USB-6001 AI Differential: 4 AI Single Ended: 8 ADC Resolution: 14 bit Maximum Sample Rate: 20 kS/s aggregate Converter Type: successive approximation AI FIFO: 2047 samples Trigger Sources: software, PFI 0, PFI 1 Input Range: +/-10 V Working Voltage: +/-10 V
Overvoltage On	+/-30 V Overvoltage Off: +/-20 V Input Impedance: greater than 1 Gohm Input Bias Current: +/-200 pA Absolute Accuracy Typical: 6 mV at full scale Absolute Accuracy Maximum: 26 mV over temperature, full scale System Noise: 0.7 mVrms DNL: 14 bit, no missing codes INL: +/-0.5 LSB CMRR: 56 dB (DC to 5 kHz)
Bandwidth	300 kHz AO Channels: 2 DAC Resolution: 14 bit AO Range: +/-10 V AO Update Rate: 5 kS/s simultaneous per channel, hardware timed AO FIFO: 2047 samples AO Drive: +/-5 mA Short Circuit Current: +/-11 mA Slew Rate: 3 V/us DIO Channels: 13 Counter Resolution: 32 bits USB Specification: USB 2.0 full-speed Power: USB bus-powered
Family Note	USB-6002/6003 are 16-bit siblings at 50 kS/s / 100 kS/s User Guide Accuracy: some USB-6001/6002/6003 comparison tables list 9.1 mV typical full scale; this file uses USB-6001 Specifications 6 mV typical Connectors: 16-position screw terminal plugs Driver: NI-DAQmx Form: portable USB DAQ enclosure

USB6001 Specifications

PARAMETER	VALUE
Applications	Benchtop +/-10 V analog I/O; student DAQ; simple waveform generation; NI-DAQmx portable logging without external analog range switching.
Key Features	- 8 SE / 4 DI analog inputs, 14-bit, 20 kS/s aggregate
Technical Specifications	Model: USB-6001

Technical Specifications

PARAMETER	VALUE
Model	USB-6001
Manufacturer	National Instruments
Instrument Type	USB Multifunction DAQ
Series	USB-6001/6002/6003
Alias	USB-6001; NI USB-6001
AI Differential	4
AI Single Ended	8
ADC Resolution	14 bit
Maximum Sample Rate	20 kS/s aggregate
Converter Type	successive approximation
AI FIFO	2047 samples
Trigger Sources	software, PFI 0, PFI 1
Input Range	+/-10 V
Working Voltage	+/-10 V
Overvoltage On	+/-30 V
Overvoltage Off	+/-20 V
Input Impedance	greater than 1 Gohm
Input Bias Current	+/-200 pA
Absolute Accuracy Typical	6 mV at full scale
Absolute Accuracy Maximum	26 mV over temperature, full scale
System Noise	0.7 mVrms
DNL	14 bit, no missing codes
INL	+/-0.5 LSB
CMRR	56 dB (DC to 5 kHz)
Bandwidth	300 kHz

PARAMETER	VALUE
AO Channels	2
DAC Resolution	14 bit
AO Range	+/-10 V
AO Update Rate	5 kS/s simultaneous per channel, hardware timed
AO FIFO	2047 samples
AO Drive	+/-5 mA
Short Circuit Current	+/-11 mA
Slew Rate	3 V/us
DIO Channels	13
Counter Resolution	32 bits
USB Specification	USB 2.0 full-speed
Power	USB bus-powered
Family Note	USB-6002/6003 are 16-bit siblings at 50 kS/s / 100 kS/s
User Guide Accuracy	some USB-6001/6002/6003 comparison tables list 9.1 mV typical full scale; this file uses USB-6001 Specifications 6 mV typical
Connectors	16-position screw terminal plugs
Driver	NI-DAQmx
Form	portable USB DAQ enclosure

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 from the NI USB-6001 Device Specifications.

Applications Benchtop +/-10 V analog I/O; student DAQ; simple waveform generation; NI-DAQmx portable logging without external analog range switching.

Key Features - 8 SE / 4 DI analog inputs, 14-bit, 20 kS/s aggregate - Single +/-10 V analog input range; greater than 1 Gohm impedance - Two 14-bit analog outputs, +/-10 V, 5 kS/s simultaneous hardware timed - 13 DIO lines; 32-bit counter - Typical full-scale AI accuracy 6 mV; 26 mV maximum over temperature - USB bus-powered; NI-DAQmx

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Family Note: USB-6002/6003 are 16-bit siblings at 50 kS/s / 100 kS/s User Guide Accuracy: some USB-6001/6002/6003 comparison tables list 9.1 mV typical full scale; this file uses USB-6001 Specifications 6 mV typical Connectors: 16-position screw terminal plugs Driver: NI-DAQmx Form: portable USB DAQ enclosure

Notes Specs from NI USB-6001 Device Specifications and USB-6001/6002/6003 User Guide. Prefer the device specifications PDF for warranted accuracy. Confirm the unit is USB-6001 versus 6002/6003 on the label.

Technical Specifications

PARAMETER	VALUE
Model	USB-6001
Manufacturer	National Instruments
Instrument Type	USB Multifunction DAQ
Series	USB-6001/6002/6003
Alias	USB-6001; NI USB-6001
AI Differential	4
AI Single Ended	8
ADC Resolution	14 bit
Maximum Sample Rate	20 kS/s aggregate
Converter Type	successive approximation
AI FIFO	2047 samples
Trigger Sources	software, PFI 0, PFI 1
Input Range	+/-10 V
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PARAMETER	VALUE
Overvoltage On	+/-30 V
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Input Impedance	greater than 1 Gohm
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Absolute Accuracy Typical	6 mV at full scale
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System Noise	0.7 mVrms
DNL	14 bit, no missing codes
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Connectors	16-position screw terminal plugs
Driver	NI-DAQmx
Form	portable USB DAQ enclosure

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

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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.