Aumictech
Test & measurement · bought, sold, repaired, calibrated

Data Sheet
August 13, 2026

NI

NI USB-6225 16-Bit Multifunction DAQ

NI Data Acquisition Systems (DAQ). Sample rate: 250 kS/s (single or aggregate multichannel), Accuracy: 50 ppm of sample rate, Accuracy: 50 ppm.

MODEL **NI USB-6225**	CALIBRATION **Available on request**
CONDITION **Used**	STATUS **In stock**
RFQ / SKU **USB-6225**	LISTING **https://aumictechlabs.com/products/usb-6225-2/**

NIST-traceable cal · SAM registered · 30-day returns · NAICS 423690 · 811210 · 541380

This unit

The NI USB-6225 is a 16-bit multifunction DAQ module engineered for USB connectivity in measurement and control applications spanning laboratory automation, research, design verification, and manufacturing test. It combines 40 differential (80 single-ended) analog input channels with 2 analog output channels, up to 24 digital I/O lines, and dual 32-bit counters/timers - all accessible through NI-DAQmx driver software. Signal conditioning expansion via SCC or SCXI modules enables sensor and high-voltage measurement capabilities.Technical Specifications -# Analog Inputs 40 differential or 80 single-ended channels, 16-bit resolution Input ranges: ±0.2 V, ±1 V, ±5 V, ±10 V Maximum sample rate: 250 kS/s (single or aggregate multichannel) Timing accuracy: 50 ppm of sample rate Input FIFO: 4,095 samples Overvoltage protection: All channels; ±20 mA maximum during overvoltage No missing codes guaranteed; maximum working voltage ±11 V -# Analog Outputs 2 channels, 16-bit resolution with guaranteed monotonicity Output range: ±10 V; output impedance 0.2 Ω Maximum update rates: 833 kS/s (single), 740 kS/s (dual) Settling time: 4 µs convert interval (±90 ppm of step/±6 LSB on full-scale steps) Overdrive protection to

±25 V at 10 mA -# Digital I/O Up to 24 static or 48 total channels Hardware-timed digital I/O: 32 lines at 1 MHz Correlated DIO: 8 clocked lines at 1 MHz Debounce filters: 125 ns, 6.425 µs, 2.56 ms, or disabled (selectable per input) Digital triggering supported ±20 V overvoltage protection on up to two pins -# Counters/Timers Two 32-bit counters with 10 MHz and 100 kHz base clocks Base clock accuracy: 50 ppm Frequency generator output available on PFI or RTSI terminals -# Power & Physical USB external supply: 11–30 VDC, 20 W +5 V terminal: 1 A max; combined +5 V/PFI/P0/P1/P2: 2 A max 2 A, 250 V supply fuse Recommended warm-up time: 15 minutesKey Features Guaranteed no missing codes (16-bit DNL) Timing accuracy maintained across all operating modes Integrated overvoltage and overdrive protection Selectable per-channel debounce configurations Direct signal conditioning module supportTypical Applications Sensor characterization and calibration Real-time control systems in test environments Multi-channel data logging in production test Frequency and timing measurement tasksCompatibility & Integration NI-DAQmx driver software enables simplified configuration. Expansion capabilities through SCC and SCXI signal conditioning modules extend measurement range and sensor compatibility. PFI terminals support correlated triggering and frequency generation.

Features & description

From manufacturer datasheet

Features

• 80 SE / 40 DI analog inputs on one multiplexed 16-bit ADC • Aggregate 250 kS/s single-channel and multichannel • Two 16-bit analog outputs to +/-10 V • 24 DIO with 8 hardware-timed Port 0 lines to 1 MHz class • Two 32-bit general-purpose counters/timers • NI-DAQmx driver; USB 2.0 Hi-Speed Signal Stream

USB6225 Characteristics / Specifications

PARAMETER	VALUE
Model	USB-6225
Manufacturer	National Instruments
Instrument Type	USB Multifunction DAQ
Series	M Series
Alias	USB-6225; NI USB-6225; NI 6225
AI Channels	40 differential or 80 single ended
ADC Resolution	16 bits
DNL	no missing codes guaranteed
AI Sample Rate Single	250 kS/s maximum
AI Sample Rate Aggregate	250 kS/s maximum
Timing Resolution	50 ns
Timing Accuracy	50 ppm of sample rate
Input Coupling	DC
Input Range	+/-0.2 V, +/-1 V, +/-5 V, +/-10 V
Working Voltage	+/-11 V of AI GND (signal plus common mode)
CMRR	92 dB (DC to 60 Hz)
Input Impedance On	greater than 10 Gohm in parallel with 100 pF
Input Impedance Off	820 ohm AI+ or AI- to AI GND
Input Bias Current	+/-100 pA
Crosstalk Adjacent	-75 dB at 100 kHz
Crosstalk Nonadjacent	-90 dB at 100 kHz (-71 dB for AI 0..15 to AI 64..79)
Small Signal Bandwidth	700 kHz (-3 dB)
AI FIFO	4095 samples
Scan List Memory	4095 entries
Overvoltage On	+/-25 V for up to two AI pins

PARAMETER	VALUE
Overvoltage Off	+/-15 V for up to two AI pins
Overvoltage Current	+/-20 mA maximum per AI pin
AI Absolute Accuracy FS	3100 uV at +/-10 V range (warranted, 1 year class table)
AO Channels	2
DAC Resolution	16 bits
AO Monotonicity	16 bit guaranteed
AO Update 1 Ch	833 kS/s
AO Update 2 Ch	740 kS/s per channel
Output Range	+/-10 V
Output Impedance	0.2 ohm
Output Drive	+/-5 mA
Overdrive Protection	+/-25 V
AO FIFO	8191 samples shared
AO Settling	6 us full-scale step, 15 ppm (1 LSB)
Slew Rate	15 V/us
AO Absolute Accuracy FS	3230 uV at +/-10 V (warranted table)
DIO Channels	24 total (8 Port 0; 16 PFI/P1/P2)
Port 0 Clocked	up to 8 bits, 0 MHz to 1 MHz sample clock
DIO FIFO	2047 samples DI or DO waveform
Pull Down	50 kohm typical, 20 kohm minimum
DIO Protection	+/-20 V on up to two pins
Counters	2, 32 bit
USB Interface	USB 2.0 Hi-Speed or full-speed; USB Signal Stream
Warm Up	30 minutes (USB)
Calibration Interval	1 year
Operating Temperature	0 to 45 C (USB)
Storage Temperature	-20 to 70 C

PARAMETER	VALUE
Humidity	10% to 90% RH noncondensing
Altitude	2000 m maximum
Pollution Degree	2 indoor
Screw Terminal Size	26.67 × 17.09 × 4.45 cm (10.5 × 6.73 × 1.75 in)
Mass Termination Size	18.8 × 17.09 × 4.45 cm (7.4 × 6.73 × 1.75 in)
Screw Terminal Weight	1.24 kg (2 lb 11 oz)
Mass Termination Weight	907 g (2 lb)
Screw Terminal Count	128 screw terminals
Wiring Gauge	16 to 28 AWG
Measurement Category	CAT I / CAT O; 11 V channel to earth
Safety Standards	IEC/EN/UL/CSA 61010-1 Notes Specs from NI 6225 Device Specifications (M Series). USB enclosure ratings differ from PCI/PXI 6225 (0 to 55 C, 15 min warm-up). Confirm screw-terminal versus mass-termination part number and external power adapter on the unit.
Bandwidth	700 kHz (-3 dB)

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	20 to 70 C
Operating temperature	0 to 45 C (USB)
Operating Temperature	0 to 45 C (USB)
Humidity	10% to 90% RH noncondensing
Altitude	2000 m maximum
Pollution Degree	2 indoor
Screw Terminal Size	26.67 × 17.09 × 4.45 cm (10.5 × 6.73 × 1.75 in)
Mass Termination Size	18.8 × 17.09 × 4.45 cm (7.4 × 6.73 × 1.75 in)
Screw Terminal Weight	1.24 kg (2 lb 11 oz)
Mass Termination Weight	907 g (2 lb)
Screw Terminal Count	128 screw terminals
Wiring Gauge	16 to 28 AWG
Measurement Category	CAT I / CAT O; 11 V channel to earth
Safety Standards	IEC/EN/UL/CSA 61010-1 Notes Specs from NI 6225 Device Specifications (M Series). USB enclosure ratings differ from PCI/PXI 6225 (0 to 55 C, 15 min warm-up). Confirm screw-terminal versus mass-termination part number and external power adapter on the unit.

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 are typical at 25 C unless noted.

Applications
High-channel laboratory and production voltage acquisition; mixed analog/digital stimulus and response; NI-DAQmx automated test; USB benchtop replacement of PCIMSeries 6225.

Key Features
- 80 SE / 40 DI analog inputs on one multiplexed 16-bit ADC
- Aggregate 250 kS/s single-channel and multichannel
- Two 16-bit analog outputs to +/-10 V
- 24 DIO with 8 hardware-timed Port 0 lines to 1 MHz class
- Two 32-bit general-purpose counters/timers
- NI-DAQmx driver; USB 2.0 Hi-Speed Signal Stream

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	USB-6225
Manufacturer	National Instruments
Instrument Type	USB Multifunction DAQ
Series	M Series
Alias	USB-6225; NI USB-6225; NI 6225
AI Channels	40 differential or 80 single ended
ADC Resolution	16 bits
DNL	no missing codes guaranteed
AI Sample Rate Single	250 kS/s maximum
AI Sample Rate Aggregate	250 kS/s maximum
Timing Resolution	50 ns
Timing Accuracy	50 ppm of sample rate
Input Coupling	DC
Input Range	+/-0.2 V, +/-1 V, +/-5 V, +/-10 V
Working Voltage	+/-11 V of AI GND (signal plus common mode)
CMRR	92 dB (DC to 60 Hz)
Input Impedance On	greater than 10 Gohm in parallel with 100 pF
Input Impedance Off	820 ohm AI+ or AI- to AI GND
Input Bias Current	+/-100 pA
Crosstalk Adjacent	-75 dB at 100 kHz

PARAMETER	VALUE
Crosstalk Nonadjacent	-90 dB at 100 kHz (-71 dB for AI 0..15 to AI 64..79)
Small Signal Bandwidth	700 kHz (-3 dB)
AI FIFO	4095 samples
Scan List Memory	4095 entries
Overvoltage On	+/-25 V for up to two AI pins
Overvoltage Off	+/-15 V for up to two AI pins
Overvoltage Current	+/-20 mA maximum per AI pin
AI Absolute Accuracy FS	3100 uV at +/-10 V range (warranted, 1 year class table)
AO Channels	2
DAC Resolution	16 bits
AO Monotonicity	16 bit guaranteed
AO Update 1 Ch	833 kS/s
AO Update 2 Ch	740 kS/s per channel
Output Range	+/-10 V
Output Impedance	0.2 ohm
Output Drive	+/-5 mA
Overdrive Protection	+/-25 V
AO FIFO	8191 samples shared
AO Settling	6 us full-scale step, 15 ppm (1 LSB)
Slew Rate	15 V/us
AO Absolute Accuracy FS	3230 uV at +/-10 V (warranted table)
DIO Channels	24 total (8 Port 0; 16 PFI/P1/P2)
Port 0 Clocked	up to 8 bits, 0 MHz to 1 MHz sample clock
DIO FIFO	2047 samples DI or DO waveform
Pull Down	50 kohm typical, 20 kohm minimum
DIO Protection	+/-20 V on up to two pins
Counters	2, 32 bit
USB Interface	USB 2.0 Hi-Speed or full-speed; USB Signal Stream
Warm Up	30 minutes (USB)
Calibration Interval	1 year
Operating Temperature	0 to 45 C (USB)
Storage Temperature	-20 to 70 C

PARAMETER	VALUE
Humidity	10% to 90% RH noncondensing
Altitude	2000 m maximum
Pollution Degree	2 indoor
Screw Terminal Size	26.67 x 17.09 x 4.45 cm (10.5 x 6.73 x 1.75 in)
Mass Termination Size	18.8 x 17.09 x 4.45 cm (7.4 x 6.73 x 1.75 in)
Screw Terminal Weight	1.24 kg (2 lb 11 oz)
Mass Termination Weight	907 g (2 lb)
Screw Terminal Count	128 screw terminals
Wiring Gauge	16 to 28 AWG
Measurement Category	CAT I / CAT O; 11 V channel to earth
Safety Standards	IEC/EN/UL/CSA 61010-1

Notes
Specs from NI 6225 Device Specifications (M Series). USB enclosure ratings differ from PCI/PXI 6225 (0 to 55 C, 15 min warm-up). Confirm screw-terminal versus mass-termination part number and external power adapter on the unit.

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
788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
https://aumictechlabs.com

NIST-traceable calibration · SAM registered · 30-day returns
NAICS 423690 · 811210 · 541380
Generated August 13, 2026