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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight U2331A

Agilent Keysight U2331A USB Modular High Density Multifunction DAQ The Agilent/Keysight U2331A is the high-density U2300 Series DAQ with 64 SE / 32 DI 12-bit analog inputs, up to 3 MSa/s on a single channel and 1 MSa/s across multiple channels, plus two 12-bit analog outputs. OEM tables list extended bipolar ranges down to plus or minus 0.05 V and unipolar down to 0.1 V with 24-bit DIO and dual counters. High-channel-count acquisition, fast single-channel capture to 3 MSa/s, and dense modular systems up to 384 channels in U2781A chassis aggregations. The Agilent/Keysight U2331A is the high-density U2300 Series DAQ with 64 SE / 32 DI 12-bit analog inputs, up to 3 MSa/s on a single channel and 1 MSa/s across multiple channels, plus two 12-bit analog outputs. OEM tables list extended bipolar ranges down to plus or minus 0.05 V and unipolar down to 0.1 V with 24-bit DIO and dual counters. High-channel-count acquisition, fast single-channel capture to 3 MSa/s, and dense modular systems up to 384 channels in U2781A chassis aggregations. 64 single ended or 32 differential inputs



MODEL

**Agilent / Keysight
U2331A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

U2331A

LISTING

<https://aumictechlabs.com/products/u2331a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight U2331A is a high-density USB modular data acquisition device built for multifunction measurement, data logging, and monitoring tasks. It operates standalone or integrates into a modular chassis system to expand channel capacity. The instrument delivers high-speed USB 2.0 connectivity with USBTMC-USB488 compliance, ensuring efficient host communication and data

transfer. Support for Keysight VEE, MATLAB, NI LabVIEW, and Microsoft Visual Studio streamlines integration into existing development workflows.

Technical Specifications

Analog Input 64 single-ended or 32 differential multiplex channels 12-bit resolution Single-channel sampling: 3 MSa/s Multi-channel sampling: 1 MSa/s aggregate (rate per channel = $1 \text{ MSa/s} \div \text{number of channels active}$)

Analog Output 2 channels, 12-bit resolution Update rate: 1 MSa/s

Waveform generation: sinusoidal, square, triangle, sawtooth, and noise

External reference voltage range: $\pm 10 \text{ V}$ maximum

Digital I/O & Counters 24-bit programmable TTL input/output channels 2 general-purpose digital counter channels (1 MHz maximum frequency input)

ADC Architecture 12-bit ADC with last 4 bits truncated

Triggering & Acquisition Immediate, analog, external digital, SSI/Star, and Master/Slave trigger sources Burst mode for simulated simultaneous analog input acquisition Self-calibration for offset adjustment within specified accuracy ranges

Key Features

- Burst mode enables multi-channel simultaneous acquisition simulation
- Configurable trigger options for both analog-to-digital and digital-to-analog operations
- On-board self-calibration reduces manual calibration overhead
- Slave and SSI/Star trigger modes optimized for U2781A chassis integration

Typical Applications

- Multi-channel industrial sensor monitoring and data logging
- Waveform generation and acquisition in automated test systems
- Frequency and timing measurements via digital counter inputs
- Laboratory instrument control requiring flexible triggering and synchronization

Compatibility & Integration Hi-Speed USB 2.0 interface with USBTMC-USB488 standard compliance. Compatible with Keysight VEE, MATLAB, NI LabVIEW, and Microsoft Visual Studio. Operates as standalone unit or as modular component within U2781A USB modular instrument chassis.

U2331A Characteristics / Specifications

PARAMETER	VALUE
Analog Input Resolution	12 bits no missing codes
Analog Input Channels	64 SE / 32 DI
Maximum Sampling Rate Single Channel	3 MSa/s
Maximum Sampling Rate Multi Channel Aggregate	1 MSa/s
Analog Output Resolution	12 bits
Analog Output Channels	2
Analog Output Update Rate	1 MSa/s
Bipolar Ranges Extended	plus or minus 10 V down to plus or minus 0.05 V
Unipolar Ranges Extended	0 to 10 V down to 0 to 0.1 V
Input Impedance	1 GOhm / 100 pF
Digital I/O Bits	24 bit programmable
Counter Channels	2
FIFO Buffer Analog Input	up to 8 MSa
Module Dimension With Case WxDxH	120.00 × 182.40 × 44.00 mm
Weight With Case	565 g
Remote Interface	Hi Speed USB 2.0
Operating Temperature	0 C to 55 C
Power Requirement	plus 12 VDC 2 A max input rated
AO Function Modes	sine square triangle sawtooth noise
Trigger Modes AI	pre delay post middle
Common Mode Range	plus or minus 7.5 V maximum
Calibration Warmup Recommended	20 minutes

U2331A Specifications

PARAMETER	VALUE
Key Features	64 single ended or 32 differential inputs
Technical Specifications	Analog Input Resolution: 12 bits no missing codes
Notes	From Keysight U2300A Series data sheet high-density section for U2331A.

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 C to 55 C
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AO Function Modes	sine square triangle sawtooth noise
Trigger Modes AI	pre delay post middle
Common Mode Range	plus or minus 7.5 V maximum
Calibration Warmup Recommended	20 minutes Notes From Keysight U2300A Series data sheet high-density section for U2331A.

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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Analog Input Channels	64 SE / 32 DI
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Calibration Warmup Recommended	20 minutes
Notes	
From Keysight U2300A Series data sheet high-density section for U2331A.	

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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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.