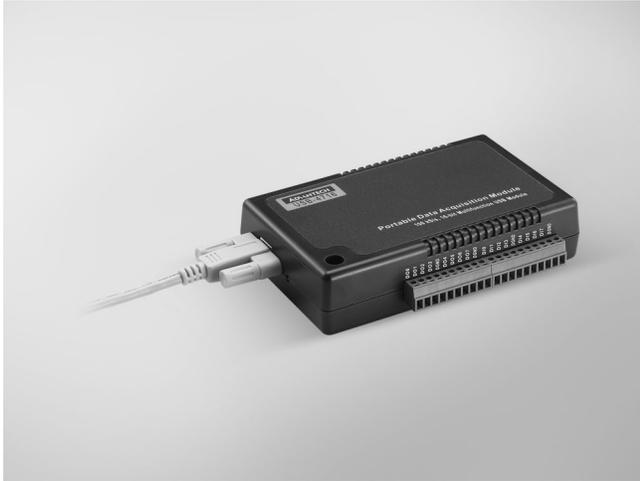# USB-4716

200 kS/s, 16-bit, 16-ch Multifunction DAQ USB Module

Features

- Supports USB 2.0
- Portable
- Bus-powered
- 16 analog input channels
- 16-bit resolution AI
- Sampling rate up to 200 kS/s
- 8-ch DI/8-ch DO, 2-ch AO and one 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN-rail mounting
- One lockable USB cable for secure connection included

CE FCC RoHS COMPLIANT 2002/95/EC

Introduction

The USB-4700 series consists of true plug & play data acquisition devices. No more opening up your computer chassis to install boards just plug in the module, then get the data. It's easy to use and efficient. USB-4716 offers 16 single-ended/ 8 differential analog inputs with 16-bit resolution, up to 200 kS/s throughput, 16 digital I/Os, and 1 user counter, plus 2 16-bit analog outputs. The high performance makes USB-4716 your best choice for test & measurement applications in the production line or in the lab.

Reliable and rugged enough for industrial applications, yet affordable for home projects, the USB-4716 is the perfect way to add measurement and control capability to any USB capable computer. The USB-4700 series is fully plug & play and easy to use. It obtains all required power from the USB port, so no external power connection is ever required.

Specifications

Analog Input

- **Channels** 16 single-ended/ 8 differential (software programmable)
- **Resolution** 16 bits
- **Max. Sampling Rate** 200 kS/s (for USB 2.0)

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels are used, the sampling rate is 200k/4 = 50 kS/s per channel.

- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software, onboard programmable pacer, or external
- **Input Range (V, software programmable) & Absolute Accuracy**

Single Ended	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Differential	±10	±5	±2.5	±1.25	±0.625
Absolute Accuracy (% of FSR)*	0.015	0.03	0.03	0.05	0.1

*: ±1 LSB is added as the derivative for absolute accuracy

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

Internal Reference	Unipolar	0 ~ 5 , 0 ~ 10
	Bipolar	±5, ±10

- **Slew Rate** 0.125 V/µs
- **Driving Capability** 5 mA
- **Output Impedance** 0.1 Ω max.
- **Operation Mode** Single output
- **Accuracy** Relative: ±1 LSB

Digital Input

- **Channels** 8
- **Compatibility** 3.3 V/5 V/TTL
- **Input Voltage** Logic 0: 1.0 V max.
  Logic 1: 2.0 V min.

Digital Output

- **Channels** 8
- **Compatibility** 3.3 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
  Logic 1: 2.4 V min.
- **Output Capability** Sink: 6 mA (sink)
  Source: 6 mA (source)

Event Counter

- **Channels** 1
- **Compatibility** 3.3V/TTL
- **Max. Input Frequency** 1 kHz

General

- **Bus Type** USB 2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 360 mA
  Max.: 5 V @ 450 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 158°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Operating Humidity** 5 ~ 85% RH non-condensing
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **USB-4716-AE** 200 kS/s, 16-bit, 16-ch Multi. USB Module

Accessories

- **1960004544** Wallmount Bracket
- **1960005788** VESA Mount Bracket

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