USB-4716

200 kS/s, 16-bit Multifunction 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
- 8DI/8DO, 2 AO and 1 32-bit counter (USB-4716L w/o AO)
- Wiring terminal on Modules
- Suitable for din-rain mounting
- Lockable USB cable for rigid connection

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 and efficient. USB4716 offers 16SE/8Diff. inputs with 16-bit resolution, up to 200 kS/s throughput, 16 digital I/O lines and 1 user counter, and 16-bit analog outputs.

Reliable and rugged enough for industrial applications, yet inexpensive enough for home projects, the USB-4716 is the perfect way to add measurement and control capability to any USB capable computer. The USB-4716 is fully USB 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/ 8differential (SW programmable)
- **Resolution** 16 bits
- **Max. Sampling Rate*** 200 kS/s max. (For USB 2.0)
- **FIFO Size** 1024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** Off: 100 MΩ/10 pF, On: 100 MΩ/100 pF
- **Sampling Modes** Software, onboard programmable pacer, or external
- **Input Range** **(V, software programmable)**

Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Accuracy (% of FSR ±1LSB)	0.15	0.03	0.03	0.05	0.1

***Note**:
The sampling rate and throughput depends on the computer hardware architecture and software environment. The rates may vary due to programming language, code efficiency, CPU utilization and other factors.

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 V, ±10 V

- **Slew Rate** 0.15 V/μs
- **Driving Capability** ±2 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: 0.8 V max.
  Logic 1: 2.0 V min.

Digital Output

- **Channels** 8
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
  Logic 1: 2.4 V min.
- **Output Capability** Sink: 4 mA (sink)
  Source: 4 mA (source)

Event Counter

- **Channels** 1
- **Compatibility** 3.3 V/5 V/TTL
- **Max. Input Frequency** 0.1~1K while using FAI; 0,1~10K while using SWAI

General

- **Bus Type** USB V2.0
- **I/O Connector** On board screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm
- **Power Consumption** Typical +5 V @ 340 mA
  Max.: +5 V @ 440 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 158° F) (refer to IEC 68-2-1, 2)
- **Storing Temperature** -20 ~ 85° C (-4 ~ 158° F)
- **Operating Humidity** 5 ~ 85% RH non-condensing(refer to IEC 68-1, -2, -3)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-1, -2, -3)

Ordering Information

- **USB-4716** 200 kS/s, 16-bit Multifunction USB Module, CD, manual and one 1.8 m USB 2.0 cable included