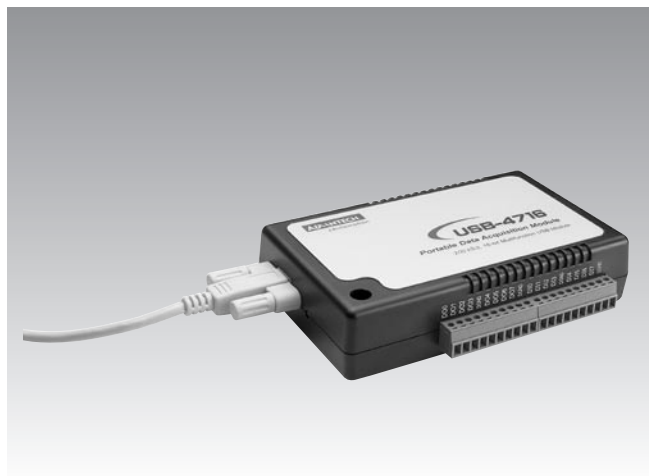


# USB-4716

## 200 kS/s, 16-bit, 16-ch 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
- Wiring terminal on modules
- Suitable for DIN-rail 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. USB-4716 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/ 8 differential (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** 1 G $\Omega$
- **Sampling Modes** Software, onboard programmable pacer, or external
- **Input Range** (V, software programmable)

Gain Code	4	0	1	2	3	
Gain	0.5	1	2	4	8	
Input Range	Bipolar	+/-10V	+/-5V	+/-2.5V	+/-1.25V	+/-0.625V
	Uni-Polar	N/A	0 ~ 10V	0 ~ 5V	0 ~ 2.5V	0 ~ 1.25V

\*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	$\pm 5$ V, $\pm 10$ V

- **Slew Rate** 0.125 V/ $\mu$ s
- **Driving Capability** 5 mA
- **Output Impedance** 0.1  $\Omega$  max.
- **Operation Mode** Single output
- **Accuracy** Relative:  $\pm 1$  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** 3.3 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.  
Logic 1: 2.4 V min.  
Sink: 2 mA (sink)  
Source: 2 mA (source)
- **Output Capability**

#### Event Counter

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

#### General

- **Bus Type** USB 2.0
- **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, one 1.8 m USB 2.0 cable included
- **1960004544** Wallmount Bracket
- **1960005788** VESA Mount Bracket