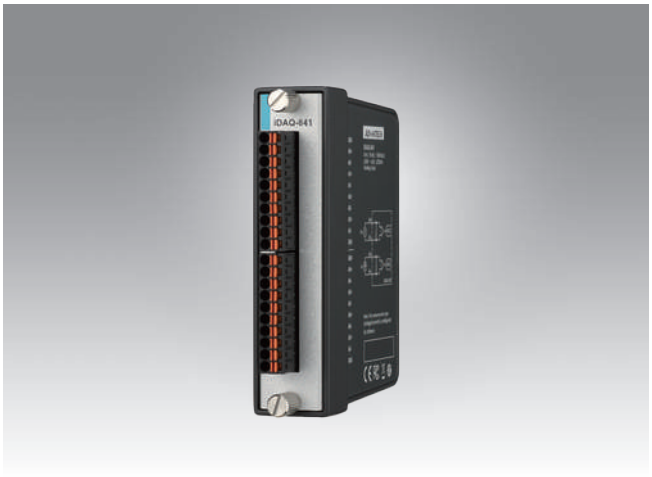
iDAQ-841

8-ch, 16-bit, 1MS/s/ch Analog Input iDAQ Module



Features

- 8-ch simultaneous sampling up to 1 MS/s
- 16-bit resolution
- Software selectable low-pass filter
- Wide input range up to 40 Vpp (±20 V range)
- Support both voltage and current measurement

Specifications

Analog Input

- **Channels** 8 differential
- **Analog-to-digital converter (ADC) resolution** 16 bits
- **Input range** ±20 V, ±12.5 V, ±10 V, ±5 V, or ±20 mA, software configurable per channel
- **Maximum input voltage** ±20 V
- **Input common-mode voltage range**
  - ±20 V range: ±10 V
  - ±12.5 V range: ±6.25 V
  - ±10 V range: ±5 V
  - ±5 V range: ±2.5 V
- **Over-voltage protection** ±30 V
- **Input coupling** DC
- **Input impedance**
  - Voltage input: 1 MΩ
  - Current input: 500 Ω
- **Analog low-pass filter**
  - -3 dB bandwidth: 22.5 kHz or 250 kHz, software configurable per channel
- Isolation protection: 600 VRMS
- Acquisition type: Instant or buffered, software configurable

Buffered Acquisition

- **Enabled channel combination** Each channel can be enabled/disabled independently by software
- **Sample rate** 1 MHz max., for all channels(1), simultaneous sampling, software configurable
- **Internal data buffer (FIFO) size** 512 samples

Absolute accuracy

- **Voltage input**
  - Operating temperature within ±5°C of last Auto-calibration temperature: ±0.01% of full-scale range max.
  - Over full operating temperature range: ±0.05% of full-scale range max.
- **Current input**
  - Operating temperature within ±5°C of last Auto-calibration temperature: ±0.1% of full-scale range max.
  - Over full operating temperature range: ±0.5% of full-scale range max.

DC Performance(2)

- **Idle channel noise** 336 µVrms
- **ENOB** 16 bits

AC Performance(2)

- **SNR** 89.21 dB
- **THD** -103.93 dB
- **THD+N** -89.06 dB
- **SFDR** 101.99 dB
- **Dynamic Range** 95.78 dB
- **Crosstalk** -100.88 dB

Analog Trigger

- **Channel** 2 (start and stop)
- **Source** One of the analog input channels, software configurable
- **Threshold level** Full scale of analog input range, software configurable
- **Hysteresis** 1/256 of analog input range, software configurable
- **Polarity** Rising edge or falling edge, software configurable

Power Requirement

- **Power consumption from chassis** 650 mW typ./ 900 mW max.

Mechanical

- **Module dimensions** 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- **Weight** 176 g

Environment

- **Operating temperature** -20 °C to 60 °C (-4 °F to 140 °F)
- **Storage temperature** -40 °C to 70 °C (-40 °F to 158 °F)
- **Operating humidity** 10% to 90% RH, non-condensing
- **Storage humidity** 5% to 95% RH, non-condensing
- **Random Vibration** 5Grms, , random, 5~500Hz, 1hr/axis
- **Shock** 30G, half sine, 11ms

Certification

- **EMC** CE, FCC
- **Safety** CB, UL

Ordering Information

- **IDAQ-841-AE** 8-ch, 16-bit, 1MS/s/ch, AI iDAQ module

(1) For detailed information, please refer to specification in the user manual.

All product specifications are subject to change without notice.

Last updated: 2-Feb-2026