

# iDAQ-817

# iDAQ-821

## 8-ch, 16-bit, 200kS/s, Analog Input iDAQ Module

## 4-ch, 16-bit, 10kS/s/ch, Analog Output iDAQ Module



iDAQ-817

### Specifications

#### Analog Input

- Channels
- Resolution
- ADC type
- Input range
- Input common-mode voltage range
- Input coupling
- Input impedance

8 differential  
16 bits  
Successive approximation (SAR)  
±10 V or ±20 mA, each channel can be configured independently by software  
±275 V max.  
DC  
Differential, voltage meas. 800 kΩ  
Common-mode, voltage meas. 200 kΩ  
Current measurement 500 Ω  
600 VRMS  
Instant or buffered, software configurable  
(200 / n) kHz max., where n is the number of enabled channels, software configurable  
512 samples

- Isolation protection
- Operation mode
- Sample rate
- Internal data buffer (FIFO) size
- Absolute accuracy

Meas. Mode	Voltage	Current
Offset Error (max.)	±1 mV	±20 μA
Gain Error (max.)	±0.01% of FSR*	±0.1% of FSR*

- Temperature drift
  - Offset drift 25 ppm/°C
  - Gain drift 15 ppm/°C
- Bandwidth (-3dB) 78 kHz
- DC performance
  - Idle channel noise 0.34 mVRMS /0.7ARMS
  - Effective resolution 15.8 bits
- AC performance
  - Signal-to-noise ratio (SNR) 86 dB
  - Total harmonic distortion (THD) -98 dB
  - Total harmonic distortion plus noise (THD+N) 86 dB
  - Effective number of bits (ENOB) 14.0 bits
  - Spurious-free dynamic range (SFDR) 103 dB
  - Crosstalk -85 dB

#### General

- Power consumption from chassis 1W typ./1.25W max.
- Dimensions 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- 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
- Vibration 5Grms
- Shock 30G
- Certification EMC: CE, FCC  
Safety: CB, UL

### Ordering Information

- iDAQ-817-AE 8-ch, 16-bit, 200 kS/s, AI iDAQ module

\*FSR: full scale range



iDAQ-821

### Specifications

#### Analog Input

- Channels 4
- Resolution 16 bits
- Output range 0-5 V, 0-10 V, ±5 V, ±10 V, 0-20mA, 4-20mA, software selectable per channel
- Output coupling DC
- Output slew rate 1 V/μs
- Output load Voltage output 1 kΩ min.  
Current output 520 Ω max.
- Output impedance Voltage output 0.06 Ω typ.  
Current output 100 MΩ typ.

- Isolation protection
- Power-on output state 0 V
- Operation mode Static or buffered, software configurable
- Update rate 10 kHz max. per channel, software configurable
- Internal data buffer (FIFO) size 512 samples
- Absolute accuracy

Meas. Mode	Voltage	Current
Offset Error (max.)	±1 mV	±20 μA
Gain Error (max.)	±0.01% of FSR*	±0.1% of FSR*

- Temperature drift
  - Offset drift 25 ppm/°C
  - Gain drift 15 ppm/°C
- Bandwidth (-3dB) 78 kHz
- DC performance
  - Idle channel noise 0.34 mVRMS /0.7ARMS
  - Idle channel noise 0.2 mVRMS @ bandwidth of 100 kHz
  - Effective resolution 16 bits

#### General

- Power consumption from chassis 0.675W typ./2.9W max.
- Dimensions 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- 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
- Vibration 5Grms
- Shock 30G
- Certification EMC: CE, FCC  
Safety: CB, UL

### Ordering Information

- iDAQ-821-AE 4-ch, 16-bit, 10 kS/s/ch AO iDAQ module