

# 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: 8 differential
- Resolution: 16 bits
- ADC type: Successive approximation (SAR)
- Input range:  $\pm 10$  V or  $\pm 20$  mA, each channel can be configured independently by software
- Input common-mode voltage range:  $\pm 275$  V max.
- Input coupling: DC
- Input impedance: Differential, voltage meas. 800 k $\Omega$   
Common-mode, voltage meas. 200 k $\Omega$   
Current measurement 500  $\Omega$
- Isolation protection: 600 VRMS
- Operation mode: Instant or buffered, software configurable
- Sample rate: (200 / n) kHz max., where n is the number of enabled channels, software configurable
- Internal data buffer (FIFO) size: 512 samples
- Absolute accuracy:

Meas. Mode	Voltage	Current
Offset Error (max.)	$\pm 1$ mV	$\pm 20$ $\mu$ A
Gain Error (max.)	$\pm 0.01\%$ of FSR*	$\pm 0.1\%$ of FSR*

- Temperature drift: Offset drift 25 ppm/ $^{\circ}$ C  
Gain drift 15 ppm/ $^{\circ}$ 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  $^{\circ}$ C to 60  $^{\circ}$ C (-4  $^{\circ}$ F to 140  $^{\circ}$ F)
- Storage temperature: -40  $^{\circ}$ C to 70  $^{\circ}$ C (-40  $^{\circ}$ F to 158  $^{\circ}$ 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,  $\pm 5$  V,  $\pm 10$  V, 0-20mA, 4-20mA, software selectable per channel
- Output coupling: DC
- Output slew rate: 1 V/ $\mu$ s
- Output load: Voltage output 1 k $\Omega$  min.  
Current output 520  $\Omega$  max.
- Output impedance: Voltage output 0.06  $\Omega$  typ.  
Current output 100 M $\Omega$  typ.
- Isolation protection: 600 VRMS
- 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.)	$\pm 1$ mV	$\pm 20$ $\mu$ A
Gain Error (max.)	$\pm 0.01\%$ of FSR*	$\pm 0.1\%$ of FSR*

- Temperature drift: Offset drift 25 ppm/ $^{\circ}$ C  
Gain drift 15 ppm/ $^{\circ}$ 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  $^{\circ}$ C to 60  $^{\circ}$ C (-4  $^{\circ}$ F to 140  $^{\circ}$ F)
- Storage temperature: -40  $^{\circ}$ C to 70  $^{\circ}$ C (-40  $^{\circ}$ F to 158  $^{\circ}$ 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