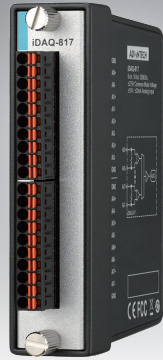


# iDAQ-817

# 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 50  $\Omega$
- 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

| Items   | Within Calibration Temperature* $\pm 5^{\circ}\text{C}$ | Over Calibration Temperature* $\pm 5^{\circ}\text{C}$ |
|---------|---------------------------------------------------------|-------------------------------------------------------|
| Voltage | $\pm 0.01\%$ of full-scale range max.                   | $\pm 0.05\%$ of full-scale range max.                 |
| Current | $\pm 0.1\%$ of full-scale range max.                    | $\pm 0.5\%$ of full-scale range max.                  |

- Bandwidth (-3dB) 70 kHz
- DC performance Idle channel noise 0.34 mVRMS / 0.7 mARMS  
Effective resolution 15.8 bits  
Signal-to-noise ratio (SNR) 86 dB  
Total harmonic distortion (THD) -98 dB  
Total harmonic distortion plus noise (THD+N) -86 dB
- AC performance 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  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ )
- Storage temperature  $-40^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $158^{\circ}\text{F}$ )
- 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

\* Factory calibration temperature is  $25^{\circ}\text{C}$



iDAQ-821

### Specifications

#### Analog Output

- Channels 4
- Resolution 16 bits
- Output range  $0-5$  V,  $0-10$  V,  $\pm 5$  V,  $\pm 10$  V,  $0-20$  mA,  $4-20$  mA, software selectable per channel
- Output coupling DC
- Output slew rate 1 V/ $\mu\text{s}$
- Output load Voltage output 1 k $\Omega$  min.  
Current output 520  $\Omega$  max.  
Voltage output 0.06  $\Omega$  typ.  
Current output 100 M $\Omega$  typ.
- Output impedance 600 VRMS
- Isolation protection 0 V @  $0-5$  V output range
- Power-on output state Static or buffered, software configurable
- Operation mode 10 kHz max. per channel, software configurable
- Update rate 512 samples
- Internal data buffer (FIFO) size 512 samples
- Absolute accuracy

| Items   | Within Calibration Temperature* $\pm 5^{\circ}\text{C}$ | Over Calibration Temperature* $\pm 5^{\circ}\text{C}$ |
|---------|---------------------------------------------------------|-------------------------------------------------------|
| Voltage | $\pm 0.01\%$ of full-scale range max.                   | $\pm 0.05\%$ of full-scale range max.                 |
| Current | $\pm 0.1\%$ of full-scale range max.                    | $\pm 0.5\%$ of full-scale range max.                  |

- DC performance 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  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ )
- Storage temperature  $-40^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $158^{\circ}\text{F}$ )
- 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