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

iDAQ-821

Specifications

Analog Input

- **Channels** — 8 differential
- **Resolution** — 16 bits
- **ADC type** — Successive approximation (SAR)
- **Input range** — ±10 V or ±20 mA, each channel can be configured independently by software
- **Input common-mode voltage range** — ±275 V max.
- **Input coupling** — DC
- **Input impedance**
  - Differential, voltage meas. — 800 kΩ
  - Common-mode, voltage meas. — 200 kΩ
  - Current measurement — 500 Ω
- **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.)	±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

Specifications

Analog Output

- **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** — 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.)	±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