iDAQ-815

8-ch RTD Input iDAQ Module

Features

- Hot-swappable in iDAQ system
- 8-ch simultaneous RTD sampling
- 24-bit resolution
- Multiple supported RTD types and connection types
- Isolation protection up to 600VRMS

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Specifications

Analog Input

- **Channels** 8
- **Resolution** 24 bits
- **Supported RTD type and range**

RTD	Temperature Range
Pt100 (α= 0.00385)	-200 °C to 850 °C
Pt100 (α= 0.00392)	-200 °C to 630 °C
Pt1000 (α= 0.00385)	-200 °C to 550 °C
NiFe604 (α= 0.00518)	-100 °C to 200 °C
Balco500 (α= 0.00518)	-40 °C to 150 °C

- **Maximum input voltage** ±20 V
- **Over-voltage protection** ±30 V
- **Isolation protection** 600 VRMS
- **Conversion mode** High-resolution mode or high-speed mode, software configured automatically according to the sampling rate (1)
- **Conversion time**
  - High-resolution mode: 110 ms per channel, 880 ms total for all channels
  - High-speed mode: 1.5 ms per channel, 12 ms total for all channels
- **Bandwidth (-3 dB)**
  - High-resolution mode: 4.7 Hz
  - High-speed mode: 574 Hz
- **Acquisition type** Instant or buffered, software configurabl

Buffered Acquisition

- **Enabled channel combination** Each channel can be enabled/disabled independently by software
- **Sample rate** 200 kS/s max., for all channels(2), 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 (3)

- **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

Ordering Information

- **IDAQ-815-AE** 8-ch RTD Input iDAQ Module

(1) The sampling mode would switch automatically according to the setting. The threshold is 10S/s. The module would run high-speed mode when the sampling rate is higher than 10S/s, and high-resolution mode when sampling rate is below 10S/s.
(2) This is not the ADC's sample rate. If time period for configured sample rate is smaller than ADC's conversion time, duplicate results are returned.
(3) For detailed information, please refer to specification in the user manual.