iDAQ-868

16-ch, 24-bit Thermocouple Input iDAQ Module

Features

- Hot-swappable in iDAQ system
- 16-channel thermocouple sampling
- 24-bit resolution
- 50/60Hz rejection filter available
- Wide range of thermocouples supported
- Isolation protection up to 600VRMS

Specifications

Thermocouple Input

- **Channels** 16
- **ADC Resolution** 24 bits
- **Acquisition Method** Scanning
- **Supported thermocouple type, measurement range and accuracy**

	T/C Type	Measurement Range °C	Reference Accuracy °C (%) @ 25 °C	Temperature Drift °C/ °C (ppm/ °C)
Input Range	J	0 ~ 760	±0.76(±0.1%)	±0.03(±40ppm/°C)
	K	0 ~ 1370	±1.37(±0.1%)	±0.08(±60ppm/°C)
	E	0 ~ 1000	±1(±0.1%)	±0.03(±30ppm/°C)
	R	500 ~ 1750	±1.25(±0.1%)	±0.11(±90ppm/°C)
	S	500 ~ 1750	±1.25(±0.1%)	±0.17(±140ppm/°C)
	B	500 ~ 1800	±1.95(±0.15%)	±0.16(±125ppm/°C)
	N	-200 ~ 1300	±2.25(±0.15%)	±0.09(±60ppm/°C)
	T	-100 ~ 400	±1(±0.2%)	±0.05(±100ppm/°C)
CJC Sensor Accuracy	±1 °C			
Total Error = Reference Accuracy@25°C + Sensor Accuracy + ΔT (T-25) × Drift				

- **Over-voltage protection** ±30 V
- **Isolation protection** 600 VRMS
- **Conversion time** High Resolution Mode: 57 ms per channel, 912 ms total for all channels
  High Speed Mode: 830 µs per channel, 13.3 ms total for all channels
- **Bandwidth (-3 dB)** High Resolution Mode: 13.2 Hz
  High-speed mode : 718 Hz
- **50/60 Hz filter** Yes (High resolution mode only)
- **Acquisition type** Instant or buffered, software configurable

Buffered Acquisition

- **Enabled channel combination** Each channel can be enabled/disabled independently by software
- **Sample rate** 20 kS/s max., for all channels[1], software configurable
- **Internal data buffer (FIFO) size** 512 samples

Power Requirement

- **Power consumption from chassis** 0.85 W Typ./1 W Max.

Mechanical

- **Module dimensions** 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- **Weight** 175 g
- **Connector Type** 2x 20-pin plug-in terminals

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** Up 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-868-A** 16-ch Thermocouple Input iDAQ Module

iDAQ Base Units[2]

- **IDAQ-934-AE** 4-slot USB3.0 iDAQ Base Unit
- **IDAQ-938-A** 8-slot USB3.0 iDAQ Base Unit
- **IDAQ-964-AE** 4-slot iDAQ Base Unit for AMAX-5000 Controller

[1] When using higher sampling rate (e.g. synchronous sampling with other iDAQ modules under higher sampling rate), duplicated data would be returned.
[2] The iDAQ modules should be used along with the base units. For detail of each base unit, please refer to individual datasheet.

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