

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 -40 °C to 70 °C (-40 °F to 158 °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.