

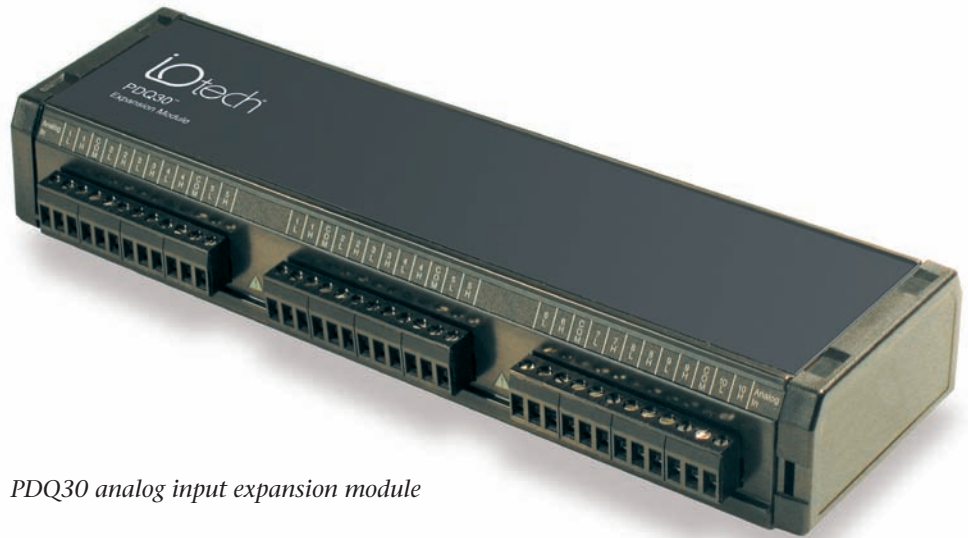
Analog Input Expansion Module for Personal Daq/3000 Series & DaqBoard/3000 Series

Features

- Adds 24 differential/48 single ended inputs to DaqBoard/3000 Series PCI boards and PersonalDaq/3000 Series USB modules
- Any input can be a voltage or thermocouple
- Convenient removable screw-terminal connections

The PDQ30 increases total channel capacity of a DaqBoard/3000 Series or Personal Daq/3000 Series to a total of 32 differential or 64 single-ended analog inputs. The PDQ30 attaches to a DaqBoard via an optional CA-266-x cable, and to the Personal Daq/3000 either by plugging directly into the Personal Daq with included clips, or via an optional CA-96A cable if it is necessary to have some distance between each device.

Voltage measurements via the PDQ30 have the same ranges as the host PCI DaqBoard or USB Personal Daq. When used with either host, the PDQ30 also adds thermocouple measurement capability, where the A/D operates in a programmable, over-sample/digital filtering mode to provide low-noise and stable temperature measurements.



PDQ30 analog input expansion module

Voltage Range*	Accuracy ±(% of reading + % Range) 23°C ±10°C, 1 year	Temperature Coefficient ±(ppm of reading + ppm Range)/°C -30°C to 13°C and 33°C to 70°C	Noise** (cts RMS)
-10V to 10V	0.031% + 0.008%	14 + 8	2.0
-5V to 5V	0.031% + 0.009%	14 + 9	3.0
-2V to 2V	0.031% + 0.010%	14 + 10	2.0
-1V to 1V	0.031% + 0.02%	14 + 12	3.5
-500 mV to 500 mV	0.031% + 0.04%	14 + 18	5.5
-200 mV to 200 mV	0.036% + 0.05%	14 + 12	8.0
-100 mV to 100 mV	0.042% + 0.10%	14 + 18	14.0

* Specifications assume differential input single channel scan, 1-MHz scan rate, unfiltered, CMV=0.0V, 30 minute warm-up, exclusive of noise, range -FS to +FS

** Noise reflects 10,000 samples at 1-MHz, typical, differential short

Specifications

General

Operating Temperature: -30 to +70 °C
Storage Temperature: -40 to +80 °C
Power: Supplied by DaqBoard/3000 Series or Personal Daq/3000 Series; 400 mW max
Relative Humidity: 0 to 95%, non-condensing
Vibration: MIL STD 810E, category 1 and 10
Communications Connector: 25-pin DSUB
Signal I/O Connector: Six removable screw-terminal blocks (12 connections each)
Dimensions: 269 mm W x 92 mm D x 45 mm H (10.6" x 3.6" x 1.6")
Weight: 400g (0.88 lbs)

Analog Inputs

Channels: 48 single-ended inputs; or 24 channels differential inputs
Voltage Measurement Speed: 1µs per channel
Ranges: ±10V, ±5V, ±2V, ±1V, ±500 mV, ±200 mV, ±100 mV, universal thermocouple, software or sequencer selectable on a per-channel basis
Total Harmonic Distortion: -80 dB typ for ±10V range, 1 kHz fundamental
Signal to Noise and Distortion: 72 dB typ for ±10V range, 1 kHz fundamental
Input Impedance: 10M Ohm (single-ended); 20M Ohm (differential)
Bias Current: 40 pA typ (0 to 35 °C)
Over-Voltage Protection: ±30V

Crosstalk: -67 dB typ DC to 10 kHz

TC Types and Accuracy¹

TC Type	Temperature Range (°C)	Accuracy (±°C)	Noise, Typical (±°C)
J	-200 to +760	1.7	0.2
K	-200 to +1200	1.8	0.2
T	-200 to +400	1.8	0.2
E	-270 to +650	1.7	0.2
R	-50 to +1768	4.8	1.5
S	-50 to +1768	4.7	1.5
N	-270 to +1300	2.7	0.3

1. Assumes 16,384 oversampling applied, CMV = 0.0V, 60 minute warm-up, still environment, and 25 °C ambient temperature; excludes thermocouple error; TC_{IN} = 0 °C, TR-2 for External Power

Thermocouples

E-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 1 m 745690-E001
 E-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 2 m 745690-E002
 J-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 1 m 745690-J001
 J-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 2 m 745690-J002
 K-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 1 m 745690-K001
 K-type thermocouple wire, fiberglass (0 °C to 482 °C, 32 °F to 900 °F) 2 m 745690-K002
 T-type thermocouple wire, fiberglass (0 °C to 260 °C, 32 °F to 500 °F) 1 m 745690-T001
 T-type thermocouple wire, fiberglass (0 °C to 260 °C, 32 °F to 500 °F) 2 m 745690-T002

Ordering Information

Description	Part No.
Analog input expansion module, adds 48SE/24DE channels to Personal Daq/3000 Series and DaqBoard/3000 Series	PDQ30
HDMI cable, connects PDQ30 to DaqBoard/3000 Series, 3 ft.	CA-266-3
HDMI cable, connects PDQ30 to DaqBoard/3000 Series, 6 ft.	CA-266-6
Personal Daq/3000 Series to PDQ30 cable, 2 ft.	CA-96A