PDQ30

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

**Features**

- Adds 24 differential/48 single ended inputs to 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.

- 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. It adds thermocouple measurement capability, where the A/D operates in a programmable, over-sample/measurement capability, where the A/D host, the PDQ30 also adds thermocouple 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 allows thermocouple measurement capability, where the A/D operates in a programmable, over-sample/digital filtering mode to provide low-noise and stable temperature measurements.

**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
- 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: -80dB typ for ±10V range, 1 kHz fundamental
- Signal to Noise and Distortion: 72dB 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

**Voltage**

- ±10V, ±5V, ±2V, ±1V, ±500 mV, ±200 mV, ±100 mV, ±1mV

**Accuracy**

- ±(% of reading + % Range)

| Voltage Range | Accuracy | Noise
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>±10V to 10V</td>
<td>0.031% + 0.008%</td>
<td>14 + 8</td>
</tr>
<tr>
<td>±5V to 5V</td>
<td>0.031% + 0.009%</td>
<td>14 + 9</td>
</tr>
<tr>
<td>±2V to 2V</td>
<td>0.031% + 0.010%</td>
<td>14 + 10</td>
</tr>
<tr>
<td>±1V to 1V</td>
<td>0.031% + 0.02%</td>
<td>14 + 12</td>
</tr>
<tr>
<td>-500 mV to 500 mV</td>
<td>0.031% + 0.04%</td>
<td>14 + 18</td>
</tr>
<tr>
<td>-200 mV to 200 mV</td>
<td>0.036% + 0.05%</td>
<td>14 + 12</td>
</tr>
<tr>
<td>-100 mV to 100 mV</td>
<td>0.042% + 0.10%</td>
<td>14 + 18</td>
</tr>
</tbody>
</table>

**Noise**

- (ppm of reading + ppm Range)/

<table>
<thead>
<tr>
<th>Temperature Coefficient</th>
<th>Noise**</th>
</tr>
</thead>
<tbody>
<tr>
<td>±(ppm of reading + ppm Range)/°C</td>
<td>Noise (cts RMS)</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>2.0</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>3.0</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>2.0</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>3.5</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>5.5</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>8.0</td>
</tr>
<tr>
<td>-30 °C to 13 °C and 33 °C to 70 °C</td>
<td>14.0</td>
</tr>
</tbody>
</table>

**Crosstalk**

- -67 dB typ DC to 10 kHz

**Ordering Information**

**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

**PDQ30 analog input expansion module**

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

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