The Model 410C01 signal conditioner from PCB Piezotronics is designed for operation with Integrated Circuit Piezoelectric (ICP®) sensors and is ideally suited for monitoring manufacturing processes associated with assembly and product testing. With a choice of AC or DC coupling and a high frequency response, both quasi-static and dynamic measurements up to 10 kHz are possible. The unit synchronizes with machine cycles through a reset feature while analog and peak hold outputs allow for real-time monitoring with machine control devices. Requires a regulated low noise 24-volt power source for proper operation.

- Delivers excitation power for ICP® sensors
- Provides peak track hold and waveform analog output signals, 0 to 10 volts
- Offers AC or DC signal coupling and choice of 7 gain settings

**TYPICAL APPLICATIONS**

- Real Time Process Monitoring with ICP® Sensors
- Analog waveform output can be mapped against a signature or standard “pulse” with set tolerances
- Captures the dynamic +peak pulse of every machine cycle for trend analysis
The 410C01 includes our downloadable Signal Capture software allowing the end user to view a sample waveform, ensuring proper sensor operation with respect to the intended response. Collected sample waveforms may be saved for future reference.

The software also serves as a portal for instrument configuration. Selectable features include coupling mode, signal polarity, zero, and gain. Indicators for sensor connect and peak reset are provided for reference purposes.

SOFTWARE FEATURES

- Integrated User’s Guide
- Captures up to 30 Seconds of Time Waveform Data
- Pulse-width and Amplitude Measurable with Scope Tool

IN THE BOX

- 410C01 Module
- USB Cable, Type A to Type B
- Operating Manual
- Quickstart Guide

DOWNLOAD SOFTWARE

www.pcb.com/410C01
TYPICAL SYSTEM WIRING DIAGRAM

Customer Supplied
Regulated 24 VDC
Power Supply

Customer Supplied
PC for Configuration

Supplied USB Cable

Customer Supplied
Programmable Logic Controller

ICP® Sensor
- Force
- Strain
- Accelerometer
- Modal Hammer
- Microphone

410C01 ICP®
Signal Conditioner

+24 VDC

PWR Ground

Common

Peak Hold Analog Output +10 V
Wavenrform Analog Output ±10 V
+Peak Reset
-Peak Reset
SPECIFICATIONS
<table>
<thead>
<tr>
<th>Model Number</th>
<th>410C01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>English (SI)</td>
</tr>
<tr>
<td>Channels</td>
<td>1</td>
</tr>
<tr>
<td>Output Voltage (Instantaneous)</td>
<td>±10 V</td>
</tr>
<tr>
<td>Output Voltage (Peak)</td>
<td>0 to 10 V</td>
</tr>
<tr>
<td>High Frequency Response</td>
<td>10 kHz</td>
</tr>
<tr>
<td>Low Frequency Response, AC coupled (-5%)</td>
<td>0.5 Hz</td>
</tr>
<tr>
<td>Low Frequency Response, DC coupled</td>
<td>Governed by Sensor DTC</td>
</tr>
<tr>
<td>Voltage Gain (Incremental Steps)</td>
<td>x1, x2, x4, x8, x10, x16, x20</td>
</tr>
</tbody>
</table>

Environmental

Temperature Range (Operating) | +60 to +110 °F (+15 to +45 °C) |

Electrical

Power Required (±10%) | 24 VDC |
Current Draw | 200 mA |
Broadband Electrical Noise (1 Hz to 10 kHz) | 200 µV rms |
Peak Hold Reset | Solid State Ready |
Discharge Time Constant (AC coupled) | 1 sec |

Physical

Size (Length x Height x Width) | 4.46 x 3.9 x 1.78 in (113 x 99 x 45 mm) |
Mounting | 35 mm DIN Rail |
Electrical Connector (Sensor Input) | BNC Jack |
Electrical Connector (Analog Output, Peak Output, Power, Ground) | Removable Screw Terminals |

PIN DESCRIPTIONS

DC Power - Pins 9 to 12

Pin 10 | +24 VDC |
Pin 11 | Power Ground |

Waveform Output - Pins 2 & 3

Pin 2 | Waveform Out |
Pin 3 | Analog Ground |

Peak Hold Output - Pins 1 & 3

Pin 1 | Peak Hold Out |
Pin 3 | Analog Ground |

Reset Input - Pins 7 & 8

Pin 7 | Reset - |
Pin 8 | Reset + |