Multi-channel Signal Conditioners

Series 481A (16-Channel) and Series 498A (8-Channel)

- Simultaneously Condition up to 16 Input Channels
- Adjust Set-Up Parameters via Computer Control*
- Daisy-Link Multiple Racks for up to 256 Channels*
- Apply Gain, Filtering, Integration, Switching*

* Available features

Multi-channel piezoelectric sensor signal conditioners are cost-effective instruments which prepare multiple measurement signals for recording or analysis. Versions to accommodate either ICP® sensors, or both charge output and ICP® sensors, are available. Each unit is housed in a standard, 19-inch, rack-mountable chassis.

The building-block design easily permits configuring a unit with appropriate features to suit a particular requirement. Several pre-configured models include some of the more popular features and are available for quick delivery.

As with all PCB® instrumentation, this equipment is complemented with toll-free applications assistance, 24-hour customer service, and is backed by a no-risk policy that guarantees satisfaction or your money refunded.
082 Selectable ICP® sensor or direct voltage input per channel. (manually selected via jumper position on the internal circuit board).

284* Same as option 084 except selectable by computer or front panel. Accepts both piezoelectric charge output sensor and ICP® sensor inputs. Adds one coaxial 10-32 charge output sensor input for each channel, each with 0.1 mV/pC charge-to-voltage conversion and 5 Hz (-5%) LF response, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

182 Same as option 082 except with 0.5 Hz LF response.

282* Same as option 082 except selectable by computer or front panel. Accepts both piezoelectric charge output sensor and ICP® sensor inputs. Adds one coaxial 10-32 charge output sensor input for each channel, each with 0.1 mV/pC charge-to-voltage conversion and 5 Hz (-5%) LF response, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

186 Same as option 086 except with 0.5 Hz LF response.

286* Same as option 086 except selectable by computer or front panel. Adds one coaxial 10-32 charge output sensor input for each channel, each with 0.1 mV/pC charge-to-voltage conversion and 5 Hz (-5%) LF response, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

187 Same as option 087 except with 0.5 Hz LF response.

287* Same as option 087 except selectable by computer or front panel. Adds one coaxial 10-32 charge output sensor input for each channel, each with selectable 0.1, 1.0, and 10 mV/pC charge-to-voltage conversion, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

184 Same as option 084 except with 0.5 Hz LF response.

284* Same as option 084 except selectable by computer or front panel. Accepts both piezoelectric charge output sensor and ICP® sensor inputs. Adds one coaxial 10-32 charge output sensor input for each channel, each with 0.1 mV/pC charge-to-voltage conversion and 5 Hz (-5%) LF response, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

284* Same as option 084 except selectable by computer or front panel. Accepts both piezoelectric charge output sensor and ICP® sensor inputs. Adds one coaxial 10-32 charge output sensor input for each channel, each with 0.1 mV/pC charge-to-voltage conversion and 5 Hz (-5%) LF response, one BNC ICP® sensor input for each channel, and input mode selector switch (all on rear panel).

386* As option 086 except with 0.5 Hz LF response.

782* As option 082 except with 0.5 Hz LF response.

50* Fixed low pass filter, -3 dB @ 2 kHz.

505 Fixed low pass filter, -3 dB @ 10 kHz.

506 Fixed low pass filter, -3 dB @ 20 kHz.

502 Fixed low pass filter, -3 dB @ 100 kHz.

503 Fixed low pass filter, -3 dB @ 150 kHz.

504 Fixed low pass filter, -3 dB @ 200 kHz.

505 Fixed low pass filter, customer-defined.

157* Programmable, low pass filter, -3 dB @ 2 Hz to 21.4 kHz with > 500 steps. Eighth-order Elliptical type. Enable / disable capability.

158* Programmable, low pass filter, -3 dB @ 2 Hz to 20 kHz with > 500 steps. Eighth-order Butterworth type. Enable / disable capability.

101* RS-232 and RS-485 computer interface (serial port). Includes Model EE-75 Control Software for PCB Series 481A and Series 498A. Two D-Sub 9-pin communication connectors on rear panel. This feature is required for all options indicated with (*). Includes auto-ranging and normalization.

107* IEEE-488 computer interface (parallel port).

103* Front panel display and keypad for local control.

061* Integration to velocity and displacement: provides selected velocity or displacement output signal at switched output connector for switch-selected channel of interest (requires switched output option 041). Example: for a 100 mV/g ICP® sensor input, you can output a velocity signal of 1000 mV/in/sec or a displacement signal of 200 mV/mil.

062 Integration to velocity output signals for all input channels simultaneously. Example: for each 100 mV/g ICP® sensor input there is an output velocity signal of 100 mV/in/sec. The feature may be user enabled or disabled.

063 DC output signal: each channel provided with a 0 to 5 VDC output signal, proportional to the RMS value of the analog input signal, provided on an additional BNC output per channel on rear panel.

065 Metric integration to velocity output signals for all input channels simultaneously. Example: for each 100 mV/g ICP® sensor input there is an output velocity signal of 1000 mV/in/sec. The feature may be user enabled or disabled.

012* Internal calibration / test signal source: Fixed frequency (100 Hz), adjustable amplitude (0.1 to 2 V pk to pk). Delivered simultaneously across all input channels and monitored at each output connector. Includes option 014 (external calibration signal input connector (BNC) for input of user defined test signals of up to 2 V pk to pk).

014* External calibration signal input connector (BNC) for input of user defined test signals of up to 2 V pk to pk.

020* Programmable overload limit: provides adjustable threshold of overload indication from 1 to 10 V pk to pk (in 1 V increments).

102* Programmable overload limit: provides adjustable threshold of overload indication from 10 V pk to pk (in 0.1 V increments).

104* TEDS - ability to read information from and write information to TEDS sensors (UTID1 format).

Notes:

Some options are incompatible and cannot be ordered together in the same unit (e.g., option 081 is incompatible with 082, 086, or 087). Contact the factory for assistance with configuring compatible options.

(*) Computer interface option 101 is required and must be ordered in conjunction with all options indicated with (*). Option 101 includes Model EE-75 software (also available separately), which permits set-up and control with a Windows based PC.

(†) 0.5 Hz (-5%) LF response for 0.1 and 1.0 mV/pC setting and 5.0 Hz (-5%) LF response for 10 mV/pC setting.
## Feature Selection Chart

To order a custom configured unit, indicate preference of either Series 481A (16-channel) or Series 498A (8-channel) base model, and select the option numbers desired as a suffix to the base model. Preconfigured models cannot be customized.

### Standard Features Included with Base Model

<table>
<thead>
<tr>
<th>Channel Count</th>
<th>Base Model</th>
<th>Preconfigured Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-channels</td>
<td>481A</td>
<td>481A01</td>
</tr>
<tr>
<td>8-channels</td>
<td>498A</td>
<td>498A02</td>
</tr>
<tr>
<td></td>
<td>481A03</td>
<td>498A03</td>
</tr>
</tbody>
</table>

**Enclosure:** Size 19 x 16.25 x 3.50 in. (Rack Mountable)

**Input Type:** ICP® Sensor

**Excitation Current:** Adjustable from 3 to 20 mA (for ICP® Sensor)

**LED (Red):** Input Fault Monitoring

**LED (Yellow):** Overload Detection

**Gain:** Fixed Gain x1

**Connectors:**
- Rear Panel: One DB50 Female Input
- Front Panel: One BNC Jack Output Per Channel

**Power Required:** 100 to 240 VAC, 47 to 63 Hz, 0.6 A

### Optional Features for Configurable Models

<table>
<thead>
<tr>
<th>Input Sensor Type</th>
<th>Jumper Selectable ICP® Sensor or AC Voltage Signal Input</th>
<th>084</th>
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<tbody>
<tr>
<td>Input Sensor Type</td>
<td>Panel/Computer Selectable ICP® Sensors or AC Voltage Input</td>
<td>284*</td>
</tr>
<tr>
<td>Input Sensor Type</td>
<td>Switch Selectable Charge or ICP® Sensors, 0.5 Hz LF</td>
<td>082, 086, 187</td>
</tr>
</tbody>
</table>

**Input Sensor Type:** Panel/Computer Selectable Charge or ICP® Sensors, 5 Hz LF

**Input Sensor Type:** Panel/Computer Selectable Charge or ICP® Sensors, 0.5 Hz LF

**Input Sensor Type:** Panel/Computer Selectable Charge or ICP® Sensors, 5 Hz LF

**Input Sensor Type:** Panel/Computer Selectable Charge or ICP® Sensors, 0.5 Hz LF

**Output Switching:** Dual output switching, 16-to-1 or 8-to-1 (two output BNC’s added)

**Connectors:**
- Rear Panel: One BNC Jack Input Per Channel
- Front Panel: One BNC Jack Output Per Channel

**Connectors:**
- Rear Panel: One BNC Jack Input Per Channel
- Front Panel: One BNC Jack Output Per Channel

**Gain:**
- Fixed Gain of x5 (substituted for standard gain of x1)
- Fixed Gain of x10 (substituted for standard gain of x1)
- Selectable Gain of x1, x10, x100 (times fixed gain)
- Incremental Gain of x0.1 to x200 (times unity gain only)
- Incremental Gain of x0.0025 to x200 (times unity gain only)
- Incremental Gain of x0.0025 to x100 (times unity gain only)

**Filtering, High Pass:**
- Selectable Discharge Time Constant of 2 or 10 sec
- Fixed Low Pass filters

**Filtering, Low Pass:**
- Programmable 8th-Order Elliptical (2 Hz to 21.4 kHz, >256 steps)
- Programmable 8th-Order Butterworth (2 Hz to 20 kHz, >256 steps)
- RS-232 and RS-485 Serial Computer Interface and Control Software

**Control:**
- IEEE-488 Parallel Computer Interface
- Front Panel Menu Display with Keypad Control
- Velocity and Displacement to Switched Outputs
- Velocity Output Each Channel (100 mV/g : 100 mV/in/sec)
- Metric Velocity Output Each Channel (100 mV/g : 100 mV/m/sec)
- RMS Conversion, 0-5 VDC on added rear panel outputs
- Internal Calibration Signal and External Cal Input Connector
- External Calibration Signal Input Connector
- Programmable Overload Threshold
- Retains User Settings Upon Power-down

**TEDS:**
- Reads and Writes TEDS Sensor Data

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**Notes:**

- (*) Computer interface option 101 must also be ordered in conjunction with this option.
- (§) Switched output option 041 must also be ordered in conjunction with this option.
- (**) Designates included feature or option.
- Consult factory for additional customization options.
SERIES 481A AND SERIES 498A MULTI-CHANNEL SIGNAL CONDITIONERS

Optional Accessories:
Model 488A05 Power Inverter, 12 VDC to 115 VAC, 60 Hz.

These products conform to applicable European Directives for CE marking.