

# Signal Conditioners

- Battery powered signal conditioners
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**Model 443B01**  
Dual-Mode Vibration Amplifier  
for use with both charge and ICP® accelerometers

 **PCB PIEZOTRONICS** INC.  
VIBRATION DIVISION

# Battery-Powered Signal Conditioners

## BATTERY-POWERED ICP® SENSOR SIGNAL CONDITIONERS

Battery-powered signal conditioners offer portable, convenient methods for powering ICP® sensors and conditioning their output signals for transmittal to readout and recording instruments. These units operate, and are supplied, with standard 9 volt alkaline batteries. Each features

a color coded input circuit checkout meter to alert of proper sensor turn-on or input fault due to open or short circuit connections. Optional rechargeable versions are equipped with ni-cad batteries and supplied with an AC powered recharger unit.



**Model 480C02**  
Unity gain, low noise,  
high frequency



**Model 480E09**  
Gain x1, x10, x100



**Model 480B10**  
Integrating: acceleration,  
velocity, displacement



**Model 480B21**  
3 channel, triaxial,  
gain x1, x10, x100

Battery-Powered Signal Conditioners				
Model Numbers	480C02	480E09	480B10	480B21
Style	Basic	Gain	Integrating, accel, vel., displ.	Triaxial, with gain
Channels	1 channel	1 channel	1 channel	3 channels
Sensor excitation	27 volt, 2 mA	27 volt, 2 mA	18 volt, 2 mA	27 volt, 3 mA
Gain	unity	x1, x10, x100	unity	x1, x10, x100
Low frequency response (-5%) <sup>[1]</sup>	0.05 Hz	0.15 Hz	0.07 (a), 8 (v), 15 (d)	0.15 Hz
High frequency response (-5%)	500 kHz	100 kHz	100 (a), 10(v), 1 (d) kHz	100 kHz
Broadband noise (at unity gain)	3.25 $\mu$ V rms	3.25 $\mu$ V rms	N/A	3.54 $\mu$ V rms
Battery (qty) type	(3) 9 V	(3) 9 V	(2) 9 V	(3) 9 V
Average battery life	100 hour	50 hour	30 hour	33 hour
Input/output connectors	BNC/BNC	BNC/BNC	BNC/BNC	4-pin, BNC/BNC
External DC powerable	yes	yes	no	yes
DC power input jack	3.5 mm	3.5 mm	—	6-pin mini DIN
Size (height x width x depth)	4.0 x 2.9 x 1.5 in 101.6 x 73.7 x 38.1 mm	4.0 x 2.9 x 1.5 in 101.6 x 73.7 x 38.1 mm	4.0 x 2.9 x 1.5 in 101.6 x 73.7 x 38.1 mm	7.5 x 5.0 x 2.0 in 190.5 x 127 x 50.8 mm
Weight	10.5 oz (298 gm)	12 oz (340.2 gm)	9.75 oz (276.4 gm)	17.6 oz (499 gm)
<b>Optional Models</b>				
10-32 input/output connectors	480C	480E06	N/A	N/A
Rechargeable (supplied with ni-cad batteries and AC powered recharger unit)	R480C02	R480E09	R480B10	N/A
<b>Optional Accessories</b>				
AC powered recharger unit with (3) 9 V ni-cad batteries	488A02	488A02	488A02	N/A
AC power supply	488A03	488A03	—	488A10
Ultralife lithium batteries (3)	400A81	400A81	—	400A81
<b>NOTE:</b> [1] Achieved with readout device having a 1 megohm input impedance.				

# Line-Powered Signal Conditioners

## LINE-POWERED ICP® SENSOR SIGNAL CONDITIONERS

Line-powered signal conditioners offer benchtop methods for powering ICP® sensors in the laboratory and conditioning their output signals for transmittal to readout and recording instruments. Each features a color coded input circuit checkout meter to alert of proper sensor turn-on or input fault due to open or short circuit connections. AC and DC powerable units

can operate either with the supplied AC powered transformer or optional external battery pack. AC/DC coupled outputs offer the ability to achieve true DC frequency response in order to accurately condition very low frequency vibrations or long duration shock pulses.



**Model 482A21**  
Unity gain, low noise,  
AC and DC powerable



**Model 482A22**  
4 channel, unity gain, low  
noise, AC and DC  
powerable



**Model 482B06**  
Basic, unity gain



**Model 482B11**  
Gain x1, x10, x100



**Model 484B06**  
Low frequency, unity gain,  
AC/DC coupled output

**Model 484B11**  
Low frequency, gain x1, x10, x100,  
AC/DC coupled output

Line-Powered Signal Conditioners						
Model Numbers	482A21	482A22	482B06	482B11	484B06	484B11
Style	Low noise AC and DC power	Low noise AC and DC power	Basic	Gain	Low frequency AC/DC coupled	Low frequency with gain
Channels	1 channel	4 channels	1 channel	1 channel	1 channel	1 channel
Sensor excitation [1]	26 volt, 2 to 20 mA	26 volt, 2 to 20 mA	24 volt, 2 to 20 mA	24 volt, 2 to 20 mA	24 volt, 2 to 20 mA	24 volt, 2 to 20 mA
Gain	unity	unity	unity	x1, x10, x100	unity	x1, x10, x100
Low frequency response (-5%)	< 0.1 Hz [2]	< 0.1 Hz [2]	< 0.05 Hz	0.17 Hz	DC	DC
High frequency response (-5%)	> 1000 kHz	> 1000 kHz	1000 kHz	200 kHz	200 kHz	200 kHz
Broadband noise (at unity gain)	< 3.25 µV rms	< 3.25 µV rms	< 3.64 µV rms	700 µV	28.8 µV rms	10 µV rms
Power required	36 VDC 120 mA [3]	36VDC 120 mA [3]	115 VAC 50 to 400 Hz			
Input/output connectors	BNC/BNC	BNC/BNC	BNC/BNC	BNC/BNC	BNC/BNC	BNC/BNC
External DC powerable	yes	yes	no	no	no	no
DC power input jack	DIN	DIN	—	—	—	—
Size (height × width × depth)	6.3 × 2.4 × 11 in 160 × 61 × 279 mm	6.3 × 2.4 × 11 in 160 × 61 × 279 mm	4.3 × 1.8 × 6 in 109.2 × 45.7 × 152.4 mm	4.3 × 1.8 × 6 in 109.2 × 45.7 × 152.4 mm	4.3 × 1.8 × 6 in 109.2 × 45.7 × 152.4 mm	4.3 × 1.8 × 6 in 109.2 × 45.7 × 152.4 mm
Weight	24.2 oz (685 gm)	26.7 oz (756 gm)	19.2 oz (544 gm)	32 oz (907.2 gm)	32 oz (907.2 gm)	32 oz (907.2 gm)
<b>Optional Models</b>						
10-32 input/output connectors	N/A	N/A	N/A	N/A	484B	484B10
210 to 250 VAC powerable	standard	standard	F482B06	F482B11	F484B06	F484B11
<b>Options</b>						
External 36 VDC battery pack	488B07	488B07	N/A	N/A	N/A	N/A
<b>NOTES:</b> [1] Current is factory set at 4 mA but is user adjustable between 2 and 20 mA. [2] Achieved with readout device having a 1 megohm input impedance. [3] Supplied with Model 488A04 AC power adaptor (100 to 240 VAC, 50 to 60 Hz input; 36 VDC 120 mA output).						

# Line-Powered Signal Conditioners

## MULTI-CHANNEL, LINE-POWERED ICP® SENSOR SIGNAL CONDITIONERS WITH GAIN

These full-featured, multi-channel, line-powered signal conditioners offer push-button, selectable gain for each channel and optional output switching to simplify data acquisition. Each features a bank of LED's on each channel to indicate gain setting, input overload, and input fault due

to open or short circuit connections. In addition to the channel specific BNC's, the optional switched output units offer additional output BNC's that carry the signals of the switch-selected channel.

**Model 482A16**  
4 channel,  
gain x1, x10, x100



**Model 482A18**  
8 channel  
gain x1, x10, x100  
8 to 1 output  
switching



### Full-Featured, Line-Powered Signal Conditioners with Gain

Model Numbers	482A16	482A20
Style	Full Feature with gain	Full Feature with gain
Channels	4 channels	8 channels
Sensor excitation <sup>[1]</sup>	24 volt, 2 to 20 mA	24 volt, 2 to 20 mA
Gain (each channel)	x1, x10, x100	x1, x10, x100
Low frequency response (-5%)	0.225 Hz <sup>[2]</sup>	0.225 Hz <sup>[2]</sup>
High frequency response (-5%)	100 kHz	100 kHz
Broadband noise (at unity gain)	9.1 µV rms	9.1 µV rms
Power required	90 to 130 VAC 50 to 400 Hz	90 to 130 VAC 50 to 400 Hz
Input/output connectors	BNC/BNC	BNC/BNC
Size (height x width x depth)	6.3 x 2.9 x 9.7 in 160 x 73.7 x 246.4 mm	6.3 x 4.0 x 9.7 in 160 x 101.6 x 246.4 mm
Weight	32 oz (907.2 gm)	97.6 oz (2767 gm)

#### Optional Models

4 to 1 output switching	482A17	482A19 <sup>[3]</sup>
8 to 1 output switching	N/A	482A18
210 to 250 VAC powerable	F482A16	F482A20

**NOTES:** [1] Current is factory set at 4 mA but is user adjustable between 2 and 20 mA.

[2] Achieved with readout device having a 1 megohm input impedance.

[3] Model 482A19 offers dual 4 to 1 output switching and is ideally suited for use with two channel analyzers.

## DC POWER CONDITIONERS

**Models 485B** and **485B12** serve to regulate available current from any conventional DC power supply or battery source to a constant value between 2 and 20 mA as required by ICP® sensors. In addition, the units decouple the sensor's output bias voltage from the measurement signal to enable zero based measurements with any readout device.

Model 485B features a 10-32 coaxial jack input connector, while Model 485B12 features a BNC jack input connector. Both units feature BNC jack output connectors.



**Model 485B**



**Model 485B12**

# Modular Style Signal Conditioners

## MODULAR STYLE SIGNAL CONDITIONERS

Modular signal conditioners are comprised of selected signal conditioning modules, and an AC power supply module, assembled into a 2-, 3-, 5-, or 9-slot chassis. Available modules condition ICP®, charge, or capacitive sensor signals. The common chassis backplane architecture permits mixing and matching of modules to achieve the desired number of channels and signal conditioning features. Preconfigured models offer ease of ordering units possessing the most commonly requested features. Request the "Series 440 Modular Signal Conditioners" brochure for full details of available items.

Modular Signal  
Conditioner  
Systems



## Preconfigured Modular Style Signal Conditioners



**Model 442B02**  
Single channel,  
gain x1, x10, x100  
for ICP® sensors

CE



**Model 442C04**  
4 channel, gain x1, x10, x100  
for ICP® sensors

CE



**Model 442B06**  
Single channel, gain x1, x10,  
x100 AC and DC coupling  
for ICP® sensors

CE



**Model 443B01**  
Dual-Mode Vibration Amplifier  
for charge and ICP® sensors

## Modular Style Signal Conditioners

Model Numbers	442B02	442C04	442B06	443B01
Style	ICP Sensor with gain	ICP Sensor with gain	ICP Sensor AC/DC coupling	Charge Mode and ICP Sensor
Channels	1 channel	4 channels	1 channel	1 channel
Sensor excitation [1]	24 volt, 1 to 20 mA	25.5 volt, 0.5 to 20 mA	24 volt, 1 to 20 mA	24 volt, 2 to 20 mA [2]
Gain (each channel)	x1, x10, x100	x1, x10, x100	x1, x10, x100	0.1 to 1000
Charge sensitivity	N/A	N/A	N/A	0.0001 to 10 volts/pC
Low frequency response	0.05 Hz (-5%) [3]	0.05 Hz (-5%) [3]	DC	0.2/2 Hz (-10%) [4]
High frequency response (-5%)	100 kHz	100 kHz	100 kHz	0.1, 1, 3, 10, 100 kHz [5]
Broadband noise (at unity gain)	9.5 µV rms	9.98 µV rms	9.11 µV rms	9 µV rms
Power required	100 to 240 VAC 50 to 60 Hz			
Input/output connectors	BNC/BNC	BNC/BNC	BNC/BNC	BNC/BNC
Size (height × width × depth)	6.2 × 4.25 × 10.2 in 157.5 × 108 × 259.1 mm	6.2 × 4.25 × 10.2 in 157.5 × 108 × 259.1 mm	6.2 × 4.25 × 10.2 in 157.5 × 108 × 259.1 mm	6.2 × 6.05 × 10.2 in 157.5 × 153.7 × 259.1 mm
Weight	70.7 oz (2 kg)	70.7 oz (2 kg)	70.7 oz (2 kg)	168.6 oz (4.78 kg)

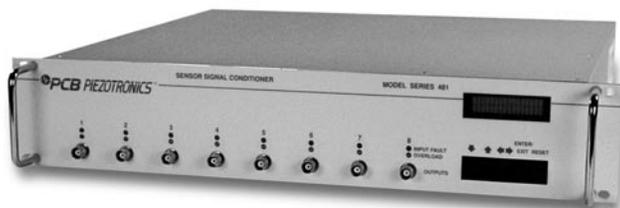
**NOTES:** [1] Current is factory set at 4 mA but is user adjustable up to 20 mA.  
[2] Excitation is disabled for charge mode sensor input.  
[3] Achieved with readout device having a 1 megohm input impedance.  
[4] Adjusted by Discharge Time Constant selection.  
[5] Adjusted by Low Pass Filter selection.

# Multi-Channel Signal Conditioners

## MULTI-CHANNEL SIGNAL CONDITIONERS

Multi-channel rack mount signal conditioners contain 8 or 16 channels of simultaneous signal conditioning and can be configured for multiple unit, daisy-linking with computerized set-up and control. The building block style architecture permits factory configuration to include characteristics which best tailor a unit for the specific application and data acquisition requirements. Optional features include ICP® sensor excitation, LED indicators for input fault monitoring and

overload detection, programmable gain, autoranging, filtering, output switching, integration, IEEE-488, RS-232, and RS-485 interface, and keypad control with LCD display. Units are available to condition signals from ICP sensors, charge mode sensors or can be set up to accept voltage input signals from other types of sensors. Request the "Series 481 Multi-Channel Signal Conditioners" brochure for full details of available items.



CE

**Series 481A30**  
8 channel signal conditioners



CE

**Series 481A**  
16 channel signal conditioners

## USB POWERED, TWO CHANNEL, ICP® SENSOR POWER CONDITIONER

Model 485B36 power conditioner provides current-regulated, ICP® sensor power for two sensor input channels. The unit operates from power obtained from a computer's USB (Universal Serial Bus) port. Additionally, the sensor bias voltage is decoupled from the measurement signals, which are output via a 3.5 mm stereo jack. Other features include: unity gain, 19.5 VDC @ 4.5 mA sensor excitation power, 50 kHz upper frequency range, BNC jack input connectors, and compact size. The device is ideal for use in portable measurement applications such as ride control, road testing, and cabin noise.



**Model 485B36**  
2 channel, ICP® sensor power conditioner

# Vibration Meters and Monitors

## MODEL 381A05 HANDHELD VIBRATION METER KIT

The Model 381A05 Vibration Meter Kit provides an easy, yet effective method for conducting overall vibration measurements. The kit is designed for general purpose use, product testing, or bearing, gearbox, and spindle vibration monitoring.

The kit is supplied with headphones for audible monitoring, a precision quartz ICP® accelerometer, a cable assembly, a high-strength mounting magnet, and a convenient storage case. The portable, lightweight, battery-powered meter provides both overall acceleration and velocity measurements.

Ideal for measuring the vibration severity of fans, motors, and pumps, it also verifies the DC bias voltage of ICP® accelerometers for troubleshooting sensors, cables, and system integrity.



**Model 381A05**  
Handheld Vibration Meter Kit

Model 381A05 Handheld Vibration Meter Kit		
Performance	English	SI
Accelerometer Sensitivity (± 5%)	100 mV/g	10.2 mV/(m/s <sup>2</sup> )
Accelerometer Frequency Response (± 5%)	1 to 4000 Hz	1 to 4000 Hz
(± 10%)	0.7 to 7000 Hz	0.7 to 7000 Hz
(± 3 dB)	0.35 to 12k Hz	0.35 to 12k Hz
Meter Frequency Response (acceleration ± 3 dB) (velocity +10%, -20%)	5 to 50k Hz 1 to 1000 Hz	5 to 50k Hz 1 to 1000 Hz
Meter Display Range (acceleration) (velocity)	0.01 to 19.9 g rms 0.001 to 1.999 in/sec rms	N/A N/A
Meter Resolution	± 2 counts	± 2 counts
Accuracy	± 3%	± 3%
Electrical		
Power Required (one battery)	9 VDC	9 VDC
Battery Life (alkaline)	10 hours	10 hours
Battery Life (rechargeable)	3 hours	3 hours
Environmental		
Temperature Range (accelerometer) (meter)	-65 to +250 °F +32 to +122 °F	-54 to +121 °C 0 to +50 °C
Physical		
Sensor (size, hex × height) (weight) (mounting thread)	7/8 in × 1.9 in 2.8 oz 10-32 female	7/8 in × 48.3 mm 80 gm 10-32 female
Meter (size, h × w × d) (weight, with battery) (input connector) (headphone connector)	5.9 × 3.15 × 1.2 in 9.1 oz BNC jack 1/8" stereo jack	150 × 80 × 30 mm 258 gm BNC jack 1/8" stereo jack
Supplied Components		
Model 487A20 Handheld Vibration Meter	Model 070A47 Headphones	
Model 353B34 Quartz ICP® Accelerometer	Model 080A27 Magnetic Mounting Base	
Model 003C10 Cable	NIST Traceable Calibration Certificate	
Options		
Model M381A05 — Metric Unit Display		
Model R381A05 — Rechargeable Version: includes Model 073M12 External Charger and Model 073A09 Ni-Cad battery replaces alkaline battery.		

## TRUE G RMS VIBRATION MONITOR

**Model 487B07** provides ICP® sensor excitation and accepts input from either a 10 or 100 mV/g accelerometer. Overall vibration levels within a frequency range of 2 to 10,000 Hz are displayed on an analog meter whose full scale range is adjustable to 1, 4, 10 or 40 g rms. High and low set points activate rear panel relays to alarm of upset conditions. An analog output for waveform analysis and a DC output for recording are included. 105 to 125 VAC, 50 to 400 Hz powered.



**Model 487B07**

## PORTABLE G RMS VIBRATION METER

**Model 487C08** provides ICP® sensor excitation and accepts input from a 100 mV/g accelerometer. Overall vibration levels within a frequency range of 5 to 10,000 Hz are displayed on an analog meter whose full scale range is adjustable to 0.25, 2.5 or 25 g rms. An analog output for waveform analysis is included. Battery powered by two standard 9 volt batteries. Ni-cad batteries with recharger option and kit configuration including accelerometer and mounting accessories are also available.



**Model 487C08**

# Charge Converters, Accessories

## IN-LINE CHARGE CONVERTERS

**Series 422E** charge converters serve to convert charge mode sensor signals to low impedance voltage signals, for transmission over long cables, and interface to data acquisition equipment. They are low in noise, powered by standard ICP® sensor signal conditioners, and install in-line between the sensor and signal conditioner.

Models 422E36 and 422E36 are specifically designed to operate with sensors that operate at extreme, elevated temperatures, >400 °F (204 °C).



**Series 422E**

### Charge Converters for Use with Charge Mode Sensors

Charge Converter Models	422E11	422E12	422E13	422E35 [2]	422E36 [2]
Gain	100 mV/pC ± 5%	10 mV/pC ± 2%	1 mV/pC ± 2%	1 mV/pC ± 2%	10 mV/pC ± 2%
Input range ± 2%	± 25 pC	± 250 pC	± 2500 pC	± 2500 pC	± 250 pC
Output voltage range	± 2.5 volts				
Frequency response (± 5%) [1]	5 to 110k Hz	5 to 100k Hz			
Broadband noise	60 µV rms	20 µV rms	11 µV rms	10.02 µV rms	71.0 µV rms
Power required	18 to 28 VDC				
Constant current required	2.2 to 20 mA				
Input connector	10-32 jack				
Output connector	BNC jack				
Size (length × diameter)	3.4 × 0.5 in 85.1 × 12.7 mm				
Weight	1.1 oz (31.2 gm)				
<b>Optional Models</b>					
0.5 Hz (-5%) low frequency	422E01	422E02	422E03	—	—
BNC plug output connector	—	—	—	422E35/C	422E36/C
10-32 jack output connector	—	—	—	422E35/A	422E36/A
TEDS addressable, on-board EEPROM	—	—	—	T422E35	T422E36
<b>NOTE:</b> [1] High frequency achieved at 20mA excitation. [2] Specifically designed for use with sensors that operate at extreme, elevated temperatures, >400 °F (204 °C).					

## ICP® SENSOR SIMULATOR



**Model 492B**

**Model 492B** ICP® sensor simulator installs in place of an ICP® sensor and serves to verify signal conditioning settings, cable integrity, and tune long lines for optimum system performance. By use of an internal oscillator, the unit delivers a 100 Hz sine or square wave at a selectable peak to peak voltage. External test signals from a function generator may also be inserted. This portable unit is battery powered.

## ICP® SENSOR SIMULATOR



**Model 401A04**

**Model 401A04** ICP® sensor simulator installs in place of an ICP® sensor and accepts test signals from a voltage function generator. The unit serves to verify signal conditioning settings, cable integrity, and tune long lines for optimum system performance. This unit requires power from an ICP® sensor signal conditioner.

## STEP FUNCTION GENERATOR



**Model 492B03**

**Model 492B03** generates a rapid charge or voltage step function from zero to a selected peak value between either 0 and 100,000 pC or 0 and 10 volts DC. The unit is useful for setting trigger points in recording equipment and verifying charge amplifier and data acquisition equipment setup. This unit is battery powered and portable.

## TEDS READ/WRITE PDA

**Model 400A75** is a fully-functional Palm™ m105 PDA with software, adaptor, and sensor cable, which permits upload and download of TEDS data. The unit provides read and write capability to the on board memory circuitry contained within a TEDS sensor, or in-line TEDS memory modules.

TEDS functionality permits data storage within a non-volatile EEPROM memory circuit to store information such as model number, serial number, sensitivity, location, and orientation. The standard TEDS protocol complies with IEEE P1451.4, which facilitates automated bookkeeping and measurement system setup to speed testing and reduce errors.



## IN-LINE TEDS MEMORY MODULES

**Models 070A70** and **070A71** are TEDS memory modules, which can be added in-line with standard ICP® sensors, to construct a sensor system with TEDS functionality.

Both units are identical except for their electrical connectors. Model 070A70 features a BNC jack input connector and a BNC plug output connector, whereas Model 070A71 features 10-32 coaxial jack input and output connectors.

ICP® sensor excitation is passed through the units to the sensor. Under reverse bias, the memory circuitry is activated for read and write capability per IEEE P1451.4.

TEDS functionality permits data storage within a non-volatile EEPROM memory circuit to store information such as model number, serial number, sensitivity, location, and orientation. The standard TEDS protocol complies with IEEE P1451.4, which facilitates automated bookkeeping and measurement system setup to speed testing and reduce errors.



**Model 070A70**



**Model 070A71**

# Sensor Signal Conditioning Kits

## SIGNAL CONDITIONER AND SENSOR KITS

To simplify ordering, predefined kits are available which supplement the ICP® sensor of choice with appropriate cables, accessories and a selected signal conditioner. Kits are designated with a letter code which, when assigned as a prefix to the sensor model number, defines the complete kit including sensor, input and output cables, signal conditioner, accessories, and storage case.

Ordering by kit designation simplifies the ordering process and insures that the correct cables are included for proper connectivity. In addition, the kit represents a better value since the cost of the components purchased separately would exceed the cost of the kit and also, up to 50 ft. of sensor cable can be specified at no additional charge.

Choose the prefix letter code corresponding to the signal conditioner desired from the table below. The letter code designates a complete kit when assigned as a prefix to the sensor model, e.g., GK353B33.



A typical sensor kit including signal conditioner, interconnect cables and storage case

Letter Designations for Signal Conditioners			
Prefix	SIGNAL CONDITIONER		FEATURES
<b>Kits with Battery Powered Signal Conditioners:</b>			
K	480C02	(see page 3.2)	Basic, unity gain
KR	R480C02	(see page 3.2)	Basic, unity gain, with rechargeable batteries and recharger
GK	480E09	(see page 3.2)	Gain $\times 1$ , $\times 10$ , $\times 100$
GKR	R480E09	(see page 3.2)	Gain $\times 1$ , $\times 10$ , $\times 100$ , with rechargeable batteries and recharger
<b>Kits with 105 to 125 VAC Line Powered Signal Conditioners:</b>			
KL	482B06	(see page 3.3)	Basic, unity gain
GKL	482B11	(see page 3.3)	Gain $\times 1$ , $\times 10$ , $\times 100$
DKL	484B06	(see page 3.3)	Unity gain, AC/DC coupling
GDKL	484B11	(see page 3.3)	Gain $\times 1$ , $\times 10$ , $\times 100$ , AC/DC coupling
<b>Kits with 210 to 250 VAC Line Powered Signal Conditioners:</b>			
FKL	F482B06	(see page 3.3)	Basic, unity gain
FGKL	F482B11	(see page 3.3)	Gain $\times 1$ , $\times 10$ , $\times 100$
FDKL	F484B06	(see page 3.3)	Unity gain, AC/DC coupling
FGDKL	F484B11	(see page 3.3)	Gain $\times 1$ , $\times 10$ , $\times 100$ , AC/DC coupling
<b>NOTES:</b> All kits include Model 002C10 sensor cable (10 ft.) and Model 012A03 output cable (3 ft.) unless: a) a longer sensor cable is specified (up to 50 ft. available at no additional charge). -or- b) if the sensor has an integral cable (in which case the kit will include Model 070A02 adaptor (10-32 jack to BNC plug) instead of a sensor cable).			

A signal conditioner kit may also be purchased separately, without a sensor. To achieve this, specify the kit prefix designator in association with the signal conditioner model number, e.g., GK480E09.

In addition to the signal conditioner, these kits include the vinyl storage case, the standard 10 ft. input cable, Model 002C10, and 3 ft. output cable, Model 012A03. Longer input cables, to 50 ft. may be specified at no additional charge.