

## Model 4416B Battery powered Isotron® conditioner

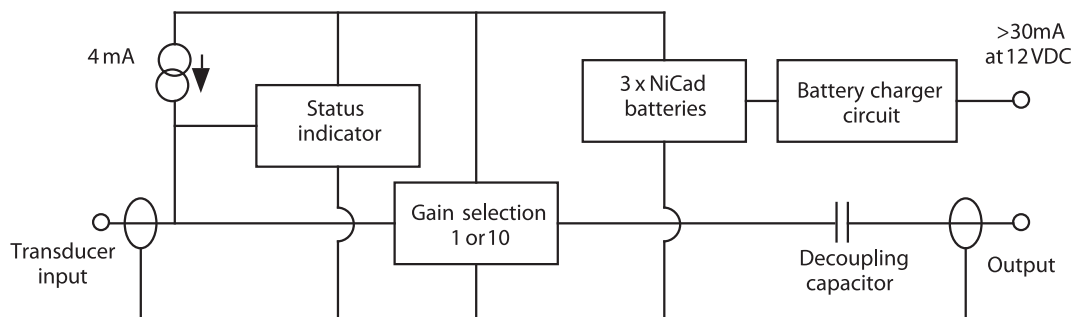
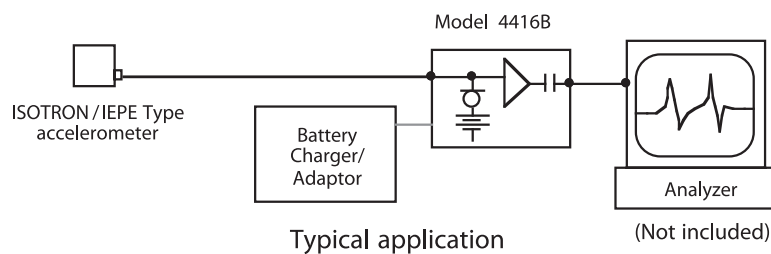
### Features

- Low noise operation
- Portable compact size
- Selectable gain of 1 or 10
- Status indicator LED
- Operational during battery recharge cycle
- Eight hours of continuous battery operation
- Economical, charger included



### Description

The Endevco® model 4416B Isotron® signal conditioner is a small, battery-operated, low noise signal conditioner for use with Isotron® transducers. It supplies power to the transducer from a constant current source, and provides a selectable gain of 1 or 10. The conditioner is powered by rechargeable NiCad batteries, and can be operated during the recharging cycle. An LED status indicator informs the user of a short, open, or normal operating conditions. Model 4416B contains internal automatic power shutdown circuitry to protect the rechargeable batteries from deep discharge damage.



Model 4416B block diagram

# Model 4416B Battery powered Isotron<sup>®</sup> conditioner



## Specifications

### Inputs

Type	Single-ended, constant current two-wire system
Input impedance	> 20 k $\Omega$
Excitation current	4.7 mA $\pm$ 20%
Compliance voltage	> 20 V. This represents the sum of AC and DC components.
Transducer status LED	The LED will not light if the transducer is disconnected, open, or the battery is low. The LED becomes red if a short is detected; green when condition is normal.

### Outputs

Type	Single-ended, one side connected to circuit ground
Output impedance	< 10 $\Omega$ , in series with at least 40 $\mu$ F
Linear output voltage	10 volts pk-pk (3.535 V rms) or greater
Linear output current	2.0 mA pk-pk or greater

### Transfer characteristics

Gain	1 or 10 selectable
Accuracy	$\pm$ 1.5% (including variation with temperature and time)
Frequency response	Within $\pm$ 5% from 1 Hz to 20 kHz, reference at 100 Hz
Lower cutoff frequency	2 Hz maximum, -5% at 1 Hz, -3db at 0.3 Hz (maximum)
Upper cutoff frequency	-5% at 20 kHz, -3db at 40 kHz (maximum)
Amplitude linearity	1% of reading from best fit straight line approximation
Residual noise	45 $\mu$ V rms maximum RTI with input shunted with 100 ohms or 100 $\mu$ V rms RTO, whichever is greater
Total harmonic distortion	less than 1% maximum for signal of full scale or less

### Power

Batteries	Powered by 3 rechargeable nickel cadmium batteries contained within the unit
Typical battery life	8 hours minimum continuous use
External power supply	12 VDC at 160 mA minimum
Recharge cycle time	3 hours minimum with unit OFF, 6 hours minimum with unit ON. Operating this unit during the recharging cycle is possible but will extend the recharge cycle time.
Charger LED indication	The LED will go on when the batteries are being charged.

### Physical

Dimensions	3.125" W x 1.25" H x 5.875" D (79.4 mm x 31.8 mm x 149.2 mm)
Weight	18 oz (510 gm) typical
Connections	BNC for both Input and Output

### Environmental

Temperature	Operating +32°F to +122°F ( 0°C to +50°C) Storage -40°F to +122°F (-40°C to +50°C) Recharging +59°F to +122°F (+15°C to +50°C)
Humidity	95% R.H.

### Included accessories

EHM1159	110 VAC to 12 VDC adaptor (call factory for 220VAC adaptor)
EJ21	MICRODOT 10-32 to BNC adaptor

### Notes:

1. For ultra-low noise application, model 4416BM1 offers the same basic design without the gain stage.
2. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.