

IEPE signal conditioner

Model 4416C



Key features

- Low noise operation
- Portable compact size
- Selectable gain of 1, 10 or 100
- Status indicator LED
- 2nd order Sallen Key low pass filter

Description

Model 4416C IEPE signal conditioner is a small, battery-operated, low noise signal conditioner for use with IEPE transducers. It supplies power to the transducer from a constant current source, and provides a selectable gain of 1, 10 or 100. The conditioner is powered by a rechargeable Li-Ion battery. An LED status indicator informs the user of a short, open, or normal operating conditions. Additionally the unit features a second order Sallen Key low pass filter.

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Specifications

Input characteristics

Type	Single-ended, constant current two-wire system
Input impedance	>20 k Ω
Excitation current	4.7 mA ($\pm 5\%$)
Maximum input voltage	7.07 Vpk (5 vrms)
Compliance voltage	24V ($\pm 1\%$)
Transducer status LED	Green = OK, Red = fault (open or short circuit)

Output characteristics

Type	Single-ended, one side connected to circuit ground
Output impedance	<10 Ω , in series with at least 47 μ F
Linear output voltage (Min)	10Vpk (7.07 V rms)
Linear output current (Max)	2mA

Transfer characteristics

Frequency range	Gain = 1: -5% 0.3 Hz to 30 kHz; -3dB 0.1 Hz to 100 kHz Gain = 10: -5% 0.5 Hz to 30 kHz; -3dB 0.15 Hz to 100 kHz Gain = 100: -5% 0.5 Hz to 20 kHz; -3dB 0.15 Hz to 50 kHz
Filter out	
Filter In	LP filter (as supplied); 2nd order Sallen Key Gain = 1 & 10: >-5% @ 10 kHz; > -3dB @ 30 kHz Gain = 100: >5% @ 10 kHz; > -3dB @ 18 kHz x1, x10 and x100, user selectable
Gain	$\pm 1\%$
Gain Accuracy	
Harmonic distortion	<1.0%, 20Hz to 30kHz, 100mV – 10V pk.
Noise (filter out)	Gain = 1: <20 μ V rms Gain = 10: <200 μ V rms Gain = 100: <2mV rms

Power

Batteries	Internal Lithium Ion
Typical battery life	8 hours minimum continuous use
External power supply	12 VDC (1.5A minimum)
Recharge cycle time	Unit off, approximately 3 hours
Charger LED indication	Red = battery low, Yellow = battery charging

Physical

Charger connector	2.5mm male jack plug
Dimensions	3.3" W x 1.4" H x 7.1" D (82 mm x 35 mm x 179 mm)
Weight	13 oz (370 gm) $\pm 5\%$
Connections	BNC for both Input and Output
Case	Aluminum, black painted

Environmental

Temperature	
Operating (battery being discharged)	-10°C to +60°C (+14°F to +140°F)
Operating (battery being charged)	-10°C to +45°C (+14°F to +113°F)
Storage (Li-Ion battery)	-5°C to +35°C (23°F to +95°F) De-rated for long-term storage for lithium batteries -40°F to +122°F (-40°C to +50°C)
Humidity	95% R.H.
Compliance	ROHS to 2011/65/EU CE to EN61326-1:2013; CFR47 Pt 15 B Class A.

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Accessories

Product	Description	4416
IM4416C	Instruction Manual	Download from website
EHM2107	Universal power supply 12 VDC, 2 AMP with adaptors for USA, Europe, Japan and Australia	Included
EJ21	10-32 to BNC adapter	Included
EHM2106	Replacement Battery	As required
EHM2107	Universal power adapter	As required
CS500	Calibration certificate	Included

Ordering information

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.