

Model Number

422E04

## IN-LINE CHARGE CONVERTER

Revision: J

ECN #: 26184

Performance	ENGLISH	SI	
Sensitivity( $\pm 2\%$ )(Charge Conversion)	0.1 mV/pC	0.1 mV/pC	
Input Range(Electrical Charge)	$\pm 25,000$ pC	$\pm 25,000$ pC	
Overrange	$\pm 3$ V	$\pm 3$ V	
Low Frequency Response(-5 %)	0.5 Hz	0.5 Hz	[3]
High Frequency Response(2.2 mA)	5 kHz	5 kHz	[4]
High Frequency Response(4 mA)	15 kHz	15 kHz	[4]
High Frequency Response(20 mA)	100 kHz	100 kHz	[4]
Non-Linearity	$\leq 1.0\%$ FS	$\leq 1.0\%$ FS	
<b>Environmental</b>			
Temperature Range(Operating)	-65 to +250 °F	-54 to +121 °C	
Temperature Response(Sensitivity Deviation)	<1 %	<1 %	
Maximum Shock	1000 g pk	9810 m/s <sup>2</sup> pk	
<b>Electrical</b>			
Excitation Voltage	18 to 28 VDC	18 to 28 VDC	
Constant Current Excitation	2.2 to 20 mA	2.2 to 20 mA	
Output Voltage(at specified measurement range)	$\pm 2.5$ Vpk	$\pm 2.5$ Vpk	
Output Impedance	<20 ohm	<20 ohm	
Output Bias Voltage	12.75 to 14.25 VDC	12.75 to 14.25 VDC	
Output Polarity	Inverted	Inverted	
Maximum Input Voltage	30 V	30 V	
Broadband Electrical Noise(1 to 10,000 Hz)	4.0 $\mu$ V	-108 dB	[1]
Spectral Noise(1 Hz)	3 $\mu$ V/ $\sqrt{\text{Hz}}$	-110 dB	[1]
Spectral Noise(10 Hz)	0.2 $\mu$ V/ $\sqrt{\text{Hz}}$	-134 dB	[1]
Spectral Noise(100 Hz)	0.1 $\mu$ V/ $\sqrt{\text{Hz}}$	-140 dB	[1]
Spectral Noise(1 kHz)	0.04 $\mu$ V/ $\sqrt{\text{Hz}}$	-148 dB	[1]
Spectral Noise(10 kHz)	0.03 $\mu$ V/ $\sqrt{\text{Hz}}$	-150 dB	[1]
Discharge Time Constant	1.0 sec	1.0 sec	
Resistance(Minimum required at input)	$7 \times 10^7$ ohm	$7 \times 10^7$ ohm	[2]
Source Capacitance Loading	0.0005 %/pF	0.0005 %/pF	
<b>Physical</b>			
Housing Material	Stainless Steel	Stainless Steel	
Sealing	Welded Hermetic	Welded Hermetic	
Electrical Connector(Input)	10-32 Coaxial Jack	10-32 Coaxial Jack	
Electrical Connector(Output)	BNC Jack	BNC Jack	
Size (Diameter x Length)	0.52 in x 3.4 in	13 mm x 86 mm	
Weight	1.15 oz	32.7 gm	

## OPTIONAL VERSIONS

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

T - TEDS Capable of Digital Memory and Communication Compliant with IEEE P1451.4  
 Temperature Range(Operating) -40 to +185 °F -40 to +85 °C  
 Output Bias Voltage 13.35 to 14.85 VDC 13.35 to 14.85 VDC

## NOTES:

- [1] Tested using voltage source and input capacitor equal to the feedback capacitor, to simulate a charge output sensor.  
 [2] Not to be used with low values of source resistance such as charge mode sensors at elevated temperatures or contaminated sensor cables (preventing low frequency peaking and/or output bias problems).  
 [3] The low frequency tolerance is accurate within  $\pm 20\%$  of the specified frequency.  
 [4] Above stated frequency, the amplifier becomes slew rate limited.  
 [5] See PCB Declaration of Conformance PS024 for details.



[5]

All specifications are at room temperature unless otherwise specified.  
 In the interest of constant product improvement, we reserve the right to change specifications without notice.

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Entered: <i>JH</i>	Engineer: <i>BJ</i>	Sales: <i>JDM</i>	Approved: <i>CPH</i>	Spec Number:
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