

Model Number  
422E01

# IN-LINE CHARGE CONVERTER

Revision: R  
ECN #: 26184

	ENGLISH	SI	
<b>Performance</b>			
Sensitivity( $\pm 5\%$ )(Charge Conversion)	100 mV/pC	100 mV/pC	
Input Range(Electrical Charge)	$\pm 25$ pC	$\pm 25$ pC	
Overrange	$\pm 3$ V	$\pm 3$ V	
Low Frequency Response(-5%)	0.5 Hz	0.5 Hz	
High Frequency Response(2.2 mA)	60 kHz	60 kHz	[3]
High Frequency Response(4 mA)	90 kHz	90 kHz	[3]
High Frequency Response(20 mA)	100 kHz	100 kHz	[3]
Non-Linearity	$\leq 1.0\%$ FS	$\leq 1.0\%$ FS	
<b>Environmental</b>			
Temperature Range(Operating)	-65 to +212 °F	-54 to +100 °C	
Temperature Response(Sensitivity Deviation)	$\leq 2\%$	$\leq 2\%$	
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)	24 $\mu$ V	-92 dB	[1]
Spectral Noise(1 Hz)	19 $\mu$ V/ $\sqrt$ Hz	-94 dB	[1]
Spectral Noise(10 Hz)	2.3 $\mu$ V/ $\sqrt$ Hz	-113 dB	[1]
Spectral Noise(100 Hz)	0.5 $\mu$ V/ $\sqrt$ Hz	-126 dB	[1]
Spectral Noise(1 kHz)	0.2 $\mu$ V/ $\sqrt$ Hz	-134 dB	[1]
Spectral Noise(10 kHz)	0.1 $\mu$ V/ $\sqrt$ Hz	-140 dB	[1]
Discharge Time Constant	1.0 sec	1.0 sec	
Resistance(Minimum required at input)	10 <sup>12</sup> ohm	10 <sup>12</sup> ohm	[2]
Source Capacitance Loading	0.005 %/pF	0.005 %/pF	
<b>Physical</b>			
Housing Material	Stainless Steel	Stainless Steel	
Sealing	Welded	Welded	
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] Above stated frequency, the amplifier becomes slew rate limited.
- [4] See PCB Declaration of Conformance PS024 for details.



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>92</i>	Sales: <i>JH</i>	Approved: <i>11/11</i>	Spec Number:
Date: <i>4-3-07</i>	Date: <i>4-5-07</i>	Date: <i>4-5-07</i>	Date: <i>4/5/07</i>	422-5010-80

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