Model	Number
42.	1R30

DIFFERENTIAL INPUT IN-LINE CHARGE AMPLIFIER

Revision: NR ECN #: 49931

4E 1030			
Performance	ENGLISH	SI	
Sensitivity(± 5 %)(Voltage Output)	20.6 mV/pC	20.6 mV/pC	[1][2]
Sensitivity(± 5 %)(Current Output)	20.6 μA/pC	20.6 μA/pC	[1][2]
Input Range	± 242 pC	± 242 pC	
Low Frequency Response(- 3 dB)	10 Hz	10 Hz	[3][4]
High Frequency Response(- 1 dB)	5 kHz	5 kHz	[5][6][4]
Non-Linearity	≤ 1.0 % FS	≤ 1.0 % FS	
Environmental			
Temperature Range(Operating)	-22 to +185 °F	-30 to +85 ℃	
Temperature Response(Sensitivity	< 2.5 %	< 2.5 %	
Deviation)			
Electrical			
Excitation Voltage	22 to 28 VDC	22 to 28 VDC	
Output Bias Voltage	7.3 to 7.7 VDC	7.3 to 7.7 VDC	
Output Voltage	± 5 Vpk	± 5 Vpk	
Output Bias Current	11 to 13 mA	11 to 13 mA	
Output Current	± 5 mApK	± 5 mApK	
Output Impedance	< 770 Ohm	< 770 Ohm	
Broadband Electrical Noise(1 to 10,000 Hz)	1,040 μV	-60 dB	[7][8]
Spectral Noise(1 Hz)	38 µV/√Hz	-88 dB	[7][8]
Spectral Noise(10 Hz)	54 μV/√Hz	-85 dB	[7][8]
Spectral Noise(100 Hz)	13 µV/√Hz	-98 dB	[7][8]
Spectral Noise(1 kHz)	10 μV/√Hz	-100 dB	[7][8]
Spectral Noise(10 kHz)	10 µV/√Hz	-100 dB	[7][8]
Resistance(Minimum required at input)	100,000 Ohm	100,000 Ohm	
Source Capacitance Loading	0.0009 %/pF	0.0009 %/pF	
Physical	•		
Housing Material	Aluminum	Aluminum	
Weight	6.5 oz	184 gm	
		3	

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.

NOTES:

- [1]Output can be set to either current or voltage output depending on the wiring configuration. See manual for wiring configuration.
- [2]Set to provide a 350 mV/psi or 350 µA/psi output when using a 17 pC/psi pressure sensor. If used with a pressure sensor with a different sensitivity, the output sensitivity will vary.
- [3] The low frequency tolerance is accurate within $\pm 20\%$ of the specified frequency.
- [4] Frequency response tested with 1000pF input capacitor.
- [5] Above stated frequency, the amplifier becomes slew rate limited.
- [6] The high frequency tolerance is accurate within ±20% of the specified frequency.
- [7]Tested using voltage source and input capacitor equal to the feedback capacitor, to simulate a charge output sensor.
- [8]Typical.
- [9]See PCB Declaration of Conformance PS024 for details. A low impendance connection from case to earth ground is required to maintain CE compliance.

CE

Entered: LK	Engineer: AJP	Sales: MC	Approved: NJF	Spec Number:
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