

Model Number
482D64

ICP/ CHARGE INPUT SENSOR SIGNAL CONDITIONER

Revision: NR
ECN #: 56455

Performance

	ENGLISH	SI	
Channels	4	4	
Sensor Input Type(s)	ICP®, Voltage, Charge	ICP®, Voltage, Charge	
Gain	x0.1 to x1000	x0.1 to x1000	
Voltage Gain	x0.1 to x1000	x0.1 to x1000	
Voltage Gain Increment	0.1	0.1	
Accuracy (Gain, x0.1 to x0.4)	± 5 %	± 5 %	
Accuracy (Gain, x0.5 to x0.99)	± 1 %	± 1 %	
Accuracy (Gain, x1.0 to x1,000)	± 0.5 %	± 0.5 %	
Sensitivity (± 1 %) (Charge Input @ 100 Hz)	0.1 / 1.0 / 10.0 mV/pC	0.1 / 1.0 / 10.0 mV/pC	
Insulation Resistance at Input (0.1 mV/pC)	>10 k Ohm	>10 k Ohm	
Insulation Resistance at Input (1.0 mV/pC)	>100 k Ohm	>100 k Ohm	
Insulation Resistance at Input (10.0 mV/pC)	>1 M Ohm	>1 M Ohm	
Input Range (Charge Input, Nominal)	± 100,000 pC	± 100,000 pC	
Output Range	± 10 Vpk	± 10 Vpk	
Source Capacitance	< 5nF	< 5nF	[9]
Frequency Range (- 5 %) (≥ x100)	0.1 to 50,000 Hz	0.1 to 50,000 Hz	[8]
Frequency Range (- 5 %) (x0.1 to x99.9 Gain)	0.1 to 100,000 Hz	0.1 to 100,000 Hz	[8]
Low Frequency Response (- 5 %) (Charge Input)	0.5 Hz	0.5 Hz[1]	
Electrical Filter Roll-off	80 dB/decade	80 dB/decade	
Filter Type (Fourth-order Butterworth)	Low Pass	Low Pass	
Electrical Filter Corner Frequency (- 3 dB)	10 kHz	10 kHz	[2][3]
Electrical Filter Roll-off	24 dB/octave	24 dB/octave	
Electrical Filter Pass Band Amplitude Accuracy	1 %	1 %	
Electrical Filter Stop Band Attenuation (Minimum)	96 dB	96 dB	
Phase Response (at 1 kHz)	± 1 °	± 1 °	
Cross Talk(maximum)	- 72 dB	- 72 dB	
TEDS Sensor Support	Yes	Yes	
Fault/Bias Monitor/Meter (LED)	Open/Short/Overload	Open/Short/Overload	
Linearity (Charge Input)	± 1 % FS	± 1 % FS	

Control Interface

Digital Control Interface	USB-C (2.0)	USB-C (2.0)
Digital Control Interface	Ethernet	Ethernet
Human Interface	Keypad	Keypad
Display	2 rows, 16 columns	2 rows, 16 columns
Digital Control: USB Cable Length (Maximum)	16.4 ft	5 m

Environmental

Temperature Range (Operating)	+32 to +120 °F	0 to +50 °C
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Electrical

Power Required (for supplied AC power adaptor)	AC Power	AC Power	
Power Required (direct input to unit)	DC Power	DC Power	
AC Power (50 to 60 Hz)	100 to 240 VAC	100 to 240 VAC	
AC Power	1.6 Amps	1.6 Amps	
DC Power	+9 to +18 VDC	+9 to +18 VDC	
DC Power	≤ 2.5 Amps	≤ 2.5 Amps	
Excitation Voltage (To Sensor)	+ 24 VDC	+ 24 VDC	
DC Offset	≤ 50 mV	≤ 50 mV	
Constant Current Excitation (To Sensor)	0 to 20 mA	0 to 20 mA	[4]
Output Impedance	≤ 50 Ohm	≤ 50 Ohm	
Discharge Time Constant (Charge Input)	1.0 sec	1.0 sec	
Broadband Electrical Noise (1 to 10,000 Hz) (Gain x1)	17 µV rms	17 µV rms	[5]
Spectral Noise (1 Hz) (Gain x1)	1.0 µV/√Hz	1.0 µV/√Hz	[5]
Spectral Noise (10 Hz) (Gain x1)	280 nV /√Hz	280 nV /√Hz	[5]
Spectral Noise (100 Hz) (Gain x1)	200 nV /√Hz	200 nV /√Hz	[5]
Spectral Noise (1 kHz) (Gain x1)	200 nV /√Hz	200 nV /√Hz	[5]
Spectral Noise (10 kHz) (Gain x1)	200 nV /√Hz	200 nV /√Hz	[5]
Broadband Electrical Noise (1 to 10,000 Hz) (Gain x10)	32 µV rms	32 µV rms	[5]
Spectral Noise (1 Hz) (Gain x10)	7.9 µV/√Hz	7.9 µV/√Hz	[5]
Spectral Noise (10 Hz) (Gain x10)	630 nV/√Hz	630 nV/√Hz	[5]
Spectral Noise (100 Hz) (Gain x10)	400 nV/√Hz	400 nV/√Hz	[5]
Spectral Noise (1 kHz) (Gain x10)	350 nV/√Hz	350 nV/√Hz	[5]
Spectral Noise (10 kHz) (Gain x10)	350 nV /√Hz	350 nV /√Hz	[5]
Broadband Electrical Noise (1 to 10,000 Hz) (Gain x100)	180 µV rms	180 µV rms	[5]
Spectral Noise (1 Hz) (Gain x100)	750 µV/√Hz	750 µV/√Hz	[5]
Spectral Noise (10 Hz) (Gain x100)	5.0 µV/√Hz	5.0 µV/√Hz	[5]
Spectral Noise (100 Hz) (Gain x100)	2.5 µV/√Hz	2.5 µV/√Hz	[5]
Spectral Noise (1 kHz) (Gain x100)	2.0 µV/√Hz	2.0 µV/√Hz	[5]
Spectral Noise (10 kHz) (Gain x100)	2.0 µV/√Hz	2.0 µV/√Hz	[5]
Broadband Electrical Noise (1 to 10kHz)(0.1 mV/pC & Gain x1)	21 µV/rms	21µV/rms	[5]
Spectral Noise (1 Hz) (0.1 mV/pC & Gain x1)	700 nV/√Hz	700 nV/√Hz	[5]
Spectral Noise (10 Hz) (0.1 mV/pC & Gain x1)	280 nV/√Hz	280 nV/√Hz	[5]

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] The low frequency tolerance is accurate within ±20% of the specified frequency.
- [2] Frequency tolerance is within ± 5% of the specified value.
- [3] Contact factory for other available frequencies.
- [4] User adjustable, factory set at 4 mA (± 1.0 mA). One control adjusts all channels.
- [5] Typical.
- [6] Auto sensing 10 base-T or 100 base-TX
- [7] See PCB Declaration of Conformance PS024 for details
- [8] DC Coupling provide amplitude accuracy down to 0 Hz.
- [9] Maintain -5% amplitude up to 50k Hz response for all gain settings. High Frequency will be reduced for source capacitance > 5 nF (Charge Input Mode)

SUPPLIED ACCESSORIES:

Model 017AXX Power Cord (1)
Model 100-18895-80 CABLE ASSEMBLY USB-A TO USB-C /W SCREW (1)
Model 488B14/NC POWER CONVERTOR (1)
Model EE75 PCB MCSC Control Software. (1)

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Spectral Noise (100 Hz) (0.1 mV/pC & Gain x1)	250 nV/√Hz	250 nV/√Hz	[5]
Spectral Noise (1,000 Hz) (0.1 mV/pC & Gain x1)	220 nV/√Hz	220 nV/√Hz	[5]
Spectral Noise (10,000 Hz) (0.1 mV/pC & Gain x1)	220 nV/√Hz	220 nV/√Hz	[5]
Broadband Electrical Noise (1 to 10,000 Hz)(1.0 mV/pC & Gain x1)	21 μV rms	21 μV rms	[5]
Spectral Noise (1 Hz) (1.0 mV/pC & Gain x1)	1.4 μV/√Hz	1.4 μV/√Hz	[5]
Spectral Noise (10 Hz) (1.0 mV/pC & Gain x1)	280 nV/√Hz	280 nV/√Hz	[5]
Spectral Noise (100 Hz) (1.0 mV/pC & Gain x1)	250 nV/√Hz	250 nV/√Hz	[5]
Spectral Noise (1,000 Hz) (1.0 mV/pC & Gain x1)	220 nV/√Hz	220 nV/√Hz	[5]
Spectral Noise (10,000 Hz) (1.0 mV/pC & Gain x1)	220 nV/√Hz	220 nV/√Hz	[5]
Broadband Electrical Noise (1 to 10,000 Hz) (10.0 mV/pC & Gain x1)	26 μV rms	26.0 μV rms	[5]
Spectral Noise (1 Hz) (10.0 mV/pC & Gain x1)	7.0 μV/√Hz	7.0 μV/√Hz	[5]
Spectral Noise (10 Hz) (10.0 mV/pC & Gain x1)	1.0 μV/√Hz	1.0 μV/√Hz	[5]
Spectral Noise (100 Hz) (10.0 mV/pC & Gain x1)	280 nV/√Hz	280 nV/√Hz	[5]
Spectral Noise (1,000 Hz) (10.0 mV/pC & Gain x1)	250 nV/√Hz	250 nV/√Hz	[5]
Spectral Noise (10,000 Hz) (10.0 mV/pC & Gain x1)	250 nV/√Hz	250 nV/√Hz /√Hz	[5]
Calibration Input (± 1 %)	± 1,000 pC/V	± 1,000 pC/V	
Overload Threshold (± 0.2 Vpk)	+ 10 Vpk	+ 10 Vpk	

Physical

Electrical Connector (ICP® Sensor Input)	BNC Jack	BNC Jack	
Electrical Connector (Charge Sensor Input)	BNC Jack	BNC Jack	
Electrical Connector (Output)	BNC Jack	BNC Jack	
Electrical Connector (DC Power input)	6-socket mini DIN (female)	6-socket mini DIN (female)	
Electrical Connector (Charge Calibration Input)	BNC Jack	BNC Jack	
Electrical Connector(USB Digital Control)	USB-C	USB-C	
Electrical Connector (Ethernet).	RJ-45	RJ-45	[6]
Size (Height x Width x Depth)	3.2 in x 8.0 in x 5.9 in	8.1cm x 20 cm x 15 cm	
Weight	2.50 lb	1,134 gm	



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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