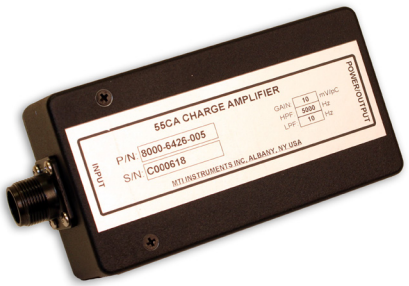
Accelerometer Charge Conversion

The 55CA Charge Amplifier conditions and amplifies charge mode accelerometer signals. It is a rugged device designed to be used in engine test cells and other environments where charge mode accelerometers are used to measure machinery vibration.



Each 55CA Charge Amplifier provides one (1) channel of charge amplification, and provides a buffered acceleration output signal as well as an integrated (velocity) signal output. Both single-ended and differential outputs are provided.

Input type, mounting style, gain, and filter settings are specified at the time of order, and configured at the MTI Instruments factory to match accelerometer type, sensitivities, and testing requirements.

Features

Input Signal	Differential or single-ended charge	
Input Connector	Single-ended:	Microdot S-50
	Differential:	MS3102A-10SL-3P

Output Signals	Single-ended velocity and acceleration
	Differential velocity and acceleration
Output Connector	DB-15 male (pins)

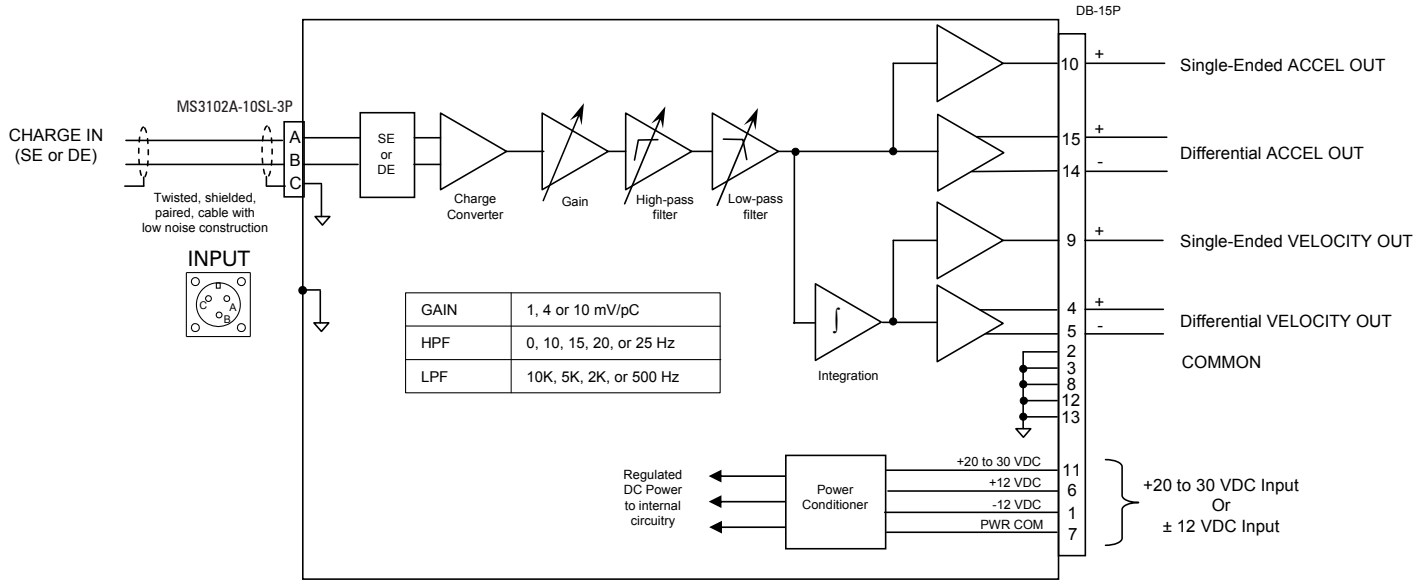
At time of order choose options:

Gain	1, 4, or 10 mV/pC
High Pass Filter	0, 10, 15, 20, or 25 Hz
Low Pass Filter	10K, 5K, 2K, or 500 Hz

Product Options

P/N	**Model**
8000-6426-001	55CA Differential Charge Amp – Plain Lid
8000-6426-002	55CA Differential Charge Amp – DIN Rail
8000-6426-003	55CA Differential Charge Amp – Flange Mount
8000-6502-001	55CA Single-ended Charge Amp – Plain Lid
8000-6502-002	55CA Single-ended Charge Amp – DIN Rail
8000-6502-003	55CA Single-ended Charge Amp – Flange Mount

Block Diagram



Specifications

CHARGE INPUT Differential or Single-ended
Connector Single-ended: Microdot S-50
Differential: MS3102A-10SL-3P
Maximum Charge 10,000 pC peak
CMMR (differential) >40dB @ 500Hz

OUTPUTS Acceleration and Velocity
Connector DB-15 male (pins)
Output Impedance <50Ω
DC Output Offset <10 mV
Linear Output Voltage 20 V peak-peak
Output Current 10 mA maximum
Residual Noise (RTD) <1.0 mV RMS maximum at gain =1 mV/pC
<4.0 mV RMS max at gain = 10 mV/pC

TRANSFER CHARACTERISTICS
Gain 1, 4, or 10 mV/pC
Gain Error < ±1% (nominal) ±2% (max)
Temperature Stability Better than ±1% over operating range

FREQUENCY RESPONSE
High Pass (-3dB point): 10 / 15 / 20 / 25 Hz ±10% (4th order Butterworth)
Low Pass (-3dB point): 10k / 5k / 2k / 500 Hz ±5% (1st order)

POWER REQUIREMENTS
Two input power options: #1: 20-30 VDC @ 80 mA operational
#2: ±12 VDC @ ±60 mA operational
Warm-up Time 60 seconds

PHYSICAL CHARACTERISTICS
Dimensions 1.6" H X 2.6" W X 4.77" D
(40.6 mm x 66 mm x 121mm)
Weight 7.7 oz. (0.2 kg)
Case Material Aluminum
Mounting Flange (DIN optional)

ENVIRONMENTAL CHARACTERISTICS
Operating Temperature -4ºF to 140ºF (-20ºC to 60ºC) No frost
Storage Temperature -40ºF to 212ºF (-40ºC to 100ºC)
Humidity 95% relative humidity, non-condensing
Vibration 8 G peak from 20 Hz to 1 kHz
Shock 50 G peak

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