

Charge Amplifier

Type 5050B...

In-line TEDS Charge Amplifier Module

A signal processing device that converts the charge signal from a high impedance piezoelectric sensor into a voltage signal at a low impedance level.

Used with high impedance acceleration sensors for performing dynamic measurements in a wide variety of applications.

- Two wire, single ended device
- Rugged, stainless steel case
- Wide frequency response
- Five gain versions
- **CE** conforming
- IEPE compatibility
- TEDS option available

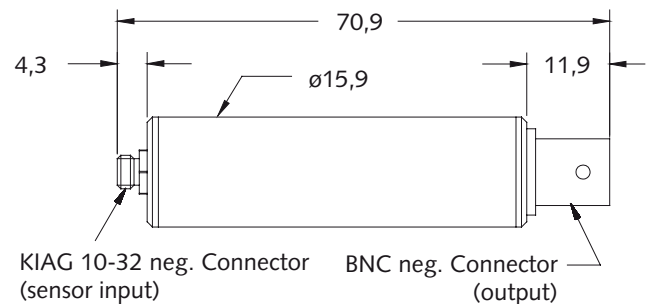
Description

The 5050B... in-line TEDS charge amplifier series contain miniature charge amplifiers that convert the charge signal from a stand-alone high impedance piezoelectric sensor into a high level voltage signal at a low impedance output.

This two wire, single ended device is in five fixed gain settings 0,1, 0,5, 1, 10, and 25 mV/pC and with a frequency response of 0,5 Hz ... 50 kHz. Type 5050B...T version includes a TEDS (Transducer Electronic Data Sheet) chip for storage and retrieval of information. The charge converters can be powered by several Kistler Piezotron® power supply couplers or any industry standard IEPE (Integrated Electronic Piezo-Electric) compatible power source.

Application

The combination of Type 5050B... in-line TEDS charge amplifier and power supply/coupler is a less expensive alternative to laboratory style charge amplifiers. The charge amplifier is inserted in the signal line between a high impedance sensor and follow-on signal conditioning. They are ideal for applications involving high temperature measurements where a low impedance device cannot withstand the environment due to the temperature limitation of its internal electronics.



Installation

Typically the sensor is placed in the high temperature environment and the charge converter is located some distance away at a location within its operating temperature range.

High temperature cable such as the Type 1635Csp is used to connect the sensor to the input of the Type 5050B... in-line TEDS charge amplifier. The output of the charge amplifier is connected to a power supply/coupler using a Type 1511sp cable.

CE Compliant Information

Because high impedance, charge mode accelerometers contain no electronics, **CE** certification to the EMC Directive is not appropriate. When a high impedance accelerometer is used with a **CE** certified signal conditioner (i.e., charge amplifier...), it is said that this system is **CE** compliant.

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This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Technical Data

Type	Unit	5050B0,1/ 5050B0,1T	5050B0,5/ 5050B0,5T	5050B1/ 5050B1T	5050B10/ 5050B10T	5050B25/ 5050B25T
Gain	mV/pC	0,1	0,5	1	10	25
Gain accuracy, 1 nf, 100 Hz	%	±2,5				
Gain stability over temperature (ref. to 25 °C @ 100 Hz)	%	±1	±1	±1	±1	±2
Noise, broad band 1 ... 10 kHz (typ.)	µV _{rms}	5	5	5	15	35
Input	Source resistance, min.	kΩ				
	Source capacitance, max.	nF				
Frequency response ±5 %	Hz	0,5 ... 50 000	0,5 ... 50 000	0,5 ... 50 000	2 ... 50 000	5 ... 50 000
Warm up time, max.	s	20	20	20	240	240
Environmental	Operating temperature range	°C				
	Vibration, 50 ... 2 000 Hz	g _{rms}				
	Shock, 3,5 ms half sine	g _{pk}				
	Humidity	%				
Output	DC Bias nom. , -54 ... 100 °C	VDC				
	Impedance, max.	Ω				
	Voltage F.S. nom.	V _{pk-pk}				
	Signal polarity	-				
Power	Constant current	mA				
	Compliance voltage	V				
Construction	Case	material				
	Sealing housing/connector	Type				
	Input connector	Type				
	Output connector	Type				
Weight	grams	28				
CE certification		EMC Emissions per EN 61000-6-3:2007 / IEC61000-6-3:2005, Part 6-3 Light Industrial, Commercial, Residential EMC EMC Immunity per EN 61000-6-1:2007 / IEC61000-6-1:2005, Part 6-1 Light Industrial, Commercial, Residential EMC				
TEDS version (Type 5050B_T)		Internal Transducer Electronic Data Sheet (TEDS), IEEE std. 1451.4 compatibility, Smart Transducer Interface, Mixed Mode Communication Protocol and Transducer Electronic Data Sheet Format, for Sensors and Actuators				

Ordering Key

Gain	
0,1 Gain	0,1
0,5 Gain	0,5
1 Gain	1
10 Gain	10
25 Gain	25

TEDS	
Default IEEE std. 1451.4	T
Standard	-

Type 5050B

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