

# PiezoSmart™

Type 5150A....

## TEDS Accelerometer Signal Conditioning Module

Four channel plug in module for use with a 2853A...Y45 Signal Conditioning Platform (SCP). The module provides excitation power and signal tailoring for conventional voltage mode accelerometers and IEPE accelerometers that contain IEEE 1451.4 TEDS capability.

- Module for use with 2853A...Y45 signal conditioning platform
- 4 channels; up to 8 modules per signal platform
- Designed for voltage mode and IEEE 1451.4 TEDS compliant piezoelectric accelerometers
- Completely programmable operation
- Optional 8 pole low pass Butterworth filter
- LEDs indicate circuit integrity and channel status

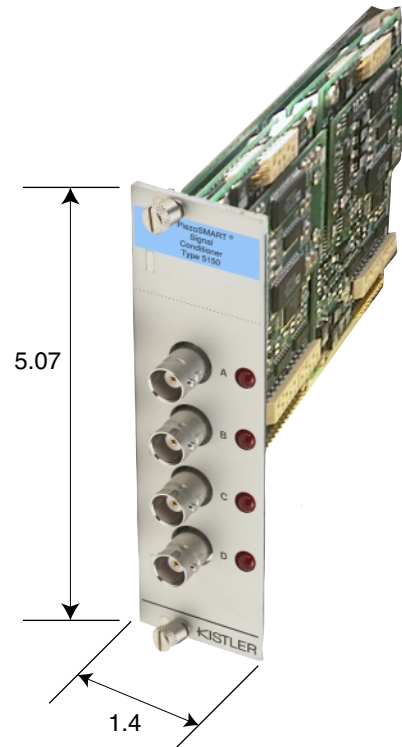
### Description

The 5150A is a 4-channel signal conditioning module designed for use as a component of the 2853A...Y45 Signal Conditioning Platform. It is one of a module series that enables the 2853A...Y45 to support operation of mixed sensor technologies. The 5150A is designed for low impedance, voltage mode IEPE sensors such as the Kistler Piezotron® and PiezoSmart types.

The design of the 5150A module is state of the art and offers several advanced operational and functional conveniences. Manual panel controls are eliminated. Operation of the signal conditioner is accomplished with a personal computer through the SCP visual interface software, supplied with the 2853A...Y45. Gain, sensor excitation current and the choice of three time constants are made as programmed selections. A programmable 8 pole Butterworth filter is an available option.

The 5150 module fully supports conventional voltage mode and smart type sensors that are capable of mixed-mode (analog/digital) operation in accordance with IEEE Specification 1451.4. These sensors feature a Transducer Electronic Data Sheet (TEDS) that stores pertinent sensor information along with its application use. Full information content of Kistler's plug and play PiezoSmart accelerometers is displayed on a PC.

The 2853A...Y45 Signal Conditioning Platform can accommodate up to eight 5150 modules (32 channels) or any combination of 5150 with charge amplifier or voltage amplifier modules.



### Application

Include: Complex, multi-channel modal measurements on large structures such as automotive body, aircraft frames, space craft, bridges, earthmoving and rotating machinery and general structural analysis measurements. Plug and play accelerometers enable faster and near error free set ups, reduced installation tracking paper work and in general saves time and money.

000-384a-05.03 (K12.5150)

**Technical Data**

Type	Units	5150
Channels		4
Sensor Excitation	mA VDC	1 ... 15 * 24
Input Impedance		2 M $\Omega$ in parallel w/1nF
Gain, programmable		0.1 ... 150 **
Gain Accuracy	of set point	%
	w/ Low Pass Filter	%
Bandwidth, $\pm 5\%$ (1Vpp input)	Hz	0.1 ... 65000
Time Constant, programmable	s	20/2/0.1
Noise (1 ... 10kHz; gain = 1)	$\mu V_{rms}$	$\leq 15$
Fault Detection		open, short
Overload Detection programmable	V	1 ... 10
Optional LP Filter		
18 programmable frequencies***		
Frequency Range	Hz	50 ... 5000
	type	Butterworth
	Poles	8
Output Range	V	$\pm 10$
Output Impedance	$\Omega$	10
Operating Temperature Range	$^{\circ}F$	32 ... 122
Connectors		
input	type	BNC neg.
backplane	type	Din 2 rows of 32 pins
Physical Size		
front panel	in	5.1 H x 1.4 W
circuit board		fits 2853A(X)Y45

\* 15 levels

\*\* 0.01 resolution

\*\*\* 50, 60, 70, 80, 90, 100, 150, 200, 250, 300,  
400, 500, 1000, 1500, 1950, 2800, 3600, 5000 Hz1 g = 9.80665 m/s<sup>2</sup>, 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.1129 Nm**Mounting**

With power disconnected from the 2853A...Y45, installation amounts to simply inserting the module into an available slot until the edge connector of the 5150 is fully seated and the upper and lower screws are tightening. Upon re-energizing the 2853A...Y45 signal conditioner, all newly inserted modules become fully active and recognized by the SCP visual interface software.

**Ordering Information**

5150A0	module only, no filter
5150A1	module with 8-pole ButterWorth filter (factory Installed)

**Required Accessories**

2853A...Y45	Signal conditioner chassis
SCP	Visual interface Windows™ software