

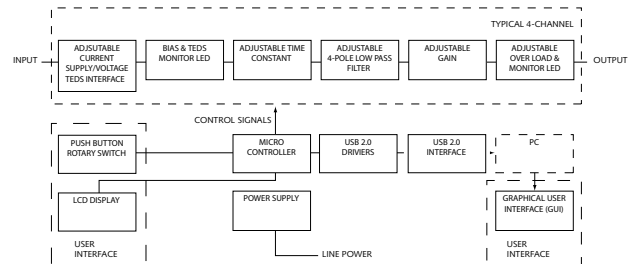
# Piezotron® Coupler

Type 5134B...

## 4-Channel PiezoSmart® (TEDS) Power Supply / Signal Conditioner

A flexible, simple to use signal conditioner that provides excitation power, signal processing and acts as an interface between voltage mode piezoelectric and measuring instruments.

- USB 2.0 ("Plug & Play") interface for remote control and monitoring
- Fault detection and multicolored LEDs
- Non volatile memory to store parameters
- Adjustable gain 0,5 ... 150
- Four selectable 4-pole low-pass filters and bypass settings
- Adjustable time constants and excitation current
- IEEE 1451.4 (TEDS compatible)
- -90dB channel crosstalk
- Conforming to CE



### Description

The 5134B... is a microprocessor controlled, IEEE 1451.4 compliant (TEDS), coupler which provides DC power and signal processing for 4 channels of Integrated Electronics Piezoelectric (IEPE) sensors. A special feature of the 5134B is that with a 0mA constant current excitation channel setting, the 5134B... channel acts as an AC coupled voltage amplifier.

The 5134B has adjustable channel settings for constant current level, time constant, low pass filter cutoff, gain and overload levels. The 5134B can be configured to read the TEDS Sensitivity or accept a user specified sensitivity and automatically scale the channel range and gain to utilize the Full Scale Output (FSO). Alternately, the 5134B can be configured for similar operation as the predecessor 5134A, as a basic amplifier without automatic scaling based on channel sensitivity. The 5134B permits system level selection for FSO ( $\pm 10V$  or  $\pm 5V$ ), Sensitivity (TEDS or User) and Scaling (Automatic or Basic Amplifier)

The 5134B1 is housed in a standard 14E (2.25inch) wide, 3U (5.25inch) high Euro-cassette. The 5134B0 is supplied without the Euro-Cassette and is suitable for rack mounting using the type 5730 rack adapter. On the rear panel are 4 channels of isolated BNC inputs and outputs as well as the USB mini-B connector and AC power plug receptacle. The E suffix, following the type number, designates 230VAC operation.

The user interface includes a LCD display and push button rotary switch for "front panel" instrument configuration. Alternately, a PC with "plug and play" USB interface and instrument drivers provides a graphical user interface to configure the 5134B remotely. Also on the front panel, is a multi-color LED for each channel that indicates both status and fault condition. The 5134B has very low noise floor making it particularly useful for shock and vibration laboratory applications. The 5134B is also compatible with Piezoelectric (PE) accelerometers used with in-line charge converters requires a constant current excitation.

### Application

The primary use for the 5134B... Power Supply/Coupler is to provide excitation power and signal conditioning for low impedance, voltage mode piezoelectric pressure, force or acceleration type sensors. The coupler is used in laboratory and field type measurement applications as either a single stand alone unit or with others mounted in a standard 19 inch (48.2 cm) rack.

5134B\_000-605e-05.07

**Technical Data**

Type	Unit	5134B	
Excitation			
Voltage Compliance (Min.)	V	24	
Current, Programmable, 16 levels	mA	0 ... 15	
Input	Impedance	2,0 M // 1nF	
	Time Constant Programmable nom.	10/1/0,1 (Rapid 0)	
ESD Protection	kV	15	
Signal Processing			
Channels		4	
Gain - Programmable		0,5 ... 150	
Gain Step Resolution (G)		0,01 (0,5 ... 99,99) 0,1 (100 ... 150)	
Gain Accuracy 0,5 ... .150	%	±0,5	
Total Wideband Noise, 1 ... 10kHz (Gain=1, 0 shunt on input), typ.	µVrms	35	
Avg. Noise Density (Gain=1, Rin=0 Ω)	uVrms√Hz	0,35	
Channel Crosstalk (Signal 10Vpp@ 1,2kHz in any 1 channel, G=1)	dB	-90	
Frequency Response, ±5% Filter = Bypassed			
2Vpp Input	Hz	0,1 ... 68k	
20Vpp Input	Hz	0,1 ... 12k	
Fault Detect		Open, Short	
Overload Detect - Programmable	V (FS)	1 ... 10 (±5%)	
Programmable LP Filter (±10%), (-3 dB)	Hz	100, 1k, 10k, 30k	
Filter Type		Butterworth	
Poles		4	
Filter bypass		programmable	
Smart Sensor (PiezoSmart®)	Interface	IEEE 1451.4 with TEDS	
Output	Impedance	Ω	<100
	RLoad, min	Ω	300
	Voltage	V	±5 or ±10
Indicators	Status LED		1/chan., 3-color (red, green, blue)
	Status	YEL YEL Flash GRN GRN Flash RED BLUE	Fault, Open Fault, Short Normal IEPE Normal voltage in Overload TEDS/Normal

**Technical Data continued**

Type	Unit	5134B	
Connectors	Input/output	Type	BNC neg,
	USB	Type	Mini-B
Environmental			
Operating temperature	°C	0 ... 50	
Storage temperature	°C	-25 ... 85	
Humidity non-condensing	%	0 ... 95	
Power			
Line Voltage, +18%, -23%	VAC	89 ... 135 (115) 178 ... 270 (230)	
Line Frequency	Hz	48 ... 62	
Power consumption, max.	VA	14	
Line cord, or user specified	Type	3-wire IEC 60320-1	
Voltage between power & ground	Vrms	<50	
Weight (with housing)	kg	1,75	

1 g = 9.80665 m/s<sup>2</sup>, 1 Inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 Nm

**Accessing TEDS Data**

The 5134B... is used to view the TEDS. The interface provides negative current excitation (reverse polarity) altering the operating mode of the PiezoSmart® sensor allowing the program editor software to read or add information contained in the memory chip.

**Ordering Key**

Case		5134B	<input type="checkbox"/>	<input type="checkbox"/>
without case	0			
with case	1			
Power				
115 VAC	-			
230 VAC	E			

**Accessories Included**

- AC power cord
- USB-A to USB mini-B cable

**Type**

70517

**Optional Accessories**

- Rack adaptor
- Blank panels

**Type**

5730

5722, 5726