

Piezotron™ Coupler

Type 5114

Versatile Voltage Mode Piezoelectric Sensor Power Supply/Coupler

A self contained power source that provides excitation power and acts as an interface between voltage mode piezoelectric sensors and measuring instruments.

Single channel unit powered by internal 9 volt battery or an AC/DC adaptor.

- Provides constant current excitation
- Monitors condition of sensors and cables
- 3.5 digit LCD display
- AC, DC or battery powered
- Conforming to CE

Description

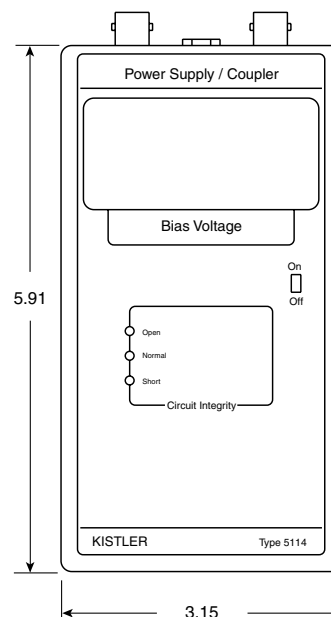
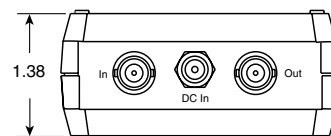
The 5114 is a single channel signal conditioner that provides constant current excitation required by low impedance voltage mode sensors with built-in electronics (i.e. Piezotron, PiezoBeam™, K-Shear™, and Ceramic Shear) or for high impedance sensors with an external impedance converter. Sensor power is supplied by the same two-wire cable that provides the low impedance, output signal. The 5114 decouples the DC bias voltage from the output signal.

A 3.5 digit LCD with 0.5 inch high digits indicates sensor DC bias voltage. Three light-emitting diode on the display panel indicate the basic status of the sensor circuit. Bias voltages in the range of 4 to 16 volts are normal and result in a "Normal" (green) indication; bias voltages below 4 volts (see model exception note 2) produce a "Short" (red) indication; and, a voltage above 16 volts will result in an "Open" (yellow) indication.

The unit operates from a single 9 volt battery or DC power from an external AC/DC power adapter. "LOBAT" is indicated on the LCD readout when battery replacement is required. One 9 volt battery is installed in a compartment in the bottom of the case and operates 36 hours. The meter will operate at least one hour when displaying "LOBAT". The 5114 can also be powered by external 12 volt DC power supplied through the 2.1mm jack. A power "On/Off" switch is located on front of the case.

Application

The primary use for the 5114 is to provide excitation power low impedance, voltage mode piezoelectric pressure, force and acceleration sensors. Its small size and light weight plastic molded case provides excellent portability for a measurement system both in the laboratory or in the field.



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Technical Data

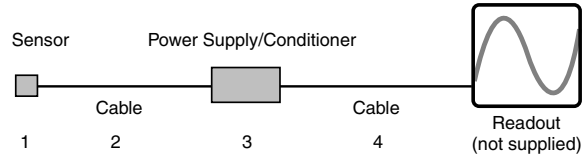
Type	Units	5114
Sensor:		
Signal Voltage,	V _{pp}	20
Supply Current	mA	2
Gain		1
Frequency Response ⁽¹⁾ (±5%) (1 M...Load; 9.5 ft. total cable length and 5V _{pp} signal level)	Hz	0.07 ... 60k
Time Constant	s	10
Temperature Range Operating (alkaline battery)	°F	-15 ... 130
Temperature Range Storage	°F	-5 ... 140
Output		
Voltage	V _{pp}	20
Impedance	Ω	<100 (in series w/47 μF)
Internal Battery	type	9 V alkaline
Battery Life	h	=36
External Voltage Source	VDC mA	12 ... 24 20
Connectors		
Input/output	type	BNC neg.
External Power	type	0.08 in. jack
Weight (with battery)	grams	250

(1) Actual responses is dependent upon cable length and signal amplitude

(2) Accelerometer types 8614A500 and 8694M1 have a normal operating bias on the range of 2.5 to 5VDC

1 g = 9.80665 m/s², 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.1129 Nm

Ordering Information



sp = specify cable length in meters

- 1 - sensor low impedance voltage mode sensor
- 2 - 1761Bsp sensor cable, 10-32 pos. to BNC pos.
- 3 - 5114 5114S1 supplied with 9V alkaline battery or supplied with 9V alkaline battery 5752-AC-DC power adapter, and 605-2501-001 carrying case,
- 4 - 1511sp output cable, BNC pos. to BNC pos.

Optional Accessories

- 5752 AC-DC power adapter (120V, 60Hz)
- 5757 AC-DC power adapter (230V, 50Hz, CE certified)
- 3.750.067 protective rubber boot
- 704-2068-001 DC power cable (6 ft)
- 300-0092-002 alkaline battery, 9V
- 605-2501-01 carrying case

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