

Piezotron® Coupler

Type 5125B...

Acoustic Emission - Piezotron Coupler

The AE-Piezotron Coupler processes the high frequency output signals from Kistler Piezotron Acoustic Emission Sensors. Gain, filters and integration time constant of the built-in RMS converter are designed as plug-in modules. This allows the best possible adaptation to the particular monitoring function. The 5125B... is designed for use in industrial applications.

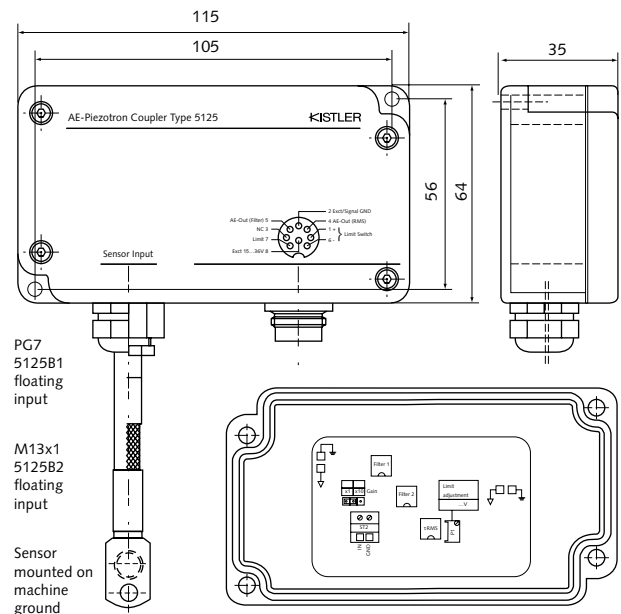
- Piezotron acoustic emission sensor high frequency amplifier
- Built-in RMS converter and limit monitor
- Plug-in filter elements
- Rugged case, vibration-proof construction
- IP 65 protection
- Conforming to CE

Description

The AE-Piezotron coupler with built-in RMS converter and Limit Switch has been specially designed for the processing of high-frequency sound emission signals from Kistler Piezotron AE sensors. The gain can be set with a jumper to (x1) (x10) or (x100). The amplifier has two series-connected second order filters, designed as plug-in elements. The type of filter (high-pass or low-pass) as well as the frequency limit are freely selectable. A bandpass filter is obtained by the series connection of one high-pass and one low-pass filter. The integration time constant of the RMS converter can be freely selected. The limit switch is set with a potentiometer. The switching threshold set point can be monitored at the "Limit" output with a DVM or an oscilloscope. The output of the limit switch is electrically isolated by an optocoupler. The following output signals are present at the 8-pin round connector: Two analog output signals AE-Out (Filter), AE-Out (RMS) and a digital output signal (Limit Switch).

Application

The AE-Piezotron Coupler Type 5125B... in conjunction with Piezotron Acoustic Emission Sensors Type 8152B... from Kistler are particularly suitable for the monitoring of machines and tools in industrial production. The AE-Piezotron Coupler supplies power to the sensor and processes the sound emission signal.



Connection

The Piezotron AE-Sensor is connected directly to the terminals inside the AE-Piezotron Coupler in accordance with the wiring diagram on the underside of the cover. The coupler can be supplied with a PG 7 or M13 x 1 connection to provide a leak-tight connection according to the type of protective cable. The supply and signal outputs are connected to an 8-pin round connector DIN 45326. Pin assignment is indicated on the case cover.

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Technical Data

Type	Unit	5125B...
Temperature Range, Operating	°C	0 ... 60
Vibration (20Hz ...2000Hz)	gpk	10
Shock (1ms)	g	200
Housing/Base	material	Aluminum
Sealing housing/connector	type	IP65
Weight	grams	270
Connection, input, output (Shield, connected on both ends)	type	8-pin
Sensor Connection	type	PG7/M13x1
AE-Out (Filter)		
Frequency Range - 5% (unfiltered)	kHz	15 ... 1000
Frequency Range - 3dB (unfiltered)	kHz	5 ... 1700
Accuracy	%	5
Output Range	V	0 ... ±5
Output Impedance	Ω	50
Output Current	mA	0 ... ±5
Offset (voltage)	mV	<±20
Noise	mVpp	<10
AE-Piezotron Sensor		
Current for Piezotron (±10%)	mA	4,3
Input Voltage	V	0 ... 8
Input Voltage, max	Vpp	1,6
Filter (plug-in)		
Filter Characteristic		Butterworth
Slope	dB	40
Bandpass HP	kHz	50
Bandpass LP	kHz	1000
AE-Out (RMS)		
Frequency Range - 3dB	kHz	10 ... 1000
Accuracy Crest Factor <2	%	3
Integration time constant (standard)	ms	1,2
Output Voltage	V	0 ... 5
Output Current	mA	0 ... 5
Output Impedance	Ω	10
Offset (max. 30)	mV	10
Noise	mVpp	<10
Limit Switch		
OptoCoupler Output		
OptoCoupler off max.	V	30
OptoCoupler on max.	mA	7
Delay	s	1,3
Hysteresis	mV	20
Supply		
Supply Voltage	VDC	15 ... 36
Supply Current	mA	<70

1 g = 9,80665 m/s², 1 Inch = 25.4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 Nm

Accessories Included

- 8-pin cable jack DIN 45326 **Type** 1500A57
- Highpass filter 50 kHz 5325A50
- Lowpass filter 1000 kHz 5327A1000
- Integration time constant 5328A1.2

Optional Accessories

- Filter module set **Type** 5330A1
- Filter bridge (no filtering) 5324A0
- AE Sensor 8152B...
- 50 ... 700 kHz High-pass Filter (see below) 5325A...
- 100 ... 1000 kHz Low-pass Filter (see below) 5327A...
- 0,12 ... 120 ms integration time constant (see below) 5327A...
- Magnet 8443B
- Adapter cable 8-Pin cable connector/ 3xBNC pos./AE-Out/RMS & filter) and 3x banana plugs (Ext. supply/GND/Case) 1500A31
- Set of filter modules, consisting of 1ea of 5330A1 following: 5325A50, 5325A100, 5325A200, 5325A500, 5327A100, 5327A200, 5327A500, 5327A1000, 5328A0.12, 5328A12, 5328A120

Ordering Key

Measuring Range		5125B <input type="checkbox"/>
with PG7 gland IP65	1	↑
with coupling M13x1 IP65	2	

Ordering Key for Optional Filters

Measuring Range		5325A <input type="checkbox"/>
50 kHz High-pass filter	50	↑
100 kHz High-pass filter	100	
200 kHz High-pass filter	200	
300 kHz High-pass filter	300	
400 kHz High-pass filter	400	
500 kHz High-pass filter	500	
700 kHz High-pass filter	700	

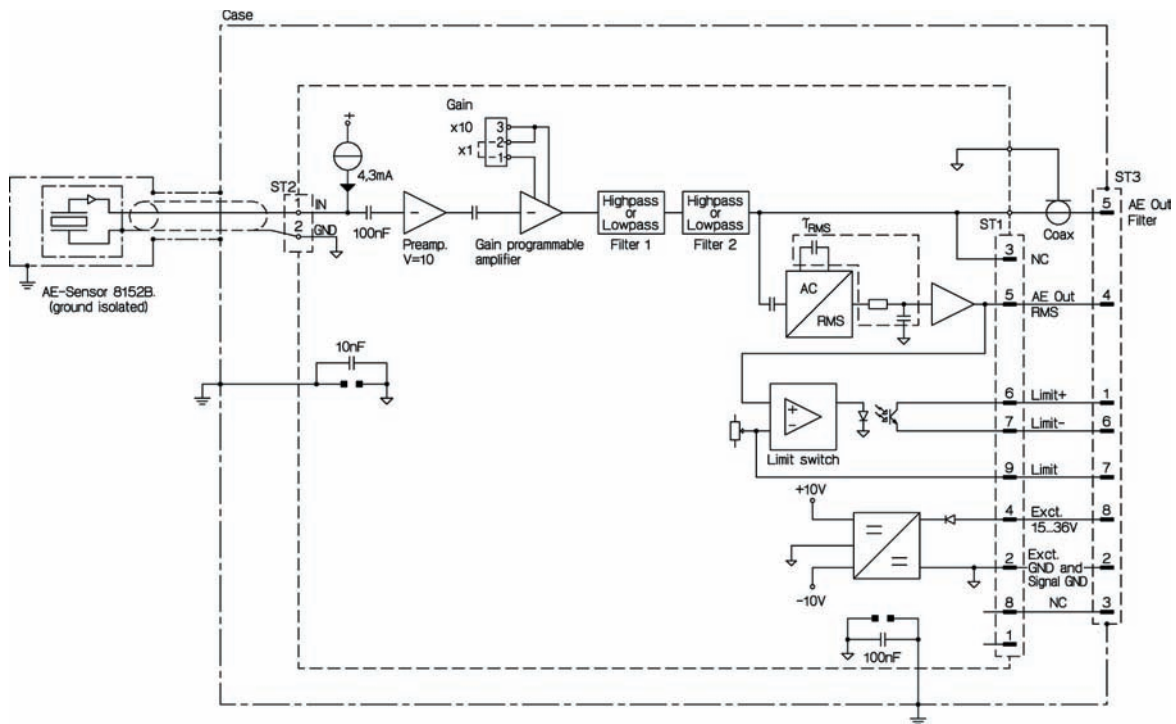
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Ordering Key for Optional Filters

Measuring Range		5327A <input type="checkbox"/>
100 kHz Low-pass filter	100	↑
200 kHz Low-pass filter	200	
500 kHz Low-pass filter	500	
600 kHz Low-pass filter	600	
800 kHz Low-pass filter	800	
900 kHz Low-pass filter	900	
1000 kHz Low-pass filter	1000	

Ordering Key for Optional Filters

Measuring Range		5328A <input type="checkbox"/>
0,12ms integration time constant	0.12	↑
1,2ms integration time constant	1.2	
12ms integration time constant	12	
25ms integration time constant	25	
120ms integration time constant	120	



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