

Piezotron®

Type 5127B...

Amplifier, for Accelerometers

Rugged coupler for powering Piezotron, or other sensors with constant current supply (two-wire system). Gain, filters and integration time constant of the built-in optional RMS converter are designed as plug-in modules. This allows the best possible adaptation to the particular monitoring function. The 5127 is designed for use in industrial applications.

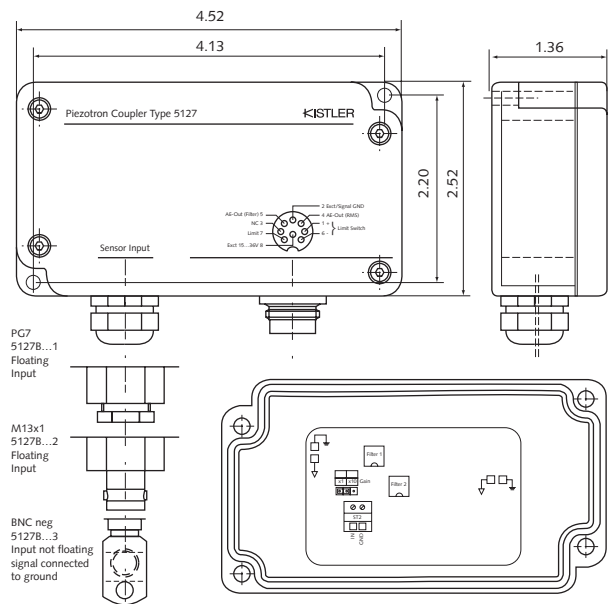
- Built-in optional RMS converter and limit monitor
- Amplifier for Piezotron and PiezoBeam sensors
- Plug-in filter elements
- Rugged case, vibration-proof construction
- IP 65 protection
- Conforming to CE

Description

The coupler is suited for low impedance sensors with integrated electronics (Piezotron, PiezoBeam, IEPE compatible) or for high impedance sensors with an external impedance converter. The gain can be set with a jumper to either 1x or 10x. 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 time constant of the optional RMS converter can be 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-pole round connector: Two analog output signals Out (Filter), Out (RMS) and a digital output signal (Limit Switch).

Application

The coupler is especially suited for use in industrial environments. The plug-in filters and the adjustable gain allow adaptation to prevailing operating conditions.



Connection

The connecting cable is fixed either via the BNC plug or directly to the terminals inside the Piezotron coupler according to the drawing on the back of the top 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 or a BNC neg. connector. The power input and signal outputs are connected to an 8-pole round connector DIN 45326. Pin assignment is indicated on the case cover.

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Technical Data

Type	Units	5127
Temperature Range, Operating	°F	32 ... 140
Vibration (20 ... 2000Hz)	g _{pk}	10
Shock (1ms)	g	200
Housing/Base	material	Aluminum
Sealing - housing/connector	type	IP65
Weight nom.	grams	270
Connection, input, output (shielded)	type	8-pin
Sensor Connection	type	PG7/M13x1/ BNC neg.
Out (Filter)		
Frequency Range - 5% (no Filter)	Hz	0.1 ... 30000
Frequency Range - 3dB (no Filter)	Hz	0.03 ... 90000
Frequency Range - 3dB (with filter)	Hz	0.03 ... 30000
Accuracy	%	5
Output Range	V	0 ... ±10
Impedance	Ω	10
Current	mA	0 ... ±5
Offset (0dB)	mV	<±20
(20dB)	mV	<±30
Noise	mV _{pp}	<20
Current for Piezotron Sensor (±10%)	mA	4.3
Input Voltage	V	0 ... 20
Filter (plug-in)		
Filter characteristic		Butterworth
Slope	dB/dec	40
Bandpass HP (type 5324A0)		Filterbridge – No Filtering
Bandpass LP (type 5327A30)	kHz	30
Out (RMS) (Option: 5127B1X)		
Frequency Range - 3dB (no filter)	Hz	0.03 ... 90000
Accuracy Crest Factor <2	%	5
Integration TC (type 5328A25 standard)	ms	25
Output Voltage	V	0 ... 10
Current	mA	0 ... 5
Impedance	Ω	10
Offset	mV	<±40
Noise	mV _{pp}	<10
Limit Switch (Option: 5127B1X)		
OctoCoupler Output		
OctoCoupler off max.	V	30
OctoCoupler on max.	mA	7
Delay, nom.	s	1.3
Hysteresis	mV	40
Adjustment Range	V	0 ... 12
Supply Voltage	VDC	22 ... 30
Current	mA	<50

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

Accessories Included

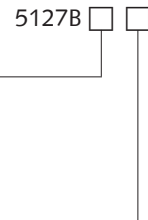
	Type
• 8-pole cable jack DIN 45326	1500A57
• filter bridge (no filtering)	5324A0
• low pass filter 30kHz	5327A30
• integration time constant, 25ms for 5127B1...	5328A25

Optional Accessories

	Type
• Adapter cable 8-pole cable connector/ 3xBNC pos./AE-Out/RMS & filter) and 3x banana plugs (Ext. supply/GND/Case)	1500A31
• vibration sensor	8141A...

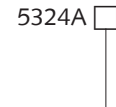
Ordering Key

Output Options	
without RMS Converter	0
with RMS Converter	1
with PG7 gland	1
with coupling M13x1	2
with BNC neg. Socket	3



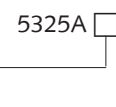
Ordering Key

Filter	
1 Hz High-pass filter	1
10 Hz High-pass filter	10
100 Hz High-pass filter	100



Ordering Key

Filter	
1 kHz High-pass filter	1



Ordering Key

Filter	
10 Hz Low-pass filter	10
20 Hz Low-pass filter	20
30 Hz Low-pass filter	30
50 Hz Low-pass filter	50
100 Hz Low-pass filter	100
150 Hz Low-pass filter	150
200 Hz Low-pass filter	200
300 Hz Low-pass filter	300
500 Hz Low-pass filter	500



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Ordering Key

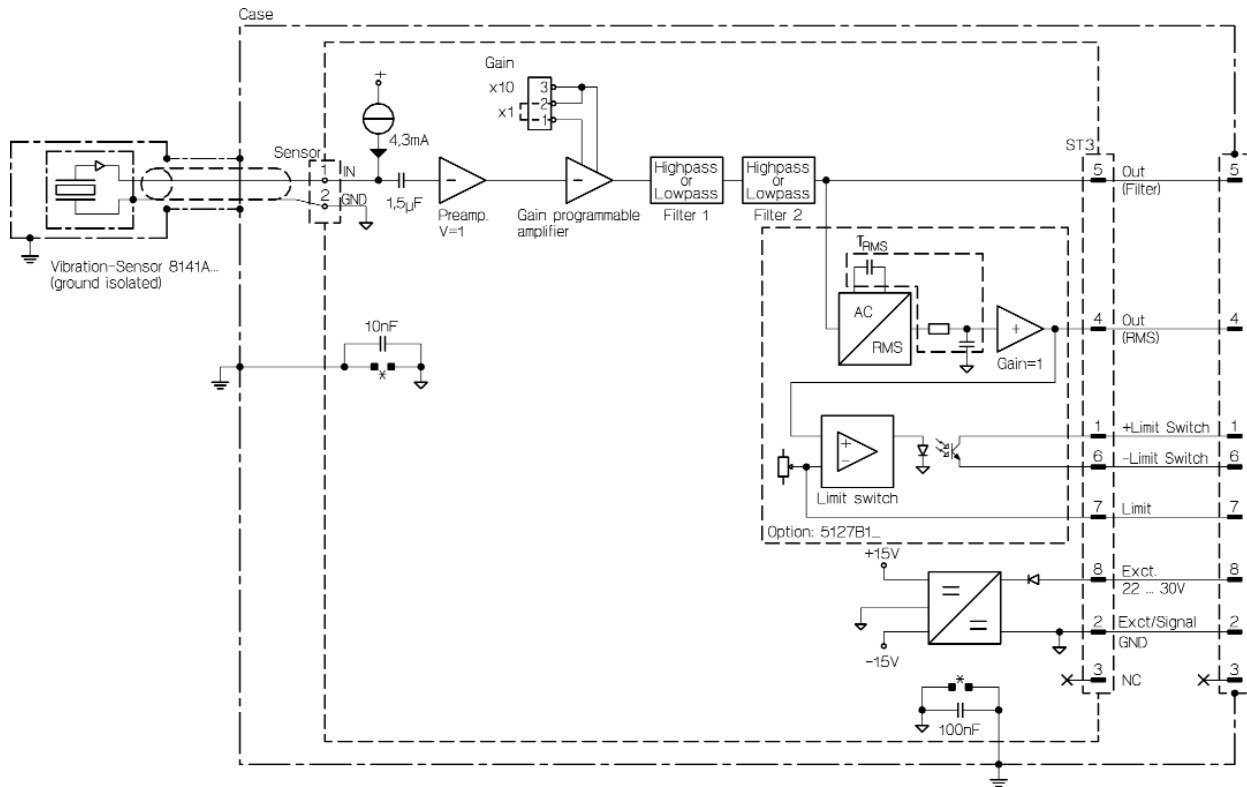
Filter	
1 kHz Low-pass filter	1
2 kHz Low-pass filter	2
3 kHz Low-pass filter	3
5 kHz Low-pass filter	5
10 kHz Low-pass filter	10
20 kHz Low-pass filter	20
30 kHz Low-pass filter	30

5327A □

Ordering Key

Filter	
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

5328A □



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