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Piezotron Coupler

Type 5127B…

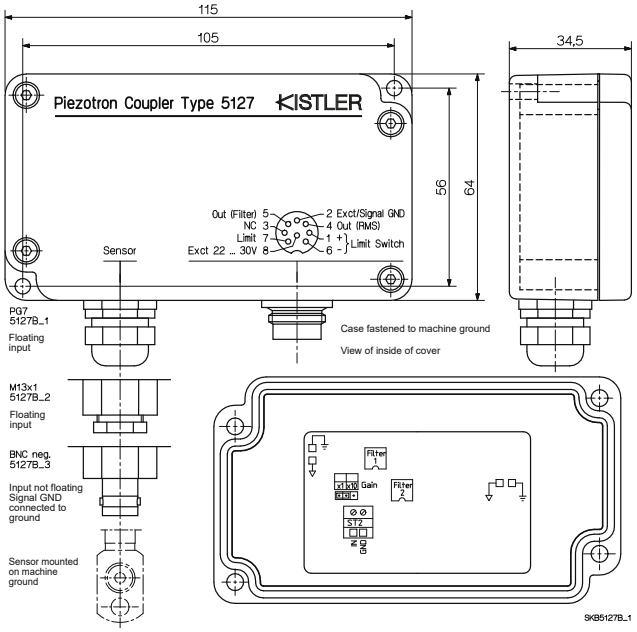
Amplifier for accelerometers

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 Type 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		°C	0 … 60
Vibration (20 … 2 000Hz)		gpk	10
Shock (1 ms)		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 … 30 000
Frequency range – 3 dB (no Filter)		Hz	0.03 … 90 000
Frequency range – 3 dB (with filter)		Hz	0.03 … 30 000
Accuracy		%	5
Output	Range	V	0 … ±10
	Current	mA	0 … ±5
	Impedance	Ω	10
Offset	(0 dB)	mV	<±20
	(20 dB)	mV	<±30
Noise		mVpp	<20
Current for Piezotron sensor		mA	3.8 (±0.6)
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: Type 5127B1X)			
Frequency range – 3 dB (no filter)		Hz	0.03 … 90 000
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		mVpp	<10

Limit switch (Option: Type 5127B1X)		
OctoCoupler output		
off max.	V	30
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

Included Accessories	Type
• 8-pole cable jack DIN 45326	1500A57
• Filter bridge (no filtering)	5324A0
• Low pass filter 30 kHz	5327A30
• Integration time constant, 25 ms for Type 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

Type 5127B □□

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

Type 5324A □

Filter

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

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Ordering key

Type 5325A ☐

Filter

1 kHz High-pass filter	**1**

Ordering key

Type 5326A ☐

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**

Ordering key

Type 5327A ☐

Filter

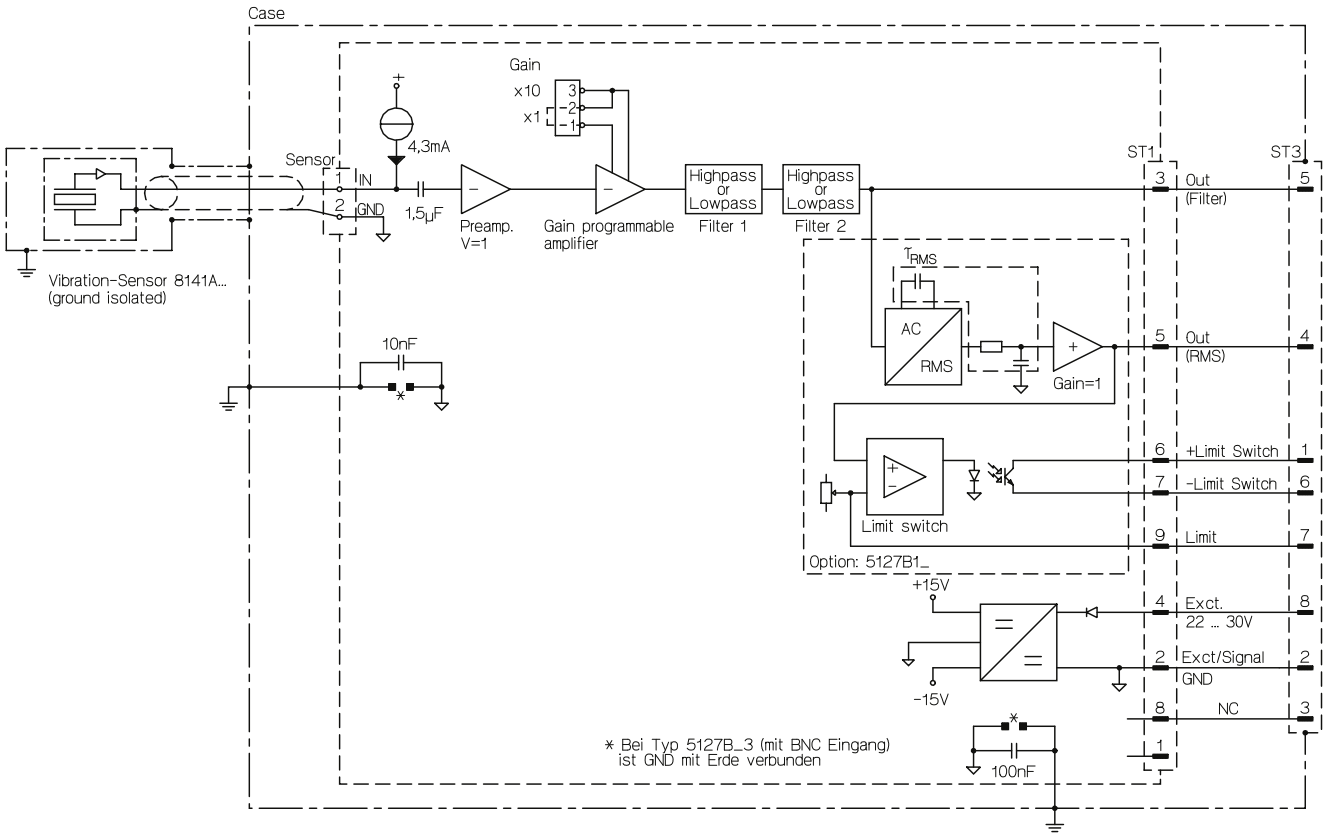
1 kHz Low-pass filter	**1**
2 kHz Low-pass filter	**2**
3 kHz Low-pass filter	**3**
5 kHz Low-pass filter	**5**
10 kHz Low-pass filter	**10**
20 kHz Low-pass filter	**20**
30 kHz Low-pass filter	**30**

Ordering key

Type 5328A ☐

Filter

0.12 ms integration time constant	**0.12**
1.2 ms integration time constant	**1.2**
12 ms integration time constant	**12**
25 ms integration time constant	**25**
120 ms integration time constant	**120**



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