

## ®IEPE High Temperature Accelerometer, Top Connector

### Main Characteristics

- 100 mV/g
- -55°C to 150 °C (-67°F to 302°F)
- IEPE 2-wire transmission mode
- Annular shear mode
- Dual case isolation with Faraday shield
- IP68 with integral cable
- Complies with API 670 requirements (A=6 only)

### Competitive advantage

- Annular shear mode is less susceptible to transverse vibrations and better immune to electronic saturation at high frequency. Low cost Planar shear mode are prone to signal saturation when subject to transverse frequency.
- Our hybrid thick film electronic exhibits exceptional bias voltage stability at elevated temperatures. Low cost FR4 are prone to early deterioration when exposed to 150°C temperature.
- High Temperature continuous operation with excellent reliability.

### Description

The hermetic sealed industrial piezoelectric accelerometer model 101.11 is designed to monitor the vibration in harsh and high temperature industrial environment. It uses the industry standard ©IEPE 2-wire voltage transmission technique with a 2.6 mA standard constant current supply. Signal ground is isolated from the mounting surface and outer case to prevent ground loops. Faraday shielding will limit sensitivity to EMC to a minimum. Annular shear mode design will prevent from thermal transient and from spurious signal from high transverse vibrations. Low noise electronic and a temperature compensated design will give you accurate result over the complete temperature range. Our electronic incorporates a low-pass filter to attenuate the sensor mechanical resonance and the associated distortion and overload.

### Typical applications

Vibrations measurement in the rugged environments of hot industrial machinery monitoring. Medium frequency version monitor overall vibration on pumps, motors, fans, .... High temperature version is typically used where extra temperature protection is needed, such as the dryer section of a paper machine.



Model 101.11 with Mil Connector

### Approvals



### Revision History

May 2003 : Released

## Ordering information

To order, specify model number, options, accessories and suffix :

### 101.11- AA - B - TT - HH

#### AA : Sensitivity

6	.....	*100 mV/g ± 5 %
6D	.....	100 mV/g ± 10 %

#### B : Connector

1	.....	MIL-C-5015, glass seal, Type MS3143 10SL-4P
2	.....	M12 glass seal, IEC 60947-5-2

#### B (CC-DD) : Integral Cable

5(01-DD)	.....	90°C Polyurethane cable
5(02-DD)	.....	200°C Teflon FEP cable
5(03-DD)	.....	120°C Radox Halogen Free cable
5(31-DD)	.....	90°C Polyurethane cable with Temperature output
5(12-DD)	.....	200°C Teflon FEP cable with Temperature output
5(13-DD)	.....	120°C Radox Halogen Free cable with Temperature output
7(01-DD)	.....	90°C Polyurethane cable with sstl overbraid protection
7(02-DD)	.....	200°C Teflon FEP cable with sstl overbraid protection
7(03-DD)	.....	120°C Radox Halogen Free cable with sstl overbraid protection
7(12-DD)	.....	200°C Teflon FEP cable with sstl overbraid & Temp. output
7(13-DD)	.....	120°C Radox Halogen Free cable with sstl overbraid & Temp. output
8(01-DD)	.....	90°C Polyurethane cable with stainless steel protection conduit
8(02-DD)	.....	200°C Teflon FEP cable with stainless steel protection conduit
8(03-DD)	.....	120°C Radox Halogen Free cable with sstl protection conduit
8(31-DD)	.....	90°C PU cable with sstl protection conduit & Temp. output
8(12-DD)	.....	200°C Teflon FEP cable with sstl protection conduit & Temp. output
8(13-DD)	.....	120°C Radox cable with sstl protection conduit & Temp. output

DD length in metres. Standard length are 2m, 5m, 10m, 15m, 20m, 30m.

#### TT : Temperature output. (Not available with Mil-C-5015 2 pins connector)

Omitted	.....	no temperature output
T0	.....	10 mV/°C. (range +2° to +150°C)

#### HH : Housing thread

Omitted	.....	M6x1
H7	.....	1/4" 28 UNF-2A

#### OEM or Customer Engraving :

Add ZXX at the end of the part number.  
 XX is a number supplied by VibraSens.  
 Customer Engraving is not allowed for Explosion proof sensor.  
 OEM should contact VibraSens if they need custom Engraving for Explosion proof sensor.

#### In stock Model

Metric connector  
 101.11-6-1 100 mV/g ±5%, MIL C 5015 Connector  
 Available Model with short lead time (1 week)  
 101.11-6-1-H7 100 mV/g ±5%, MIL C 5015 Connector, 1/4"28UNF housing thread

## Configurations



**M12 glass seal  
(B = 2)**

Pin 1 : not connected  
Pin 2 : not connected or  
temperature output (T0  
option)  
Pin 3 : (-)  
Pin 4 : (+)

Associated cable  
10.01-A01-E02-31-Length  
gth  
Black (+); Blue (-)  
Temperature Output (T0  
option) between Blue  
(-) and White (+)

**Mil-C-5015  
(B = 1)**

Pin A : (+)  
Pin B : (-)

Associated cable  
10.01-A01-B22-06-Length:  
Red (+); White (-)  
Associated cable  
10.01-A01-B22-02-Length:  
Red (+); White (-)  
Note: No temperature  
option available

**Integral Cable  
B = 5 (CC-DD)**

CC=01, 02 (PU, Teflon)  
: White (-); Red (+)

CC=03 (Radox) : White  
N°1 (-); White N°2 (+)

CC=12 (Teflon): White  
(-); Red (+)  
Temperature output  
between Black and  
White

CC=13 (Radox) : White  
N°1 (-); White N° 2 (+)  
Temperature output  
between White N°3 and  
White N°1

CC=31 (PU) : Blue(-);  
Black(+); Brown (NC)  
Temperature output  
between White(+) and  
Blue (-)

NC: Not connected; (1)

**Integral cable with  
overbraid  
B = 7 (CC-DD)**

Same wiring color as  
B=5

**Integral cable with  
protection conduit  
B = 8 (CC-DD)**

Same wiring color as  
B=5

with T0 option

## Specifications (24°C)

### Dynamic

A=6	100 mV/g ±5%
A=6D	100 mV/g ±10%
Frequency response 101.11	
A=6	±10 % : 1 to 9000 Hz ±3 dB : 0.5 to 14000 Hz
Mounted Resonant frequency	
A=6	25 kHz Nom.
Dynamic range	
A=6	80 g pk
Transverse response sensitivity (20Hz, 5g)	<.5%
Polarity	Top
Linearity	±1% Max
Warm up time (Typical)	
A=6	< 1Sec
Temperature Output (Option T0)	
	Only available if sensor is powered via IEPE Output (between - and Temp) 0VDC at 0°C Vout=10mV/°C * Temp.(°C) Range: +2° to 120°C

### Electrical

Electrical Grounding	Isolated from machine ground Internal Faraday shielding
Isolation(Case to shield)	100 MΩ Min
Capacitance to ground	70 pF Nom
Output impedance	50 Ω Nom
DC output bias, 4mA supply	12 VDC Nom
Residual noise (24°C) : A=6	
1 Hz to 25 kHz	300 ug rms
1 Hz	200 ug /√ Hz
10 Hz	30 ug /√ Hz
100 Hz	10 ug /√ Hz
1000 Hz	10 ug /√ Hz
Power requirements	
	Constant current : +2 to +10mA DC Voltage : +22 to +28 VDC For 150°C operation, only 2 mA is accepted
Protection	
Overvoltage	Yes
Reverse polarity	Yes

### Environmental

Temperature, operating continuous : (max. current =2mA)	
A= 6	-55 to 150 °C (-65 to 302 °F)
Humidity / Enclosure	
B=1, 2	Not affected, hermetically sealed, 1E-8 torr.l/s
B=5, 7, 8	IP68, epoxy sealed
Acceleration limit : Shock	5000 g peak
Continuous vibration	500 g peak
Base strain sensitivity	0.0002 g pk/u strain
Temp. transient sens. (3Hz, LLF, 20dB/dec)	5 mg/°C
Acoustic sensitivity (164 dBSP)	0.5 mg
Electromagnetic sens. (50Hz, 0.03 T)	0.2 g
ESD Protection	> 40 V

## Physical

Design	Ceramic, annular shear mode
Weight with connector	
A=6	85 gr Nom (3.0 Oz)
Weight with Integral cable : add sensor weight above + ...	
BB=5(CC-DD)	40gr/m
BB=7(CC-DD)	60 gr/m
BB=8(CC-DD)	105 gr/m
Material	AISI 316L, DIN 1.4404 (Stainless steel)
Mounting torque (M6, M7, M8 suffix)	2,4 N.m (21 in-lbs)

## European Directive

EMC Directive	2014/30/EU
Standards	61326-1
RoHS Directive	2011/65/EU
Certificate	101.51-YN_Rohs2

## Accessories, supplied

Calibration supplied	Sensitivity (5g, 160 Hz)
	No frequency response

## Accessories, not supplied

Cable assembly B=1 (Mil connector)	
Polyurethane cable (90°C)	10.01-A01-B22-06-Length
FEP Teflon cable (200°C)	10.01-A01-B22-02-Length
Cable assembly B=2 (M12 connector)	
Polyurethane cable (90°C)	10.01-A01-E02-31-Length
FEP Teflon cable (200°C)	10.01-A01-E61-02-Length

For more cable option see Model 10.01 (specific cable harness).

Mounting Stud for M6 sensor thread

M6 machine thread	191.01-06-06-1
1/4" 28 UNF machine thread	191.01-06-16-1
M8 machine thread	191.01-06-08-1
M10 machine thread	191.01-06-10-1
Mounting Stud for 1/4"28 UNF sensor thread	
M6 machine thread	191.01-16-06-1
1/4" 28 UNF machine thread	191.01-16-16-1
M8 machine thread	191.01-16-08-1
Calibration, back to back, Frequency response (10 Hz-10 kHz), 4 pages	501.11
Calibration, back to back, single point., A4 certificates	501.01

## **Repair**

Consult factory for replacement of connector in case of broken or bended pins. Repair of electronic is not possible.

## **Legal Information**

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