RECOVIB

IAC

RECOVIB® INDUSTRIAL ACCELEROMETERS

The RECOVIB® industrial accelerometers bridge the gap between the performance of laboratory accelerometers (which are often expensive, fragile and offer low protection) and the robustness of industrial accelerometers (which are sometimes cheaper but often noisy and inaccurate).

Our accelerometers can be deployed in industrial environments for monitoring machinery or structures.

The RECOVIB® accelerometers are of proven design and most of the models available are widely used in a variety of fields, such as the machine tools, precision machining and onshore and offshore wind energy sectors in monitoring or active vibration control applications.

FIELD OF APPLICATIONS

- Transport: Railways, Marine, Aeronautics
- Piping & pumps
- Machine tools
- Civil engineering
- Building vibration monitoring
- Paper/Printing machines
- Semiconductor industry
- Energy: Wind turbines (both onshore and offshore), power-plants
- Astronomy

ADVANTAGES

INTERNAL SIGNAL CONDITIONING

The signals from the vibration sensor are amplified and conditioned by the accelerometer unit itself before being passed to the data acquisition system through a disturbed industrial medium. Our accelerometers are equipped either with a voltage output or a 4-20 mA current output.

GALVANIC ISOLATION

The RECOVIB® accelerometers offer galvanic isolation of the signal conductors. An additional isolation module is therefore not needed. Multiple sensors can be distributed in multiple locations and connected to the same acquisition system without signal degradation, even in environments with high ground potential differences due to heavy electrical loads operating in close proximity.

LEVEL OF PROTECTION

The RECOVIB® accelerometers are sealed to an ingress protection level of IP67. We can design and develop custom-made units using special protective materials (for example, 316L stainless steel for marine environments, special cabling for vacuum application).

LOW FREQUENCY MEASUREMENT

The RECOVIB® accelerometers operate down to DC allowing for the accurate measurement of low frequency signals. They are therefore also suitable for the monitoring of slow processes (such as monitoring the foundation movements of an offshore wind turbine etc.).

TYPE OF SENSORS

IAC: compact and rugged design with low noise (< 50 µg/√Hz) for most applications

IAC-HiRes: for applications requiring very low noise (< 10 µg/√Hz)

IAC-CM: for machine monitoring requiring a higher-bandwidth (up to 10 kHz)

IAC-Seismic: for very high resolution (e.g. background noise lower than 2 µg/√Hz)

TYPE → / ↓ CHARACTERISTICS	Standard	HiRes	Seismic	Condition Monitoring (CM)
Can measure ultralow frequencies	✓	✓	✓	✓
Highest Bandwidth				✓
Lowest Noise Floor/Highest Resolution		✓	✓	
Widest Measurement Range				✓

TYPE OF OUTPUTS

- 4-20mA current loop for long cables and EMI immunity
- Unipolar Voltage
- Differential voltage for high-resolution sensors

All sensors are available with Aluminum or Stainless-Steel (AISI316L) casing, in 1-axis, 2-axis (any combination) or 3-axis configurations.

1-axis	2-axis	3-axis	Range	Bandwidth (-3dB)	Internal Sensor Sensitivity (mV/g)	Output Sensitivity	Noise (µg/√Hz)	Resolution [2] over max. bandwith (g)	Output Range
CURRENT OUTPUT									
Condition Monitoring									
IAC-CM-I-01	IAC-CM-I-02	IAC-CM-I-03	± 25 g	0-10 kHz	80	257 µA/g	50	0,005000	4-20 mA
IAC-CM-I-01	IAC-CM-I-02	IAC-CM-I-03	± 50 g	0-10 kHz	40	128 µA/g	50	0,005000	4-20 mA
IAC-CM-I-01	IAC-CM-I-02	IAC-CM-I-03	± 100 g	0-10 kHz	20	64 µA/g	50	0,005000	4-20 mA
IAC-CM-I-01	IAC-CM-I-02	IAC-CM-I-03	± 200 g	0-10 kHz	10	32 µA/g	50	0,005000	4-20 mA
Standard Resolution									
IAC-I-01	IAC-I-02 [3]	IAC-I-03	± 2 g	0-1000 Hz	600	3200 µA/g	50	0,001581	4-20 mA
IAC-I-01	IAC-I-02 [3]	IAC-I-03	± 6 g	0-1000 Hz	200	1070 µA/g	50	0,001581	4-20 mA
High Resolution									
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 2 g	0-400 Hz	2000	4000 µA/g	8	0,000160	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 5 g	0-600 Hz	800	1600 µA/g	10	0,000245	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 10 g	0-1000 Hz	400	800 µA/g	13	0,000411	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 25 g	0-1500 Hz	160	320 µA/g	28	0,001084	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 50 g	0-2000 Hz	80	160 µA/g	53	0,002370	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 100 g	0-2500 Hz	40	80 µA/g	100	0,005000	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 200 g	0-3000 Hz	20	40 µA/g	200	0,010954	4-20 mA
IAC-HiRes-I-01	IAC-HiRes-I-02	IAC-HiRes-I-03	± 400 g	0-4000 Hz	10	20 µA/g	400	0,025298	4-20 mA
Seismic[5]									
IAC-UHRS-I-01	IAC-UHRS-I-02	IAC-UHRS-I-03	± 3 g	0-500 Hz	900	2500 µA/g	2	0,000045	4-20 mA
IAC-UHRS-I-01	IAC-UHRS-I-02	IAC-UHRS-I-03	± 5 g	0-650 Hz	540	1500 µA/g	3	0,000076	4-20 mA
UNIPOLAR VOLTAGE OUTPUT [4]									
Condition Monitoring									
IAC-CM-U-01	IAC-CM-U-02	IAC-CM-U-03	± 25 g	0-10 kHz	80	80 mV/g	50	0,005000	0-5 V
IAC-CM-U-01	IAC-CM-U-02	IAC-CM-U-03	± 50 g	0-10 kHz	40	40 mV/g	50	0,005000	0-5 V
IAC-CM-U-01	IAC-CM-U-02	IAC-CM-U-03	± 100 g	0-10 kHz	20	20 mV/g	50	0,005000	0-5 V
IAC-CM-U-01	IAC-CM-U-02	IAC-CM-U-03	± 200 g	0-10 kHz	10	10 mV/g	50	0,005000	0-5 V
Standard Resolution									
IAC-U-01	IAC-U-02	IAC-U-03	± 2 g	0-1000 Hz	600	600 mV/g	50	0,001581	0-3 V
IAC-U-01	IAC-U-02	IAC-U-03	± 6 g	0-1000 Hz	200	200 mV/g	50	0,001581	0-3 V
DIFFERENTIAL VOLTAGE OUTPUT									
High Resolution									
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 2 g	0-400 Hz	2000	2000 mV/g	5	0,000100	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 5 g	0-600 Hz	800	800 mV/g	7	0,000171	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 10 g	0-1000 Hz	400	400 mV/g	10	0,000316	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 25 g	0-1500 Hz	160	160 mV/g	25	0,000968	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 50 g	0-2000 Hz	80	80 mV/g	50	0,002236	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 100 g	0-2500 Hz	40	40 mV/g	100	0,005000	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 200 g	0-3000 Hz	20	20 mV/g	200	0,010954	± 4 V
IAC-HiRes-Ud-01	IAC-HiRes-Ud-02	IAC-HiRes-Ud-03	± 400 g	0-4000 Hz	10	10 mV/g	400	0,025298	± 4 V
Seismic[5]									
IAC-UHRS-Ud-01	IAC-UHRS-Ud-02	IAC-UHRS-Ud-03	± 3 g	0-500 Hz	900	900 mV/g	1,0	0,000022	± 2.7 V
IAC-UHRS-Ud-01	IAC-UHRS-Ud-02	IAC-UHRS-Ud-03	± 5 g	0-650 Hz	540	540 mV/g	1,5	0,000038	± 2.7 V

Case Dimensions

	L:23 x l:23 x H:14 mm
	L:27 x l:27 x H:18 mm
	L:30 x l:30 x H:20 mm
	L:39 x l:37 x H:31 mm

1 : all accelerometers can be made in IP68 - 5 BAR with marine cable and 250 BAR

2 : resolution for other bandwidth can be computed using

Resolution (µg) = Noise (µg/√Hz) * √bandwidth(Hz)

3 : exist in flat casing

4 : other range upon request

5 : strong motion class B

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