IRD811

IRD Mechanalysis® Limited

Vibration cum Spike Energy(TM) Detector

The Vibration People®

The IRD Mechanalysis model 811 plays a dual role in machinery maintenance: - It is used for periodic vibration checks for unbalance, misalignment, looseness, etc. With an industry standard high frequency detection circuit, it pinpoints incipient bearing and gear deterioration. Professional vibration analysts prefer the IRD811 as the analog meter indicates more than a just a digital value, vibration hunting, rubs, cavitation etc. can be observed. Used with the optional Fish Tail, absolute shaft measurements are possible.

Its solid-state circuitry provides wide dynamic range and long battery life. From precision bearing inspection to plant-wide maintenance, the IRD811 has the sensitivity for measuring fractions of a micrometer to 3000 micrometers with 8 easy to read overlapping ranges.

The IRD811 also includes the widely acclaimed IRD Spike Energy™ (gSE™) circuit. The broadband measurement of gSE units has proved to have the advantage of simplicity and earlier warning of bearing and gear defects.

By detecting and measuring "bursts" of Spike Energy at ultrasonic frequencies, bearing defects such as micro spalls, cracks and lack of lubrication can be quickly identified.

BILL OF MATERIALS	Qty	Part Number
IRD811 Vibration Spike Energy Detector with Std Accessories:		M81101
Sensor Accelerometer, model IRD521, Standard, 2-10KHz, 100mV/g, Top Exit, Mil 2 Pin, 1/4"-28UNF Female Mounting Thread with National Traceable Cal. Cert.	1	M5211005001000
Cable Assembly, 1.5m length, rubber insulated	2	M60021
Magnetic Portable Base, IRD500 Series Accelerometers	1	M24828
Stinger, Al 225mm long for Sensor	1	M24827
Battery Set, 3 Nos. of 9V, 100mAH Dry Cells for model IRD811	1	M30643
Carrying Case	1	M25345
Manual Operating	1	M21072

Optional Accessories		Part Number
Inductive Velocity Sensor model IRD544		M45260
Cable Assembly for IRD544 Sensor, 8m length, rubber & shielded		M21045
Magnetic Portable Base, IRD544 Inductive Velocity Sensors		M24823
Magnetic Deflecting Shroud for IRD544 Sensor		M24825
Cable Assembly for IRD521 Accel, 8m length, rubber & shielded		M21044
Scope/Analyser AC output Cable PVC 2m Mil to BNC connector		M60170-02
Manual Training - IRD MVT1		M51001
Shaft Fish Tail Stick - Absolute Vibration IRD500 Series Sensors		M24824

Frequency – with Accelerometer

Displacement (350 CPM):	- 350 to 60,000 CPM	(5.8 Hz to 1,000Hz)
Displacement (1400 CPM):	- 1400 to 60,000 CPM	(23.3 Hz to 1,000 Hz)
Velocity:	- 350 to 600,000 CPM	(5.8 Hz to 10,000 Hz)
Acceleration:	- 350 to 600,000 CPM	(5.8 Hz to 10,000 Hz)
Bearing/Gear	- Up to ultrasonic frequencies	
RMS	- V_{RMS} – vibration severity evaluation as per ISO 10816-3	

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Measurement Ranges

Acceleration Range:	- 0 to 100 g Pk in 8 overlapping ranges
Bearing/Gear Check Range:	- 0 to 100 gSE™ in 8 overlapping ranges
Spike Energy:	- Special circuit designed to detect gSE™
Displacement Range:	- 0 to 3,000 microns Pk to Pk in 8 overlapping ranges
Velocity Range:	- 0 to 3,000 mm/sec Pk in 8 overlapping ranges

Frequency – with IRD544 velocity sensor

Displacement (350 CPM):	- 600 to 60,000 CPM	(10 Hz to 1,000 Hz)
Displacement (1400 CPM):	- 1400 to 60,000 CPM	(23.3 Hz to 1,000 Hz)
Velocity:	- 600 to 60,000 CPM	(10 Hz to 1,000 Hz)

Input / Output

Inputs:	- Accelerometer/ IRD544 Velocity Sensor
Outputs:	- Analog amplitude meter, microns, mm/sec, g, gSE™
	- Time Waveform (TWF) signal for Scope/Tape Recorder/Analyser

Power Requirements

Internal Batteries:	- Battery Set, 3 Nos. of 9V, 100mAH Dry Cells
Battery Test:	- Battery condition indicated on meter front

Environmental

Operating temp:	- -1°C to 65°C
Storage temp:	- -20°C to 65°C

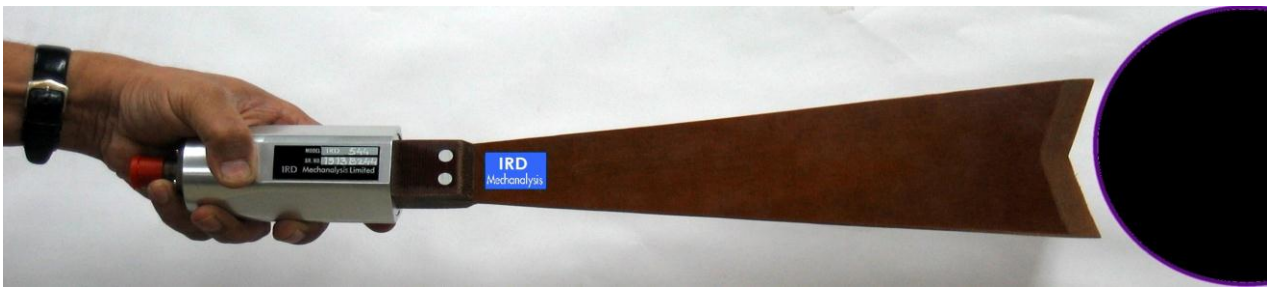
Packaging

Enclosure:	- Aluminium with dust and splash proof seal
Battery compartment:	- Easy access for quick change of batteries
Carrying case:	- Good quality rugged leather case for space provided for instrument and standard accessories

Weight & Dimensions

Instrument:	- 1.05 Kg
Dimensions:	- 210mm (L) × 116mm (W) × 78mm (H)
Weight:	- 2.50 Kg (inc. meter, standard accessories in the carrying case)

Optional Extras: IRD544 inductive velocity sensor and shaft stick for absolute vibration measurements, details above



Where to Buy

You can order your IRD811 by sending in an email to sales@irdmech.com and obtaining an estimate and placing an order. The meter is also available through a local dealer near you. To find out your nearest dealer, please visit our website

Contact Details - Our Address*:** E8-14, Bhumi World Industrial Park, Thane - 421302, Maharashtra, India **Telephone:** +91-2522297023 (Monday to Friday 9:00 to 17:30 hours) ***Website: www.irdmechanalysis.com

condition management solutions

IRD521 Accelerometer

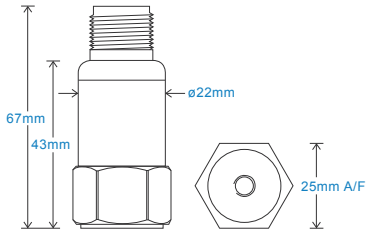
AC acceleration output via 2 Pin MS Connector

Key Features

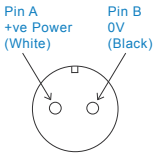
- Most common seller
- For use with data collector/ Monitoring System
- Customisable features

Industries

Building services, Pulp and Paper, Mining, Metals, Utilities, Automotive, Water, Pharmaceutical



Connection Details



Technical Performance

Mounted Base Resonance	see 'How To Order' table (nominal)
Sensitivity	see: 'How To Order' table ± 10%
	Nominal 80Hz at 22°C
Frequency Response	2Hz (120cpm) to 10kHz (600kcpm) ± 5%
	1.5Hz (90cpm) to 12kHz (720kcpm) ± 10%
	0.8Hz (48cpm) to 15kHz (900kcpm) ± 3dB
Isolation	Base isolated
Range	see: 'How To Order' table
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	8Nm
Weight	125gms (nominal)
Screened Cable Assembly	contact sales@irdmech.com for options
Connector	HS-AA004 - non-booted
	HS-AA053 or HS-0054 - booted
Mounting Threads	see: 'How To Order' table

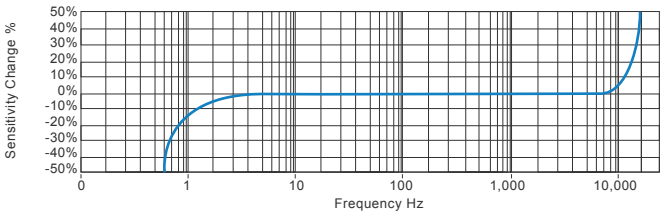
Electrical

Electrical Noise	0.1mg max
Current Range	0.5mA to 8mA
Bias Voltage	10 - 12 Volts DC
Settling Time	2 seconds
Output Impedance	200 Ohms max.
Case Isolation	$>10^8$ Ohms at 500 Volts

Environmental

Operating Temperature Range	-55 to 140°C
Sealing	IP68
Maximum Shock	5000g
EMC	EN61326-1:2013

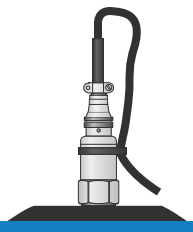
Typical Frequency Response (at 100mV/g)



Applications

Fans, Motors, Pumps, Compressors, Centrifuges, Conveyors, Air Handlers, Gearboxes, Rolls, Dryers, Presses, Cooling, VAC, Spindles, Machine Tooling, Process Equipment

Vibration sensor should be firmly fixed to a flat surface (spot face surface may be needed to be produced and cable anchored to sensor body.)



How To Order

Product Prefix
M - IRD Mechanalysis

Product Series
521 - Industrial Vibration Sensor

Cable Length (if integral cable)
QXX - length specified in metres

M	5	2	1	X	X	X	X	X	X	X	X	X	X	X

Extra Options (if required)
F - Filtered
I - Intrinsically Safe
L - 316L Stainless Steel
RT - Temperature Output PT100
T - Temperature Output
Y - 5% tolerance on sensitivity

Sensitivity	Range	Resonant Frequency
010 - 10mV/g	±800g	28kHz (1,680kcpm)
030 - 30mV/g	±250g	26kHz (1,560kcpm)
050 - 50mV/g	±160g	24kHz (1,440kcpm)
100 - 100mV/g	±80g	22kHz (1,320kcpm)
250 - 250mV/g	±32g	20kHz (1,200kcpm)
500 - 500mV/g	±16g	18kHz (1,080kcpm)

Cable/Connector
01 - PUR
02 - Braided
07 - Silicon
08 - Flame Retardant
50 - 2 Pin MS
54 - M12

Mounting Threads
01 - ¼-28" UNF Female
02 - ¼-28" UNF Male
05 - Quick Fit Female
06 - M6 x 1mm Male
08 - M8 x 1.25mm Male
10 - M10 x 1.5mm Male

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www.irdmechanalysis.com
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