Product Guide

Vibration and dynamic pressure measuring instruments.



10010

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Tri-Axial Piezo-Electric Accelerometers

Tri-Axial, Integral Electronics, Voltage Output Standard sensitivities shown, other sensitivities available on request



Tri Axial

Piezo-Tronic

Accelerometer

Description



Tri-Axial

Piezo-Tronic

Accelerometer







Tri-Axial Piezo-Tronic Accelerometer





Mono-Axial Piezo-Electric Accelerometers

Mono-Axial, Integral Electronics, Voltage Output

Standard sensitivities shown, other sensitivities available on request







Description	Miniature Piezo-Tronic Voltage Source Accelerometer	Piezo-Tronic Voltage Source Accelerometer	Piezo-Tronic Voltage Source Accelerometer	Piezo-Tronic Voltage Source Accelerometer
Product	A/124/E, A/124/TE A/124/TS	A/123/E, A/123/S A/123/TS, A/123/TE	A/122/V	A/120/V, A/120/VT A/120/VTC, A/120/VT A/120/VI, A/120/VTI
Sensitivity	10mV/g • 100mV/g	10mV/g • 100mV/g	10mV/g • 100mV/g	10mV/g • 100mV/g
Weight (gm)	2gm	4gm	12gm	12.5gm (A/120/V, A/120/VT, A/120/VI, A/120/VTI) 30gm (A/120/VTC)
Min. Temp	-50°C	-50°C	-50°C	-50°C
Max. Temp	125℃ Standard 161℃ High Temp	125°C Standard 161°C High Temp	125°C Standard	125℃ Standard 161℃ High Temp
Connector	M3.5 KP	10/32 UNF Microdot	10/32 UNF Microdot	10/32 UNF Microdot TNC - VTC
Mounting	Adhesive M4x5mm integral stud	Adhesive M5x5mm integral stud	Through hole 5.3mm Ø Mounting kit available	Based tapped 10/32UNF 4mm deep
	MENU			
Description	Piezo-Tronic Voltage Source Accelerometer	Micro g Voltage Piezo-Tronic Accelerometer	Seismic Piezo-Tronic Accelerometer	Calibration Piezo-Tronic Accelerometer
Product	A/121/V, A/121/VI	A/1600/V	A/1800/V	A/120/CR
Sensitivity	100mV/g • 1000mV/g	1V/g	10mV/g • 100mV/g	10mV/g • 100mV/g
Weight (gm)	97gm	112gm	400gm	24gm
Min. Temp	-50°C	-50°C	-50°C	-50°C
Max. Temp	125°C Standard 161°C High Temp	125°C Standard 161°C High Temp	125°C Standard 161°C High Temp	125°C Standard
Connector	10/32 UNF Microdot	10/32 UNF Microdot	10/32 UNF Microdot; TNC	10/32 UNF Microdot
Mounting	Based tapped 10/32 UNF 4mm deep	Based tapped 10/32 UNF 4mm deep	Based tapped 1/4 UNF 4mm deep	Based tapped 10/32 UNF 4mm deep



Tri-Axial Piezo-Electric Accelerometers

Tri-Axial Charge Output









Description	Micro-miniature Piezo-Electric Tri-Axial Accelerometer	Tri-Axial Piezo-Electric Accelerometer	Tri-Axial Piezo-Electric Accelerometer	Tri-Axial Piezo-Electric Accelerometer
Product	A/38, A/38-1	A/32	A/31	A/34, A/34-2
Sensitivity	0.4pC/g nom./axis	2pC/g nom./axis	7pC/g nom./axis	7pC/g nom./axis
Weight (gm)	≤ 1gm	8gm	18gm	19/22gm
Min. Temp	-50°C	-50°C	-50°C	-50°C
Max. Temp	200°C	200°C	220°C	220°C
Mounting	1 x 2.1mm Ø through hole Adhesive	3 x 2.5mm Ø through holes	2 x 3.25mm Ø through holes	2 x 3.25mm Ø through holes 1 x M4 Ø through hole. 3 x tapped 10/32 UNF x 4mm deep (A/34-2)
Connector Output Type	L8	L5	10/32 UNF Microdot	10/32 UNF Microdot
Description	Water Cooled Tri-Axial Piezo-Electric Accelerometer	Tri-Axial Piezo-Electric Accelerometer	Tri-Axial Piezo-Electric Accelerometer	
Product	A/33	A/30, A/30-1	AT/04	
Sensitivity	7pC/g nom./axis	25pC/g nom./axis	3/6pC/g nom./axis	
Weight (gm)	38gm	38gm	8gm	
Min. Temp	-50°C	-50°C	-50°C	
Max. Temp	800°C Max Surface Temp with Water Flow	220°C	200°C	
Mounting	1 x 5.5mm Ø through hole	3 x 3mm Ø through holes; 1 x M4 Ø through hole. 3 x tapped 10/32 UNF x 4mm deep (A/30-1)	Adhesive	
Connector Output Type	10/32 UNF Microdot	10/32 UNF Microdot	3S	





Mono-Axial Piezo-Electric Accelerometers

Mono-Axial, Charge Output

Description

Product

Sensitivity

Weight (gm)

Min. Temp

Max. Temp

Connector

Mounting



Micro-Miniature

Piezo-Electric

Accelerometer

(integral Cable)

0.4pC/g nom.

Integral A/28/E-1

0.25gm

-50°C

200°C

L8 A/28/E

Adhesive

A/28/E, A/28/E-1



Miniature Piezo-Electric Accelerometer A/25/E 2pC/g nom.

1.5gm

-50°C

200°C

Adhesive

L5



Miniature Piezo-Electric Accelerometer



Piezo-Electric Accelerometer

A/24/E, A/24/TE A/24/TS	A/23/E, A/23/S A/23/TE, A/23/TS
5pC/g nom.	8pC/g nom.
2gm	4gm
-50°C	-50°C
200°C	250°C
M3.5 KP	10/32 UNF Microdot
Adhesive (A/24/E, TE) M4 x 5mm Integral stud (A/24/TS)	Adhesive (A/23/E, TE) Integral stud M5, 7mm Ig. (or shorter) (A/23/S, TS)
33 Å	
Piezo-Electric Accelerometer	Micro g Piezo-Electric Accelerometer
A/21 A/21/T A/21/TC	A/600 A/600/T
360pC/g nom.	1.2nC/g nom.

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Mono-Axial Piezo-Electric Accelerometers

Mono-Axial, Charge Output







Description	Micro g Piezo-Electric Accelerometer	Piezo-Electric Accelerometer	Piezo-Electric Accelerometer	T
Product	A/800 A/800/T A/800/TC	A/26/E A/26/S	A/22	
Sensitivity	9nC/g nom.	8/12 pC/g	20/32 pC/g	
Weight (gm)	400gm (A/800, A/800/T) 407gm (A/800/TC)	6gm, 7gm	12gm	
Min. Temp	-50°C	-50°C	-50°C	
Max. Temp	150°C	250°C	250°C	
Connector	10/32 UNF Microdot TNC	10/32 UNF Microdot	10/32 UNF Microdot	K
Mounting	Base tapped 1/4 UNF x 4mm deep	Adhesive (A/26/E) Integral stud M5 x 7mm Ig. (or shorter) (A/26/S)	Through hole 3.5mm Ø Mounting kit available	
Description	Miniature Piezo-Tronic Accelerometer		Micro Miniature Piezo-Tronic Accelerometer	
Product	A/125		A/128	
Sensitivity	1mV/g.10mV/g		1mV/g.10mV/g	
Weight (gm)	1.5gm		0.25gm	
Min. Temp	-50°C		-50°C	
Max. Temp	+200°C		+200°C	
Connector	L5/Microdot		L8/Microdot	

The A/128 and A/125 IEPE accelerometers include a cable assembly that integrates the IEPE circuitry in the microdot connector, this is included in the quoted price.

Adhesive



Adhesive

Mounting



Mono-Axial Industrial Piezo-Electric Accelerometers

Mono-Axial, Industrial, Charge and Voltage Output Standard sensitivities shown, other sensitivities available on request









Description	Industrial Piezo-Electric Accelerometer	Industrial Piezo-Electric Accelerometer	Industrial Piezo-Electric Accelerometer	Industrial Piezo-Electric Accelerometer
Product	A/52/F A/52/F/HT	A/81/F A/81/F/HT	A/53/F A/53/F/HT	A/107/F A/107/F/HT
Sensitivity	100pC/g (A/52/F) 12C/g nom. (A/52/F/HT)	230pC/g (A/81/F) 35C/g nom. (A/81/F/HT)	12pC/g (A/53/F) 1.7pC/g nom. (A/53/F/HT)	100pC/g (A/107/F)
Weight (gm)	100gm (exc cable) (<i>A52/F</i>) 123gm (exc cable) (<i>A\52/F/HT</i>)	150gm (exc cable) (A/81/F) 160gm (exc cable) (A/81/F/HT)	20gm (exc cable) (A/53/F) 20gm (exc cable) (A/53/F/HT)	80gm
Max. Temp	300°C (A/52/F) 400°C (A/52/F/HT)	300°C (A/81/F) 400°C (A/81/F/HT)	300°C (A/53/F) 400°C (A/53/F/HT)	300°C (A/107/F) 400°C (A/107/F/HT)
Cable	Integral Hardline Cable	Integral Hardline Cable	Integral Hardline Cable	
Connector	7/16 UNF HT Microdot	7/16 UNF HT Microdot	7/16 UNF HT Microdot	2 pole connector 7/16 UNF
Mounting	2 x 6.4mm Ø holes @ 38mm ctrs.	2 x 6.4mm Ø holes @ 38.1mm ctrs.	2 x 5.2mm Ø holes @ 24.4mm ctrs.	3 x 3.2mm Ø holes 25.4mm PCD
Description	Industrial Piezo- Electric Accelerometer	Industrial Piezo- Tronic Accelerometer		
Product	A/301/F A/301/F/HT	A/172/VF		
Sensitivity	220pC/g (A/301/F) 25pC/g nom. (A/301/F/HT)	100mV/g ±5%		
Weight (gm)	150gm (A301/F) 150gm (A/301/F/HT)	130gm		
Max. Temp	300°C (A/301/F) 400°C (A/301/F/HT)	125°C		
Connector	2 pole connector 7/16 UNF	2 pole connector 7/16 UNF		
Mounting	4 x 3.8mm Ø holes	3 x 5mm Ø holes		



Impact Modal Hammer

IEPE Instrumented Impact Hammer range

The IH series IEPE impact hammer range features a rugged force sensor that is integrated into the hammers striking surface. The force sensor serves to provide a measurement of the amplitude of the energy stimulus that is imparted to a test object. A variety of tips supplied with each hammer permit the energy content of the force impulse to be tailored to suit the requirements of the item under test. Using multi-channel data acquisition and analysis software, the test engineer is able to ascertain a variety of mechanical properties leading to an understanding of an objects structural behaviour. Items analysed can include resonance detection, mode shapes, transfer characteristics, and structural health, such as crack and fatigue detection.



IH series impact hammers can be applied for Structure Health Testing, Resonance Determination, Modal Analysis etc. used in association with DJB's wide range of accelerometers full response data can be captured during impact testing.

Description	Impact Modal Hammer	Impact Modal Hammer	Impact Modal Hammer	Impact Modal Hammer
Product	IH-02	IH-05	IH-10	IH-50
Sensitivity	2.5mV/N	1mV/N	0.5mV/N	0.1mV/N
Measuring Range	2000N	5000N	10000N	50000N
Hammer Mass	105gm	105gm	1000gm	5000gm
Head Diameter	20mm	20mm	50mm	80mm
Hammer Length	250mm	250mm	400mm	500mm
Output connector	BNC	BNC	BNC	BNC
Tips Supplied	Stainless Steel, Aluminium, Nylon, Rubber	Stainless Steel, Aluminium, Nylon, Rubber	Hard tip, Medium tip, Soft tip	Hard tip, Medium tip, Soft tip

Hand held vibration meter

VT2

The VT2 is a rugged compact low cost hand held vibration meter developed for use in industrial applications for periodic monitoring of Industrial plant such as rotating machinery. The VT2 allows frequency selective measurement which provides the user with the means of recovering meaningful source dependent data buried in wideband signals, and to therefore diagnose the estate of specific machine components.



The standard VT2 provides a bandwidth limited velocity measurement characterised to the requirements of ISO 2954-1975. This stipulates an RMS velocity measurement within the restricted bandwidth 10Hz/1kHz. In addition the standard VT2 provides bandwidth limited displacement 10Hz/100Hz, isolating balance type (fundamental shaft frequency) problems, and acceleration 2kHz/20kHz, the latter aimed at detection of roller bearing faults of a pulse burst nature.

Description	Hand held Vibration Meter	
Product	VT2	Analogue out
Input	Single ended, 25pC/g std.	accn widebar
	1/300pC/g optional	Analogue out
Weight (gm)	390gm	ver wideband
Output	100mV/g ±2%@ 500Hz	Analogue out displ wideban
Range	0/1.999, 1/19.99, 10/199.9g rms	
Filters	Various Bandpath Filters Available	



max. $4.5v \text{ pk} \equiv 4.5 \text{M/sec pk}$

1 mv.pk./µM pk pk, +/-3% @ 100Hz, out. max. 4.5.v.pk \equiv 4.5mm pk pk d



Instrumentation

Charge and Voltage Source Amplifiers







Converters and Integrators

Hybrid Two

QV/01

Wire Voltage

Source Line Driver

Miniature 2 Wire

Charge/Voltage Converter

Low impedance line

drive maintains

distances up to

several hundred

1 and 10mV/pC

Gain Options

metres

data integrity over





Hybrid Two

Wire Voltage



Acceleration/ Velocity Converter



to min. 2Hz

Source Line Driver		
QV/02	VM/04	DM/04
Miniature 2 Wire Charge/Voltage Converter	Single Integrator/ High Pass Filter Converts Vibration Data from Acceleration to Velocity Format	Double Integrator/ High Pass Filter Converts Vibration Data from Acceleration to Displacement Format
Low impedance line drive maintains	Configurable for optimum signal/	Configurable for optimu signal/noise down

noise down to min. 2Hz

Filters

Description

Frequencies

High pass

Low Pass

Product

Gain

Description

Product

Voltage

Output



Highpass Filter HP/04

Lowpass Filter LP/04

Switched Corner

7 Pole Butterworth

7 Pole Butterworth

Low Pass 50, 100,

200, 500 Hz, 1, 2, 5, 10kHz, 42dB/octave

High Pass 2, 5, 10, 20,

50, 100Hz; 42dB/octave

Frequencies 6 four HP/04

8 four LP/04

HP/04

LP/04



Bandpass Filter

Fixed Frequency

Bandpass Filters

BP/04/N

BP/04/W

1Hz/15kHz

Tuning Rate

Customer

Selectable

Customer

Selectable

data integrity over

distances up to

several hundred

1 and 10mV/pC

Gain Options

metres



DIN Rail Mounted Filter Module

CV1-F CV1-VF

Fixed Frequency factory set to customer spec. Variable Frequency set by DIP switch, 255 steps

Range of High pass filters available

Range of Low pass filters available





Instrumentation

Level Meter and Alarms







Description	Analogue Level Meter	Digital Display	Level Alarm
Product	MU/04/E	DD/04, DD/04/3 DD/04/DVA	LA/04
Features	Analogue Level Meter		High level alarm indicator Alarm timer eliminates spurious triggering, Programmable alarm Setpoint and timer, Latching non-latching alarm mode
Output	True RMS Conversion	True RMS Conversion from 2Hz	
Input	Single ended 12V PK max four Vs ±15V	3 Ranges Configurable for 1, 10, 100mV/g etc. I/P's	Single ended
Display	Bargraph	Autoranging 3½ Digit	

Module housing and rack



Housings for up to twelve single width modules including a power supply, input/output signal connectors, module interconnections, for any practicable module combination This cost effective solution to what tends to be a fragmented, application specific area of signal processing allows single function modules to be combined to perform a specific vibration/acoustic measurement task with minimal redundancy. Particular attention is paid to inter module and power supply screening, switchable signal ground/mains earth connection helps in common mode interference reduction.



Alternative power sources are catered for to allow operation from 12/28V DC unregulated supplies (other options onrequest). SR/04s contain 200/240V,90/130V, 50/60Hz mains input, ±15V, 1.5A max. 0/P regulated power supply, s/c protected, noise/ripple 100µV rms. For input/output connector options contact our Sales Team.



Accessories

Connectors

Non-standard cable assembly and repair service available on request





Accessories Mounting Studs and Accessories 10/32 UNF Ø 12.0 10/3218 Ø Product 9 Product e Product SI/06 6 A/F 12 Product IM/01 IM/02 MB MJ Description Bulkhead Joiner Inline Joiner for for Microdot Plug Microdot Plug 015 215 € Product Description TNC Bulkhead Bulkhead Joiner In line Joiner for Inline Joiner for Lemo Mini Twin Socket Microdot Plug and Microdot Plug and for BNC and Bulkhead BNC Socket TNC Socket Microdot Plug Socket

**Range of Studs available



Cables



Description	Cable Code	Impedance Ω/m	Capacitance pF/m	Temp Range °C
Cable Single Core				
0.8mm P.T.F.E. low noise cable	T08	3	93	-55/+200
1.0mm F.E.P. low noise cable	T10	1	90	-65/+200
1.8mm P.T.F.E. low noise cable	T18	0.06	90	-70/+200
2.0mm PVC low noise cable	P20	0.06	98	-40/+85
3.0mm F.E.P. low noise, double screen cable	P30 0.06		98	-55/+200
3.0mm PVC low noise, single screen cable	P31	P31 0.134		-40/+80
3.9mm PVC low noise extendable coiled cable 0.7m - 1.75m	P39	P39 0.4		-40/+80
4.5mm PVC low noise cable	P45	0.08	92	-40/+85
1.8mm F.E.P. screened cable	S18	0.35	100	-55/+200
2.8mm PVC screened cable	S28	0.134	100	-40/+85
2 Core Cable		R _{A,B} R _s	C _{AS,} C _{BS} C _{AB}	
2.3mm 2 core P.T.F.E. low noise cab	le T23	0.22 0.05	81 63	-55/+260
1.55mm 2 core hard line cable	HL15	11 0.02	260 110	-50/+800
3.0mm 2 core hard line cable	HL30	2.5 0.004	220 85	-50/+800
4 Core Cable				
3.5mm 4 core PVC screened cable	SM35	0.34	140	-40/+80
	UT18	0.4	107	
	ET25	0.4	83	
Tri-Axial		R _A R _{SCR} R _S	C _{AS} -C _{SCR} C _{SCR-S}	
2.5mm tri-axial, hard line cable	HL25	9 1.7 0.01	380 1100	-50/+800

All dimensions are approximate in mm.





DJB Instruments (UK) Ltd

Established in 1974, DJB Instruments (UK) Ltd are the UK's leading manufacturer of accelerometers, dynamic pressure transducers, instrumentation and cabling. From a modern production facility based in Mildenhall, Suffolk, UK we constantly strive for efficient manufacturing, high quality and reliable product delivery.

Accelerometers	All DJB products have an enviable reputation for quality and reliability, this is probably best appreciated through the history and number of our accelerometers still in use around the world that were sold during the early days of DJB. The range has grown to include the latest integral electronics accelerometers (IEPE) as well as Charge output devices, triaxial and monoaxial, miniature, high temperature and our specialist water cooled ultra-high temperature accelerometers.
Dynamic Pressure	Using our industry leading expertise and well proven piezo-ceramic technology we offer a range of sensors for dynamic pressure measurement. Many of these applications also require high temperature capability and our ultra-high temperature microphones offer solutions up to 650°C.
Cable Assembly Facility	In 2012 our cable assembly facility was expanded to offer an increased capability to a wider range of customers including many who are users of sensors of different types other than accelerometers. With a huge stock of cable types and connectors, backed up with our experience in cable assembly we can offer cables for sensors measuring force, pressure, angles, velocity as well as many more. In addition we also offer a test and repair service for cables from any manufacturer, available with quick turnaround we offer the complete cable assembly service.
Instrumentation	All sensors require some sort of instrumentation to provide power, measure signals and in some cases do both. The DJB range of Charge/Voltage amplifiers, hybrid converters, DIN rail mounted amplifiers, filters and in line conditioners offer a solution for every application. Our hand held units offer quick measurement for use in industrial applications where permanent installations are not possible.
Customer Support	Accelerometers are application specific. We advise users of the environmental constraints relative to individual transducers, hardware is made available for evaluation. Standard products are stocked in depth for rapid response.
Quality	Virtual 100% inspection and test, supported by continuous assessment of all facets of manufacture, maintains a high standard of product excellence. Environmental test facilities, simulating actual usage, eliminating uncertainty.
Engineering Capability	All facets of transducer / instrumentation manufacture and test are carried out in house, and encompass fabrication of piezo-ceramic components, hermetic seals and connectors, thick film hybrid electronic products, environmental testing.
Research & Development	DJB Instruments has a policy of continuous research & development. We are constantly reviewing our existing product range. We are working with selected partners to develop new technologies and we anticipate a rolling programme of product releases.

For further information please contact our sales department



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A UK company with UK-based manufacturing, assembly and calibration in-house.