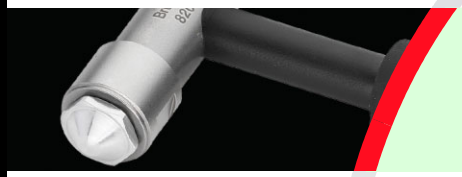


PRODUCT DATA

Miniature Impact Hammer — Type 8204

USES

- Impact-force measurements on small structures
- Measurement of frequency response functions using impact excitation techniques
- As part of a dynamic structural testing system for modal analysis and the prediction of structural response

FEATURES

- Compact size and low weight
- Negligible changes to dynamic properties of test structure
- Aluminium shaft to reduce occurrence of double impacts
- DeltaTron® (low-impedance) output

Description

The piezoelectric force transducer is designed to excite and measure impact forces on small structures such as disc-drive heads, circuit boards, turbine blades and similar small structures. An accelerometer (or laser velocity transducer) is used to measure the response of the structure. By using a multichannel FFT analyzer, such as the PULSE™ system, the frequency response function and mode shapes of the test structure can be derived.

Characteristics

Type 8204 has built-in electronics. The sensitivity is expressed in terms of voltage per unit force (mV/N or mV/lbf).

The integral impact tip is made of stainless steel, which combined with the very low mass gives a high resonance frequency. The frequency response of the impact and decay of the impulse can be adjusted by applying tape to the impact area or using the supplied head extender.

The handle has been designed for optimal control of impact and thus reduces the risk of "double hits".

Calibration

The transducer is supplied with an individual calibration of its sensitivity.

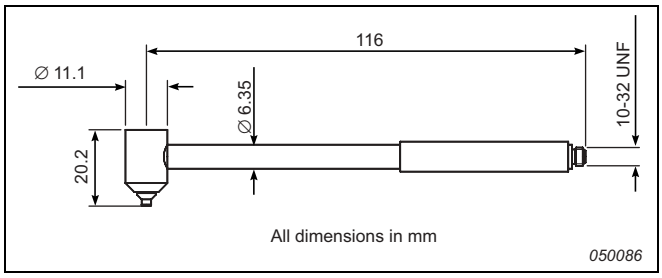
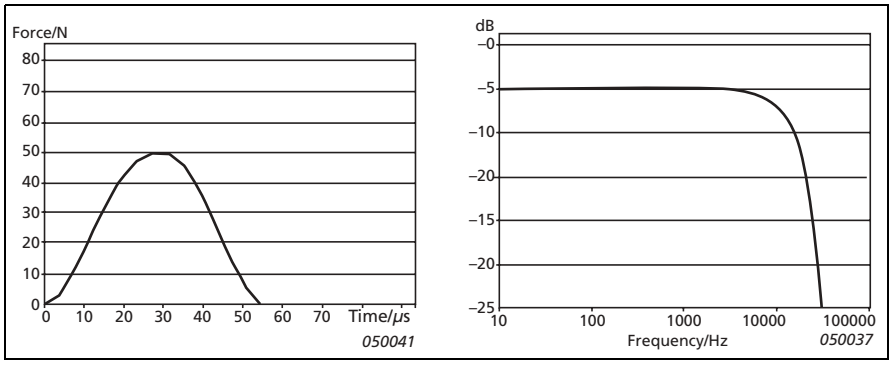


Fig. 1
Impulse shapes for the hammer tip as a function of time showing the pulse decay and peak value (left); force spectrum of an impact on an aluminium plate (right)



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Specifications – Miniature Impact Hammer Type 8204

	Units	8204
Dynamic Characteristics		
Voltage Sensitivity (typical)	mV/N (mV/lbf)	22.7 (100)
Full Scale Force Range Compression	N (lbf)	220 (50)
Linear Error at Full Scale	% full scale	<±2
Electrical Characteristics		
Full Scale Output Voltage	V	±5
DC Output Bias Voltage	V	+7 to +12
Output Impedance	Ω	<100
Power Supply	mA	2 to 20
Voltage Range	V DC	+18 to +30
Environmental Characteristics		
Temperature Range	°C (°F)	–73 to +60 (–100 to +140)
Max. Force Compression	N (lbf)	890 (200)
Physical Characteristics		
Dimensions		See outline drawing
Overall Length	mm (in.)	122 (4.8)
Effective Seismic Mass without Head Extender	gram (oz.)	2 (0.07)
Effective Seismic Mass with Head Extender	gram (oz.)	5.5 (0.2)
Impact Tip Material		17–4 PH stainless steel
Connector		10–32 UNF

All values typical at 25°C (77°F) unless measurement uncertainty is specified

COMPLIANCE WITH STANDARDS

CE Compliance with EMC Directive and Low Voltage Directive of the EU

Compliance with the EMC requirements of Australia and New Zealand

Ordering Information

Type 8204 includes the following accessories:
- Carrying Box
- Calibration Chart
- Head Extender, 3.5 gram (0.123 oz.)
- PVC Insulated Cable, 10–32 UNF to BNC Connector, 5 m (16.4 ft)

OPTIONAL ACCESSORIES*
- AO 0406: Double-screened Low-noise Cable, 10–32 UNF to BNC Connector via JP 0145, 5 m (16.4 ft)
- AO 0531: PVC Insulated Cable, 10–32 UNF to BNC Connector, 5 m (16.4 ft)
- AO 0463G: 70°C, Single Screen Cable, 10–32 UNF to 10–32 UNF, length 5 m (16.4 ft.)
- JP 0145: Plug Adaptor, BNC/10–32 UNF
- JJ 0032: Extension Connector 10–32 UNF
- ZZ 0245: In-line TEDS Adaptor 10–32 UNF to 10–32 UNF

* Additional accessories, cables and services are available (see www.bksv.com)

HEADQUARTERS: DK-2850 Nærum · Denmark · Telephone: +45 4580 0500 · Fax: +45 4580 1405
www.bksv.com · info@bksv.com

Australia (+61) 2 9889-8888 · Austria (+43) 1 865 74 00 · Brazil (+55) 11 5188-8166 · Canada (+1) 514 695-8225
China (+86) 10 680 29906 · Czech Republic (+420) 2 6702 1100 · Finland (+358) 9-521 300 · France (+33) 1 69 90 71 00
Germany (+49) 421 17 87 0 · Hong Kong (+852) 2548 7486 · Hungary (+36) 1 215 83 05 · Ireland (+353) 1 807 4083
Italy (+39) 0257 68061 · Japan (+81) 3 5715 1612 · Korea (+82) 2 3473 0605 · Netherlands (+31) 318 55 9290
Norway (+47) 66 77 11 55 · Poland (+48) 22 816 75 56 · Portugal (+351) 21 47 11 4 53 · Singapore (+65) 377 4512
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USA (+1) 800 332 2040 · Local representatives and service organisations worldwide

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