

# Pro-DX excieo

## human & environmental vibration meter

- Parallel Triaxial Measurement
- Special Modes for Hand-arm and Whole Body Measurements
- Minimal instruction Operation
- Input of Employee Names and Tool Information
- Universal Mode For Multiple Applications
- Compliant With ISO 8041:2005







technical safety & environmental solutions



# Pro-Dx Excio

## GA2005 human & environmental vibration meter

What is Human Vibration Exposure?...

Long term exposure to vibration can lead to permanent disability for employees and to huge civil claims and massive insurance premiums for companies. Any hand contact with a vibrating surface will result in Hand Arm Vibration Exposure. The most commonly known Hand Arm Vibration problem is Vibration White Finger. Whole Body Vibration Exposure results from seated or standing people being in contact with vibrating surfaces.

For Companies to protect themselves and their employees properly, it is imperative to measure the levels of exposure. The Castle Excio Vibration meter can provide these measurements with the simplest of instruction and the greatest of ease. The final results are presented in Castle's VIBdataPRO software, which instantly gives daily exposures and maximum operating times.



**HAND-ARM**



**WHOLE-BODY**

### ENVIRONMENTAL VIBRATION

Vibration can also cause problems in the environment when buildings or people are exposed. If severe enough, damage to buildings will result from such activities as piling, blasting or longer term levels from railways or roads. The same kind of vibrations can also cause disturbance of sleep or annoyance in residential areas. The Castle Excio is ideally suited for this type of monitoring with a weatherproof, long term monitoring kit available.

### ENGINEERING VIBRATION MONITORING

The Excio is also ideally suited to machine monitoring as it can store thousands of results. Measuring at regular intervals over longer periods of time can give a strong indication of machine part condition. Vibration severity is also commonly used as an indication to machine performance.

### EXCIO FEATURES...

- PARALLEL TRIAXIAL MEASUREMENT
- SPECIAL MODES FOR HAND-ARM AND WHOLE BODY MEASUREMENTS
- MINIMAL INSTRUCTION OPERATION
- INPUT OF EMPLOYEE NAMES AND TOOL INFORMATION
- UNIVERSAL MODE FOR MULTIPLE APPLICATIONS
- COMPLIANT WITH ISO 8041:2005



Pro-Dx Excio with the tri-axial seat accelerometer

## Legislation and Litigation

The introduction of "The Control of Vibration at Work Regulations 2005" in the UK and similar throughout Europe is an important signal that employers should be protecting employees from this debilitating exposure. Government enforcement is fairly rigorous but this may not be enough to protect companies from civil claims! It is important to seek advice to avoid a potentially very expensive problem!



### VERSATILE & FUNCTIONAL

The use of state-of-the-art Digital Signal Processing (DSP) Technology has meant the Excio could be loaded with 12 frequency filters. This means that, whilst the meter has simple-to-use, dedicated modes for Hand Arm and Whole Body measurement, it also has the ability to adapt to many other applications. Advanced data-logging functions and simple file management increase the flexibility and range of applications further.

### SOFTWARE SYNERGY

The power of much modern technology comes into its own when attached to a PC and this is also true for the Excio. Castle's VIBdataPRO software presents meaningful information in a clear and concise format that can either be viewed in tabular or graphical form; from there, the information is simply 'copied' and 'pasted' into other applications you choose, for example word processors and spreadsheets.

### THE HUMAN TOUCH...

Irrespective of Technical performance, many instruments neglect the user as part of the working equation. The Castle Pro-DX Excio is pleasing to the eye and ergonomically designed to fit ease of use. Its similarity to a mobile phone is no co-incidence. It feels and operates using sequences we know so well. Never has a technical instrument been so 'user friendly'.

### FUTURE PROOF...

The built in software for these meters is designed to suit future upgrading for feature enhancements, legislative changes or instrument upgrades. Details are sent to the customers as soon as they become available with the Castle Pro-DX meters, you will always be in step with the law and market requirements.



Rugged construction and easy connectivity

### EXCIEO SYSTEMS

**VK024** Hand Arm Risk Measurement (HARM) System

**VK025** Whole Body Vibration (WBV) System

**VK026** HARM and WBV Combined System

**VK027** Environmental and Industrial Vibration System

**VK028** Outdoor Environmental Vibration System





# PRO-DX EXCIEO (GA2005) TECHNICAL SPECIFICATION

## PRO-DX EXCIEO: MODELS

Excio H (GA2005H)	- Hand Arm Vibration
Excio W (GA2005W)	- Whole Body Vibration
Excio C (GA2005C)	- HAV and WBV Combined
Excio E* (GA2005E)	- Environmental & Engineering Vibration
Excio M (GA2005M)	- Multi-Function Vibration

## APPLICABLE STANDARDS

ISO8041:1990 type 1 and latest draft of ISO8041 revision (Human Vibration Meters) ISO8041: 2005  
BS4675:1978, ISO2954:1975 Requirements for Instruments measuring vibration severity ROHS compliant

## ACCELEROMETERS

### For Hand Arm Vibration: KD1006

Sensitivity: 10mV/g, Range (f.s.)  $\pm 500g$ ,

Frequency response 2-5000Hz  $\pm 10\%$

### For Whole Body Vibration: KD1007

Sensitivity: 100mV/g, Range (f.s.)  $\pm 50g$ ,

Frequency response 0.5-3000Hz  $\pm 5\%$

### For Environmental Vibration: TBA

### For Engineering Vibration (single Axis): KD1003

Sensitivity: 100mV/g, Range (f.s.)  $\pm 80g$ ,

Frequency response 2-13000Hz  $+5\%$

## DISPLAY

Electro-Luminescent, Back-lit LCD panel (160x160 pixels)

Vibration Meter displays

Numerical: Parallel Tri-axial results

Bar graph: Time History plot

Real time clock: Day, Month, Year, Hour, Minute, Second language display:

English, French\*, German\*, Spanish\* and Italian\*

## LEVEL RANGE

Linear Operating Range: 74 dB

HARM: RMS Range: 0.02-5000m/s<sup>2</sup>

Peak Range: 0.2-7000m/s<sup>2</sup>

WBV & Engineering: RMS Range: 0.001-500m/s<sup>2</sup>

Peak Range: 0.02-700m/s<sup>2</sup>

## NOISE FLOOR

Typical: TBA

## FREQUENCY WEIGHTING

Severity: Ws, Fa(0.4-100Hz), Fb(0.4-1250Hz), Fc(6.3-1250Hz)

HARM: Wh

WBV: Wb, Wc, Wd, We, Wj, Wk, Wm

## FREQUENCY RANGE

1Hz - 6.3 kHz (electrical characteristics)

See accelerometer frequency range

## DETECTORS

rms, rmq and Peak

## REAL-TIME TRI-AXIAL MEASUREMENT

Real-time 3 channel measurement to give simultaneous display and integration for tri-axial measurement.

## MEASUREMENT PARAMETERS

All Variations (H, W, C, E & M)

Arms, Amin, Amax, Aeq, Amp, PEAK, Velocity, Displacement.

Variations W, C & M

CFmp, CF, VDV

Variations E & M

Fast-data, VDV

Units: m/s<sup>2</sup>, cm/s<sup>2</sup>, g, dB, mm/s,  $\mu m$

## LOG TIME INTERVALS

1s -12hours user definable in one second intervals (all parameters) up to 99 hours, cumulative every 12 hours.

## TRIGGER FUNCTION

Trigger source: internal value (rising or falling)

## TIMER FUNCTION

A Program Log Timer to give multiple Start-Stop timings (with sleep mode), Repeat timer and programming function\* to control multiple measurement tasks (date independent). Real Time Clock and Calendar, plus measurement duration.

## REAL TIME CLOCK

Time and Date - accuracy better than 5s per day.

## MEMORY

4Mb On-board FLASH, 2Mb available for data storage

## INPUTS

3-Channel input for Voltage mode, charge mode (via interface unit) and Direct DC Power input via external socket: 12V

## SIGNAL OUTPUT

RS232: 19200 Baud, 8 bit, no parity, bi-directional, standard USB interface, 'AC output

## PROCESSING

A to D Converters: 20-bit Stereo, 16kHz sampling DSP: 5MIPS, 5MHz processor Controller: 16bit, running at 16MHz

## POWER REQUIREMENTS

12 volts DC (with mains adapter), Batteries: 6 x MN1500 (size AA), Life: approximately 12 hours (alkaline batteries, continuous operation). Simultaneous mains and battery operation.

## SIZE AND WEIGHT

Dimensions: Height: 255mm (without Cable)

x Width: 100mm (max) x Depth: 49mm

Weight: 780g approximately (including batteries)

## MANUALS

Multi-language manuals\*: English, French, German, Spanish and Italian.

## KITS

VK024 Hand Arm Risk Measurement (HARM) System

VK025 Whole Body Vibration (WBV) System

VK026 HARM and WBV Combined System

VK027 Environmental and Industrial Vibration System\*

VK028 Outdoor Environmental Vibration System\*

## ACCESSORIES

KD1006 HARM Tri-axial Accelerometer

KD1007 Tri-axial Seat-pad WBV Accelerometer

ZL1096-02 Tri-axial Accelerometer Cable

ZL1097 Industrial Coiled Cable

GA505 Portable, Battery Operated, Thermal Printer

ZL1084-01 Printer Cable for use with GA505.

PC009 VibdataPRO Windows Analysis Software.

KA016V Kit Case for Excio and Accessories

KA019 Weatherproof Enclosure\*

PSU4 Power Supply

ZL1064-01 AC Output Cable

Note: Items marked \* will be available as upgrades soon.

In the interest of continued developments, Castle reserve the right to change the product specifications without notice



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



**UK Office**

**Keison Products,**

**P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.**

**Tel: +44 (0)330 088 0560**

**Fax: +44 (0)1245 808399**

**Email: [sales@keison.co.uk](mailto:sales@keison.co.uk)**

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.