

V-Meter MK IV™



Test Well. Build Well.

Ultrasonic pulse velocity system for finding voids and cracks, and determining other material properties



Product Information

Concrete

The **V-Meter MK IV™** is widely used and accepted for quality control and inspection of concrete. It can measure and correlate concrete strength to standard strength measurement, permitting non-destructive testing of complete structures. It will identify honeycombs, voids, frozen concrete, cracks and other non-homogenous conditions in concrete. Ultrasonic testing can be applied to new and old structures, slabs, columns, walls, fire damaged areas, hydroelectric structures, pipe, prefab and pre-stressed beams, cylinders and other concrete forms. A wide range of transducers are available.

Wood

The **V-Meter MK IV™**, ultrasonic testing of wood can, nondestructively, detect knots, shakes, splits, grain orientation, windfall cracks and presence of decay and rot. Basic parameters such as modulus of elasticity and density can be calculated. Practical applications include field testing of utility poles and structures, grading in the manufacturing process, fire ladder inspection, examination of laminates and paper roll density. The velocity of ultrasonic energy pulses traveling in a solid material are related to the density and elastic properties of the material. The pulse velocity is thus a measure of density and elastic properties of the material.

Ceramics

The **V-Meter MK IV™** has been successfully applied to a range of ceramic products – including tile, refractory bricks and blocks, and kiln furniture, as well as graphite. In an increasing number of refractory and ceramic applications, the ultrasonic pulse velocity testing technique has been used with positive results. UPV testing has enabled users to improve their production processes, increase the integrity and quality of their products, and reduce scrap and reject rates, thereby saving both time and money. In today's economy, such bottom-line benefits are difficult to ignore.

Applications

- Locate Honey Combs and Voids in Concrete
- Locate Cracks in Concrete, Ceramics, Masonry or Stone
- Determine Fire Damage Extent in Concrete or Masonry
- Crack Depth Determination
- Determining Young's Modulus (with optional Shear Wave Transducers)
- Find Hidden Areas of Rotting Wood

Strength

Locators

Ultrasonics

Corrosion

Moisture

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A wide range of transducers are available. Shown are 54KHz Transducers.

Features & Benefits

- System has a direct digital read-out of transit time, and read out of wave form on daylight display, back lit LCD.
- Rugged and splash resistant case is built for tough construction environments. Portable, and light weight with both rechargeable battery and standard A-C power.
- Includes a signal and trigger output for use with external oscilloscope or other data input device. Digital calibration means no special bar required. Trigger levels and Signal amplification can be digitally adjusted.
- Conforms to ASTM C-597, BS 1881-203 and other international standards
- USB interface for computer control. Veelinx™ software allows complete control of the system as well as data upload to a PC and data analysis.
- Direct reading of calculated P-wave velocity and S-wave velocity. The unit can also calculate modulus of elasticity of material using optional S-Wave Transducers. Direct reading of Poisson's ratio
- A large range of Accessories and Ultrasonic Transducers available.

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Standards

- ASTM C-597 - "Standard Test Method for Pulse Velocity Through Concrete"
- BS EN 12504 - 4:2004 (Formerly BS 1881-203) "Determination of Ultrasonic Pulse Velocity"
- ASTM D2845 - 08 "Standard Test Method for Laboratory Determination of Pulse Velocities and Ultrasonic Elastic Constants of Rock"
- ASTM E494 - 10 "Standard Practice for Measuring Ultrasonic Velocity in Materials"
- ACI 228.2 R "Nondestructive Test Methods for Evaluation of Concrete in Structures"
- ISO1920-7 : 2004 "Testing of Concrete -. Part 7:Non-Destructive Tests on Hardened Concrete"
- IS13311 Part 1: "Non - Destructive Testing of Concrete Methods of Test Part 1 - Ultrasonic Pulse Velocity"

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V-Meter MK IV evaluating a round column



V-Meter MK IV used on Wood Direct Mode.



V-Meter MK IV used with ceramic sample

Specifications

Frequency range:	24 to 500 kHz, based on transducers selected.
Receiver sensitivity:	250 micro volts, between 30 kHz and 100 kHz.
Receiver input impedance:	approximately 100 k Ohms.
Transit time measurement:	0.1 to 6553.5 microseconds, direct digital display. 4 hours continuous operation
Measurement accuracy:	0.1 microseconds.
Transmitter output:	pulse 1000/500V, 2 microseconds.
Transmitter pulse group rate:	selectable 1, 3 or 10.
Gain Selection:	1, 5, 10, 25, 50, 100, 250, 500
Battery:	14 Volt. 4-10 hours continuous use (Lithium Ion).
Display:	320 by 240; backlit for daylight use.
Storage:	1800 plus readings
Software:	Windows XP compatible.
Temperature:	0° - 50°C
Instr. Weight:	6 lbs. (2.75 Kg)
Ship Weight:	17 lbs. (7.7 Kg)
Dimensions:	4.5" x 8.5" x 10.5" (114.3mm x 223.5mm x 267mm)

Sales Numbers

V-C-400: V-Meter MK IV Complete System (includes two 54 KHz Transducers and Velocilinx Software)

V-C-401: V-Meter MK IV System w/o Software (includes two 54 KHz Transducers)

V-C-402: V-Meter MK IV Basic System (includes Velocilinx Software, but no Transducers)

V-C-403: V-Meter MK IV Basic System w/o Software (no software, no Transducers)



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