



Simplifying NDT

# MODSONIC

(AN ISO 9001 :2008 COMPANY)

# ULTRASONIC VELOCITY METER

(For Direct Measurement Of Sound Velocity In Material)

## EdVel - Series

- Memory of 2000 Readings★
- Computer Connectivity★
- Resolution 1m/sec
- One Step Calibration
- Operates on Two AA Batteries
- Sealed Touch Key Pad
- Built-in Calibration Block
- EL back-light for indoor / dark areas(optional)

★ Available in EdVel-1M

● **FOR SEGREGATION OF CASTINGS ACCORDING TO % NODULARITY**



# Technical Specification

## EdVel-1 AND EdVel-1M

EdVel-1 and EdVel-1M - Handheld Ultrasonic Velocity Gauge for easy sound velocity measurement for quick correlation to mechanical properties and microstructure.

Quick and Easy Velocity Measurement for Nodularity % in Ductile Iron and other Applications

Simple-to-Use, 2-Step Operation

Handheld, Portable, Weights only 225 Grams with Batteries

On-Board 2000 Reading Data Logger Optional.

Rugged, Dependable

Spot Check Production Processes, Sort Suspect Lots, 100% Inspection of Critical Safety-Related Parts.

### Measure, record, report

The microcontroller-based EdVel-1 is a sound velocity gauge/data logger combination (EdVel-1M) built into a small, portable instrument. Sound velocity measurements can be made throughout a plant, recorded on-site, and then sent directly to a serial printer or PC for immediate hardcopy reports, analysis, or permanent storage.

Sound velocity measurements can be made on a wide range of materials with the EdVel (i.e. cast iron, aluminum, plastics, and other metals and non-metals).

### Sound Velocity vs. Nodularity %

Sound velocity is a prime factor in estimating the nodularity percentage (%) of ductile iron and its relative tensile strength. The mechanical properties of ductile iron are very dependent upon the shape of nodular graphite formations, or % nodularity, which has a direct effect on the sound velocity. As the nodularity % (graphite formation) increases, the sound velocity of the ductile iron also increases. In turn, sound velocity also has a relationship to the tensile strength of ductile iron, and is often used to predict or qualify the tensile strength of a casting. The EdVel provides an excellent tool for spot checking production processes, sorting of suspect lots of material, 100% inspection of low volume production runs, and 100% inspection of critical safety-related ductile iron castings.

Operating Principle	: Ultrasonic Pulse/Echo
Probe Zero Adjustment	: Couple probe on Instrument probe zero block then Press Probe Switch.
V-Path Correction	: Automatic, microcontroller controlled
Material Velocity Measuring Range	: 1000 to 9999 metre /sec.
Material Thickness Range (Steel)	: 2 mm to 300 mm
Material Velocity Linearity:Metric	: 2 to 25 mm = $\pm 51$ m/sec. 25 to 300 mm = $\pm 26$ m/sec.
Displayed Resolution	: XXXX m/sec.
Display Type	: 4 digit, (12.5mm) high (Optional electroluminescent backlight)
Display Update Rate	: 7 Hz
Power Supply	: Two 1.2V AA Ni-Cd batteries or Dry cell.
Battery Life (operating time)	: Up to 20 hours (with Alkaline batteries). Auto Shut-Off
Auto Shut-Off	: 3 minutes after switching on/ last reading.
Data Logger Memory Capacity	: 2000 readings (EdVel-1M)
Data Output Port	: RS232C: Serial PC and printer cables
Temperature Range	: 0/°C to +55/°C
Dimensions (L x W x D)	: 125 mm(H) x 65 mm (W) x 30 mm (D)
Weight	: 225 Grams including batteries

Instrument and probe specifications are subject to change without notice.

### PROBES

Probe Model	Nominal Freq.	Contact Dia. Approx.	Typical Application
DT-201	5 Mhz	10 mm	General Purpose
DT-212	10 Mhz	5 mm	General Purpose Miniature
DT-203	2 Mhz	20 mm	High Penetration

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