

# UMX-2

## Underwater Material & Coating Thickness Gauge



### HIGHLIGHTS:

- ▶ 1000 ft. (300m) depth rating.
- ▶ Probe types: Single Membrane & Dual Element.
- ▶ Automatic: Probe recognition and Zero.
- ▶ Measurement modes: Pulse-Echo, Pulse-Echo w/Coating, Echo-Echo, Triple-Echo (TCG).
- ▶ Data Storage: Alpha numeric and Sequential w/ID.
- ▶ Windows PC software included.
- ▶ 3 year limited warranty.

# UMX-2 SPECIFICATIONS

## Physical

### Size:

Length (9.0 in/229 mm)

Diameter (2.375 in/60.33 mm)

### Weight:

1.5 lbs (0.680kg) - with 3 AA batteries

### Keyboard:

Single button, magnetically coupled switch.

### Operating Temperature:

-20 to 140F (-29C to 60C)

### Underwater Case:

High strength transparent plastic housing. Depth rating of 1000 feet (300 meters).

### Data Output:

Bi-directional RS232 serial port, with USB converter. Windows® PC interface software.

### Display:

1/2in (12.7mm) 4.5 digit LCD display.

3/8in (9.5mm) 6 alpha LCD display.

Both displays backlit (on/off/auto).

**LED Lighting:** 8 blue leds (on/off).

## Ultrasonic Specifications

### Measurement Modes:

#### Dual Element Probes:

**Pulse-Echo (P-E):** Coating Off.

**Pulse-Echo Coating (PECT):** Coating On

**Echo-Echo (E-E):** Thru-Paint.

#### Single Element Probes:

**Triple-Echo (TCG):** Thru-Paint.

**Pulser:** Dual square wave pulsers.

#### Receiver:

Dual receivers - manual or AGC gain control with 110dB range.

**Manual Gain:** Limited to 5 gain settings (vlow, low, med, high, vhigh (42 to 50 dB).

**AGC:** Automatic gain setting.

#### Timing:

Precision 25 MHz TCXO with single shot 100 MHz 8 bit ultra low power digitizer.

## Power Source

Three 1.5V alkaline or 1.2V NiCad AA cells.

Typically operates for 50 hours on alkaline and 20 hours on NiCad (backlight off). 15 hours on alkaline and 8 hours on Nicad (backlight on).

Auto power off if idle 5 min.

Battery status displayed on power up.

## Measuring

**Pulse-Echo Mode (P-E)** - (Pit & Flaw Detection) measures from 0.025 to 19.999 inches (0.63 to 508 millimeters).

**Pulse-Echo Coating Mode (PECT)** - (Material, Coating, Pit & Flaw Detection): Material: 0.025 to 19.999 inches (0.63 to 508 millimeters). Coating: 0.001 to 0.100 inches (0.01 to 2.54 millimeters).

**Echo-Echo Mode (E-E)** - (Thru Paint & Coatings) measures from 0.100 to 4.0 inches (2.54 to 102 millimeters). Will vary based on coating.

**Triple-Echo (TCG)** - 0.040 to 6.00 (1 to 152 millimeters) inches in steel. Range will vary based on coating thickness, material type, and probe.

### Resolution:

+/- 0.001 inches (0.01 mm)

### Units:

English & Metric

### Velocity Range:

0.0492 to 0.5510 in/us

1250 to 13995 meters/sec

8 fixed and 1 programmable Material Velocities (in/us):

|                        |      |
|------------------------|------|
| 1. Aluminum 2024       | .251 |
| 2. Steel 4340          | .233 |
| 3. Stainless Steel 302 | .223 |
| 4. Iron                | .232 |
| 5. Cast Iron           | .180 |
| 6. PVC                 | .094 |
| 7. Polystyrene         | .092 |
| 8. Polyurethane        | .070 |
| 9. Custom              | User |

## Display

### Segmented Displays:

**4.5 Digit LCD** - Primary measurement display.

**6 Character LCD** - Displays menu options.

**Repeatability Bar Graph** - Bar graph indicates stability of reading.

## Data Logger

### File Formats:

Grid (alpha numeric)

Sequential (auto identifier)

**Programming:** Storage capacity of 1 file template. Size and dimension specified by the user.

**Storage capacity:** 5,000 readings, settings, and waveform graphics.

### Memory:

32 megabit non-volatile ram.

## Transducer

**Auto Probe Zero:** Applies to dual element probes only.

### Transducer Types:

**Dual Element:** 1 to 10 MHz frequency range. Custom auto recognition probes. (flaw & pit detection).

**Single Element:** 1 to 10 MHz frequency range. (General purpose).

LEMO underwater connectors.

Standard 4 foot cable.

Custom transducers and cable lengths available for special applications.

## Certification

Factory calibration traceable to national standards.

IP68 rating

## Warranty

3 year limited



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