



# UM-1 Series Technical Specifications

## Product Introduction

UM-1 series ultrasonic thickness gauge has extremely high measurement performance with a high reading stability and accuracy.

We first introduced the penetration coating technology in 2006. UM-1D has this special function, which can directly measure the thickness of the substrate without removing the coating such as paint layer, plastic coating, etc. This function is achieved by measuring two consecutive bottom echoes of the substrate, it has advantages of no zero point calibration, high stability of the indication, and zero drift.

| Technical parameter                  |  |
|--------------------------------------|--|
| Display Type                         | 128×64 dot-matrix LCD screen with EL backlight   |
| Operating Principle                  | P-E (pulse-echo) , E-E (echo-echo) with dual-crystal probes (Only UM-1D)   |
| Measuring Range In Standard Mode     | 0.8mm to 300mm, depending on material and probe  |
| Measuring Range In Thru Coating Mode | 3mm-20mm with PT-08 probe (Only UM-1D)   |
| Measuring Limits of Tube (Steel)     | Φ20mm×3.0mm(PT-08 probe)<br>Φ15mm×2.0mm(PT-06 probe) The measuring error is up to ±0.1mm                               |
| Measuring Error                      | Low limit to 10mm: ±0.1mm 10mm to high limit: ± (1%H+0.1) mm<br>Note: H is the actual thickness of the measured object |
| Repeatability                        | 0.1mm  |
| Resolution                           | 0.1mm,0.001 inch   |
| Units                                | Inch or Millimeter   |
| Calibration Method                   | Zero calibration,Two-point calibration   |
| V-Path Correction                    | Automatic  |
| Update Rate                          | 4Hz  |
| Velocity Range                       | 1000 ~ 9999 m/s (0.0394 to 0.3937in/us)  |
| Memory Function                      | 500 readings can be stored in 5 groups   |
| Minimum Value Checking               | Move the probe along the surface of the testing piece, the gauge is able to find the thinnest point automatically.     |
| Warning Function                     | If the measured value exceeds the pre-set limit, the warning tone will be start.                                       |
| Velocity Storage                     | Totally 5 different materials velocities can be stored   |
| Languages                            | English and Chinese  |
| Communication Port                   | USB port or Serial RS 232 port (Optional)  |
| Application Software                 | UmView Software for transmission,storage,analysis and documents editing (Optional)                                     |
| Power Source                         | Two 1.5V AA alkaline batteries(Warning with low battery voltage)   |
| Operating Time                       | Up to 200 hours with alkaline batteries (without backlight)  |
| Instrument Shut-off                  | AUTO OFF after 5 minutes of inactivity   |
| Operating Temperature                | -10° C to +50° C , -20° C in special requirements  |
| Dimensions                           | 149mm X 73mm X 32mm(H X W X D)   |
| Weight                               | 210g including batteries   |

## Optional Accessories

|                        |                      |                         |                 |  |
|------------------------|----------------------|-------------------------|-----------------|--|
| High Temperature Probe | Cast Iron Probe      | Small Tube Probe        | Fingertip Probe | Probe Cable                            |
| Step Calibration Block | Application Software | Data Transmission Cable | Rubber Sheath   | Couplant and High Temperature Couplant |