

## eThick-640

Electromagnetic Ultrasonic Thickness Gauge



### Contact us

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## Feature and Application

The eThick-640 Electromagnetic Ultrasonic Thickness Gauge is a super - compact instrument that requires no couplant and enables non - contact measurement. It can measure the thickness of metallic substances at normal and high temperatures. It supports the use of high - temperature probes and small - aperture probes to meet different measurement requirements, and is applicable to titanium, aluminum, copper, stainless steel, alloy steel, carbon steel, cast steel, etc.

### Product Feature

- Support A - Scan Waveform Thickness Measurement.
- Ergonomically optimized design, compact structure, ultra - small size, easy to carry, and comfortable to hold.
- Precise thickness measurement, capable of penetrating coatings. No couplant is required, and there is no need to polish the workpiece surface. The presence of paint, cladding, unevenness, etc. on the surface to be inspected is allowed.
- The instrument has multiple material sound velocities pre - stored internally. Meanwhile, material sound velocities can be dynamically added and deleted. The sound velocity calibration is equipped with a temperature compensation function to improve measurement accuracy.
- High - definition LCD black - and - white screen display, suitable for measurement environments under various lighting conditions.

### Product Application

- Petrochemical industry: High-temperature pipeline inspection, non-contact thickness measurement without couplant, suitable for 800°C high-temperature working conditions and coated pipe walls.
- Shipbuilding: Thickness detection of hull steel plates, no polishing for rough surfaces, fast batch measurement of large-area plates.
- Power industry: Thickness measurement of boilers and pressure vessels, stable measurement in high-temperature environments to ensure safe operation of pressure equipment
- Rail transit: Inspection of steel rails and vehicle metal parts, portable all-in-one design for fast and accurate on-site thickness data acquisition
- Machinery manufacturing: Thickness measurement of castings and forgings, compatible with various metal materials, meeting measurement needs of both thin parts and thick plates.
- Steel structure construction: Thickness verification of building components, non-contact measurement without damaging workpieces, improving inspection efficiency.



## Product Details



**1.LCD Black and White Screen**

**4.Set Key**

**5.Up Key**

**2.Indicator Light**

**6.Down Key**

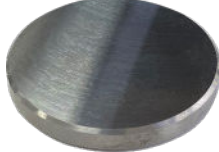
**3.Switch Key**

**7.Safety lanyard**

# Technical Specification

|                              |                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Sampling</b>              | 80MSPS                                                                                                                    |
| <b>Bandwidth</b>             | 2.5MHz~6MHz                                                                                                               |
| <b>Transmit</b>              | ±600V_400Hz_125ns                                                                                                         |
| <b>Gain</b>                  | Automatic 0 - 96 dB, step interval 1 dB                                                                                   |
| <b>Measurement Accuracy</b>  | ±0.01mm                                                                                                                   |
| <b>Sound Speed Range</b>     | 400~9999 m/s                                                                                                              |
| <b>Effective Range</b>       | 1.0~640mm                                                                                                                 |
| <b>Averaging Level</b>       | Three adjustable levels: L, M, H                                                                                          |
| <b>Lift-off Distance</b>     | 5mm (Aluminum), 4mm (Carbon Steel), 3mm (Stainless Steel)                                                                 |
| <b>Measurement Materials</b> | Metallic materials like aluminum, copper, iron, carbon steel, cast steel, alloy steel, stainless steel and titanium alloy |
| <b>Measurement Mode</b>      | Single echo (I-E), Double echo (E-E)                                                                                      |
| <b>Auxiliary Functions</b>   | Auto Freeze, Auto Gain, Auto Sleep, Metric - Imperial Switch, Sound Speed Saving, Backlight Adjustment                    |
| <b>Correction Function</b>   | Sound Speed Calibration, Zero - point Calibration, High - temperature Compensation                                        |
| <b>Communication</b>         | RS-485 or USB 2.0                                                                                                         |
| <b>Charger</b>               | 5V 2A, standard Type-C interface                                                                                          |
| <b>Display Screen</b>        | 1.47-inch 320×172 IPS LCD                                                                                                 |
| <b>Dimension</b>             | 178.4mm*42mm*32mm                                                                                                         |
| <b>Battery Life</b>          | 3.7 V 3400 mAh lithium battery, 6 hours of endurance                                                                      |
| <b>Net Weight</b>            | Metal housing: 358 g; Injection-molded housing: 255 g; Injection-molded + quick release: 289 g                            |

## Standard Delivery

| Name                      | Qty   | Photo                                                                                 |
|---------------------------|-------|---------------------------------------------------------------------------------------|
| Main Unit                 | 1pc   |    |
| USB Charger               | 1pc   |    |
| Charging Cable            | 1pc   |   |
| Test Block (Iron)         | 1pc   |  |
| Test Block (Aluminum)     | 1pc   |  |
| Instrument Case           | 1pc   |  |
| Certificate of Conformity | 1copy |  |
| Instruction Manual        | 1copy |  |

## Optional Delivery

| Name                   | Remark                 | Photo                                                                                 |
|------------------------|------------------------|---------------------------------------------------------------------------------------|
| Small-bore Probe       | 4MHz, $\Phi$ 13mm*36mm |    |
| Large-bore Probe       | 4MHz, $\Phi$ 40mm*60mm |    |
| High-temperature Probe | 4MHz, $\Phi$ 33mm*40mm |  |

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