Cygnus 1 Intrinsically Safe

**Multiple ECHO Ultrasonic Digital Thickness Gauge**

Measures metal thickness to determine wastage or corrosion – accurately, quickly and without removing protective coatings.
With multiple echo, readings are taken by measuring the time delay between any three consecutive backwall echoes. The time of \( T_1 \) (coating thickness) is ignored. The times of \( T_2 \) and \( T_3 \) are equal to the time that it takes to travel through the metal. Only by looking at three echoes can the measurements be automatically verified (where \( T_2 = T_3 \)).

**Benefits of Cygnus Multiple Echo**

- Measures remaining metal thickness on corroded and coated structures
- All measurements are error checked using 3 return echoes to give repeatable, reliable results
- Accepted by all major classification societies
- Greatly reduces inspection time and costs
- Echo strength indicator to aid measurement

**Applications**

Maintenance and safety checks of metal thickness for:

- Chemical plants
- Petroleum, chemical storage tanks
- Oil and gas production facilities such as pipelines and offshore platforms
- Dry, dusty environments where ignition could occur
- LPG vessels
- Road transport tankers carrying potentially explosive contents
- Grain processing plants
- Fuel depots
- Processing vessels
- Structures and facilities in mines NEW!

**Kit contents**

Instrument, heavy duty remote 2.25 MHz x 13 mm diameter probe, nose cone, tommy bar, probe locking ring key, 2 rechargeable batteries, battery charger, 2 membranes, membrane couplant, O rings, steel test block, calibration jumper lead, calibration trim tool, hex key, ultrasonic couplant, operation manual and carry case.

**Specification**

**Materials**

Sound velocities between 2000 m/s and 7000 m/s – covers virtually all common engineering materials

**Measurement Range in steel**

- 3 mm – 250 mm with 2.25 MHz probe
- 2 mm – 150 mm with 3.5 MHz probe
- 1 mm – 50 mm with 5 MHz probe

**Accuracy**

\( \pm 0.1 \) mm or \( \pm 0.05 \) mm (selectable)

**Resolution**

\( 0.1 \) mm or \( 0.05 \) mm (selectable)

**Probes**

- Single crystal soft-faced compression.
- 6 mm – 5 MHz
- 13 mm – 2.25, 3.5 or 5 MHz
- 19 mm – 2.25 MHz

(Lower frequency probes offer better penetration on heavy corrosion/coatings)

**Power**

NiMH rechargeable battery pack

**Battery life**

10 hours' continuous operation

**Display**

Large, bright LED display

**Size**

235 mm x 75 mm

**Weight**

1040 gm - with remote probe

940 gm - with fixed head probe

(Including batteries)

**Operating Temp**

-10°C to +50°C

**Environmental Protection**

IPX5 and IPX7

**Compliance**

CE, British Standard BS EN 15317:2007

(Specification for the characterisation and verification of ultrasonic thickness measuring equipment)

**Environmental**

WEEE compliant

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**Primary Features**
- Certified Intrinsically Safe to: II 1 G Ex ia IIC T6 Ga
- CSA Class 1 Group A, B, C & D Division 1 NEW!
- For use in Zone 0, Zone 1 hazardous areas
- Also approved for use in MINES NEW!
- No plant shutdown or hot work permit necessary
- Heavy duty sealed unit - IPX5 and IPX7 rated
- Rugged, durable, shock-proof construction
- Stable calibration - linear accuracy - no zero adjustment
- Self verification of the measurements to ensure accuracy
- Bright LED display with polarised filter
- Two rechargeable battery packs with charger
- Displays sound velocity settings
- Echo strength indicator to aid measurement
- Various probe options
- Right angle probe is available for use in areas of restricted access
- Probe frequency selectable
- Metric / Imperial switchable
- Low battery warning

**New!**
Structures and facilities in mines
Processing vessels
Applications
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