Cygnus Instruments

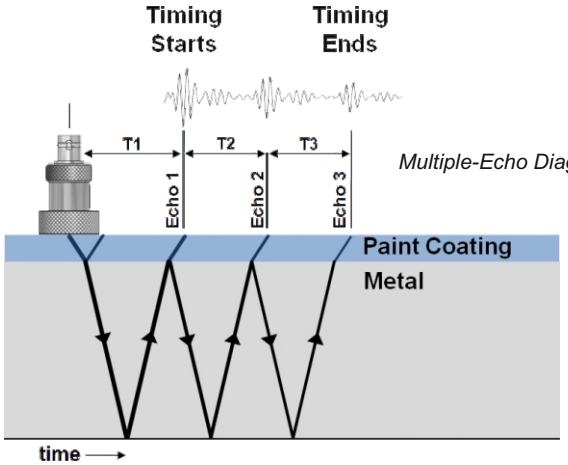
Cygnus 1 Intrinsically Safe Ultrasonic Thickness Gauge

KEY FEATURES

- Certified Intrinsically Safe to:
  ATEX
  {Ex} I M 1 Ex ia I Ma (Ta = 0 to 45 C)
  {Ex} II 1 G Ex ia IIC T6 Ga (Ta = -20 to 40 C)
  CSA Class 1 Group A, B, C & D Division 1
  IECEx Ex ia IIC T2/T3/T6 Ga
  Ex ia I Ma
- For use in Zone 0, Zone 1 hazardous areas
- Also approved for use in MINES
- No plant shutdown or hot work permit necessary
- Heavy duty sealed unit - IPX5
- 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.

BENEFITS OF 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.



Multiple-Echo Diagram

With Multiple-Echo, readings are taken by measuring the time delay between any three consecutive backwall echos. The time of T1 (coating thickness) is ignored. The times of T2 and T3 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 T2 = T3).

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
- ...plus many more.

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KIT CONTENTS

Cygnus 1 ultrasonic thickness gauge; heavy duty remote 2.25 MHz x 13 mm (½") diameter probe; nose cone tommy bar; probe locking ring key; 2 rechargeable batteries; battery charger; spare membranes; membrane couplant; O rings; steel test block; calibration jumper lead; calibration trim tool; hex key; ultrasonic couplant; operation manual and carry case.

SPECIFICATION

Gauge	Cygnus 1 Intrinsically Safe
Materials	Sound velocities from 2,000 - 7,000 m/s (0.059 - 0.31 in/us) - covers virtually all common engineering materials
Accuracy	±0.1 mm (±0.004 inch) or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure
Resolution	0.1 mm (0.005 inch) or 0.05 mm (0.002 inch)
Probe Diameters and Frequencies	6 mm (0.25 inch) - 5 MHz 13 mm (0.5 inch) - 2.25, 3.5 or 5 MHz 19 mm (0.75 inch) - 2.25 MHz (lower frequency probes offer better penetration on heavy corrosion / coatings)
Measurement Range in Steel	3 - 250 mm (0.110 - 9.995 inch) with 2.25 MHz probe 2 - 150 mm (0.065 - 6.000 inch) with 3.5 MHz probe 1 - 50 mm (0.045 - 4.000 inch) with 5 MHz probe
Power	NiMH rechargeable battery pack
Battery Life	12 hours continuous operation
Display	Large, bright LED display
Size	235 x 75 mm (9.252 x 3 inch)
Weight	1,040 grams (34.7 oz.) with remote probe (inc. batteries)
Operating Temp.	-10°C to 50°C (14°F to 122°F)
Certification	ATEX {Ex} I M 1 Ex ia I Ma (Ta = 0 to 45 C) {Ex} II 1 G Ex ia IIC T6 Ga (Ta = -20 to 40 C) CSA Class 1 Group A, B, C & D Division 1 IECEx Ex ia IIC T2/T3/T6 Ga Ex ia I Ma
Environmental Protection	IPX5
Standards	Designed for EN 15317
Warranty	3 years on gauge and 6 months on probes

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