

RELIABLE ULTRASONIC MEASUREMENT







CYGNUS SURFACE RANGE

ULTRASONIC THICKNESS GAUGES















STORAGE CIVIL SHIP TANKS ENGINEERING SURVEYS







CYGNUS INSTRUMENTS WHO WE ARE

Trusted by engineers and inspectors worldwide since 1983, Cygnus manufactures truly reliable ultrasonic measurement equipment to suit a broad spectrum of user needs across

Always taking an applicationdriven approach, Cygnus has designed its range of surface gauges for ease-of-use, accuracy and with practical functionalities.

Cygnus gauges are renowned for their durability. As such, Cygnus service centres are strategically placed across the globe to provide professional and efficient service throughout the 3-year warranty period and beyond.





INTRODUCING **THE CYGNUS SURFACE RANGE**

Cygnus 1 Intrinsically Safe measures wall thickness through coatings and is certified intrinsically safe for use in Zone 0 & Zone 1 hazardous areas.









Cygnus Mk5 Range consists of 2 base models for simple, accurate measurement through coatings; and 3 PLUS models with advanced features and additional measuring modes for extreme corrosion and extensive applications.

ACCURACY

Cygnus-Pioneered Multiple Echo Technique uses three return echoes to give a truly accurate, error-checked metal thickness measurement - ignoring coatings up to 20mm (0.8"). Accepted by all major Classification Societies.

Cygnus' Measurement Stability Indicator (MSI™) helps verify stable and reliable measurements in Single-Echo and Echo-Echo modes.

SIMPLE TO USE

With intuitive menus on a large front or bright end display, Cygnus gauges are easy to navigate and can be worn on wrist, neck, or belt - enabling efficient, hands-free operations. Auto-Log and min/max Limit & Alert features further enhance the convenience.

HIGHLY DURABLE

Rated to IP67 and the stringent US Military Standards 810G, the MK5 range is dust-tight, water-resistant and offers maximum impact protection against accidental drops and knocks. Supplied with a 3-year warranty.

VERSATILE

Three measuring modes to suit levels of corrosion, various materials and applications.

Multiple-Echo mode uses three error checked back wall echoes to provide the most reliable and accurate remaining thickness measurements, with no need to remove coatings (up to 20mm/0.8 in thick).

Single-Echo mode is ideal for measuring uncoated metals with heavy front and/or back-wall corrosion. Also effective on a range of cast metals, plastics and composites.

Echo-Echo mode works best for measuring heavily corroded metals through thin coatings of up to 1mm/0.04in thick, ideal for measuring painted metals with heavy back wall corrosion.

VARIETY OF PROBES

For different material thickness and various materials - coated or uncoated.





Single Crystal probes Twin Crystal probes

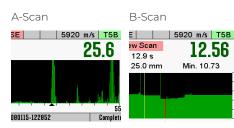
DATA LOGGING FACILITIES

To assist with recording, reporting and further analysis on a computer using CygLink (Windows-based software).



A-SCAN & B-SCAN

To allow users to verify measurements visually in a real-time graphical display.











PRODUCT

- For use in Zone 0, Zone 1 hazardous areas
- · No plant shutdown or hot work permit necessary
- Approved for use in mines
- Stable calibration no zero adjustment
- Two rechargeable battery packs with charger
- Echo strength indicator to aid measurement
- Metric / imperial switchable
- Stable calibration, linear accuracy, no zero adjustment
- Self-verification of the measurements to ensure maximum accuracy
- Two rechargeable battery packs with charger
- Displays sound velocity settings

APPLICATIONS

Ideal for chemical plants, oil and gas production infrastructure and pipelines, storage tanks, dry dust environments, LPG vessels, mines, road tankers, grain processing plants, fuel depots and many more.









MULTIPLE PROBE OPTIONS **AVAILABLE**



HEAVY-DUTY SEALED UNIT IP65 RATED



RUGGED, DURABLE. SHOCK-PROOF CONSTRUCTION





Feature	Description	
Measuring Mode	Multiple-Echo using 3 echoes to ignore coatings	
Materials	, ,	and 0.31 in/us) - covers virtually all common
Accuracy	±0.1mm (±0.004") or 0.1% of thickness m calibrated in accordance with Cygnus Ir	neasurement, whichever is greatest, when instruments calibration procedure
Resolution	0.1mm (0.004") or 0.05mm (0.002") (selectable)	
Probe Options	Single crystal probes	
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) depending and configuration, material and tempe	
Power	NiMH rechargeable battery pack	
Battery Life	12 hours' continuous operation	
Display	Bright LED display	
Size	235 x 75mm (9.252" x 3.000") (H x W)	
Weight	910g (32 oz) with remote probe (inc. bat	teries)
Operating Temp.	-10°C to +50°C (14°F to 122°F)	
Certification	ATEX II 1 G Ex ia IIC T6 Ga (Tamb = -20°C to 40°C) I M 1 Ex ia I Ma (Tamb = 0°C to 45°C) Certificate No. BASOOATEX1108 UKEX II 1 G Ex ia IIC T6 Ga	IECEX Ex ia IIC T6 Ga (Tamb = -20°C to 40°C) Ex ia I Ma (Tamb = 0°C to 45°C) Certificate No. IECEx BAS 19.0021 CSA Class 1 Group A, B, C, D Division 1
	(Tamb = -20°C to 40°C) M Ex ia Ma (Tamb = 0°C to 45°C) Certificate No. BAS21UKEX0661	CA &
Environmental Protection	IP65	
Standards	Designed for EN 15317	
Warranty	3 years on gauge and 6 months on prob	pe







- Multiple-Echo mode for accurate, through-coat measurements as specified by Classification Societies.
- · Hands free operation: wrist, waist belt and harness mountable
- Deep Coat function ignores coatings up to 20mm thick
- Simple, one-point calibration no zeroing required
- End-mounted rotatable LCD display for convenient hands-free operation
- · Intuitive easy to use menu
- Extremely rugged enclosure shock and impact proof to US MIL STD 810G
- Environmental sealing (water and dust proof) to IP67 - US MIL STD 810G

APPLICATIONS

Ideal for ship surveys and hull UTM inspections, and structural integrity inspection via rope access or climbing.













SHOCK/ **IMPACT PROOF** TO US MIL STD 810G

WATER & DUST **TIGHT IP67** HOUSING

END-**MOUNTED** ROTATABLE LCD DISPLAY

USE WITH SINGLE CRYSTAL **PROBES**

SPECIFICATION



Feature	Description
Materials	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)
Accuracy	± 0.05 mm ($\pm 0.002"$) - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on. ± 0.1 mm ($\pm 0.004"$) or 0.1% of thickness measurement whichever is the greatest - in Single-Echo & Echo-Echo measurement modes, when calibrated and measuring the same material as calibrated on.
Resolution	0.1 mm (0.005") or 0.05 mm (0.002")
Probe Options	Single crystal probes
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) depending on selected probe and configuration, material and temperature
Connector	1 x Lemo 1
Power	3 x AA batteries
Battery Life	10 hours minimum
Electronics	Dual channel pulser
Display	End-Mounted LCD (rotatable)
Size	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")
Weight	300g (10.5 oz.) (inc. batteries)
Operating Temp.	-10°C to 50°C (14°F - 122°F)
Environmental Rating	IP67 MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis) MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)
Standards	Designed for EN 15317
Compliance	CE, UKCA, RoHS
Warranty	3 years on gauge and 6 months on probe

PRODUCT PAGE







CYGNUS 4 GENERAL PURPOSE KEY FEATURES





• Multiple-Echo mode for accurate, through-coat measurements as specified by Classification Societies

- Deep Coat function ignores coatings up to 20 mm thick
- Min/Max measurement limit functions
- Visual & vibrate alert
- Simple, one-point calibration no zeroing required
- · Intuitive easy to use menu
- Large and bright front colour LCD display
- Extremely rugged enclosure shock and impact proof to US MIL STD 810G
- Environmental sealing (water and dust proof) to IP67 - US MIL STD 810GG

APPLICATIONS

Ideal for plant maintenance, civil engineering, oil and gas, storage tanks, shipping and marine inspections



ALERT







SHOCK/

IMPACT

PROOF TO US MIL STD 810G

WATER & DUST **TIGHT IP67** HOUSING

Feature	Description	
Materials	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)	
Accuracy	±0.05 mm (±0.002") - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on. ±0.1 mm (±0.004") or 0.1% of thickness measurement whichever is the greatest - in Single-Echo & Echo-Echo measurement modes, when calibrated and measuring the same material as calibrated on.	
Resolution	0.1 mm (0.005") or 0.05 mm (0.002")	
Probe Options	Single crystal probes	
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) depending on selected probe and configuration, material and temperature	
Connector	1 x Lemo 1	
Power	3 x AA batteries	
Battery Life	10 hours minimum	
Electronics	Dual channel pulser	
Display	2.4" quarter VGA LCD	
Size	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")	
Weight	300g (10.5 oz.) (inc. batteries)	
Operating Temp.	-10°C to 50°C (14°F - 122°F)	
Environmental Rating	IP67 MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)	
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis) MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)	
Standards	Designed for EN 15317	
Compliance	CE, UKCA, RoHS	
Warranty	3 years on gauge and 6 months on probe	



CYGNUS 2+ HANDS-FREE KEY FEATURES







- Echo-Echo and Single-Echo modes for heavily corroded metals with a thin or no coating
- Hands free operation: wrist, waist belt and harness
- Deep Coat function ignores coatings up to 20 mm thick
- MSI™ (Measurement Stability Indicator) verifies stable, reliable readings
- · Intuitive easy to use menu

APPLICATIONS

Ideal for ship surveys and hull UTM inspections, structural integrity inspection via rope access or climbing, heavily corroded metals with front/back wall pitting, irregular geometric shapes, attenuative materials, plastics, e.g. pipes and dredge pipes



SHOCK/ IMPACT PROOF TO US MIL STD 810G



WATER & END-MOUNTED **TIGHT IP67** ROTATABLE HOUSING DISPLAY

DUST



USE WITH SINGLE & TWIN CRYSTAL **PROBES**





Feature	Description	
Measuring Modes	Multiple-Echo using 3 echoes to ignore coatings up to 20 mm thick Echo-Echo using 2 echoes to ignore coatings up 1 mm thick Single-Echo using 1 echo	
Materials	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)	
Accuracy	±0.05 mm (±0.002") - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on. ±0.1 mm (±0.004") or 0.1% of thickness measurement whichever is the greatest - in Single-Echo & Echo-Echo measurement modes, when calibrated and measuring the same material as calibrated on.	
Resolution	Multiple-Echo mode - 0.1 mm (0.005") or 0.05 mm (0.002") Single-Echo and Echo-Echo modes - 0.1 mm (0.005") or 0.01 mm (0.001")	
Probe Options	Single crystal probes and Twin crystal probes	
Measurement Range in Steel	0.8 – 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature	
Connector	Twin Lemo 00	
Power	3 x AA batteries	
Battery Life	10 hours minimum	
Electronics	Dual channel pulser	
Display	Cygnus 2+: End-Mounted LCD (rotatable)	
Size	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")	
Weight	300g (10.5 oz.) (inc. batteries)	
Operating Temp.	-10°C to 50°C (14°F - 122°F)	
Environmental Rating	IP67 MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)	
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis) MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)	
Standards	Designed for EN 15317	
Compliance	CE, UKCA, RoHS	
Warranty	3 years on gauge and 6 months on probe	





CYGNUS 4+ **GENERAL PURPOSE KEY FEATURES**





PRODUCT

- Multiple-Echo mode for accurate, through-coat measurements as specified by Classification Societies
- Echo-Echo and Single-Echo modes for heavily corroded metals with a thin or no coating
- · Sequential data logging, records saved on SD card
- Add comments to any measurement point
- Deep Coat function ignores coatings up to 20 mm thick
- Manual & automatic gain control
- Min/max measurement limit functions with visual & vibrate alert
- MSI™ (Measurement Stability Indicator) verifies stable, reliable readings
- Available with Cygnus High Temperature probe for measurement on hot surfaces

APPLICATIONS

Ideal for plant maintenance, civil engineering, marine structures, ship surveys, oil and gas facilities, offshore platforms and windfarms, rail infrastructure, metals protected by thick/special coatings









DATA

WITH



MIN/MAX **LIMIT** AND ALERT **FUNCTIONS**

LIVE A-SCAN FOR FURTHER VERIFICATION

LOGGING AUTO-LOG

USE WITH SINGLE & TWIN CRYSTAL **PROBES**

Feature	Description	
Measuring Modes	Multiple-Echo using 3 echoes to ignore coatings up to 20mm thick Echo-Echo using 2 echoes to ignore coatings up 1mm thick Single-Echo using 1 echo	
Materials	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)	
Accuracy	±0.05 mm (±0.002") - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on. ±0.1 mm (±0.004") or 0.1% of thickness measurement whichever is the greatest - in Single-Echo & Echo-Echo measurement modes, when calibrated and measuring the same material as calibrated on.	
Resolution	Multiple-Echo mode - 0.1 mm (0.005") or 0.05 mm (0.002") Single-Echo and Echo-Echo modes - 0.1 mm (0.005") or 0.01 mm (0.001")	
Probe Options	Single Crystal probes, Twin Crystal probes and High Temp probe	
Measurement Range in Steel	0.8 – 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature	
Connector	Twin Lemo 00	
Power	3 x AA batteries	
Battery Life	10 hours minimum	
Electronics	Dual channel pulser	
Display	2.4" quarter VGA LCD	
Size	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")	
Weight	300g (10.5 oz.) (inc. batteries)	
Operating Temp.	-10°C to 50°C (14°F - 122°F)	
Data Logging	5000 measurements and A-scans per record. Max number records: 100	
Computer Software	CygLink allows remote logging and viewing of A-scan graphs Survey and report generation to PDF file Graphic analysis of data and statistical calculations	
Environmental Rating	IP67 Safe operation in Explosive Atmospheres: Class I, Division 2, Group D Locations only, as defined in the National Fire Protection Association Code (NFPA 70), Article 500. Tested using MIL-STD-810G, Method 511.5, Procedure I MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)	
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis) MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)	
Standards	Designed for EN 15317	
Compliance	CE, UKCA, RoHS	
Warranty	3 years on gauge and 6 months on probe	

^{*}except high temperature measurements





CYGNUS 6+ PRO KEY FEATURES





PRODUCT

- Multiple-Echo mode for accurate, through-coat measurements as specified by Classification Societies
- Echo-Echo and Single-Echo modes for heavily corroded metals with a thin or no coating
- Comprehensive data logging: linear, grid and template
- Radial Points allow immediate further investigation around defect areas
- MSI™ (Measurement Stability Indicator) verifies stable, reliable readings
- Deep Coat function ignores coatings up to 20 mm thick
- Manual & automatic gain control
- Min/max measurement limit functions with visual and vibrate alert
- Temperature Compensation for hot surfaces
- Used with Cygnus High Temperature probe for hightemperature measurement

APPLICATIONS

Ideal for plant maintenance, civil engineering, marine structures, ship inspections, oil and gas facilities, offshore platforms and windfarms, rail infrastructure, metals protected by thick/special coatings



ADVANCED





DUAL LCD ROLLING LIVE A-SCAN DATA LOGGING DISPLAY -**B-SCAN** WITH FOR FURTHER WITH RADIAL FRONT & END AUTO START/ VERIFICATION POINTS MOUNTED STOP

Feature	Description	
Measuring Modes	Multiple-Echo using 3 echoes to ignore coatings up to 20mm thick. Echo-Echo using 2 echoes to ignore coatings up 1mm thick. Single-Echo using 1 echo	
Materials	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)	
Accuracy	±0.05 mm (±0.002") - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on. ±0.1 mm (±0.004") or 0.1% of thickness measurement whichever is the greatest - in Single-Echo & Echo-Echo measurement modes, when calibrated and measuring the same material as calibrated on.	
Resolution	Multiple-Echo mode - 0.1 mm (0.005") or 0.05 mm (0.002") Single-Echo and Echo-Echo modes - 0.1 mm (0.005") or 0.01 mm (0.001")	
Probe Options	Single Crystal probes, Twin Crystal probes and High Temp probe	
Measurement Range in Steel	0.8-250 mm (0.031 in. -10 in.) depending on selected probe and configuration, material and temperature	
Connector	Twin Lemo 00	
Power	3 x AA batteries	
Battery Life	10 hours minimum	
Electronics	Dual channel pulser	
Display	2.4" quarter VGA LCD and end-mounted LCD (rotatable)	
Display Info.	Thickness value, A-scan and B-scan	
Size	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")	
Weight	300g (10.5 oz.) (inc. batteries)	
Operating Temp.	-10°C to 50°C (14°F - 122°F)	
Data Logging	5000 measurements and A-scans per record. Max number records: 100	
Computer Software	CygLink allows remote logging and viewing of A-scan graphs Survey and report generation to PDF file Graphic analysis of data and statistical calculations	
Environmental Rating	IP67 Safe operation in Explosive Atmospheres: Class I, Division 2, Group D Locations only, as defined in the National Fire Protection Association Code (NFPA 70), Article 500. Tested using MIL-STD-810G, Method 511.5, Procedure I MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)	
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)	
Standards	Designed for EN 15317	
Compliance	CE, UKCA, RoHS	
Warranty	3 years on gauge and 6 months on probes	

^{*}except high temperature measurements



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