

CYGNUS



## **ULTRASONIC THICKNESS GAUGES**



GAS



STRUCTURES







CIVIL SHIP ENGINEERING SURVEYS

SHIP

15.0

IDEAL FOR USE IN

0.0I

10.0



YGNUS 1



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# **CYGNUS INSTRUMENTS** WHO WE ARE

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

Always taking an application- driven 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.

IEC IECEx @ @ 🕞

Cygnus Mk5 Range consists of 2 base models for simple, accurate measurement throuah coatings: and 3 PLUS models with advanced features and additional measuringmodes 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<sup>™</sup>) 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).

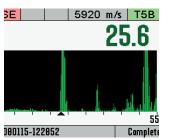


# **A-SCAN & B-SCAN**

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

B-Scan

A-Scan



5920 m/s   T5B
12.56
12.00
Min. 10.73
-
-
-

## **CYGNUS 1 INTRINSICALLY SAFE**



# **CYGNUS 1 INTRINSICALLY** SAFE



## **CERTIFIED** INTRINSICALLY SAFE TO:

## ATEX

{Ex} II 1 G Ex ia IIC T6 Ga  $(Tamb = -20^{\circ}C to 40^{\circ}C)$ {Ex] M ] Ex ia I Ma CSA Class 1 Group A, B, C & D Division 1

IECEx Ex ia IIC T2/T3/T6 Ga Ex ia I Ma



The Cygnus 1 Intrinsically Safe is a simple and tough ultrasonic thickness gauge for safely measuring remaining metal hazardous/potentially thickness in explosive atmospheres. The gauge employs the Multiple-Echo technique to give accurate, self-verified measurements without removing protective coatings.

# **KEY FEATURES**

- 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.



## **SPECIFICATION**

Feature	Description
Measuring Mode	Multiple-Echo using 3 echoes to
Materials	Velocities from 2000 - 7000 m/s engineering materials
Accuracy	±0.1mm (±0.004") or 0.1% of thick calibrated in accordance with Cy
Resolution	0.1mm (0.004") or 0.05mm (0.002
Probe Options	Single crystal probes
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) dep and configuration, material and
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
Weight	910g (32 oz) with remote probe (i
Operating Temp.	-10°C to +50°C (14°F to 122°F)
Certification	ATEX {Ex}    1 G Ex ia   C T6 Ga (Tamb = - {Ex}   M 1 Ex ia   Ma (Tamb = 0°C to
	IECEx Ex ia IIC T6 Ga Ex ia I Ma
	CSA Class 1 Group A, B, C, D Division 1
Environmental Protection	IP65
Standards	Designed for EN 15317
Warranty	3 years on gauge and 6 months of

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ignore coatings
(0.059 and 0.31 in/us) - covers virtually all common
ness measurement, whichever is greatest, when ygnus Instruments calibration procedure
2") (selectable)

pending on selected probe temperature

×W)

(inc. batteries)

-20°C to 40°C) to 45°C)



# **CYGNUS 2 HANDS-FREE**



The Cygnus 2 Hands-Free uses the Multiple-Echo technique to reliably measure metal thickness through coatings. The gauge is small and lightweight, yet very rugged and extremely

simple to operate with its intuitive menu.

# **KEY FEATURES**

- 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.



## **SPECIFICATION**

Feature	Description
Materials	Velocities from 1,000 - 9,000 m/s
Accuracy	±0.05 mm (±0.002") - in Multiple- measuring the same material as ±0.1 mm (±0.004") or 0.1% of thick Single-Echo & Echo-Echo measu same material as calibrated on.
Resolution	0.1 mm (0.005") or 0.05 mm (0.00
Probe Options	Single crystal probes
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) depe and configuration, material and t
Connector	l x Lemo l
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 :
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 MIL STD 810G Method 502.6 (low MIL STD 810G Method 507.6 (hum MIL STD 810G Method 512.6 (imm
Shock and Impact	MIL STD 810G Method 514.7 (vibra MIL STD 810G Method 516.7 (shoc sine shock pulse, 40g 11ms in eac MIL STD 810G Method 516.7 (26 d
Standards	Designed for EN 15317
Compliance	CE, UKCA, RoHS
Warranty	3 years on gauge and 6 months c

; (0.0390 - 0.3543 in/us)

Echo measurement mode, when calibrated and calibrated on.

kness measurement whichever is the greatest - in rement modes, when calibrated and measuring the

D2")

ending on selected probe temperature

x D) (3.3" x 5.1" x 1.4")

n temp +55°C (131°F)) temp -20°C (-4°F)) nidity 95%) nersion - 1 metre for 30 mins)

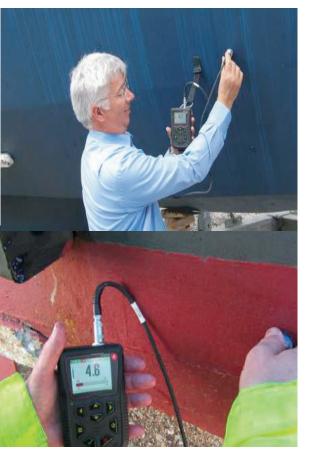
ration - 1 hour each axis) ck 20g - 11ms half ch axis) drops - transit drop 1.22 m)

## **CYGNUS 4 GENERAL PURPOSE**



The Cygnus 4 General Purpose thickness gauge uses the Multiple- Echo technique to accurately measure metal thickness without removing protective coatings. This compact gauge is light but tough and truly simple to use with its intuitive menu.

# **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



## **SPECIFICATION**

Feature	Description
Materials	Velocities from 1,000 - 9,000 m/s
Accuracy	±0.05 mm (±0.002") - in Multiple- measuring the same material as ±0.1 mm (±0.004") or 0.1% of thick Single-Echo & Echo-Echo measu same material as calibrated on.
Resolution	0.1 mm (0.005") or 0.05 mm (0.00
Probe Options	Single crystal probes
Measurement Range in Steel	1 – 250mm (0.040 in. – 10 in.) dep and configuration, material and
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
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 MIL STD 810G Method 502.6 (low MIL STD 810G Method 507.6 (hun MIL STD 810G Method 512.6 (imm
Shock and Impact	MIL STD 810G Method 514.7 (vibr MIL STD 810G Method 516.7 (shoo sine shock pulse, 40g 11ms in eac MIL STD 810G Method 516.7 (26 d
Standards	Designed for EN 15317
Compliance	CE, UKCA, RoHS
Warranty	3 years on gauge and 6 months of

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pending on selected probe temperature

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## **CYGNUS 2+ HANDS-FREE**



# CYGNUS 2+ **HANDS-FREE**



The Cygnus 2+ is the advanced version of the Hands Free model, incorporating three measuring modes to measure the wall thickness of a variety of materials (including plastics) and metals of any level

# **KEY FEATURES**

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

of corrosion and pitting.

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

## **APPLICATIONS**

810G

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



DISPLAY

PROBES

HOUSING

## **SPECIFICATION**

Feature	Description
Measuring Modes	Multiple-Echo using 3 echoes to Echo-Echo using 2 echoes to ign Single-Echo using 1 echo
Materials	Velocities from 1,000 - 9,000 m/s
Accuracy	±0.05 mm (±0.002") - in Multiple- measuring the same material as ±0.1 mm (±0.004") or 0.1% of thick Single-Echo & Echo-Echo measu same material as calibrated on.
Resolution	Multiple-Echo mode - 0.1 mm (0. Single-Echo and Echo-Echo mod
Probe Options	Single crystal probes and Twin cr
Measurement Range in Steel	0.8 – 250mm (0.031 in. – 10 in.) de and configuration, material and 1
Connector	Twin Lemo 00
Power	3 x AA batteries
Battery Life	10 hours minimum
Electronics	Dual channel pulser
Display	Cygnus 2+: End-Mounted LCD (ro
Size	84mm x 130mm x 35mm (W x H
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 MIL STD 810G Method 502.6 (low MIL STD 810G Method 507.6 (hun MIL STD 810G Method 512.6 (imm
Shock and Impact	MIL STD 810G Method 514.7 (vibra MIL STD 810G Method 516.7 (shoc sine shock pulse, 40g 11ms in eac MIL STD 810G Method 516.7 (26 d
Standards	Designed for EN 15317
Compliance	CE, UKCA, RoHS
Warranty	3 years on gauge and 6 months o

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ration - 1 hour each axis) ck 20g - 11ms half ch axis) drops - transit drop 1.22 m)



# CYGNUS 4+ **GENERAL PURPOSE**



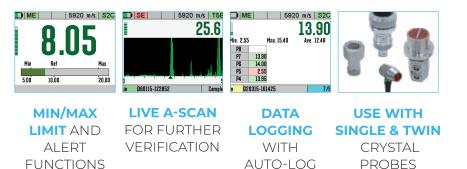
The Cygnus 4+ General Purpose thickness gauge is a light, tough multi-mode thickness gauge. It features a sunlight readable LCD display with Live A-scan, intuitive menu and sequential data logging for easy reporting & analysis (CSV or PDF format).

# **KEY FEATURES**

- 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<sup>™</sup> (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



## **SPECIFICATION**

Feature	Description
Measuring Modes	Multiple-Echo using 3 echoes to Echo-Echo using 2 echoes to ign Single-Echo using 1 echo
Materials	Velocities from 1,000 - 9,000 m/s
Accuracy	±0.05 mm (±0.002") - in Multiple- measuring the same material as ±0.1 mm (±0.004") or 0.1% of thick Single-Echo & Echo-Echo measu same material as calibrated on.
Resolution	Multiple-Echo mode - 0.1 mm (0. Single-Echo and Echo-Echo mod
Probe Options	Single Crystal probes, Twin Cryst
Measurement Range in Steel	0.8 – 250mm (0.031 in. – 10 in.) de and configuration, material and
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
Weight	300g (10.5 oz.) (inc. batteries)
Operating Temp.	-10°C to 50°C (14°F - 122°F)
Data Logging	5000 measurements and A-scan
Computer Software	CygLink allows remote logging a Survey and report generation to Graphic analysis of data and stat
Environmental Rating	IP67 Safe operation in Explosive Atmo as defined in the National Fire Pr Tested using MIL-STD-810G, Met MIL STD 810G Method 501.6 (high MIL STD 810G Method 502.6 (low MIL STD 810G Method 507.6 (hur MIL STD 810G Method 512.6 (imm
Shock and Impact	MIL STD 810G Method 514.7 (vibr MIL STD 810G Method 516.7 (sho sine shock pulse, 40g 11ms in eac MIL STD 810G Method 516.7 (26 d
Standards	Designed for EN 15317
Compliance	CE, UKCA, RoHS
Warranty	3 years on gauge and 6 months (

\*except high temperature measurements

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epending on selected probe temperature

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ns per record. Max number records: 100

and viewing of A-scan graphs PDF file tistical calculations

ospheres: Class I, Division 2, Group D Locations only, Protection Association Code (NFPA 70), Article 500. thod 511.5, Procedure I h temp +55°C (131°F)) / temp -20°C (-4°F)) midity 95%) nersion - 1 metre for 30 mins) ration - 1 hour each axis)

ock 20g - 11ms half ch axis) drops - transit drop 1.22 m)



# CYGNUS 6+ PRO



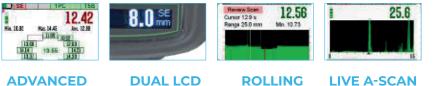
The Cygnus 6+ PRO thickness gauge boasts a full range of useful features for professional users, including A-scan, B-scan and comprehensive data logging. The gauge can switch between 3 measuring modes and use different probes to suit levels of front/back wall corrosion and pitting or measure a variety of materials such as plastics, cast metals and composites.

# **KEY FEATURES**

- 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<sup>™</sup> (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



DISPLAY -

MOUNTED

DATA LOGGING WITH RADIAL POINTS

ROLLING LIVE A-SCAN **B-SCAN** WITH FOR FURTHER FRONT & END AUTO START/ VERIFICATION STOP

## **SPECIFICATION**

	Description
Feature	Description
Measuring Modes	Multiple-Echo using 3 echoes to ig Echo-Echo using 2 echoes to ignor Single-Echo using 1 echo
Materials	Velocities from 1,000 - 9,000 m/s (0
Accuracy	±0.05 mm (±0.002") - in Multiple-Ec measuring the same material as ca ±0.1 mm (±0.004") or 0.1% of thickne Single-Echo & Echo-Echo measure same material as calibrated on.
Resolution	Multiple-Echo mode - 0.1 mm (0.00 Single-Echo and Echo-Echo mode
Probe Options	Single Crystal probes, Twin Crystal
Measurement Range in Steel	0.8 – 250mm (0.031 in. – 10 in.) depe 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-mo
Display Info.	Thickness value, A-scan and B-scar
Size	84mm x 130mm x 35mm (W x H x I
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 p
Computer Software	CygLink allows remote logging and Survey and report generation to PI Graphic analysis of data and statist
Environmental Rating	IP67 Safe operation in Explosive Atmosp defined in the National Fire Protec Tested using MIL-STD-810G, Metho MIL STD 810G Method 501.6 (high t MIL STD 810G Method 502.6 (low te MIL STD 810G Method 507.6 (humin
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tion - 1 hour each axis) 20g - 11ms half sine shock pulse, 40g 11ms in each axis) ops - transit drop 1.22 m)

n probes







## Sap & Kaps Petroleum Services, LLC Abu Dhabi, UAE

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