



# CYGNUS SURFACE RANGE

ULTRASONIC THICKNESS GAUGES



IDEAL FOR  
USE IN



OIL AND  
GAS



MARINE  
STRUCTURES



STORAGE  
TANKS



CIVIL  
ENGINEERING



SHIP  
SURVEYS





EXPLORE THE  
SURFACE RANGE

## 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 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.

# THE CYGNUS SURFACE RANGE

Cygnus Surface Range consists of a base model for simple, accurate measurement through coatings; and three PLUS models with advanced features and additional measuring modes for extreme corrosion and extensive applications.

The Cygnus 1 Ex Ultrasonic Thickness Gauge is an intrinsically safe instrument designed for taking reliable thickness measurements in Zone 0 Explosive Atmospheres.



## 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 surface 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

## Coming soon! CYGNUS HIGH TEMPERATURE EX PROBE

ATEX-certified high temperature probe measuring hot surfaces up to 300°C (570°F) continuous. **No cooling period required** - reducing inspection time and facilitating more effective measurement.



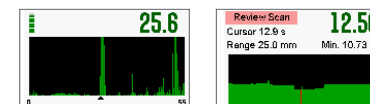
## DATA LOGGING FACILITIES

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.



A-Scan

B-Scan

The Cygnus 1 Ex Ultrasonic Thickness Gauge is an Intrinsically Safe Ex gauge, designed for taking reliable thickness measurements in mines and gas hazardous areas across all Zones 0, 1 & 2. No need for hot work permits. 3 measuring modes enable through-coat measurements for various materials and heavily corroded metals. Available with advanced data logging and manual measurement mode.

## CYGNUS 1 Ex KEY FEATURES



- **Certified Intrinsically Safe to ATEX, IECEx, UKEX for Zone 0**
- **Coming soon - High temperature measurement capability**
- **Intrinsic Safety protection - No need for hot work permits**
- 3 measuring modes for levels of corrosion, various materials and through-coat measurements
- Deep Coat function ignores thick coatings
- Manual Measurement Mode allows gates and gain to be configured to suit your application
- Live A-Scans aid visual measurement verification
- Live B-scans give a quick, cross-sectional representation
- 4 function keys for easy controls and dynamic views
- User Access feature protects specific access level records
- Measurement setup can be saved/restored for quick start
- Measurement Freeze function and Ref/Min/Max thickness limits
- Available as SC, TC, PLUS and PRO variants with options of upgradeable features

## APPLICATIONS

Fuel depots, road and vessel tankers, mines, chemical plants, oil and gas, refineries, pipelines and hazardous storage tanks.



**LARGE 3.5" OUTDOOR** **CYGLINK SOFTWARE** **B-SCAN WITH AUTO START/ PAUSE/CONTINUE** **LIVE A-SCAN FOR FURTHER VERIFICATION**



GO TO  
PRODUCT  
PAGE

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## SPECIFICATION

Feature	Description
<b>Measuring Mode</b>	Single Echo with Twin Crystal Probes Echo-Echo with Twin Crystal Probes Multiple Echo with Singly Crystal Probes
<b>Materials</b>	Sound velocity from 1000 m/s to 9000 m/s [0.0390 in/us to 0.3543 in/us]
<b>Accuracy</b>	±0.1 mm (±0.004") or 0.1% of thickness measurement whichever is the greatest
<b>Resolution</b>	0.1mm, 0.05mm or 0.01mm depending on probe type
<b>Probe Options</b>	Single crystal, twin crystal and high temperature probes
<b>Measurement Range in Steel</b>	0.8mm to 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature
<b>Connector</b>	Single Dual Coaxial Connector
<b>Power Supply</b>	Rechargeable, removable Lithium-Ion battery pack
<b>Power Rating</b>	2W
<b>Probe Sockets</b>	Single Dual Coaxial Connector
<b>Battery Life</b>	6-8 hours continuous measurement
<b>Display</b>	3.5" VGA, sunlight readable colour display
<b>Size</b>	270mm tall, 135mm wide, 80mm deep
<b>Weight</b>	1 kg with battery
<b>Operating Temp.</b>	-0°C to +50°C (32°F to 122°F)
<b>Storage Temp.</b>	-10°C to +65°C (50°F to 149°F)
<b>Data Logging</b>	10,000 measurements and A-scans per record
<b>Computer Software</b>	CygLink allows remote logging and viewing of A-scan graphs. Survey and report generation to PDF file. Graphic analysis of data and statistical calculations. Bluetooth connection to transfer data to a Windows® computer with CygLink
<b>Certification</b>	<b>ATEX, IECEx and UKEX</b> I M1 Ex ia Ma (Tamb = 0°C to +50°C) II 1G Ex ia IIC T4 Ga (Tamb = 0°C to +50°C)  Certificate Numbers; ATEX: ExVeritas 21ATEX0860X UKEX: ExVeritas 21UKEX0861X IECEx: IECEx EXV 21.0035X
<b>Environmental Protection</b>	IP67 Pollution degree 3
<b>Standards</b>	Designed for BS EN 15317:2000
<b>Warranty</b>	3 years on gauge and 6 months on probe

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The Cygnus 2+ is specifically designed for hands-free use by displaying measurements via an end-mounted screen. With three measuring modes, it measures the wall thickness of a variety of materials (including plastics) and metals of any level of corrosion and pitting.



## CYGNUS 2+ HANDS-FREE 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**
- **Hands free operation: wrist, waist belt and harness mountable**
- End-Mounted display shows thickness measurements - ideal for rope access or climbing work
- Front display enables easy gauge setup
- Deep Coat function ignores coatings up to 20mm thick
- MSI™ (Measurement Stability Indicator) verifies stable, reliable readings
- Intuitive easy to use menu
- Can be upgraded to 4+ or 6+ at an additional cost

### 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



GO TO  
PRODUCT  
PAGE



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



**WATER &  
DUST  
TIGHT** IP67  
HOUSING



**END-  
MOUNTED**  
ROTATABLE  
DISPLAY



**USE WITH  
SINGLE & TWIN**  
CRYSTAL  
PROBES

### SPECIFICATION

Feature	Description
<b>Measuring Modes</b>	Multiple-Echo using 3 echoes to ignore coatings up to 20 mm thick Echo-Echo using 2 echoes to ignore coatings up to 1mm thick Single-Echo using 1 echo
<b>Materials</b>	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)
<b>Accuracy</b>	±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.
<b>Resolution</b>	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")
<b>Probe Options</b>	Single crystal probes and Twin crystal probes
<b>Measurement Range in Steel</b>	0.8 – 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature
<b>Connector</b>	2 x Lemo 00
<b>Power</b>	3 x AA / R6 batteries
<b>Battery Life</b>	Approx. 10 hours continuous measurement
<b>Electronics</b>	Dual channel pulser
<b>Display</b>	End-mounted rotatable LCD, 25.58 mm (W) x 6.38 mm (H) - for measurements 2.4" QVGA LCD, 47 mm (W) x 37 mm (H) - for gauge setup only
<b>Size</b>	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")
<b>Weight</b>	300g (10.5 oz.) (inc. batteries)
<b>Operating Temp.</b>	-10°C to 50°C (14°F - 122°F)
<b>Environmental Rating</b>	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)
<b>Shock and Impact</b>	MIL STD 810G Method 514.7 (vibration) MIL STD 810G Method 516.7 (shock 20g) MIL STD 810G Method 516.7 (transit drop 1.22m)
<b>Standards</b>	Designed for EN 15317
<b>Compliance</b>	CE, UKCA, RoHS
<b>Warranty</b>	3 years on gauge and 6 months on probe

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 20mm thick**
- Min/Max measurement limit functions
- Visual and 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 810G
- Can be upgraded to 4+ or 6+ at an additional cost

### APPLICATIONS

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



**MIN/MAX  
LIMIT AND  
ALERT  
FUNCTIONS**



**COMPATIBLE  
WITH SINGLE  
CRYSTAL  
PROBES**



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



**WATER &  
DUST  
TIGHT IP67  
HOUSING**



### SPECIFICATION

Feature	Description
<b>Materials</b>	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)
<b>Accuracy</b>	±0.05 mm (±0.002") - in Multiple-Echo measurement mode, when calibrated and measuring the same material as calibrated on.
<b>Resolution</b>	0.1 mm (0.005") or 0.05 mm (0.002")
<b>Probe Options</b>	Single crystal probes
<b>Measurement Range in Steel</b>	1 – 250mm (0.040 in. – 10 in.) depending on selected probe and configuration, material and temperature
<b>Connector</b>	2 x Lemo 00
<b>Power</b>	3 x AA / R6 batteries
<b>Battery Life</b>	Approx. 10 hours continuous measurement
<b>Electronics</b>	Dual channel pulser
<b>Display</b>	2.4" QVGA LCD, 47 mm (W) x 37 mm (H)
<b>Size</b>	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")
<b>Weight</b>	300g (10.5 oz.) (inc. batteries)
<b>Operating Temp.</b>	-10°C to 50°C (14°F - 122°F)
<b>Environmental Rating</b>	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)
<b>Shock and Impact</b>	MIL STD 810G Method 514.7 (vibration) MIL STD 810G Method 516.7 (shock 20g) MIL STD 810G Method 516.7 (transit drop 1.22 m)
<b>Standards</b>	Designed for EN 15317
<b>Compliance</b>	CE, UKCA, RoHS
<b>Warranty</b>	3 years on gauge and 6 months on probe



**GO TO  
PRODUCT  
PAGE**

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## CYGNUS 4+ GENERAL PURPOSE KEY FEATURES

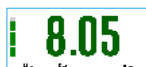


The Cygnus 4+ General Purpose thickness gauge is a light, tough multi-mode thickness gauge. It features a sunlight readable LCD display with Live A-scan, intuitive menu and sequential data logging for easy reporting & analysis (CSV or PDF format).

- **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**
- **High temperature measurement capability with Cygnus high temperature probe**
- Deep Coat function ignores coatings up to 20mm thick
- Manual and automatic gain control
- Min/max measurement limit functions with visual and vibrate alert
- Large front sunlight readable LCD Live A-scan display
- Water and dust tight IP67 housing
- Shock and impact proof to US MIL STD 810G
- Safe operation in explosive atmospheres: Class I, Division 2, Group D locations only, as defined in NFPA 70, Art. 500
- One and two point calibration
- Can be upgraded to 6+ at an additional cost

### 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



**MIN/MAX  
LIMIT AND  
ALERT  
FUNCTIONS**



**LIVE A-SCAN  
FOR FURTHER  
VERIFICATION**



**DATA  
LOGGING  
WITH  
AUTO-LOG**



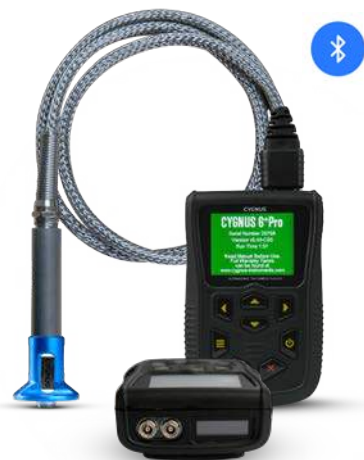
**USE WITH  
SINGLE & TWIN  
CRYSTAL  
PROBES**

## SPECIFICATION

Feature	Description
<b>Measuring Modes</b>	Multiple-Echo using 3 echoes to ignore coatings up to 20mm thick Echo-Echo using 2 echoes to ignore coatings up to 1mm thick Single-Echo using 1 echo
<b>Materials</b>	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)
<b>Accuracy</b>	±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.
<b>Resolution</b>	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")
<b>Probe Options</b>	Single Crystal probes, Twin Crystal probes and High Temp probe
<b>Measurement Range in Steel</b>	0.8 – 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature
<b>Connector</b>	2 x Lemo 00
<b>Power</b>	3 x AA batteries
<b>Battery Life</b>	Approx. 10 hours continuous measurement
<b>Electronics</b>	Dual channel pulser
<b>Display</b>	2.4" QVGA LCD, 47 mm (W) x 37 mm (H)
<b>Size</b>	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")
<b>Weight</b>	300g (10.5 oz.) (inc. batteries)
<b>Operating Temp.</b>	-10°C to 50°C (14°F - 122°F)
<b>Data Logging</b>	5000 measurements and A-scans per record. Max number records: 100
<b>Computer Software</b>	CygLink allows remote logging and viewing of A-scan graphs Survey and report generation to PDF file Graphic analysis of data and statistical calculations
<b>Environmental Rating</b>	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)
<b>Shock and Impact</b>	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)
<b>Standards</b>	Designed for EN 15317
<b>Compliance</b>	CE, UKCA, RoHS
<b>Warranty</b>	3 years on gauge and 6 months on probe



**GO TO  
PRODUCT  
PAGE**



## CYGNUS 6+ PRO 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**
- **High temperature measurement capability with Cygnus high temperature probe**
- Deep Coat function ignores coatings up to 20mm thick
- Manual and automatic gain control
- Min/max measurement limit functions with visual and vibrate alert
- Large front LCD display and end-mounted rotatable LCD display with grayscale setting for bright sunlight
- Safe operation in explosive atmospheres: Class I, Division 2, Group D locations only, as defined in NFPA 70, Article 500
- Shock and impact proof to US MIL STD 810G

## 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



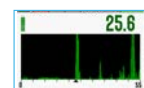
**ADVANCED DATA LOGGING**  
WITH RADIAL POINTS



**DUAL LCD DISPLAY –**  
FRONT & END MOUNTED



**ROLLING B-SCAN** WITH  
AUTO START/ STOP



**LIVE A-SCAN**  
FOR FURTHER VERIFICATION

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.

## SPECIFICATION

Feature	Description
<b>Measuring Modes</b>	Multiple-Echo using 3 echoes to ignore coatings up to 20mm thick. Echo-Echo using 2 echoes to ignore coatings up to 1mm thick. Single-Echo using 1 echo
<b>Materials</b>	Velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)
<b>Accuracy</b>	±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.
<b>Resolution</b>	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")
<b>Probe Options</b>	Single Crystal probes, Twin Crystal probes and High Temp probe
<b>Measurement Range in Steel</b>	0.8 – 250mm (0.031 in. – 10 in.) depending on selected probe and configuration, material and temperature
<b>Connector</b>	2 x Lemo 00
<b>Power</b>	3 x AA / R6 batteries
<b>Battery Life</b>	Approx. 10 hours continuous measurement
<b>Electronics</b>	Dual channel pulser
<b>Display</b>	Front LCD 2.4" QVGA 47 mm (W) x 37 mm (H); End-mounted LCD 25.58mm (W) x 6.38 (H)
<b>Size</b>	84mm x 130mm x 35mm (W x H x D) (3.3" x 5.1" x 1.4")
<b>Weight</b>	300g (10.5 oz.) (inc. batteries)
<b>Operating Temp.</b>	-10°C to 50°C (14°F - 122°F)
<b>Data Logging</b>	5000 measurements and A-scans per record. Max number records: 100 (soft limit)
<b>Computer Software</b>	CygLink allows remote logging and viewing of A-scan graphs Survey and report generation to PDF file Graphic analysis of data and statistical calculations
<b>Environmental Rating</b>	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)
<b>Shock and Impact</b>	MIL STD 810G Method 514.7 (vibration) MIL STD 810G Method 516.7 (shock 20g) MIL STD 810G Method 516.7 (transit drop 1.22 m)
<b>Standards</b>	Designed for EN 15317
<b>Compliance</b>	CE, UKCA, RoHS
<b>Warranty</b>	3 years on gauge and 6 months on probes



GO TO  
PRODUCT  
PAGE

## HOW TO PLACE YOUR ORDER

1

CHOOSE YOUR GAUGE

2

CHOOSE YOUR PROBE

3

CHOOSE YOUR CABLE

4

YOUR KIT IS COMPLETE



1 Ex

2+

4

4+

6+

No cable options\*



SINGLE CRYSTAL



TWIN CRYSTAL\*



HIGH TEMPERATURE#



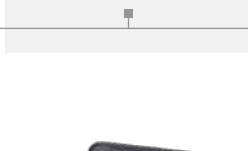
TWIN LEMO  
00 TO BNC



TWIN LEMO  
00 TO SINGLE  
LEMO 00



BRAIDED



TWIN LEMO  
00 TO TWIN  
LEMO 00



STANDARD



\*All Ex gauge probe supplied as assembly with cable

+ Incompatible with 4

# For use with 4+, 6+ and Ex only

More items available than pictured in the diagram above

ISS14 10/23

All information provided is subject to change without prior notice.



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