

BLUETOOTH SUITE: TRANSFER UNIT, MICROCOR ER DATALOGGER, ER PROBE READER, LPR PROBE READER, LEGACY CONVERTER, ER DATALOGGER, LPR DATALOGGER, ULTRACORR 2

User Manual



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Introduction

Chapter 1

Transfer Unit

The Transfer Unit (TU-500) handheld instrument is the convenient and hassle-free way to configure and collect data from Microcor Dataloggers, Ultracorr 2 Readers, Ultracorr 2 Dataloggers, ER Readers, LPR Readers, ER Dataloggers and LPR Dataloggers. The Transfer Unit can be used with Cosasco Bluetooth enabled devices via a Bluetooth link used as a serial cable replacement. The Transfer Unit can also be used with other Cosasco legacy devices with the addition of the Legacy Converter. This portable unit can store readings of up to 255 total devices including up to 99 Microcor and/or a combination of up to 255 Ultracorr 2, ER and LPR IDs. This intrinsically safe handheld device allows an operator to program and collect data from Cosasco devices installed in hazardous locations. Furthermore, this device allows simple and fast data transfer using Cosasco Data software and a Bluetooth Dongle.

Microcor ER Datalogger

The Microcor[®] ER Datalogger (M-200) is based on Cosasco's latest generation of high-resolution Microcor technology. The M-200 operates in conjunction with the high-resolution Microcor probes that Cosasco offers. The Microcor ER Datalogger is an 18 bit high- resolution corrosion measurement device, approximately 256 times higher than previous electrical resistance measurement instruments. This increased resolution greatly improves response to corrosion upsets, and at the same time allows measurements to be made in virtually any environment. The patented technology combines speed of response, similar to linear polarization resistance, with the universal applicability of electrical resistance measurements.

ER Probe Reader

The ER Probe Reader (ER-100) was designed to be used together with the Transfer Unit and to replace the older Checkmate and Checkmate Plus handheld instruments. The ER Probe Reader is able to read all standard Cosasco ER probes and reads both corrosion data and temperature. For convenience, the ER Probe Reader communicates with the Transfer Unit via a Bluetooth link used as a serial cable replacement.

LPR Probe Reader

The LPR Probe Reader (LPR-100) was designed to be used together with the Transfer Unit to replace the Mate II and Aquamate handheld instruments. The LPR Probe Reader reads all standard Cosasco LPR probes and can read both corrosion rate and temperature. It communicates with the Transfer Unit via a Bluetooth link used as a serial cable replacement.

Legacy Converter

The Legacy Converter (LC-500) is an RS232 to Bluetooth serial converter that allows the Transfer Unit to communicate with Cosasco legacy instruments in hazardous areas. This is done by plugging the Legacy Converter directly into the communications port of the Cosasco legacy instrument.

ER Datalogger

The ER Datalogger (ER-200) was designed to be used together with the Transfer Unit. The ER Datalogger replaces the Remote Data Collector (RDC) that measures corrosion via ER Probe measurements. The ER Datalogger interfaces with all standard Cosasco Electrical Resistance probes and reads both corrosion data and temperature. For convenience, the ER Datalogger communicates with the Transfer Unit via Bluetooth link used as a serial cable replacement.

LPR Datalogger

The LPR Datalogger (LPR-200) was designed to be used together with the Transfer Unit. The LPR Datalogger replaces the Remote Data Collector (RDC) that measures corrosion via LPR Probe measurements. The LPR Datalogger interfaces with all standard Cosasco Electrical Resistance probes and reads both corrosion data and temperature. For convenience, the LPR Datalogger communicates with the Transfer Unit via Bluetooth link used as a serial cable replacement.

Ultracorr 2

Note: For additional information regarding the Ultracorr 2, refer to the latest Ultracorr 2 Corrosion Monitoring System User Manual (Cosasco P/N: U-CORR2- MANUAL)

The new Ultracorr 2 is the next evolution in handheld Ultracorr Corrosion Monitoring Systems. Ultracorr 2 provides a cost effective ultrasonic thickness measurement and temperature measurement of a pipe or vessel wall using fixed transducers mounted at various locations throughout a site.

After initial installation, access to the monitoring point is no longer required. The transducer connector can be located at a convenient location for taking thickness and temperature readings. These readings can then be downloaded to a personal computer running Cosasco Data Corrosion Management Software for storage and trend analysis.

The Ultracorr 2 transducers are equipped with an integral RTD measuring temperature which enables taking of simultaneous metal thickness and metal temperature readings. The instrument uses temperature data to compensate for changes in the metal thickness readings due to temperature variations. The new generation of transducers are embedded with smart sensors that retain user configured ID characteristics.

A basic system consists of a smart transducer, the new Ultracorr 2 handheld instrument, data collection device, and Cosasco Data Software package. Since it will often be advantageous to take a reading of the transducer from some remote point, there are numerous cabling options to connect these two items. For example, cables may be run from numerous transducers into a single junction box at ground level, where multiple readings may be taken very quickly.

Although there are many applications for the Ultracorr Corrosion Monitoring System, there are three basic system applications. Refer to chapter 4 and 5 for installation procedures for various placement options.

Specifications

Chapter 2

Transfer Unit (TU-500)

Battery Requirements:

2 x Cosasco AA Lithium Batteries (P/N 095820)

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

6.24"H x 3.35"W x .91"D (15.8 cm x 8.51 cm x 2.31 cm)

LCD:

5 volt, 20 x 4 character LCD screen without backlight

Intrinsic Safety:

ATEX Certification SIRA 14 ATEX 2263X Ex ia IIC T4 Ga, Ta = -40°C to +70°C Enclosure: IP20 For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

<u>IEC Ex Certification</u> IECEx SIR 14.0096X Ex ia IIC T4 Ga, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

North American Certifications CSA Certification: 70007061 CSA_{US} Class I, Zone 0, AEx ia IIC T4 Ga, Ta = -40°C to +70°C $_{C}$ CSA Ex ia IIC T4 Ga, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

Data Storage:

- Stores up to 255 IDs, with up to 99 Microcor IDs
- ER Probe Reader, LPR Probe Reader, Ultracorr 2 Reader: 10 readings
- RDC COT, ER Datalogger: 2048 readings without temperature 1024 readings including temperature
- RDC CAT, LPR Datalogger: 1024 readings without temperature 512 readings including temperature
- Microcor Bluetooth: 16000 readings
- Microcor Legacy: 8000 readings
- Ultracorr 2 Datalogger: 2000 readings

Battery Life:

Approximately 2 days of continuous operation

Communication:

Bluetooth[®] as serial cable replacement

Microcor ER Datalogger (M-200)

Battery Requirements:

7.2V Lithium Power Module (P/N 748400)

Operation Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

4.40"Diameter x 6.9"H (11.2 cm x 17.5cm)

Weight:

6.45lbs (2.9kg)

Operation:

- Compatible with all Cosasco Microcor Probes
- Battery Life: 2 years at 20 min measurement interval

Resolution:

18 bit (1 part in 262,144)

Data Storage:

16,000 Readings (Circular Buffer)

Communication:

Wired/RS232 or Bluetooth v2.0

Bluetooth Specifications:

- Bluetooth v2.0 + EDR
- FHSS/GFSK Modulation
- +2 dBi typical, +4dBi maximum Integral Antenna
- Frequency Range: 2402-2480 MHz

ER Probe Reader (ER-100)

Battery Requirements:

2 x Cosasco AA Lithium Batteries (P/N 095820)

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

6.1"H x 2.4"W x 1.44"D (15.5 cm x 6.1 cm x 3.66 cm)

Intrinsic Safety:

<u>ATEX Certification</u> SIRA 14 ATEX 2261X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

IEC Ex Certification

IECEx SIR 14.0094X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

North American Certifications CSA Certification: 70043903 CSA_{US} Class I, Zone 1, AEx ib IIC T4 Gb, Ta = -40° C to $+70^{\circ}$ C _CCSA Ex ib IIC T4 Gb, Ta = -40° C to $+70^{\circ}$ C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

Operation:

- Compatible with all Cosasco ER Probes
- Battery Life: 1700 Readings

Communication:

LPR Probe Reader (LPR-100)

Battery Requirements:

2 x Cosasco AA Lithium Batteries (P/N 095820)

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

6.1"H x 2.4"W x 1.44"D (15.5 cm x 6.1 cm x 3.66 cm)

Intrinsic Safety:

ATEX Certification SIRA 14 ATEX 2262X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

<u>IEC Ex Certification</u> IECEx SIR 14.0095X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

North American Certifications CSA Certification: 70007055 CSA_{US} Class I, Zone 1, AEx ib IIC T4 Gb, Ta = -40°C to +70°C $_{\rm C}$ CSA Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 Minimum

For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

Operation:

- Compatible with all Cosasco LPR Probes
- Battery Life: 2000 Readings

Communication:

Legacy Converter (LC-500)

Battery Requirements:

2 x Cosasco AA Lithium Batteries (P/N 095820)

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

4.0"H x 2.5"W x 1.3"D (10.3 cm x 6.4 cm x 3.3 cm)

Intrinsic Safety:

<u>ATEX Certification</u> SIRA 14 ATEX 2264X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

<u>IEC Ex Certification</u> IECEx SIR 14.0097X Ex ib IIC T4 Gb, Ta = -40°C to +70°C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

North American Certifications CSA Certification: 70008374 CSA_{US} Class I, Zone 1, AEx ib IIC T4 Gb, Ta = -40° C to $+70^{\circ}$ C _cCSA Ex ib IIC T4 Gb, Ta = -40° C to $+70^{\circ}$ C Enclosure: IP20 Minimum For use only with Cosasco Batteries P/N 095820 or P/N 095818, do not mix.

Operation:

- Compatible with all Cosasco legacy instruments (Excluding RDC 4 Channel)
- Battery Life: Approximately 2 days of continuous operation

Communication:

ER Datalogger (ER-200)

Battery Requirements:

Cosasco RDC2 Battery Pack P/N 726043

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions (Approximately):

9.05"H x 6.5"W x 4.25"D (22.987 cm x 16.51 cm x 10.795 cm)

Intrinsic Safety:

<u>ATEX Certification</u> SIRA 16ATEX2024X Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20

IEC Ex Certification

IECEx SIR 16.0009X Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20 Minimum

North American Certifications

CSA Certification: 70008419 CSA_{US} Class I, Zone 0, AEx ia IIC T4 Ga, Ta = -40°C to +70°C _CCSA Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20 Minimum

Operation:

- Compatible with all standard Cosasco ER Probes
- Battery Life: 1.9 years at 1 measurement every 4 hours

Communication:

LPR Datalogger (LPR-200)

Battery Requirements:

Cosasco RDC2 Battery Pack P/N 726043

Operating Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions (Approximately):

9.05"H x 6.5"W x 4.25"D (22.987 cm x 16.51 cm x 10.795 cm)

Intrinsic Safety:

<u>ATEX Certification</u> SIRA 16ATEX2025X Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20

IEC Ex Certification

IECEx SIR 16.0010X Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20 Minimum

North American Certifications

CSA Certification: 70014313 CSA_{US} Class I, Zone 0, AEx ia IIC T4 Ga, Ta = -40°C to +70°C _CCSA Ex ia IIC T4 Ga, Ta = -40°C to +70°C For use only with RCS RDC2 Battery Pack P/N 726043 Enclosure: IP20 Minimum

Operation:

- Compatible with all standard Cosasco LPR Probes
- Battery Life: 1 year at 1 reading every 4 hours

Communication:

Ultracorr 2 (U-200)

Ultracorr 2 Instrument

Battery Requirements:

2 x 3.6V AA Lithium Cells (Cosasco P/N 095820)

Battery Life:

Over 6000 readings

Operating Temperature: -40°F to 158°F (-40°C to 70°C)

Storing Temperature:

-40°F to 158°F (-40°C to 70°C)

Dimensions:

6"H x 3.25"W x 1.25"D (152.4 mm x 82.55 mm x 31.75 mm)

Weight:

1 lb. (0.45 kg)

Intrinsic Safety:

For USA/Canada:



Ex ib IIC T4: Class I, Zone 1 AEx ib IIC T4

For Europe:



UST2 Ultrasonic Sensor

Thickness Measurement:

Range:	0.2 (0.1 for special orders) to 2.0 inches, up to 25 ft. cable
Resolution:	0.0001 inch
Accuracy:	± 0.0002 inch at constant temperature ± 0.0005 inch from -40°C to +70°C (Instrument) ± 0.0003 inch from -40°C to +150°C (Metal Surface of Transducer)

Transducer Temperature:

Ambient: -40°F to +158°F (-40°C to +70°C) Range: Metal Surface: -40°F to +305°F (-40°C to +150°C)

Temperature Compensation:

-0.0002 inch/inch/°C

Temperature Differential Error:

-0.0001 inch/inch/°C difference (inside to outside of wall)

Temperature Measurement:

Range:	-40°C to +150°C
Resolution:	0.1°C
Accuracy:	±2°C (Transducer) ±2°C (Instrument)

Data Storage:

Memory Type:	Nonvolatile
Probes:	255
Readings/Probes:	2000 Date and Time Stamped

Interface:

Bluetooth®

Transducer Type: Contact

Transducer Cable:

RG-174 up to 25 ft.

Basics of the Bluetooth Suite

Chapter 3

Transfer Unit

Battery Installation

The Transfer Unit is supplied with two 3.6 Volt AA lithium batteries. To install these batteries, remove the rear access panel of the unit with a screwdriver and install the batteries with the polarities as indicated on the unit. Replace the rear access panel when finished.



TU-500 Transfer Unit Front View





Transfer Unit Back View

Standby Screens

The **Standby** screens are shown below. To navigate between the two standby screens use the **More** and **Back** options.

COSASCO TU-500 vX.XX			
MM/DD/YY HH:MM:SS			
Confg Scan Device			
Disp	PC	More	

COSASCO TU-500 vX.XX MM/DD/YY HH:MM:SS Time | Units | Memory Back |

Scanning for Devices

To scan for devices, select the **Scan** option on the standby screen. The following screen will appear. Select and amount of time, **10s**, **20s**, or **30s**, to scan for devices.

Note: It is recommended to use the **30s** scan time to allow for Bluetooth to sync.

Select Scan Time 10s | 20s | 30s | Exit

The Transfer Unit will show the following screens while scanning for devices.

Scanning. . .

Please Wait XX



When the Transfer Unit has finished scanning, scroll through the list of found devices using the up and down arrows on the keypad. The user can select Sv to save the device to a list.

Note: Up to 10 devices can be stored into the saved device list.

Devices [UP/DOWN] X	
[XXXXXXXXX]
Bk=Back Sv=Save)
Cfg DI St Bk	Sv

Device List

After scanning for devices, the Transfer Unit allows the user to view the devices found from the last scan or view the list of saved devices. These options allow the user to bypass the scanning command and directly access a list of devices.

From the Standby screen select **Device**.

COSASCO TU-500 vX.XX				
MM/DD/YY HH:MM:SS				
Confg	I	Scan	I	Device
Disp	I	PC	I	More

On this screen, the user will have the option for Last Scan, Saved List and Exit.

Device Menu		
Last Scan	Saved List Exit	

- Last Scan will bring the user to the list of devices from the last scan.
- Saved List will bring the user to the list of saved devices.
- **Exit** will return the user to the standby screen.

Display Configured IDs

The Transfer Unit gives the user the option to view configured ID's through the standby screen.

On the standby screen select **Disp**.

COSASCO TU-500 vX.XX MM/DD/YY HH:MM:SS		
Confg	Scan	Device
Disp	PC	More

On the following screen, the user has the option to display configured ID's by selecting either **Current** or **ID**. If **Current** is selected the Transfer Unit will display the last viewed ID and if **ID** is selected the Transfer Unit will allow the user to enter a device's ID number. Different information will be displayed depending on the type of ID configured.

Display Saved ID

Current | ID | Exit

Setting Units

To change the units on the Transfer Unit select **Units** from the standby screen. The following screen will appear with the options for Temperature being **F** (Fahrenheit) and **C** (Celsius) and the options for Metal Loss being **mils**, μ m, and **mm**.



The option that is currently selected for temperature or metal loss will be shown next to **Temperature** and **Metal Loss** respectively. To change the units, navigate to the preferred unit then hit **OK**. When finished selecting the units, select **Back** to return to the standby screen.

Setting Time

To change or set the time on the Transfer Unit select **Time** from the standby screens. The following screen will appear with the options for Mate and Zone.

Time set up

Mate | Zone

Back | Exit

Choosing **Mate** will take the user to the following screen and will allow the user to manually enter the time and date in military time.

YY – Year, MM – Month, DD – Day of the month, dd – Day of the week where 00 is Sunday, hh – Hours, mm – Minutes, ss – Seconds

> Enter date/time in YYMMDDddhhmmss <XXXXXXXXXXXXXXX 0123456789.< OK Back

Choosing **Zone** will take the user to the following screen and will allow the user to select a time zone and an offset. Select either **STZ (Standard Time Zone)** or **DTZ (Daylight Time Zone)** and scroll up and down using the up and down arrows on the keypad to change the offset.

Time Zone: STZ < X:XX > Scroll Up and Down DTZ | Back

Clearing Memory

From the standby screen select the option **Memory**. The following screen will appear with the options to clear memory for a specific device's **ID** number, **Units**, **Device** or **AII**.

Clear Memory				
ID		Units		Device
All		Back		Exit

- If the user selects ID, enter the ID number of the device to delete the data off the Transfer Unit then select OK. On the next display screen select Okay to clear the data for that ID. This will clear all of the data stored for this specific ID including configuration and data.
- If the user selects **Units**, the preferences for the units stored on the Transfer Unit will be restored to the defaults. *Temp: C, Metal loss: mils, Time zone: STZ, -8:00 offset.*
- If the user selects **Device**, this will clear the memory for saved scan BT devices and last scanned BT devices.
- If the user selects **All**, this will clear all stored ID numbers configuration and data, restore all units to their default and clear all stored scanned devices.



TU-500 Transfer Unit

Microcor ER Datalogger

Power Module Installation

Power Module (Cosasco P/N 748400) is intrinsically safe and may be connected/disconnected in a hazardous location.



Configuration for hazardous/non-hazardous locations (computer software may only be used in a non-hazardous location).

Mounting the Microcor ER Datalogger

The Microcor ER Datalogger can be installed on the top, side or bottom of the line according to the probe installation. Choose the best installation configuration that corresponds to the location of the probe.

Grounding

A 8 to 14 AWG grounding wire can be attached to the datalogger at the grounding lug. Connect the ground wire to earth ground per local electrical code.

Direct Probe Mounting

Top of the Line

- 1. Attach connector and tighten connector nut to mount the transmitter to the probe adapter.
- 2. Rotate the antenna to vertical position.



Side of the Line

- Attach connector and tighten connector nut to mount the transmitter to the probe adapter. 1.
- 2. Rotate the antenna to vertical position.



Bottom of the Line

- 1. Attach connector and tighten connector nut to mount the transmitter to the probe adapter.
- 2. Rotate the antenna to vertical position.



Optional Remote Mounting

(Bottom of the Line shown)

- 1. Secure the transmitter to the remote mounting post using appropriate accessories.
- 2. Attach connector and tighten connector nut of the optional flexible cable to the probe adapter and attach the other end to the transmitter.
- 3. Rotate the antenna to vertical position.



Cosasco Mounting Accessories



ER Probe Reader and LPR Probe Reader

Battery Installation

Both Probe Readers are supplied with two 3.6 Volt AA lithium batteries. To install these batteries, remove the rear access panel of the unit with a screwdriver and install the batteries with the polarities as indicated on the unit. Replace the rear access panel when finished.



ER-100 Probe Reader

ER-100 Reader Back View

Checking Battery Status

To check the battery status of the Probe Readers, turn on the Probe Reader by pushing the power button on the top of the device. If the LED on the top of the device is **green**, the Probe Reader has good batteries. If the LED on the top of the device is **red** or unit does not respond, the user needs to change the batteries of the Probe Reader before taking a reading. Replace batteries as indicated on the **ER Probe Reader and LPR Probe Reader Battery Installation** section.



ER-100 Reader Top View

Using the ER Probe Reader

To use the ER Probe Reader, the user must first attach the ER Probe Reader to an <u>ER</u> probe/probe adapter.



Turn on the ER Probe Reader by pushing the power button on the top of the device. The LED of the ER Probe Reader will be **green** when ready to take a probe reading. When the ER Probe Reader is taking a reading of the probe, the LED will be **yellow/orange**. When the ER Probe Reader has finished taking a reading of the probe, the LED will return back to **green**.

Using the LPR Probe Reader

To use the LPR Probe Reader, the user must first attach the LPR Probe Reader to an LPR probe/probe adapter.



Turn on the LPR Probe Reader by pushing the power button on the top of the device. The LED of the LPR Probe Reader will be **green** when ready to take a probe reading. When the LPR Probe Reader is taking a reading of the probe, the LED will be **yellow/orange**. When the LPR Probe Reader has finished taking a reading of the probe, the LED will return back to **green**.

Turn Off Probe Readers

To turn off the ER Probe Reader or LPR Probe Reader, push and hold down the power button until the LED turns **red**.

Legacy Converter

Battery Installation

The Legacy Converter is supplied with two 3.6 Volt AA lithium batteries. To install these batteries, remove the rear access panel of the unit with a screwdriver and install the batteries with the polarities as indicated on the unit. Replace the rear access panel when finished.



LC-500 Legacy Converter

LC-500 Converter Back View

Checking Battery Status

To check the battery status of the Legacy Converter, turn on the device by pushing down the power button. If the LED on the device does not flash **green** after approximately 2 seconds the user needs to change the batteries. Replace batteries as indicated on the **Legacy Converter Battery Installation** section.



LC-500 Converter Top View

Bluetooth Suite 27

Using the Legacy Converter

Attach the Legacy Converter directly to the communications port of the Cosasco Legacy Device.



Communication Port

Turn on the device by pushing the white power button. The LED on the Legacy Converter will flash **green** when ready to be used with the Transfer Unit.

Turn Off Legacy Converter

To turn off the Legacy Converter, push the white power button and the LED will turn off.



ER Datalogger and LPR Datalogger

Battery Installation

<u>NOTE: If LED flashes green when battery is installed, use the TU-500 to download data and reconfigure the Datalogger.</u>

Both Dataloggers are supplied with a battery pack (Cosasco P/N 726043). To install this battery pack, open the unit by releasing the latches, remove the thumb screws and washers, place the battery onto the screw mounts and make sure the arrows are pointing upwards, insert the washers, hand tighten the thumb screws and connect the power connecters together. Once finished, close the unit by re-latching the latches.

Installation

<u>THE FOLLOWING ARE ONLY RECOMMENDED PRACTICES. INSTALLATION OF THIS</u> <u>DATALOGGER IN AN EXPLOSIVE ENVIRONMENT MUST BE IN ACCORDANCE WITH THE</u> <u>REQUIREMENTS FOR INSTALLATION OF INTRINSICALLY SAFE SYSTEMS IN HAZRDOUS</u> (CLASSIFIED) LOCATIONS, PER LOCAL CODE SUCH AS THE NATIONAL ELECTRIC <u>CODE (ANSI/NFPA70)</u>

Location

The ER and LPR Dataloggers are certified for Zone 0 Hazardous Environment operation. The Dataloggers are designed for continuous operation between -40°C to 70°C. If extremes are expected outside of this operation range, sufficient protection to the thermal differences should be used for optimal lifespan of the device.

Mounting the Device

The ER and LPR Dataloggers cannot be directly mounted to a probe and are typically remote mounted with a 10' (typical) probe cable connecting to a probe location. A typical ER Datalogger or LPR Datalogger mounting example is shown below.



Two common ways to mount the device are **remote wall mounting** and **2**" **pipe mounting**.

Remote wall mounting: Ensure the device is mounted vertically with the probe cable entrance pointed down.



Pipe mounting: This mounting technique is for the <u>Fiberglass Enclosure only</u>. Mount the device to the mounting plate and attach the U bolts around the pipe and secure with the nuts. *Note:* Only the U bolts will be provided.




Grounding

This is applicable to the ER-200 or LPR-200 Stainless Steel enclosure and units with remote mounted antenna.

An 8 to 14 AWG grounding wire can be attached to the Datalogger at the mounting hole. Install grounding wire per local Electric code.

Attach a grounding wire into the lightning arrestor and enclosure if the remote mount antenna is used.



Mounting the Remote Mount Antenna

The remote mount antenna is provided with the installation hardware. This uses a U bolt for installation.

Secure the antenna to the mounting location using the U bolt. After the antenna is secured apply the provided sealing tape to both Lightning arrestor and to antenna connector to help ensure maximum device lifespan.



Ultracorr 2

<u>Note: For additional information regarding the Ultracorr 2, refer to the latest Ultracorr 2</u> <u>Corrosion Monitoring System User Manual (Cosasco P/N: U-CORR2- MANUAL)</u>

Battery Installation

The Ultracorr 2 is supplied with a set of two 3.6 Volt lithium batteries (Cosasco PN 095820). To install these batteries, remove the access panel on the back of the unit (see below) and install the batteries with the polarities as indicated on the unit. Replace the back cover when finished.



Transfer Unit

Chapter 4

Microcor ER Datalogger

Create an ID for Microcor ER Datalogger

On the standby screen of the Transfer Unit select **Confg**. On the next display screen, select **Microcor** to get to a list of Microcor devices.

Select Device			
ER	LPR	I	Microcor
Ultra	corr 2		Exit

Select M-200 for the Microcor ER Datalogger (M-200).

Microcor				
M-200 Back	MDL Exit	ML95		

Enter the desired **ID** number then select **OK**.

Enter ID:[___] (1 – 99) 0123456789.< OK Back

Enter the interval then select **m** for minutes.

Note: the hours (h) option is disabled and will show INVAL if selected.

```
Interval:[___]
min: (2 – 1440)
0123456789< m h Back
```

Enter a tag name for the device then select Nxt.

```
Tag:[____]
ABCDEFGHIJKLMNOPQR
STUVWXYZ0123456789._-<
Clr | Nxt | Bck | Exit
```

To save the configuration of the device select Okay.



Load ID onto Microcor ER Datalogger

To load a configuration onto the Microcor ER Datalogger an ID must be created. If the user has not already created an ID, please refer to the **Create an ID** section.

On the Transfer Unit, scroll through the list of Devices until the Bluetooth name of the desired Microcor ER Datalogger device is displayed then select **Cfg**.

```
Devices [UP/DOWN] X
[XXXXXXXXXX ]
Bk=Back Sv=Save
Cfg | DI | St | Bk | Sv
```

Enter the ID of the configuration to load onto the Microcor ER Datalogger then select OK.

Enter ID:[___] (1 – 99) 0123456789.< OK Back

Select Okay to load the configuration onto the Microcor ER Datalogger.

Save? ID: XX TAGNAME Okay | Back | Exit

Download Data from Microcor ER Datalogger

On the Transfer Unit device list, navigate to the Microcor ER Datalogger device and select DI.

Devices [UP/DOWN]	Χ	
[XXXXXXXXXX]	
Bk=Back Sv=Save		
Cfg DI St Bk 3	Sv	

After the transfer of data from the Microcor ER Datalogger to the Transfer Unit is complete, the following screen will display the Microcor ER Datalogger ID number, tag name and the number of samples collected with the interval they are being collected at.

ID:XX M-200			
Tag: XXXXXXXX			
Samples: XXXX (XX m/h)			
Next Back Exit			

Select Next to continue to the next display which shows Probe Life Units (PLU).

PLU: XXXXX Next | Back | Exit

Select **Next** to continue to the next display to see the time when the last data point was collected as well as what intervals the data is being taken at.

Time Stamp: MM/DD/YY HH:MM:SS Interval: (XX m/h) Back | Exit

Read Microcor ER Datalogger Status

On the Transfer Unit device list, navigate to the Microcor ER Datalogger device and select St.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv After a successful data transfer, the following screen will appear with the attached information. Select **Next** to continue to the next display which shows the current time on the Microcor ER Datalogger.

ID:XX TAGNAME	Current Time:
Samples: XXXX	MM/DD/YY HH:MM:SS
Interval: XX m/h Next Back Exit	Next Back Exit

Select **Next** to continue to the next display which shows the battery, memory and transmitter information as shown below. Battery status will show **good** or **low**. Memory and transmitter will show **good** or **bad** depending on their status.

Battery Memory	:Good/Low :Good/Bad
Transmitter	:Good/Bad
васк Ехіт	

Ultracorr 2

Create an ID for the Sensor

On the standby screen of the Transfer Unit select **Confg**. On the screen that appears select **Ultracorr 2**.

Select Device			
ER	LPR	Microcor	
Ultrad	corr 2	Exit	

The user will then have the option to configure the Ultracorr 2 as a **Reader** or **Logger**.

Choosing **Reader** will create an ID that can be used when connected to the Ultracorr 2 as a reader. Connecting to the Ultracorr 2 as a reader will allow the user to get readings manually, store the readings and get real-time updates of readings.

Choosing **Logger** will create an ID that can be used when connected to the Ultracorr 2 as a Datalogger. Connecting to the Ultracorr 2 as a Datalogger will allow the user to configure the Ultracorr 2 to read and store data at certain intervals and get real-time updates of readings.

Ultracorr 2		
Reader	Logger	
Back	Exit	

After selecting either Reader or Logger, enter the desired ID number then select OK.

```
Enter ID: [___]
(1 – 255)
0123456789.< OK Back
```

Enter a tag name for the device then select Nxt.

Tag:[]
ABCDEFGHIJKLMNOPQR
STUVWXYZ0123456789<
Clr Nxt Bck Exit

Select the correct **Alloy**.

Select Alloy			
K03005		S30400	
S31600		Back	

Click **Okay** to save the configuration for the chosen ID.

Save? ID: XX TAGNAME		
Okay Back Exit		

Connecting to the Ultracorr 2

To connect to the Ultracorr 2 a sensor must be connected to the Ultracorr 2 unit. Access the Ultracorr 2 on the device list of the Transfer Unit and select either **Dlgr** or **Rdr** to connect to the Ultracorr 2 as a Datalogger or reader respectively.

Devices [UP/DOWN]	Χ
[XXXXXXX]
Bk=Back Sv=Save	
Dlgr Rdr Bk Sv	

When successfully connected, the Transfer Unit will display the Ultracorr 2 main menu screen shown below. If the ID shown is 0, the sensor has not been configured.

Ultracorr 2 ver. XX ID: XX TAGNAME Alloy: XXXXXX Sensor | More | Exit

Configure the Sensor

To configure the Sensor, first use the Transfer Unit to connect to the Ultracorr 2 device then select **Sensor** from the Ultracorr 2 main menu screen. The user can either select **Save Current** to save the current configuration of the sensor to the Transfer Unit or select **Confg** to load the sensor with the configuration of a specific ID that was created in the **Create an ID for the Sensor** section.

Ultracorr 2 Sensor			
Save current	Confg		
Calibration	Back		

If the user selects **Save Current** and the same ID number is saved in the Transfer Unit, the following screen will appear. Select **Okay** to clear the ID found and replace it with the current ID.

Clear ID Found? ID: XX TAGNAME				
Okay	Ι	Back	I	Exit

If the user selects **Confg**, the following screen will appear. Enter the **ID** to configure the sensor with.

Select **Okay** to configure the sensor.

ID: XX TAGNAME Okay | Back | Exit

Calibrate the Sensor

WARNING: CALIBRATION IS DONE BY COSASCO AND CHANGES MAY CAUSE INACCURACIES!

NOTE: DO NOT attempt to calibrate a transducer without notifying Cosasco. In most cases your transducer will not require a field calibration.

If transducer calibration is required, please contact your closest Cosasco regional office location for assistance. Information on the latest software version will be required.

To contact Cosasco technical support go to: <u>technicalsupport@cosasco.com</u> or call toll free 1-800-635-6898

Use the Transfer Unit to connect to the Ultracorr 2 device and select **Sensor** from the Ultracorr 2 main menu screen. On the following screen select **Calibration**.

Ultracorr 2 Sensor Save current | Confg Calibration | Back

A warning screen will be displayed stating that Calibration is done by Cosasco and Changes may cause inaccuracies. This screen will disappear after about 3 seconds.

WARNING Calib. is done by Cosasco. Changes may cause inaccuracies.

Displayed on the next screen are the current values for the **Offset**, **Slope**, and **Delay**. To change these values select **Change**.

Offset: X.XXXX Slope : X.XXXX Delay : X.X Change | Store | Back

The user will then go through the following screens to input the desired values for the **Offset**, **Slope** and **Delay**.

Slope: <

Offset: [_]
0123456789.< OK	Back

0123456789.< OK Back

>

Select Delay

1.0 | 1.5 | 2.0 2.5 | 3.0 | Back

After the user selects the desired Delay, another warning screen will appear and then a screen will appear with the values selected for **Offset**, **Slope** and **Delay**. These values will not be saved until the user selects **Store**. Selecting **Store** will overwrite the current values saved in the Ultracorr 2.

Offset: X.XXXX Slope : X.XXXX Delay : X.X Change | Store | Back

Configure the Datalogger

This is only available if the Ultracorr 2 is used as a Datalogger when connected to the Transfer Unit.

After connecting to the Ultracorr 2 as a Datalogger, select **More** from the Ultracorr 2 main menu screen and select **Confg** on the following screen.

Ultracorr 2 Logger Confg | Test | Dload Stat | Stop | Back

Enter the desired **interval** in **minutes** between **10** and **1440** then select **m**. Note: The hours (**h**) option is disabled and will show **INVAL** if selected.

> Interval:[___] min: (10 – 1440) 0123456789< m h Back

Stop Data Collection

This is only available if the Ultracorr 2 is used as a Datalogger when connected to the Transfer Unit.

NOTE: Download all data before stopping collection as this will clear the Ultracorr 2's stored readings!

After connecting to the Ultracorr 2 as a Datalogger, select **More** from the Ultracorr 2 main menu screen and select **Stop** on the following screen.

Ultracorr 2 Logger Confg | Test | Dload Stat | Stop | Back

Downloading Data

On the Transfer Unit devices list, navigate to an Ultracorr 2 device and select **DIgr**.

```
Devices [UP/DOWN]X[XXXXXXXX]Bk=Back Sv=SaveDlgr | Rdr | Bk | Sv
```

To download data from the Logger, select **More** then select **Dload**.

Ultracorr 2 ver. XX ID: XX TAGNAME Alloy: XXXXXX Sensor | More | Exit

Ultracorr 2 Logger				
Confg		Test		Dload
Stat		Stop		Back

After a successful data transfer, a screen will pop up with information about the last data point collected. Select **Next** to see the time when the last data point was collected.

Thickness: X.XXXX in			
Temp: XX.XX C			
Gain: XX.XX dB			
Next Back Exit			

Time s	tamp:
MM/DD	//YY HH:MM:SS
Back	Exit

Taking Individual Readings

While connecting to an Ultracorr 2 with the Transfer Unit the user has two options. One option is to get a single reading and be able to save that reading's data. Another option is to get readings that update continuously.

Individual Data Points

When connected to the Ultracorr 2 as a **Reader** the sensor is able to take individual readings and save them.

Once connected to the Ultracorr 2, select **More** from the Ultracorr 2 main menu screen and then select **Read**.

Ultracorr 2 ver. XX ID: XX TAGNAME Alloy: XXXXXX Sensor | More | Exit

Ultracorr 2 Reader Read | Test | Back After a successful reading, a screen displaying Thickness, Temperature, Gain and Battery Voltage values will appear. To get another reading select **Read**. To save the reading select **Save**. To Exit this screen, select **Back**.

Thickness: X.XXXX in			
Temp: XX.XX C Rea	ad		
Gain: XX.XX dB Sav	'e		
Batt: X.XX V Bac	ck		

Real-Time Data

When connected to the Ultracorr 2 as a **Reader** or **Datalogger**, the user is able to take readings that update in real-time.

Once connected to the Ultracorr 2, select **More** from the Ultracorr 2 main menu screen and then select **Test**

Ultracorr 2 ver. XX ID: XX TAGNAME	Ultracorr 2 Reader	Ultracorr 2 Logger
Alloy: XXXXXX Sensor More Exit	Read Test Back	Confg Test Dload Stat Stop Back

After a successful read, a screen displaying Thickness, Temperature, Gain and Battery Voltage values will appear and continuously update with new data. When the user wants to exit this screen, hold **OK**.

Note: A Battery Voltage reading below 4.5V means that the batteries are low and need to be replaced.

Thickness: X.XXXX in			
Temp: XX.XX C	Hold		
Gain: XX.XX dB	OK to		
Batt: X.XX V	►Exit		

Read Status

On the Transfer Unit devices list screen, navigate to an Ultracorr 2 device and select **Dlgr**.

Devices [UP/DOWN] X [XXXXXXXX] Bk=Back Sv=Save Dlgr | Rdr | Bk | Sv To check the status of the Ultracorr 2, select More then select Stat.

Ultracorr ID: XX TA	2 ver. XX AGNAME	
Alloy: XXXXXX		
Sensor	More	Exit

Ultracorr 2 Logger				
Confg		Test		Dload
Stat		Stop		Back

This will show the user the number of samples currently saved in the Ultracorr 2 and the interval in which the samples are been taken. Select **Next** to see the current time on the device.

Samples:XXXXX Interval: XX m Next | Back | Exit

Current Time: MM/DD/YY HH:MM:SS			
Back Exit			

ER Probe Reader

Chapter 5

The Transfer Unit is used with the ER Probe Reader to utilize all of the ER Probe Reader functions. Refer to **Basics of the Bluetooth Suite – ER Probe Reader and LPR Probe Reader** for more information on how to use the ER Probe Reader.

Create an ID for ER Probe Reader

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **ER** to get to a list of ER devices.

Select Device		
ER LPR	Microcor	
Ultracorr 2	Exit	

Select Reader from the list of devices.

	ER	
Reader	Logr	RDC
Back	Exit	

Enter the desired ID number then select OK.

Enter ID: [] (1 – 255)	
0123456789.< OK	Back

Enter a tag name for the device then select Nxt.

Tag:[] ABCDEFGHIJKLMNOPQR
STUVWXYZ0123456789<
Clr Nxt Bck Exit

Enter in the name of the alloy then select Nxt.

Note: The name of the alloy is for reference only and does not affect the calculation of corrosion rates.

```
Alloy: [_____]
ABCDEFGHIJKLMNOPQR
STUVWXYZ0123456789._-<
Clr | Nxt | Bck | Exit
```

Select the probe type used with the Reader then select Next.

If the user selects any of the **Other** probe options, the following screen will appear. Manually enter the span of the probe.

Span:<_ > mils 0123456789.< OK Back

Select if the probe is a temperature probe or not by selecting either Yes or No.

Is it a Temp. Probe? Yes | No | Bck | Exit

To save the ID select Okay.

Save? ID: XXX TAGNAME	
Okay Back Exit	

Take Data Point

On the Transfer Unit device list screen, navigate to the ER Probe Reader and select **Read**.

Devices [UP/DOWN]	
[XXXXXXXXXX	
Bk=Back CI=Clear	
Read DI Bk CI	

The user will have the option to either select **ID** or **Quick** to read the probe connected to the Reader.

• If **ID** is selected, the user will need to enter an ID preconfigured for the ER Probe Reader to take the data of and select **OK**. On the confirmation screen select **Okay** and the reader will begin to read the probe.

Note: If the user has not already created an ID, please refer to the **Create an ID for Reader** section for the ER Probe Reader.



• If **Quick** is selected, the user will need to manually enter the probe type, the span of the probe, and if the probe is a temperature probe or not.

Select Probe Type	Span: < > mils	
A B C D		Is it a Temp. Probe?
G u Back Exit	0123456789.< OK Back	Yes No Bck Exit

Once one of the previous steps is completed, the ER Probe Reader will take a reading of the attached probe. The ER Probe Reader has finished taking a reading once the ER Probe Reader light goes from yellow/orange back to blinking green.

Download Data Point from Reader

Before Downloading Data from the Reader, the user must first take a reading from the Reader. If this has not been done, please refer to the **Take Data Point** section.

Once the user finds an ER Probe Reader to download data from on the Transfer Unit select DI.

Devices [UP/DOWN]	
[XXXXXXXXX	
Bk=Back CI=Clear	
Read DI Bk CI	

After the transfer of the data point from the Reader to the Transfer Unit is complete, a screen will display information about the data on the Reader including the Divisions and Check Readings, Temperature, Metal Loss and the time that the last data point was collected from the device.

To save the current data to the Transfer Unit select **Save**. <u>Note</u>: This option will only be available if the user read from the Reader using a pre-configured ID.

Div: XXX.X Chk: XXX.X Temp: XXXX.X C MLoss: X.XXX mils Next | Back | Exit Time Stamp: MM/DD/YY HH:MM:SS Save | Back | Exit

LPR Probe Reader

Chapter 6

The Transfer Unit is used with the LPR Probe Reader to utilize all of the LPR Probe Reader functions. Refer to **Basics of the Bluetooth Suite – ER Probe Reader and LPR Probe Reader** for more information on how to use the LPR Probe Reader.

Create an ID for LPR Probe Reader

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **LPR** to get to a list of LPR devices.

Select Device		
ER LPR	Microcor	
Ultracorr 2	Exit	

Select Reader from the list of devices.

	LPR	
Reader Back	RDC2 Exit	RDC

Enter the desired ID number then select OK.

Enter ID:[_] (1 – 255)	
0123456789.< OK	Back

Enter a tag name for the device then select Nxt.

Tag:[]	
ABCDEFGHIJKLMNOPQR	
STUVWXYZ0123456789<	:
Clr Nxt Bck Exit	

Select an alloy by using the up and down arrows to scroll through the choices then select Next.

Select Alloy XXXXXXXXXXXXX XXXXXX (scroll U/D) Next | Back | Exit

If **Other** is selected, the name of the alloy and the multiplier (mult) will have to be inputted manually.

Alloy: [_____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Mult:< >	
0123456789.<	OK Back

Select either **Stdrd-E** or **Flush-F** for the probe type.

Select Probe Type		
Stdrd-E		Flush-F
Back		Exit

Select the cycle time in minutes for the device by selecting either 5, 10, 15 or 20.

Select Cycle Time in Minutes				
5	10	15	20	Back

Select if the probe is a temperature probe or not by selecting either **Yes** or **No**.

Is it a Temp. Probe?

Yes | No | Bck | Exit

To save the configuration of the device select Okay.

Save? ID: XXX TAGNAME		
Okay	Back Exit	

Take Data Point

On the Transfer Unit device list screen, navigate to the LPR Probe Reader and select **Read**.

Devices [UP/DOWN]	Χ		
[XXXXXXXXXX]		
Bk=Back CI=Clear			
Read DI Bk CI			

The user will have the option to either select **ID** or **Quick** to read the probe connected to the Reader.

• If **ID** is selected, the user will need to enter an ID preconfigured for the LPR Probe Reader to take the data of and select **OK**. On the confirmation screen select **Okay** and the reader will begin to read the probe.

Note: If the user has not already created an ID, please refer to the **Create an ID for Reader** section for the LPR Probe Reader.



• If **Quick** is selected, the user will need to manually select the alloy, the type of probe, the cycle time in minutes and if the probe is a temperature probe or not.

Select Alloy XXXXXXXXXXXXX XXXXXX (scroll u/d) Next Back Exit	Select Probe Type Stdrd-E Flush-F Back Exit
Select Cycle Time in Minutes 5 10 15 20 Back	Is it a Temp. Probe? Yes No Bck Exit

Once one of the previous steps is completed, the LPR Probe Reader will take a reading of the attached probe. The LPR Probe Reader has finished taking a reading once the LPR Probe Reader light goes from yellow/orange back to blinking green.

Download Data Point from Reader

Before Downloading Data from the Reader, the user must first take a reading from the Reader. If this has not been done, please refer to the **Take Data Point** section.

On the Transfer Unit devices list screen, navigate to the LPR Probe Reader then select DI.

Devices [UP/DOWN]	Χ	
[XXXXXXXXX]	
Bk=Back Cl=Clear		
Read DI Bk CI		

After a successful data transfer, a screen will display information about the data in the Reader including the Rate, Imbalance, Temperature and the time that the last data point was collected from the device.

To save the current data to the Transfer Unit select **Save**.

<u>Note</u>: This option will only be available if the user read from the Reader using a pre-configured ID.

Rate: XXX mpy Imb: XX.XXX Temp: XXX Next | Back | Exit Time Stamp: MM/DD/YY HH:MM:SS Save | Back | Exit

Legacy Converter

Chapter 7

The Transfer Unit is used with the Legacy Converter to utilize all of the Legacy Converter functions. Refer to **Basics of the Bluetooth Suite – Legacy Converter** for more information on how to use the Legacy Converter.

RDC-CO(T)

To use the Transfer Unit with the RDC-CO(T), a Legacy Converter must be connected to the RDC-CO(T)'s service port to allow for communication between devices.

Create an ID for RDC-CO(T)

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **ER** to get to a list of Corrosometer devices.

Select Device		
ER LPR	Microcor	
Ultracorr 2	Exit	

Select **RDC** from the list of devices.

	ER	
Reader	Logr	RDC
Back	Exit	

Enter the desired ID number then select OK.

Enter ID: [_] (1 – 255)	
0123456789.< OK	Back

Enter the interval then select **m** for minutes or **h** for hours.

```
Interval: [___]
min:(5-30) hr:(1-24)
0123456789< m h Back
```

Enter a tag name for the device then select Nxt.

Tag:[____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Enter in the name of the alloy then select **Nxt**.

Note: The name of the alloy is for reference only and does not affect the calculation of corrosion rates.

Alloy: [_____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Select the probe type used with the RDC-CO(T) then select Next.

Select Probe Type < XX XXXXXXXX > Scroll up and down Next | Back | Exit

If the user selects any of the **Other** probe options, the following screen will appear. Manually enter the span of the probe.

Span:< > mils

0123456789.< OK Back

Select if the probe is a temperature probe or not by selecting either Yes or No.

Is it a Temp. Probe? Yes | No | Bck | Exit To save the configuration of the device select **Okay**.

Save? ID: XXX TAGNAME		
Okay Back Exit		

Load Configuration onto RDC-CO(T)

To load a configuration onto the RDC-CO(T) an ID must be created. If the user has not already created an ID, please refer to the **Create an ID for RDC-CO(T)** section.

On the device list screen, find the Legacy Converter device by pushing the up and down keys and select **Cfg**.

Devices [UP/DOWN]	Χ	
[XXXXXXXXXX]	
Bk=Back Sv=Save		
Cfg DI St Bk	Sv	

On the following screen, select **RDC-COT**.

Select Device	
MDL/ML9500	
ĺ	
Exit	

Enter the ID of the configuration to load onto the RDC-CO(T) then select OK.

Enter ID:[___] (1 – 99) 0123456789.< OK Back

On the following screen, select Okay to load the configuration onto the RDC-CO(T).

ID: XX TAGNAME

Okay | Back | Exit

Download Data from RDC-CO(T)

On the Transfer Unit device list screen, navigate to the Legacy Converter device connected to the RDC-CO(T) to download the data from and select **DL**.

Devices [UP/DOWN]	Χ
[XXXXXXXXXX]
Bk=Back Sv=Save	
Cfg DI St Bk 3	Sv

On the following screen, select **RDC-COT**.

Select Device	
RDC-COT	MDL/ML9500
RDC-CAT	1
Back	Exit

After successful data transfer, a screen will display information about the RDC-CO(T) and the latest reading.

ID: XXX (X) RDC-COT Tag: XXXXXXX Samples XXX (XX m/h) Next | Back | Exit

Use **Next** to navigate between the screens and see the Alloy, Span, Divisions and Check Readings, Temperature, Metal Loss and the time that the last data point was collected from the device.

Alloy: XX Span: XX.XXX mils

Next | Back | Exit

Div: XXX.X Chk: XXX.X Temp: XXXX.X C MLoss: X.XXX mils Next | Back | Exit Time Stamp: MM/DD/YY HH:MM:SS Interval: XX m/h Back | Exit

Read RDC-CO(T) Status

On the Transfer Unit device list screen, navigate to the Legacy Converter device connected to the RDC and select **St**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

On the following screen, select **RDC-COT**.

Select Device RDC-COT | MDL/ML9500 RDC-CAT | Back | Exit

The Transfer Unit will connect to the RDC-CO(T) then show information about the RDC-CO(T) including the Revision, ID, Tag name, Number of Samples and Interval in which the Samples are being taken. Select **Next** to see the time of the last reading and the time that the next reading will be taken.

Revision: X ID: XXX TAGNAME Samples: XX (X m/h) Next | Back | Exit Last Read: MM/DD/YY HH:MM:SS Next Read: HH:MM:SS Back | Exit

RDC CA(T)

To use the Transfer Unit with the RDC-CA(T), a Legacy Converter must be connected to the RDC-CA(T)'s service port to allow for communication between devices.

Create an ID for RDC-CA(T)

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **LPR** to get to a list of Corrater devices.

Select Device	
ER LPR	Microcor
Ultracorr 2	Exit

Select **RDC** from the list of devices.

	LPR	
Reader	Logr	RDC
Back	Exit	

Enter the desired ID number then select OK.

Enter the interval then select **m** for minutes or **h** for hours.

Interval: [_] min:(30) hr:(1-24)
0123456789< m h Back

Enter a tag name for the device then select Nxt.

Tag:[]
ABCDEFGHIJKLMNOPQR
STUVWXYZ0123456789<
Clr Nxt Bck Exit

Select an alloy by using the up and down arrows to scroll through the choices then select Next.

Select Alloy XXXXXXXXXXXX	
XXXXXX (scroll U/D) Next Back Exit	

If **Other** is selected, the name of the alloy and the multiplier (mult) will have to be inputted manually.

Alloy: [_____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Mult:< >	
0123456789.<	OK Back

Select either Stdrd-E or Flush-F for the probe type.

Select	t Probe Type
Stdrd-E	Flush-F
Back	Exit

Select if the probe is a temperature probe or not by selecting either **Yes** or **No**.

Is it a Temp. Probe? Yes | No | Bck | Exit

To save the configuration of the device select **Okay**.

Save? ID: XXX TAGNAME Okay | Back | Exit

Load Configuration onto RDC-CA(T)

To load a configuration onto the RDC-CA(T) an ID must be created. If the user has not already created an ID, please refer to the **Create an ID for RDC-CA(T)** section.

On the Transfer Unit device list screen, find the Legacy Converter connected to the RDC-CA(T) and select **Cfg**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

On the following screen, select **RDC-CAT**.

Select Device	
RDC-COT	MDL/ML9500
RDC-CAT	
Back	Exit

Enter the ID of the configuration to load onto the RDC-CA(T) then select OK.

Enter ID:[__] (1 – 99) 0123456789.< OK Back

On the following screen, select Okay to load the configuration onto the RDC-CA(T).

ID: XX TAGNAME Okay | Back | Exit

Download Data from RDC-CA(T)

On the Transfer Unit devices list screen, navigate to the Legacy Converter device connected to the RDC-CA(T) and select **DI**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv On the following screen, select **RDC-CAT**.

Select Device	
RDC-COT	MDL/ML9500
RDC-CAT	
Back	Exit
	-

After a successful data transfer, a screen will display information about the RDC-CA(T) and the latest reading.

ID: XXX (X) RDC-CAT Tag: XXXXXXX Samples XX (XX m/h) Next | Back | Exit

Select **Next** to navigate between the following screens to see the Alloy, Multiplier, Cycle Time Rate, Imbalance, Temperature, the time stamp of when the last data point was taken and the interval in which the samples are being taken.

Alloy: XXXXXXX Multiplier: XX.XXX Cycle Time: N/A Next | Back | Exit

Rate: XXX mpy Imb: XX.XXX Temp: XXX C/F Next | Back | Exit Time Stamp: MM/DD/YY HH:MM:SS Interval: XX m/h Back | Exit

Get Status of RDC-CA(T)

On the Transfer Unit devices list screen, navigate to the Legacy Converter connected to the RDC-CA(T) and select **Stat**.

Devices <XXXXXXXXXX > Scroll up and down Cfg | DL | Stat | Back

On the following screen, select **RDC-CAT**.

Select Device		
RDC-COT	MDL/ML9500	
RDC-CAT		
Back	Exit	

Once the Transfer Unit has connected to the RDC-CA(T) it will show a screen with the Revision, ID, Tag Name, Number of Samples collected and the interval in which the samples are taken for the RDC. Select **Next** to see when the last reading was taken and when the next reading will be taken.

Revision: X ID: XXX TAGNAME Samples XX (X m/h) Next | Back | Exit

Last Read: MM/DD/YY HH:MM:SS Next read: HH:MM:SS Back | Exit

Microcor Datalogger/ML-9500B

To use the Transfer Unit with the Microcor Datalogger/ML-9500B, a Legacy Converter must be connected to the Microcor Datalogger/ML-9500B serial port to allow for communication between devices.

Create an ID for a Microcor Device

On the Transfer Unit standby screen select **Confg**. On the next display screen, select **uCor** to get to a list of Microcor devices.

Select Device		
ER LPR	Microcor	
Ultracorr 2	Exit	

Select the type of Microcor Device.

- MDL (Microcor Datalogger) MWT-3905-MDL
- ML95 (Legacy Microcor Datalogger) ML-9500B

Microcor		
M-200 Back	MDL Exit	ML95

Enter the desired **ID** number then select **OK**.

Enter ID:[___] (1 – 99) 0123456789.< OK Back Enter the interval then select **m** for minutes. Note: the hours (**h**) option is disabled and will show **INVAL** if selected.

```
Interval:[___]
min: (5 – 1440)
0123456789< m h Back
```

Enter a tag name for the device then select Nxt.

Tag:[____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

To save the configuration of the device select **Okay**.



Load ID onto Microcor Datalogger and ML-9500B

To load a configuration onto the MDL/ML9500 a configuration must be created. If the user has not already created a configuration, please refer to the **Create an ID for a Microcor Device** section.

Scroll through the list of devices on the Transfer Unit until the Bluetooth name of the desired Legacy Converter is displayed and then select **Cfg**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

On the following screen, select MDL/ML9500.

Select Device		
RDC-COT	MDL/ML9500	
RDC-CAT		
Back	Exit	

Enter the ID of the configuration to load onto the Datalogger then select OK.

```
Enter ID:[__]
(1 – 99)
0123456789.< OK Back
```

On the following screen, select **Okay** to load the configuration onto the Datalogger.

ID: XX TAGNAME	
Okay Back Exit	

Download Data from Microcor Datalogger/ML-9500B

On the Transfer Unit device list, navigate to the Legacy Converter connected to the Microcor Datalogger or ML-9500B and select **DI**.

Devices [UP/DOWN] X		
[XXXXXXXXXX]		
Bk=Back Sv=Save		
Cfg DI St Bk	Sv	

On the following screen, select MDL/ML9500.

Select Device		
RDC-COT	MDL/ML9500	
RDC-CAT	ĺ	
Back	Exit	

After a successful data transfer, a screen will appear with information about the MDL/ML-9500B including its ID, Tag Name, the number of samples downloaded and the interval in which data is collected.

ID:XX MDL Tag: TAGNAME Samples: XXXX (XX m) Next | Back | Exit ID:XX ML9500 Tag: TAGNAME Samples: XXXX (XX m) Next | Back | Exit Select Next to continue to the next display which shows Probe Life Units (PLU).

PLU: XXXXX			
Next	Back	I	Exit

Select **Next** to continue to the next display to see the time when the last data point was collected as well as what intervals the data is being taken at.

Time Stamp: MM/DD/YY HH:MM:SS Interval: (XX m) Back | Exit

Read Microcor Datalogger/ML-9500B Status

On the Transfer Unit device list, navigate to the Legacy Converter device connected to the Microcor Datalogger or ML-9500B and select **St**.

Devices [UP/DOWN] X		
[XXXXXXXXXX]		
Bk=Back Sv=Save		
Cfg DI St Bk 3	Sv	

On the following screen, select MDL/ML9500.

Select Device RDC-COT | MDL/ML9500 RDC-CAT | Back | Exit

After a successful data transfer, the following screen will appear with the attached information. Select **Next** to continue to the next display which shows the current time on the MDL.

ID:XX TAGNAME Samples: XXXX Interval: XX m/h Next | Back | Exit

Current time: MM/DD/YY HH:MM:SS		
Next	Back Exit	

Select **Next** to continue to the next display which shows the battery, memory and transmitter information as shown below. Battery status will show **good** or **low**. Memory and transmitter will show **good** or **bad** depending on their status.

Battery	:Good/Low
Memory	:Good/Bad
Transmitter	:Good/Bad
Back Exit	
ER Datalogger

Chapter 8

Create an ID for ER Datalogger

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **ER** to get to a list of ER devices.

Select Device		
ER	LPR	Microcor
Ultra	corr 2	Exit

Select **RDC2** from the list of devices.

	ER	
Reader	Logr	RDC
Back	Exit	

Enter the desired ID number then select OK.

Enter ID: [] (1 – 255)
0123456789.< OK Back

Enter the interval then select **m** for minutes or **h** for hours.

Interval: [_] min:(5-59) hr:(1-24)
0123456789< m h Back

Enter a tag name for the device then select Nxt.

Tag:[____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Enter in the name of the alloy then select Nxt.

Note: The name of the alloy is for reference only and does not affect the calculation of corrosion rates.

Alloy: [_____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Select the probe type used with the ER Datalogger then select Next.

Select Probe Type < XX XXXXXXXX X > Scroll up and down Next | Back | Exit

If the user selects any of the **Other** probe options, the following screen will appear. Manually enter the span of the probe.

Span:< > mils 0123456789.< OK Back

Select if the probe is a temperature probe or not by selecting either Yes or No.

Is it a Temp. Probe?

Yes | No | Bck | Exit

To save the configuration of the device select Okay.

Save? ID: XXX TAGNAME	
Okay Back Exit	

Load Configuration onto ER Datalogger

To load a configuration onto the ER Datalogger an ID must be created. If the user has not already created an ID, please refer to the **Create an ID for ER Datalogger** section.

On the device list screen, find the ER Datalogger device by pushing the up and down keys and select **Cfg**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

Enter the **ID** of the configuration to load onto the ER Datalogger then select **OK**.

Enter ID:[__] (1 – 255) 0123456789.< OK Back

Select **Okay** to load the configuration onto the ER Datalogger.

ID: XX TAGNAME

Okay | Back | Exit

Download Data from ER Datalogger

On the Transfer Unit device list, navigate to the ER Datalogger device and select DI.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

After successful data transfer, a screen will display information about the ER Datalogger and the latest reading.

ID: XXX (X) RDC-COT Tag: XXXXXXX Samples XXX (XX m/h) Next | Back | Exit

Use **Next** to navigate between the screens and see the Alloy, Span, Divisions and Check Readings, Temperature, Metal Loss and the time that the last data point was collected from the device.

Alloy: XX Span: XX.XXX mils

Next | Back | Exit

Div: XXX.X Chk: XXX.X Temp: XXXX.X C MLoss: X.XXX mils Next | Back | Exit Time Stamp: MM/DD/YY HH:MM:SS Interval: XX m/h Back | Exit

Get Status of ER Datalogger

On the Transfer Unit device list screen, navigate to the ER Datalogger device and select St.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv The Transfer Unit will connect to the ER Datalogger then show information about the ER Datalogger including the Revision, ID, Tag name, Number of Samples and Interval in which the Samples are being taken. Select **Next** to see the time of the last reading and the time that the next reading will be taken.

Revision: X ID: XXX TAGNAME Samples: XX (X m/h) Next | Back | Exit Last Read: MM/DD/YY HH:MM:SS Next Read: HH:MM:SS Back | Exit

LPR Datalogger

Chapter 8

Create an ID for LPR Datalogger

On the Transfer Unit standby screen select **Confg.** On the next display screen, select **LPR** to get to a list of LPR devices.

Select Device	
ER LPR	Microcor
Ultracorr 2	Exit

Select **RDC2** from the list of devices.

	LPR	
Reader	Logr	RDC
Back	Exit	

Enter the desired ID number then select OK.

Enter ID: [] (1 – 255)
0123456789.< OK Back

Enter the interval then select **m** for minutes or **h** for hours.

Interval: [_] min:(10-59) hr:(1-24)
0123456789< m h Back

Enter a tag name for the device then select Nxt.

Tag:[____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit

Select an alloy by using the up and down arrows to scroll through the choices then select Next.

If **Other** is selected, the name of the alloy and the multiplier (mult) will have to be inputted manually.

Alloy: [_____] ABCDEFGHIJKLMNOPQR STUVWXYZ0123456789._-< Clr | Nxt | Bck | Exit Mult:< > 0123456789.< OK Back

Select either Stdrd-E or Flush-F for the probe type.

Select Probe Type	
Stdrd-E	Flush-F
Back	Exit

Select the cycle time for the device by selecting either Min or Auto.

Select Cycle Time in Minutes

Min | Auto | Back

Select if the probe is a temperature probe or not by selecting either Yes or No.

Is it a Temp. Probe?

Yes | No | Bck | Exit

To save the configuration of the device select Okay.

Save? ID: XXX TAGNAME	
Okay Back Exit	

Load Configuration onto LPR Datalogger

To load a configuration onto the LPR Datalogger an ID must be created. If the user has not already created an ID, please refer to the **Create an ID for LPR Datalogger** section.

On the device list screen, find the LPR Datalogger device by pushing the up and down keys and select **Cfg**.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

Enter the ID of the configuration to load onto the LPR Datalogger then select OK.

Enter ID:[__] (1 – 255) 0123456789.< OK Back

Select **Okay** to load the configuration onto the LPR Datalogger.

ID: XX TAGNAME

Okay | Back | Exit

Download Data from LPR Datalogger

On the Transfer Unit device list, navigate to the LPR Datalogger device and select DI.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv

After successful data transfer, a screen will display information about the LPR Datalogger and the latest reading.

ID: XXX (X) RDC-COT Tag: XXXXXXX Samples XXX (XX m/h) Next | Back | Exit

Use **Next** to navigate between the screens and see the Alloy, Multiplier, Cycle Time, Rate, Imbalance, Temperature, Interval at which readings are being taken and the time that the last data point was collected from the device.

Alloy: XX Span: XX.XXX mils

Next | Back | Exit

Div: XXX.X Chk: XXX.X Temp: XXXX.X C MLoss: X.XXX mils Next | Back | Exit

Time Stamp: MM/DD/YY HH:MM:SS Interval: XX m/h Back | Exit

Get Status of LPR Datalogger

On the Transfer Unit device list screen, navigate to the LPR Datalogger device St.

Devices [UP/DOWN] X [XXXXXXXXXX] Bk=Back Sv=Save Cfg | DI | St | Bk | Sv The Transfer Unit will connect to the LPR Datalogger then show information about the LPR Datalogger including the Revision, ID, Tag name, Number of Samples and Interval in which the Samples are being taken. Select **Next** to see the time of the last reading and the time that the next reading will be taken.

Revision: X ID: XXX TAGNAME Samples: XX (X m/h) Next | Back | Exit Last Read: MM/DD/YY HH:MM:SS Next Read: HH:MM:SS Back | Exit

Transfer Readings from the Transfer Unit to Cosasco Data

Chapter 8

For maximum functionality and data management, all the data contained in the Transfer Unit may be downloaded to a personal computer running Cosasco Data Corrosion Management Software. The Cosasco Data software package is a flexible corrosion data management system that allows integration of all corrosion monitoring parameters. Refer to the Cosasco Data Corrosion Management Software documentation for installation, site setup, capabilities and other details.

Bluetooth Communication Requirements

In order to connect the Transfer Unit to the PC, the user will need a PC with Bluetooth capability or a Bluetooth USB Adapter, which can be ordered through Cosasco (P/N 723763). The recommended Bluetooth version is 2.1 + Enhanced Data Rate (EDR), but is compatible with Bluetooth version 2.0, 1.2 and 1.1.

Create a New Group

Run Cosasco Data and from the **Devices** drop down list select **Transfer Unit**. A window will pop up for the Transfer Unit Driver.





In the top right corner, select Add New to create a new group for the Transfer Unit.

The following window will pop up. Select Transfer Unit and select OK.

Select Device
Bluetooth
Transfer Unit
Legacy
Checkmate DL-Microcor
Checkmate DL-Corrdata
Checkmate Plus
Checkmate
Mate II
Mate
Ultracom
DWC Cancel

After creating a new group, the Transfer Unit Driver window will now appear as below. Name the group by typing the desired name into the **Display Name** box and click **Save** to save the changes made.

Transfer Unit v1.4.0.1								
🖽 Add New 🛅 Open <u>î</u> Delete						-		
Devide;	+ Add P	robe	Configure	Get IDs	s 🚽 Downlo	ad 🔛 Save		
Transfer Unit	F	^p robe D	Ident	Tag	Probe Type	Element	Span / Multiplier	
Display Name								
Bluetooth Clevice: Select								
1								
Create nodes for new probes								

Open a Group

Run Cosasco Data and from the **Devices** drop down list select **Transfer Unit**. A window will pop up for the Transfer Unit Driver.

Probe Ident Tag Probe Temperature Bernent Alloy Span / Cycle Time	Interval
te a	
aros.	
te inclus få verw probes	

In the top right corner, select **Open** to open a previously created group for the Transfer Unit.

nsfer Unit v1.4.0.1				100					
l Nev 🗁 Open 🕤 Delete	- Add Prohe	Configure	Download	Save					
	Probe	Ident T	Probe Type	Temperature	Element Name	Element A	lloy Span / Multiplier	CycleTime	Interval
Y Naria	-								
Port.									
ath De Vice									
eate nodes for new probes									
ident:									

A screen will pop up containing a list of all of groups created for the Transfer Unit Driver with the group name next to the group type which is in brackets. Select the group for the **Transfer Unit** then select **OK**.

Open	8
TU-500 (Transfer Unit]	
OK Cancel	
	-

Add a Probe through Cosasco Data

Run Cosasco Data and from the **Devices** drop down list select **Transfer Unit**. A window will pop up for the Transfer Unit Driver. After creating a new group or opening a group, select **Add Probe** to add a new probe to the list of probes for the Transfer Unit.



The following screen will appear. Enter the **Probe ID**, **Tag Name** and **Probe Type**. Depending on the Probe Type chosen, enter the **Element**, **Alloy**, **Span**, **if it's a Temperature Probe**, and **Interval in which it collects data**.

Probe Configuration	n 🛃
ID:	1
Tag:	
Туре:	ER-200 -
Element:	•
	D 🔹
Alloy:	
Span (mils):	0.00
Temperature:	
Interval:	•
Cycle Time:	(suto)
Where to save da	ita:
Ident:	(none)
	Create

Optional: Click the box next to Ident and select a node to store the Probe's Data to then click OK.

Once the user has finished entering the details of the probe, select **Create** to add the probe to the list. Then click **Save** to save the changes made to the Transfer Unit group.

Probe Configuration		
ID:	2	
Tag:	Test Probe	
Туре:	ER-200 -	
Element:	S10 Flush 💌	
	B •	
Alloy:	K03005	
Span (mils):	5.00	
Temperature:		
Interval:	15 m 👻	
Cycle Time:	(auto)	
Where to save data		-
Ident:	ER ER	
	Create	1

Transfer Unit v1.4.0.1								1				
щ Add New 🔚 Open 🏢 Delete						-						
Bev/de:	+ Ad	d Probe	Configure	Get ID	s 🚽 Downlo	ad 🔛 Save						
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
Display Name	÷.	1	System/	Test Pr.	RDC2-ER		S10 Flush	в	K03005	5	15 m	
TU-500												
Bluetooth Devices												
Select												
Create nodes for new probes												
Stoup form												
10												

Create Nodes for New Probes (Optional)

The Transfer Unit Driver gives the user the option to create new nodes in the Plant Layout for Probe Data collected through the Transfer Unit. This removes the step of creating a node manually and choosing a node to save the Probe Data to.

On the Transfer Unit Driver screen, select the checkbox next to Create nodes for new probes.

Transfer Unit v1.4.0.1												
🛺 Add New 🔚 Open 前 Delete												
Beylde:	+ Ac	Id Probe	Configure	e Get ID	s 🚽 Downloa	id 🔛 Save				-		
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
Display Name	P.	1		Test Pr.	RDC2-ER		S10 Flush	В	K03005	s	15 m	
TU-500												
Bluetooth Device:												
Select												
Create nodes for new probes												
Stoup (den)												
0												
	-											

Transfer Unit v1.4.0.1												
🛱 Add New 🛅 Open <u> </u> Delete	+ Ad	ld Probe	Configure	e Get ID	is 🛓 Download	Save						
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
Display Name	F	1		Test Pr.	RDC2-ER		S10 Flush	в	K03005	5	15 m	
TU-500												
Bluetooth Devide:												
Select												
Create nodes for new probes Group later:												

Click the icon under **Group Ident** and a window will appear with the Plant Layout within.

Select a **System** or **Subsystem** node for new probes to be created under and select **OK**.

Select Ident	-	
Database Points		
E System		
🕀 🏀 Sub System		
Development		
Sector Sector		
System		
•••••••••		
La 💮 👖 Consecu		
⊕ 📸 SubSystem		
Sec.		
System		
🕀 💏 SubSystem		
er 🖶 📮 Denember		
Sector Sector		
Database ID: 2172	System	
		OK Cancel

ev)de;			and the second	1		Internet and					
	1.4	dd Probe	Configure	e Get ID	s Downloa	id Save					
ransfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interv
splay Name	₽.	1		Test Pr.	RDC2-ER		S10 Flush	B	K03005	5	15 m
U-500											
uetooth Device:											
Select											
J Create nodes for new											
cup roent:											

Select **Save** to save the changes to where the new probes will be stored.

Connect Transfer Unit to PC

On the Transfer Unit select **PC** from the standby screen. It will show the following screen while waiting to connect to the PC.



On the Transfer Unit Driver, click the box under **Bluetooth Device**.

Transfer Unit v1.4.0.1							-					
🖽 Add New 🛅 Open 🏢 Delete												
Bev/de:	+ 4	dd Probe	Configur	e Get ID	is 🚽 Downlo	ad 🔛 Save				_		
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
Display Name	F.	1		Test Pr.	RDC2-ER		S10 Flush	В	K03005	5	15 m	
TU-500												
Bluetooth Devrice:												
Select												
V Create nodes for new probes												
Group Ident:												
111 ×												

A window will appear with possible Bluetooth devices the PC can connect to. Select the Transfer Unit device then click **OK**.

C-TU-500ENGDEMO2 Bluetooth Other	
If you don't see the device that you want to add, make sure that it is turned on. Fo that came with the device, and then click Search Again.	low the setup instruc

The Transfer Unit Driver will now show the name of the Transfer Unit the PC is connected to and connected in green underneath. The Transfer Unit will show the following screen.

Transfer Unit v1.4.0.1										~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
🖽 Add New 🛅 Open 🍿 Delete												
Beylde:	+ Ad	d Probe 🛓	Configure	Get ID	s 🛃 Downlo	ad 🔛 Save	_			-		
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
Display Name	Þ	1	System/	Test Pr.	RDC2-ER		S10 Flush	в	K03005	5	15 m	
TU-500												
Bluetooth Device:												
C-TU-500ENGDEMO2												
(connected)												
UI Create nodes for new probes												
Group Ident.												
System												



Get ID's from Transfer Unit

Once the Transfer Unit has connected to the PC, select **Get IDs** from the Transfer Unit Driver window.

dd New 🛅 Open 🏢 Delete				_								
V)de;	+ Ac	dd Probe 👔	Configure	Get ID	s 🦺 Downlo	ad 🔛 Save				-		
ansfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element Name	Element	Alloy	Span / Multiplier	Interval	
splay Name	Þ.,	1	System/	Test Pr.	RDC2-ER		S10 Flush	В	K03005	5	15 m	
-500												
tooth Device:												
C-TU-500ENGDEMO2												
nected)												
Create podes for new probes												
ip Ident:												
Svetem												

Once the transfer of the ID's on the Transfer Unit to the PC is complete, the user will see a list of all probes from the Transfer Unit. Click **Save** to save the list of probes from the Transfer Unit.

Add New Delete													
De une	+	kdd Probe	Configu	ure Get IDs 🛓 D	ownload 🔛 Sav	e					_		
Tianaler Unit		Probe	klert	Tag	Picke Type	Temperature	Barterif	Alloy	Span / Mutpler	Oycle Tene	Interval	Readings	Last Reading
Disaray Marrie	÷.	21		ACCE PHAT	LEFT 200		(North	ALC: NO.	1.5	tie -	10.00		
70-500		23	1	COKE-OLDROC	RDC-ER	1	D	\$03005	5		10 m	-	T
and the second se		24		POLYROC-87	ER-200		0	K03005	5		10 m		
P TH EMENICOCIAN		25		RDCSSHOUSE 87	ER-200	1	8	K03005	5		10 =		
C-TO-SODEMADEMO2		112		ROCZ	ER 200	92	8		5	-	(Sim		

Configure Probes

WARNING: Changing the configuration of the Probes through the Transfer Unit Driver will erase all stored data.

Configure Individual Probes

To change the configuration of a probe, right click it and select **Edit Details**.

Add Probe	Ident	e Get IDs Dow Tag H2OLPRBT COKE-OLDRDC POLYRDC-BT RDCSHOUSE BT RDC2	Interference Image: Probe Type LFR-200 RDC-ER RR-200 ER-200 ER-200 ER-200	Temperature Bernent A Edit Details Download - ID #21 Configure - ID #21 Delete	Alloy 05 05 105	Span / Multiplier 5 5 5 5 5	Cycle Time	Interval 10 m 10 m 10 m 10 m 5 m	Readings	Last Reading
Probe ID 21 23 24 25 112	Ident	Tag HZOLPRIET COKE-OLDRDC POLYRDC-BT RDCSHOUSE BT RDC2	Probe Type LPR-200 RDC-ER ER-200 ER-200 ER-200	Temperature Bernent A Edit Details Download - ID #21 Configure - ID #21 Delete	Viloy 05 05 105	Span / Multiplier 5 5 5 5 5	Cycle Time	Interval 10 m 10 m 10 m 10 m 5 m	Readings	Last Reading
21 23 24 25 112		H2OLPRET COKE-OLDRDC POLYRDC-BT RDCSSHOUSE BT RDC2	LPR-200 RDC-ER ER-200 ER-200 ER-200	Edit Details Download - ID #21 Configure - ID #21 Delete	05	1 5 5 5 5	5m	10 m 10 m 10 m 10 m 5 m		
23 24 25 112		COKE-OLDRDC POLYRDC-BT RDCSSHOUSE BT RDC2	RDC-ER ER-200 ER-200 ER-200	Download - ID #21 Configure - ID #21 Delete	05 05 105	5 5 5 5		10 m 10 m 10 m 5 m		
24 25 112		POLYRDC-BT RDCSSHOUSE BT RDC2	ER-200 ER-200 ER-200	Download - ID #21 Configure - ID #21 Delete	05	5 5 5		10 m 10 m 5 m		
25		RDCSSHOUSE BT RDC2	ER-200 ER-200	Configure - ID #21 Delete)05	5		10 m 5 m		
112		RDC2	ER-200	Delete		5		5 m		
						-				

On the window that appears, the user can change the Probe ID, Tag Name, Element, Alloy, Span, if it's a Temperature probe, Interval and Cycle Time depending on what type of probe it is.

Probe Configuration	n	
ID:	2	
Tag:	Test Probe	
Туре:	ER-200 -	
Element:	S10 Flush 👻	
	B 🔹	
Alloy:	K03005	
Span (mils):	5.00	
Temperature:		
Interval:	15 m 👻	
Cycle Time:	(auto)	
Where to save da	ita:	
Ident:	ER ER	
	Create	1

Exit out of the screen once the user has finished changing the details of the probe. Right click the probe and select **Configure – ID** to change the configuration of the probe on the Transfer Unit.

Transfer Unit v1.4.4.2												
Add New 🔚 Open 🏢 Delete			-									
Jev/pe:	- - A	dd Probe 🯦	Configure	Get IDs 📩 Dow	nload 🔛 Save							
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature Element Allo	у	Span / Multiplier	CycleTime	Interval	Readings	Last Reading
spiey Name:	þ.	21		H2OLFRBT	LPR-200	E Maria Progr	⁴ 05	Ť	5 m	10 m		
U-500		23	-	COKE-OLDRDC	RDC-ER	Edit Details	05	5	-	10 m	5	
		24	-	POLYRDC-BT	ER-200	Download - ID #21	05	5		10 m	1	
C TUSOOENCDEMO2		25		RDCSSHOUSE BT	ER-200	Configure - 10 #21	05	5		10 m		
C-10300ENGDEMIO2		112	-	RDC2	ER-200	Delete		5		5 m		
I Create nodes for new probes												

Configure All Probes

e Ident Tag H2OLPRBT COKE-OLDRDC POLYRDC-BT RDCSSHOUSE BT RDC2	Probe Type LPR-200 RDC-ER ER-200 ER-200 ER-200 ER-200	Temperature Element A Edit Details Download - ID #21 Configure - ID #21	lloy 05	Span / Multiplier	CycleTime 5 m	Interval	Readings	Last Reading
H20LPHBT COKE-OLDRDC POLYRDC-BT RDCSSHOUSE BT RDC2	LPR-200 RDC-ER ER-200 ER-200 ER-200	Edit Details Download - ID #21 Configure - ID #21	05	1	5 m	10 m		
COKE-OLDRDC POLYRDC-BT RDCSSHOUSE BT RDC2	RDC-ER ER-200 ER-200 ER-200	Edit Details Download - ID #21 Configure - ID #21	05	5				
POLYRDC-BT RDCSSHOUSE BT RDC2	ER-200 ER-200 ER-200	Configure - ID #21	05			10 m		
RDCSSHOUSE BT RDC2	ER-200 ER-200	Configure - ID #21	0.5	5		10 m		
RDC2	ER-200		05	5		10 m		
		Delete		5		5 m		

To change the configuration of a probe, right click it and select **Edit Details**.

On the window that appears, the user can change the Probe ID, Tag Name, Element, Alloy, Span, if it's a Temperature probe, Interval and Cycle Time depending on what type of probe it is.

ID:	2
Tag:	Test Probe
Type:	ER-200 -
Element:	S10 Flush 🔹
	В
Alloy:	K03005
Span (mils):	5.00
Temperature:	
Interval:	15 m 👻
Cycle Time:	(auto)
Where to save d	lata:
Ident:	ER ER

Exit out of the screen. Once the user has finished changing the details of the probes, click **Configure**. This will reconfigure **all** of the probes on the Transfer Unit.

Sevice:	+ 4	dd Probe 🟦	Configure	Get IDs 📥 Dow	nload 🔛 Save								
ransfer Unit		Probe	Ident	Configure	Probe Type	Temperature	Element	Alloy	Span / Multiplier	Cycle Time	Interval	Readings	Last Reading
splay Name	b.	21		HZOLPRET	LPR-200		None	K03005	1	5 m	10 m		
I-500	-	23	1	COKE-OLDRDC	RDC-ER		D	K03005	5		10 m	j	
atomb Davina-		24	1	POLYRDC-BT	ER-200		D	K03005	5		10 m		
C-TU500ENGDEMO2		25		RDCSSHOUSE BT	ER-200		в	KO3005	5		10 m		
		112		RDC2	ER-200	V	в		5		5 m		
¹ Create nodes for new probes													

Download Data

Download Individual Probe Data

To download a single probe's data, right click a specific probe and select **Download – ID**.

Huarten _ open _ beet				10.0		1.1						
Device	+ 4	dd Probe	Configure	Get IDs	s 🛃 Downloa	ad 📔 Save					-	
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element	Alloy	Span / Multiplier	CycleTime	Interval	
Display Name:		21	System/	H2OLP	LPR-200		None	K03005	1	5 m	10 m	
TU-500		23	System/	COKE	RDC-ER		D	K03005	5		10 m	
		24	System/	POLY	ER-200		D	K03005	5		10 m	
C THEODENICDEMICO		25	System/	RDCS	ER-200		R	Knanns	5		10 m	
C-10500ENGDEMO2		112	System/	RDC2	ER-200	Edit	Details		5		5 m	
(connected)						Dow	nload - ID	#25				
						Cont	igure - ID	#25				
						Delet	te					
						-		-	-			
Create nodes for new probes.												
☑ Create nodes for new probes Group Ident:												

Once the data has finished downloading from the Transfer Unit to the PC the Transfer Unit Driver will display the number of readings and the time of the last reading from the probe. Click **Save** to save the downloaded data.

dd New 📺 Open 🏢 Delete	+ A	dd Probe	, Configure	Get ID:		Save						
ansfer Unit	Ē	Probe	Ident	Tag	Probe	Temperature	Bement	Alloy	Span / Multiplier	CycleTime	Interval	
play Name:	E.	21	System/	H2OLP	LPR-200		None	K03005	1	5 m	10m	
-500		23	System/	COKE	RDC-ER		D	K03005	5		10 m	
toolb Revice		24	System/	POLY	ER-200		D	K03005	5		10 m	
C-TU500ENGDEMO2		25	System/	RDCS	ER-200		В	KO3005	5		10 m	
nected)		112	System/	RDC2	ER-200		в		5		5 m	
Create nodes for new probes												
Zreate nodes for new probes												

Download All Probe Data

To download data for all the probes on the Transfer Unit, select **Download**.

Probe ID 23 24 25 112	Ident System/ System/ System/ System/	Tag H2OLP. COKE POLY RDCS RDC2	Probe Type LPR-200 RDC-ER ER-200 ER-200 ER-200	Temperature	Element D D B B	Alloy K03005 K03005 K03005 K03005	Span / Multiplier 1 5 5 5 5 5 5	Cycle Time	Interval 10 m 10 m 10 m 10 m 5 m	
21 23 24 25 112	System/ System/ System/ System/	H2OLP. COKE POLY RDCS RDC2	LPR-200 RDC-ER ER-200 ER-200 ER-200		None D D B B	K03005 K03005 K03005 K03005	1 5 5 5 5 5	5m	10 m 10 m 10 m 10 m 5 m	
23 24 25 112	System/ System/ System/	COKE POLY RDCS RDC2	RDC-ER ER-200 ER-200 ER-200		D D B B	K03005 K03005 K03005	5 5 5 5		10 m 10 m 10 m 5 m	
24 25 112	System/ System/ System/	POLY RDCS RDC2	ER-200 ER-200 ER-200		D B B	K03005 K03005	5 5 5		10 m 10 m 5 m	
25 112	System/ System/	RDCS RDC2	ER-200 ER-200		B	K03005	5		10 m 5 m	
112	System/	RDC2	ER-200	V	В		5		5 m	

Once the data has finished downloading from the Transfer Unit to the PC the Transfer Unit Driver will display the number of readings and the time of the last reading from all of the probes on the Transfer Unit. Click **Save** to save the downloaded data

Transfer Unit v1.4.4.2	-											
Add New 🛅 Open 🏢 Delete	+ 4	dd Probe	Configure	Get ID	s 🛃 Downlo	ad 🔛 Save						
Transfer Unit		Probe ID	Ident	Tag	Probe Type	Temperature	Element	Alloy	Span / Multiplier	CycleTime	Interval	
Sisplay Neme		21	System/	H2OLP.	LPR-200		None	K03005	1	5 m	10 m	
U-500		23	System/	COKE	RDC-ER		D	K03005	5	_ i i	10 m	
ments Decision		24	System/	POLY	ER-200		D	K03005	5		10 m	
C TUSODENICDEMO2		25	System/	RDCS	ER-200		в	KO3005	5		10 m	
CHOSOENOE		112	System/	RDC2	ER-200		в		5		5 m	
Create nodes for new probes inoup Ident:												

Update Device Firmware

Appendix A

TU-500 Firmware Update Instructions

These instructions describe the proper procedure for updating the firmware for the TU-500.

Required Equipment:

- TU-500 to be updated
- Kinivo Bluetooth USB
- Cosasco Bluetooth USB (P/N 726033)
- PC with USB port

WARNING:

This operation is intended to be done in a Non-Hazardous Area. This process can take approximately 20 minutes to complete. A close proximity of 3 feet or less is recommended between the Device and the PC. DO NOT REMOVE BATTERIES UNTIL FIRMWARE UPDATE IS COMPLETED.

1. If not installed, install the drivers for the Kinivo USB device. The drivers are included on the Cosasco Bluetooth USB.

nize 🕶 Share with 🕶 Burn New	folder			iii • 🗖
A Name	Date modified	Туре	Size	
VISTA_WIN7	5/12/2016 9:56 AM	File folder		
WIN8	5/12/2016 9:56 AM	File folder		
🚺 XP	5/12/2016 9:56 AM	File folder		
Autorun	9/30/2012 10:28 PM	Application	454 KB	
atorun 🖉	1/3/2013 12:47 AM	Setup Information	1 KB	
BTD-400_Quick Installation Guide	2/20/2013 6:37 PM	Adobe Acrobat D	73 KB	
8 btw	7/25/2001 12:33 AM	Icon	4 KB	

2. If not installed, install the Device Firmware Update Software. The software is included on the Cosasco Bluetooth USB device within the Cosasco Data Installation.

ize 👻 🔟 Open Bur	n New folder				8== •	
Name	D	ate modified	Туре	Size		
Drivers	5/	/12/2016 9:56 AM	File folder			
User Manuals	5,	12/2016 9:56 AM	File folder			
+ CosascoDataSetup	3,	/24/2016 4:01 PM	Application	176,571 KB		

- 3. Plug in the Kinivo Bluetooth USB device into the PC USB Port. Utilize the USB Ports on the back of a Desktop PC where possible to help avoid errors.
- Open the Device Firmware Update Software. This can typically be found in: Start → All Programs → Cosasco → Cosasco Data Devices → Device Firmware Update



- 5. Turn on the TU-500 by using the Power Button and select PC on the TU-500 Main Screen.
- On the Device Firmware Update Window, click "Select Device", select the TU-500 from the window that has a matching serial number to the back of the device. For example, C-TU500XXXXXXX, where XXXXXXX is the serial number for the device you are updating. Then click "OK".

🖉 Firmware Update		Select Bluetooth Device
Select Device Select File Ready	Gol	RCS-MBTXXXXXXXX Bluetooth Other
		If you don't see the device that you want to add, make sure that it is turned on. Follow the setup instructions that came with the device, and then click Search Again. Search Again OK Cancel

- 7. On the Device Firmware Update Window, click "Select File", open the .rcsfirmware version you are trying to apply to the TU-500. EX. "101181 TU-500boot V1_XX.rcsfirmware"
- If more than 3 minutes have passed since the TU-500 PC mode was selected, you may have to select it again. The TU-500 goes into a low power mode to conserve battery power after 3 minutes of no activity.
- 9. Click "Go!".
- 10. The Device Firmware Update Application should now attempt to connect to the TU-500. The TU-500 will then display "PRODUCTION TEST" then "BOOTLOAD MODE". The Device Firmware Update Application will have sent the message configuring the device for boot-load mode. If an error occurs here, retry by clicking "Go!". Once the Device Firmware Application has begun, a progress bar will proceed across the screen. After the first progress bar is completed a 2nd progress bar saying "verifying" will proceed across the screen.

11. Wait until the Device Firmware Update Window displays "Done". This can take about 15 minutes to complete.

Select Device C-TU-500COSASCO2 Select File C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirm Done. Reading File C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirmware 8063 lines read. Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	Firmware Update	3	
Select File C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirm Go! Done. Reading File C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirmware 8063 lines read. Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	Select Device	C-TU-500COSASCO2	
Done, Reading File C{Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirmware 8063 lines read. Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	Select File	C:\Users\whills\Desktop\101181 TU-50	0boot V1_37.rcsfirm Go!
Reading File C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirmware 8063 lines read. Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	Done,		
C:\Users\whills\Desktop\101181 TU-500boot V1_37.rcsfirmware 8063 lines read. Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	Reading File		
Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	C:\Users\whills\D	esktop\101181 TU-500boot V1_37.rcsfirm	nware
Setting device to bootloader mode Device code: 0C-50 Writing program memory Verifying Done.	ouos ines read.		
Device code: 0C-50 Writing program memory Verifying Done.	Setting device to	bootloader mode	
Writing program memory Verifying Done.	Device code: 0C-!	i0	
ventying Done.	Writing program	memory	
	Dono		
	Done.		

- 12. Remove batteries from the TU-500 then reinsert them into the TU-500. NOTE: DO NOT <u>REMOVE BATTERIES UNTIL FIRMWARE UPDATE IS COMPLETED. IF BATTERIES</u> <u>ARE REMOVED BEFORE THE FIRMWARE UPDATE IS DONE THE TU-500 WILL</u> <u>APPEAR BROKEN WITH BLACK LINES ACROSS THE SCREEN.</u>
- 13. Power on the TU-500 using the Power Button. The screen will show "Setting Baud to 57k" then proceed to the main screen. This indicates the device is ready for use. Note: the firmware version in the upper right of the main screen should have now changed to the intended version being updated.

Troubleshooting

If you receive a similar screen to the following:

Firmware Update				X
Select Device C-TU-500COS	SASCO2			
Select File C:\Users\while	s\Desktop\101181 TU-500	boot V1_37.rcs	sfirm G	io!
Setting device to bootloader mod	e		_	
Reading File	Section Sections			-
C:\Users\whills\Desktop\101181 8063 lines read.	TU-500boot V1_37.rcsfirm	ware		
Setting device to bootloader mo	de			
Device is already in bootloader m	node(?)			
A connection attempt failed beca a period of time, or established o respond 0006666626B3:0000110	ause the connected party o onnection failed because (100001000800000805f9b3	did not properly connected hos 34fb	y respond af t has failed t	fter

This can be caused by:

- Wrong Device Selected
- TU-500 is off
- TU-500 not set to PC mode

If this occurs start again from step 5.

If you receive a similar screen to the following:

Firmware Update	e	
Select Device	RCS-MBTXXXXXXX	
Select File	C:\Users\whills\Desktop\101	.181 TU-500boot V1_37.rcsfirm Go!
Writing program r	nemory	
C:\Users\whills\D 8063 lines read. Setting device to Device code: 0C-	esktop\101181 TU-500boot V1 bootloader mode 50	1_37.rcsfirmware
Writing program Unable to read do the connected pa	memory ata from the transport connect arty did not properly respond a	tion: A connection attempt failed because after a period of time, or established
connection falled	because connected nost has h	aneu to respond.

This can be caused by:

- The TU-500 out of range
- Too many devices drawing power from USB port
- Bad USB port on the PC

If this occurs and the front USB ports are being used, unplug any un-needed peripherals attached to the front USB ports. This will optimize performance of the Kinivo USB device. On some PCs, it has been shown to negatively affect the Bluetooth range with multiple devices plugged into the front USB ports. Next, start again from Step 5.

If this occurs and the front USB ports are not being used, start again from Step 5.

If the screen on the TU-500 appears as the following:



TU-500 Batteries Removed too soon error screen

This can be caused by:

- Batteries removed before update process completed
- Low Batteries

If this occurs start again from Step 5. If this continues to occur replace batteries and proceed from Step 5.

ER-100, LPR-100, ER-200, and LPR-200 Firmware Update Instructions

These instructions describe the proper procedure for updating the firmware for the ER-100, LPR-100, ER-200, and LPR-200.

Required Equipment:

- Device to be updated
- Kinivo Bluetooth USB
- Cosasco Bluetooth USB (P/N 726033)
- PC with USB port

WARNING:

This operation is intended to be done in a Non-Hazardous Area. This process can take approximately 20 minutes to complete. A close proximity of 3 feet or less is recommended between the Device and the PC. DO NOT REMOVE BATTERIES UNTIL FIRMWARE UPDATE IS COMPLETED.

1. If not installed, install the drivers for the Kinivo USB device. The drivers are included on the Cosasco Bluetooth USB.

anize 🕶	Share with 🕶 🛛 Burn New fold	ler			833 💌	
^ N	lame	Date modified	Туре	Size		
	VISTA_WIN7	5/12/2016 9:56 AM	File folder			
1	WIN8	5/12/2016 9:56 AM	File folder			
1	📓 XP	5/12/2016 9:56 AM	File folder			
8	B Autorun	9/30/2012 10:28 PM	Application	454 KB		
100	🖹 Autorun	1/3/2013 12:47 AM	Setup Information	1 KB		
ť	BTD-400_Quick Installation Guide	2/20/2013 6:37 PM	Adobe Acrobat D	73 KB		
	btw	7/25/2001 12:33 AM	Icon	4 KB		

2. If not installed, install the Device Firmware Update Software. The software is included on the Cosasco Bluetooth USB device within the Cosasco Data Installation.

	Date modified	Туре	Size	
Drivers	5/12/2016 9:56 AM	File folder		
User Manuals	5/12/2016 9:56 AM	File folder		
-t CosascoDataSetup	3/24/2016 4:01 PM	Application	176,571 KB	

- 3. Plug in the Kinivo Bluetooth USB device into the PC USB Port. Utilize the USB Ports on the back of a Desktop PC where possible to help avoid errors.
- Open the Device Firmware Update Software. This can typically be found in: Start → All Programs → Cosasco → Cosasco Data Devices → Device Firmware Update



- 5. Turn on the Device by using the Power Button for ER-100 and LPR-100, and by power cycling the battery for the ER-200 and LPR-200.
- On the Device Firmware Update Window, click "Select Device", select the Device from the window that has a matching serial number to the back of the device. For example, C-ER-100XXXXXXX, where XXXXXXX is the serial number for the device you are updating. Then click "OK".

🔎 Firmware Update		Select Bluetooth Device
Select Device Select File	Gol	RCS-MBTXXXXXXX Bluetooth Other C-TU-500COSASCO2 Bluetooth Other
Ready		
		If you don't see the device that you want to add, make sure that it is turned on. Follow the setup instructions that came with the device, and then click Search Again.
		Search Again OK Cancel

- 7. On the Device Firmware Update Window, click "Select File", open the .rcsfirmware version you are trying to apply to the device. EX. "101180 ER-100boot_V1_X.rcsfirmware"
- 8. If more than 3 minutes have passed since the Device was powered/power cycled, you may have to power cycle it again. The Devices go into a low power mode to conserve batteries after 3 minutes of no activity.
- 9. Click "Go!".
- 10. The Device Firmware Application should now attempt to connect to the Device. The Device LED will be a solid green light and then go out. The Device Firmware Application will have sent the message configuring the device for boot-load mode. If an error occurs here, retry by clicking "Go!". Once the Device Firmware Application has begun, a progress bar will proceed across the screen. After the first progress bar is completed a 2nd progress bar saying "verifying" will proceed across the screen.
11. Wait until the Device Firmware Update Application screen displays "Done". This can take about 15 minutes.

Titilitare opude		
Select Device	C-TU-500COSASCO2	
Select File	C:\Users\whills\Desktop\101181 TU	-500boot V1_37.rcsfirm Go!
Done,		
Reading File	A Transferration Stream P	
C:\Users\whills\De 8063 lines read.	esktop\101181 TU-500boot V1_37.rcsf	firmware
Setting device to	bootloader mode	
Device code: 0C-5	i0	
Device couc, oc a		
Writing program	memory	
Writing program Verifying	memory	
Writing program Verifying Done.	memory	
Verifying Verifying Done.	memory	

- 12. For the ER-100 and LPR-100, remove the batteries from the Device then reinsert them into the Device. For the ER-200 and LPR-200, power cycle the battery. <u>NOTE: DO NOT</u> <u>REMOVE BATTERIES UNTIL FIRMWARE UPDATE IS COMPLETED. REMOVING THE BATTERIES BEFORE THE FIRMWARE UPDATE IS COMPLETE WILL CAUSE THE DEVICE TO APPEAR BROKEN.</u> If this occurs repeat the steps starting at step 6.
- Power on the Device using the Power Button. The LED will be flashing green. This indicates the device is ready for use/configuration.

EC Type Examination Certificates Transfer Unit

Appendix B

1	EC TYDE-EXAMI	NATION CERTIFICATE		
2	Equipment intended (or use in Potentially Evolutive A	tmoenheree Dir	active 94/9/EC
3	Certificate Number:	Sira 14ATEX2263X	Issue:	0
4	Equipment:	Mate	15040.	
5	Applicant:	Robrback Cosasco System	16	
6	Address:	11841 Smith Ave. Santa Fe Springs California 90670 USA		
7	This equipment and a the documents therei	any acceptable variation thereto n referred to.	is specified in	the schedule to this certificate and
8	Sira Certification Serv of 23 March 1994, ce Safety Requirements potentially explosive a	vice, notified body number 0518 rtifies that this equipment has b relating to the design and atmospheres given in Annex II t	in accordance seen found to co construction of to the Directive.	with Article 9 of Directive 94/9/EC omply with the Essential Health and f equipment intended for use in
	The examination and	test results are recorded in the	confidential rep	orts listed in Section 14.2.
9	Compliance with the the schedule to this c	Essential Health and Safety Re ertificate, has been assured by	equirements, wi compliance with	th the exception of those listed in the following documents:
	EN 60079-0:2012/A11	EN 60079-11:20	12	EN 60079-26:2015
	The above list of document through Sira's flexible score	its may detail standards that do not ap be of accreditation, which is available or	pear on the UKAS S	Scope of Accreditation, but have been added
10	If the sign 'X' is place conditions for safe us	d after the certificate number, i e specified in the schedule to th	it indicates that his certificate.	the equipment is subject to special
11	This EC type-examir equipment. If applica this equipment.	nation certificate relates only able, further requirements of thi	to the design s Directive apply	and construction of the specified y to the manufacture and supply of
12	The marking of the e	quipment shall include the follow	wing:	
	(1) II 1G Ex ia IIC T4 Ga Ta = -40℃ TO	+70°C		
				C. C.
Proje	ct Number 70005218			C Ellaby Deputy Certification Manager
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- cprote	accentration of the second sec			Unit 6, Hawarden Industrial Park, Hawarden, CH5 3US, United Kingdom
Form	9400 Issue 3	Page 1 of 2		Tel: +44 (0) 1244 670 900 Fax: +44 (0) 1244 539 301 Email: <u>ukinfo@csagroup.org</u>



Certificate Annexe CSA Group Certificate Number: Sira 14ATEX2263X Equipment: Mate Applicant: Rohrback Cosasco Systems Issue 0 Drawing no. Sheets Rev, Date (Sira stamp) Description 723740 1 to 13 A 02 Jul 15 PCB Layout 723748 1 of 1 A 02 Jul 15 PCB Assembly 723752 1 to 4 02 Jul 15 Schematic 723765-1 1 of 1 02 Jul 15 Certification Label - ATEX and IECEx Detail 723766-1 22 Jun 15 Label - Serial Number/Year of Manufacture 1 of 1 723769 1 to 3 22 Jun 15 **Display Module Detail** 726027 1 of 1 22 Jun 15 Bluetooth Chip Potting Mold 748599 1 and 2 25 Jun 15 General Assembly

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Sira Certification Service

Unit 6, Hawarden Industrial Park. Hawarden, CH5 3US, United Kingdom

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ER Probe Reader

CSA Group EC TYPE-EXAMINATION CERTIFICATE 1 2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC 3 Certificate Number: Sira 14ATEX2261X Issue: 0 4 Equipment: Reader-COT Applicant: Rohrback Cosasco Systems 5 6 11841 Smith Ave. Address: Santa Fe Springs California 90670 USA 7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to. Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC 8 of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports listed in Section 14.2. 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents: EN 60079-0:2012/A11:2013 FN 60079-11:2012 The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request. 10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate. This EC type-examination certificate relates only to the design and construction of the specified 11 equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment. 12 The marking of the equipment shall include the following: II 2G Ex ib IIC T4 Gb Tamb = -40°C to +70°C Project Number 70004817 C Ellaby Deputy Certification Manager This certificate and its schedules may only be reproduced in its entirety and without change. Sira Certification Service Unit 6, Hawarden Industrial Park, Hawarden, CH5 3US, United Kingdom Page 1 of 2 Form 9400 Issue 3 +44 (0) 1244 670 900 +44 (0) 1244 539 301 Tel: Fax Email: ukinfo@csagroup.org Web: www.csadroupuk.org



Certificate Annexe			ATEVO2CIN		GE CSA
Certificate Number: Equipment: Applicant:		Sira 14ATEX2261X Reader-COT Rohrback Cosasco Systems			
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Issue 0 Drawing no.	Sheets	Rev.	Date (Sira stamp)	Description	
Ssue 0 Drawing no. 726000	Sheets 1 to 13	Rev.	Date (Sira stamp) 21 May 15	Description PCB Layout	
Drawing no. 726000 726002	Sheets 1 to 13 1 of 1	Rev. A A	Date (Sira stamp) 21 May 15 21 May 15	Description PCB Layout PCB Assembly	
Drawing no. 726000 726002 726016	Sheets 1 to 13 1 of 1 1 to 5	Rev. A A	Date (Sira stamp) 21 May 15 21 May 15 21 May 15 21 May 15	Description PCB Layout PCB Assembly Schematic	
Drawing no. 726000 726002 726016 726029-1	Sheets 1 to 13 1 of 1 1 to 5 1 of 1	Rev. A A -	Date (Sira stamp) 21 May 15 21 May 15 21 May 15 21 May 15 25 Jun 15	Description PCB Layout PCB Assembly Schematic Certification Label – ATEX and IECEx Detail	
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LPR Probe Reader

CSA Group EC TYPE-EXAMINATION CERTIFICATE 1 2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC Certificate Number: Sira 14ATEX2262X 3 Issue: 0 4 Equipment: Reader-CAT 5 Applicant: Rohrback Cosasco Systems 6 Address: 11841 Smith Ave. Santa Fe Springs California 90670 USA 7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to. 8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports listed in Section 14.2. Compliance with the Essential Health and Safety Requirements, with the exception of those listed in 9 the schedule to this certificate, has been assured by compliance with the following documents: EN 60079-0:2012/A11:2013 EN 60079-11:2012 The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request. 10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate. This EC type-examination certificate relates only to the design and construction of the specified 11 equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment. 12 The marking of the equipment shall include the following: II 2G Ex ib IIC T4 Gb Tamb = -40°C to +70°C Project Number 70005219 C Ellaby Deputy Certification Manager This certificate and its schedules may only be reproduced in its entirety and without change. Sira Certification Service Unit 6, Hawarden Industrial Park, Hawarden, CH5 3US, United Kingdom Page 1 of 2 Form 9400 Issue 3 +44 (0) 1244 670 900 Tel: +44 (0) 1244 539 301 Fax Email: ukinfo@csagroup.org www.csagroupuk.org Web:

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	EC TY	PE-EXAMINA	TION CERTI	FICATE			Sira 14ATEX2262X Issue 0	
3	DESCR	IPTION OF EQ	UIPMENT					
	The Rei primary consists membra intended protection The inter which is to the R	ader-CAT is 'can cells located in a of a plastic enc ane off/on switch d to be connect on. ended use of the i on plant and co s a separately ce eader-CAT via a	ried by the p a battery comj Josure contain h and LED ind ted to an ex- e equipment onnect the Re artified (Sira 14 wireless Bluet	erson' equipment partment. These of ing a p.c.b. assen icator. The other dernal probe. T is for the operato ader-CAT to these ATEX2263X) hand poth link.	that is powered cells may be replace ably. One end of the end of the enclosus the enclosure prov- r to carry the Rea probes and then to the deplace of equi	by two ed in the the end ire is fivides a ider-CA take a ipment	A size replaceable he hazardous area. It closure is fitted with a itted with a connector at least IP20 ingress AT to probes that are reading using a Mate, t which communicates	
	The Rea	der-CAT has the	e following par	ameters at the pro	be connector:			
	Ui = 0 Ii = 0	Pi = 0 Uo = 5.36V	Io = 67.2m Po = 90mV	A Ci=0 / Li=35nH	Co = 65μF Lo/Ro = 395μH/Ω	Lo =	7.87mH	
4	DESCR	IPTIVE DOCUM	IENTS					
4.1	DESCRIPTIVE DOCUMENTS							
4.1	Drawin	igs						
7.1	Refer to	Certificate Anne	exe.					
4.2	Refer to Associa	Certificate Anne ated Sira Repo	exe. rts and Certi	ficate History				
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CSA Group

Certificate Annexe

Certificate Number: Sira 14ATEX2262X

Equipment: Reader-CAT

Applicant:

Rohrback Cosasco Systems

Issue 0

Drawing no.	Sheets	Rev,	Date (Sira stamp)	Description
726004	1 to 13	-	21 May 15	PCB Layout
726007	1 of 1		25 Jun 15	PCB Assembly
726025-1	1 of 1		25 Jun 15	Certification Label – ATEX and IECEx Detail
726026-1	1 of 1	-	21 May 15	Label – Serial Number/Year of Manufacture
726027	1 of 1		21 May 15	Bluetooth Chip Potting Mould
726036	1 to 5	-	21 May 15	Schematic
748597	1 and 2	+	25 Jun 15	General Assembly

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Sira Certification Service

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Page 1 of 1

Legacy Converter

CSA Group EC TYPE-EXAMINATION CERTIFICATE 1 2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC Certificate Number: Sira 14ATEX2264X 3 Issue: 0 4 Equipment: Converter* Rohrback Cosasco Systems 5 Applicant: 6 Address: 11841 Smith Ave. Santa Fe Springs California 90670 USA This equipment and any acceptable variation thereto is specified in the schedule to this certificate and 7 the documents therein referred to, 8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports listed in Section 14.2. Compliance with the Essential Health and Safety Requirements, with the exception of those listed in 9 the schedule to this certificate, has been assured by compliance with the following documents: EN 60079-0:2012/A11:2013 EN 60079-11:2012 The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special 10 conditions for safe use specified in the schedule to this certificate. This EC type-examination certificate relates only to the design and construction of the specified 11 equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment. The marking of the equipment shall include the following: 12 (Ex) II 2G Ex ib IIC T4 Gb Ta = -40°C to +70°C Project Number 70008375 C Ellaby Deputy Certification Manager This certificate and its schedules may only be reproduced in its entirety and without change. Sira Certification Service Unit 6, Hawarden Industrial Park, Hawarden, CH5 3US, United Kingdom Page 1 of 3 Form 9400 Issue 3 +44 (0) 1244 670 900 +44 (0) 1244 539 301 Tel: Fax Email ukinfo@csagroup.org Web: www.csagroupuk.org



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CSA Group

Certificate Annexe

Certificate Number: Sira 14ATEX2264X Equipment: Converter Applicant: Rohrback Cosasco Systems

Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Description
723743	1 to 13		16 Jun 15	PCB Layout
723751	1 of 1	-	16 Jun 15	PCB Assembly
723753	1 of 1	2	16 Jun 15	Schematic
723768-1	1 of 1	>> <	25 Jun 15	Certification Label – ATEX and IECEx Detail
723776-1	1 of 1		16 Jun 15	RS 232 IC Potting Mold
723781-1	1 of 1	-2.5	16 Jun 15	Label – Serial Number/Year of Manufacture
726027	1 of 1	-	16 Jun 15	Bluetooth Chip Potting Mold
748600	1 to 3	4	25 Jun 15	General Assembly

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ER Datalogger

1	\sim			GE CSA Group
1	<u>_x</u> /			
1	EC TYPE-EXA	MINATION C	ERTIFICATE	
2	Equipment intend	ed for use in Pot	entially Explosive Atmos	oheres Directive 94/9/EC
3	Certificate Numbe	er: Sira 16A	TEX2024X	Issue: 0
4	Equipment:	RDC2-CO	T* and RDC2-COT-G*	
5	Applicant:	Rohrback	Cosasco Systems	
6	Address:	11841 Smi Santa Fe S California S USA	th Ave. prings 90670	
7	This equipment an the documents the	d any acceptable rein referred to.	variation thereto is spe	cified in the schedule to this certificate and
8	Sira Certification S 23 March 1994, co Safety Requiremen explosive atmosph	ervice, notified bo artifies that this e its relating to the eres given in Ann	edy number 0518 in acco equipment has been four design and construction ex II to the Directive.	rdance with Article 9 of Directive 94/9/EC of nd to comply with the Essential Health and of equipment intended for use in potentially
	The examination a	nd test results an	e recorded in the confide	ential reports listed in Section 14.2.
9	Compliance with the schedule to this ce	ne Essential Healt rtificate, has bee	h and Safety Requirement n assured by compliance	nts, with the exception of those listed in the with the following documents:
	EN 60079-0:2012	/A11:2013	EN 60079-11:2012	EN 60079-26:2015
	The above list of docur through Sira's flexible s	ments may detail star	idards that do not appear on t	he UKAS Scope of Accreditation, but have been added
10	If the sign 'X' is pla conditions for safe	aced after the cer use specified in t	tificate number, it indica the schedule to this certi	tes that the equipment is subject to special ficate.
11	This EC type-exa equipment. If app this equipment.	mination certifica licable, further re	te relates only to the quirements of this Direc	design and construction of the specified tive apply to the manufacture and supply of
12	The marking of the	e equipment shall	include the following:	
	Ex II 1G Ex ia IIC T4 Tamb = -40	Ga °C to +70°C		
				C. FOD
Projec	tt Number 700084	20		C Ellaby Deputy Certification Manager
This ce eprod	rtificate and its schedules uced in its entirety and wi	may only be hout change.		Sira Certification Servic Unit 6, Hawarden Industrial Park.
			Page 1 of 3	Hawarden, CH5 3US, United Kingdom

CSA Group



15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 Under certain extreme circumstances, the exposed plastic/fibre glass surfaces of the non-metallic enclosure version of the equipment may generate, and its unearthed metal parts may store, an ignitioncapable level of electrostatic charge. Therefore this version of the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on the enclosure surfaces. In addition, the equipment shall only be cleaned with a damp cloth. This is particularly important if the equipment is installed in a Zone 0 location.

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CSA Group

Certificate Annexe

Certificate Number:	Sira 16ATEX2024X
Equipment:	RDC2-COT* and RDC2-COT-G*
Applicant:	Rohrback Cosasco Systems

Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Description
726008	1 to 13	21-1	28 Jan 16	Main PCB Layout
726010	1 of 1	1×	28 Jan 16	Main PCB Assembly
726015	1 to 7		28 Jan 16	Main PCB Schematic
726017	1 of 1	~	28 Jan 16	Adapter Board Schematic
726021	1 to 10	1,	28 Jan 16	Adapter Board PCB Layout
726023	1 of 1	· · · · ·	28 Jan 16	Adapter Board Assembly
726027	1 of 1	14-1	28 Jan 16	Bluetooth Chip Potting Mould
726043-1	1 of 1	+	28 Jan 16	Battery Pack - Detail
726044-1	1 of 1		28 Jan 16	Battery Pack - Label
726046-1	1 of 1	-	28 Jan 16	Certification Label – ATEX and IECEx Detail
726062	1 of 1	7	29 Jan 16	Control Drawing Detailing Equipment Configurations and Intrinsic Safety Parameters
748598	1 and 2		28 Jan 16	General Assembly

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1

LPR Datalogger

1			CSA
	ex		Group
1	EC TYPE-EXAMIN	ATION CERTIFICATE	
2	Equipment intended f	or use in Potentially Explosive Atmo	ospheres Directive 94/9/EC
3	Certificate Number:	Sira 16ATEX2025X	Issue: 0
4	Equipment:	RDC2-CAT* and RDC2-CAT-G	*
5	Applicant:	Rohrback Cosasco Systems	
6	Address:	11841 Smith Ave. Santa Fe Springs California 90670 USA	
7	This equipment and ar the documents therein	y acceptable variation thereto is s referred to.	pecified in the schedule to this certificate and
8	Sira Certification Servic 23 March 1994, certifi Safety Requirements re explosive atmospheres	e, notified body number 0518 in ac es that this equipment has been for clating to the design and construction given in Annex II to the Directive.	cordance with Article 9 of Directive 94/9/EC of ound to comply with the Essential Health and on of equipment intended for use in potentially
	The examination and to	est results are recorded in the conf	idential reports listed in Section 14.2.
9	Compliance with the Es schedule to this certific	ssential Health and Safety Requiren ate, has been assured by complian	nents, with the exception of those listed in the ce with the following documents:
	EN 60079-0:2012/A11	:2013 EN 60079-11:2012	EN 60079-26:2015
	The above list of documents through Sira's flexible scope	may detail standards that do not appear of accreditation, which is available on requi	on the UKAS Scope of Accreditation, but have been added
10	If the sign 'X' is placed conditions for safe use	after the certificate number, it ind specified in the schedule to this ce	icates that the equipment is subject to special rtificate.
11	This EC type-examina equipment. If applicat this equipment.	tion certificate relates only to the le, further requirements of this Dir	e design and construction of the specified ective apply to the manufacture and supply of
12	The marking of the equ	upment shall include the following:	
	EX II 1G Ex ia IIC T4 Ga Tamb = -40°C to	o +70°C	
			C. ES
Projec	ct Number 70014314		C Ellaby Deputy Certification Manager
This ce reprod	artificate and its schedules may uced in its entirety and without	only be change.	Sira Certification Servic
		Page 1 of 3	Hawarden, CH5 3US, United Kingdom
Form	9400 Issue 3		Tel: +44 (0) 1244 670 900 Fax: +44 (0) 1244 639 301 Email: <u>ukinfo@csagroup.org</u>





ertificate N quipment: pplicant:	umber:	Sira 10 RDC2- Rohrb	6ATEX2025X CAT* and RDC2- ack Cosasco Syst	-CAT-G* tems
sue 0				
Drawing no.	Sheets	Rev.	Date (Sira stamp)	Description
726017	1 of 1	-	28 Jan 16	Adapter Board Schematic
726021	1 to 10	4,11	28 Jan 16	Adapter Board PCB Layout
726023	1 of 1	÷	28 Jan 16	Adapter Board Assembly
726027	1 of 1		28 Jan 16	Bluetooth Chip Potting Mold
726039	1 to 13	÷ a	28 Jan 16	Main PCB Layout
726041	1 of 1	-	28 Jan 16	Main PCB Assembly
726042	1 to 5	+	28 Jan 16	Main PCB Schematic
726043-1	1 of 1	-	28 Jan 16	Battery Pack - Detail
	1 of 1	4	28 Jan 16	Battery Pack - Label
726044-1				
726044-1 726053-1	1 of 1		28 Jan 16	Certification Label – ATEX and IECEx Detail
726044-1 726053-1 726061	1 of 1 1 of 1	-	28 Jan 16 29 Jan 16	Certification Label – ATEX and IECEX Detail Control Drawing Detailing Equipment Configurations and Intrinsic Safety Parameters

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Form 9400 Issue3

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Ultracorr 2

UST2 Ultrasonic Transmitter

ERTIFICATION EC TYPE-EXAMINATION CERTIFICATE 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC 2 3 Certificate Number: Sira 12ATEX2083X Issue: 1 **ULTRACORR-2 Ultrasonic Transmitter** 4 Equipment: Applicant: 5 Rohrback Cosasco Systems Address: 11841 East Smith Ave 6 Santa Fe Springs California 90670 USA 7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to. 8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports listed in Section 14.2. 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents: IEC 60079-0:2011 Ed. 6 IEC 60079-11:2011 Ed. 6 10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate. 11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment. 12 The marking of the equipment shall include the following: II 2G Ex ib IIC T4 Gb Ta = -40°C to +70°C Project Number 29789 A C Smith Certification Manager This certificate and its schedules may only be reproduced in its entirety and without change. Sira Certification Service Rake Lane, Eccleston, Chester, CH4 9JN, England Page 1 of 3 +44 (0) 1244 670900 Tel: Form 9400 Issue 2 +44 (0) 1244 681330 Fax Email: info@siracertification.com Web: www.siracertification.com





SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 12ATEX2083X Issue 1

13 DESCRIPTION OF EQUIPMENT

The ULTRACORR-2 is battery-powered, portable instrument that measures pipe and vessel wall thickness for non-intrusive corrosion and erosion monitoring. The instrument is intended for connection to a piezo-electric ultrasonic transducer manufactured by Rohrback Cosasco Systems, typically a model UST2, which provides periodic time- and date-stamped measurements of wall thickness. The ULTRACORR-2 sends the results via a low power wireless channel to a remote device.

The ULTRACORR-2 is powered from two, non-rechargeable, AA cells, which are intrinsically safe and may be replaced in the hazardous area. Only cells with part number 095818 or 095820 from Rohrback Cosasco Systems may be fitted. Apart from the cells, the circuitry is completely encapsulated within a plastic enclosure. A flying lead terminates in a plug-and-socket connector, which is used to connect the ULTRACORR-2 to the ultrasonic transducer.

For the purposes of the assessment of external equipment, the following worst case parameters may be used. Note: Uo, cannot occur at the same time as the Io and Po.

-	Combined parameters
Uo	126 V ac
Io	60 mA
Po	173 mW
a	2.42 nF
LÍ	0
Co	2.79 nF
Lo	9876 µH

Variation 1 - This variation introduced the following changes:

 The 095820 battery pack was introduced and recognised in the Product Description and the Special Condition for Safe Use. Whilst this is a direct replacement for the original 095818 battery pack, for the purpose of back compatibility, reference to the 095818 battery pack will be retained in the certificate.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment	
0	20 April 2012	R27101A/00	The release of the prime certificate.	
1	04 April 2013	R29789A/00	The introduction of Variation 1.	

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Form 9400 Issue2

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()	$\langle \cdot \rangle$		Sira
1			CERTIFICATION
	SCHEDULE		
	EC TYPE-EXAMINATION	CERTIFICATE	Sira 12ATEX2083X Issue 1
15	SPECIAL CONDITIONS FOR	SAFE USE (denoted by X a	fter the certificate number)
15.1	The cells in the battery pack an P/N 095818 or 095820 cells sup care is taken to prevent the cel Cells with P/N 095820 are also o	e intrinsically safe and may oplied by Rohrback Cosasco Is being damaged, they ma compatible with units certifie	be replaced by the user, however, only RCS Systems may be used; in addition, provided y be changed whilst in the hazardous area. ed under previous issues of the certificate.
16	ESSENTIAL HEALTH AND SA	FETY REQUIREMENTS O	F ANNEX II (EHSRs)
	The relevant EHSRs that are identified and individually assess	not addressed by the star sed in the reports listed in S	ndards listed in this certificate have been ection 14.2.
17	CONDITIONS OF CERTIFICA	TION	
17.1	The use of this certificate is sub	ject to the Regulations Appl	icable to Holders of Sira Certificates.

Certificate Annexe

Certificate Number:	Sira 12ATEX2083X
Equipment:	ULTRACORR-2 Ultrasonic Transmitter
Applicant:	Rohrback Cosasco Systems



Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title	
725121	1 of 1	10	04 Apr 12	Parts list	
725123	1 to 13	Α	04 Apr 12	Artwork	
725124	1 to 2	18	04 Apr 12	Schematic	
725125 -1	1 of 1	-	04 Apr 12	Marking	
725126	1 to 2	-	04 Apr 12	General assembly	
725127	1 of 1	-	04 Apr 12	Sector diagram	

Issue 1

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
725125 - 1	1 of 1	A	13 Mar 13	Marking
725126	1 to 2	A	13 Mar 13	General assembly

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Form 9400 Issue2

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Ultracorr 2 Ultrasonic Transducer

FRIEICA EC TYPE-EXAMINATION CERTIFICATE 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC 2 Sira 12ATEX2084X Issue: 2 3 Certificate Number: 4 Equipment: UST2 Ultrasonic Transducer Applicant: Rohrback Cosasco Systems 5 6 Address: 11841 East Smith Ave Santa Fe Springs California 90670 USA This equipment and any acceptable variation thereto is specified in the schedule to this certificate and 7 the documents therein referred to. Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC 8 of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports listed in Section 14.2. 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents: IEC 60079-0:2011 IEC 60079-11:2011 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special 10 conditions for safe use specified in the schedule to this certificate. 11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment. The marking of the equipment shall include the following: 12 (Ex) II 2G Ex ia IIC T4 Gb Ta = -40°C to +70°C Project Number 29833 A C Smith Certification Manager This certificate and its schedules may only be reproduced in its entirety and without change. Sira Certification Service Rake Lane, Eccleston, Chester, CH4 9JN, England Page 1 of 3 +44 (0) 1244 670900 Tel: Form 9400 Issue 2 +44 (0) 1244 681330 Fax Email: info@siracertification.com Web: www.siracertification.com





SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 12ATEX2084X Issue 2

13 DESCRIPTION OF EQUIPMENT

The UST2 is a piezo-electric ultrasonic transducer that is designed to be attached by adhesive to a metal pipe, for measuring metal thickness. It is equipped with an integral RTD for temperature monitoring and contains an embedded memory chip inside its connector to retain user-configured ID characteristics. It is intended to be periodically interrogated by a monitoring device; this may be an ULTRACORR-2, Sira 12ATEX2083X, manufactured by Rohrback Cosasco Systems, alternatively, another appropriately certified device may be used provided it is suitable for the application and has matching entity parameters.

The high voltage supply to the piezo-electric transducer and the low voltage supply to the RTD are treated as a single, intrinsically safe circuit with the following combined entity parameters:

	Combined parameters
Ui	126 V ac
Ii	60 mA
Pi	173 mW
a	0.85 nF
ti	0

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	20 April 2012	R27101B/00	The release of the prime certificate.
1	6 June 2012	R27101B/01	Report no. R27101B/01 replaced R27101B/00 to allow the specification of the insulation material around the piezo transducer to be more generic.
2	20 February 2013	R29833A/00	 It was recognised that the manufacturer has not made any UST2 devices in accordance with the design covered by Issues 0 and 1. It is therefore their intention to replace this model with the one introduced by Issue 2, also known as the UST2, which incorporates the following design modifications: The approval of mechanical changes, including a thinner diaphragm. The entity parameter Ci was changed from 1 nF to 0.85 nF. Minor changes to the artwork were acknowledged. The Description, Special Conditions for Safe Use and Conditions of Certification were revised so that they apply specifically to the new model design.

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Form 9400 Issue2

Page 2 of 3

	SCHEDULE	
	EC TYPE-EXAMINATION CERTIFICATE	Sira 12ATEX2084X Issue 2
5	SPECIAL CONDITIONS FOR SAFE USE (denoted by X after	er the certificate number)
5.1	The UST2 has been assessed as compliant for a T4 t temperature of 70°C. It has also been assessed with the fr 150°C provided that the cable end of the UST2 is at no more that in this condition, with a pipe surface temperature at temperature class to T3.	temperature class at an upper ambient ront face attached to a process pipe up to e than 70°C. However, it should be noted 150°C, the pipe surface itself limits the
5.2	The metallic ring on the top of the enclosure may store become incendive. Therefore, the user/installer shall implem electrostatic charge e.g. locate the equipment where a char blown dust) is unlikely to be present. Refer to user instruction	a level of electrostatic charge that could nent precautions to prevent the build-up of rge-generating mechanism (such as wind- ons for further information.
5.2	Only portable, battery-powered equipment, with no conne UST2. The Rohrbach-Cosasco Systems Ultracorr (Sira 12ATE	ection to earth, can be connected to the X2083) is suitable equipment.
6	ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF	ANNEX II (EHSRs)
7	The relevant EHSRs that are not addressed by the stand identified and individually assessed in the reports listed in Sec CONDITIONS OF CERTIFICATION	dards listed in this certificate have been ction 14.2.
7.1	The use of this certificate is subject to the Regulations Applic	able to Holders of Sira Certificates.
7.2	Holders of EC type-examination certificates are required requirements defined in Article 8 of directive 94/9/EC.	to comply with the production control

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Form 9400 Issue2

Page 3 of 3

Certificate Annexe

Certificate Number:	Sira 12ATEX2084X
Equipment:	UST2 Ultrasonic Transducer
Applicant:	Rohrback Cosasco Systems



 $\ensuremath{\mbox{Issues 0}}$ and 1 The drawings listed with these Issues were rationalised and have been superseded by those detailed in Issue 2

Issue 2

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title	
646129 -1	1 of 1	-	04 Apr 12	UST2 IECEx & ATEX marking	
646131	1 to 7	В	11 Feb 13	UST2 PCB artwork	
646132	1 of 1	A	11 Feb 13	UST2 schematic and parts list	
646133	1 to 2	В	19 Feb 13	UST2 general assembly	

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Form 9400 Issue2

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M-200

The M-200 uses the same certifications as the MWT-3905.

2	Equipment or Protective systems inte	ended for use in Potentially
	Explosive Atmospheres - Directive 94	V9/EC
3	EC-Type Examination Certificate No:	FM09ATEX0018X
4	Equipment or protective system: (Type Reference and Name)	MWT-3905 Microcor Wireless Transmitter
5	Name of Applicant:	Rohrback Cosasco Systems
6	Address of Applicant:	11841 East Smith Ave Santa Fe Springs, CA 90670 USA
7	This equipment or protective system and certificate and documents therein referre	any acceptable variation thereto is specified in the schedule to this ed to.
8	FM Approvals Ltd, notified body number 1994, certifies that this equipment has Requirements relating to the design and atmospheres given in Annex II to the Dir The examination and test results are reco 2009.	1725 in accordance with Article 9 of Directive 94/9/EC of 23 March s been found to comply with the Essential Health and Safety construction of equipment intended for use in potentially explosive rective. orded in confidential report number 3032790EC dated 15 October
9	Compliance with the Essential Health ar item 15 of the schedule to this certificate, EN 60079-0:2006, EN 60079-1:2007, EN	nd Safety Requirements, with the exception of those identified in , has been assessed by compliance with the following documents N 60529:1991 +A1:2000, EN 60079-11:2007
10	If the sign 'X' is placed after the certific conditions for safe use specified in the s	cate number, it indicates that the equipment is subject to special schedule to this certificate.
11	This EC-Type Examination certificate re equipment or protective system in accord apply to the manufacturing process and covered by this certificate.	elates only to the design, examination and tests of the specified dance to the directive 94/9/EC. Further requirements of the Directive d supply of this equipment or protective system. These are no
12	The marking of the equipment or protect	tive system shall include:
	II 2 G Exd [ib] IIC T4 Ta = -40°C	to +70°C
(IP66	
/	\frown	
>	12	
-	-	
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De	pary certification manager, i in Approve	Monter et au PAT (data) se
ISS	ue date: 26 October 2009	
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SCHEDULE



EC-Type Examination Certificate No. FM09ATEX0018X

13 Description of Equipment or Protective System:

The MWT-3905 Microcor Wireless Transmitter measures corrosion and transmits data via a wireless connection. The transmitter consists of a 6061-T6 aluminum enclosure consisting of a cover that threads onto the base. The enclosure has 2 compartments that are separated by an internal separator plate. The top compartment portion contains an intrinsically safe battery and the bottom compartment portion of the enclosure is flameproof Ex d. The battery provides power to the circuits in the Ex d compartment via a stainless steel Power Module Port feedthrough. Three other stainless steel feedthroughs connect to the Ex d compartment portion of the enclosure and provide intrinsically safe outputs; the Antenna Port, Data Port and Probe Port feedthroughs. DURALCO 4864 compound is present in each feedthrough to form a cement joint. As the transmitter is powered via the battery, there are no connection entries to the enclosure, other than the external port feedthroughs. O-rings are provided on the thread-on cover as well as on the port feedthroughs to provide ingress protection.

The MWT-3905 Microcor Wireless Transmitter is certified for use only with Power MODULE P/N 748400.

14 Special Conditions for Safe Use:

The MWT-3905 shall only be used with the 748400 Battery Pack.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

Drawing No:	Revision	Title / Description
702430	E	PCB Assy, Analog Board
702431	С	PCB Fab, Analog Board
702432	С	Schematic, Analog Board
702425	E	PCB Assy, Intrinsic Safety Board
702426	В	PCB Fab, Intrinsic Safety Board
702427	D	Schematic, Intrinsic Safety Board

17 Approved Drawings

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS

T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmglobal.com

FM F ATEX 020 (Feb/07)

SCHEDULE



EC-Type Examination Certificate No. FM09ATEX0018X

17 Approved Drawings

Drawing No:	Revision	Title / Description
702461	В	Nameplate, Microcor Wireless Transmitter
702402	В	Certification Drawing
702401-Quickstart	(-)	Safety Manual, MWT-3905
702408	С	MWT-3905 Intrinsic Safety

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmglobal.com

FM F ATEX 020 (Feb/07)

Page 3 of 3

Certificates of Conformity

Appendix C

Transfer Unit

IEC, TEĈE	IECEx Certificate of Conformity			
INTER IEC C	RNATIONAL EL Certification Sc for rules and details	ECTROTE heme for of the IECEx Sc	ECHNICAL Explosive /	COMMISSION Atmospheres
Certificate No.:	IECEx SIR 14.0096X		issue No.:0	Certificate history
Status:	Current			
Date of Issue:	2015-07-06	Page	1 of 3	
Applicant:	Rohrback Cosasco 11841 Smith Ave. Santa Fe Springs California 90670 United States of An	Systems nerica		
Electrical Apparatus: Optional accessory:	Mate			
Type of Protection:	Intrinsically Safe			
Marking;	Ex ia IIC T4 Ga Ta = -40°C TO +70°C	2		
Approved for issue on I Certification Body:	behalf of the IECEx	C Ellaby		
Position		Deputy Certificat	ion Manager	
Signature: (for printed version)		(2. 300	Y
Date:		201	5-07-06	5
1. This certificate and s 2. This certificate is not 3. The Status and author	chedule may only be repro transferable and remains enticity of this certificate m	duced in full. the property of th ay be verified by	e issuing body. visiting the Official	IECEx Website.
ertificate issued by:				
SIRA C	CSA Group			
Unit 6, Ha	Hawarden		SIL	
	CH5 3US		CERTIFICAT	ON



TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report GB/SIR/ExTR15.0182/00

Quality Assessment Report

US/UL/QAR08 0005/04


IECEx SIR 14 0096X

Certilicate No. Date of Issue

2015-07-06

Issue No.: 0

IECEx Certificate

of Conformity

Page 3 of 3

Schedule

EQUIPMENT:

1.

Equipment and systems covered by this certificate are as follows.

The Mate is finind-held equipment that is powered by two, AA size, replaceable, primary cells located in a battery compartment. It consists of a plastic enclosure containing a p.c.b. assembly and a window through which an U.C.D. can be viewed. The front of the enclosure is also fitted with a membrane keypad. The enclosure provides at least. IP20 ingress protection

The intended use of the equipment is for the operator to connect either a Reader-CAT (separately certified as IECEx SIR 14,0095X) or a Reader-COT (separately certified as IECEx 14,0094X) to probes that are installed on plant. A reading is then taken using the Mate, which communicates with the Readers using a wireless Bluetooth link. The Mate is also intended to be used to communicate with other certified equipment.

Conditions of manufacture

The Manufacturer shall comply with the following 1.

The Mate incorporates an IS Fusion Limited Type (SF021/T/80 fuse that has previously been Ex Component certified under IECEx SIR 07.0050U. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with this device. The manufacturer shall inform CSA-Sira of any modifications to the device that may impinge upon the explosion safety design of the Mate.

CONDITIONS OF CERTIFICATION: YES as shown below:

No precautions against electrostatic discharge are necessary for hand-held equipment that has an enclosure made of plastic metal or a combination of the two, except where a significant static-generating mechanism has been identified. Activities such as placing the item in a pocket or on a belt, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk. However, where a static generating mechanism is identified, such as repeated brushing against ciothing, then suitable precautions shall be taken, e.g. the use of anti-static footwear

ER Probe Reader

IEC IEĈE		ficate nity	
INTER IEC (RNATIONAL ELEC Certification Scher for rules and details of th	TROTECHNICAL ne for Explosive A e IECEx Scheme visit www.iac	COMMISSION Atmospheres ex.com
Certificate No.	IECEx SIR 14.0094X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2015-06-15	Page 1 of 4	
Applicant:	Rohrback Cosasco Sys 11841 Smith Ave Santa Fe Springs California 90670 United States of Americ	a	
Electrical Apparatus Optional accessory:	Reader-COT		
Type of Protection:	Intrinsically Safe		
Marking:	Ex ib IIC T4 Gb Tamb = -40°C To +70°C		
Approved for issue on Certification Body:	behalf of the IECEx C Ella	вру	
Position:	Depu	ty Certification Manager	
Signature: (for printed version)		CLA	
Date:	-	2015-06-15	7
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ertificate issued by:			
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Certificate No.: Date of Issue; IECEX SIR 14.0094X

2015-06-15

Issue No.: 0

Page 2 of A

Manufacturer:

Rohrback Cosasco Systems 11841 Smith Ave. Santa Fe Springs California 90670 United States of America

Additional Manufacturing location (s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards.

IEC 60079-0 : 2011 Edition 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 ; 2011 Edition: 6.0	Explosive atmospheres - Parl 11: Equipment protection by intrinsic safety "/"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report GB/SIR/ExTR16.0152/00

Quality Assessment Report

US/UL/QAR08.0005/04

IEC, IEC		ECEx Cel of Confo	rtificate prmity
Certificate No.	IECEX SIR 14,00	94X	
Date of Issue	2015-06-15		Isaue No: 0
			Page 3 of 4
		Schedule	
EQUIPMENT: Equipment and system	s covered by this certificate an	as follows	
The Reader-COT is to battery compartment. It it consists of a pleasic et and LED indicator. The The enclosure provides The intended use of the connect the Reader-CC 14 0096X) hand-held pl The intrinsic safety pa UI = 0 II = 0 PI = 0	med by the person' equipment a These cells may be replaced in the hobsure containing a p.c.b, asses to ther end of the enclosure is fitti- at least IP20 ingress protection. equipment is for the operator to 07 to these probes and then take ece of equipment which communi- ingress at the probe connect Uo = 5.36V Ig = 0.329A Po = 0.45VV	nd is powered by two AA size e hazardous area mbly. One end of the enclos ad with a connector intended carry the Reader-COT to pro- a reading using a Mate, whic woates to the Reader-COT vi- tor are CI = 0 LI = 35nH	e replaceable primary cells located in a ure is filted with a membrane off/on switch to be connected to an external probe. bes that are installed on plant and this a separately certified (IECEx SIR a wireless Bluetooth Ink. Co = 65μF Lo = 328μH Lo/Ro = 80μH/Ω

CONDITIONS OF CERTIFICATION: YES as shown below:

No precautions against electrostatic discharge are necessary for equipment carried by the person that has an enclosure made of plastic, metal or a combination of the two, except where a significant staticgenerating mechanism has been identified. Activities such as placing the item in a pocket or on a beit, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk. However, where a static-generating mechanism is identified, such as repeated brushing against clothing, then suitable precautions shall be taken, e.g. the use of anti-static footwear.



IECEx SIR 14.0094X

Certificate No.: Date of Issue:

2015-06-15

Issue No.: 0

Page 4 of 4

EQUIPMENT(continued):

Conditions of manufacture
The Manufacturer shall comply with the following:
The Manufacturer shall comply with the following:
The Reader-COT incorporates an IS Fusion Limited Type ISF021/T/80 fuse that has previously been Ex
Component certified under IECEx SIR 07.0050U. It is therefore the responsibility of the manufacturer to continually
monitor the status of the certification associated with this device. The manufacturer shall inform CSA-Sira of any
modifications to the device that maximum unon the explosion safety design of the Reader-COT. modifications to the device that may impinge upon the explosion safety design of the Reader-COT.

LPR Probe Reader



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.	IECEx SIR 14.009	15X	issue No.:0	Certificate history
Status:	Current			
Date of Issue:	2015-06-15		Page 1 of 3	
Applicant:	Rohrback Cosas 11841 Smith Ave. Santa Fe Springs California 90670 United States of	aco Systems America		
Electrical Apparatus Optional accessory:	Reader-CAT			
Type of Protection	Intrinsically Safe			
Marking:	Ex ib IIC T4 Gb Tamb = -40°C To	+70°C		
Approved for issue on b Certification Body:	whalf of the IECEx	C Ellaby		
Position.		Deputy Cer	rtification Manager	
Signature: (for printed version)			C. Ela	
Date:		20	015-06-15	_
1. This certificate and so	chedule may only be re	eproduced in fi	ull.	

SIRA Certification Service CSA Group Unit 6. Hawarden Industrial Park Hawarden Deeside CH5 3US United Kingdom





Certificate No: Date of Issue: IECEX SIR 14 0095X

2015-06-15

Issue No. 0

Page 2 of 3

Manufacturer:

Rohrback Cosasco Systems 11841 Smith Ave. Santa Fe Springs California 90670 United States of America

Additional Manufacturing location

(s)

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "?"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report GB/SIR/ExTR15.0153/00

Quality Assessment Report.

US/UL/QAR08 0005/04



CONDITIONS OF CERTIFICATION: YES as shown below:

1

No procautions against electrostatic discharge are necessary for equipment carried by the person that has an enclosure made of plastic, metal or a combination of the two, except where a significant staticgenerating mochanism has been identified. Activities such as placing the item in a pocket or on a beit, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk. However, where a static-generating mechanism is identified, such as repeated brushing against clothing, then suitable precautions shall be taken, e.g. the use of anti-static footwear.

Legacy Converter

IEC IECE	×	of	Ex Certil	nity
INTER IEC C	Certification So for rules and detail	ECTRO cheme f	OTECHNICAL or Explosive A	COMMISSION Atmospheres
Certificate No.:	IECEx SIR 14.00977	ĸ	issue No.:0	Certificate history;
Status:	Current			
Date of Issue:	2015-07-06		Page 1 of 4	
Applicant	Rohrback Cosasc 11841 Smith Ave. Santa Fe Springs California 90670 United States of A	o Systems merica		
Electrical Apparatus Optional accessory:	Converter*			
Type of Protection:	Intrinsically Safe			
Marking:	Ex lb IIC T4 Gb Ta = -40°C to +70°C			
Approved for issue on I Certification Body:	behalf of the IECEx	C Ellaby		
Position:		Deputy Cen	ification Manager	
Signature: (for printed version)		_	CCAR	
Date:		2	015-07/06	1
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IEC IFCEx	IECE of (x Certificate Conformity
Certificate No	IECEX SIR 14.0097X	
Date of issue:	2015-07-06	Issue No. 0
		Page 2 of 4
Manufacturer	Rohrback Cosasco S 11841 Smith Ave. Santa Fe Springs California 90670 United States of Amer	rica
Additional Manufacturing I (s):	acation	
This certificate is issued at found to comply with the if covered by this certificate, certificate is granted subje as amended.	s venfication that a sample(s), repre- EC Standard list below and that the was assessed and found to comply ct to the conditions as set out in IEC	sentative of production, was assessed and tested and manufacturer's quality system, relating to the Ex products with the IECEx Quality system requirements. This XEx Scheme Rules, IECEx 02 and Operational Documents.
STANDARDS: The electrical apparatus a documents, was found to o	nd any acceptable variations to it sp comply with the following standards	ecified in the schedule of this certificate and the identified
IEC 60079-0 : 2011	Explosive atmospheres - Part 0	General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11	Equipment protection by intrinsic safety "?"
This Certificate does no	at indicate compliance with electrics expressly included in the S	l safety and performance requirements other than those standards listed above.
TEST & ASSESSMENT R A sample(s) of the equipm	EPORTS: ent listed has successfully met the	examination and test requirements as recorded in
Test Report GB/SIR/ExTR15 0176/00		
Quality Assessment Repo	<u>tt</u>	
US/UL/QAR08.0005/04		



IECEx Certificate of Conformity

Certificate No.

IECEx SIR 14 0097X

2015-07-06

Date of Issue

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Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows.

The Converter* is carried by the person' equipment that is powered by two AA size replaceable primary cells located in a battery compartment. These cells may be replaced in the hazardous area.

It consists of a plastic enclosure containing a p.c.b, assembly. One end of the enclosure is littled with an off/on switch and LED indicator. The other end of the enclosure is fitted with two 'RS 232' connectors (a 'LEMO' connector and an 'AMPHENOL' connector) that are internally connected in parallel and which are intended to be connected to equipment installed on plant. The enclosure provides at least IP20 ingress protection.

The intended use of the equipment is for the operator to carry the Converter to the equipment installed on plant, connect the Converter to this equipment, and take a reading using a Mate, which is a separately-certified (Sira IECEx. SIR 14.0096X) hand-held piece of equipment that communicates to the Converter via a wireless Bluetooth link. Conditions of manufacture

The Manufacturer shall comply with the following.
1. The Converter' incorporates an IS Fusion Limited Type ISF021/T/80 fuse that has previously been Ex.
Component certified under IECEx SIR 07.0050U. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with this device. The manufacturer shall inform CSA-Sira of any modifications to the device that may impinge upon the explosion safety design of the Converter*

CONDITIONS OF CERTIFICATION: YES as shown below:

No precautions against electrostatic discharge are necessary for equipment carried by the person that has an enclosure made of plastic, metal or a combination of the two, except where a significant staticgenerating mechanism has been identified. Activities such as placing the item in a pocket or on a belt, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk. However, where a static-generating mechanism is identified, such as repeated brushing against clothing, then suitable precautions shall be taken, e.g. the use of anti-static footwear.



IECEx Certificate of Conformity

Certificate No..

IECEx SIR 14 0097X

Date of Issue:

2015-07-06

Issue No.: 0 Page 4 of 4

EQUIPMENT(continued):

The intrinsic safety parameters at the 'RS 232' connectors are as follows:

Tx and Rx pins co	mbined w.r.t. GND pin:	1223 10000 100	1000 TO 100	
Ui = 11.1 V	li = n/a	Pi = n/a	Ci = 0	Li = 35 nH
Uo = 11.1 V	lo = 22.5 mA	Po = 62.3 mW		
Tx pin with Rx pe	1			
UI = 22.2 V	li = n/a	Pi = n/a	Ci = 0	Li = 35 nH
Uo = 22.2 V	lo = 11,3 mA	Po = 62.3 mW	-	

The load parameters are as follows

Gas Group	Max, external capacitance (Co)	Max: external inductance (Lo)	Max. external inductance to resistance ratio (Lo/Ro)
lic	0.16 µF	70 mH	571 μH/Ω
118	1.11 µF	280 mH	2.28 mH/Ω
IIA	4.08 µF	560 mH	4.57 mH/Ω

ER Datalogger

	1	of Conform	nity
INTER IEC C	ertification Sche for rules and details of	CTROTECHNICAL me for Explosive A the IECEx Scheme visit www.lec	COMMISSION Atmospheres
Certificate No.,	IECEx SIR 16.0009X	issue No.;0	Certificate history:
Status:	Current		
Date of Issue:	2016-02-03	Page 1 of 4	
Applicant:	Rohrback Cosasco Sy 11841 Smith Ave. Santa Fe Springs California 90670 United States of Amer	ica	
Electrical Apparatus: Optional accessory.	RDC2-COT* and RDC2-C	COT-G*	
Type of Protection:	Intrinsically Safe		
Marking;	Ex ia IIC T4 Ga Tamb = -40°C to +70°C		
Approved for issue on I Certification Body:	behall of the IECEx C E	llaby	
Position:	Dej	outy Certification Manager	
Signature: (for printed version)		C. C.	
Date		2016-02-6	3
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	Hawarden Deeside CH5 3US	CERTIFICAT	

EC IEĈEx	IECE	k Certificate
	of C	onformity
ertificate No.:	ECEX SIR 16,0009X	
Date of issue:	2016-02-03	ISSUE NO: 0
		Page 2 of 4
Manufacturer:	Rohrback Cosasco Sys 11841 Smith Ave. Santa Fe Springs California 90670 United States of Americ	tems ;a
Additional Manufacturing loca s):	ation	
This certificate is issued as v bund to comply with the IEC sovered by this certificate, we artificate is granted subject to a amended.	arification that a sample(s), represe Standard list below and that the m is assessed and found to comply v to the conditions as set out in IECE	entative of production, was assessed and tested and anufacturer's quality system, relating to the Ex products with the IECEx Quality system requirements. This is Scheme Rules, IECEx 02 and Operational Document
TANDARDS: The electrical apparatus and locuments, was found to cor	any acceptable variations to it spe- nply with the following standards.	cified in the schedule of this certificate and the identified
EC 60079-0 : 2011	Explosive atmospheres - Part 0: G	ieneral requirements
EC 60079-11 : 2011	Explosive almospheres - Part 11:	Equipment protection by intrinsic safety "I"
EC 60079-26 : 2014- 10 Edition: 3.0	Explosive atmospheres - Part 25	Equipment with Equipment Protection Level (EPL) Ga
This Certificate does not in	ndicate compliance with electrical a expressly included in the Str	afely and performance requirements other than those andards listed above.
EST & ASSESSMENT REF sample(s) of the equipmen	ORTS: I listed has successfully met the ex	lamination and test requirements as recorded in
est Report GB/SIR/ExTR16.0003/00		
Quality Assessment Report:		
S/UL/QAR08 0005/05		
IS/UL/QAR08 0005/08		



Certificate No.

IECEX SIR 16.0009X

Date of Issue:

2016-02-03

Issue No :: 0

Page 3 of 4

Schedule

EQUIPMENT:

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2

3.

Equipment and systems covered by this certificate are as follows:

The RDC2-COT* and RDC2-COT-G* Data Loggers am fixed equipment and use an enclosure that is made from either fibreglass (with polyester mounts) or a stainless steel. The enclosure, which provides at least IP 20 ingress protection, contains a main p.cb. assembly and an internal source of power, this source of power is an RCS RDC2 Baltery Pack that incorporates two, D size, primary cells and is identified as part number 725043, a second, "adapter" p.cb. assembly may be mounted on the main p.cb. The Battery Pack can only be replaced by another RCS RDC2 Pack but it can be changed even when an explosive atmosphere is present.

One end of the enclosure has a permanently connected cable that enters the enclosure via a cable gland, the intension being that the cable is connected to an RCS/Cosasco simple apparatus probe (not covered by this certification). This end of the enclosure is also fitted with a vent/drain. The other end of the enclosure may have up to two, RF coaxial connector/adapters fitted, these are connected to an external antenna by the user.

It is intended that an operator takes a reading from the RDC2-COT* or RDC2-COT-G* using a Mate, which is a separately cartified (IECEx SIR 14.0096X), hand-held, piece of equipment, or other suitably cartified hand-held equipment (including a phone) running RCS application software; the two devices communicate via a wireless, Bluetooth link. Refer to EQUIPMENT (continued) for additional information

CONDITIONS OF CERTIFICATION: YES as shown below:

Under partain extreme circumstances, the exposed plastic/fibre glass surfaces of the non-metallic enclosure version of the equipment may generate, and its uncerthed metal parts may store, an ignition-capable level of electrostatic charge. Therefore this version of the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on the enclosure surfaces. In addition, the equipment shall only be cleaned with a damp doth. This is particularly important if the equipment is installed in a Zone 0 location. The maximum radio power output at the RF connectors is 1W. Any anterna fitted shall not result in the radiated in the radiated in the surface shall be added and the result of the radiated in the radiated in the result in the radiated in the radiated shall not result in the radiated in the result in the radiated in the result in the radiated in the radiated in the radiated in the radiated in the result in the radiated in the radiated in the result in the result in the radiated in the result in the re

The maximum radio power output at the RF connectors is TW. Any amenna hitted shall not result in the radiated power exceeding 2 W when any antenna gain is taken into account.

The RDC2-COT-G* version of the equipment is not capable of passing a 500 V dielectric strength test, according to Clause 6,3,13 of IEC 60079-11, between its intrinsically safe circuits and its enclosure. This shall be taken into account in any equipment installation.

IEC.	IEČEx	IECEx Certificate of Conformity			
Certificate No	,±	IECEX SIR 16.000	Xec		
Date of Issue		2016-02-03		Issue No	.: 0
				Page 4 c	of 4
	ontinued):				
The intrinsic safe	ety parameters at th	e permanently conne	cted cable are:		
Ui=0 Uo=5,36 V	li=0 lo=0.329 A	Pi = 0 Po = 0.45 W	Co = 64.9 µF	Lo = 300 µH	Lo/Ro = 53 µH/0
The intrinsic safe Ui = 0 Uo = 5.3 6V	ety parameters at the li = 0 lo = 0.894 A	e RF coaxial connect Pi = 0 Po = 0.95 W	tors are: Ci = 30.4 μF Co = 1.6 μF	Li = 35 nH Lo = 44.4 µH (A max. discrete inductance, tr allowed as cable indu	of 2 µH shall be te balance being clance)

LPR Datalogger

IEC, IEĈE	IE	CEx Certifor	ficate nity
INTER IEC C	Certification Sche for rules and details of	CTROTECHNICAL (me for Explosive A the IECEx Scheme visit www.iec	COMMISSION Atmospheres
Certificate No.:	IECEX SIR 16.0010X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2016-02-03	Page 1 of 4	
Applicant	Rohrback Cosasco Sy 11841 Smith Ave. Santa Fe Springs California 90670 United States of Amer	rstems ica	
Electrical Apparatus: Optional accessory:	RDC2-CAT* and RDC2-C	CAT-G*	
Type of Protection:	Intrinsically Safe		
Marking:	Ex ia IIC T4 Ga Tamb = -40°C to +70°C		
Approved for issue on t Certification Body:	behalf of the IECEx C E	liaby	
Position:	De	puty Certification Manager	
Signature: (for printed version)		C. ERR	~
Date:		2016-02-0	3
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ertificate issued by SIRA (Certification Service CSA Group	1.14	-
Unit 6, Ha	Hawarden Deeside CH5 3US	CERTIFICATI	

IECEx SIR 16.0010X 2016-02-03 Rohrback Cosasco Sy	(ssue No.10
2016-02-03 Rohrback Cosasco Sy	(ssue No.10
Rohrback Cosasco Sy	A CRAWNER AND
Rohrback Cosasco Sy	Page 2 of 4
11841 Smith Ave. Santa Fe Springs California 90670 United States of Amer	ica
cation	
venification that a sample(s), repre C Standard list below and that the was assessed and found to comply it to the conditions as set out in IEC	sentative of production, was assessed and tested and manufacturer's quality system, relating to the Ex products with the IECEx Quality system requirements. This Ex Scheme Rules, IECEx 02 and Operational Document
d any acceptable variations to it sp emply with the following standards:	ecified in the schedule of this certificate and the Identified
Explosive atmospheres - Part 0:	General requirements
Explosive atmospheres - Part 11	Equipment protection by intrinsic safety ""
Explosive atmospheres - Part 26	3: Equipment with Equipment Protection Level (EPL) Ga
Indicate compliance with electrica expressly included in the S	l safety and performance requirements other than those Itandards listed above.
PORTS: Int listed has successfully met the e	examination and test requirements as recorded in
	cation verification that a sample(s), repres C Standard list below and that the invest assessed and found to comply it to the conditions as set dut in TEC d any acceptable variations to it sp comply with the following standards: Explosive atmospheres - Part 11 Explosive atmospheres - Part 11 Explosive atmospheres - Part 20 Cincleste compliance with electrical expressive included in the S EPORTS: In thisted has successfully met the e





Ultracorr 2

Ultracorr 2 Ultrasonic Transmitter

	RNATIONAL ELE Certification Sch for rules and details o	CTROTECHNICAL C eme for Explosive A f the IECEx Scheme visit www.iece	COMMISSION tmospheres x.com
Certificate No.:	IECEx SIR 12.0028X	issue No.:1	Certificate history:
Status:	Current		Issue No. 0 (2012-4-20)
Date of Issue:	2013-04-23	Page 1 of 5	
Applicant:	Rohrback Cosasco S 11841 East Smith Ave Santa Fe Springs California 90670 United States of Ame	systems erica	
Electrical Apparatus: Optional accessory:	ULTRACORR-2 Ultrasc	onic Transmitter	
Type of Protection:	Intrinsic Safety		
Marking:	Ex ib IIC T4 Gb Ta = -40°C to +70°C		
Approved for issue on I Certification Body:	behalf of the IECEx	A C Smith	
Position:		Certification Manager	
Signature: (for printed version) Date:		48	,
 This certificate and s This certificate is not The Status and author 	chedule may only be reprod transferable and remains th enticity of this certificate may	uced in full. luced in full. le property of the issuing body. y be verified by visiting the Official I	ECEx Website.
ertificate issued by:			
SI	RA Certification Service Rake Lane Eccleston Chester		sira





IECEx SIR 12.0028X

Certificate No.: Date of Issue

2013-04-23

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IECEx Certificate

of Conformity

Schedule

EQUIPMENT:

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Equipment and systems covered by this cortificate and as follows:

The ULTRACORR-2 is battery-powered, portable instrument that measures pipe and vessel wall thickness for non-intrusive corrosion and erosion monitoring. The instrument is intended for connection to a piezoelectric ultrasonic transducer manufactured by Rohrback Cosasco Systems, typically a model UST2, which provides periodic time- and date-stamped measurements of wall thickness. The ULTRACORR-2 sends the results via a low power wireless channel to a remote device.

The ULTRACORR-2 is powered from two, non-rechargeable, AA cells, which are intrinsically safe and may be replaced in the hazardous area. Only cells with part number 095818 or 095820 from Rohrback Cosseco Systems may be fitted. Apart from the cells, the circulity is completely encapsulated within a plastic enclosure. A flying lead terminates in a plug-and-socket connector, which is used to connect the ULTRACORR-2 to the ultrasonic transducer. See Eguipment Continued for additional description.

CONDITIONS OF CERTIFICATION: YES as shown below:

The cells in the battery pack are intrinsically safe and may be replaced by the user, however, only RCS, P/N 095818 or 095620 cells supplied by Rohrback Cosasco Systems may be used; in addition, provided care is taken to prevent the cells being damaged, they may be changed whilst in the hazardous area. Cells with P/N 095820 are also compatible with units cartified under previous issues of the certificate.





UST2 Ultrasonic Transducer

	RNATIONAL ELE Certification Sch for rules and details of	ECTROTECHNICAL	COMMISSION Atmospheres
Certificate No.:	IECEx SIR 12.0029X	issue No.:2	Certificate history: Issue No. 2 (2013-4-23)
Status:	Current		Issue No. 1 (2012-6-13) Issue No. 0 (2012-4-20)
Date of Issue:	2013-04-23	Page 1 of 4	
Applicant:	Rohrback Cosasco S 11841 East Smith Ave Santa Fe Springs California 90670 United States of Ame	Systems erica	
Electrical Apparatus: Optional accessory:	UST2 Ultrasonic Trans	sducer	
Type of Protection:	Intrinsic Safety		
Marking:	Ex ia IIC T4 Gb Ta = - 40°C to + 70°C		
Approved for issue on L Certification Body:	behalf of the IECEx	A C Smith	
Position:		Certification Manager	
Signature: (for printed version)		18	\geq
Date:		203-04-	23
1. This certificate and s 2. This certificate is not 3. The Status and authe	chedule may only be reproc transferable and remains the enticity of this certificate ma	duced in full. he property of the issuing body. y be verified by visiting the Official	IECEx Website.
ertificate issued by: SI	RA Certification Service Rake Lane Eccleston Chester CH4 9JN United Kingdom	c	Sira ERTIFICATION



IECEx SIR 12.0029X

2013-04-23

Issue No.: 2 Page 2 of 4

IECEx Certificate

of Conformity

Manufacturer:

Certificate No.:

Date of Issue:

Rohrback Cosasco Systems 11841 East Smith Ave Santa Fe Springs California 90570 United States of America

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate; was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0 IEC 60079-11 : 2011 Edition: 6.0

Explosive atmospheres - Part 0: General requirements Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "/"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report GB/SIR/ExTR12.0085/00

GB/SIR/ExTR12.0085/01

GB/SIR/ExTR13.0044/00

Quality Assessment Report

US/UL/QAR08.0005/02

US/UL/QAR08.0005/03

1		of C	onformity
Certifi	sate No.;	IECEX SIR 12.0029X	
Date o	f Issue:	2013-04-23	issue No.: 2
			Page 3 of 4
		Schedule	
QUIPM	ENT:	Sector and the design of the sector	
		and a way to be addressed and an end of the second	
The Us	ST2 is a piezo-eli or measuring me	ectric ultrasonic transducer that is de tal thickness. It is equipped with an e	esigned to be attached by adhesive to a metal ntegral RTD for temperature monitoring and
The Us pipe, fe contair intende SIR.12 device The hig single in	5T2 is a piezo-el- or measuring me ts an embedded d to be periodica .0028X, manufar may be used pro h voltage supply b ntrinsically safe cir	ectric ultrasonic transducer that is de tal thickness. It is equipped with an e memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the I rouit with the following combined entity p	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and retain user-configured ID characteristics. It is lice; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. ow votage supply to the RTD are treated as a parameters:
The Us pipe, fe contain ntende SIR.12 device The hig single is	ST2 is a piezo-el or measuring me ts an embedded ed to be periodica .0028X, manufar may be used pro h voltage supply b ntrinsically safe cir Combined per	ectric ultrasonic transducer that is de tal thickness. It is equipped with an a memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the I rout with the following combined entity p ameters	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and ratain user-configured ID characteristics. It is loe; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. ow voltage supply to the RTD are treated as a parameters:
The US bips, fo contain ntende SIR.12 device The hig single i UI	ST2 is a piezo-el- or measuring me is an embedded ed to be periodic: .0028X, manufar may be used pro h voltage supply b intrinsically safe cir Combined per 126 V ac	ectric ultrasonic transducer that is de tal thickness. It is equipped with an a memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the l rout with the following combined entity p ameters	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and netain user-configured ID characteristics. It is ice; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. ow voltage supply to the RTD are treated as a parameters:
The US pipe, fe contain intende SIR, 12 device The hig single in UI	512 is a piezo-el- or measuring me is an embedded ed to be periodica .0028X, manufax may be used pro h voltage supply b intrinsically safe cir Combined par 126 V ac 80 mA	ectric ultrasonic transducer that is de tal thickness. It is equipped with an a memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the I rout with the following combined entity p ameters	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and netain user-configured ID characteristics. It is loc; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. ow voltage supply to the RTD are treated as a parameters:
The US pipe, fe contain intende SIR.12 device The hig single i UI II PI	572 is a piezo-el- or measuring me is an embedded ad to be periodica .0028X, manufac may be used pro h voltage supply b intrinsically safe cir Combined par 126 V ac 50 mA. 173 mW	ectric ultrasonic transducer that is de tal thickness. It is equipped with an a memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the t rout with the following combined entity p ameters	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and retain user-configured ID characteristics. It is lice; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. low voltage supply to the RTD are treated as a marameters:
The US pipe, fe contain intende SIR, 12 device The hig single in UL II PI CI	572 is a piezo-eli or measuring me is an embedded ad to be periodica .0028X, manufac may be used pro h voltage supply b ntrinsically safe cir <u>Combined per</u> 126 V ac <u>50 mA</u> 173 mW 0.85 nF	ectric ultrasonic transducer that is de tal thickness. It is equipped with an a memory chip inside its connector to ally interrogated by a monitoring dev ctured by Rohrback Cosasco System ovided it is suitable for the application of the piezo-electric transducer and the t rout with the following combined entity p ameters	esigned to be attached by adhesive to a metal integral RTD for temperature monitoring and retain user-configured ID characteristics. It is lice; this may be an ULTRACORR-2, IECEx is, alternatively, another appropriately certified in and has matching entity parameters. low voltage supply to the RTD are treated as a marameters:

CONDITIONS OF CERTIFICATION: YES as shown below:

- 1. The UST2 has been assessed as compliant for a T4 temperature class at an upper ambient temperature of 70°C. It has also been assessed with the front face attached to a process pipe up to 150°C provided that the cable end of the UST2 is at no more than 70°C. However, it should be noted that in this condition, with a pipe surface temperature at 150°C, the pipe surface itself limits the temperature class to T3.
- a pipe surface temperature at 150°C, the pipe surface itself limits the temperature class to T3.
 2. The metallic ring on the top of the enclosure may store a level of electrostatic charge that could become incendive. Therefore, the user/installer shall implement precautions to prevent the build-up of electrostatic charge e.g. locate the equipment where a charge-generating mechanism (such as wind-blow dust) is unlikely to be present. Refer to user instructions for further information.
- Only portable, battery-powered equipment, with no connection to earth, can be connected to the UST2. The Rohrbach-Cosesco Systems Ultracorr (IECEx SIR 12.0028) is suitable equipment.



IECEx Certificate of Conformity

Certificate No .:

IECEX SIR 12.0029X

Date of Issue:

2013-04-23

Issue No.: 2

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue	1 - this Issue introduced the following change:
1	ExTR Free Ref. no. R27101B/01 replaced R27101B/00
Issue	2 - this Issue introduced the following changes:
1	Mechanical changes, including a thinner diaphragm were approved.
2	A change to O in the entity parameters from 1 nF to 0.85 nF, the table above is amended accordingly.
3	Minor changes to the artwork were acknowledged.
4	The addition of a new Condition of Certification and the removal of the Condition of Manufacture.

M-200

The M-200 uses the same certifications as the MWT-3905.

INTER IEC C	ertification Sch for rules and details of	ECTROTECHNICAL (eeme for Explosive A of the IECEx Scheme visit www.iec	COMMISSION Atmospheres
Certificate No.:	IECEx FMG 09.0004	issue No.:0	Certificate history:
Status	Current		
Date of Issue:	2009-08-13	Page 1 of 3	
Applicant [,]	Rohrback Cosasco 11841 East Smith Ave Santa Fe Springs, CA S United States of Am	Systems 00670 erica	
Electrical Apparatus: Optional accessory:	MWT-3905		
Type of Protection.	d [ib]		
Marking:	Ex d [ib] IIC		
Approved for issue on i Certification Body:	behalf of the IECEx	David Styrcula	
Position:		Technical Team Manager	
Signature: (for printed version) Date: 1. This certificate and s 2. This certificate is not 3. The Status and auth	chedule may only be repro transferable and remains i	$\int \frac{1}{200} \frac{1}{1000} \frac{1}{10000000000000000000000000000000000$	unter
Certificate issued by:	entities of the continente in	ay be remined by visiting the emission	
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Certificate No.:	IECEx FMG 09.0004		
Date of Issue:	2009-08-13	Issue No.: 0	
		Page 3 of 3	
	Schedule		
EQUIPMENT: Fourpment and systems co	overed by this certificate are as follows:		
MWT-3905			
CONDITIONS OF CERTIF	FICATION: NO		

Drawing 726061



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Appendix D

Drawing 726062



Appendix E
