OnTrak System

Remote Lubrication &
Bearing Monitoring Systems

ue SYSTEMS INC
The ultrasound approach

Copyright

Disclaimer

This manual is provided for informational purposes. UE Systems MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UE Systems shall not be liable for errors, omissions, or inconsistencies that may be contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. Information in this document is subject to change without notice and does not represent a commitment on the part of UE Systems. The information in this manual is not all-inclusive and cannot cover all unique situations.

Patents

The product(s) described in this manual may be covered under existing and pending patents.

Table of Contents

OnTrak System

1.1 OnTrak Overview

The OnTrak is a remote bearing monitoring and precision lubrication system designed to significantly reduce the amount of time and resources required for optimal bearing lubrication

From any device, anywhere use real-time prescriptive friction monitoring with precision of single point lubricators to significantly reduce the common causes of premature bearing failure

The OnTrak comes in three different models for network configurations.

1. ON-TRAK-CEL-16 - Cellular, 16 channels
2. ON-TRAK-ETH-16 - Ethernet, 16 channels
3. ON-TRAK-WIFI-16 - Wi-Fi, 16 channels

UE Systems' UE Insights Cloud allows you to view data collected by the OnTrak and lubricate the bearings remotely with precision through the optional integration of the M-UE Single Point Lubricators. Optionally, the data can be integrated into other platforms through industrial and software protocols.

1.2 OnTrak Specifications

Weatherproof Enclosure	Features
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Humidity	95% at 40C non-condensing
Power	0.5 Amps RMS, 120/230 VAC, 50/60Hz
Warranty	2 years on hardware; Software: As-Is software license
Ratings	Gasketed, UL, NEMA, IEC, Wall Mount, ABS. IEC529-IP66 (used in many wet, dirty and/or corrosive environments)
Dimensions	159.8 mm, 200 mm, 300 mm

Superbase Module	Features
Processor	ARM Cortex A8, 1GHz
Memory	512MB Ram, 8GB Flash
Connectors	Barrel connector for Power. Size N; OD 5.5mm ID 2.5mm 9.5mm length; mini-USB for download of software from laptop
Software	Runs Python virtual machine. All message and communication protocols handled via software blocks e.g., HTTPS REST APIs, WebSocket's, MODBUS, MT Connect, MQTT etc. Contact us for details.

Analog In Module	Features
Connector	10 position terminal block; screw clamp; Wire Gauge 16-26 AWG (0.5-1.5mm)
Processor	ARM Cortex microcontroller. 80MHz 128k Flash 32K Ram
I/O	Eight 0-20mA analog inputs
A-D resolution	16 bits
Modes	Sample on demand, send on compare above below change, send on change based on configurable hysteresis value, sample at fixed rate (max 1KHz).
Power Output	Software selectable 3.3V or 5V (500 mA)

Ethernet Module	Features
Connector	RJ-45 (8 position)
Processor	ARM Cortex microcontroller. 120MHz 512k Flash 256K Ram
Protocols	10 and 100Mbps; IEEE-802.3-2008 compliant MAC; All standard web protocols. DNS, DHCP, TCP, UDP, TLS

Cellular Module	Features
Connector	SMA; external antenna included
Processor	ARM Cortex microcontroller. 120MHz 512k Flash 256K Ram
Radio	4G LTE CAT 1; Verizon Bands LTE B4, B13; Specify carrier - Verizon, AT&T, T-Mobile; For AT&T Bands LTE B2, B4, B12; Call for international options; 10Mbps download, 5Mbps upload. No fallback.
SIM	Built-in 3FF micro-SIM card
Power	Active power 616mA Peak. 156mA average; Idle 48mA. low power 8.6mA.
Antenna Requirements	If not using included antenna. Bandwidth: LTE B4(1700): 445MHz, LTE B13(700): 41MHz; Impedance 50 ohm

Bluetooth Module	Features
Processor	ARM Cortex microcontroller. 120MHz 512k Flash 256K Ram
Radio	2.4 GHz Bluetooth; +12 dBm transmit power;
Protocols	Bluetooth BLE only; Bluetooth 4; does not include Bluetooth audio or older Bluetooth; Multiple connections; Advertising; Scanning;

Wi-Fi Module	Features
Processor	ARM Cortex microcontroller. 120MHz 512k Flash 256K Ram
Radio	802.11 b/g/n 2.4 GHz. (n - 2.4GHz up to 150Mbps); Automatic beacon monitoring (hardware TSF); 20 dBm transmit power; Antenna built-in;
Protocols	All standard web protocols. DNS, DHCP, TCP, UDP, TLS. Client or AP access point (server).

RS-485 Module	Features
Connector	10 position terminal block; screw clamp; Wire Gauge 16-26 AWG (0.5-1.5mm) 3 used (D+ D- Shield)
Processor	ARM Cortex microcontroller. 80MHz 128k Flash 32K Ram
Baud Rate	Software selectable to 115200
Terminating Resistor	Software selectable in or out.
Protocols	Numerous protocols including proprietary ones handled via software blocks. MODBUS

RS-232	Features
Connector	DB 9 Male
Processor	ARM Cortex microcontroller. 80MHz 128k Flash 32K Ram
Baud Rate	Software selectable

1.3 OnTrak & Accessories

Included Accessories:

- OnTrak with Enclosure
- Power Plug (Plug Type Dependent on Customer Location)
- Wall Mounting Brackets
- Ethernet, Wi-Fi, or Cellular communication block

Optional accessories:

- Serial Communication Block (RS232/RS485)
- SIM Card (Required for Cellular Communication)
- Bluetooth Communication Block (BLE)

1.4 Data Collection Requirements

The OnTrak must be connected to the sensors on the equipment you want to monitor and set up in the UE Insights Cloud that matches how the sensors on the equipment are connected to the channels of the OnTrak.

- OnTrak and accessories
- Field wiring to installed sensors
- AC line power wiring

1.5 Precautions

The OnTrak is dust and water-resistant. Use a damp, clean cloth for cleaning. Do not use cleaning fluids, abrasives, or aerosols, as they could enter the device, causing damage, fire, or electrical shock.

1.6 Safety Notes

This document is intended as a guide only. No instructions given here are intended to supersede any locally issued directions or safety instructions.

Do not operate the OnTrak in a hazardous location.

Ensure cable glands are tightened properly to provide strain relief and maintain IP66 rating when installing.

User must disconnect AC power before wiring and connecting sensors/lubricators.

Ensure the AC outlet or dedicated uninterrupted power supply that the OnTrak is plugged into is not obstructed or positioned such that the user cannot easily disconnect the OnTrak and that the AC power plug acts as the electrical disconnect for the OnTrak.

Customer must ensure a grounded AC outlet or power supply is used. Refer to your local electrical code requirements for the onsite building circuit breaker amperage.

Only the provided AC power cord can be used for supplying the OnTrak with power.

Any use of OnTrak outside manufacturer's specifications and instructions found in this user manual may result in hazard and/or injury.

User must disconnect AC power plug when making channel changes to the internal OnTrak termination board or cleaning the OnTrak system with a damp cloth if required – water only.

Installing the OnTrak System

2.1 Component Overview of the OnTrak Enclosure

A. Sensor & Single Point Lubricator Cable Entry (1-16)
B. Ethernet Connection (RJ45 Connector - Optional)
C. Power Cord Entry

2.2 Installation of the OnTrak Enclosure

Mount the OnTrak to a location that will provide easy access. For the drill hole dimensions refer to Appendix diagram: **A1**.

The enclosure is a gasketed, all-plastic enclosures that has been designed to meet NEMA 1, 2, 4, 4x and IEC529-IP66 requirements, allowing them to be used in numerous wet, dirty and/or corrosive environments.

2.3 OnTrak Power Requirements

The OnTrak is powered by a 120/230 VAC, 50/60Hz power supply. The power consumption from the OnTrak with sixteen (16) Ultra-Trak 850S sensors is 0.5A (RMS). Although it is not a requirement, we recommend plugging the OnTrak into its own dedicated power supply.

2.4 Installation of the Ultra-Trak 850S Sensor

Mount the sensors as close as possible to the centerline of the bearing housing by either drilling and tapping or by using our stud mounting kit that comes included with every purchased sensor. If you are going to drill and tap, the thread size for the 850S sensors is 10/32 UNF.

The mounting kit includes bonding material, a metal mount plate with 10/32 UNF male stud. For more information regarding 850S mounting and proper location, refer to **A2**.

2.5 Installation of the M-UE

The M-UE can be either be directly or remotely mounted to your asset. The dispense port on the M-UE is 3/8” NPT. First check the size required on the lube point of your machine and use an appropriate 3/8” NPT Female to lube point thread size Male brass reducer.

For applications where heat, space and vibration are of concern, remote mounting is highly recommended in either 10 ft or 20 ft options. For more information regarding M-UE mounting and installation guidelines, refer to **A3**.

2.6 Ultra-Trak 850S Cable Connections

The UE 850S requires a 23 to 26 V, DC power source @ 30 mA total. The power connections are to be made via the cable connections on the sensor (refer to the connection diagram below). **Note:** The sensor requires +23 VDC Minimum at the sensor after any voltage drops in the power supply loop.

2.7 Additional References

For instructions regarding the Ultra-Trak 850S Smart Analog Sensor or M-UE Single Point Lubricator, refer to the following resources.

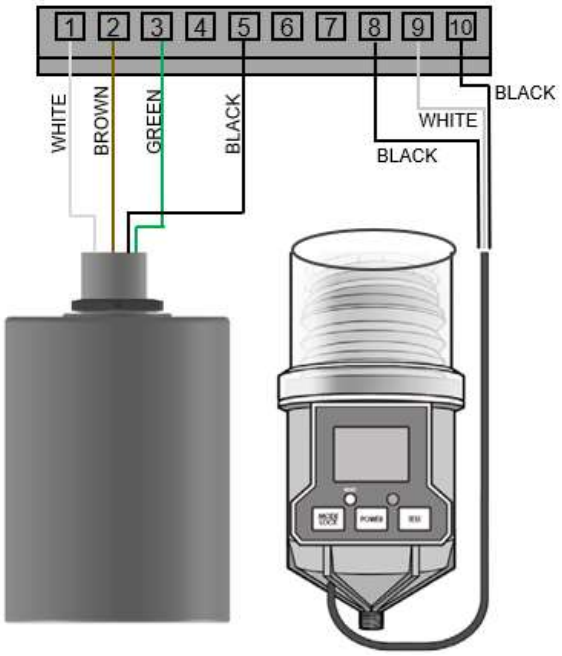
- Ultra-Trak 850S User Guide Manual
- M-UE User’s Manual

2.8 Wiring the Ultra-Trak 850S Sensor & M-UE to the OnTrak

Begin with routing the sensor and if applicable the single point lubricator cable through the cable strain relief fitting on the OnTrak enclosure. Included with each OnTrak system is three different types of bushing plugs used to seal the cable entry points.

1. Single hole used with a single sensor.
2. Two holes used for a single sensor and a single point lubricator.
3. Cap used to seal hole when no hardware is used.

The OnTrak comes with 10 terminals for each channel. There are a total of sixteen channels per OnTrak which are labeled on the termination panel. Use a mini flat head terminal screwdriver (1/8”) to terminate the wire connections shown below.



OnTrak Channel Wiring			
Terminal #	**Device**	**Wire Color**	**Wire Function**
1	**UT850S Sensor**	White	Power Supply
2		Brown	Current Output
3		Green	Ground
4		Empty	Empty
5		Black	RF Shield
6		Empty	Empty
7		Empty	Empty
8	**M-UE Single Point Lubricator**	Black (28 AWG)	Shield
9		White (24 AWG)	Signal
10		Black (24 AWG)	Ground

Network Configuring the OnTrak System

There are many ways to use the OnTrak system by connecting sensors or machine data interfaces to the appropriate hardware blocks in the OnTrak. The data can be processed locally which is then sent to the UE Insights dashboard and/or most on-premises systems or cloud IoT platform for: storage, visualization, sending alerts, and reporting. The Stackbuilder authoring tool can be used to configure or fully program a stack to do anything you want. Please contact us with any questions and advice on any of your projects at info@uesystems.com.

The standard OnTrak includes a Superbase, two 8-channel Analog in Universal, two 8-channel I/O Expander, and one of the three communication options, Cell Data, Wi-Fi Data or Ethernet Data blocks. OnTrak has been pre-programmed to sample and send data to UE Insights cloud storage, visualization, and alerting platform. The OnTrak is configured to sample the 16 inputs every minute and send them to the UE Insights when it is within reach of a network.

The OnTrak is wired for 0-16 mA sensors and calibrated to display 0-100 dB values and pre-defined sensors tags are set from factory. Just like the OnTrak programming, these input types and behaviors can be easily changed. Our support engineers would be happy to help you set up and program your OnTrak.

Contact us at info@uesystems.com if you need any troubleshooting advice.

3.1 Viewing Data on the UE Insights Cloud Platform

To access UE Insights platform to view the sensor data streamed from the OnTrak and lubricate from any device anywhere (phone, tablet, laptop):

A. Open a web browser and point to the URL - https://uesystems.interstacks.com

B. Login to the account we set up for you already using your email.

A pre-configured Dashboard for this stack has been set up already. If a OnTrak loses its network connection but remains powered, when the network connection returns, it will send all the data it has saved in its internal memory during the network outage. This can be many hours of saved data.

In addition to the UE Insights visualization platform, a cloud device management capability is available that supports remote updating of connected OnTrak software (over the air - OTA updates) and basic connectivity status monitoring.

3.2 Configuring Cellular Data

If you have ordered the OnTrak will cellular data connectivity, your OnTrak will come provisioned with an activated SIM card. Connect the power supply to the OnTrak and position it in a place that has good cellular coverage. The OnTrak will register itself on the strongest cell service provider in that location and automatically begin to send data.

To ensure the target area has cellular coverage, check your cellphone in that area and ensure you are getting enough bars before installing.

3.3 Configure Wi-Fi Access

You must first configure the Wi-Fi module so that it knows your local Wi-Fi network name (SSID) and password. To do this, you will use a laptop, phone, or tablet to connect to the module's built-in web server to view a configuration panel that will let you enter your local Wi-Fi information.

Specific OnTrak SSID network name and network password will be sent via email with the purchase of each OnTrak unit.

A. Power up the OnTrak. Wait for a few seconds until the OnTrak boots up.

B. Using a computer/phone/tablet, go to Wi-Fi-settings to connect to the OnTrak's Wi-Fi server.

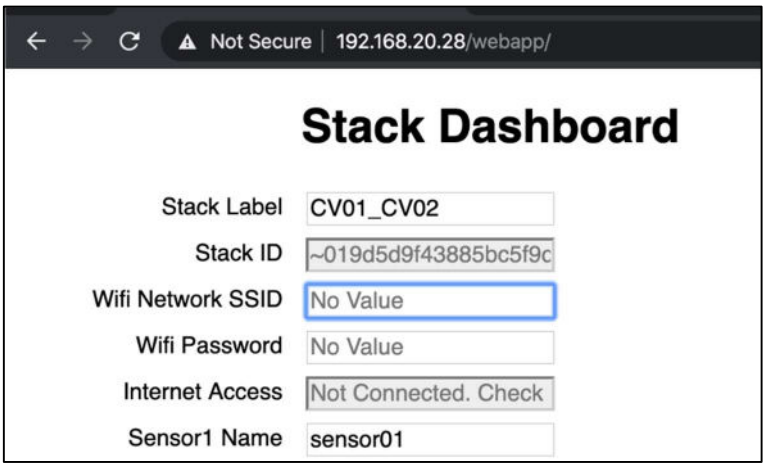
OnTrak SSID: *Customer*_OnTrak_*X*
Password: ontrak123

Where *Customer* is the company name.
Where *x* is the number of OnTrak's purchased.

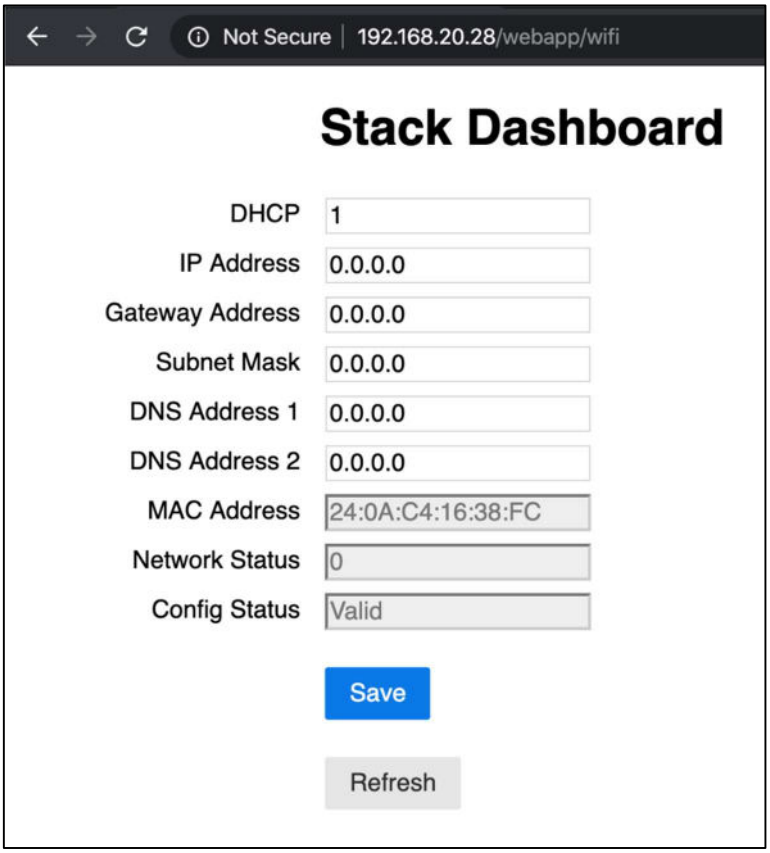
C. After connecting to the OnTrak's SSID, open a web browser and point the browser to the following URL - http://192.168.4.1/webapp/

When prompted for a login, use:
Username: stackadmin
Password: StckAdm1n

D. In the configuration view, enter your local WIFI Network name (SSID) and Wi-Fi Password in the fields provided, scroll down and click the Save button.



E. Point the browser to the following URL - http://192.168.4.1/webapp/wifi and enter the correct IP address assignment information in all required fields. Example of DHCP below:



Note:
If the IP address assignment is DHCP, enter 1 and omit all other fields.

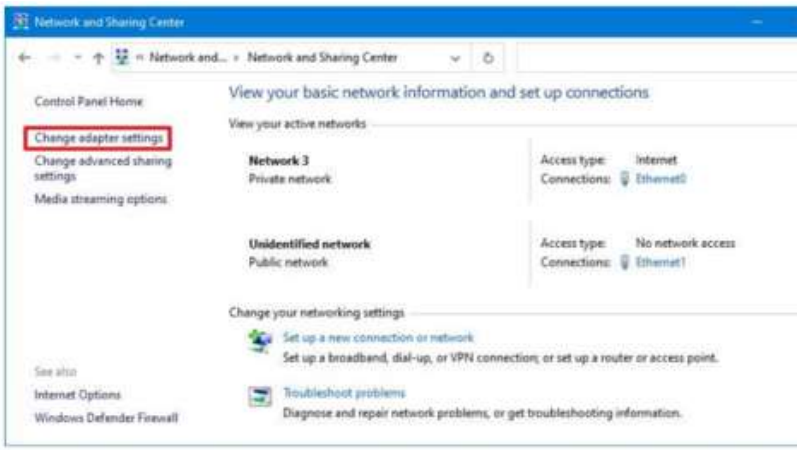
If the IP address assignment is STATIC, enter 0 and enter all required fields. In this case, the IP information will be defined by your IT.

F. The OnTrak will reboot in a few seconds and will connect to the specified Wi-Fi network.

3.4 Configure Ethernet Access

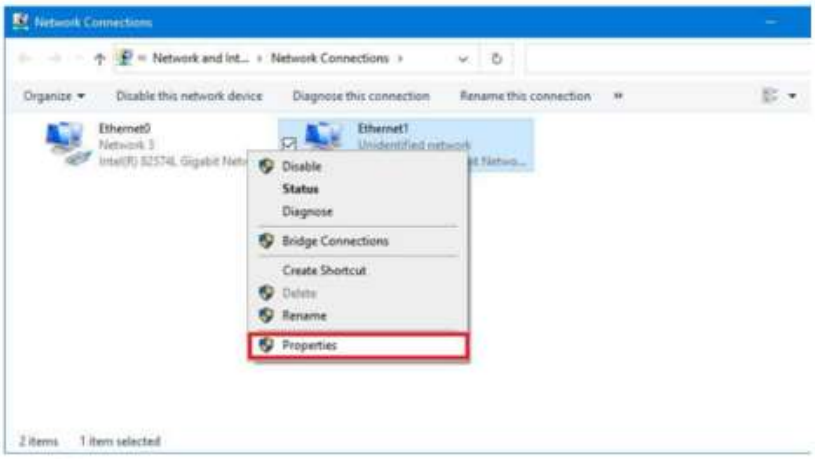
To setup an Ethernet based OnTrak, you must first configure a laptop/computer to allow for communication between the computer and OnTrak:

1. Open the **Control Panel**.
2. Click on **Network and Internet**.
3. Click on **Network and Share Center**.
4. Select the **Change adapter settings** from the left navigation panel.



Change adapter settings

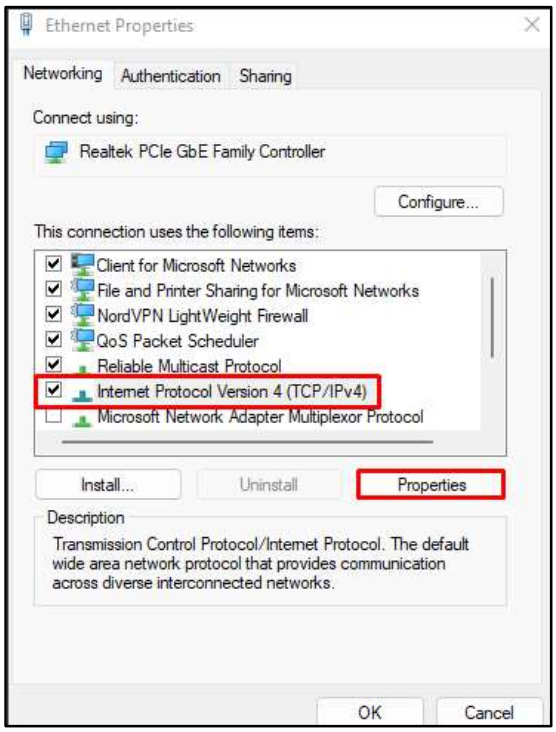
5. Right-click the network adapter and select the **Properties** option.

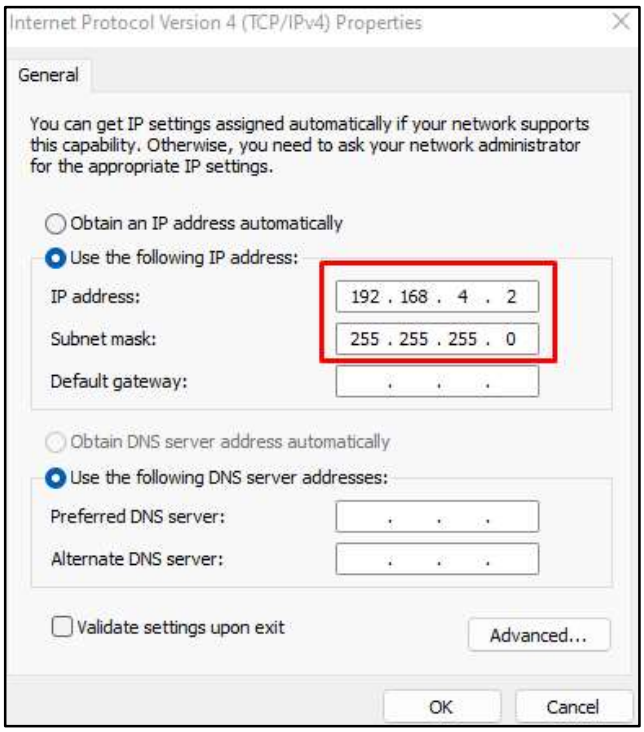


Network adapter properties

6. Select the **Internet Protocol Version 4 (TCP/IPv4)** option.

7. Click the **Properties** button and select the **Use this following IP Address** button.





8. Change the IP address to **192.168.4.2** and change subnet mask to **255.255.255.0**. Once entered, click ok to finalize.

9. Now that the computer has been configured, connect the OnTrak to this computer directly via an ethernet cable and follow the remaining steps below.

10. To confirm your IPv4 settings were changed, you can open command prompt on the laptop and type in ipconfig. Then confirm the Ethernet adapter port you configured is showing the updated settings.

    Ethernet adapter Ethernet:

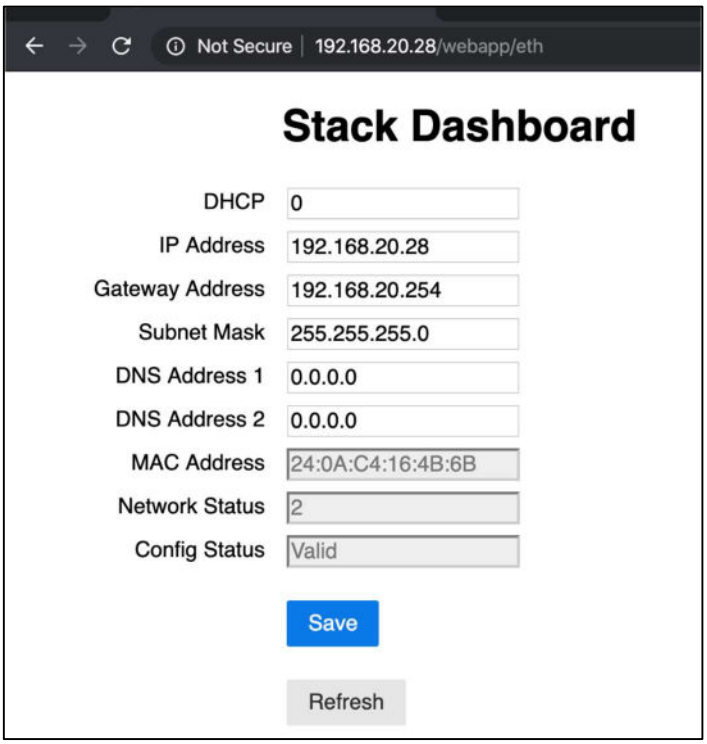
    IPv4 Address. . . . . : 192.168.4.2
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.4.1

A. Power up the OnTrak. Wait for a few seconds until the OnTrak boots up.

B. After connecting to the OnTrak, open a web browser and point the browser to the following URL - http://192.168.4.1/webapp/eth

When prompted for a login, use:
Username: stackadmin
Password: StckAdm1n

C. Enter the correct IP address assignment information in all required fields. Example of Static IP configuration below:



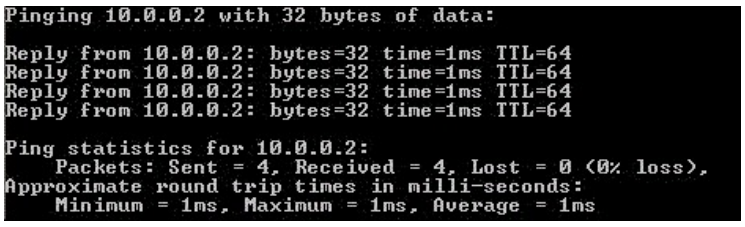
Note:
If the IP address assignment is DHCP, enter 1 and omit all other fields.

If the IP address assignment is STATIC, enter 0 and enter all required fields. In this case, the IP information will be defined by your IT.

D. The OnTrak will reboot in a few seconds and will connect to the specified Wi-Fi Network after ethernet cord connection.

Troubleshooting Tip:

If you are not connecting to the webapp, make sure firewall access has been granted (See next section for instructions). Additionally, after step 10 has been completed and the OnTrak is powered on, open command prompt on the laptop and type in “ping 192.168.4.1” to confirm successful communication.



3.5 Network Firewall - For your network administrator

The OnTrak sends data to the UE Insights platform hosted at Amazon Web Services (AWS). Your local network administrator MAY need to configure settings in your network's security firewall.

OnTrak hardware stack communication to the UE Insights dashboard is through a specific server via AWS API Gateway through AWS CloudFront which can have a range of IP address. The following list of IP address ranges are the most common but not exhaustive. To find the definitive list of IPs from your location (where the stacks will be deployed) try to fetch the above URL from command line curl or other means and note the IP address of the server.

URL - **https://p4d812n74f.execute-api.us-east-1.amazonaws.com** (**Port 443**)

Try a few times to get more than one instance of the servers that map to the URL. Add them to the list below.

54.230.0.0/16
34.195.252.0/24
34.226.14.0/24
34.232.163.208/29

For ALL AWS IP ranges, refer to the JSON document at https://ip-ranges.amazonaws.com/ip-ranges.json

OnTrak cannot go through "internet proxies" that require typing a username and password. These are sometimes used for internet guest networks. If you need to setup firewall access for the device, the MAC address for the network communication block starts with: **24:0A:C4:XX:XX:XX**

3.6 MODBUS TCP Configuration

Modbus TCP/IP which is a widely known and used universal communication protocol for industrial applications. Thus, making them compatible with any PLC, Scada system or any other Modbus TCP/IP communicating software.

Data Format

The OnTrak exports its data using 16-bit singed holding registers. Each OnTrak exports a series of standard data.

IP Address

The OnTrak Modbus TCP/IP configuration can use a dedicated IP address or DHCP using the OnTrak MAC address. TCP port default is 502 and can be changed at the factory.

Modbus Registers

The value of the 16 sensors is stored in 16-bit signed holding registers. Modbus addresses are 1 based and all 16 registers are contiguous.

Multiple register values can be read in the same request or individual registers can be requested as needed.

The value in the register is 10 x sensor value. For example, if the sensor value for channel 1 is 23.1, then the value in register 40001 will be 231. Any request for addresses outside the range will result in an error response as per the Modbus specification.

Modbus Registers Table

Register	Value	Size	Register Type	Integer Type
40001	Sensor #1 Raw Value	16Bit	Holding	Signed
40002	Sensor #2 Raw Value	16Bit	Holding	Signed
40003	Sensor #3 Raw Value	16Bit	Holding	Signed
40004	Sensor #4 Raw Value	16Bit	Holding	Signed
40005	Sensor #5 Raw Value	16Bit	Holding	Signed
40006	Sensor #6 Raw Value	16Bit	Holding	Signed
40007	Sensor #7 Raw Value	16Bit	Holding	Signed
40008	Sensor #8 Raw Value	16Bit	Holding	Signed
40009	Sensor #9 Raw Value	16Bit	Holding	Signed
40010	Sensor #10 Raw Value	16Bit	Holding	Signed
40011	Sensor #11 Raw Value	16Bit	Holding	Signed
40012	Sensor #12 Raw Value	16Bit	Holding	Signed
40013	Sensor #13 Raw Value	16Bit	Holding	Signed
40014	Sensor #14 Raw Value	16Bit	Holding	Signed
40015	Sensor #15 Raw Value	16Bit	Holding	Signed
40016	Sensor #16 Raw Value	16Bit	Holding	Signed

Customer Support

Have a question or need assistance with your single point lubricator?

Want more information regarding products or training?

Contact Us

UE Systems Inc.

Toll Free – 800.223.1325

Phone – 914.592.1220

Fax – 914.347.2181

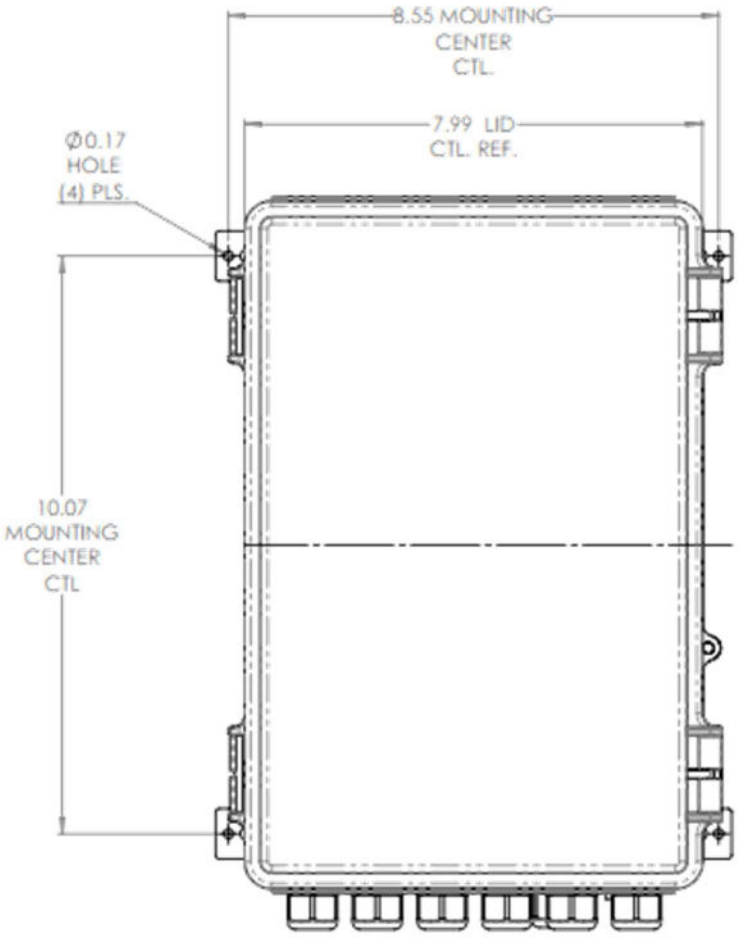
Email – info@uesystems.com

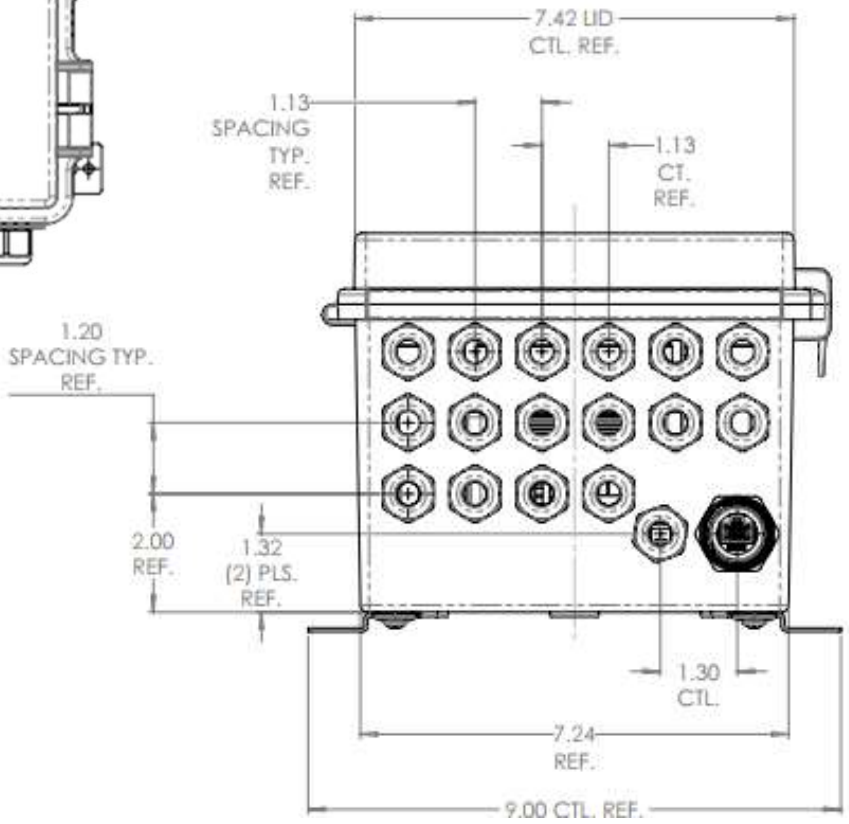
Website – www.uesystems.com

UE SYSTEMS INC
The ultrasound approach

Appendix A

A1 - OnTrak Enclosure





UE SYSTEMS INC
The ultrasound approach

A2 - UT850S Sensor Mounting Instructions

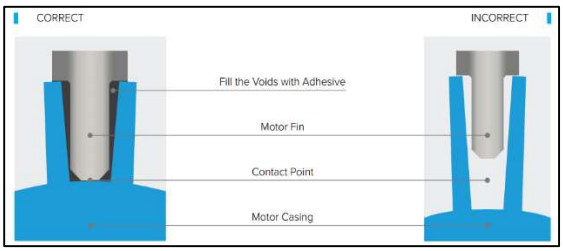
Recommended: Adhesive Stud Mount

15 MINUTES

- Prepare the mounting surface.
- Mix the 2-part epoxy included with the kit and apply.
- Press on the plastic piece of the mounting kit until it clicks.
- Wait 10 – 15 minutes.
- Remove the plastic mounting kit from the stud.
- Thread the sensor onto the stud.

Alternative: Fin Mount

When a good spot to mount the sensor is not available, UE systems' Motor Fin Mounts may be the perfect solution. selecting the proper Motor Fin Mount is accomplished by measuring the depth and width of the cooling fins where you want to locate the remote ultrasound sensor. The Motor Fin Mount needs to be long enough to directly contact the motor case between the fins. Loctite AA H3300 adhesive is then used to hold the Motor Fin Mount in place. The thickness of the Motor Fin Mount should allow contact at the bottom and minimize the amount of adhesive needed.

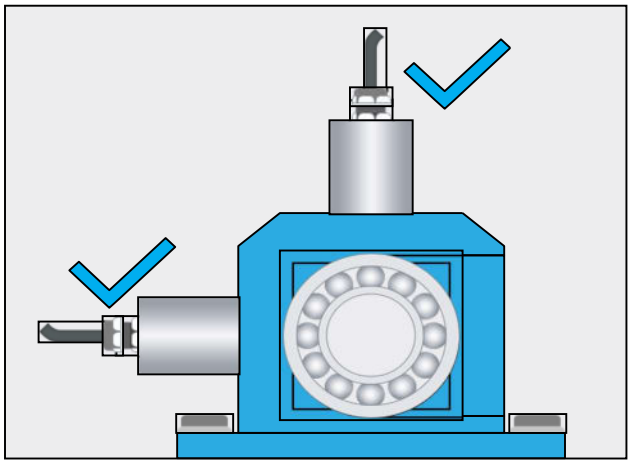


UE SYSTEMS INC
The ultrasound approach

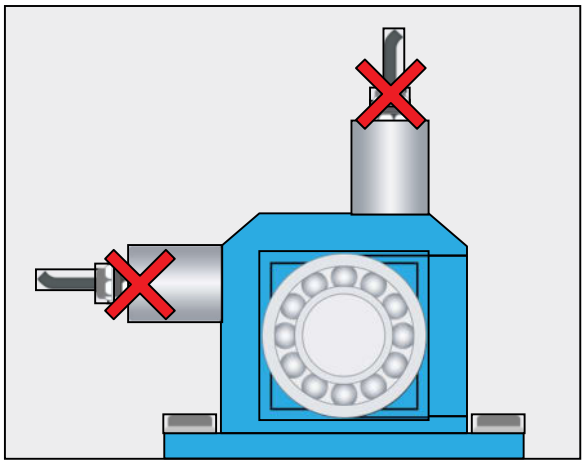
A3 - UT850S Sensor Mounting Placement

Bearing Proximity

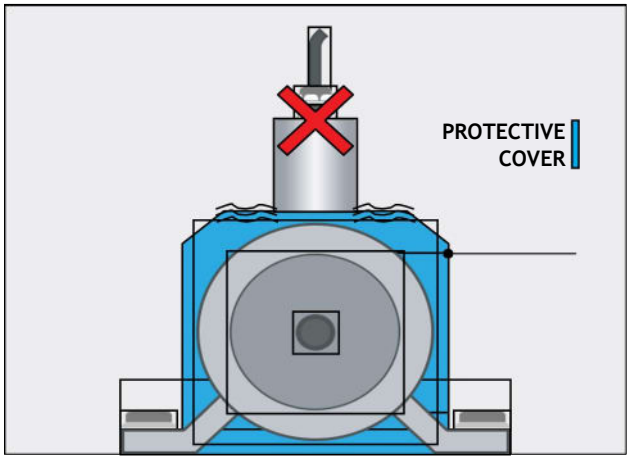
Place the sensor directly on the machine housing as close as possible to where the bearing is located for the most direct path of sound and vibration transmission. Placing the sensor as close as possible to the centerline of the bearing can also be considered to further optimize the signal coming directly from the bearings and avoid any potential distortion.



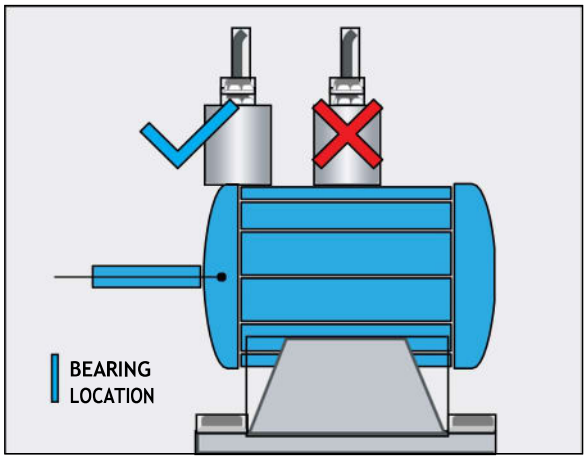
Both sensors are mount vertically but the right sensor is not mounted as close as possible to the bearing and should not be used. The left sensor on the other hand is mounted in an acceptable location on the machine housing that is closest to the bearing.



Both sensors are placed in locations furthest away from the centerline of the bearing and are not optimal for data collection



This sensor is placed on the protective cover and should not be used. It should be moved to a location on the machine housing that would allow for the most direct path of sound transmission from the bearing to the sensor.



Both sensors are mount vertically but the right sensor is not mounted as close as possible to the bearing and should not be used. The left sensor on the other hand is mounted in an acceptable location on the machine housing that is closest to the bearing.

Competing Sounds

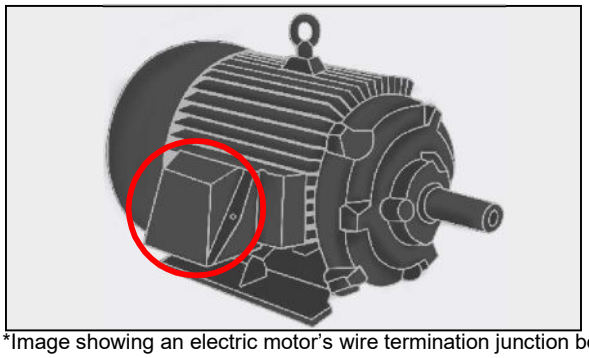
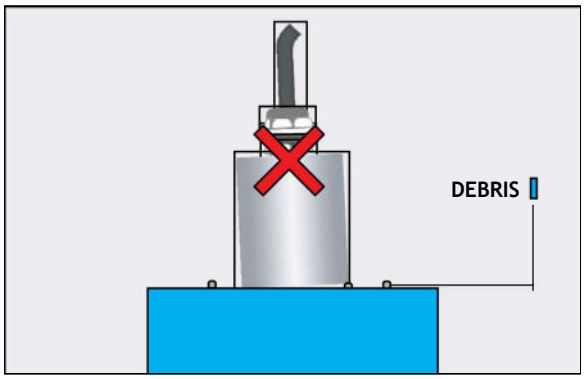


*Image showing an electric motor's wire termination junction box

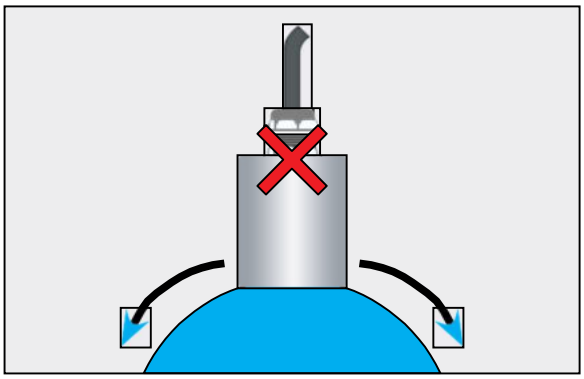
Whenever possible the sensor should be placed in locations that best isolate it from other sounds, both internal and external to the machine, that could hamper consistent monitoring of the bearing. A common example would be the increased electrical related sounds that can be heard the closer the sensor is placed to an electric motor's wire termination junction box.

Proper Mounting

Ensure the sensor can be firmly attached to the machine housing and is free of debris and obstructions that would impede its ability to maintain consistent and stable contact. Eliminating any contact with the sensor housing by structures external to the test location should also be considered.



The sensor is placed at a location where it has limited surface contact area and is prone to rocking and movement side to side. This lack of stability will cause the readings to be inconsistent and potentially erroneous in nature and should not be used.



The sensor is placed at a location with debris that is not allowing the sensor to fully contact that machine housing and/or firmly attach to it. The surface should be cleaned of all debris before placing the sensor to ensure there is instability or weakness in the readings coming from the bearing.

A4 - M-UE Mounting

Direct Mount

The dispense port on the M-UE is 3/8”. First check the size required on the lube point and use an appropriate 3/8” Female to lube point thread size Male brass reducer.

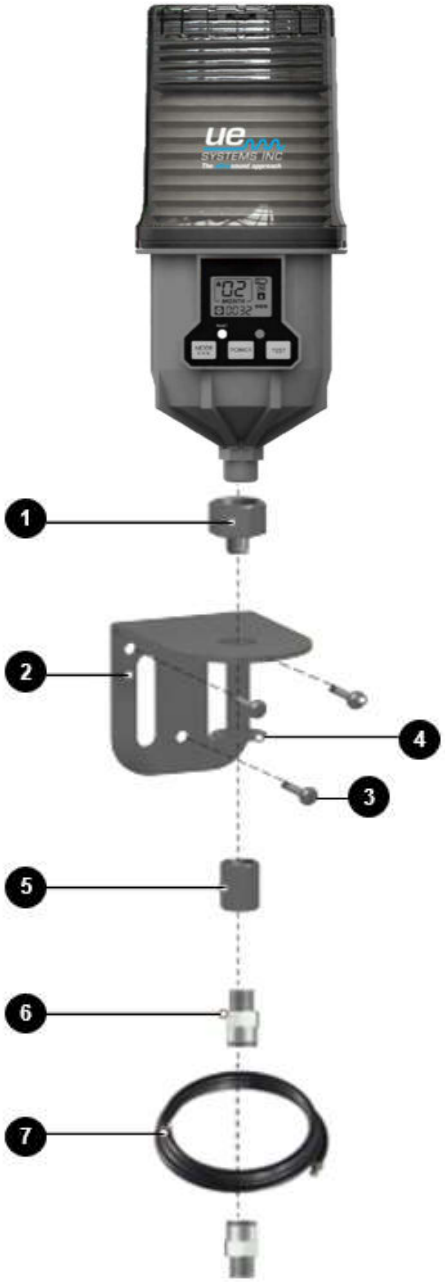
Remote Mounting (Optional)

For applications where heat, space and vibration are of concern, remote mounting is highly recommended in either 10 ft or 20 ft options.

AL-1250RC-1: M-UE High Pressure Single Point Remote Installation Kit with **10 ft**. Nylon, Prefilled Distribution Tubing, O.D. 1/4" (6mm).

AL-A214-2: M-UE High Pressure Single Point Remote Installation Kit with **20 ft**. Nylon, Prefilled Distribution Tubing, O.D. 1/4" (6mm).

For remote installation ensure the tube that’s been ordered is using the same grease type as contained in the M-UE cartridge and is compatible with the machine.



Number	Description	QTY
1	Reducer, 3/8"F x 1/8"M Adaptor (Brass)	1
2	Mounting Bracket "L" Shape	1
3	Self Drilling Screw, #8 x 20	3
4	Washer	3
5	Socket, 1/8"F x 1/8"F Adaptor (Brass)	1
6	Tube Fitting, Push-In Type, PC6-PT1/8"M	2
7	Distribution Tubing,10ft or 20 ft Pre-filled with (Grease Type)	1