

iTrixx-Ultra 300 Ethernet Hour Meter

Quick Setting Instruction

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Before You Begin

Thank you for purchasing the Linortek iTrixx-Ultra 300! The ULTRA 300 is an IoT controller and run-time meter equipped with:

- Two digital inputs (5-44VDC)
- Two analog inputs (AC)
- Two relay outputs with push-in spring connection
- Two independent hour meters with configurable resolution (1/10 or 1/100 hour)
- Network configuration via Ethernet or USB

For complete setting instructions, please refer to the iTrixx-Ultra 300 User Manual at:

<https://www.linortek.com/downloads/documentations/>

How to Trigger the Meter

The hour counter can be activated in three different ways: digital input, analog input, power input, and relay output.

Using Digital Inputs (Recommended for Industrial Applications)

Digital inputs are the most reliable and recommended method for industrial applications. Most industrial equipment uses PLCs or control systems that can provide 5-44VDC output signals. Common digital output sources include:

- PLC digital output modules
- Machine control relays
- Machine state outputs
- Production line sensors
- Equipment status indicators

Using Analog Input

The hour meter can be triggered using current sensors connected to the analog inputs (AIN1 or AIN2). This method is ideal for:

- Monitoring equipment power consumption
- Detecting machine operational states

- Equipment load monitoring
- Process verification

Supported current sensors:

- YHDC SCT-013-015 (15A range)
- YHDC SCT-013-030 (30A range)

****Note:**** Current sensors provide voltage output proportional to current flow:

- SCT-013-015: 1.0V = 15A current flow
- SCT-013-030: 1.0V = 30A current flow

Using Power Input

In the simplest setup, the meter may be activated whenever power is applied to the unit. A voltage threshold needs to be provided to stop counting as power is lost, preventing memory corruption.

Benefits:

- No additional wiring required
- Simple installation - just connect to equipment power
- Automatic operation

Important Consideration: Although this is the simplest method, it is not recommended for applications requiring precise hour readings as device boot-up time during equipment startup may affect reading accuracy.

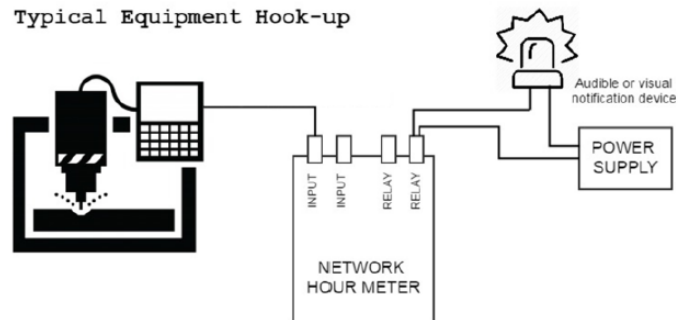
Using Relay Output

Configure the meter to follow relay activation:

- Hardware:
 - Two push-in spring connection terminal blocks
 - Labeled "OUT1" and "OUT2" on enclosure
 - Signal relay
 - Configurable Normally open/close configuration
- Operation:
 - Counting begins when relay activates
 - Can be used for event-based counting
 - Useful for specific trigger conditions

For detailed wiring instructions, refer to the Wiring your iTrixx-Ultra 300 section in the User Manual.

Typical Equipment Hook-up



Finding Your iTrixx's IP Address

Your iTrixx comes with DHCP enabled by default. This means it will automatically get an IP address from your router if your router is set up for DHCP. If your router

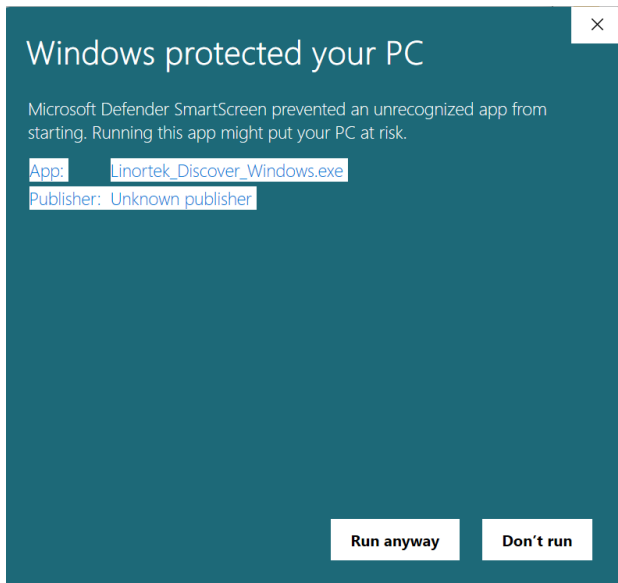
isn't set up for DHCP, you can use Option 3 below to access your iTrixx using its default IP address.

Option 1: Using Our Discover Programs (Recommended Method)

We provide two easy-to-use Discover programs to help you find your iTrixx on your network:

A. Windows PC and Android Phones (Recommended for Windows Users)

- Go to <https://www.linortek.com/downloads/support-programming/>



- Download the Discover program (it comes as a zip file)
- Extract the zip file on your computer
- Double-click the file named "Linortek_Discover_Windows.exe"

Important Note: When you open the program, you might see a Windows security message saying "Windows protected your PC." This is normal:

- Click "More info"
- Click "Run anyway" (don't worry - the app is completely safe)

B. Java-Based App (For All Computer Types)

- Make sure you have Java installed on your computer
 - If you need Java, download it from: <https://www.java.com/en/download/>
- Download the Java Discoverer from our website: <https://www.linortek.com/downloads/support-programming/>
- If you see a warning message about keeping the file, click "Keep" (the program is safe)

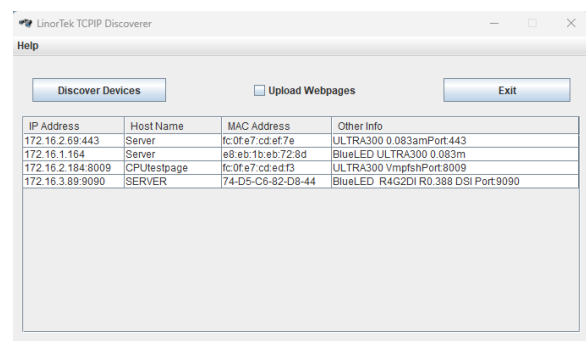
When the Discover program finds your iTrixx, it will show you:

- Port Number (usually 30303)

- IP Address
- Host Name
- MAC Address
- Additional Information:
 - Blue LED status (if on)
 - Product Name
 - Server Software Version

To access your iTrixx software: Click on your device in the Discover program

- Your web browser will open automatically to your Netbell's webpage
- Click the "Login" button
- Use these default login credentials:
 - Username: **admin**
 - Password: **admin** (You can change these later in the settings menu)



Option 2: Using Your Computer's Command Prompt

- If the Discover program isn't working for you, try this method: Open the Start menu on your PC
- Type "cmd" in the search bar
- Select "Command Prompt"
- Type "ping server" and press **Enter**
- If successful, you'll see replies with an IP address
- Open your web browser and type in that IP address

Option 3: Direct Connection Method

If you're still having trouble or your network doesn't support DHCP:

- Connect the iTrixx directly to your computer's Ethernet port using the provided RJ45 cable
- Important: Turn **OFF** your WiFi
- Open your web browser
- Type in: **169.254.1.1** (this is your iTrixx's default IP address)

Once you're logged in, you can set a permanent (static) IP address if needed:

- Go to "Configure" - "Network Config"
- Set your desired static IP address
- After setting the static IP, you can connect your iTrixx back to your network
- Use the static IP address you set to access your iTrixx

Option 4: USB Connection

If Discoverer isn't available:

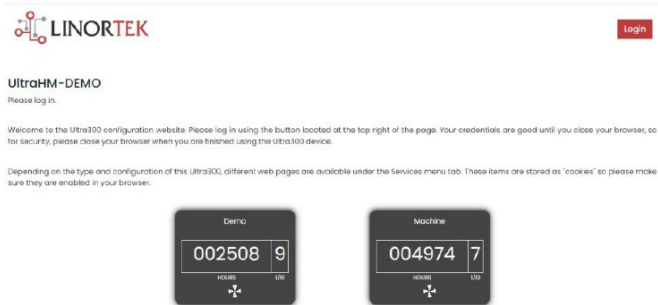
- Connect Ultra 300 to PC's USB port using 'POWER' input Open terminal emulator
- Set COM port to Serial
- Find port number in Device Manager
- Type 'netinfo' command
- Note displayed IP address

Server Configuration

Landing Page

After connecting your equipment and accessing the web interface:

- Two meters displayed:
 - Each meter has independent triggers
 - Can record up to 999999.99 hours
 - Decimal hours with 1/100 hour by default (you can change it for 1/10 on Hours page)
- Running indicator:
 - Spins when counting is active
 - Visual confirmation of operation



Setting Time and Date

When first configuring your ULTRA 300:

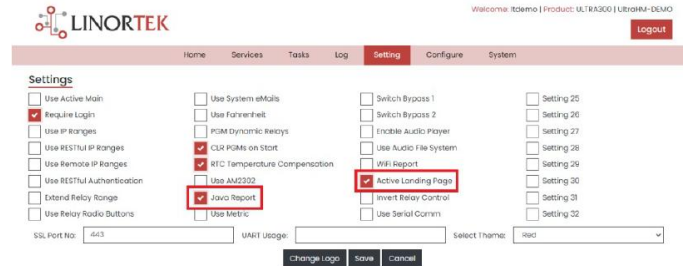
- Default Settings:
 - Eastern Standard Time (GMT-5)
 - Automatic daylight savings adjustment
 - NTP time synchronization enabled
- To Change Settings (Navigate to Settings - Time/Date):
 - Adjust time zone value
 - Enable/disable daylight savings
 - Configure NTP updates
 - Set manual time if needed

Setting Up Data Report and Enable Landing Page

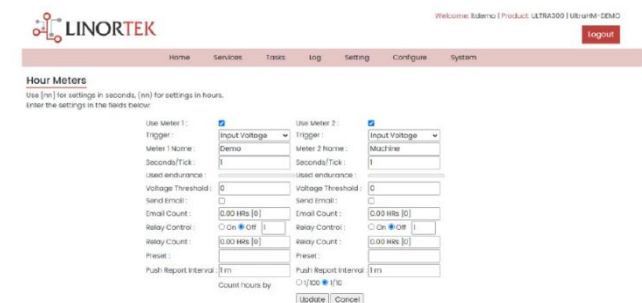
To enable your iTrixx to send data to the Hour Collector desktop applications (introduced in the next section), you must first enable Java reporting in the software. If you want to display the meter on the landing page before signing in to the device, you'll need to enable this feature. To enable Java report and landing page:

- Navigate to **Settings - Settings**

- Check the **Java Report** box
- **Save** changes



Configuring the Hour Meter



After enabling Data Report, navigate to **Services - Hours**. To configure each hour meter:

- **Use Meter:** Enable counting. Hour counter will not run unless the "Use Meter" is checked.
- **Trigger:** The trigger selects the condition to start and stop the counter meter. You can select an **INPUT** or a **RELAY** depending on the source you use to activate the counter. If those conditions are met such that the device is ON, the meter will start running. You may additionally select to have the **INPUT VOLTAGE** start the counter. For example, if the ULTRA 300 is powered the counter runs.
- **Meter Name:** Give the meter a name to identify what is being metered. (15 char max)
- **Seconds/Tick:** The ticks set the counting resolution. The smaller the number the faster the memory is used up. Usually set to 2.
- **Used Endurance:** Because the number of memory writes is finite, the Endurance indicator gives an idea of the memories condition. It will wear out. (Tick*512*100000 = memory endurance in seconds.)
- **Voltage Threshold:** The Voltage Threshold condition must be satisfied along with the trigger condition to make the meter count. This is useful to stop the counter if the unit loses power. For example: by setting a threshold of 20 volts on a 24-volt system, the Hour Meter will assume that the power is declining and shut off to prevent a counter memory error.

- **Send Email:** Using the Email checkbox and the Count, the unit will send an email when this value is exceeded. (Email setup required. To setup the email, go to Configure – Email Setup page)
- **Email Count:** Hour meter value to send email notification. This value is entered in [seconds] or (hours).
- **Relay Control:** By using a Relay Number and a Count, the unit will activate a relay when the value is exceeded. This is useful for turning on a maintenance light or buzzer on a machine that requires a look.
- **Relay Count** – Hour meter value to trigger relay. This value may be entered in [seconds] or (hours).
- **Preset** – The Preset is used to **ZERO** the meter or set it to any value you like. This value may be entered in [seconds] or (hours).
- **Push Report Interval** – You can change how often to send the hour report out to the HourCollector App, it's set for 2 minute by default. If you want to change the frequency, you can enter the number here (use "m" for minutes, "h" for hours, "d" for days).

Configure the Analog Input Data (Current Sensor) to Activate the Counter

****Important:** You will find how to start and stop the meter and count uptime using the current sensor in this instruction. For other configurations such as time/date, reports, network configurations or data collection please refer to ****the Ultra 300 User Manual****.

To configure the analog input:

1. Navigate to ****Services > In/Out**** page
2. Click **"**Edit**"** icon for AIN1 or AIN2
3. Configure the settings according to your sensor type

****Note:**** YHDC SCT-013-015 will display 1.0V when the current flow equal 15A, YHDC SCT-013-030 will display 1.0V when the current flow equal 30A.

After configuring the analog input, proceed to ****Tasks**** page and create two tasks:

1. Task 1: Turn on Relay when the Analog input shows the value to start the meter
2. Task 2: Turn off Relay when the Analog input drops down

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Please go to ****Services > Hours**** page to configure the Hour meter 1 to count uptime of your machine.

****Note:**** If you want to count the down time as well, please use the opposite logic for Hour meter
 2. Create two tasks: to Turn on another Relay when the value drops and to turn it off when the current is indicated. Then use the relays to activate the hour meters.

Monitoring the Meter

Linortek provides three powerful solutions for monitoring your equipment running hours:

1. HourMeter Collector App (Basic Monitoring)

Best for: Single location monitoring with data logging

Features:

- Simple interface for monitoring multiple devices
- Equipment will automatically show up on the app once powering on
- No login required, no configuration needed
- Automatic data logging to CSV files: When you run the HourMeter Collector for the first time, it will generate a CSV_FILE folder with your Hour Meter Logs details. If you rename this file or delete it, it will just create another folder name CSV_FILE.

Setup Instructions:

- Download the app:
<https://www.linortek.com/downloads/support-programm>
- For detailed instructions, download at:
<https://bit.ly/hourcollector>



2. DataCollector Pro App (Advanced Features)

Best for: monitoring equipment data from multiple locations using MQTT protocol

Features:

- Manual and automatic data collection modes
- Display hour readings and digital/analog inputs data
- MQTT protocol enabled
- Manually/automatically collecting/exporting data
- Customizable update frequencies
- Remote device monitoring
- Detailed data export options

Setup Instructions:

- Download the app:
<https://www.linortek.com/downloads/support-programm>
- For detailed instructions on app settings, download at: <https://bit.ly/datacollectorapp>



3. iTrixx Mobile App (On-the-Go Monitoring)

Best for: Mobile users needing real-time data access

Features:

- Android-based mobile monitoring
- Easy device provisioning
- Mobile hotspot support
- Real-time status updates
- CSV log generation

Setup Instructions:

- Download from Google Play Store:
<https://bit.ly/hourmeterapp>
- For instructions on how to setup the app, download at: <https://bit.ly/itrixxmobileapp>

RESTful API

Here are the available APIs that you can export the data from the device directly (for software REV. 427 and above).

- Meter 1:
your_IP_address/api/hourmeter/1/getcount
- Meter 2:
your_IP_address/api/hourmeter/2/getcount

XML Data Format

For pulling the hours out, there are two XML commands built-in:

- your_IP_address/hours.xml
- your_IP_address/hourdetail.xml

For integration assistance, contact:

support@linortek.com

Common Questions and Solutions

Q: Why isn't my digital input triggering the meter?

A: Check these common issues:

- Digital input not enabled in software
- Incorrect voltage/resistance for input level
- Wrong input mode selected (PU vs ISO)
- Missing or incorrect external resistor for high voltage

Q: How do I download my hour meter data?

A: Multiple options available:

- Use HourMeter Collector for basic CSV logging
- DataCollector Pro for multiple location data logging
- Mobile app for on-the-go CSV generation
- Direct API access for custom integration

Q: Can I monitor my equipment data remotely?

A: Yes, there are several ways to monitor your equipment data remotely:

- Using DataCollector Pro App (Recommended): Supports remote monitoring via MQTT protocol
- Web Browser Access:

- Port forwarding your device on your network
Access device web interface using the device web address
- Real-time monitoring through landing page
- No additional software required
- Contact your IT department for proper network configuration

Additional Resources

- Complete user manual:
<https://www.linortek.com/downloads/documentations/>
- Software downloads:
<https://www.linortek.com/downloads/support-programming/>
- Technical support: support@linortek.com

Further Notice for Limitation of Use

When wiring a line voltage device, you **MUST** either be a qualified electrician or use the services of a qualified electrician. Additionally, local codes must be followed including but not limited to wire gauge size and suitable housing.

Linortek cannot assume any responsibility for:

- Harm to users or third parties from improper use
- Device damage from improper use
- See product manual for full Disclaimer and User Agreement

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