XTRALIS LI-ION TAMER GEN3 DEMO KIT APPLICATION NOTE

December 2024
Doc. No. 38001_01

Preface

This Application Note details how to setup and test the Li-ion Tamer® GEN 3 Demo Kit (LT-DKT). It does not contain detailed technical specifications. For technical specifications, please refer to the User Manual (Doc. No. 37141).

Related Products

Li-ion Tamer GEN 3.

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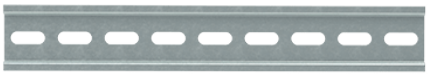
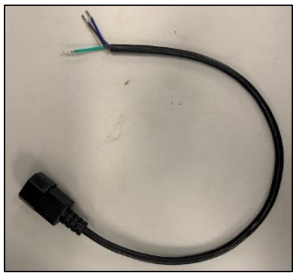
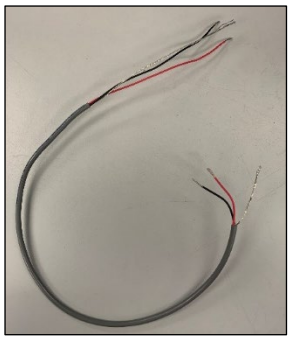
1 Included Hardware

The demo kit (LT-DKT) is packaged in a Pelican case for ease of transport, as shown below:



The demo kit includes the following:

Description	Xtralis SKU	Quantity	Picture
Controller, Gen 3	LT-CTR-SML	1	
Ethernet Switch, 5 port	LT-ACC-ETS-5	1	 ** Photo for reference only – actual model may vary.*
Hub, Direct Power	LT-ACC-HUB-PWR	1	

Description	Xtralis SKU	Quantity	Picture
Power Supply, 12VDC	LT-ACC-PWR-12	1	
Monitoring Sensor, Gen 3	LT-SEN-M3	2	
Reference Sensor, Gen 3	LT-SEN-R3	1	
Network Cable, 3ft (0.9m)	LT-ACC-NCL-3	6	
DIN Rail	-	1	
IEC320-C14 Power Cable	-	1	
3-Conductor Cable	-	2	

Description	Xtralis SKU	Quantity	Picture
2-Conductor Cable	-	1	
Spare Accessory Kit	LT-ACC-SAK	1	

Note that the demo kit ***does not include*** the following, which can be purchased separately:

Description	Xtralis SKU	Recommended Quantity	Notes
IEC C13 Power Cord	-	1	Required for power supply to the system
Ethernet Relay Module	LT-ACC-ERO-16	1	
Relay Output DIN-Rail Mount Kit	LT-ACC-ERO-MKT	1	Recommended if adding the relay module
Multi-Conductor Cable or Stranded Wires	-	1	Required if adding the relay module - used to wire DC power to the module
Network Cable, 3ft (0.9m)	LT-ACC-NCL-3	1	Required if adding the relay module - used to connect the module to the system
DEC Bump Test Bottle	LT-ACC-TST	1	Recommended for testing/ demonstration of the system capabilities

2 Setup

The following sections detail how to wire and setup the demo kit hardware.

2.1 Power Wiring

The demo kit includes a Power Supply, 12VDC (LT-ACC-PWR-12), which is used to power all devices in the kit. Follow the steps below to properly wire power to the necessary devices.

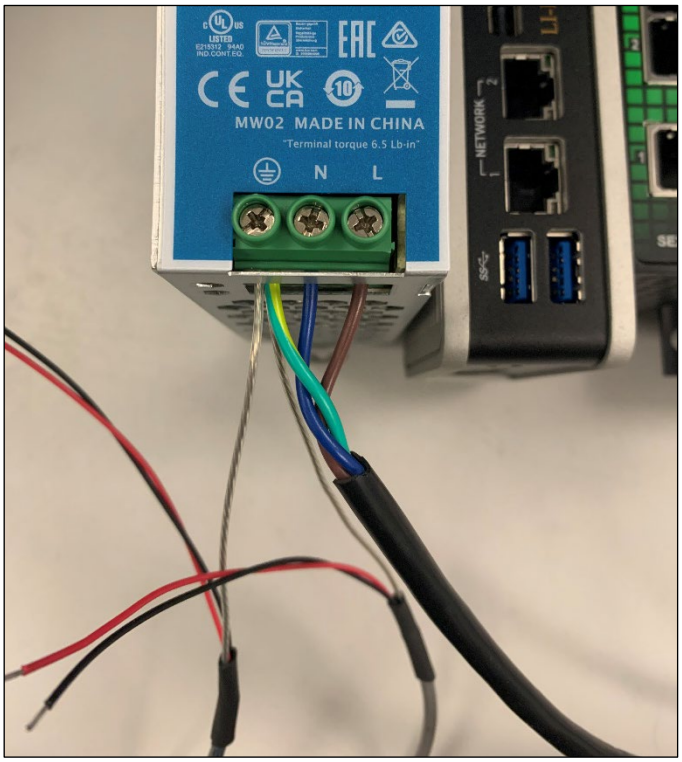
Caution!

Do not connect the IEC Power Cable to AC voltage until the conductors are wired to the power supply terminals.

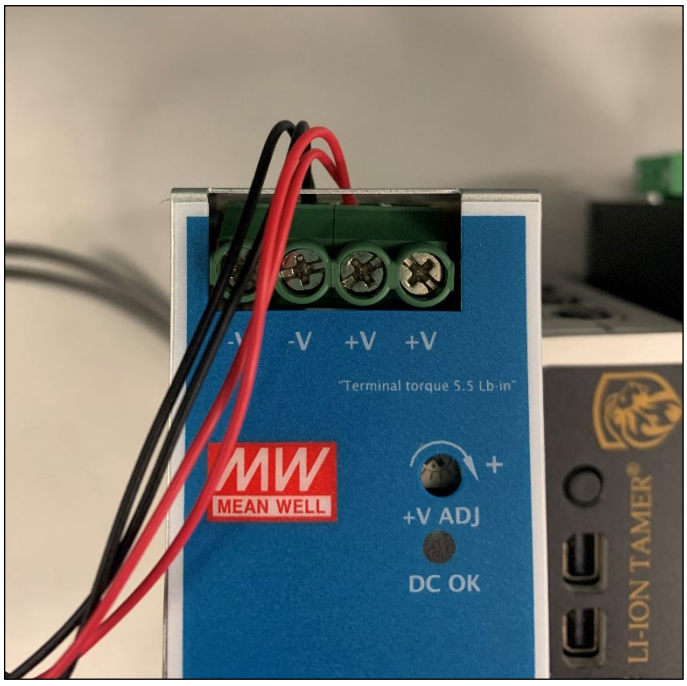
1. Wire the IEC Power Cable's three conductors to the AC voltage input screw terminals on the 12VDC Power Supply.
   - Green/ Yellow conductor to GND (⏚)
   - Blue conductor to Neutral (N)
   - Brown conductor to Line (L)



2. Wire the green or grey wires of the two 3-Conductor Cables to the GND terminal on the AC input side of the 12VDC Power Supply.
   Use the side of the cable with longer conductors.

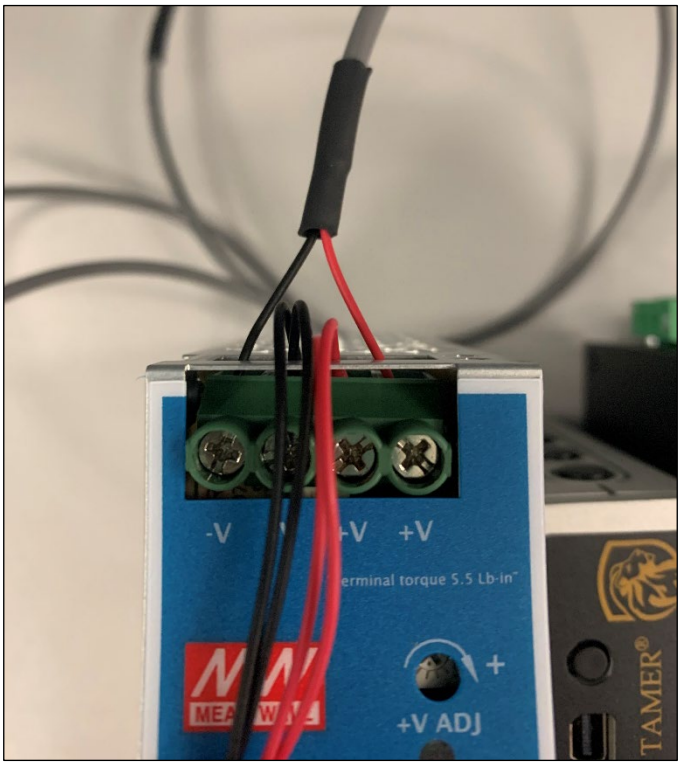


3. Wire the black and red conductors of the two 3-Conductor Cables to the -V and +V terminals, respectively, on the DC output side of the 12VDC Power Supply.





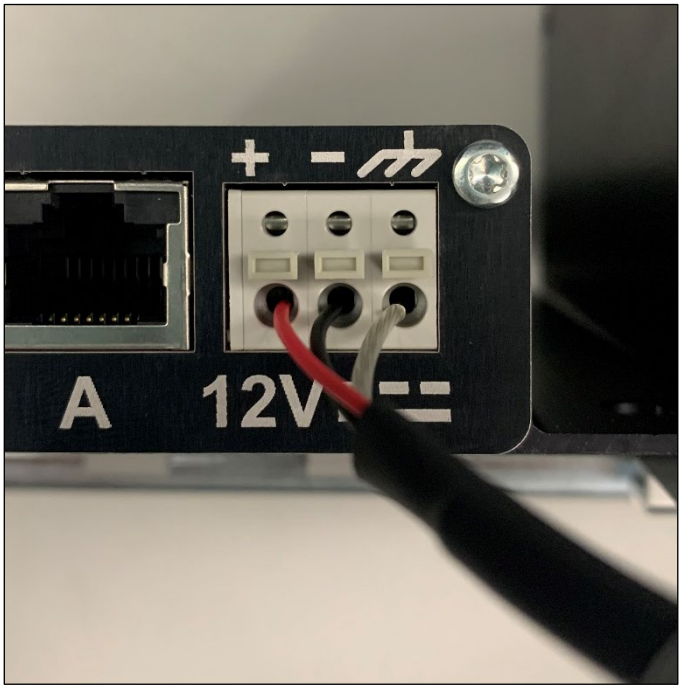
4. Wire the black and red conductors of the 2-Conductor Cable to the -V and +V terminals, respectively, on the DC output side of the 12VDC Power Supply.



5. Wire the opposite end of one of the 3-Conductor Cables to the Ethernet Switch, 5 port (LT-ACC-ETS-5).
   - Green or grey wire to chassis GND (⏚)
   - Red conductor to P1+
   - Black conductor to P1-



6. Wire the opposite end of the second 3-Conductor Cable to the Hub, Direct Power (LT-ACC-HUB-PWR).
   - Green or grey wire to chassis GND (⏚)
   - Red conductor to +
   - Black conductor to –



7. Remove the small screw below the Controller barrel jack port, shown below:



8. Insert the barrel plug to screw terminal adapter from the Spare Accessory Kit (LT-ACC-SAK) into the barrel jack.
9. Position the barrel plug, as shown below, and use the previously removed screw to fasten the plastic lock, which is also in the Spare Accessory Kit, to the Controller.

   Make sure that the barrel plug is fully inserted into the jack.





10. Wire the opposite end of the 2-Conductor Cable to the Controller.
    - Red conductor to +
    - Black conductor to –

> **Caution!**
>
> Make sure the polarity is wired properly, otherwise damage to the Controller may occur.

11. Confirm that all wires are secured in their respective terminals.
12. Plug in the IEC C13 Power Cord, which must be sourced locally with the appropriate outlet connector to the male port on the IEC Power Cable that is connected to the 12VDC power supply.
13. Plug in the IEC C13 Power Cord to a wall outlet, ensuring that it is appropriately rated for the power requirements of the 12VDC Power Supply (https://www.meanwellusa.com/upload/pdf/NDR-120/NDR-120-spec.pdf).
14. Confirm that the 12VDC Power Supply, Controller, Ethernet Switch, and Hub are all receiving power.

    If any device is not powered, troubleshoot the wiring using a Digital Multimeter (DMM) before proceeding.

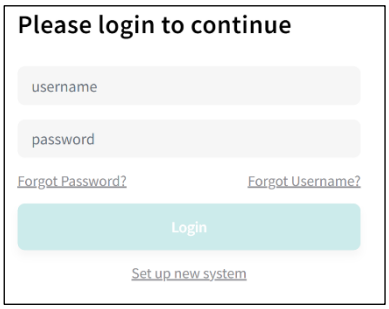
2.2 Communication Wiring and Setup

The demo kit includes several Network Cables, 3ft/0.9m (LT-ACC-NCL-3), which are used to wire the system for communication. These will be the only cables used in the following steps.

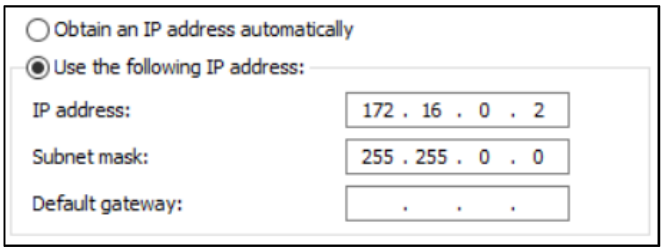
> **Note!**
>
> Laptop or PC is required for setting up the demo kit communication.

1. Wire the Network 1 Port on the Controller (LT-CTR-SML) to one of the ports on the Ethernet Switch (LT-ACC-ETS-5).
2. Wire the Ethernet port on a laptop or PC to one of the ports on the Ethernet Switch.
3. Open a web browser and navigate to the following URL: (https://172.16.0.1).

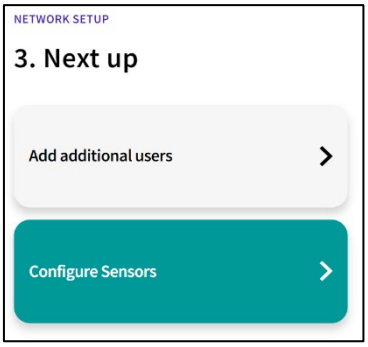
   The browser may flag the URL as being not trusted or secure, in this case go to the advanced settings and proceed to the URL.



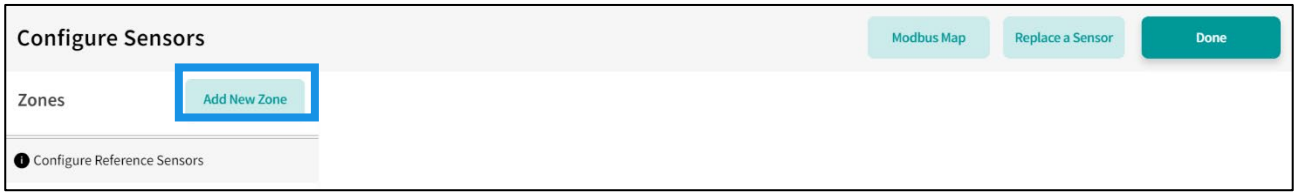
- If the login screen does not appear after the Controller has been powered on for several minutes, power cycle the Controller using the pushbutton and attempt to access the URL again.
- If the login screen still does not appear, set the static IP address on the laptop or PC Ethernet port to the following settings and attempt to access the URL again.



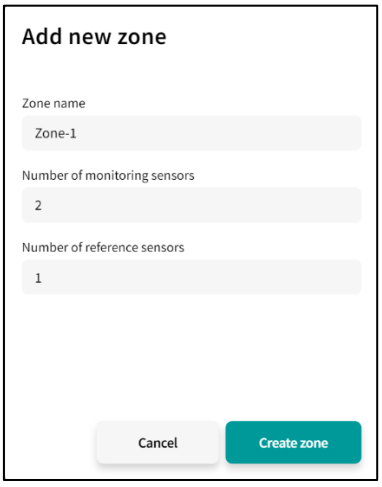
4. Click “Set up new system”, enter a username and password and click “Register”.
5. On the System Setup screen, enter the following settings:
   - Number of monitoring sensors: 2
   - Number of reference sensors: 1
   - Number of zones: 1
6. Click “Next” then click “Configure Sensors” when the following page appears:



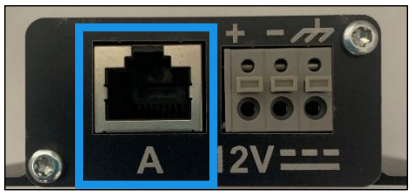
7. In Configure Sensors Mode, click “Add New Zone”, as shown below:



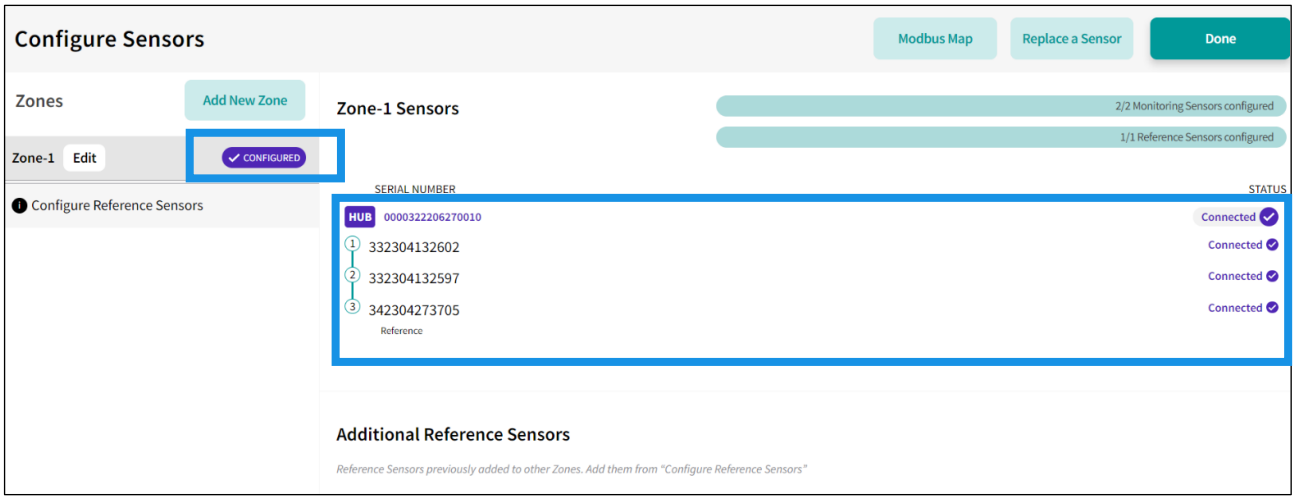
8. Name the Zone, enter the following information and click “Create zone”:
   - Number of monitoring sensors: 2
   - Number of reference sensors: 1



9. Wire the two Monitoring Sensors (LT-SEN-M3) and one Reference Sensor (LT-SEN-R3) to the port labeled “A” on the Hub (LT-ACC-HUB-PWR) using the Network Cables.



10. Wire the Hub to one of the ports on the Ethernet Switch using a Network Cable and wait for the Hub to connect to the Controller. When the Hub is fully connected, it will be displayed in the Controller software display and the onboard LED will be blinking green. Confirm that the Zone is listed as “Configured” and click “Done”.



11. The Hub and Sensors are now connected to the Controller and the system. For instructions on testing the system, refer to section 2.3. For more details on the Li-ion Tamer GEN 3 system and software user interface, refer to the User Manual (Doc. No. 37141).

2.3 Bump Test Procedure

Follow the procedure below to correctly test sensors.



Note!

Use proper personal protective equipment when transferring liquid between bottles. It is important that the puff-test bottle is never turned up-side down during use and is not intended to be refilled.

Required Materials for Testing:

- DEC Test Bottle (refer to the Bump Test Application Note (Doc. No. 37440))
- Latex gloves (recommended)
- Safety glasses (recommended)

How to Use:

1. Carefully pour liquid from DEC Storage Bottle into DEC Test Bottle.
2. Position the DEC Test Bottle relative to the desired sensor, as shown in the below example:



3. Open the tab on the cap.
4. Firmly squeeze the bottle to release a puff of headspace gas towards the sensor face.

   WARNING: Avoid ejecting liquid from the bottle, especially onto the sensor. If the sensors were recently powered on, wait at least 30 minutes prior to testing.
5. Proceed to bump test all sensors, close the tab on the cap and observe the sensors' responses.

Notes!

- If the test liquid is being shipped, transfer the liquid back into the small, leak-proof bottle.
- To maximize the test liquid lifetime, store it in the small bottle.

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