



INSTALLING THE THREE MAIN TYPES OF LOAD MANAGEMENT

VERSION 2

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Load Management – Version 2

Load management is a critical aspect of installing EV charge points. It involves the effective control and optimisation of electrical loads to ensure the safe and efficient operation of systems of the equipment. Three main types of load management are "Managing Operator Current," "Static Load Control," and "Dynamic Load Control." Let's delve into the step by step instructions for each load management.

Step 1

You will need: A Laptop and a micro-USB to USB cable. This should be plugged in from your laptop to your charge controller. If the charger has two charge controllers make sure you plug into the charge controller on the right-hand side and **DO NOT** remove any cables or links between the charge controllers.

When you have that done you need to open a web browser and type in your IP address (192.168.123.123/operator) to access the charge controller.

Click on "Master", which is the left-hand side charge controller. Then on "Operator". It will ask for username and password:

Username	operator
Password	yellow_zone OR cherry_zone

Managing operator current refers to the process of overseeing and regulating the flow of electrical current. This is essential for ensuring that the current remains within safe and desirable limits. The goal is to prevent electrical overloads, short circuits, and equipment failures. This specifically controls individual socket output.

Step 1

Log into the Master controller using the instructions on page 1.

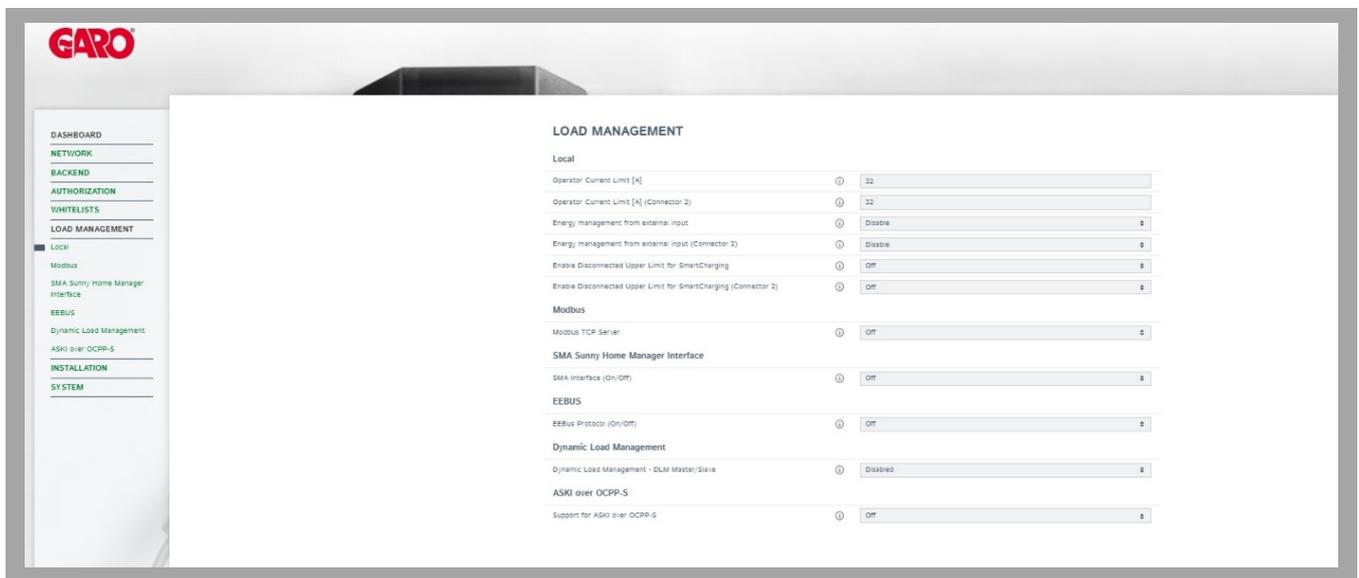
Step 2

Click on operator located on the left-hand side of the web interface. You will have access to the operator settings.

Operator Current (A) - is for the outlet on the left side.

*(Provided it's a dual unit. If it's a single outlet charger this option will not be available)

- MAXIMUM 32 AMP per phase per outlet.
- MINIMUM 6 AMP per phase per outlet.



Step 3

Once you have changed the operating current click on "save and restart". This will allow the the charge point controller to apply all settings and restart.

In power systems, the balance between generation and consumption must be maintained to ensure a stable and reliable supply of electricity. Static load control involves implementing measures to regulate and control the power consumed by static loads, which are devices or equipment that draw a consistent amount of power when connected to the electrical system. The objective of static load control is to optimise the distribution of power to ensure the most efficient and stable operation of these loads. By carefully managing static loads, homes and businesses can reduce energy consumption, minimize operational costs of the electric vehicle charge point, and enhance the overall reliability of their system.

Step 1

Log into the Master controller using the instructions on page 1.

Step 2

You will then have access to the operating settings. If you scroll down to find the option "**Dynamic Load Management**". It will say "**Disabled**", click on the drop-down menu and select the appropriate options for the application.

Then Click on operator located on the right-hand side of the web interface. You will have access to the operator settings.

DLM Master (with internal DLM-Slave) - This option is for when you have more than one charge point connected on a site

1. Click Load Management

2. Click into Dynamic Load Management

3. Ensure DLM Master (with internal DLM-Slave) is selected for more than one charge point

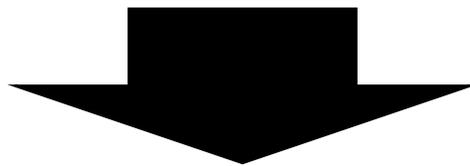
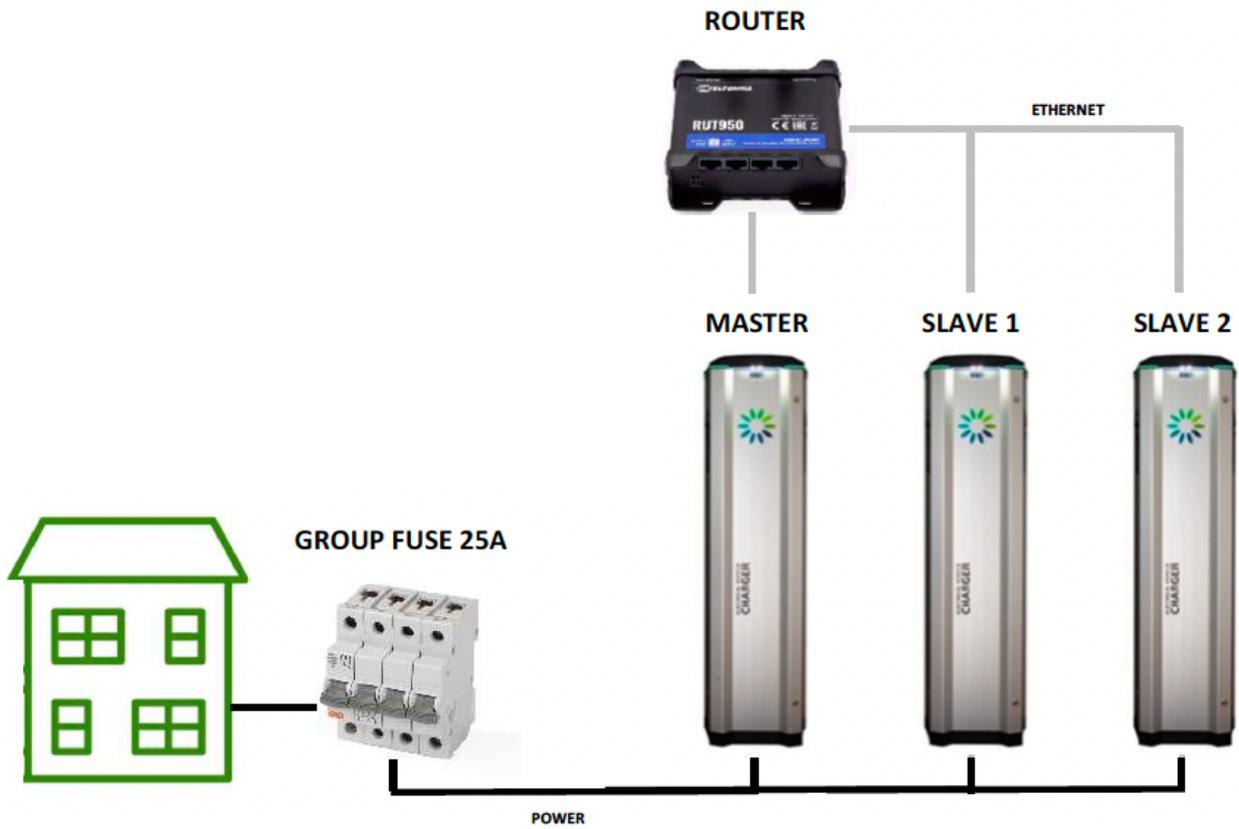
Step 3

Once the option is selected you will see added settings appear underneath.

DLM Network ID - should be changed to a number for the rest of the chargers to find it. We recommend using "1".

EVSE Sub-Distribution Limit - This is where you set what AMPS are always available to the group of chargers.

Always set the values of "EVSE Sub-Distribution Limit" and "Operator EVSE Sub-Distribution Limit" to the same value during setup.



- DLM Master (With Internal DLM-Slave)
- DLM Slave (Master-Auto-Discovery)



Dynamic Load Control (With External Meter)

Dynamic load control is the management of loads that vary over time. In contrast to static loads, dynamic loads fluctuate in their power consumption. Dynamic load control is designed to adjust power distribution in real-time to accommodate changes in load. This ensures that electrical system remain stable, energy-efficient, and responsive to evolving operational requirements.

Step 1

Log into the Master controller using the instructions on page 1.

Step 2

Scroll down to find the option "**Dynamic Load Management**". It will say "**Disabled**", click on the drop-down menu and select the appropriate options for the application.

DLM Master (with internal DLM-Slave) - This option is for when you have more than one charge point connected on a site. This is only to be selected for the Master side of the charger.

Dynamic Load Management	
Dynamic Load Management - DLM Master/Slave	<input type="text" value="DLM Master (With internal DLM-Slave)"/>
DLM Network Id	<input type="text" value="0"/>
Disable Discovery Broadcasting	<input type="text" value="Off"/>
DLM Algorithm Sample Rate	<input type="text" value="30 sec"/>
Allow EV Wakeup	<input type="text" value="On"/>
EVSE Sub-Distribution Limit (L1/L2/L3) [A]	<input type="text" value="16"/> <input type="text" value="16"/> <input type="text" value="16"/>
Operator EVSE Sub-Distribution Limit (L1/L2/L3) [A]	<input type="text" value="16"/> <input type="text" value="16"/> <input type="text" value="16"/>
External Input 1 Config	<input type="text" value="Disable"/>
External Meter Support	<input type="text" value="On"/>
Meter configuration (Second)	<input type="text" value="No Meter"/>
Main Distribution Limit (L1/L2/L3) [A]	<input type="text" value="100"/> <input type="text" value="100"/> <input type="text" value="100"/>
External Load Headroom (L1/L2/L3) [A]	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>
External Load Falback (L1/L2/L3) [A]	<input type="text" value="9999"/> <input type="text" value="9999"/> <input type="text" value="9999"/>
External Meter Location	<input type="text" value="Including EVSE Sub-Distribution"/>
External Load Averaging Length [sec]	<input type="text" value="5"/>
Current Imbalance Prevention	<input type="text" value="Off"/>
Minimum Current Limit [A]	<input type="text" value="6"/>

Step 3

Once the option is selected you will see added settings appear underneath.

DLM Network ID - should be changed to a number for the rest of the chargers to find it. We recommend using "1".

External Meter Support - Should be set to on, additional parameters will become available now.

EVSE Sub-Distribution Limit - This is where you set what AMPS are always available to the group of chargers regardless of the supply on the building.

PLEASE NOTE: If this is set to 100Amps and the Main distribution Limit is set to 200Amps, and the building uses 50 Amps. There will be 150Amp available to the charge points but because the EVSE Distribution is set to 100Amp it will only avail of 100Amp during any circumstance.

Step 4

Main Distribution Limit - Should be set to the size of the main fuse where the external meter is located.

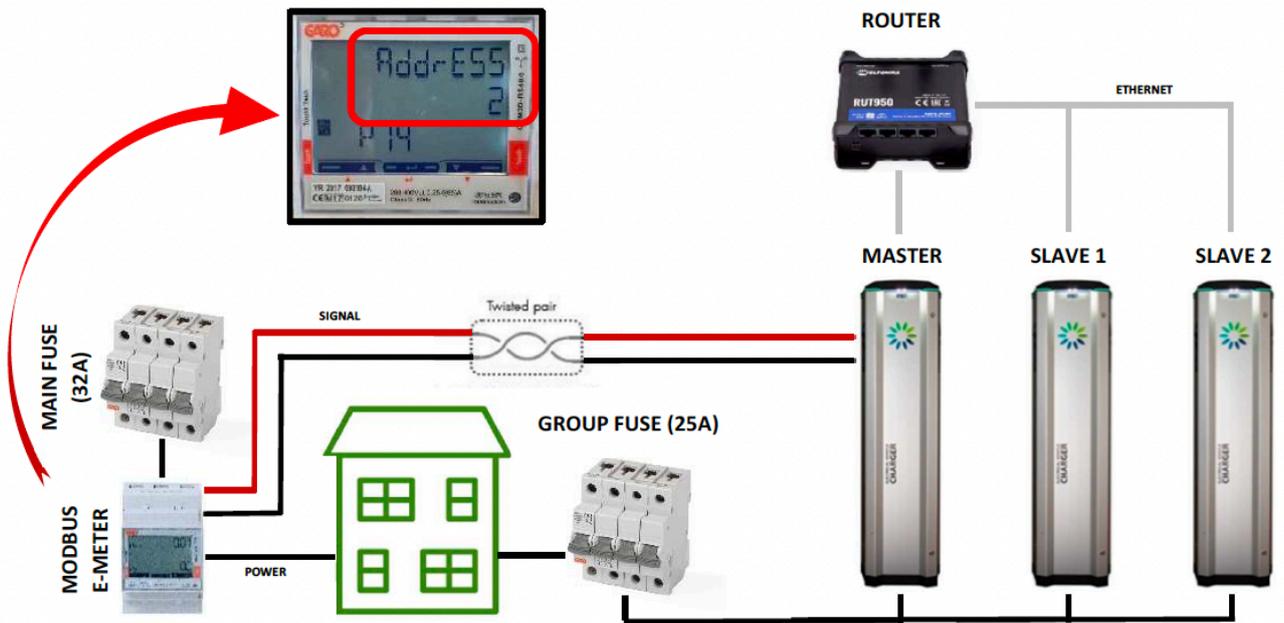
External Load Headroom - This is used as a "current load buffer zone". Essentially it lowers the Main Distribution Limit in case of fast influx of current/amps on the system.

Step 5

Meter Configuration (Second) - This is where you should identify what meter is being used externally for the Dynamic Load Management. If using a DLM 300 or 600 he meter will be **GNM3D-RS485**

Step 6

Click on **SAVE** and **RESTART** and wait for the Charge Controller to restart. This will allow the charge point controller to apply all settings and restart.



Any further questions on the three GARO Load Management systems. Please call or email the EV Support teams.

Programming Address On GNM1D-100-RS485

Step 1

Press and hold bottom right-hand key on the meter until "Pass" come up and the zero on the right-hand side flashes.

Step 2

Password is "0000" so keep pressing the bottom right-hand key for 2 seconds until all zeros have stopped flashing.

Step 3

Press left-hand key until P.10 Address should be at "2" or "100" for cluster of chargers.

Step 4

Press and hold the bottom right-hand key until "1" is flashing.

Step 5

Press left-hand key and change address to "2" or "100" for cluster.

Step 6

When address is changed to "2" keep pressing the bottom right-hand key until all numbers have stopped flashing.

Step 7

Press left hand key until you have reached P.14 (END) press bottom right-hand key to return to the main menu.

Step 8

RX/TX should be flashing in the lower right-hand corner of the home screen which means the unit is communicating with the meter.

Programming Address On GNM3D-RS485

Step 1

Press and hold bottom right-hand key on the meter until "Pass" come up and the zero on the right-hand side flashes.

Step 2

Password is "0000" so keep pressing the bottom right-hand key for 2 seconds until all zeros have stopped flashing.

Step 3

Press left-hand key until P.14 Address should be at "2" or "100" for cluster of chargers.

Step 4

Press and hold the bottom right-hand key until "1" is flashing.

Step 5

Press left-hand key and change address to "2" or "100" for cluster.

Step 6

When address is changed to "2" keep pressing the bottom right-hand key until all numbers have stopped flashing.

Step 7

Press left hand key until you have reached P.18 (END) press bottom right-hand key to return to the main menu.

Step 8

RX/TX should be flashing in the lower right-hand corner of the home screen which means the unit is communicating with the meter.

A dark Volvo SUV is driving on a road through a forest at dusk. The car is in the lower center of the frame, moving towards the viewer. The road is paved and has white dashed lines. The background is filled with tall trees and a soft, hazy light from the setting or rising sun. The overall mood is serene and natural.

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