GARO® ELECTRIC VEHICLE CHARGING

DOMESTIC CHARGERS

- SMART METERING
- LOAD BALANCING
- MONITORING SOLUTIONS
- SEAI GRANT APPROVED

WWW.GARO.IE/EVCHARGING
EV@GARO.IE | 01 866 5360

GARO ELECTRIC CHARGING

ABOUT GARO ELECTRIC

GARO
An innovative force

Nordic EV Charging Expertise Available in Ireland

GARO Electric is one of Ireland's main EV charging providers and part of the long established GARO Group. The company's Nordic counterparts are market leaders in the region (the most mature EV market in the world) due to their extensive history, knowledge and expertise in this space. The result is a comprehensive range of charging stations, developed to meet the demand of the entire market, from small domestic settings through to all scales of commercial installation and rapid motorway locations.

GARO Electric Ireland has adapted this expertise for the Irish market, offering a premium quality range for the local market. All GARO charging stations are manufactured in Europe, resulting in immediate stock availability, quality production and speedy timeframes for bespoke orders.

All GARO chargers incorporate a stylish design that can be placed both indoors and outdoors at home or work, smart functionality and a simple charging procedure with built-in protection for personal safety. A three-year warranty is standard across the range.

www.garo.ie/evcharging

DOMESTIC CHARGERS

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GARO® ELECTRIC VEHICLE CHARGING

BUILT WITH FUTURESMART-TECHNOLOGY

KEY FEATURES

- EUROPEAN MANUFACTURED
- EUROPEAN COMPONENTS
- 3 YEAR COMPREHENSIVE WARRANTY
- G-CLOUD LITE BILLING SOFTWARE
- PROPRIETARY TECHNOLOGY
- FREE E-LEARNING CERTIFICATION
- FULL TECHNICAL SUPPORT AVAILABLE
- COMPREHENSIVE RANGE:
  - MULTI-USE WALL CHARGERS
  - PILLAR CHARGERS
  - HIGH PERFORMANCE DC FAST CHARGERS
  - FULL OPEN OCPP COMMUNICATION

MAIN DESIGN CONSIDERATIONS

FOR DOMESTIC EV CHARGING

1. WHAT TYPE OF RCCB OR RCBO?

The IEC state that a type B RCCB or RCBO must be installed by the Electrical Contractor due to DC leakage current, unless the manufacturer has fitted DC leakage detection equipment. This regulation is valid from February 2021. GARO has a range of chargers with DC leakage protection built into the product. When an EV charger has DC leakage protection, the Electrical Contractor then needs to fit a type A RCCB or RCBO.

2. HOW TO MANAGE THE TOTAL HOUSE LOAD?

All GARO EV chargers have Dynamic Load Management built into the product. The Electrical Contractor must also fit a GARO meter at the main distribution board to measure the total current. This means that the total load in the house is continually monitored and if the total load exceeds the set limit, the GARO EV charger will turn the car down. If the total load reduces, the GARO EV charger will allow the current to the car to increase. We also have priority distribution boards to manage the total load. The priority distribution boards can be used with any Electric Vehicle Charger.

CV8-PS1

This is a consumer unit with priority Shower/ Electric Vehicle control. This priority board is extremely effective for controlling the load to an electric vehicle, when an electric shower or other large electrical load is also installed. The shower is connected as the “Primary” and the Electric vehicle is connected as the “Secondary”. When the shower is activated, the supply to the Electric vehicle is disconnected, and so the main fuse is protected.

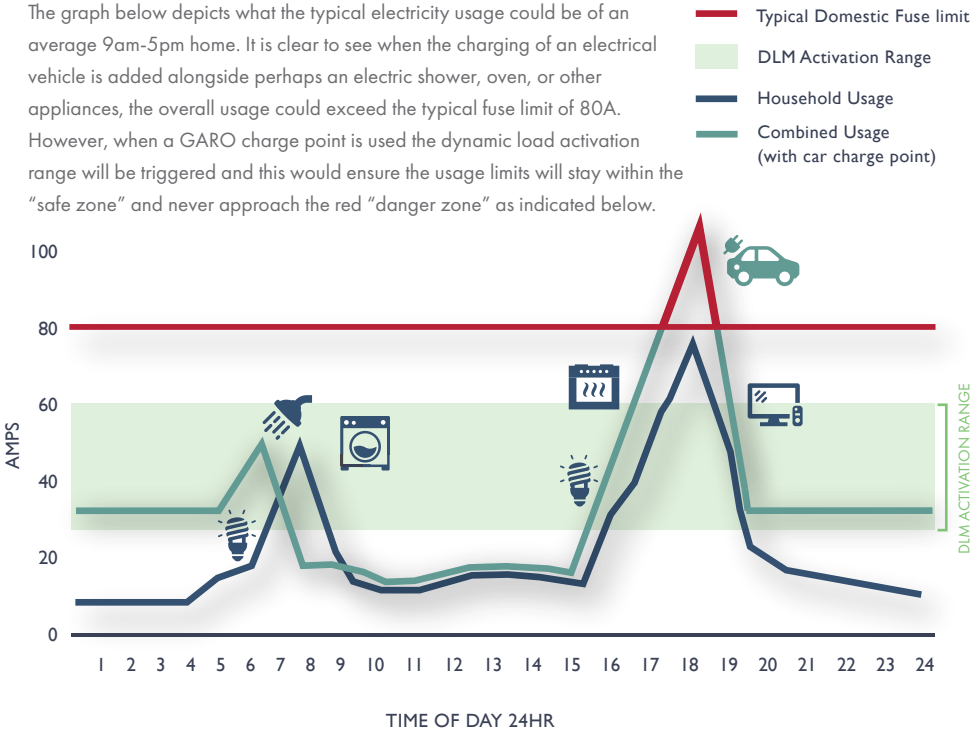
DYNAMIC LOAD MANAGEMENT

PROTECTING YOUR HOME

When a GARO charge point is connected to a property the energy meter communicates with the charge point in real-time. The pre-programmed limit values mean that the property's main fuses can handle the charging load without the main fuse blowing and requiring an expensive electricity network call out.

GARO charge points are equipped with a dynamic load balancing feature that senses the entire properties current electricity consumption and adjusts the charging power accordingly. This means that the main fuse is never overloaded and that the charging current to the car can vary between 6A and 32A. Dynamic load balancing can also be managed where multiple GARO charge points are utilised.

The graph below depicts what the typical electricity usage could be of an average 9am-5pm home. It is clear to see when the charging of an electrical vehicle is added alongside perhaps an electric shower, oven, or other appliances, the overall usage could exceed the typical fuse limit of 80A. However, when a GARO charge point is used the dynamic load activation range will be triggered and this would ensure the usage limits will stay within the "safe zone" and never approach the red "danger zone" as indicated below.



GLB-T222FC
TYPE 2 TETHERED LEAD

GLB-T222WO
TYPE 2 SOCKET

FEATURES

- **DLM INSTALLED** *To ensure protection of the main fuse (needs DLM meter)*
- **MOTORISED INTERLOCK** *To prevent the cable being removed while charging*
- **TYPE 2 SOCKET OR TETHERED LEAD** *(depending on model number)*

OPTIONS

- **GNM1D-100-RS485** *DLM Meter*

GLBDC-T222FC

TYPE 2 TETHERED LEAD

GLBDC-T222WO

TYPE 2 SOCKET

FEATURES

- **DC MONITORING** *Uses a standard Type A RCBO*
- **DLM INSTALLED** *To ensure protection of the main fuse (needs DLM meter)*
- **MOTORISED INTERLOCK** *To prevent the cable being removed while charging*
- **VOLT FREE INPUTS** *For additional control*
- **TYPE 2 SOCKET OR TETHERED LEAD** *(depending on model number)*

OPTIONS

- **GLB-WIFI** *Wi-Fi Module*
- **GLB-RFID** *RFID reader*
- **RFID-CARDS** *or* **RFID-TAGS**
- **GNM1D-100-RS485** *DLM Meter*
- **GNM1D-RS485** *45 Amp Charger Meter*
- **G-CLOUD** *EV Management & Monitoring Software*

GARO TWIN - THE SMART TWO-CAR EV CHARGER

TYPE 2 TETHERED LEAD

GTBDCM-T274FC-A WITH METERS

GTBDCMW-T274FC-A WITH WI-FI & METERS

TYPE 2 SOCKET

WITH METERS **GTBDCM-T274WO-A**

WITH WI-FI & METERS **GTBDCMW-T274WO-A**

FEATURES

- **DC MONITORING** *Uses a standard Type A RCBO*
- **DLM INSTALLED** *To ensure protection of the main fuse (needs DLM meter)*
- **MOTORISED INTERLOCK** *To prevent the cable being removed while charging*
- **VOLT FREE INPUTS** *For additional control*
- **TYPE 2 SOCKET OR TETHERED LEAD** *(depending on model number)*

OPTIONS

- **GLB-WIFI** *Wi-Fi Module*
- **GTB-RFIDKIT** *RFID reader*
- **RFID-CARDS** *or* **RFID-TAGS**
- **GNM1D-100-RS485** *DLM Meter*
- **G-CLOUD** *EV Management & Monitoring Software*

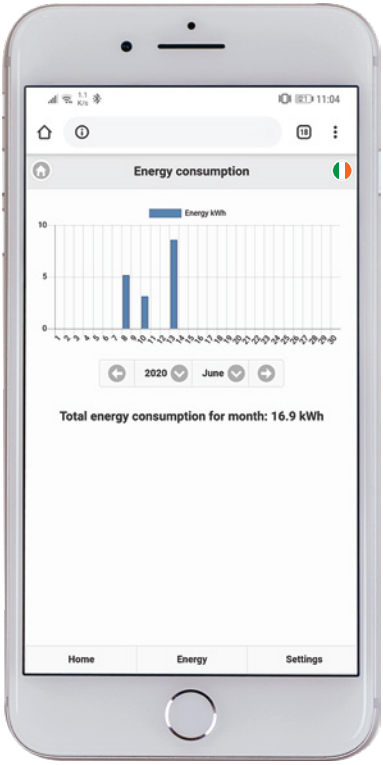
WI-FI and RFID

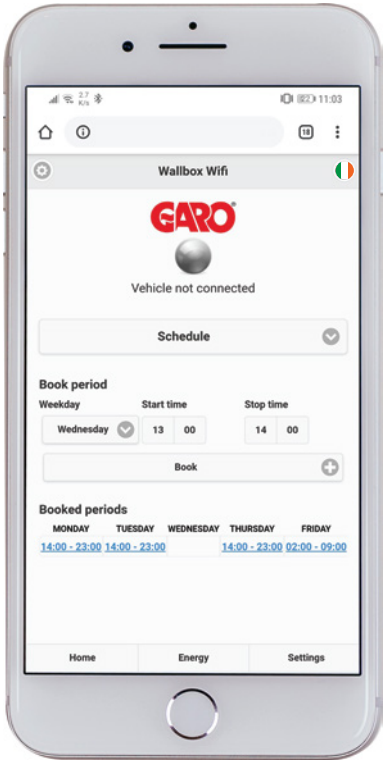
for GLBDC & GTBDC Models

The Wi-Fi module (optional in the GLBDC) allows the charger to be configured and updated remotely. It future-proofs the charger allowing updates for both firmware and software. The Wi-Fi module can be retro fitted in the GLBDC range.

With the Wi-Fi module fitted, the charger can also be fitted with an optional RFID reader for increased security and billing. With the addition of an energy meter it will give the user the ability to view their energy consumption on their mobile phone, tablet or web browser on their PC or laptop. Users will also have the ability to create schedules to suit their lifestyle or energy tariffs.

Propriety, low cost, cloud based reporting system, G-Cloud is available for registered users with RFID cards, providing usage and billing information.





GLB

WALL CHARGER ACCESSORIES

PRODUCT CODE	DESCRIPTION	CURRENT	VOLTAGE
GLK2T216A230V	Charging cable Type 2 to type2	**16**	**230**
GLK1T232A230V	Charging cable Type 1 to type2	**32**	**230**
GLK2T232A230V	Charging cable Type 2 to type2	**32**	**230**
GLK2T232A400V	Charging cable Type 2 to type2	**32**	**400**
GLB-WIFI	WiFi Module		
GLB-RFID	RFID Module		
RFID-TAGS	RFID Cards		
EVTESTTYPE2	EV Charging Station Test Equipment with tethered lead		
EVTEST TYPE2SKT	EV Charging Station Test Equipment with socket		
EVTEST TYPE1SKT	EV Charging Station Test Equipment with socket		
SH-GHL	Cable Holder		
ST-GHL	Mounting Pillar 1 GLB		
ST-GHL-D	Mounting Pillar for 2 GLB's		
SKT-GHL	Canopy		
GNM1D-RS485	Meter in Charger, SinglePhase	**45A**	
GNM1D-100-RS485 *(DLM Meter)*	Meter in Board, SinglePhase	**100A**	
MVRF	1500 mm Ground Floor Foundation Pole		
GLBFD	Single & Double Mounting Post for GLBs		

MOUNTING PILLAR
SINGLE GLB
ST-GHL

CANOPY GLB
SKT-GHL

CHARGING STATION
TEST EQUIPMENT
RECOMMENDED FOR INSTALLERS

CABLE HOLDER
SH-GHL

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BECOME AN APPROVED EV INSTALLER

FREE Online Training & Certification for GARO EV Charging Range at the online GARO Academy.

www.garo.ie/Academy