E-Mobility
Charging Solutions

SCHRACK TECHNIK

The emission-free way into our future

ONLINE SHOPPING!

In the office and on the go with the Live Phone App

INCL. AVAILABILITY INFORMATION

Ex stock

Index

Publisher and Editor

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The information contained herein reflects the opinion of the company at the time of writing. It was assembled on the basis of published standards, specialist industry presentations, specialist literature and in-house expertise. The content is for informational purposes only.

List of references

1) http://www.e-tankstellen-finder.com
2) http://www.bmw-i.at/de_at/bmw-i3/

The Arrival of Electromobility

The rapid advancement of electrical engine technologies and battery systems has given rise to a new generation of vehicles which are superior to their fossil-fuel powered counterparts both in terms of cost efficiency and road capability. Thanks to the elimination of local emissions combined with the extremely low Austrian carbon footprint in electrical power generation electric vehicles have become an ideal means of transport for inner-city traffic and for medium-distance trips to surrounding areas. With a significant number of charging stations available even a trip across Austria is easily doable now. Currently, in the mid-size car segment the range is around 300 km.

Electricity is the fuel of the future and electric vehicles are convincing in many ways: enhanced driving pleasure, less noise, highly efficient electric motors, which are low on maintenance and show minimal wear and tear. The expansion of renewable energy sources has caused the electricity costs to fall – another welcomed advantage.

This in turn raises the need, both in terms of demand and requirements, for a suitable and nationwide charging infrastructure. Although there are plenty of mains sockets in every household not all of them are suitable for charging the batteries of electric vehicles. Therefore, what we need are easy-to-use electric car charging stations well within range and with a nationwide coverage.

The Austrian regional building regulations already include this requirement. The regional building by-law of one of Austria's largest federal provinces, Lower Austria, in its latest amendment (11. Novelle zur NÖ Bauordnung § 64 Abs. 3a) regulates that in public car parks with over 50 parking bays at least one in every 10 bays must be suitable for fitting it with electric car/motorcycle charging stations.

The Electric Charging Station

Car charging stations made by Schrack Technik Energie GmbH going by the brand name i-CHARGE (which stands for intelligent charging) pave the way for this climate-friendly mobility. They are the best solution for all electrically powered vehicles currently available (cars, motor scooters, bicycles) and designed to fit all locations:

- Public buildings, such as e.g. underground car parks, shopping centres, and airports
- Outdoors, e.g. at gas stations and service areas or in customer car parks
- Private applications in the garage, carport or for the private carport
- Sports and leisure facilities, such as hotels, public swimming pools, golf courses, and tennis courts

By pairing intuitive ease-of-use with an intelligent charging logic the i-CHARGE charging stations meet all the multiple demands while at the same time being convincingly user friendly.

Our car charging stations make charging your car fast, safe and hassle-free. With their remote maintenance capability and the possibility of software updates charging stations are future-proof already today.

In January 2017, there were roughly 2,585 electric car charging stations available in Austria[1]. Their number is continually and deliberately increasing. The Austrian „Life Ministry" offers consultancy and funding programmes. They support local governments, businesses, associations, and consumers planning to convert their vehicle fleet to electric cars. A new i-CHARGE charging station is your investment in the future and your guarantee for safe charging and optimised battery life.

Charging

To charge the vehicle battery, the alternating current (AC) from the power grid is converted to direct current (DC). The conversion is made by the charger, which is either built into the vehicle (on-board) or into the electric charging station. The control logic in the car (battery management system, BMS) monitors the charging process, checks the temperature of the power cells and adjusts the charging process to optimise charging time and battery life. Power is fed from special power sockets and charging cables, which not only transfer electricity but data as well.

Compared to e-cars, power supply requirements are less demanding in case of single-track vehicles, such as e-bikes or e-scooters. The batteries used there have less charging power due to their lower capacity. Therefore any socket suitable for outdoor installation can be used to charge those.

E-vehicles are chiefly charged while at home or at the office. Charging while you are at work considerably increases your vehicle's range – roughly 80% of the population could use electric cars, estimating an average distance of 40-some kilometres covered per day[2]. Thanks to DC quick charging stations, where inverter and charger are built into the charging station and can therefore be a lot more powerful, electric vehicles can be used for long-haul journeys: A recharge of up to 80% is possible in less than 20 minutes!

Charging Time

Charging times vary and depend on battery capacity, charger and mains feed. The average charging time of a 24 kWh battery is between 10 hours (Schuko socket in Mode 1 - see below for details on the charging modes) and about 1 hour (in Mode 3) to be fully charged when starting at charging level „empty". DC rapid charging (Mode 4) can be completed within 20 minutes! The actual charging times are usually shorter, because the battery is hardly ever completely empty.

[1] see references on page 2

[1] see references on page 2

Sockets Suitable for Charging

	Schuko	TYPE 1	TYPE 2	CHAdeMO	CCS
					
Voltage	230 V AC	230 V AC	400 V AC	500 V DC	500 V DC
Current	10 A – 16 A	16 A – 32 A	16 A – 63 A	125 A	125 A
Power	2 - 3,7 kW	3,7 - 7,4 kW	11 - 44 kW	60 kW	60 kW
Charging time*	8 - 10 h	3 - 5 h	<1 - 3 h	approx. 20 min	approx. 20 min
Usage	**No communication**	**Station-to-vehicle communication - adjustable charging power**			
	☺	☹	☹	☹	☹
	☺	😐	😐	☹	☹
	😐	☺	☺	☺	☺

* with a 20 kWh vehicle battery as an example

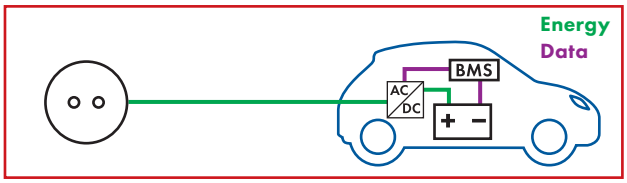
The Charging Process

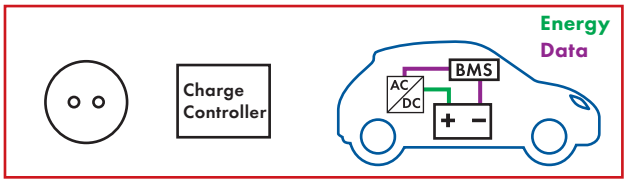
The charging station is in stand-by mode if the green LED is on or the display shows that it is ready. The charging station identifies a plugged-in cable by means of an auxiliary contact in the charging socket or through communication with the vehicle. Now it is possible to use a key switch or a contactless card (RFID) to activate charging. If the station does not require activation, charging starts automatically. The battery management system (BMS) of the vehicle controls the charging process and ensures fast charging and optimised battery life. Charging ends when the plug is pulled, which leaves the socket reliably without mains voltage.

Charging Modes

The standard ÖVE/ÖNORM EN 61851 specifies the charging modes to be used for different combinations of socket and charging cable:

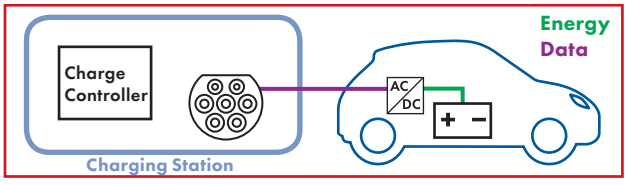
Schuko/CEE Socket (Mode 1 - 2)





Charging stations with a Schuko or CEE socket have an integrated auxiliary contact. This contact recognises a plugged-in plug and ensures safe switching on and off. A combined current breaker with residual current tripping (RCBO) protects the charging point. The electric vehicle is either connected directly (Mode 1) or with a special cable (called „in cable control box", ICCB) (Mode 2).

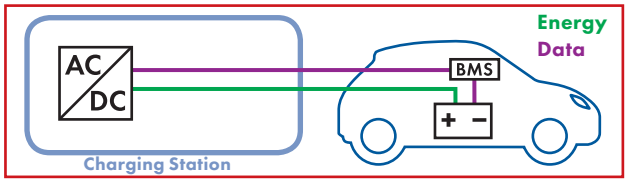
TYPE 1 und TYPE 2 Sockets (Mode 3)



The manufacturers of vehicles and charging stations in the EU have agreed on the TYPE 2 charging plug system. TYPE 1 plugs are only used on the vehicle side, not on the charging station. TYPE 1 vehicles, such as Nissan Leaf or KIA Soul EV can also be charged from a TYPE 2 socket if an adaptor cable is used.

Therefore, a TYPE 2 socket is the TYPE of choice, especially if different TYPEs of vehicles shall be charged. There may be exceptions where a charging station has to be fitted with a fixed charging cable. In these cases the choice has to be made between TYPE 1 or TYPE 2.

CHAdeMO and CCS (Mode 4)



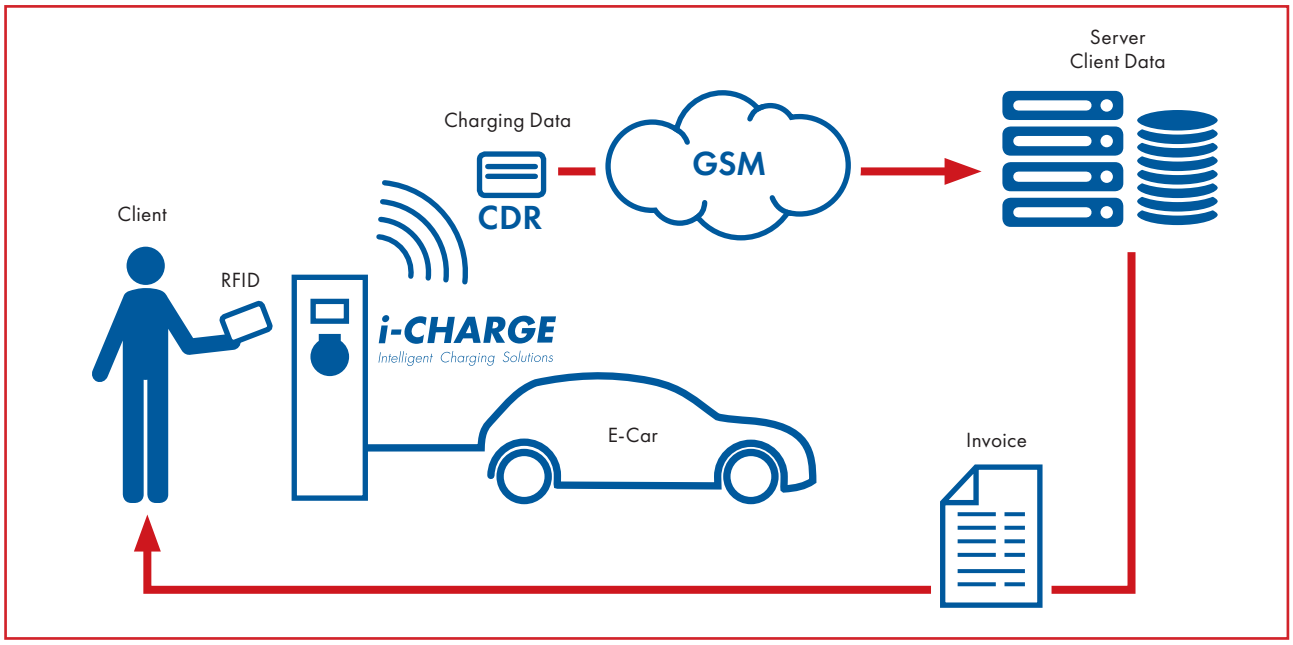
As opposed to the AC charging modes 1-3, the CHAdeMO and CCS mode feeds direct current from the charging station into the vehicles's battery. The charger is located inside the charging station. Therefore, the limitations regarding size or weight of a vehicle do not apply. The considerably higher charging power allows fast charging within approx. 20 minutes while preserving battery life as much as possible.

Activation, Metering and Payment

i-CHARGE electric charging stations for use in public and semi-public areas can be equipped with different activation and payment systems. For activation it is possible to use either a key or an RFID card. Customers can pay using a coin slot, the Quick card or bank card function, or billing can be handled via OCPP (via the power utility company or a payment service provider). The i-CHARGE Grid Master stations can also be integrated into a parking garage system. Metering of the amount of electricity used for charging at the charging point is done by fitting them with an MID approved meter.
It has to be noted that billing by electricity used (selling of electrical energy) is only allowed with a valid license for electricity trading. Alternatively, a time-based price may be used.

Billing via OCPP

The standardised communication protocol, OCPP 1.5, allows to use products from different manufacturers within a shared charging network. The protocol authorises the charging cards of the clients and, after charging has finished, transfers so-called charging data records (CDR), which contain the charging time and electricity amount. The operator of the charging station can then invoice the charging to the customer. It is also possible for several operators to practice clearing, so that their clients can use the stations of other operators (roaming).



The OCPP protocol

Charging Station Server and Payment Systems

The standardised protocol used between charging station and server allows to build a manufacturer independent, expandable and fully compatible charging network. The server solutions of several different manufacturers are compatible with the charging stations from Schrack Technik:

Online Billing via OCPP

- has.to.be GmbH (Salzburger Straße 20, 5550 Radstadt)
- NTT DATA Österreich GmbH (Handelskai 92, 1200 Vienna)
- ENIO GmbH (Geyschlägergasse 14, 1150 Vienna)
- ... and several other OCPP compatible back-end providers

The online billing option is especially favourable for large charging networks. Invoicing, administration of the client database, status information and remote operation of charging stations are all managed through a convenient web portal of the software provider.

The web portal allows the definition of different user access rights. For example, the technician is allowed to see the status of charging stations, but not the client database. The back-office staff adds and updates customer data and launches invoicing, but is not allowed to change charging station configurations.

Offline Billing via EBE Charge Server

- EBE Mobility & Green Energy GmbH (Prießnitzgasse 16, 2340 Mödling)

If a transfer of payment data to a server is not desired or not possible, the client database and the entire payment process can be handled locally by the charging station. Still, the charging station can be configured and controlled via web interface that runs on the charging station's control computer. It is also possible to control several charging stations from a charge server. The prerequisite to do so is a direct connection between the charging stations. Naturally, also the charge server supports the OCPP protocol and can be integrated into an online payment system on request.

Charging with QR code and app

i-CHARGE Public 2

The new charging unit i-CHARGE Public 2 presents the proven i-CHARGE Public charging unit in a new design. The body features an appealing rounded top, an illuminated RFID reader field and the flush charging sockets as the most readily recognisable modifications. Several other details have been improved and adjusted.

EMPUB249O

Technical Data

- New design with rounded top
- Flush, rain-proof charging points
- Illumination
- Covered door sealing
- Transparent RFID reader field with status display
- Larger cable inlet in the bottom for feed cables up to 5x95 mm²

Optional Features

- Colour and logos according to customer specifications
- Free selection of up to 2 or 4 charging points
- Load management to distribute power input
- Floor standing body W = 500, H = 1,700, D = 450 (in mm) with 4 charging points, transformer measurement field and meter board can be mounted inside of body
- Offline operation without billing, impact protection

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-Charge PUBLIC 2				
Design Offline	TYPE2, Schuko	22; 3,7 kW	1.320 x 250 x 180mm	EMPUB226
Design Online	TYPE2, Schuko	22; 3,7 kW	1.320 x 250 x 180mm	EMPUB226O
Design Offline	2x TYPE2	2x11 kW	1.320 x 250 x 180mm	EMPUB227
Design Online	2x TYPE2	2x11 kW	1.320 x 250 x 180mm	EMPUB227O
Design Offline	2x TYPE2	2x22 kW	1.320 x 250 x 180mm	EMPUB229
Design Online	2x TYPE2	2x22 kW	1.320 x 250 x 180mm	EMPUB229O
Design Offline with load management	2x TYPE2	2x22 kW	1.320 x 250 x 180mm	EMPUB229B
Design 4 charging plugs				
Design Offline	2x TYPE2; Schuko	11; 22; 2x 3,7 kW	1.320 x 360 x 280mm	EMPUB249
Design Online	2x TYPE2; Schuko	11; 22; 2x 3,7 kW	1.320 x 360 x 280mm	EMPUB249O
Design Offline	2x TYPE2; Schuko	2x 22; 2x 3,7 kW	1.320 x 360 x 280mm	EMPUB2414
Design Online	2x TYPE2; Schuko	2x 22; 2x 3,7kW	1.320 x 360 x 280mm	EMPUB2414O

i-CHARGE Public

i-CHARGE Public charging units are custom designed for public and semi-public areas. Depending on customer requirements, they can be equipped with different activation, authentication and payment systems (RFID, key switch). Billing can also be handled using the charging point server of the power utility company.

EMPUB026O

Technical Data

- Charging points: 1x TYPE 2 11 kW or 22 kW, 1x Schuko
- All-current sensitive RCCB
- Residual current protection per charging point
- Ready/Charging indication with LEDs
- Body: powder-coated stainless steel
- Dimensions: W = 200, H = 1,300, D = 150 (in mm)
- Degree of protection: IP 44, IK 07

Technical Data - Online

- MID approved meters
- Identification: RFID/NFC contactless card
- Payment system: OCPP 1.5
- Data transfer: GSM

Optional Features

- Colour and logos according to customer specifications
- Free selection of up to 3 charging points
- Load management to distribute power input
- Larger body W = 400, H = 1,300, D = 150 (in mm) and up to 4 charging points max.
- Meter board can be mounted inside of body
- Charging points can be mounted on the side
- Offline operation without billing, impact protection

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-Charge PUBLIC				
Offline	TYPE2; Schuko	11 kW; 3,7 kW	1.300 x 200 x 150mm	EMPUB023
Online OCPP	TYPE2; Schuko	11 kW; 3,7 kW	1.300 x 200 x 150mm	EMPUB023O
Offline	TYPE2; Schuko	22 kW; 3,7 kW	1.300 x 200 x 150mm	EMPUB026
Online OCPP	TYPE2; Schuko	22 kW; 3,7 kW	1.300 x 200 x 150mm	EMPUB026O
Offline	2x TYPE2	2x 11 kW	1.300 x 200 x 150mm	EMPUB027
Online OCPP	2x TYPE2	2x 11 kW	1.300 x 200 x 150mm	EMPUB027O
Offline with load management	2x TYPE2	2x 22 kW	1.300 x 200 x 150mm	EMPUB029B
Offline	2x TYPE2	2x 22 kW	1.300 x 400 x 150mm	EMPUB129
Offline	2x TYPE2; Schuko	2x 11; 2x 3,7 kW	1.300 x 400 x 150mm	EMPUB149
Offline	2x TYPE2; Schuko	2x 22; 2x 3,7 kW	1.300 x 400 x 150mm	EMPUB1414

i-CHARGE Public Wall

EMPUBW23

EMPUBW48

The i-CHARGE Public Wall charging station is particularly well suited for use in private garages. Customers have free choice of charging points, ranging from Schuko to TYPE 2, including CEE sockets and others. The charging station can be fitted with authentication and identification systems on request. The cost-efficient option for private use are key switches, whereas RFID card readers and OCPP connection are recommended for public areas to prevent unauthorised use.

Technical Data

- 1, 2 or 4 charging points
- Ready/Charging indication with LEDs
- Rugged powder-coated sheet steel body
- Wall mounting
- Dimensions depending on number of charging points - 1 charging point: W = 250, H = 300, D = 210 (in mm) - 2 charging points: W = 400, H = 500, D = 210 (in mm) - 4 charging points: W = 600, H = 600, D = 210 (in mm)
- Use: outdoor / indoor IP 44

Optional Features

- Colour and logos according to customer specifications
- Available charging points, positions freely selectable: Schuko, CEE, TYPE 2, up to 22 kW per charging point
- Fix mounted charging cable TYPE 1, TYPE 2
- Stainless steel body
- Custom dimensions available on request
- Meter (S0 or M BUS interface)
- Timer
- Charging starts/stops via - key switch / key button - RFID (contactless access card) - coin slot
- Billing via OCPP 1.5
- Load management
- Integration of an existing cylinder locking mechanism possible

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-Charge PUBLIC Wall				
2 points	TYPE 2; Schuko	11 kW; 3,7 kW	500 x 400 x 210mm	EMPUBW23
4 points	2x TYPE 2; 2x Schuko	2x 11 kW; 2x 3,7 kW	600 x 600 x 210mm	EMPUBW48

i-CHARGE Mini Online

A location with a single charging point should be connected to a payment system, but the available room is insufficient for a floor standing charging unit? i-CHARGE Mini Online offers a TYPE 2 charging point with either 11 kW or 22 kW in a compact body. The charging station needs no special circuit breakers in the feed line, because it features an integrated DC residual-current detection device.

EMPUBM16O

Technical Data

- 1 charging point TYPE 2 11 kW or 22 kW
- Integrated residual current monitoring unit (RCMU)
- Integrated modem and OCPP 1.5 billing module
- Ready/Charging indication with LEDs
- Wall-mounted body made of die-cast aluminium
- Dimensions: W = 230, H = 400, D = 110 (in mm)
- Degree of protection: IP 44

Optional Features

- Colour and logos according to customer specifications
- Stainless steel body
- MID approved meter
- Charging starts/stops via RFID

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE Mini Online				
11 kW	TYPE 2	max. 14 kW	400 x 230 x 110mm	EMPUBM13O
22 kW	TYPE 2	max. 22 kW	400 x 230 x 110mm	EMPUBM16O

i-CHARGE Charging Cables

Several available adaptor cables and replacement cables allow connecting a TYPE 1 vehicle with a TYPE 2 socket. Refitting and retrofitting of different charging stations and replacements are available if a charging cable is damaged.

VEHICLE-SIDE PLUG TYPE	INFRASTRUCTURE TYPE	RATED CURRENT	LENGTH	ORDER NO.
i-CHARGE replacement charging cables				
Charging cable TYPE 1	Open end	20 A 1 phase	4 m	EMK110F0F2
Charging cable TYPE 2	Open end	20 A 1 phase	4 m	EMK020F0F2
Charging cable TYPE 2	Open end	20 A 3 phase	4 m	EMK120F0F2
Charging cable TYPE 2	Open end	32 A 3 phase	4 m	EMK320F0F2
i-CHARGE charging cables				
Charging cable TYPE 2	TYPE 2	20 A 3 phase	4 m	EMK122MFF2
Charging cable TYPE 2	TYPE 2	32 A 3 phase	8 m	EMK322MFF3
Adaptor cable TYPE 1	TYPE 2	20 A 1 phase	4 m	EMK121MFF2
Adaptor cable TYPE 1	TYPE 2	32 A 1 phase	4 m	EMK221MFF2
i-CHARGE cable and plug holders				
	Cable holder			EMKHA00
	Plug holder TYPE 1			EMKHA01
	Plug holder TYPE 2			EMKHA02

i-CHARGE Home Eco

Our Wallbox i-CHARGE Home Eco made of stainless steel is especially remarkable for its size: It is the smallest 22 kW wallbox with TYPE B RCCB on the market. The comfortable operation is further facilitated by three large operating lights which show the current operating state. Optionally, it is possible to include a key switch and there are several ways to integrate the i-CHARGE Home Eco into an existing control system by means of a potential-free switching contact, a network interface or a 0-10 V interface.

EMHOM416B

We offer customised branding

Technical Data

- Charging power: 4.6 kW / 11 kW / 22 kW
- Dimensions (L x W x H): 325 x 130 x 150 mm
- Weight: approx. 4 - 5 kg (depends on version)
- Body: powder-coated stainless steel RAL 9016 traffic white
- Charging controller according to EN 61851-1
- Charging current can be set in the steps 6 A, 10 A, 13 A, 16 A, 20 A and 32 A
- Control port for potential-free switching contact
- Degree of protection: IP 44

Optional Features

- All-current sensitive Type B RCD (EMHOM41xB)
- Residual current monitoring unit (RCMU)
- Body colour and printing according to customer specifications (RAL color or stainless steel uncoated)
- Adaptor cable TYPE 1 available
- Available with CEE connection for self-installation
- 0-10 V interface (PV control)
- Ethernet interface on the outside
- Handle made of brushed aluminium

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE Home Eco				
Eco 1 phase	TYPE 2	4,6 kW	325 x 130 x 150mm	EMHOM411
Eco	TYPE 2	11 kW	325 x 130 x 150mm	EMHOM413
Eco TYPE B	TYPE 2	11 kW	325 x 130 x 150mm	EMHOM413B
Eco	TYPE 2	22 kW	325 x 130 x 150mm	EMHOM416
Eco TYPE B	TYPE 2	22 kW	325 x 130 x 150mm	EMHOM416B

i-CHARGE Home

The i-CHARGE Home charging stations make fast and safe charging at your own private parking space a reality. They are designed for use indoor and outside. Two LEDs display the operating state. Thanks to the compact build mounting takes less space. Another convenient feature is the included charging cable, which saves the effort to dig out the vehicles's charging cable. Simply park - plug in - charge!

The built-in charging controller of the charging station controls and monitors the charging process in concordance with the EN 61851-1 standard and allows 1- or 3-phase charging of all currently available e-vehicles at up to 32 A.

EMHOM1211

EMHOM2232P

Technical Data

- Rugged plastic housing
- W = 200, H = 200, D = 115 (in mm)
- Use: indoor / outdoor
- Degree of protection: IP 65
- Installation: wall mounting or mobile use
- Charging point: 1 of TYPE 1 or TYPE 2 230 V / up to 20 A
- Charging power 4.6 kW
- Charging time for 20 kWh battery less than 5 h

Optional Features

- Higher charging power up to 22 kW
- W = 320, H = 258, D = 142 (in mm)
- Charging point: TYPE 1 230 V up to 32 A / TYPE 2 400 V / up to 32 A
- Charging time for 20 kWh battery approx. 1 h
- RFID card reader

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE Home				
TYPE 1 4,6 kW	TYPE 1	4,6 kW	200 x 200 x 115mm	EMHOM1211
TYPE 1 7,4 kW	TYPE 1	7,4 kW	200 x 200 x 115mm	EMHOM1311 *
TYPE 2 4,6 kW	TYPE 2	4,6 kW	200 x 200 x 115mm	EMHOM1212
TYPE 2 7,4 kW	TYPE 2	7,4 kW	200 x 200 x 115mm	EMHOM1312 *
TYPE 2 11 kW	TYPE 2	11 kW	258 x 320 x 142mm	EMHOM2232P
TYPE 2 22 kW	TYPE 2	22 kW	258 x 320 x 142mm	EMHOM2363P

* only available on request and after technical feasibility has been confirmed

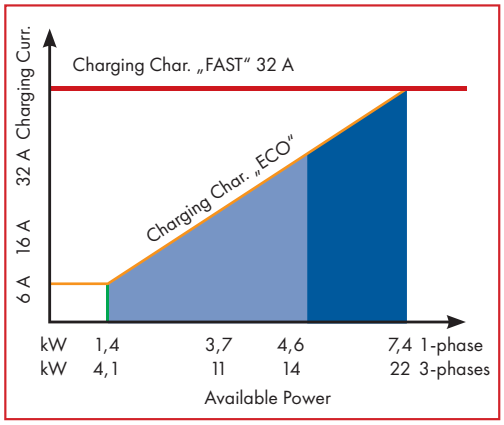
i-CHARGE PV

For those who own electric vehicles and a photovoltaic system Schrack Technik Energie offers an innovative solution to charge the electric vehicle with the power of the sun. Optimise your consumption with i-CHARGE Home PV!

The series i-CHARGE Public and i-CHARGE Home charging stations can be optionally (retro-)fitted with the i-CHARGE PV charging controller. It allows to integrate the charging station with the energy management system (EMS). The EMS determines the current surplus and communicates the surplus power to the i-CHARGE PV charging controller. The electric car receives precisely the charging power that reduces the surplus to zero!

Even while charging is in progress the priority of the charging station can be changed in favour of surplus optimisation. To do so, there are three charging modes available:

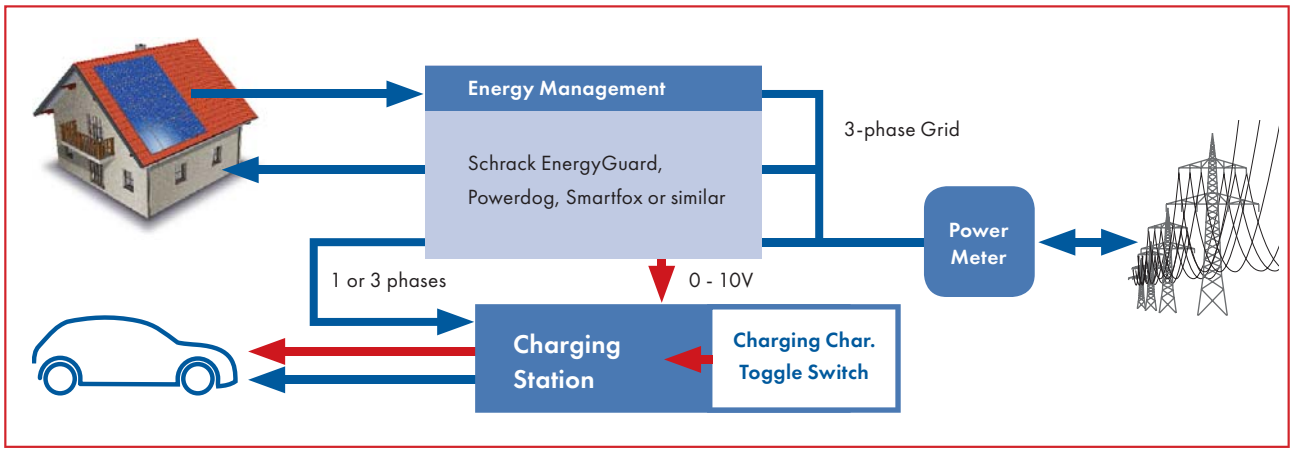
- ECO+: Charging starts only if no electricity will be drawn from the grid,
- ECO: Charging is always done with minimal power, the consumption is reduced to zero,
- FAST: The vehicle is charges as quickly as possible, regardless of the available power.



EMCPV010 Control Curve

Technical Data

- Connection points: S0 bus and 0-10 V interface.
- Switch to select the charging mode
- Compatible with Schrack Energyguard consumption optimisation module
- Setting range: 1.4 kW – 3.7 kW one-phase; 4 kW – 22 kW three-phase



EMCPV010 Bloc Diagram

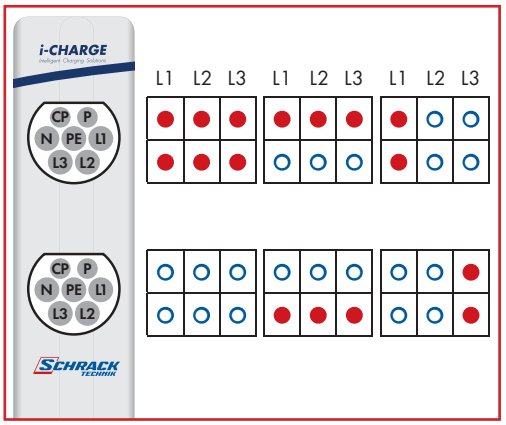
DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE PV				
PV controller module	0-10 V, S0 bus	up to 22 kW charging power	-	EMCPV010
Energy management				
EnergyGuard Light	0-10 V	up to 15 kW charging power	110 x 105 x 62mm	PVC00001
EnergyGuard Pro	0-10 V	up to 50 kW charging power	110 x 105 x 62mm	PVC00002

i-CHARGE Intelligent Charging

EMCEBELLEM

i-CHARGE LLEM: Local Load and Energy Management for Multiple Charging Points

Systems with multiple charging points may overwhelm mains power supply if load management is not used. The solution is i-CHARGE LLEM: as soon as more vehicles are connected the charging power will be reduced to a previously set maximum load. The load can be defined dynamically to balance peaks of other loads or the infeed of a PV system. I-CHARGE LLEM is suitable for systems with up to 6 charging points.



i-CHARGE LLB

i-CHARGE LLB: Local Load Balancing for 2 Charging Points

If at any one location two charging points are to be installed, but the total power exceeds the mains feed, LLB is the ideal solution. One active charging point will receive the full load, but as soon as both points are used to charge the total power will be reduced. LLB even differentiates between 1-phase and 3-phase charging and optimises the charging feeds.
The resulting time savings are up to 50%! Available for i-CHARGE Public and Public Wall.

EMCEBER

i-CHARGE RFID local: User Authorisation without Payment

A local RFID system can be used to restrict the use of the charging station to a limited group of users. The reader recognises the common MIFARE RFID cards and can store up to 75 users. New users are added with the included Master-Teach card. Available for i-CHARGE Public, Public Wall, Home und Home Eco.

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE LLEM	0-10 V/S0 bus	max. 100 kW	6 charging points	EMCEBELLEM
		>100 kW	>6 charging points	On request
i-CHARGE LLB				
Offline with load management	2x TYPE2	2x 22 kW	1.320 x 200 x 150mm	EMPUB029B
Design, Offline with load management	2x TYPE2	2x 22 kW	1.320 x 250 x 180mm	EMPUB229B
i-CHARGE RFID local				
RFID reader			20 x 110 x 70mm	EMCEBER
RFID card			W 85 x L 55mm	EMCRFIDC

NRGkick Mobile Charger

The NRGkick adaptor cable from CEE to TYPE 2 offers a power of up to 22 kW and includes all required safety components to charge quickly and safely from any existing 3-phase wall socket. The maximum charging current can be set and reduced to the capacity of the socket used.

The free app (iOS and Android) and the Bluetooth LE connection can be used to comfortably monitor and control the charging process. To prevent theft or an unauthorised modification of settings NRGkick includes several security precautions. As soon as charging is initialised all settings are locked and the vehicle lock can only be opened by the owner.

EMNK532B

EMNKA32

Technical Data

- Charging point: TYPE 2
- Charging mode: Mode 2 according to EN 61851
- Charging power: 400 V 32 A, 22 kW max.
- Integrated AC and DC residual current protection
- Charging current switching at the push of a button
- Bluetooth Low Energy and energy meter (except EMNK532L/516L)
- Device dimensions (LxWxH): 215 x 90 x 84 mm
- Cable length: 5 m or 7.5 m
- Weight: 4 kg
- Degree of protection: IP 66

Optional Features

- Adaptor cable separate or included in the set
- Maximum charging power 11 kW (16 A)
- Mobile charging solutions for TYPE 1 available on request

DESCRIPTION	CONNECTION	RATED OUTPUT	CABLE LENGTH	ORDER NO.
NRGkick				
NRGkick16Light	CEE 16 A, TYPE 2	11 kW	5 m	EMNK516L
NRGkick16	CEE 16 A, TYPE 2	11 kW	5 m	EMNK516B
NRGkick32Light	CEE 32 A, TYPE 2	22 kW	5 m	EMNK532L
NRGkick32	CEE 32 A, TYPE 2	22 kW	5 m	EMNK532B
NRGkick32-7.5	CEE 32 A, TYPE 2	22 kW	7,5 m	EMNK732B
Adaptor set	Camping, CEE 16 A, Schuko	11 kW	0,6 m or 1,5 m	EMNKA32
Adaptor 1 pc.	CEE 16 A - CEE 32 A	11 kW	approx. 0,6 m	EMNKA3216
Adaptor 1 pc.	Camping - CEE 16 A	3,7 kW	approx. 0,6 m	EMNKAC16
Adaptor 1 pc.	Schuko - CEE 16 A	3,7 kW	approx. 1,5 m	EMNKAS16

i-CHARGE Triberium Fast Charger

Especially for highly frequented locations and alongside major roads; the i-CHARGE Triberium Fast Charger quickly recharges electric vehicles. A charging power of up to 60 kW allows a quick charge up to 80% battery capacity within 20 minutes. Vehicles of all three charging standards – CCS, CHAdeMO and Type 2 – can be charged in the shortest possible time. The charger has a 9" (23 cm) diagonal touch screen which serves as the user interface. A clearly organised menu guides the user through the charging process.

EMDCT554

Equipment

The charging station supports all common charging types: Type2 (AC), CHAdeMO (DC) and CCS (DC). It is possible to use DC and AC sockets for charging simultaneously. i-CHARGE Triberium can locally store a list of all authorised users.

Technical Data

- Dimensions (W x H x D): 835 x 1900 x 550 mm
- Connection data: 400 V AC, 3x 32 A – 3x 150 A
- Output voltage: 850 V C max.
- Operating temperature: -30°C to +50°C
- Relative humidity: 5% to 95%
- Body: stainless steel/powder-coated aluminium
- EN 61851 Mode 3 (Type2) and Mode 4 (CCS, CHAdeMO)
- Authorisation: RFID card reader
- Network connection: GSM/GPRS/3G/LTE
- Charging unit protocol: OCPP 1.5 (upgradable to OCPP 2.0)

Charging Sockets and Available Capacity Levels

DC CHAdeMO	DC CCS/COMBO TYPE 2	AC TYPE 2
		
		
30 kW	30 kW	11 kW
Standard 60 kW	60 kW	22 kW
120 kW	120 kW	43 kW

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE Triberium				
50 kW DC, 22 kW AC	CHAdeMO, CCS, TYPE 2	max. 80 kVA	1900 x 835 x 550 mm	EMDCT552
50 kW DC, 43 kW AC	CHAdeMO, CCS, TYPE 2	max. 100 kVA	1900 x 835 x 550 mm	EMDCT554
120 kW DC, 43 kW AC	CHAdeMO, CCS, TYPE 2	max. 180 kVA	1900 x 835 x 550 mm	EMDCT120
DC Wallbox				
20 kW DC Wallbox CHAdeMO	1x CHAdeMO	max. 22 kVA	900 x 600 x 300 mm	EMDCM020
20 kW DC Wallbox CCS	1x CCS	max. 22 kVA	900 x 600 x 300 mm	EMDCS020

i-CHARGE Bike

i-CHARGE Easy Pack

The i-CHARGE Easy Pack safely stores charger and battery during charging. Putting in a 1€ coin locks the box.

EMEPS020

Technical Data

- Aluminium body, IP 22, W = 500, H = 540, D = 200 (in mm)
- Installation: wall mounting
- Charging points: 2 Schuko 230 V / 16 A
- Coin deposit lock
- Optionally 4 charging points
- Optionally with coin collection box.
  When the case is opened the coin is collected.

i-CHARGE Bike Solar

Ride your bike with solar power. This all-in-one solution combines electromobility with a renewable energy source. The site must be prepared with a foundation, foundation earth electrodes and/or an integrated lightning protection.

Technical Data

- Grid infeeding PV system approx. 1 kWp (4 x 255 Wp)
- Power inverter unit SMA Sunnyboy 1200
- 6 charging points (Schuko socket 230 V / 16 A)
- 6 integrated bicycle stands
- Schrack Outdoor information display
- Static load and type tested (snow load zone 3)
- Optional features: wind break, LED illumination, Easy-Pack system

DESCRIPTION	CONNECTION	RATED OUTPUT	DIM. H x W x D	ORDER NO.
i-CHARGE Bike				
Easy Pack 2 units	2x Schuko	max. 3,7 kW	540x500x200mm	EMEPS020
Easy Pack 4 units	4x Schuko	max. 3,7 kW	540x1000x200mm	EMEPS040
Public 6 units	6xSchuko	max. 6x3,7 kW	1300x200x150mm	EMPUB066
Bike Solar	6x Schuko	max. 3,7 kW		On request

i-CHARGE Accessories

i-CHARGE Impact Protection

The matching impact protection safeguards your charging station against careless drivers. The bright colouration prevents accidents. The impact protection bars are made of galvanised steel tube of 3 mm or stainless steel tube of 2 mm strength, which prevents corrosion and renders them extremely durable. They are mounted with drive plugs.

EMPUBR01

DESCRIPTION	MATERIAL	COLOUR	DIM. H x W x D	ORDER NO.
i-Charge impact protection				
Bar for Public 200	Galvanised steel tube	Yellow	350 x 375 x 76mm	EMPUBR00
Bar for Public 400	Galvanised steel tube	Yellow/black	350 x 750 x 76mm	EMPUBR01
Bollard	Stainless steel	Uncoated	H 900 x 76mm	EMPUBR02

i-CHARGE Tester TYPE 2

Schrack Technik provides different test plugs for the testing of existing charging infrastructure. They simulate an electric vehicle being connected, which makes it possible to test whether the charging station functions correctly. The first item is a simple test plug to test the functioning (communication according to EN 61851, charging voltage available) and the connection of the test load, the second is an analyser that measures the voltage, includes a rotary field indicator and offers the possibility to simulate the different operating states of the vehicle.

EMTEST211

DESCRIPTION	RATED OUTPUT	ORDER NO.
i-CHARGE Tester		
Without Schuko coupling	-	EMTEST201
With Schuko coupling	max. 3,7 kW	EMTEST211
With voltage measurement and rotary field indicator	-	EMTEST155

Hauptbahnhof Wien Main Railway Station

Since October 2014, three public car parks in the vicinity of Vienna's new infrastructure hub offer to a total of 25 drivers of electric cars the comfortable possibility to park and ride on public transports while their car gets fully charged, ready to drive when they return.

TIWAG and IKB, Tyrol

Driving downhill in the mountainous Tyrol landscape, electric vehicles can recycle energy instead of wasting it in the form of excess heat while braking. We were able to win the power utility companies TIWAG and IKB as customers and installed charging units with integrated transformer measurement of the Type i-CHARGE Public 2 in Tyrol.

Siebenhirten Park and Ride, Vienna

Eco-aware commuters can still enjoy private mobility. Since June 2012 you can charge your electric vehicle at either 2 Type 2, 3 Schuko or 2 CEE charging points in the Siebenhirten Park and Ride car park on the outskirts of Vienna.

Wien Energie, Vienna Airport

On the Schwechat Vienna Airport car park an i-CHARGE Triberium fast charger is installed, ideal for quick charging on your way from Bratislava to Vienna or for E-Taxis. The charging bays were equipped with a roof and well lit. Parking for cars using conventional fuel is prohibited.

SPAR, Vienna and Surroundings

Charge your electric car while you shop! Schrack Technik has equipped several Spar markets in Vienna and its surrounding areas with charging stations for two electric vehicles each. They use the proven combination of Type 2 and Schuko. The parking spaces are reserved exclusively for customers with electric vehicles!

EVN, Grafenegg Castle

Since autumn 2015 concert visitors or those visiting the Grafenegg Advent Market are welcome to arrive in e-vehicles. The two i-CHARGE Public 2 charging stations, operated by EVN, allow 8 vehicles to simultaneously charge eco-friendly power!

Energie Burgenland, Eisenstadt

The head office of the Energie Burgenland power utility company is located in Eisenstadt, the training centre in Oberpullendorf. The electric company cars could not cover the distance to and back – but now there are i-CHARGE Triberium fast chargers installed on both locations. A clean solution!

Energy Base Giefinggasse, Vienna

Owners of electric bicycles appreciate the 6 charging points in front of the building of the University of Applied Sciences Vienna as a means to fully charge the battery until they ride off again. Combined with the rugged bicycle racks - a secure solution!

Compatibility List

This list shows you which charging station is best suited for the charging plug of your car. Many vehicles are available in different versions. Therefore, please consult the vehicle's documentation before you choose your charging station:

❶ Some vehicles do not support 3-phase charging, which reduces the charging power to one third. The suggestion, however, considers a later purchase of more powerful electric vehicles and the suitable charging station.

❷ With an adaptor cable (art. no. EMK121MFF2) it is also possible to charge vehicles with TYPE 1 connection on charging stations with TYPE 2 sockets.

← If the power input at the planned installation site is insufficient for the maximum charging power, a station with lower power can be used.

Model Type	Vehicle Connection	TYPE 1	TYPE 2	TYPE 2	TYPE 2
	Power Input	1ph 3,7 kW	1ph 3,7 kW	3ph 11 kW	3ph 22 kW
i-Charge Home 	3,7 kW 230V/16A	EMHOM1211	EMHOM1212	←	←
	11 kW 400V/16A	-	EMHOM2232P ❶	EMHOM2232P	←
	22 kW 400V/32A	-	EMHOM2363P ❶	EMHOM2363P	EMHOM2363P
i-Charge Home Eco 	3,7 kW 230V/16A	EMHOM411 ❷	EMHOM411	←	←
	11 kW 400V/16A	EMHOM413B ❷	EMHOM413B ❶	EMHOM413B	←
	22 kW 400V/32A	EMHOM416B ❷	EMHOM416B ❶	EMHOM416B	EMHOM416B
i-Charge Public 	11 kW 400V/16A	EMPUB023 ❷	EMPUB023 ❶	EMPUB023	←
	22 kW 400V/32A	EMPUB026 ❷ EMPUB027 ❷	EMPUB026 ❶ EMPUB027 ❶	EMPUB026 EMPUB027	EMPUB026 EMPUB029B
Mobile Charging Station 	3,7 kW 230V/16A	CC100A*	EMNK516 CC100A*	EMNK516 ❶	EMNK532 ❶
	11 kW 400V/16A	-	EMNK516 ❶	EMNK516	EMNK532 ❶
	22 kW 400V/32A	-	EMNK532 ❶	EMNK532	EMNK532

* CC100A replacement emergency charging cable available on request

Request

Company / Name: ..... Contact Person: .....

Adress: ..... Schrack Customer Number: .....

Postcode / City: ..... Phone / Email: .....

TYPE: ☐ floor standing  ☐ wallbox  ☐ mobile charging station 

Charging sockets - directly at the station:

TYPE Power	Schuko 3,7 kW	TYPE 2 1-phase 3,7 kW	TYPE 2 3-phase 11 kW	TYPE 2 3-phase 22 kW
Number				

Charging cables - directly at the station:

TYPE Power	TYPE 1 1-phase 3,7 kW	TYPE 2 1-phase 3,7 kW	TYPE 2 3-phase 11 kW	TYPE 2 3-phase 22 kW
Number				

Activation:	☐ always active	☐ key	☐ half-cylinder (customer prov.)
	☐ local RFID incl. _____	pcs. RFID cards	☐ online (OCPP)
Meter:	☐ without	☐ central	☐ per charging point
Protection:	☐ customer provided	☐ integrated MCB/RCCB	
El. Connection:	☐ terminals	☐ Cu / ☐ Al _____mm²	☐ _____
Optional Features :	☐ emergency unlocking	☐ cable wall holder	☐ 0-10 V interface (PV control)

Notes

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