

Table of contents

1	General	Page 3
1.1	Introduction	
1.2	Use for the intended purpose	
2	Safety	Page 3
2.1	Signal words	
2.2	Safety instructions	
3	Description of the charging unit	Page 4
4	Charging a vehicle	Page 5
4.1	Meaning of the status LED colours	
4.2	Connecting the charging cable	
4.3	Authorisation & starting the charging process	
4.3.1	- Types of authorisation	
4.3.2	- Starting the charging process with RFID chip or RFIC card	
4.3.3	- Starting the charging process via smartphone app	
4.4	Ending the charging process	
4.4.1	- Ending the charging process with RFID chip or RFIC card	
4.4.2	- Ending the charging process via smartphone app	
5.	Cleaning and care	Page 6
6.	Inspection and maintenance	Page 6
7.	Troubleshooting	Page 7
8.	Contact and support	Page 8
9.	Manufacturer warranty	Page 8
9.1	General	
9.2	Warranty conditions	
9.3	Occurrence of a warranty claim	
10.	Disposal	Page 8
11.	Technical data	Page 9
12.	Guidelines and standards	Page 10
13.	Glossary	Page 10
14.	Commissioning	Page 10

1 General

1.1 Introduction

We are glad you chose to buy one of our products. BEGA charging units offer convenient, safe and standard-compliant charging in accordance with Standard IEC 61851-1, charging type 3. Before you commission the charging station, read through these operating instructions carefully and follow the instructions. Please also note the vehicle-specific instructions in the operator's manual of your electric vehicle. If you have received these operating instructions in digital form, print out the document and file it away safely. Store the operating instructions properly. Information regarding assembly, installation and maintenance can be found in the separate installation guide. If you sell the charging station, hand over these operating instructions to the buyer.

1.2 Use for the intended purpose

The charging station is used to charge electric and plug-in hybrid vehicles in accordance with charging type 3. The charging station is mounted in the variants provided by BEGA. Any other use is deemed improper and is not permitted. The BEGA charging unit is suitable for all electric vehicles with a type 2 connection. It can also be used for electric vehicles with a type 1 connection if a standard-compliant adapter cable (in accordance with IEC 62196-2) is used. Persons who are unable to safely operate the charging station due to their physical, sensory or mental capacities, or due to their lack of experience or lack of knowledge, may not use the charging station without the supervision or instruction of a responsible person.

2 Safety

2.1 Signal words

⚠ WARNING: This designates a danger with a moderate degree of risk, which if not avoided could result in serious injury or death.

⚠ CAUTION: This designates a danger with a low degree of risk, which if not avoided could result in a minor or moderate injury.

Note: This refers to additional information that is not associated with dangers.

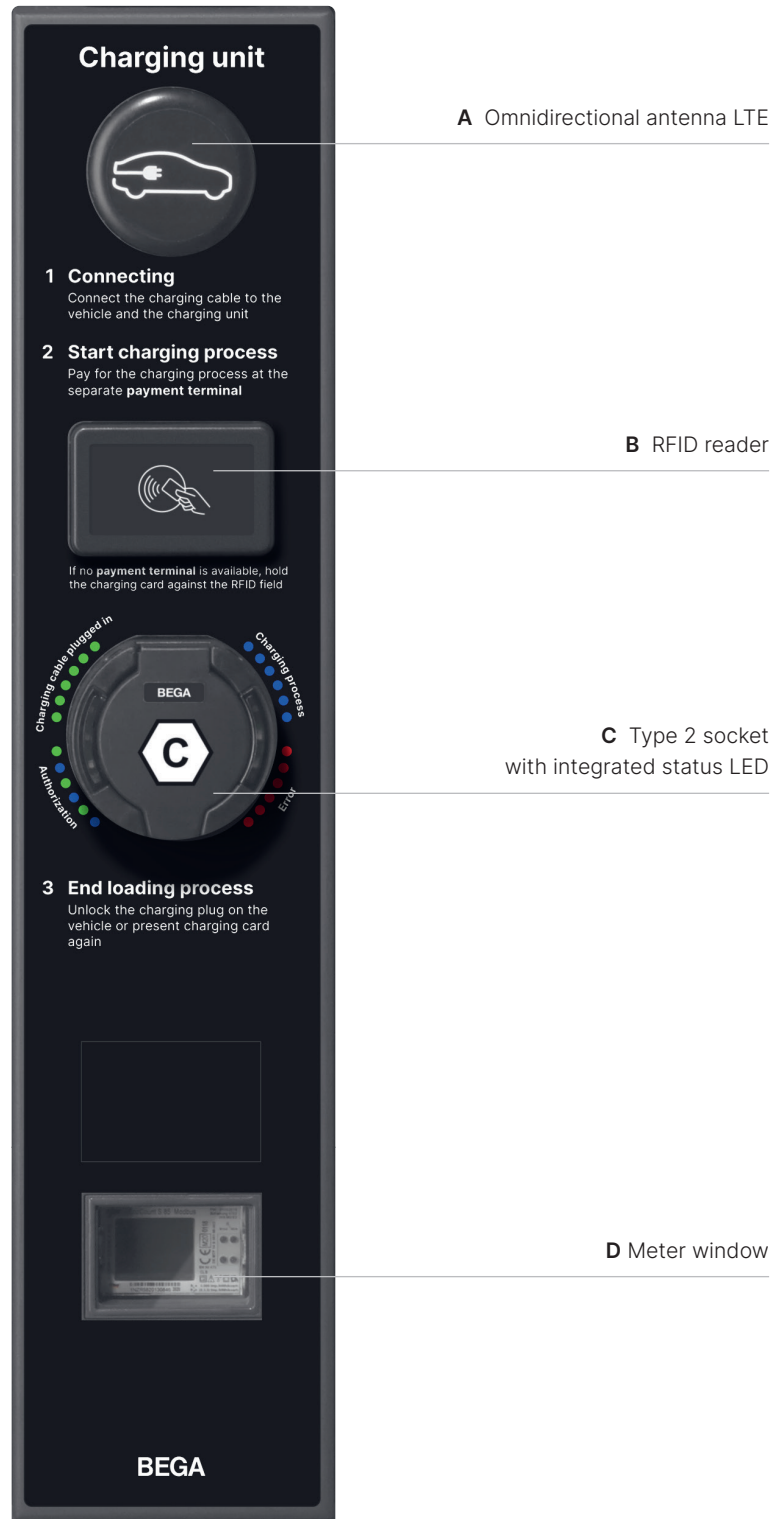
2.2 Safety instructions

- Before each charging process, check whether the charging cable or contacts of the charging plug are damaged. Do not use damaged charging cables. There is a risk of electrical shock!
- Never repair defective charging cables yourself.
- Before each charging process, check whether the vehicle inlet (plug of the vehicle) is damaged. Do not connect any charging cables with a damaged vehicle inlet.
- Make sure that the contacts of the charging plug do not come into contact with heat sources, dirt or water.

- Never reach into the socket of the charging station.
- Do not step on the charging cable or kink the cable.
- Make sure that neither children nor pets are allowed to come into the vicinity of the connected charging cable. Never let children play with the operating terminal and charging station.
- Do not pull the plug out of the socket by the cable. Pulling on the charging cable may damage the charging cable or the locking mechanism.
- Never remove the charging cable using force. Dangerous electrical arcs can cause serious injuries or death.
- Unwind the charging cable completely to prevent overheating.
- Only use standard-compliant charging cables (in accordance with Standard EN 62196-1, EN 62196-2 and EN 50620).
- Never open the payment terminal and charging station yourself. Only specialist personnel or persons acting under the instructions of specialist personnel are allowed to open the payment terminal and charging station.
- Do not use the charging cable with an extension cable or adapter.
- Always make sure to remove the charging cable from the vehicle before driving off.
- It is not permitted to make any changes to the payment terminal. There is a risk of electrical shock as well as damage to the payment terminal. Any violation will void the warranty with immediate effect.
- It is not permitted to make any changes to the charging station. There is a risk of electric shock as well as damage to the charging station. Any violation will void the warranty with immediate effect.
- Never clean the payment terminal and charging station with harsh cleaning agents, water-jet or steam-jet cleaners.
- Never submerge the charging cable in liquids.
- Only trained electricians are allowed to carry out installation, electrical connection, commissioning, maintenance and repair. The electrician must be registered in the directory of qualified installation technicians.
- If other specialised tasks are required for installation, the required activities may only be carried out by specialists who have been trained for this purpose.
- No liability is accepted for damages during transport if the product is transported in anything other than the original packaging.
- Observe the local safety regulations for the country in which you operate the device at all times.

3 Description of the charging unit





The following illustration shows the BEGA charging unit. Depending on the version ordered, the visual appearance may differ from the illustration.



4 Charging a vehicle

4.1 Meaning of the status LED colours

The BEGA charging station features a status LED which indicates the current status of the charging station. The colours of the status LED represent the following statuses:

-  LED shows a steady **green** light, the charging station is ready for use.
-  LED flashes alternately **green** and **blue**, authorisation and activation phase
-  LED shows a steady **blue** light, the electric vehicle is charging.
The current progress of the charging process can be read on the charging display in your vehicle.
-  LED shows a steady **red** light, the charging station has detected an error.

4.2 Connecting the charging cable

WARNING:

Make sure that the charging cable does not block any paths for other road users when it is connected with the charging station and vehicle.

WARNING:

Observe caution with the charging cable lying on the ground when the charging cable is connected with the vehicle and charging station. There is a risk of tripping.

Charging station with socket:

1. Make sure that the status LED of the charging point you would like to use shows a steady green light.
2. Connect the charging cable with the vehicle inlet of the electric vehicle.
3. Connect the other end of the charging cable with the socket of the charging station.
4. The charging plug will be locked automatically. The status LED continues to show a steady green light.

4.3 Authorisation & starting the charging process

4.3.1 Types of authorisation

You can use two different types of authorisation at the charging station:

- Via RFID chip or RFID card
- Via smartphone app

4.3.2 Starting the charging process with RFID chip or RFIC card

1. Make sure that the charging cable is connected with the electric vehicle and the charging station.
2. Hold the RFID card or RFID chip in front of the card reader or the symbol that can be found on the front of the charging station.
3. The charging station will be activated and the charging process will start immediately. The status LED lights up blue.

4.3.3 Starting the charging process via smartphone app

1. Make sure that the charging cable is connected with the electric vehicle and the charging station.
2. Start the smartphone app.
3. Find the desired charging station in the app.
4. Start the charging process.
The status LED now lights up blue.

4.4 Ending the charging process

Note: In the event of a power loss, the charging plug will be automatically unlocked due to the lock-release module.

4.4.1 Ending the charging process with RFID chip or RFIC card

1. Charging station with socket:
Once the desired charging level has been reached, end the charging process in your electric vehicle. To do so, either open the central locking mechanism of your vehicle or end the charging process at your charging station.
2. Note: Once the vehicle is fully charged, the vehicle will end the charging process automatically.
3. Disconnect the charging cable from the electric vehicle. Follow the instructions in the operator's manual of your vehicle.
4. Then disconnect the charging cable from the charging station.
5. Stow the charging cable carefully in your vehicle again.

4.4.2 Ending the charging process via smartphone app

Charging station with socket:

1. Once the desired charging level has been reached, end the charging process in your electric vehicle or via the app.
2. Disconnect the charging cable from the electric vehicle. Follow the instructions in the operator's manual of your vehicle.
3. Then disconnect the charging cable from the charging station.
4. Stow the charging cable carefully in your vehicle again.

5 Cleaning and care

CAUTION:

End the charging process before cleaning, care and maintenance work. Also disconnect the charging cable from any connected vehicle. Stow the charging cable in your vehicle.

You can clean the charging station as follows:

Wipe off the outside of the charging station with a dry cloth.

WARNING:

The charging station must not be cleaned with a water-jet or steam-jet cleaner. This can trigger a short circuit.

WARNING:

Do not use harsh cleaning agents. This can be harmful to health and cause damage to the charging station.

6 Inspection and maintenance

It is required by law for the charging station and accompanying sub-main distribution circuit to be inspected once a year for function and safety.

The inspection and maintenance of the charging station may only be carried out by the manufacturer or specialist partners certified by BEGA.

The results of the inspection will be issued to you in the form of a certificate, which you should file away carefully.

Please refer to Chapter 9, manufacturer warranty as well.

Further information regarding maintenance can be found in the separate installation guide.

7 Troubleshooting

Please note that as a user you are only allowed to carry out the troubleshooting activities listed in the following table by yourself. All other troubleshooting activities may only be carried out by qualified specialists.

Error description	Possible cause	Rectification
The charging process does not start. The status LED is still not lit up green.	The vehicle is not recognised.	First check that the plug is properly fitted at the vehicle and charging station if necessary. If the problem persists, check whether the vehicle displays an error message. If this is the case, bring your vehicle to the workshop. If it is determined in the workshop that the vehicle is not responsible for the error message, contact our support service (see Chapter 8).
	Charging cable defective	Use a different charging cable.
	Authorisation was not carried out by user.	Carry out the authorisation process (see Chapter 4.3).
Authorisation with the RFID card is not possible. A long acoustic signal sounds.	The RFID card is not registered for the charging point.	Use a registered RFID card or contact our support service (see Chapter 8).
The status LED lights up red. No charging cable is connected to the charging station.	General error.	Contact our support service (see Chapter 8).
The status LED suddenly lights up red during the charging process.	DC error or general error.	Remove the charging cable. If the status LED still lights up red, get in touch with our support service.
The status LED does not light up.	The charging station is not supplied with power.	Please contact the installer of your charging station.
	The status LED is defective.	Contact our support service (see Chapter 8).
After plugging in the charging cable, the status LED immediately lights up red.	The current carrying capacity of the charging cable is too low.	Use a charging cable with a higher current carrying capacity.
	The plug cannot be locked.	Reinsert the plug into the socket of the charging station correctly.
	There is a foreign object in the socket of the charging station.	Remove the foreign object from the socket of the charging station.
	The locking motor is defective.	Contact our support service (see Chapter 8).
The charging cable cannot be removed. The locking motor does not open.	The locking motor jams due to a premature removal attempt.	Insert the plug in the charging station as far as the stop. Then reconnect the charging cable with the vehicle. Then disconnect the charging cable from the electric vehicle and from the charging station.

8 Contact for support

You are welcome to contact our support desk by e-mail. We are happy to help you: support@bega.com

9 Manufacturer warranty

If the charging station has evident defects on delivery/ installation, please notify us without delay by phone or e-mail. If you identify any physical or optical damages when the charging station is delivered, please send us pictures of the damaged charging station. This allows us to process warranty claims as fast as possible.

9.2 Warranty conditions

The charging station is covered by a two-year statutory warranty obligation.

We grant the manufacturer's warranty to you under the following conditions:

1. The prerequisite for warranty coverage is installation and annual maintenance (including maintenance certificate) of the BEGA product by a certified BEGA specialist partner.
2. BEGA may decide at its due discretion whether the warranty is fulfilled in the form of repair or by replacement of the device or defective part. Other claims are excluded.
3. Warranty repairs may only be carried out by BEGA. For repairs that are carried out by other dealers, there is no entitlement to reimbursement of costs under the warranty.
4. If the device is operated in a different country from the country for which it was originally developed and produced, modifications may need to be made to the device in order to adapt it to the technical and/or safety standards of this other country. Such modifications cannot be attributed to material or processing defects in the devices and are not covered by this warranty. The costs of such modifications and damages caused to the device as a result will not be reimbursed.
5. The warranty does not include:
 - The costs of regular inspections, maintenance or for repair or replacement of parts due to normal occurrence of wear;
 - Transport and travel costs as well as costs incurred during assembly and dismantling of the device;
 - Damages that are caused by misuse and improper use of the device as well as incorrect installation;
 - Damages that are caused by lightning, water, fire, force majeure, war, incorrect mains voltage, insufficient ventilation or other reasons for which BEGA is not responsible.

6. This warranty is product-specific and can be claimed within the warranty period by any person who has lawfully acquired the device.
7. The buyer's statutory rights regarding quality defects which are granted under the purchase agreement are not restricted by this warranty.

You can find more information under the phone number +49 (0) 23 73 - 966-0.

9.3 Occurrence of a warranty claim

When submitting warranty claims, the customer must provide:

- The maintenance certificate,
- The original invoice, or sales receipt issued by the dealer, or other corresponding confirmation
- The serial number on the device

BEGA Gantenbrink-Leuchten KG may decide at its due discretion whether the warranty is fulfilled in the form of repair or by replacement of the device or defective part. Other claims are excluded.

You can find more information under:

Phone +49 (0) 23 73 - 966-0

www.bega.com

10 Disposal

Please note that this product may not be disposed of along with normal household waste. The product must be brought to an established collection and recovery point designated for the delivery and recycling of electric and electronic devices. In the process, you must observe all applicable national and local legal regulations. You can find more information in this regard from your local authorities.

For safety reasons, only a qualified electrician or BEGA specialist partner is allowed to dismantle the charging station.

Ask your contact person whether they will carry out disposal on your behalf.

11 Technical data

Output class 22 kW

Model	Charging
Number of charging points	1
Charging capacity per charging point	22 kW
Voltage	400 V
Current	32 A
Phases	3-phase
Authorisation	App, RFID
Socket	Type 2
Dimensions of charging station (H x W x T)	1260 x 570 x 180 mm
Weight charging station	approx. 17 kg
Contactors	4-pole, 40 A
Control fuse	1-pole, B6
Integrated safeguards	RCM module DC error detection 6 mA, welding detection, lock-release module
RCD	Not integrated (required in sub-main distribution circuit, recommended protection: Type A 0.03 A / 40 A) Here we recommend BEGA 71306
Maximum back-up fuse	Not integrated (required in sub-main distribution circuit, recommended protection: B16 A for 11 kW / B32 A for 22 kW) Here we recommend BEGA 71306
Overvoltage protection	Not integrated (required in sub-main distribution circuit, recommended protection: at least Type 2, must be determined and selected on site depending on the system properties. Here we recommend: BEGA connection box 71306
DC tripping current $I_{\Delta dc}$	0.006 A
Energy meter	Yes
Precision class	in accordance with EN 50470-1 (Class A)
OCPP connections	OCPP 1.6 JSON
Interfaces (internal)	RS485
Interfaces (external)	Ethernet RJ45, GSM/UMTS
Protocols (internal)	Modbus RTU
Protocols (external)	Modbus TCP, OCPP 1.6 JSON
Adjustable	Yes (digital input, Modbus TCP and OCPP 1.6 JSON)
Status in accordance with EN 61851-1	Status D with ventilation is not supported.
Storage temperature range	-30 to +70 °C
Operating temperatures range	-25 to +45 °C
Rel. humidity	5 to 95 % (non-condensing)
Safety class	1
Protection class	IP 54
Impact resistance	IK 8
Nominal voltage U_n	230 V / 400 V AC
Rated operating voltage U_e	220/380–240/415 V 3N
Rated isolation voltage U_i	500 V
Rated dielectric strength I_{imp}	4 kV
Overvoltage category	Depending on the variant of overvoltage protection used
Rated current of a charging point I_{nc}	Safeguarded at 32 A on the load side, 6 A on the control side
Rated short-term current capacity I_{pk}	<6 kA
Rated short-term current I_{cw}	6 A
Rated conditional short-circuit current I_{cc}	32 A
Nominal frequency f_n	50 Hz
Degree of contamination	3
System by type of earth connection	TN or TT
Installation site	Indoor and outdoor installation
EMC classification	Class B
Mechanical ambient conditions according to the requirements of MessEV (compliant with calibration regulations)	M1
Electromagnetic ambient conditions according to the requirements of MessEV (compliant with calibration regulations)	E1

12 Guidelines and standards

The following guidelines and standards were observed:

- **Guidelines**
- Low Voltages Directive 2014/35/EU
- EMV Directive 2014/30/EU
- ROHS Directive 2011/65/EU
- WEEE Directive 2012/19/EU

- **Standards**
- EN 61851-1
- EN 61439-7
- EN 61000-6-2
- EN 61000-6-3
- EN 61000-3-2
- EN 61000-3-3

13 Glossary

Unfortunately, the use of specialist terms cannot always be avoided. For this reason, you will find a brief explanation of some specialist terms and abbreviations in our glossary:

Vehicle inlet

The vehicle inlet of the electric vehicle accommodates the charging plug of the charging cable. In a certain sense, the vehicle inlet is the socket of the electric vehicle.

Charging mode 3

Charging mode 3 is used for one-phase or three-phase charging with alternating current for permanently installed charging units. The charging process with alternating current is controlled by the communication between charging station and vehicle. The charging station is able to detect, among other things, the charging capacity of the charging cable, any interruption of the charging process as well as the maximum available charging current.

Automatic cutout

Automatic cutouts (also known as circuit breakers) separate the power circuit from the mains if an overload or short circuit causes the power to exceed a specific value.

Lock-release function

The lock-release function ensures that the charging plug automatically unlocks if there is a power loss during the charging process.

RCD (Residual-current circuit device)

RCD or residual current devices are fault-current protection devices that interrupt a power circuit when a fault current is detected. This can occur if a small portion of the current is discharged by the human body and does not flow back into the power circuit via the RCD. RCDs are triggered by 30 mA at the latest.

Safety socket

Safety socket refers to a common household socket with 230 volts.


Welding detection

The welding detection identifies whether the contacts of the contactor have become welded (stuck together) due to a defect. In the event of a welding error, a dangerous voltage will be maintained and the status LED will light up red.

Sub-main distribution circuit

The sub-main distribution circuit is used to distribute the current within a building. It is located in the fuse box and is made up of various switch and fuse elements.

14 Commissioning

 Before commissioning the installation, a commissioning inspection must be carried out in accordance with DIN VDE 0100-722!

BEGA Gantenbrink-Leuchten KG

PO Box 3160 · 58689 Menden
Hennenbusch 1 · 58708 Menden

Germany

Phone +49 2373 966-0
info@bega.com · www.bega.com