



TECHNIVOLT

Installation instructions



TECHNIVOLT 1100
1100 SMART
2200 SMART

Charging station for charging
electric vehicles



Table of contents

Introduction	4
Intended use.....	4
Symbols used in this manual.....	5
Symbols used on the unit.....	5
Warning signs in this manual	6
Safety information	7
Safety instructions for people with pacemakers.....	9
Information about the charging station.....	10
Scope of delivery	10
Operating elements and connections	11
Type plate.....	12
Identification of the product variants	13
Device dimensions	13
Installation requirements.....	14
Location selection	14
Space requirement for wall mounting	16
Electrical connection	17
Mains infeed.....	17
Circuit breaker	17
Residual current circuit breaker (RCD).....	18
Load management	18
OCPP backend connection.....	18
Installing the charging station.....	19
Removing the installation flap.....	19
Wall mounting.....	20
Electrical installation	23
Mains connection.....	24
Network connection	25
Completing the installation	26
Mounting the installation flap.....	26
Mounting the front glass panel.....	27
Implementation.....	28
Delivery status.....	28
Final inspection.....	29
LED status indicator	30

Charge controller	32
Access to the configuration interface	32
Access via WLAN hotspot.....	32
Access via Ethernet.....	33
Alternative	33
Access via backend	33
Login / Register	34
Configuration interface	36
Dashboard.....	38
Network.....	40
GSM.....	40
LAN	42
WLAN.....	44
WLAN configuration hotspot.....	46
NTP	46
Backend	47
Connection	47
OCPP	47
Other	49
Energy meter.....	50
Banner gateway.....	51
Authorisation	52
Free charging	52
Overview.....	53
RFID settings.....	54
RFID whitelist.....	55
HLC 15118	56
Whitelists.....	57
Load management.....	58
Local	58
Modbus	58
SMA Sunny Home Manager Interface	59
EEBUS	60
Dynamic load management.....	61
ASKI via OCPP-S.....	65
Installation.....	66
General installation.....	66
Safety & Security.....	67
Hardware Usage Meter Settings.....	67
System.....	68
Overview.....	68
Password.....	69
System information	69

System maintenance	69
Firmware update	69
Factory settings.....	70
Shutting down and restarting the charging station.....	70
Dismantling the charging station	71
Disposal	71
Technical data.....	72
General	72
Input/power connection	72
Output/vehicle connection.....	72
Fuses.....	72
Communication/Protocols.....	73
Network/Ethernet.....	73
Network/WLAN	73
RFID card	73
Mobile communication.....	73
MID energy meter.....	74
Mechanical properties	74
Operating conditions	74
Storage conditions	74
Appendix.....	75
CE mark and declaration of conformity	75
Contact address	75
Software licences	75
Service instructions.....	75

Copyright

The information provided in this document has been checked with great care. However, no liability or guarantee can be assumed that all information is complete, correct and up-to-date at all times. You can find the current version of the manual in PDF format in the corresponding product area of the [TechniSat home page](#)..

All contents of this document, in particular texts, photographs, and graphics, are protected by copyright. Copying and reproduction of this document, even in part, requires the written approval of the publisher.

TechniSat is a registered trademark of:

TechniSat Digital GmbH

Julius-Saxler-Str. 3
D-54550 Daun, Germany

TechniVolt is a registered trademark of:

TechniVolt GmbH

Julius-Saxler-Str. 3
D-54550 Daun, Germany

Feedback on this manual

If you have any suggestions for a better design or if you are missing information in the instructions, please send your suggestions to:

techdoc@technivolt.de

Introduction

This manual describes the mechanical and electrical installation of the following charging station models:

TECHNIVOLT 1100

TECHNIVOLT 1100 SMART

TECHNIVOLT 2200 SMART

It is intended for a qualified electrician who, on account of his/her technical training, knowledge and experience, and knowledge of the applicable standards, can assess and execute the working steps described in these instructions, and detect any possible dangers that may be associated them.

These operating instructions are an integral part of the product and must be kept safely for its entire service life.

Intended use

The **TECHNIVOLT** charging station is a power supply unit for electric vehicles, intended for connection to an AC mains supply. The charging station is designed exclusively for charging electric vehicles using charging mode 3 (Mode 3 in accordance with the IEC 61851-1 standard. Connecting other devices is not permitted.

The connection to the electric vehicle is established using a permanently attached type 2 vehicle connector charging cable according to standard IEC 62196-2.

The **TECHNIVOLT** charging station is a piece of equipment that is permanently installed (surface-mounted) and intended for installation at locations with restricted access (e.g. private properties, company car parks, depots).

The intended use of this device always includes compliance with the operating instructions (see "Operating conditions" on Page 74).

Any use of the **TECHNIVOLT** charging station that is not in accordance with its intended use is not permitted and will result in the exclusion of warranty, guarantee, and liability.

Symbols used in this manual

Symbol	Meaning
	General warning symbol
	Warns about electric danger
	Disconnect the power before working.
	Indicates tips and recommendations
•	Bullet point/List entry
<input checked="" type="checkbox"/>	A condition has been met.
➤	Step
1, 2, 3...n	Steps with a fixed sequence
↳	Result of a step
	Menu only visible if condition is met

Symbols used on the unit

Safety signs are affixed to the charging station and must be complied with.

Symbol	Meaning
	Read the installation instructions before you open the charging station or start installation of the charging station.
	A dangerous electrical voltage may be present inside the charging station after opening the housing.
	The appliance bears the CE mark - see "CE mark and declaration of conformity" on Page 75.

Warning signs in this manual

The following symbols and warning signs are used in this manual and must be observed.

Warnings prevent life-threatening or fatal injuries.

Observe all notes and follow all instructions.



DANGER

Indicates a danger that can lead to death or severe injury if not avoided.



WARNING

Indicates a dangerous situation that can lead to death or severe injury if not avoided.



CAUTION

Indicates a hazardous situation with low risk which, if not avoided, may result in minor or moderate injury or damage to property.

NOTE

Indicates an important piece of information and/or special feature relating to specific steps and circumstances.

Safety information

**DANGER****Danger to life from electrical power.**

There is an immediate danger to life by electrocution if you touch live parts.

All assembly and installation work should be carried out by an expert electrician. A skilled person is someone who, on account of their technical training and experience, has adequate knowledge in the field of the installation to be tested, and who is acquainted with the applicable governmental safety at work regulations, accident prevention regulations, guidelines and the generally-accepted rules of technology (e.g. DIN standards, VDE stipulations) to an extent whereby they can assess the safe working status of the installation. Skilled persons can be persons such as works engineers, master craftsmen, technical staff, and fitters.

The person carrying out the installation must be fit for the work involved in accordance with DGUV Regulation 103-011 "Working on live electrical systems and operating material".

**WARNING**

Never permit persons (including children) with limited physical, sensory, or mental capacities, or with a lack of experience and/or knowledge, to use the electrical equipment unsupervised!

➤ **Failure to observe this warning may result in death or serious injury.**

For your own protection, please read through the safety instructions carefully prior to installation.

The manufacturer accepts no liability for damage caused by inappropriate handling or by failure to comply with the safety precautions.

These operating instructions must be safely retained for consultation at a later date.

- The charging station must be connected and approved for operation in accordance with local rules and regulations.
- For charging stations with power ratings of more than 3.7 kVA and less than 12 kVA, there is an obligation to notify the grid operator.
- Check the voltage stated on the type plate and only use the charging station with a suitable power supply voltage.
- Do not continue using the device if you are unsure whether it is functioning correctly, or if you suspect it may be damaged. In this case, switch it off! Switch the line and residual current circuit breaker to OFF. Contact your local distributor.
- The ambient temperature must be between -25 °C and $+50\text{ °C}$, out of direct sunlight, and the relative humidity must be between 5% and 95%. The charging station must be only used within these operating conditions.
- The device is intended only for the charging of electric vehicles that can be charged without ventilation.
- The charging station must only be operated when mounted vertically.
- The charging station must be mounted on a non-combustible, smooth surface.
- The charging station must not be installed in enclosed cabinets.
- The charging station must not be installed in areas where there is a risk of flooding.
- Do not use the charging station in places where explosive or flammable substances (e.g. gases, liquids, or dust) are stored or are present.

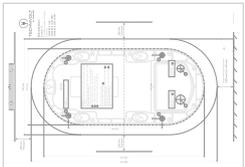
- The device is designed for use both indoors and outdoors. If the device is to be installed outdoors, all the connection devices for outdoor operation must be designed and properly installed so as to ensure that the prescribed IP protection rating is retained.
- The charging station must not be used with a cable extension, thus avoiding the risk of fire or electric shock.
- Vehicle adapters must not be used to connect a vehicle coupling to a vehicle connector.
- A damaged charging station must be immediately taken out of service.
- A damaged charging cable or charging plug must be replaced immediately by a qualified electrician.
- The charging station may only be repaired by a qualified electrician.
- When repairing the charging station, only system parts approved by the manufacturer may be used.
- It is forbidden to make any changes to the housing, the charging cable, or the internal circuitry. In the event of non-compliance, any claim to liability and warranty shall be void.
- Signs and markings affixed by the manufacturer must not be altered, removed or made unrecognisable.

Safety instructions for people with pacemakers

Electromagnetic fields can influence and interfere with a pacemaker or an implantable defibrillator (ICD).

We recommend that people fitted with a pacemaker or defibrillator consult their doctor before using this product.

Information about the charging station Scope of delivery

<p>1 x TECHNIVOLT charging station variant</p> 	<p>1 x front glass panel</p> 
<p>1 set of assembly instructions</p> 	<p>1 x instruction manual</p> 
<p>1 x drilling template, DIN A1</p> 	<p>2 x user RFID cards</p> 
<p>1 x angle wrench, Torx-TR 20</p> 	<p>Mounting kit 4 x Fischer SXRL 8 x 60 FUS A4</p> 
<p>1 x locking screw for glass panel, Torx-TR 20 M4</p> 	<p>2 x M25 gasket, network</p> 

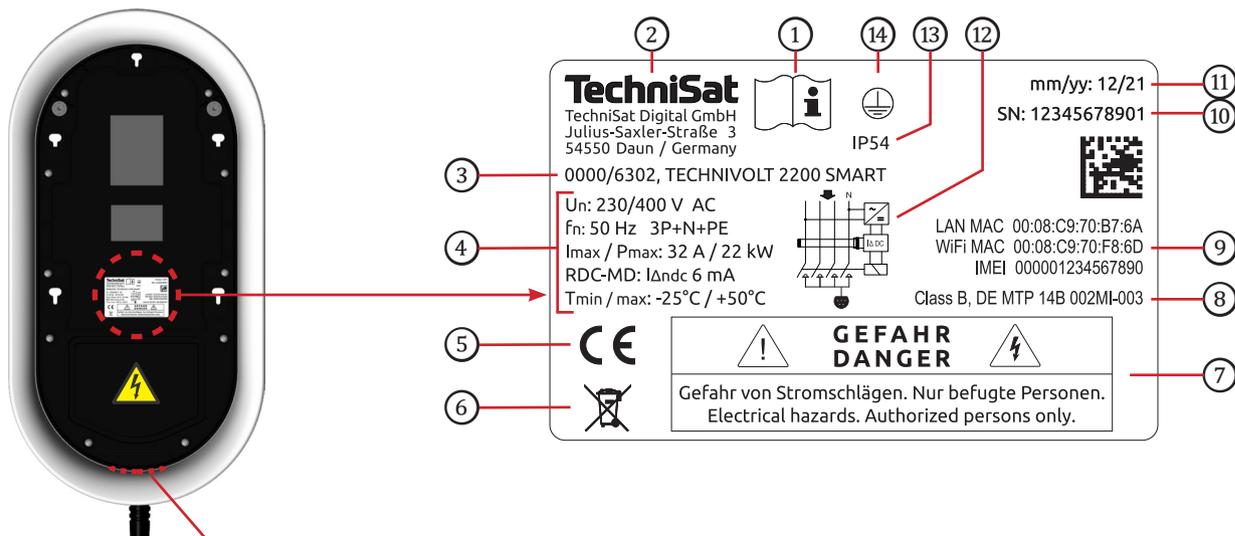
Operating elements and connections



1	Light ring, LED status display
2	RFID reader and brightness sensor
3	MID energy meter (SMART only)
4	Type plate
5	Installation flap
6	Front glass panel
7	Charging cable with charging plug type 2
8	Mains supply input, M32
9	Charging cable input
10	Network/Ethernet input, M25

Type plate

The type plate is located on the front of the charging station, below the front glass panel. The following image shows all the details on the type plate.



In the final assembled state with the front glass panel, the charging station can be identified via an additional marking below the front glass panel.



1	Note to "Read instructions"	8	MID marking
2	Manufacturer	9	MAC and IMEI
3	Item no. and model designation	10	Serial number (bar code)
4	Technical data	11	Date of manufacture
5	CE marking	12	RCD-MD switching symbol
6	Disposal instructions	13	Protection class

7 Safety advice

14 IEC protection class

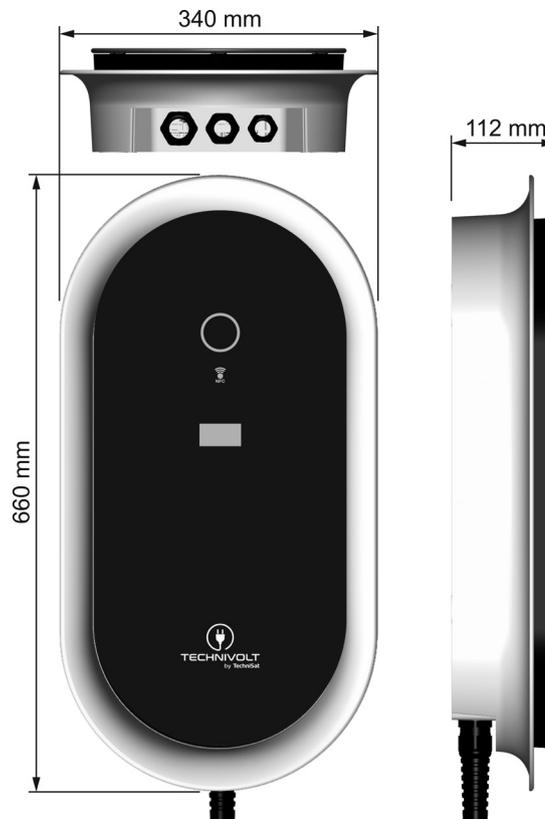
Identification of the product variants

The **TECHNIVOLT** charging station is available in different versions, which differ electrically and are equipped with different functions.

Identify your product using the item no. on the type plate (see section "Type Plate" on Page 12).

Variants TECHNIVOLT	Charging cable Length	Item no.	Charging power	MID
1100	5 m	0000/6300	11 kW	No
	7.5 m	0007/6300	11 kW	No
1100 SMART	5 m	0000/6301	11 kW	Yes
	7.5 m	0007/6301	11 kW	Yes
2200 SMART	5 m	0000/6302	22 kW	Yes
	7.5 m	0007/6302	22 kW	Yes

Device dimensions



Installation requirements



Good preparation accounts for half of the installation. Therefore, you must observe all installation criteria.

- The charging station is suitable for indoor and outdoor installation.
- The location of the charging station at the charging point shall be designed in such a way that operation of the charging station and access to the connection point on the electric vehicle are ensured without any difficulty.
- The charging station should ideally be installed on the same side as the charging socket on the vehicle. The usual parking direction must also be taken into account.

A light at the charging point is useful. This will make it easier to charge the electric vehicle at dusk or in the dark.

Location selection

When selecting a location, ensure that the electric vehicle can be parked at a suitable distance from the charging station and that the charging cable can be connected without tension.

If possible, mount the charging station in such a way that it is protected from direct sunlight, to prevent the unit from overheating.

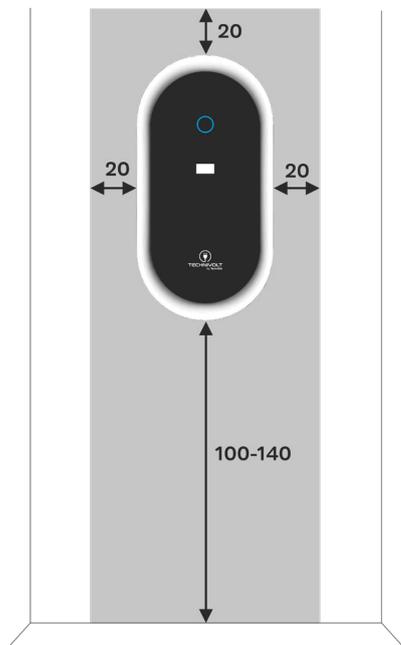


The charging current may be reduced or charging may be interrupted due to the overheating of the unit.

For outdoor locations, it is recommended that you install a canopy to protect the charging station from rain.

- The location for the charging station is deemed suitable if:
 - there is a sufficient power supply available.
 - the mounting surface has sufficient strength to withstand the mechanical load.
 - the mounting surface is not combustible.
 - the mounting surface is flat, so as to avoid bending the enclosure.
 - no falling objects can damage the charging station.
 - no explosive or flammable substances are stored or are present on it (e.g. gases, liquids, or dusts).
 - no direct water jets can hit the charging station (e.g. garden hose, high-pressure cleaner).
 - it is located away from areas at risk of flooding.
 - the charging cable does not have to be routed across traffic routes.
 - the positioning of the charging station does not obstruct any thoroughfares, in particular, if it is possible that wheelchairs may need to pass, and the charging cable does not obstruct or impede the passage of wheelchairs.
 - the charging cable can be connected to the electric vehicle without any difficulty. The charging cable must not be under mechanical tension and must rest on the floor.
 - it is not located close to playgrounds (playing children!).

Space requirement for wall mounting



The TECHNIVOLT charging station is surface-mounted.

The space requirement for the TECHNIVOLT charging station is 34 cm x 66 cm, plus the clearance and mounting height (grey area).

- ☑ Allow a free space of 20 cm on each side, to the left, right and above the TECHNIVOLT charging station, so that the charging cable can be comfortably wound around the integrated cable holder.
- ☑ The recommended mounting height is 100 - 140 cm, measured from the floor to the lower edge of the charging station.
- ☑ The mounting height should, in any case, be selected so that a vehicle cannot drive into the charging station.

Electrical connection

When connecting charging devices for electric vehicles to the low-voltage grid, the grid operator's technical connection conditions and, in particular, the current DIN VDE 0100, VDE AR N 4100, VDE AR N 4101, VDE AR N 4102, DIN EN 61000-3-2, and DIN EN 61000-3-12 standards, as well as the D-A-CH-CZ guideline, must be observed.

Mains infeed

- Each charging station must be connected via its own mains supply line.
- The mains supply line infeed can be surface-mounted or flush-mounted.
- A mains cable with an external diameter of between 13 mm and 21 mm can be inserted into the charging station.
- It must be assumed that each charging station will be operated at full power (simultaneity factor = 1.0).
- The charging station can have a single-phase or three-phase connection. Charging equipment for electric vehicles with a rated power of > 4.6 kVA must always have a three-phase connection in the three-phase system.
- Dimension the conductor cross-section on the basis of the charging station's rated current (see type plate), the cable length (cable losses), and the ambient conditions.



We recommend that the mains supply line be designed for a 22 kW charging power to allow for future upgrades, regardless of the charging station or the electric car currently in use. This will allow an 11 kW charging station to be exchanged for a 22 kW charging station with little effort.

Circuit breaker

- Each charging station must be protected by its own circuit breaker with disconnection at all phases.
- The rated current of the circuit breaker should be selected according to the rated current of the charging station (see type plate) and the ambient conditions.

- The rated current of the circuit breaker must correspond to the rated current of the charging station.

Residual current circuit breaker (RCD)

- A type A residual current device with a rated differential current not exceeding 30 mA shall be provided for each charging station and shall be installed in the upstream final circuit.
- The rated current of the RCD must be selected to match the circuit breaker.



The **TECHNIVOLT** charging station has an integrated, patented, electronic system for the detection of smooth DC residual currents $I_{\Delta n} \geq 6$ mA. This, in conjunction with an upstream type A, 30 mA RCD, replaces the need for a type B RCD.

Load management

If a car park is supplied with multiple charging points (charging stations), the building connection, the supply line, or the branch of a sub-distribution unit is the limiting factor concerning the charging current at the charging point. This limit represents the upper limit of the charging current to be distributed.

Using load management, **TECHNIVOLT** offers the ability to optimally align the charging currents of multiple charging points with the available electrical supply.

- A network connection (LAN, WLAN) between the units is a prerequisite for setting up load management .
- When using LAN, each charging point must be connected to a switch via an Ethernet line.
- When using WLAN, the wireless range can be a limiting factor (charging points too far apart).
- The Ethernet cable can be fed in, either surface-mounted or flush-mounted.

OCPP backend connection

- For the OCPP backend connection with the **TECHNIVOLT** charging service, a GSM connection is required at the installation site.

Installing the charging station

Dismantling of the charging station must always be carried out by a qualified electrician.



CAUTION

Risk of injury due to the charging station falling down

➤ Assembly of the charging station requires at least 2 people.

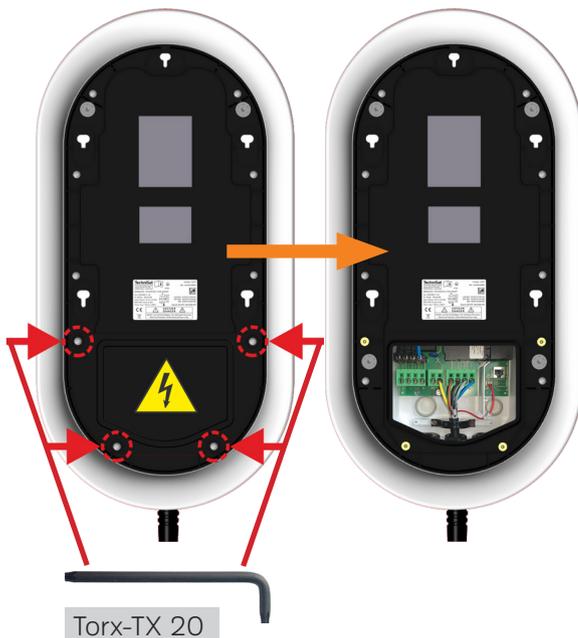
☑ The "Installation requirements" on Page 14 have been observed and are fulfilled.

Removing the installation flap

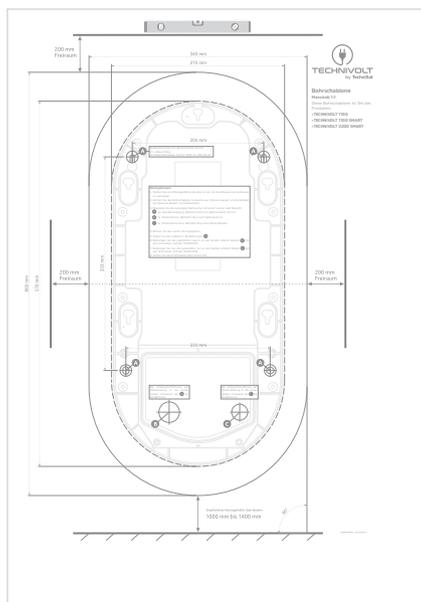
Remove the installation flap of the charging station to access the connection points later during the installation process.

➤ Completely loosen the 4 screws marked in red in the fig. on the left, using the Torx-TX 20 angle wrench to remove the installation flap.

➤ This gives you access to the mains connection terminal and the Ethernet connection.



Wall mounting



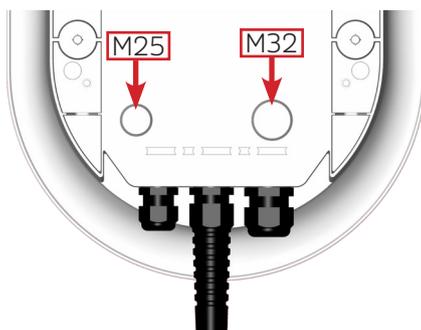
Mount the charging station horizontally on the mounting surface.

1. Use the supplied drilling template to mark the fixing holes for wall mounting.

NOTE

Follow the installation instructions on the drilling template!

- Choose a mounting surface that is level to avoid bending the enclosure.
- Align the drilling template horizontally with a spirit level and secure it with adhesive tape if necessary.
- Mark the required drill holes with a centre punch or pencil. If the mains cable or Ethernet connection are inserted via the rear of the charging station (flush-mounted feed), mark these positions as well.
- Drill all holes as indicated on the drilling template.



View from the rear

2. Run the mains cable and, if necessary, the network cable (Ethernet) up to the installation point of the charging station.

- If the cable is being fed through the back of the charging station, the corresponding cable diaphragm bushings on the back of the charging station must be pierced (see fig. on the left).

M32, cable diaphragm bushing for the mains supply line

M25, cable diaphragm bushing for the network cable

Use a pointed object, e.g. a small screwdriver, to pierce the diaphragm.

3. Place the 4 dowels into the holes for wall mounting.

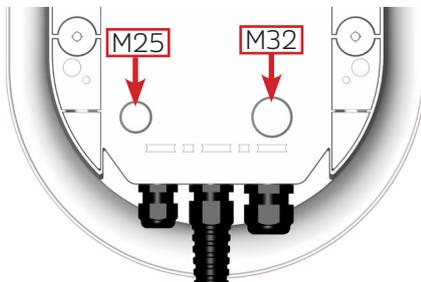


Use the dowels included in the scope of delivery. These are suitable for mounting in:

- Vertically perforated brick
- Aerated concrete
- Lightweight concrete hollow block
- Perforated sand-lime brick
- Thermal insulation blocks
- Solid block of light and normal weight concrete
- Solid brick
- Solid sand-lime brick
- Concrete \geq C12/15
- Natural stone with a dense structure
- Solid plaster boards

When mounting onto other building materials, you must use dowels that are suitable for this purpose.

4. When feeding cables through the back of the charging station, insert them through the correct cable diaphragm bushings.



View from the rear

- M32**, cable diaphragm bushing for mains supply cable
- M25**, cable diaphragm bushing for Ethernet cable

NOTE

After the cables have been inserted through the diaphragm bushings, make sure that the diaphragm bushings are seated correctly!

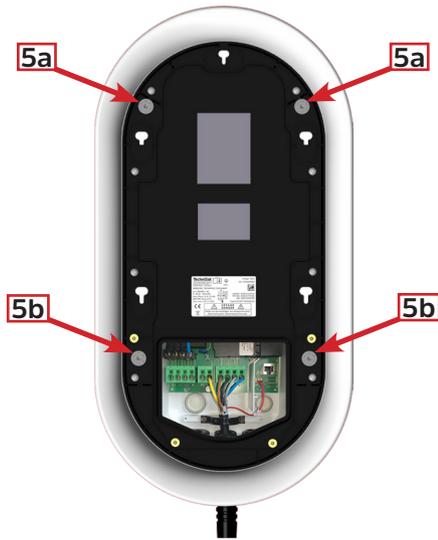
5. Screw the charging station to the mounting surface.



Use the mounting screws included in the scope of delivery.

All 4 mounting screws must be used.

Installing the charging station



- 5a.** First fix the charging station to the two upper dowels using the screws, TX30/SW10 drive. Do not tighten the screws completely yet.
- 5b.** Now fix the charging station to the two lower dowels using the screws, TX30/SW10 drive. Do not tighten the screws completely yet.
- 6.** Now tighten the mounting screws crosswise (approx. 4 Nm).

Electrical installation

Electrical dismantling must always be carried out by a qualified electrician.

**DANGER****Danger to life from electrical power.**

There is an immediate danger to life by electrocution if you touch live parts.

- Disconnect the power to the installation before starting work.
- Observe the 5 safety rules to avoid electrical accidents:
 1. Disconnect
 2. Secure against restarting.
 3. Verify that the power is off.
 4. Earth and short-circuit.
 5. Cover or cordon off any adjacent live parts.

NOTE

Upon delivery, the charging current is the nominal current indicated on the type plate. If the charging station is operated below the nominal current, the charging current must be reduced (adjusted) at the charging station. To adjust the charging current, see the chapter on the charge controller under "Installation current limit [A]" on Page 66.

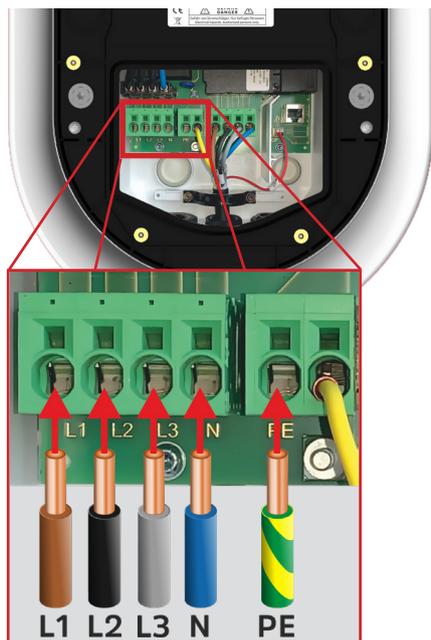
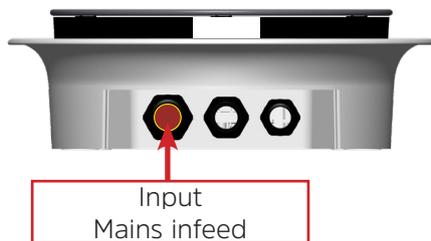
Example:

22 kW charging station is to be converted to an 11 kW charging station by changing the value. To do so, the maximum charging current must be adjusted from 32 A to 16 A.

NOTE

The charging station can also have a single phase connection. In this case, the rated power specified for the charging station will not be reached.

Mains connection



- ☑ The charging station is mounted.
- ☑ The mains supply cable has been passed into the charging station.
- ☑ The requirements regarding "Electronical connection" on Page 17 have been observed and fulfilled.

- Surface-mounted, cable feed from below.

1. Open the cap nut on the left M32 cable gland.
2. Remove the red sealing plug from the cable gland.
3. Guide the mains cable through the M32 cable gland.
 - 3a. Strip the mains cable to a core length of 14 cm.
 - 3b. Strip all wires to 18 to 19 mm!

4. Insert the cores into the connection terminals. The cores can be inserted into the connection terminals without tools.

When plugging in the connecting cable, make sure that the terminals are correctly assigned (observe clockwise rotating field!).

Mains connection Terminal	Core colour, mains supply line	
	3-phase	1-phase
PE		
N		
L3		
L2		
L1		

5. Securely retighten the cap nut of the cable gland. The seal of the cable gland must seal around the mains supply line. Only then is the IP54 protection class maintained.

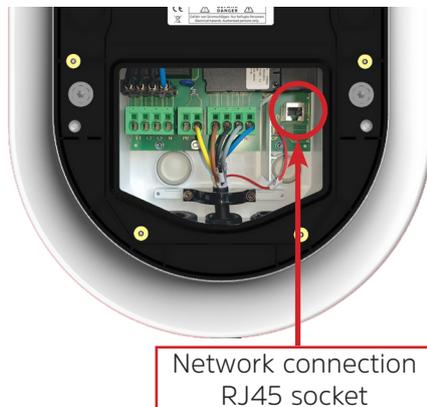
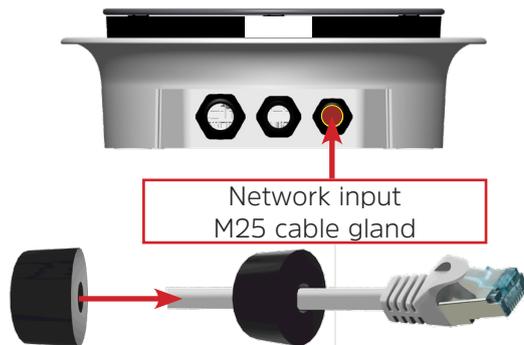
Network connection

The network connection allows the charging station to be connected to an existing Ethernet network.

- ☑ The charging station is mounted.
- ☑ The network cable has been passed into the charging station.



Use a shielded network cable. See under technical data "Network/Ethernet" on Page 73.



- Surface-mounted, cable feed from below.
1. Open the cap nut on the right-hand M25 cable gland.
 2. Remove the red sealing plug from the cable gland.
 3. Use the seal from the supplied accessories and place it around the network cable (cable diameter must match the seal).
 4. Feed the network cable through the M25 cable gland (if the RJ45 plug is already fitted, then attend to this first).
 5. Connect the network cable to the RJ45 network connection socket.
 6. Push the seal all the way back into the cable gland.
 7. Securely retighten the cap nut of the cable gland. The cable gland seal must seal around the network cable. Only then is the IP54 protection class maintained.

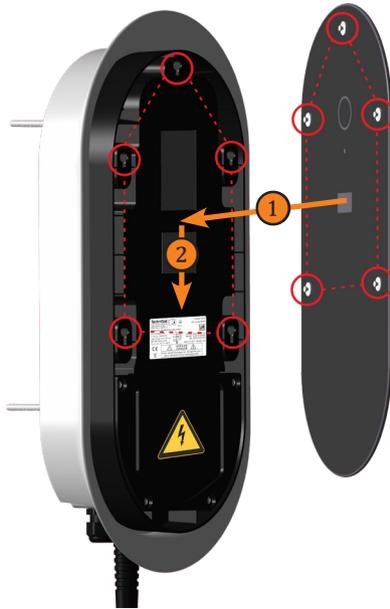
Completing the installation Mounting the installation flap

Mount the previously removed installation flap with the associated 4 Torx-TX 20 screws.

- Tighten the screws crosswise (max. 1 Nm).



Mounting the front glass panel



The installation flap is mounted.

1. Hook the glass panel onto the counter bearings of the charging station using the mushroom head connectors and
2. push downwards until they engage.

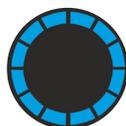


3. Now screw the Torx-TR 20 M4 locking screw and washer (included in the scope of delivery) into the threaded bush above the front glass panel using the Torx-TR 20 angle wrench.

Implementation

Perform the following steps to put the charging station back into service:

1. Switch on the upstream line protection switch.
2. Switch on the upstream residual current device.



The charging station is now being supplied with power. Once the charging controller has booted up, the charging station is ready to charge electric vehicles - the blue illuminated ring indicates this.

Delivery status

Upon delivery, the charging station is preconfigured for free charging (no authorisation required).



If you want to switch to authorised charging via RFID card, the RFID cards must be recorded in the "Local Whitelist". See the chapter "Local whitelist" on Page 57. There are 2 RFID cards included within the scope of delivery:

The maximum current [A] delivered by the charging point corresponds to the nominal current I_{max} indicated on the type plate.



If the charging station is operated below the rated current, the charging current must be reduced (adjusted) at the charging station. If, for example, a 22 kW charging station is to be restricted to 11 kW (KfW 440), the charging current must be changed by changing the value. Adjustment of the charging current from 32 A to 16 A. To change the charging current, read the chapter on the charge controller at "Installation current limit" on Page 66.

The charging station is set for 3-phase connection.



If the charging station has a single-phase connection, the system must be changed from three-phase to single-phase. To change the setting, read the chapter on the charge controller, "Number of phases connected to the charging point" on Page 66.

Final inspection

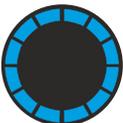
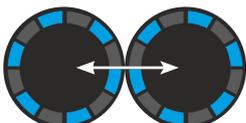
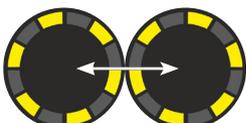
Electrical systems and equipment must be checked for proper condition before being put into operation for the first time.

- Following completion of the installation, an initial test must be performed on the charging station in accordance with DIN VDE 0100-600.

Commercial and public charging stations are subject to mandatory testing in accordance with DGUV V3.

- After completion of the installation, a professional and recognised test must be carried out in accordance with DGUV V3.

LED status indicator

Status of the LED		Status of the charging station
	Constant blue	Charging device is ready for charging.
	Bottom two LEDs constant blue	The charging station has been blocked by the operator via OCPP and cannot be used in this state.
	Flashing Blue every 2 seconds	Electric vehicle is connected. The charging station waits for authorisation of the RFID card.
	Rotating Blue	RFID card has been held in front of the RFID reader.
	Flashing Blue every 0.5 seconds	RFID card has been recognised.
	Flashing yellow every 0.5 seconds	RFID card was not recognised and has been rejected.
	Constant green	Electric vehicle is connected. The charging station is waiting for the authorisation of the RFID card.

Status of the LED	Status of the LED	Status of the charging station
	Rotating green	Charging process under way
	Flashing green every 2 seconds	Charging process is complete
	Rotating yellow	The charging current was reduced during the charging process, e.g. due to the charging station overheating.
	Constant red	Error condition ➤ See error entry under Dashboard/System Status > Error
	Bottom two LEDs constant red	The PE monitoring has detected a fault at the protective earth. This is not charge-preventing.
	Flashing red every 2 seconds	DC fault current has been detected.
	Constant purple	Rotating field detection. Outer conductor of the supply line reversed or "Number of phases connected to the charging point" not configured correctly. ➤ See "Installation" on Page 66.

Charge controller

The charge controller monitors the internal hardware of the charging station. Its settings are configured via a web-based configuration interface.



CAUTION

Under certain circumstances, there is a risk of fire if the configuration is incorrect.

- Settings on the charge controller may only be configured by a qualified electrician.

Access to the configuration interface

To apply settings on the charging station, the web-based configuration interface must be accessed. This is the basic prerequisite for all other instructions and steps explained in this chapter.

In principle, the web interface of the charging station can be accessed via any network interface:

- WLAN
- Ethernet
- Indirectly via the backend system



Initial access to the charging station is via WLAN hotspot, as described below.

Access via WLAN hotspot

1. Switch to the WLAN settings on your mobile device or PC.
 - The charging station appears under the network name (SSID) *TechniVolt [serial number]*. Please take the serial number from the type plate.
2. Select the *TechniVolt [serial number]* network name.
The password for the WLAN hotspot is: **TechniVolt**
 - The connection between the charging station and the mobile device or Windows PC is established.

3. Open a web browser and enter the IP address of the charging station. The configuration interface is then accessed with the URL <http://172.20.0.1>.
- as outlined in "Login/Register" on Page 34.

Access via Ethernet

When accessing via Ethernet, you must enter the IP address of the charge controller in the Ethernet network. Which Ethernet address this is depends on your network. If the charge controller receives an IP address from a DHCP server (factory setting), which may be part of a network router, for example, you must search for the IP address there.

Alternative

To enable configuration when both described methods are not possible or accessible to you, a second permanent static IP address is configured on the controller's Ethernet interface. This IP address is 192.168.124.123. To do this, you must manually configure your PC to an IP address in the same address space and with the same subnet mask.

For example, you can use the address 192.168.124.100 and the subnet mask 255.255.255.0 for your PC.

The web interface is then accessed with the URL <http://IP-Adresse/operator>, i.e. in the previous example, with the URL <http://192.168.124.123/operator>.

Access via backend

Access via the backend uses the controller's OCPP interface. The backend sends GetConfiguration and ChangeConfiguration messages to read out the configuration parameters. The user interface offered by the backend for this purpose differs depending on the backend system.

Login / Register



You have access to the configuration interface.

In the LOGIN window, enter "operator" for the user and "TechniVolt" for the password. After confirmation, you are authenticated as an operator.

The password is a pre-configured standard password, which is freely accessible. You will be asked to create your own individual password.

➔ The input window opens automatically when you log in for the first time.

BETREIBERPASSWORT & MASTER RFID ÄNDERN

Neues Passwort eingeben Anzeigen

Neues Passwort bestätigen

Master RFID

Um die Master RFID automatisch einzulesen, halten Sie nun eine beliebige RFID Karte vor den Leser oder geben Sie alternativ eine gültige RFID UID in das Textfeld ein.

Speichern

➤ Enter the new password in ① and ② .

User: operator

Password:

NOTE

Be sure to remember your new password!

If you lose the password, you will no longer have access to the charging station and it will have to be returned to the factory to be unlocked. To avoid this situation, so-called "master RFID cards" are created.

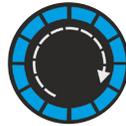
With a master RFID card, the charging station can be reset to the delivery state (factory settings) if you have forgotten the password - all saved settings will be deleted!



Make the two RFID cards included within the scope of delivery your master RFID cards.



You can now set up the master RFID card with which the charging station can be set to the delivery state.



- Hold one of the two RFID cards in front of the RFID reader. When the card is recognised, the illuminated ring rotates to the right.

➔ The UID of the RFID card is displayed under **3**.

3243D2D6

- With the other RFID card, repeat the procedure as described above.

➔ The UID of both RFID cards is displayed under **3**.

3243D2D6:7289F3D6

- Save the entry with

Speichern

➔ The prompt opens

Please restart your device to apply changes

Reset all changes

Save

Restart

- Click on Restart

➔ The security prompt opens

Restart device?

To apply the changes a restart is required. This might take longer than 60 sec.

Cancel

Restart

- Click on Restart

➔ You have saved your new password and the master RFIDs.



The charging station can now be reset to the delivery state (factory settings) using the RFID card, if you hold the RFID card in front of the RFID reader for 120 seconds.

Configuration interface

After entering the password, you reach the configuration interface - the main menu and dashboard are displayed.



1 Main menu (left menu bar)

Network	Backend	Authorisation	Load management	Installation	System
GSM	Connection	Free charging	Local	General installation	Overview
LAN	OCPP	Overview	Modbus	Safety & Security	Password
WLAN	Other	RFID settings	SMA Sunny Home Manager Interface	Hardware Usage Meter Settings	System information
WLAN configuration hotspot	Energy meter	RFID whitelist	EEBUS		System maintenance
NTP	Banner gateway	HLC 15118	Dynamic load management		Firmware update
			ASKI via OCPP-S		

2 Software version of the charge controller

3 System time (**NTP server required!**)

4 Language change (selection menu)

5 Logging off from the charge controller

Bottom menu bar

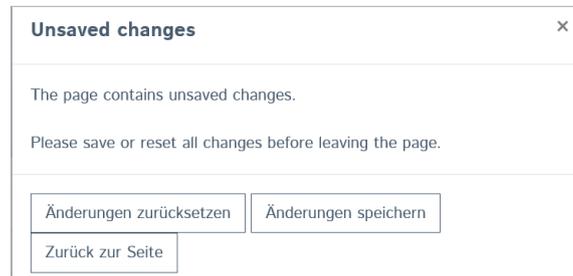
The bottom menu bar is automatically displayed and the control panels are activated as required.



After changing the parameters in a menu item, they can be saved or discarded using the bottom menu bar. Restarting the charging station is also possible if this is required in order to adopt the changed parameters.

Unsaved changes

When changing to another menu item, the system automatically checks whether the changes have already been saved. If this has not already been done, a warning message will appear asking you to save or discard the change.



"Reset changes" is used to discard the changed parameters. This may take a moment depending on how many parameters are to be reset.

Value outside the permissible range

When entering values outside the permissible range, either a red warning message (when attempting to save, if not before) appears to the bottom left of the screen, or a red warning message appears below the input area indicating the permissible value range.



Next to each configuration item you will find a note providing configuration tips and explaining the consequences of a change. The information text can be displayed by moving the mouse over the displayed symbol. 

Dashboard



The dashboard displays current information about the **TECHNIVOLT** charging station.

1 Overview

2 Last month (export)

➤ Click on *export*.

➤ Export the **ChargeReport.csv** file. The file gives you an overview of the charging processes in the current and previous month, with the charged **energy [Wh]** (only **TECHNIVOLT SMART** with MID).

Session Numl	Start Date	Start Time	Duration	Energy [Wh]	RFID-Tag
29	03.11.2021	14:25:25	03:10:05	8880	
30	04.11.2021	04:41:35	03:29:18	24342	
31	04.11.2021	10:20:19	06:20:31	10982	

Name	Value
OCPP ChargeBoxIdentity (ChargePointID)	+49*839*00000000003
OCPP Status	FREI (verfügbar)
Status des Type2 Anschlusses	(A) Fahrzeug nicht verbunden Angeschlagenes Kabel
Angebotener Strom	0 A
Ladestrom [A]	(0.00 0.00 0.00) [A]
Frequency Mains	50.054 Hz
Verbindungsstatus (Backend)	Nicht verbunden
Verbindungsstatus (Modem)	Not available
Kostenloses Laden	On (No OCPP)
Fehler	No errors
RDC-M (RCMB) Status	DC: OK, RDC-M (RCMB) Device Status (IEC 62955): OK Last transaction maximum DC: 6.0 mA Values DC: 0.0 mA
Schaltzyklen des Lastschützes Typ2	44/50.000
Steckzyklen des Typ 2-Anschlusses	47/50.000
Netzwerk	eth0: [42:EB:EE:7F:69:2A] IP: 192.168.205.13 wlan0: [D4:CA:6E:A1:F8:32] IP: (none) ap0: [D4:CA:6E:A1:F9:32] IP: 172.20.0.1
Eichrechtsfunktionen	System without Eichrecht

3 System status

Provides general information regarding the current operating status of the charge controller.

OCPP ChargeBoxIdentity (ChargePointID)	Returns the entered ChargepointID with which the chargepoint logs into a backend.
OCPP status	This value is transferred to the backend and indicates the operating status of the charge controller.
Status of the Type2 connection	The status of the connected vehicle is shown here (A, B, C, D, E). PR indicates the maximum charging current of the connected cable. The current status of the locking mechanism is also displayed.
Supplied current	The maximum current that the vehicle can receive. The value is determined by the energy manager.
Charging current [A]	Current charging current in amps.
Connection status (backend)	Indicates whether the charging station is connected to a backend.
Connection status (modem)	Shows whether the internal modem is connected to an access point (APN) of the mobile network.
Free charging	Overview of whether or not authorisation is required to start a charging process (FreeCharging).
Error	A list of currently occurring errors
RDC-M (RCMB) status	These values show the current status of the residual current transformer and show the maximum values of the last transaction.

Switching cycles of the type 2 load contactor	Actual/max.
Mating cycles of the type 2 connector	Actual/max.
network	If the charge controller is connected to a network, the local IP address can be found here.
Calibration regulation functions	Here you will find information as to whether the system complies with calibration regulations.

Energiemanager 4

Energiemanager OCPP Zähler

Name	Wert	Beschreibung
Energiemanager Gesamtzustand	0 A	Zustand und Strom des Energiemanagement-Moduls
Zustand Temperaturüberwachung	16 A (Ambient temperature: +14,0 C)	Zustand und Stromsollwert des Temperaturüberwachungsmoduls
Relais Temperatur	16 A	Relais Temperatur Modulzustand und -strom
OCPP SmartCharging Zustand	16 A	OCPP SmartCharging Zustand und Ladestrom
Betreiber-Strombegrenzung [A]	16 A	Vom Betreiber eingestellte Stromgrenze (in Ampere)
DLM Strom Verteilt	0 A	Verfügbarer Ladestrom, der vom DLM-Master zugewiesen wird
ISO 15118 Zustand	16 A (Disabled)	Zustand und Strom des Moduls für High Level Communication (15118)
Eichrechtsfunktionen	16 A	Zustand und Stromwert des Eichrecht Moduls
Zustand Fahrzeugschnittstelle	0 A	Zustand Fahrzeugschnittstelle und Strombegrenzung des Moduls
Error Handler Zustand	80 A	Status und aktueller Zustand des Error Handler Moduls
HEMS Modbus TCP Server Zustand	16 A (Disabled)	Zustand und Strom des HEMS-Modbus-Moduls
HEMS Semp Gerätezustand	16 A (Disabled)	Zustand und Strom des HEMS-Semp-Moduls
HEMS EEBUS Zustand	16 A (Disabled)	Zustand und Strom des HEMS-EEBUS-Moduls

4 Energy Manager

Provides a complete overview of configured and calculated flows. The charge controller always transmits the lowest value to the connected vehicle (energy manager overall status). In the "OCPP meter" tab you will find the current values of the installed MID (**TECHNIVOLT SMART** only).

DLM Status 5

DLM Konfiguration DLM Interner Slave DLM verbundene Slaves DLM Live Ansicht

5 DLM status

👁 If *Dynamic Load Management* = "Enabled" (see "Dynamic load management" on Page 61).

Provides a complete overview of the configured charging stations in the charging network.

Network

GSM

Display modem settings

Show or hide the modem configuration.

- **Hide**
- **Show**

Access Point Name (APN)

Name of the access point (APN) of the mobile network to be used when establishing connections to the backend system via the built-in modem.

👁 If *Show modem settings* = "Show".

APN user name

User name used for authentication with the mobile network access point to connect to the backend system.

👁 If *Show modem settings* = "Show".

APN password

Password used for authentication with the APN of the mobile network to connect to the backend system.

👁 If *Show modem settings* = "Show".

SIM PIN

PIN number to be used to unlock the SIM card. This number is only used if the SIM card requests a PIN number.

👁 If *Show modem settings* = "Show".

Network operator selection by the modem

In automatic mode, the modem selects the network operator. In manual mode, the requested network operator is used. If manual selection fails, automatic mode is used in Manual/Auto.

👁 If *Show modem settings* = "Show".

- **Auto**
- **Manual**
- **Manual/Auto**

Mobile technology	The technology to be used to access the 2G (GSM), 3G (UTRAN) or 4G (LTE) network. In automatic mode, the modem selects the technology. <ul style="list-style-type: none">• Auto• 2G• 3G• 4G
Requested network operator	Name of the mobile network operator to which the built-in modem should connect in "Manual network selection mode".
Format of the network operator name	Indicates whether the format of the operator name is alphanumeric or numeric. The long alphanumeric format can be up to 16 characters long, and the short format up to 8 characters (see GSM MoU SE.13). <ul style="list-style-type: none">• Alphanumeric Long• Alphanumeric Short• Numeric
WAN Router	Enables access to the WAN (GSM) interface from LAN interfaces (Ethernet/WLAN/USB). This also activates the DNS forwarder. <ul style="list-style-type: none">• Off• On
MTU	Maximum size of the transmission unit for GSM connections (in bytes) (valid value range: 68 - 1492).

LAN

Show network settings

Show or hide the LAN configuration.

- **Show**
- **Hide**

Ethernet configuration mode

Ethernet configuration mode used for the charging point.

👁 If *Show network settings* = "Show".

- **Automatic (DHCP):** The IP address is automatically assigned to the charging point by the DHCP server in the network.
- **Static:** The IP address of the charging point can be assigned statically.
- **DHCP server** The charging point automatically assigns an IP address to other DHCP client charging points in the network (assignment is incremental, within a range between 172.16.23.100 and 172.16.23.254; network mask 255.255.255.0;). The DHCP server's own IP address is 172.16.23.1 (= default gateway = DNS). Any statically configured IP addresses that may be required must lie outside this range. If the DHCP client charging points in the network are to communicate with the backend via the SIM card of the DHCP server charging point, the 'WAN router' setting must be activated.

DHCP client request retries

Number of retries for DHCP requests.

👁 If *Ethernet configuration mode* = "Automatic DHCP".

- **10**

Timeout for DHCP client requests

Timeout for DHCP requests in seconds.

👁 If *Ethernet configuration mode* = "Automatic DHCP".

- **10**

Interval between two repeat DHCP requests

DHCP request delay (in seconds) between multiple requests.

👁 If *Ethernet configuration mode* = "Automatic DHCP".

- **10**

DHCP client host name	Host name of the charging point sent to the DHCP server together with a DHCP request. 👁 If <i>Ethernet configuration mode</i> = "Automatic DHCP".
IP for static network configuration	Static LAN IP of the charging point. • 192.168.0.100
Network mask for static network configuration	Network mask to be used for the charging station LAN. • 255.255.255.0
Gateway for static network configuration	Gateway for the LAN of the charging point. • 192.168.0.1
DNS for static network configuration	DNS server to be used for the charging point LAN. • 8.8.8.8
USB	Not relevant, as function not supported.
Show USB settings	Show or hide the USB configuration. • Hide • Show

WLAN

Use WLAN

Switch WLAN on/off.

- **Off**
- **On**

WLAN SSID

SSID of the WLAN to which the charging station should connect.

👁 If *Use WLAN* = "On".

WLAN password

Password of the WLAN to which the charging point connects. The charging point automatically selects the correct encryption method of the WLAN.

👁 If *Use WLAN* = "On".

WLAN configuration mode

Network configuration mode for the charging point's WLAN connection. Select "Auto" to use DHCP to automatically configure the WLAN network connection. Select 'Static' to use a static IP address to be configured below (as well as a Netmask, Gateway, and DNS server).

👁 If *Use WLAN* = "On".

- **Automatic (DHCP):** The IP address is automatically assigned to the charging point by the DHCP server in the network.
- **Static:** The IP address of the charging point can be assigned statically.

DHCP client request retries

Number of DHCP requests sent before the DHCP requests are abandoned.

👁 If *WLAN configuration mode* = "Automatic (DHCP)".

- **10**

Timeout for DHCP client requests

Timeout for DHCP requests in seconds.

👁 If *WLAN configuration mode* = "Automatic (DHCP)".

- **10**

Interval between two DHCP repeat requests

DHCP request delay (in seconds) between multiple requests.

👁 If *WLAN configuration mode* = "Automatic (DHCP)".

- **10**

DHCP client host name	Host name of the charging point sent to the DHCP server together with a DHCP request.
 If <i>WLAN configuration mode</i> = "Automatic (DHCP)".	
IP for static network configuration	WLAN IP of the charging point with static configuration. • 192.168.1.100
 If <i>WLAN configuration mode</i> = "Static".	
Network mask for static network configuration	Network mask to be used for the charging station WLAN. • 255.255.255.0
 If <i>WLAN configuration mode</i> = "Static".	
Gateway for static network configuration	Gateway for the WLAN of the charging point. • 192.168.1.1
 If <i>WLAN configuration mode</i> = "Static".	
DNS for static network configuration	DNS server to be used for the charging point WLAN. • 8.8.8.8
 If <i>WLAN configuration mode</i> = "Static".	

WLAN configuration hotspot

Use hotspot

Activate this if the charging point is to function as a hotspot for WLAN clients.

- **Off**: Hotspot switched off.
- **On**: Hotspot switched on.

Hotspot SSID

SSID of the charging station hotspot.

- **TechniVolt [serial number]**. Please take the serial number from the type plate.

👁 If *Use Hotspot* = "On".

Encryption

Type of encryption of the hotspot.

- **None**
- **WPA2-PSK (CCMP)**

👁 If *Use Hotspot* = "On".

Hotspot password

Password for the hotspot of the charging point. Please note: In 'WPA2-PSK (CCMP)' encryption mode, the password must be at least 8 characters long.

👁 If *Use Hotspot* = "On".

Subnet of the hotspot

Subnet for the charging station hotspot.

- **172.20.0.0**

👁 If *Use Hotspot* = "On".

Network mask of the hotspot

Network mask to be used for the charging station hotspot.

- **255.255.255.0**

👁 If *Use Hotspot* = "On".

DHCP server activated

Activate this option if the charging point is to manage the network connection of the WLAN clients connected to it.

👁 If *Use Hotspot* = "On".

- **Off**
- **On**

NTP

NTP client

Retrieve time from NTP servers if no backend connection is configured.

- **Off**
- **On**

Configuration of NTP server 1

Assign a host name or IP address and optional port to the Server 1 configuration.
The server 1 configuration must not be empty.

Backend

Connection

Connection type	<p>The type of data connection used to connect to the backend system. When using GSM, the Wallbox can be connected to LAN/WLAN at the same time to enable local load management or the like.</p> <ul style="list-style-type: none"> • No backend: Completely disables backend communication. • GSM: Must be activated to use the TECHNIVOLT charging service. • Ethernet • USB: is not supported. • WLAN
-----------------	---

OCPP

OCPP ChargeBoxIdentity (ChargePointID)	The ID that is sent to the backend and used by the backend to identify the charging point.
OCPP mode	<p>This parameter determines the OCPP standard to be used for backend communication.</p> <ul style="list-style-type: none"> • OCPP-J 1.6 • OCPP-B 1.5 • OCPP-B 1.5
Backend JSON OCPP URL WebSockets	The WS/WSS URL of the OCPP backend system. This URL must be the WS/JSON endpoint and must start with "ws://" or "wss://". This parameter is only used when OCPP-J 1.6 or OCPP-J 2.0 mode is used. The ID of the ChargePoint is automatically added when connecting to the backend.
Websockets proxy	Websockets proxy to which a connection is to be established. Input format HOST:PORT, where PORT is optional and is set to 80 if no specification is made.
WebSockets Keep Alive Interval	WebSockets Keep alive interval in seconds. Value 0 if not used.
HTTP Basic Authentication Password	The password to be used for HTTP basic authorisation.

Always send heartbeat messages	<p>Specifies whether the charging point should send OCPP heartbeat messages even though other messages have been sent within the interval.</p> <ul style="list-style-type: none">• On• Off
Send informative StatusNotifications	<p>This parameter determines whether or not OCPP status messages intended for information purposes only (e.g. temperature report) should be sent to the backend system.</p>
Send status notifications for errors	<p>This parameter determines whether or not OCPP status messages that are to report errors to the backend (e.g. if the plug interlock is defective) are to be sent to the backend system.</p>
Send USB errors via StatusNotifications	<p>This parameter determines whether USB communication errors between master and slave are to be reported to the backend.</p>
Strategy for StatusNotifications state transition	<p>This parameter determines the conditions under which the charging point changes to the OCCUPIED state.</p> <ul style="list-style-type: none">• Occupied during charging: With this setting, the assignment is only signalled if an authorisation is present and a cable is plugged in.• Occupied when authorised/plugged in: With this setting, the status already changes to busy if the charger is authorised without a connection, or if a cable/vehicle is connected but no authorisation has yet taken place.
Allow long retrieval of configuration keys	<p>Allows OCPP parameter values in OCPP GetConfiguration to be longer than 500 characters.</p>
Prevent charging in case of persistent backend malfunctions	<p>When enabled, a full OCPP message buffer will result in an error state. Charging is cancelled.</p>
Force 'available' state on backend	<p>If the charging station has been set to unavailable by the backend and you have no other way to reset it to available, you can force the state change here. Note: Only works in the 'not available' state!</p>

Other

Timeout of the backend connection

The time in seconds used to establish an APN connection, establish a proxy, or establish a backend connection before a timeout. Also determines the amount of time waited for responses from the backend for OCPP requests. Only reduce this value if you can ensure a stable network connection. Increase the value if network coverage is poor. Increasing the value also allows longer delays in user interaction.

- **60**

Number of attempts to send transaction-related messages

Determines how often the charging point attempts to resend a transaction-related message if the backend does not positively acknowledge it. 0 means unlimited attempts.

- **5**

Number of attempts to send transaction-related calibration regulation messages

Determines how often the charging point attempts to resend a calibration regulation transaction-related message if the backend does not positively acknowledge it. 0 means unlimited attempts. -1 means that the value of the "TransactionMessageAttempts" parameter shall also be used for calibration messages.

- **0**

SSL mode as client

Allows you to set how strict SSL authentication is, ranging from no authentication (encryption only) to full authentication.

- **Encrypt only - No authentication**

TCP Watchdog Timeout

This is the time in seconds during which an attempt is made to establish a connection to the backend. After the time has lapsed, the system is restarted. Set this parameter to 0 to disable the restart.

- **10800**

Signal backend connection failure as error

Parameter that determines whether an error is reported to the user when the backend connection is interrupted.

- **Off**
-

Energy meter

Zero reset behaviour (SO and internal meter)	Sets the meter reading to 0 after each transaction. This setting is recommended for SO or internal meters, as it provides consistent meter values for each transaction. If not activated, the meter values are only set to 0 every time the system is restarted.
Meter values sampled data (OCPP)	Comma-separated list of the types of meter values to be sent as data elements clocked relative to the charge start in separate meter value messages. Supported: 'Energy.Active.Import.Register', 'Power.Active.Import', 'Power.Offered', 'Current.Import', and 'Current.Offered'.
Meter Values Sample Interval (OCPP)	Interval in seconds after which a new meter value is sent to the backend system during a charge transaction. Set 0 to disable the transfer altogether. To activate, a value greater than or equal to 10 seconds must be configured. Values between 1 and 9 are invalid for technical reasons.
Meter values aligned data (OCPP)	Comma-separated list of the types of meter values to be sent as time-timed data elements in separate meter value messages. Supported: 'energy.Active.Import.Register', 'Power.Active.Import', 'Current.Import', 'Current.Offered', and 'Voltage'.
Clock aligned data interval (OCPP)	Interval in seconds after which a new meter value is sent to the backend system, regardless of whether a charging process is running or not. The sending of these values is based on the full hour. Set the value to 0 to turn the function off or to a value of 10 or higher to turn the function on.
Retransmit MeterValue messages	If activated, MeterValue messages are retransmitted following faulty transmission.

Banner gateway

Banner activated	Activate or disable the banner function. Banner gateway must use Modbus slave ID 3.
Read banner analogue values	Read analogue values from all selected banner nodes.
<p>👁 If <i>banner activated</i> = "On".</p>	
Data request interval (s)	Query interval for banner gateway data in seconds. If the reading of the analogue value is activated, this value must be set to 40 seconds or more, otherwise to 20 seconds or more.
<p>👁 If <i>banner activated</i> = "On".</p>	
Interval for OCPP messages (s)	Guaranteed OCPP message interval in seconds. Must be set to 40 seconds or more, and must be equal to or greater than the data retrieval interval.
<p>👁 If <i>banner activated</i> = "On".</p>	
Max. Banner Node ID	Node ID of the last banner node to be read. Starting with node ID 0 (gateway).
<p>👁 If <i>banner activated</i> = "On".</p>	

Authorisation

Free charging

Free charging

Here you specify whether charging is permitted without authorisation.

- **Off:** Charging only takes place by means of authorisation via RFID or through the backend.
 - **On:** Charging takes place without authorisation and starts immediately when an electric vehicle is connected.
-

Free charging mode

👁 If *Free Charging* = "On".

Sets the OCPP behaviour to free charging mode. Note that in the case of a master/slave scenario, the slave is automatically configured to the same mode as that used for the master.

- **No OCPP:** Disables the function. No OCPP messages are sent to the backend. No authorisation is required. As soon as the car is connected, it can be charged.
 - **With OCPP status message without authentication:** No permission is required. The charging process starts as soon as the car is connected. Only OCPP status notifications are sent, in particular, to indicate when the charging station and port are occupied (charging) or available.
 - **With OCPP status message with authentication:** An RFID card is required for authorisation. Only OCPP status messages are sent, in particular, those indicating whether the connector and charging point are occupied (charging) or available. No start or stop transaction messages are sent. Remote stop messages are rejected because no transaction ID is involved.
 - **With full OCPP, fixed RFID UID with authentication:** Text
 - **With full OCPP, fixed RFID UID without authentication:** Text
 - **With full OCPP, any RFID:** Text
-

RFID tag for free charging with full OCPP, fixed RFID modes

RFID tag for free charging in *With full OCPP fixed RFID UID mode*.

👁 If *With full OCPP, fixed RFID UID with {or without} authentication* = "On".

- **Input field:** Enter the RFID UID that enables free charging. Only one UID is permitted.

Overview

Timeout for the vehicle connection

The time interval within which the user must have plugged the cable into the vehicle's charging station after successful authorisation. Otherwise the charging station will not start and a new authorisation is required.

- **45**

Send OCPP Authorise for RemoteStart Requests

Determines whether a remote request to start a transaction in the form of a 'RemoteStartTransaction.req message' should be authorised in the same way as a local action to start a transaction. Some backends require this, as the OCPP specification is not clear in this regard. Other backends do not work if this parameter is activated.

- **Off:** Disables the parameter.
- **On:** Activates the parameter.

Stop transaction mode

This allows the behaviour of the charging device to be changed at the end of a transaction.

- **Normal:** unlocks and stops the transaction when the plug is removed from the vehicle or the RFID card used for authorisation is read again.
- **Stop only by unplugging at station side:** causes a transaction to stop completely only when the cable is unplugged from the charging station socket.
- **Unlock only with RFID/RemoteStop:** the lock is only opened if RFID or RemoteStop has been used to stop the transaction. Pulling the cable out of the car does not end the transaction.
- **Normal + Mode D + FI detected**

RFID settings

RFID tag upper/lower case

Parameter that makes the management of RFID tags configurable in upper or lower case. When reading out the UID, the display format must always be taken into account. The hexadecimal code must always be used for the controller. For example:

- **Lower case:** 0a0e9b83
- Upper case: 0A0E9B83
- **Lower case reversed byte sequence:** 839b0e0a
- Upper case **reversed byte sequence:** 839B0E0A

The byte order in which the UIDs are stated is not always apparent. If in doubt, try both options.

Force Master RFID

Changing the default operator password (see "Change Operator Password & Master RFID" on Page 69) forces the configuration of the master RFID token, which can reset the system to its operator default settings (factory settings) when a master RFID card is held in front of the RFID reader for 120 seconds.

- **Off:** Disables *Force Master RFID*.
- **On:** Enables *Force Master RFID*.

Accept only tamper-proof RFID

Determines which RFID cards are accepted as a means by which to start the charging process.

- **Off:** All RFID cards are accepted as a means by which to start the charging process.
- **On:** Only tamper-proof RFID tokens according to VDE-AR-E 2532-100 are accepted as a means by which to start the charging process.

Language of the display

The language of the display texts on the LCD, if applicable.

RFID whitelist

Activate local whitelist

The parameter (also fixed local list (FLL)) is a backend-independent list that is stored exclusively on the controller. Listed UIDs are always authorised for charging. There is no query to the backend.

- **Off:** Disables the parameter.
- **On:** Activates the parameter. You can then enter all the desired UIDs under Local Whitelist (chapter "Whitelists" on Page 57). These must be separated with a colon. Make sure that you use the correct format.

Activate OCPP whitelist

The OCPP whitelist parameter (also List of entries in cache or cache) is a kind of local backend cache at the charging point. Here, all RFIDs from charging cards that are approved by the backend are regularly transferred to the charging point. This is to ensure that the authorisation of a charging process can also take place in the event that the charging point cannot connect to the backend. What's more, authorisation can be carried out much faster with the help of the cache.

Off: If this option is disabled, a request is sent to the backend with every request to the charging point (i.e. whenever an RFID is presented to the RFID reader). The charging process only authorised when this has been accepted.



Disable the OCPP whitelist if you do not have a backend connection!

- **On:** Activates the option.

OCPP whitelist expiry mode

👁 If *Enable OCPP Whitelist* = "On".

The assumed expiry date of cache entries if the OCPP expiry date has not been explicitly set by the backend. The default setting for such cache entries is the largest system time permitted: 2038.

- **End of 2038 Standard epoch**
- **One year from now**

Local pre-authorisation	Determines whether the charging point, when online, starts transactions for locally authorised RFID cards without sending an OCPP Authorise message to the backend (local whitelist is consulted before backend). <ul style="list-style-type: none">• On• Off
Local offline authorisation	Determines whether the charging station starts transactions for locally authorised RFID cards when offline. <ul style="list-style-type: none">• On• Off
<hr/>	
HLC 15118	
15118 Configuration	High Level (15118 protocol) PowerLineCommunication configuration. <ul style="list-style-type: none">• Off• On (with PlugNCharge)• On (without PlugNCharge)
OCPP 1.6 extension for the 15118 certificate installation	OCPP 1.6 extension for the 15118 certificate installation. <ul style="list-style-type: none">• Ebee
<hr/>	
Additional logging	Enable the running of the '15118_log.csv' file with the incoming and outgoing exi messages. <ul style="list-style-type: none">• Off• On
<hr/>	
Autocharge	Autocharge is an experimental and non-standard function. Some vehicles may not work or may show a charging error. The function is being continuously improved on both the EVSE and EVS sides. Check for software updates to take advantage of improvements that are already available. <ul style="list-style-type: none">• Off• On
<hr/>	

Whitelists

Local whitelist

👁️ If *Enable Local Whitelist* = "On" (see "Activate local whitelist" on Page 55).

Edit the local list of UIDs of RFID cards with which authorised charging is allowed.

- Click on ① "Add entry".
- The "Add entry" window opens.



1. Hold the Master RFID card against the RFID reader. When the card is recognised, the illuminated ring rotates once to the right.
 - The UID of the RFID card is displayed and stored in the Local Whitelist.

7289F3D6 ✔

- Repeat steps 1 and 2 if you wish to register additional user RFID cards. > 1,000 UIDs).
- ② Click on "Import list".
- ③ Click on "Export list".
- ④ Click on "Delete entire list".

Charge controller

OCPP Whitelist

☞ If *Enable OCPP Whitelist* = "On".

The OCPP whitelist (also List of entries in cache or cache) is a kind of local backend cache at the charging point. Here, all RFIDs from charging cards that are approved by the backend are regularly transferred to the charging point. This is to ensure that the authorisation of a charging process can also take place in the event that the charging point cannot connect to the backend. What's more, authorisation can be carried out much faster with the help of the cache.

Load management

Local

Operator current limit [A]

Maximum charging current that can be signalled to the vehicle for charging. This value must be less than or equal to the charging point "Installation current limit [A]" on Page 66. It can be freely configured, even during charging. This parameter can be changed through the backend for the energy management.

- **The value in the delivery state corresponds to the I_{max} specified on the type plate of the charging station:**
 - for 11 kW charging station = **16**
 - for 22 kW charging station = **32**

Enable Disconnected Upper Limit for SmartCharging

If this option is activated and the charging point is disconnected from the backend, the 'Upper current limit [A] in case of network failure' is applied despite the restrictions set in the saved charging profiles.

- **Off:** Disables the parameter.
- **On:** Activates the parameter. Then set the current limit under 'Upper current limit [A] in case of network failure'.

Upper current limit [A] in case of network failure

Upper current limit (in amps) for SmartCharging if the charging point is disconnected from the backend.

- **16**

☞ If *Enable Disconnected Upper Limit for SmartCharging* = "On".

Modbus

Modbus TCP Server	<p>Activates the Modbus TCP server function of the charging point. This enables reading and writing of parameters via the Modbus protocol. Detailed registry information can be found in the documentation.</p> <ul style="list-style-type: none"> • Off: Disables the parameter. The following parameter settings are hidden. • On
Modbus TCP Server Base Port	<p>The port number on which the Modbus TCP server waits for incoming connections on port 1. If a second port is supported, the configured 'Port + 1' is used for this port.</p> <ul style="list-style-type: none"> • 502
Modbus TCP Server Register Set	<p>Select the set of register addresses that the Modbus TCP Server device offers to its Modbus TCP Client device.</p> <ul style="list-style-type: none"> • Phoenix • TQ-DM100: • Open Modbus Charge Control Interface (OMCCI)
Allow Modbus TCP Server Transaction Start/Stop	<p>Allows transactions to be started/stopped via the controller Modbus TCP server interface.</p> <ul style="list-style-type: none"> • Off: Disables the parameter. • On: Activates the parameter.
Allow Modbus TCP Server UID transmission	<p>Allows the UID to be transmitted via the Modbus server protocol.</p> <ul style="list-style-type: none"> • Off: Disables the parameter. • On: Activates the parameter.
SMA Sunny Home Manager Interface	Supported as of Sunny Home Manager 2.0
SMA interface (on/off)	<p>This option activates the SMA interface functionality.</p> <ul style="list-style-type: none"> • Off: Disables the parameter. • On: Activates the parameter.

Charge controller

SMA communication failure current [A]	Communication timeout current set by the SMA interface in case of communication errors. The permissible range is between 6 A and 80 A.
👁 If <i>SMA interface</i> = "On"	• 6
SMA communication timeout [s]	Communication timeout for the SMA interface in seconds before the communication timeout current is used. The permissible range is between 60 s and 3600 s.
👁 If <i>SMA interface</i> = "On"	• 600
SMA Maximum energy requirement [kWh]	This value configures the maximum energy requirement reported by the SMA interface for the charging point connection. It typically represents the maximum capacity of the vehicle battery. The permissible range is from 1 kWh to 1000 kWh.
👁 If <i>SMA interface</i> = "On"	• 30
SMA Minimum energy requirement [kWh]	This value configures the minimum energy requirement reported by the SMA interface for the charging point connection. It represents the typical minimum mandatory energy required by the vehicle up until the configured end-of-charge time. In other words, the minimum amount of current that must always be delivered with each charge. The permissible range is from 0 kWh to 1000 kWh.
👁 If <i>SMA interface</i> = "On"	• 5
SMA charge termination time [hh:mm]	This value configures the time of day by which the charging process should be completed. At least the minimum configured energy requirement should be delivered by this time.
👁 If <i>SMA interface</i> = "On"	• 08:00

EEBUS

EEBus protocol (on/off)	This option activates the EEBUS functionality.
	• Off : Disables the parameter.
	• On : Activates the parameter.
Fallback current [A]	Current limit set by the EEBUS system in case of communication errors. Permitted range is from 6 A to 80 A.
👁 If <i>EEBus protocol</i> = "On".	• 6

Communication timeout [s]	Communication timeout in seconds after which the fallback current is used. The permissible range is between 4 s and 3600 s.
☞ If <i>EEBus protocol</i> = "On".	<ul style="list-style-type: none"> • 6
Select pairing action	Activates the EEBUS pairing process for 2 minutes and deletes a previously established EEBUS pairing. Please reload the page to view the ID of the paired energy manager after the pairing is complete.
☞ If <i>EEBus protocol</i> = "On".	<ul style="list-style-type: none"> • No entry • Enable pairing • Delete pairing
Pairing status	Pairing status of the EEBUS module.
☞ If <i>EEBus protocol</i> = "On".	<ul style="list-style-type: none"> • Display only - no setting option.
Identification of the paired CEM	ID of the paired CEM.
☞ If <i>EEBus protocol</i> = "On".	<ul style="list-style-type: none"> • Display only - no setting option.

Dynamic load management

Dynamic Load Management - DLM Master/Slave	<p>Specifies the role of the charging point in a DLM network. There <u>MUST</u> be exactly one DLM master within a DLM network that manages multiple DLM slaves.</p> <ul style="list-style-type: none"> • Disabled: Dynamic load management is disabled. • DLM Master (with internal DLM slave): With this parameter, the charging station that assumes the master role takes its own charging point into account within the load management. • DLM Master (Standalone): A standalone DLM master does not contain an internal DLM slave. If this charging station is nevertheless used for charging, its power consumption is <u>not</u> taken into account by the DLM! • DLM slave (Master Auto Discovery): With this parameter, you can integrate a charging station into a charging cluster as a slave. • DLM slave (Master Fixed IP): With this parameter, you can operate the charging station as a slave with a fixed IP address in a charging cluster.
--	---

Charge controller

DLM Network ID	Multiple DLM groups can coexist in a physical LAN. In the case of DLM Master Auto Discovery, they are distinguished by the Master Auto Discovery Network ID, and slaves can thus be assigned to the correct master.
☞ If <i>DLM Master/Slave</i> = "Enabled".	<ul style="list-style-type: none">• 0 to 255
Disable Discovery Broadcasting	Disables the distribution of DLM Discovery Beacons in the DLM Master. If disabled, DLM slaves cannot automatically find their DLM master using the DLM Master Auto Discovery function.
☞ If <i>DLM Master</i> = "Enabled".	<ul style="list-style-type: none">• Off: Activates Discovery Broadcasting.• On: Disables Discovery Broadcasting
DLM algorithm sampling rate	The DLM algorithm does not calculate and allocate the current to its DLM slaves faster than the configured rate. In exceptional cases, electric vehicles that are preparing to be charged are taken into account and immediately provided with the current status.
☞ If <i>DLM Master</i> = "Enabled".	<ul style="list-style-type: none">• 30 sec
Allow the electric vehicle to wake up	Continuously offer electricity to electric vehicles that have deliberately decided not to charge (e.g. vehicle fully charged), in order to give them the opportunity to continue charging later (e.g. auxiliary heating activated prior to departure).
☞ If <i>DLM Master</i> = "Enabled".	<ul style="list-style-type: none">• Off: Disables the function.• On: Activates the function.
Sub-distribution current limitation for the charging point network (L1/L2/L3) [A]	Grid connection current limitation for load management (DLM) that can be distributed to the individual charging points within the charging point network.
☞ If <i>DLM Master</i> = "Enabled".	<ul style="list-style-type: none">• 16 - 16 - 16
Operator Sub-distribution current limit (L1/L2/L3) [A]	Operator Sub-distribution current limitation for load management (DLM). Electricity that is available for distribution to electric vehicles. This current limitation must be equal to or smaller than the subdistribution current limitation. It can be changed without restarting the charging point. For example, a backend with this parameter could change the available power for the dynamic charging of electric vehicles. The backend cannot set a higher value than the sub-distribution current limit.
☞ If <i>DLM Master</i> = "Enabled".	<ul style="list-style-type: none">• 16 - 16 - 16

<p>External meter support</p> <p>☞ If <i>DLM Master</i> = "Enabled".</p>	<p>If activated, an external meter also allows the power consumption of additional loads to be taken into account. The available power for charging electric vehicles is adjusted accordingly. Please ensure that the 'Meter configuration (external)' is configured accordingly, preferably using a 3-phase meter with individual phase resolution.</p> <ul style="list-style-type: none"> • Off: Disables External Meter Support. • On: Enables External Meter Support.
<p>External Meter Configuration</p> <p>☞ If <i>DLM Master</i> = "Enabled" <u>and</u> <i>External Meter Support</i> = "On".</p>	<p>Energy management: the type of external meter used only for the input to control the power in the grid.</p> <ul style="list-style-type: none"> • Off: Disables External Meter Support. • On: [Meter Selection List - only <i>Modbus TCP</i> is supported]
<p>Mains connection current limitation (L1/L2/L3) [A]</p> <p>☞ If <i>DLM Master</i> = "Enabled" <u>and</u> <i>External Meter Support</i> = "On".</p>	<p>Current limitation for DLM applied for distribution to EVs and additional energy loads. This value is typically higher than the 'EVSE sub-distribution limit' mentioned above. An external meter is required to record the energy consumption of the additional load.</p> <ul style="list-style-type: none"> • 100 - 100 - 100
<p>Safety margin for external load (L1/L2/L3) [A]</p> <p>☞ If <i>DLM Master</i> = "Enabled" <u>and</u> <i>External Meter Support</i> = "On".</p>	<p>Safety margin for external load (L1/L2/L3) [A]. Safety margin to avoid transient overload situations. The algorithm guarantees this leeway in the "grid connection current limitation" direction.</p> <ul style="list-style-type: none"> • 0 - 0 - 0
<p>External load fallback level (L1/L2/L3) [A]</p> <p>☞ If <i>DLM Master</i> = "Enabled" <u>and</u> <i>External Meter Support</i> = "On".</p>	<p>In the event of an error, if the external meter is disconnected or fails, "External load fallback level" is assumed to be the consumption of an additional consumer. Setting this to a high value will result in no power being available for the charging station sub-distribution in this particular situation. This would stop the charging process.</p> <ul style="list-style-type: none"> • 9999 - 9999 - 9999

External meter topology (L1/L2/L3) [A]	Indicates how the external meter is connected: If this measures the energy of charging points and additional consumers in total, the value is set to "Including EVSE sub-distribution", otherwise it is set to "Without EVSE sub-distribution". <ul style="list-style-type: none">• Including charging station sub-distribution• Without charging station subdivision
<p>☞ If <i>DLM Master</i> = "Enabled" and <i>External Meter Support</i> = "On".</p>	
Averaging of the external load length [sec]	The meter values are averaged to avoid transients. <ul style="list-style-type: none">• 5
<p>☞ If <i>DLM Master</i> = "Enabled" and <i>External Meter Support</i> = "On".</p>	
Unbalanced load avoidance	When activated, DLM does not exceed the configured 'unbalanced load limit'. The VDE-AR-N 4100 prescribes 20 A as the maximum unbalanced load. <ul style="list-style-type: none">• Off: Disables the function.• On: Activates the function.
<p>☞ If <i>DLM Master</i> = "Enabled".</p>	
Maximum permitted unbalanced load [A]	Maximum permissible unbalanced load DLM does not exceed the shift load limit configured here between the phases when allocating power to electric vehicles. <ul style="list-style-type: none">• 20
<p>☞ If <i>DLM Master</i> = "Enabled" and <i>Sliding Load Prevention</i> = "On".</p>	
Minimum current limit value [A]	Minimum current limit below which the charging process should not fall. If a current value below this threshold is necessary, charging is paused. <ul style="list-style-type: none">• 6
<p>☞ If <i>DLM Master/Slave</i> = "Enabled".</p>	
Current limitation in the event of connection failure [A]	Some DLM slaves are separated from the DLM master. <ul style="list-style-type: none">• 10
<p>☞ If <i>DLM Master/Slave</i> = "Enabled".</p>	

IT power grid	<p>Set this value to 'On' if your power grid is an IT grid. When set to 'On', the DLM master only accepts DLM slaves whereby the phase rotation is set to 'Single phase system (IT grounding)'. When switched off, the DLM master only accepts DLM slaves whereby the phase rotation is set to a different value. Connection requests from incorrectly configured DLM slaves are rejected.</p> <ul style="list-style-type: none"> • Off: Disables the function. • On: Activates the function.
Deletion of the persistent DLM slave database	<p>Immediately deletes the database of known DLM slaves.</p> <ul style="list-style-type: none"> • Reset Button
Maximum current schedule	<p>When enabled, DLM does not exceed the limit configured in the schedules. Each entry specifies the maximum permitted current for each phase from the entered hour.</p> <ul style="list-style-type: none"> • Off: Disables the function. • On: Activates the function.

ASKI via OCPP-S

Support for ASKI via OCPP-S interface	<p>Enable or disable support for receiving OCPP 1.5 SOAP 'Change Configuration Requests' for the 'LaMa_ConnectionRate' LaMa parameter. The SOAP server listens on TCP port 13000 for connector 1. If a second connector is installed, it can be reached on port 13001. 'LaMa_ConnectionRate' can be adjusted to within one10th of an ampere.</p> <ul style="list-style-type: none"> • Off: Disables the function. • On: Activates the function.
Permitted IP address for access by ASKI via OCPP-S Home Manager	<p>Here you can configure a single IP address that is allowed to access the 'ASKI over OCPP-S' service. An empty field prohibits access!</p>

Installation

Specification of the local connection conditions.

General installation

Installation current limit [A]

The 'Installation current limit' corresponds to the rated current I_{\max} indicated on the charging station's type plate. It is also the upper limit for the "Operator current limit [A]" on Page 58. The 'Installation Current Limit' must be less than or equal to the 'Maximum Current' of the charging point.

This parameter cannot be changed via the backend.

- for 11 kW charging station = **16**
- for 22 kW charging station = **32**



If a 22 kW charging station is restricted to 11 kW, first reduce the "Operator current limit [A]" on Page 58.

Number of phases connected to the charging point

Here you must select whether the charging point is operated as a single-phase or three-phase system, or is connected to the mains.

- **Single-phase system:** Select for 1-phase power connection, incl. N+PE.
- **Single-phase system (IT earthing):** Select for 1-phase connection with IT earthing, incl. N but without PE.
- **Three-phase system:** Select for 3-phase connection, incl. N+PE.

Phase rotation direction of the charging point

Phase rotation of the charging point in relation to the mains connection.

- **RST (L1/L2/L3, standard phase position)**
- **STR (L2/L3/L1, standard 120 degree phase rotation)**
- **TRS (L3/L1/L2, standard 240 degree phase rotation)**

Random time-delayed start of charging after power failure

Specify whether the charging process is to be restarted after a power failure after a random number of seconds (maximum 30 seconds) (On). If multiple charging points are connected to the same power supply, restarting all charging processes at the same time (Off) can lead to an overload, which could cause the power supply to fail again. If all charging processes start at random, one after the other, this can be avoided.

- **Off:** Disables the function.
- **On:** Activates the function.

Transaction restart after a power failure

Activate this option if a transaction that was interrupted by a power failure is to be continued after the power supply is restored. If disabled, the authorisation must be performed again by the user and the new transaction is started when signed meter values are switched on.

- **Off:** Disables the function.
- **On:** Activates the function.
- **On (BYES-specific)**

Safety & Security

Delta temperature monitoring

Temperature change in degrees Celsius for which a new temperature measurement report is sent to the backend system. A value of 0 disables the message.

- **5**

Charging current reduction (in %) for temperature reduction

How much (in %) of the signalled current should be reduced to lower the temperature if the temperature is above temperature threshold 1.

- **100**

RCMB Delta

RCD-MD, fault current change (in tenths of a milliamp) above which an OCPP status message is sent to the backend. A value 0 disables notifications.

- **0**

Voltage monitoring

Enables monitoring of overvoltage and undervoltage at the mains. Requires an OCPP meter with voltage measurement.

- **Off:** Disables the function.
- **On:** Activates the function.

Hardware Usage Meter Settings

Change switching cycles of the type 2 load contactor to

Use this parameter to reset the switching cycles when the contactor is replaced. Set the parameter to 0 when a new contactor is installed.

- **There is no preset value here**

Change mating cycles of the type 2 connection to

Use this parameter to reset the mating cycles when the charging cable is replaced. Set the parameter to 0 if a new charging cable is installed.

- **There is no preset value here**

System

Overview

Time zone	Time zone for local time. <ul style="list-style-type: none">• Berlin
Local time for the regular restart	The local time used for regular restarts. The charge controller is typically restarted after 30 days to ensure uninterrupted operation. Restarts only take place when no vehicle is connected and no customer is present. Select a time, on the hour and within the range [0 - 23]. <ul style="list-style-type: none">• 0
Number of days for regular restart	Number of days used for regular restarts. The charge controller performs a restart after the defined number of days to ensure uninterrupted operation. Restarts only occur when no vehicle is connected and no customer is present. Select a number within the range [1 - 99]. <ul style="list-style-type: none">• 20
REST interface	This option activates the REST interface. It provides the status of the charge controller, error messages, and information about the charging session. The interface can be used to show information on a charger display. <ul style="list-style-type: none">• Disabled: Function is switched off.• Enabled (with UID): displays user authentication information and can be used if the interfaces are protected against unauthorised access.• Activated (without UID): prevents access to user authentication information.
Logging level	Level for the logging system. For security reasons, you may have to re-enter your username and password to download the log file. <ul style="list-style-type: none">• LOG_LEVEL_DBG
Download log files	Download of the log files. This process can take a few minutes, depending on the size of the logs. Please do not leave this page. <ul style="list-style-type: none">• Download

LED brightness	Brightness/intensity level of the LED status display. Complete disabling of the LEDs (0) is not possible. <ul style="list-style-type: none"> • 100
Activate sound	Not relevant - not supported.
USB security	Not relevant. Internal service interface only.
Password	
Force password change	Force change of default user password at first login. <ul style="list-style-type: none"> • Off: Disables the function. • On: The operator password must be changed when logging onto the charging station for the first time.
Change Operator Password & Master RFID	Change the password to protect against unauthorised access to the charge controller. <ul style="list-style-type: none"> • TechniVolt
System information	Here you can obtain general information about the charging station, such as serial number, application version number, etc.
System maintenance	
Restart charging point	If necessary, restart the charging point. Click on the "Restart" button.
Firmware update	Installation of a new, official firmware version.
Upload new firmware	<ol style="list-style-type: none"> 1. Download the current firmware version from the TechniVolt homepage and save it on the PC. 2. Click on the "Select file button (.deb)". 3. Select the downloaded file. 4. Click on the "Upload & Install" button. <ul style="list-style-type: none"> ↳ The firmware update is performed.
NOTE	
Do not interrupt the power supply to the charging station during the update process.	

Factory settings

The charging station can be set to the factory settings (delivery state) using the master RFID card.



- Hold the Master RFID card against the RFID reader.

➔ After 120 seconds, the LED status indicator briefly lights up red. The charging station has been set to its delivery state. All saved settings are deleted.

Shutting down and restarting the charging station

The charging station does not have its own mains switch.

The charging station can be taken out of service temporarily or for the long-term if required. Carry out the following steps:

1. Switch off the upstream line protection switch.
2. Switch off the upstream residual current device.
 - ➔ The charging station is now not able to carry out any charging processes. You can now carry out electrical dismantling.

Perform the following steps to put the charging station back into service:

1. Switch on the upstream line protection switch.
2. Switch on the upstream residual current device.
 - ➔ The charging station is now being supplied with power. The charging station can be used for charging electric vehicles again after the internal charging controller has booted up.

Dismantling the charging station

Electrical dismantling work must always be carried out by a qualified electrician.



DANGER

Danger to life from electrical power.

There is an immediate danger to life by electrocution if you touch live parts.

- Disconnect the power to the installation before starting work.
- Observe the 5 safety rules to avoid electrical accidents:
 1. Disconnect.
 2. Secure against restarting.
 3. Verify that the power is off.
 4. Earth and short-circuit.
 5. Cover or cordon off any adjacent live parts.

Disposal



Electronic devices do not belong in the household waste and must be disposed of properly in accordance with Directive 2012/19/EC of the EUROPEAN PARLIAMENT AND OF THE COUNCIL dated 04 July 2012 concerning waste electrical and electronic equipment. Please return this device to the designated public collection point for disposal at the end of its service life.

The symbol on the device indicates this requirement.

Technical data

General			
Model	TECHNIVOLT 1100	TECHNIVOLT 1100 SMART	TECHNIVOLT 2200 SMART
Item no.	000x/6300	000x/6301	000x/6302
IEC protection class	Class I	Class I	Class I
Overvoltage category	III according to EN60664	III according to EN60664	III according to EN60664
Input/power connection			
Mains connection	1-phase/3-phase	1-phase/3-phase	1-phase/3-phase
Rated voltage	230/400 V	230/400 V	230/400 V
Rated current	16 A, 3P+N+PE	16 A, 3P+N+PE	32 A, 3P+N+PE
Rated frequency	50 Hz	50 Hz	50 Hz
Connection cross-section	$\leq 10 \text{ mm}^2$, $\varnothing 13 - 21 \text{ mm}$	$\leq 10 \text{ mm}^2$, $\varnothing 13 - 21 \text{ mm}$	$\leq 10 \text{ mm}^2$, $\varnothing 13 - 21 \text{ mm}$
Conductor connection	Push-in spring connection	Push-in spring connection	Push-in spring connection
Single wire conductor	4 to 10 mm^2	4 to 10 mm^2	6 to 10 mm^2
Fine stranded conductor with wire end ferrule	4 to 10 mm^2	4 to 10 mm^2	6 to 10 mm^2
Stripping length of the conductors	18 mm	18 mm	18 mm
Self-consumption/standby	3.7 W type	4.2 W type	4.2 W type
Output/vehicle connection			
Charging operating mode	3, IEC 61851-1	3, IEC 61851-1	3, IEC 61851-1
Charging connection	Charging cable with type 2 connector, IEC-62196-2	Charging cable with type 2 connector, IEC-62196-2	Charging cable with type 2 connector, IEC-62196-2
Output voltage	230/400 V	230/400 V	230/400 V
Maximum charging current	16 A per phase	16 A per phase	32 A per phase
Maximum charging power	11 kW	11 kW	22 kW
Fuses			
DC residual current detection	RCM internal, $I_{\Delta n} \geq 6 \text{ mA}$	RCM internal, $I_{\Delta n} \geq 6 \text{ mA}$	RCM internal, $I_{\Delta n} \geq 6 \text{ mA}$
Line protection switch in input/power connection	3P, type C, 16 A	3P, type C, 16 A	3P, type C, 32 A
Prescribed residual current circuit breaker (RCD) in the mains supply line	4P, type A, 20 A, 30 mA	4P, type A, 20 A, 30 mA	4P, type A, 40 A, 30 mA
Temperature monitoring	Power reduction or shutdown	Power reduction or shutdown	Power reduction or shutdown
Weld-Check detection	Yes	Yes	Yes
PE monitoring	Yes, signalling via LED status display	Yes, signalling via LED status display	Yes, signalling via LED status display
Rotary field detection	Yes, signalling via LED status display	Yes, signalling via LED status display	Yes, signalling via LED status display

Communication/Protocols	TECHNIVOLT 1100	TECHNIVOLT 1100 SMART	TECHNIVOLT 2200 SMART
Vehicle communication	PLC, ISO 15118	PLC, ISO 15118	PLC, ISO 15118
Network	Ethernet, WLAN	Ethernet, WLAN	Ethernet, WLAN
Mobile communication	-	4G LTE Cat 1	4G LTE Cat 1
Backend connection	OCPP 1.5, 1.6	OCPP 1.5, 1.6	OCPP 1.5, 1.6
Energy Management (EMS)	EEBUS, Modbus TCP, HEMS Semp	EEBUS, Modbus TCP, HEMS Semp	EEBUS, Modbus TCP, HEMS Semp
User authorisation	RFID	RFID	RFID
Network/Ethernet			
Default	IEEE 802.3, 10/100BASE-T	IEEE 802.3, 10/100BASE-T	IEEE 802.3, 10/100BASE-T
Connection socket	RJ45	RJ45	RJ45
Connection cable	CAT6, shielded, shield on one side to PE	CAT6, shielded, shield on one side to PE	CAT6, shielded, shield on one side to PE
Connection cable length	max. 100 m	max. 100 m	max. 100 m
Network/WLAN			
Default	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n
Frequency	2.412 - 2.472 GHz	2.412 - 2.472 GHz	2.412 - 2.472 GHz
Transmission capacity	< 100 mW	< 100 mW	< 100 mW
RFID card			
Card type	MIFARE Classic 1k	MIFARE Classic 1k	MIFARE Classic 1k
Default	ISO 14443A	ISO 14443A	ISO 14443A
Frequency	13.56 MHz	13.56 MHz	13.56 MHz
UID	4-byte, 7-byte	4-byte, 7-byte	4-byte, 7-byte
Mobile communication			
Default	-	4G LTE Cat1	4G LTE Cat1
LTE FDD bands	-	B1/B3/B7/B8/B20/B28	B1/B3/B7/B8/B20/B28
WCDMA bands	-	B1/B8	B1/B8
EDGE bands	-	B3/B8	B3/B8
GSM frequency	-	900/1,800 MHz	900/1,800 MHz
Max. transmission power:	-	Class 3 (23 dBm±2 dB) for LTE FDD bands Class 3 (24 dBm+1/-3 dB) for WCDMA bands Class 4 (33 dBm±2 dB) for EGSM900 Class 1 (30 dBm±2 dB) for DCS1800 Class E2 (27 dBm±3 dB) for EGSM900 8-PSK Class E2 (26 dBm±3 dB) for DCS1800 8-PSK	
SIM card holder	-	Micro SIM	Micro SIM

Technical data

MID energy meter	TECHNIVOLT 1100	TECHNIVOLT 1100 SMART	TECHNIVOLT 2200 SMART
Type	-	DVH4013	DVH4013
Display	-	LCD, 7 digits	LCD, 7 digits
Accuracy class		Class B	Class B
Type examination certificate No.	-	EN MTP 14 B 002 MI-003	EN MTP 14 B 002 MI-003

Mechanical properties

Casing material	Plastic	Plastic	Plastic
Bushing for mains infeed	M32, cable Ø 13-21 mm, max. 10 mm ² , or diaphragm grommet	M32, cable Ø 13-21 mm, max. 10 mm ² , or diaphragm grommet	M32, cable Ø 13-21 mm, max. 10 mm ² , or diaphragm grommet
Bushing for data cable	M25, for cable Ø 4-9 mm, or diaphragm grommet	M25, for cable Ø 4-9 mm, or diaphragm grommet	M25, for cable Ø 4-9 mm, or diaphragm grommet
Weight of unit (5 m charging cable)	8.06 kg	8.39 kg	9.61 kg
Unit dimensions	340 mm (width) 112 mm (height) 660 mm (depth)	340 mm (width) 112 mm (height) 660 mm (depth)	340 mm (width) 112 mm (height) 660 mm (depth)

Operating conditions

Temperature	-25 °C to 50 °C	-25 °C to 50 °C	-25 °C to 50 °C
Relative humidity	5% to 95%, no dew	5% to 95%, no dew	5% to 95%, no dew
Maximum operating altitude	2,000 m above sea level	2,000 m above sea level	2,000 m above sea level
IP protection class	IP54	IP54	IP54
IK impact resistance	IK08	IK08	IK08

Storage conditions

Temperature	-30 °C to 70 °C	-30 °C to 70 °C	-30 °C to 70 °C
Relative humidity	5% to 95%, no dew	5% to 95%, no dew	5% to 95%, no dew
Maximum altitude	2,000 m above sea level	2,000 m above sea level	2,000 m above sea level

Appendix CE mark and declaration of conformity

The **TECHNIVOLT** charging station bears the CE mark.



TechniSat hereby declares that the **TECHNIVOLT 1100**, **TECHNIVOLT 1100 SMART** and **TECHNIVOLT 2200 SMART** equipment complies with Directive 2014/53/EU. The full text of the EU conformity declaration is available at the following Internet address:

TECHNIVOLT 1100: <http://konf.tsat.de/?ID=23268>

TECHNIVOLT 1100 SMART: <http://konf.tsat.de/?ID=23269>

TECHNIVOLT 2200 SMART: <http://konf.tsat.de/?ID=23271>

Contact address

TechniSat Digital GmbH
Julius-Saxler-Straße3
D-54550 Daun, Germany
Web www.technisat.de

Software licences

This product contains open source software. Further information on this is available via the dashboard. The dashboard is located on the configuration interface of the charge controller: [http://\[ip-address\]/groups/system](http://[ip-address]/groups/system) > Licensing Information

Service instructions

This **TechniSat** product is quality-tested and furnished with the legally-specified warranty period of 24 months from the date of purchase. Please keep your receipt as proof of purchase. In the event of warranty claims, please contact the product dealer. If the device has to be sent to us for any reason, please use only the following address:

TechniSat Digital GmbH
Service-Center
Nordstr. 4a
39418 Staßfurt
Email service@technivolt.de

You can issue repair orders directly online, at:
www.technisat.de/reparatur.



TECHNIVOLT



20220801 - 2238001000200