

3.3.3. Station Charger


NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.

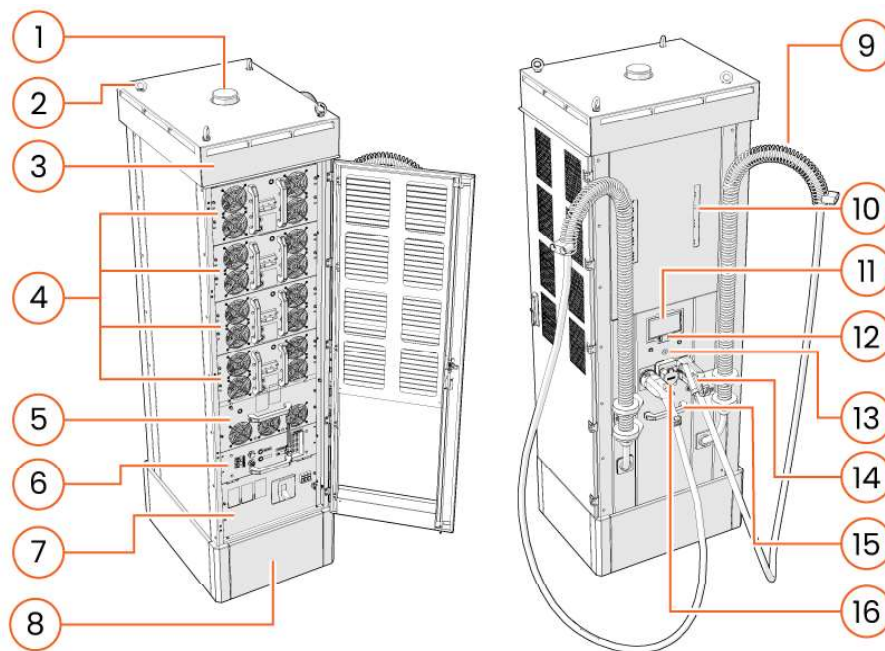

NOTE

See [9: Unit footprints and clearances](#) for the footprints and required clearances of the units.

Kempower Station Charger consists of a charging power unit, 1–2 DC vehicle connectors per cabinet, and a user interface. Station Charger can have an additional AC charging socket (option). See the product datasheet for the available charging cable and vehicle connector types. Station Charger can be a single or double cabinet unit. Depending on the configuration, Station Charger can also be connected to 1–2 Kempower Satellites.

Each cabinet can be equipped with 1–4 power modules (C500/500 V and C800/800 V). One power module provides a maximum of 50 kW charging power. Charging power management can be dynamic or static, see [3.1: Charging power management](#).

Figure 5. Kempower Station Charger overview (single cabinet, two DC vehicle connectors and optional AC charging socket)



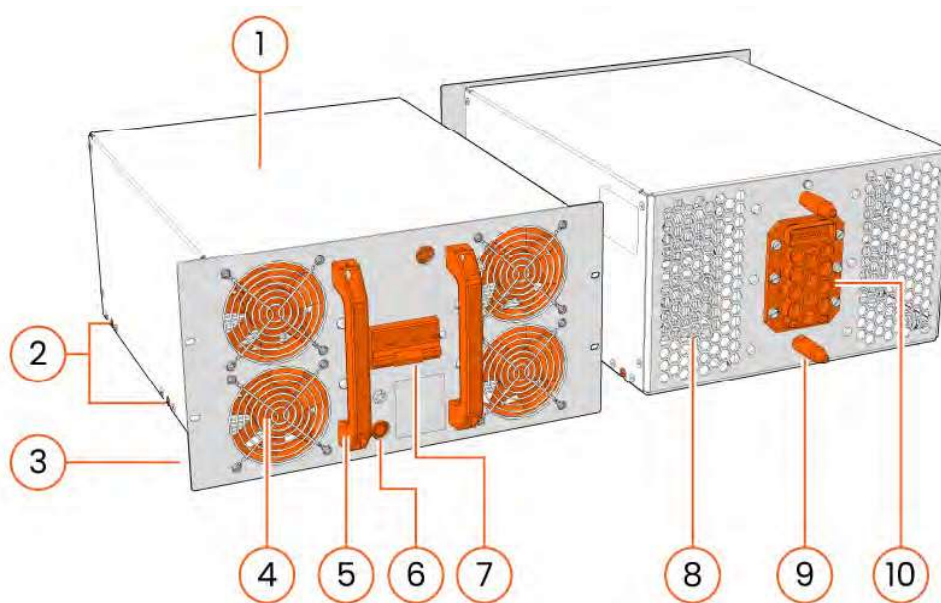
- | | | | |
|---|---------------------------------|----|--------------------------------|
| 1 | Cellular/Wi-Fi antenna | 9 | Charging cable support springs |
| 2 | Lifting lugs | 10 | Charging status indicators |
| 3 | Unit roof with cooling outlets | 11 | Touch screen |
| 4 | Power modules (1–4 per cabinet) | 12 | RFID reader |
| 5 | Power distribution module | 13 | Function buttons |
| 6 | Control module | 14 | Vehicle connectors and holders |
| 7 | Mains module | 15 | Front panel |
| 8 | Steel base | 16 | AC charging socket (option) |

3.4. Modules of the charging power unit

3.4.1. Power module

The power module (C500/500 V and C800/800 V) provides the power for the charging power unit. The power module has two channels (2 x 25 kW), A on the right and B on the left.

Figure 6. Power module overview



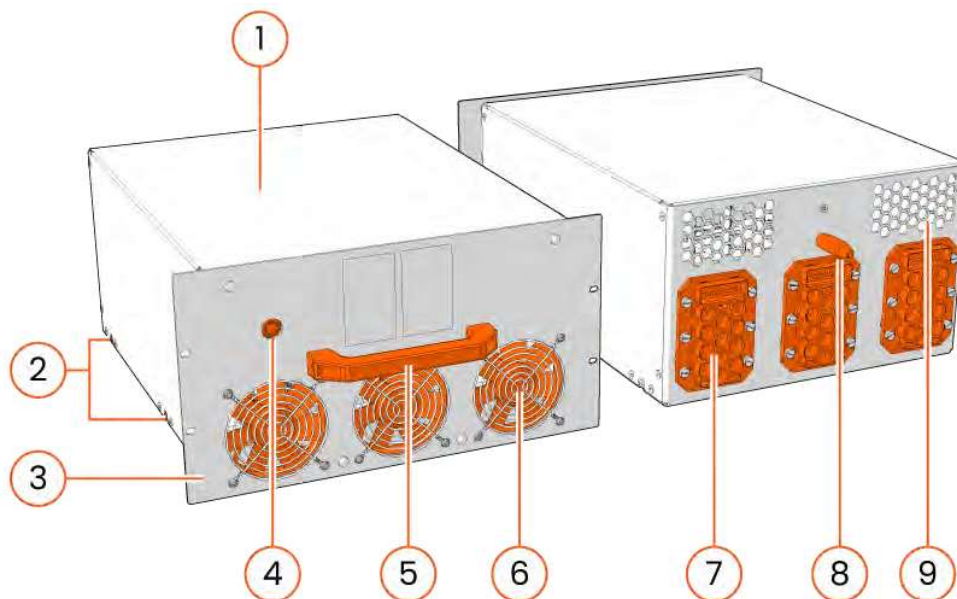
- | | | | |
|---|--------------|----|--|
| 1 | Cover | 6 | Channel status indicators ^a |
| 2 | Rollers | 7 | Circuit breaker |
| 3 | Front panel | 8 | Cooling outlets |
| 4 | Cooling fans | 9 | Guide pins |
| 5 | Handles | 10 | Multi-quick connector |

^aGreen: OK, ready for operation. Blue: operation. Red: error.

3.4.2. Dynamic power distribution module

The dynamic power distribution module of the charging power unit routes and re-routes the power channels to the charging points during the charging session.

Figure 7. Dynamic power distribution module overview



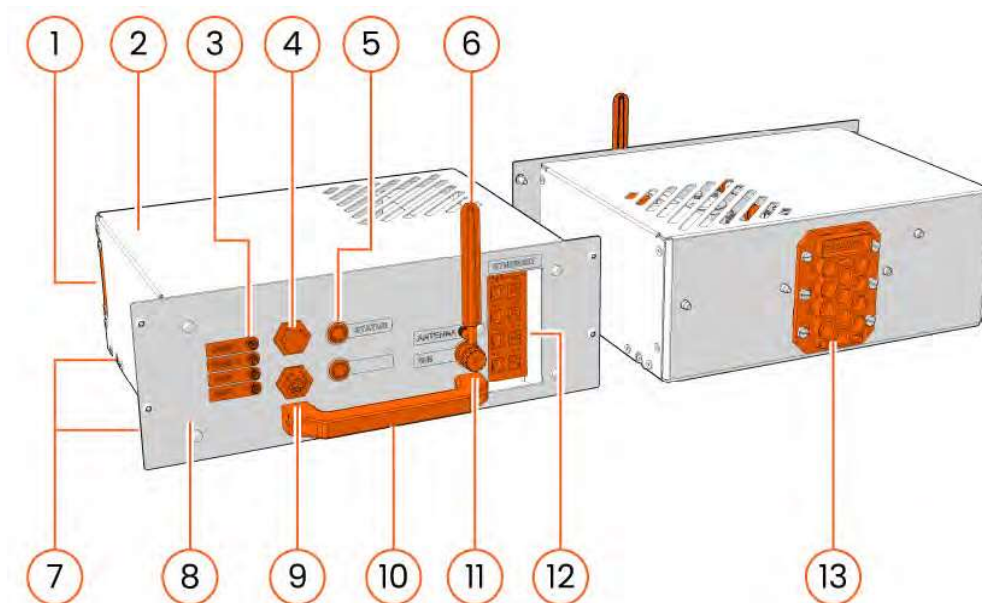
- | | | | |
|---|-------------------------------|---|------------------------|
| 1 | Cover | 6 | Cooling fans |
| 2 | Rollers | 7 | Multi-quick connectors |
| 3 | Front panel | 8 | Guide pin |
| 4 | Status indicator ^a | 9 | Cooling outlets |
| 5 | Handle | | |

^aGreen: OK, ready for operation. Blue: operation. Red: error.

3.4.3. Control module

The control module handles the communication in the charging power unit.

Figure 8. Control module overview



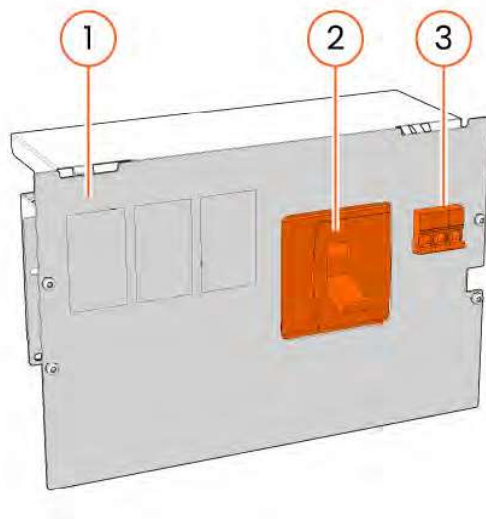
- | | | | |
|---|---|----|-------------------------------------|
| 1 | Mounting plate for printed circuit boards | 8 | Front panel |
| 2 | Cover | 9 | Ethernet port (external) |
| 3 | Antenna cable connectors | 10 | Handle |
| 4 | USB port | 11 | SIM card adapter (for customer SIM) |
| 5 | Status indicator ^a | 12 | Ethernet switch (internal) |
| 6 | Antenna (for customer modem) | 13 | Multi-quick connector |
| 7 | Rollers | | |

^aGreen: OK, ready for operation. Blue: operation. Red: error.

3.4.4. Mains module

The mains module of the charging power unit houses the terminal blocks for the main AC supply power cables, the main switch for the cabinet, and the miniature circuit breaker (MCB) for the auxiliary circuit.

Figure 9. Mains module overview

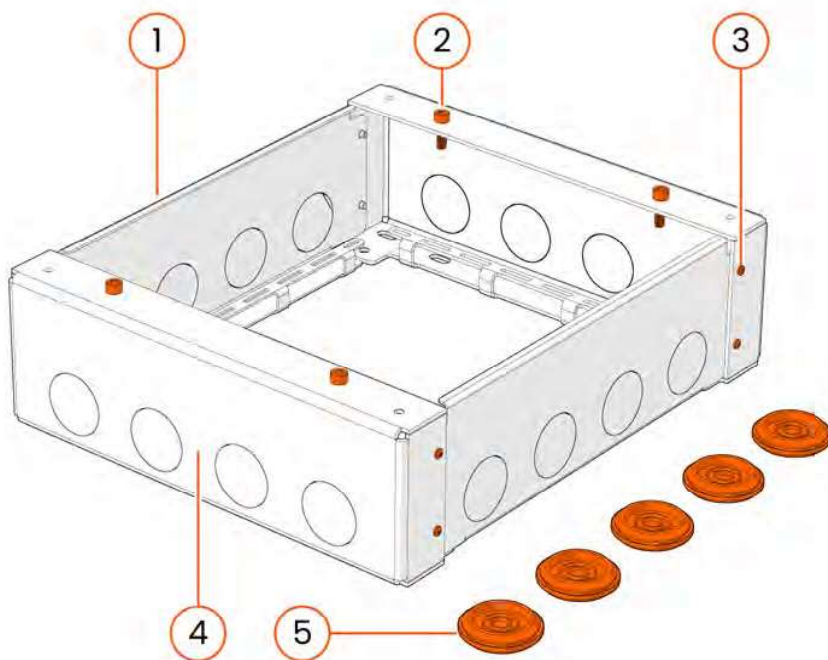


- 1 Front panel
- 2 Main switch (circuit breaker)
- 3 Miniature circuit breaker (MCB) for the control voltage

3.5. Steel base (option)

The steel base is an installation foundation that provides additional height under the cabinet for surface-installed cables. It is a standard part for Kempower Station Chargers (included in the delivery) and an optional part for Kempower Power Units (ordered separately). All sides of the steel base have pre-machined knock-outs for cables.

Figure 10. Steel base parts



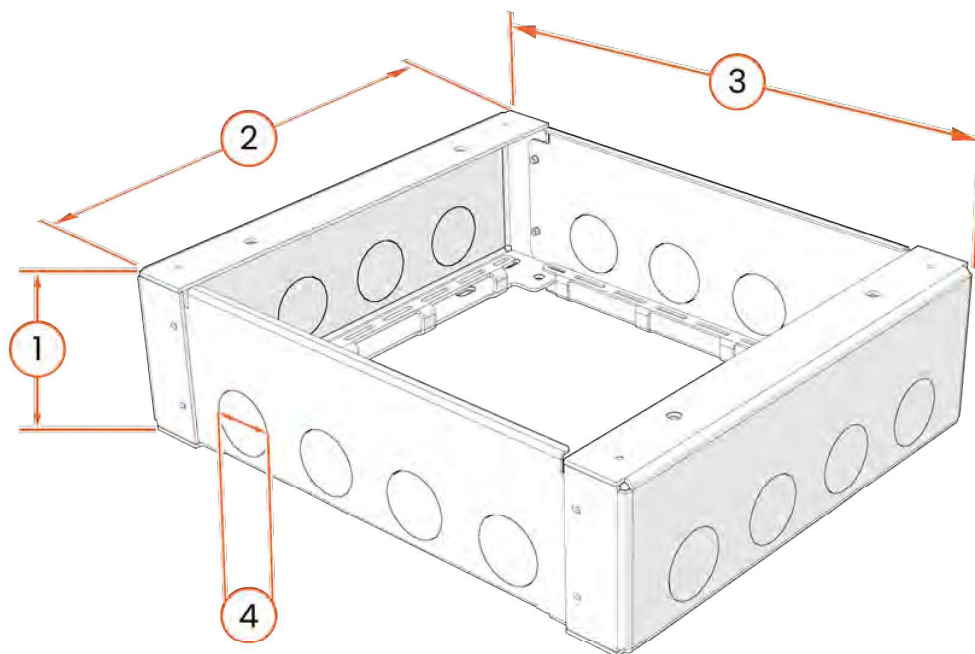
- | | | | |
|---|-----------|---|----------------|
| 1 | End panel | 4 | Side panel |
| 2 | M12 bolt | 5 | Cable bushings |
| 3 | M6 bolt | | |



NOTE

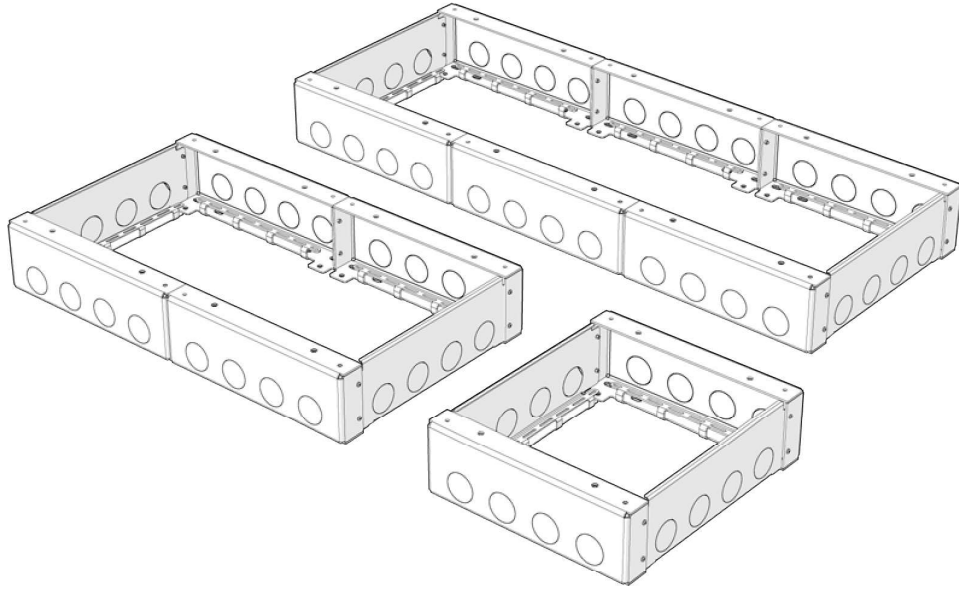
The fasteners used for installing the steel base to the installation surface are not included in the delivery.

Figure 11. Steel base dimensions



- 1 Height 200 mm
- 2 Depth 702 mm
- 3 Width 600 mm
- 4 Diameter 80 mm

Figure 12. Steel base options



3.6. Kempower DC Satellites

3.6.1. Satellite


NOTE

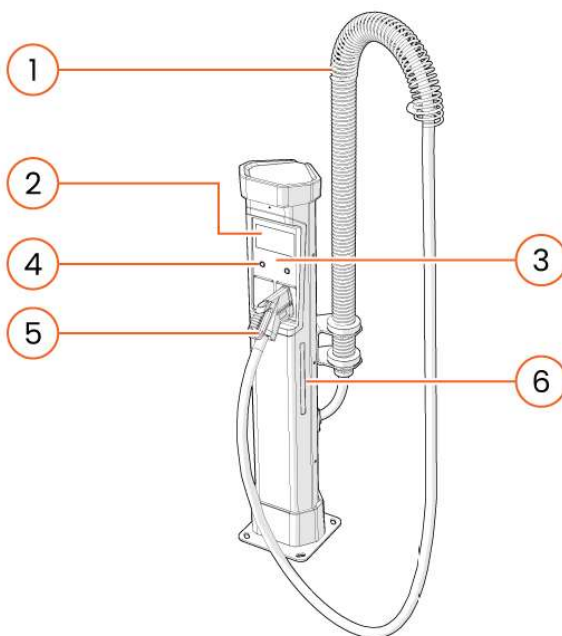
See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.


NOTE

See [9: Unit footprints and clearances](#) for the footprints and required clearances of the units.

Kempower Satellite is the charging point connected to the charging power unit. The single Satellite has one vehicle connector and the double has two. See the product datasheet for the available charging cable and vehicle connector types.

Figure 13. Kempower Satellite overview (single)



- | | | | |
|---|-------------------------------|---|--|
| 1 | Charging cable support spring | 4 | Function buttons |
| 2 | Touch screen | 5 | Vehicle connector and holder |
| 3 | RFID reader | 6 | Charging status indicator ^a |

^aGreen: OK, ready to charge. Blue: charging. Red: error.

The height of the charging status indicator light-emitting diode (LED) bar indicates the state of charge (SoC) of the vehicle being charged.

3.6.2. Satellite Version 2


NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.


NOTE

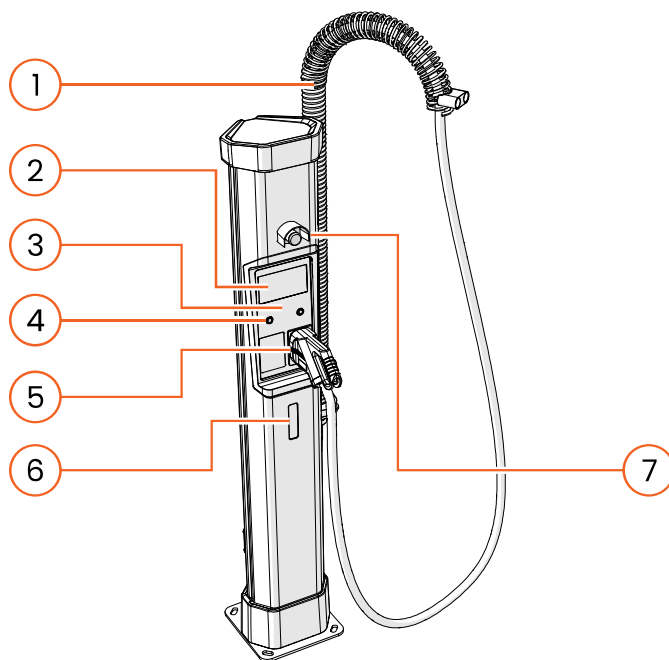
See 9: Unit footprints and clearances for the footprints and required clearances of the units.


NOTE

The Satellite Version 2 does not have charging status indicator LEDs.

Kempower Satellite Version 2 is the charging point connected to the charging power unit. The single Satellite has one vehicle connector and the double has two. See the product datasheet for the available charging cable and vehicle connector types.

Figure 14. Kempower Satellite Version 2 overview (single, with integrated energy meter)



- | | | | |
|---|-------------------------------|---|--------------------------------|
| 1 | Charging cable support spring | 5 | Vehicle connector and holder |
| 2 | Touch screen | 6 | Integrated energy meter |
| 3 | RFID reader | 7 | Equipment stop button (option) |
| 4 | Function buttons | | |

3.6.3. Liquid Cooled Satellite


NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.


NOTE

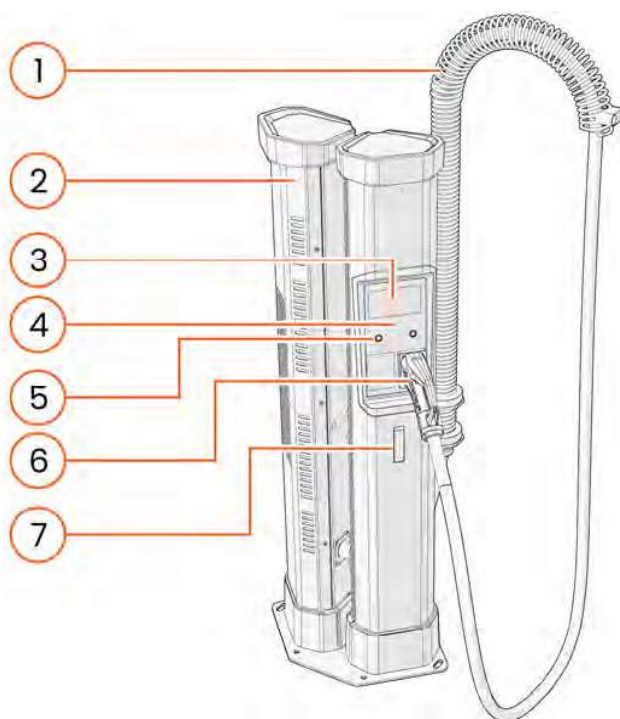
See 9: Unit footprints and clearances for the footprints and required clearances of the units.


NOTE

Liquid Cooled Satellite does not have charging status indicator LEDs.

Kempower Liquid Cooled Satellite is the high-power charging point connected to the charging power unit. See the product datasheet for the available charging cable and vehicle connector types.

Figure 15. Kempower Liquid Cooled Satellite overview (single)



- | | | | |
|---|-------------------------------|---|------------------------------|
| 1 | Charging cable support spring | 5 | Function buttons |
| 2 | Liquid cooling unit | 6 | Vehicle connector and holder |
| 3 | Touch screen | 7 | Energy meter window |
| 4 | RFID reader | | |

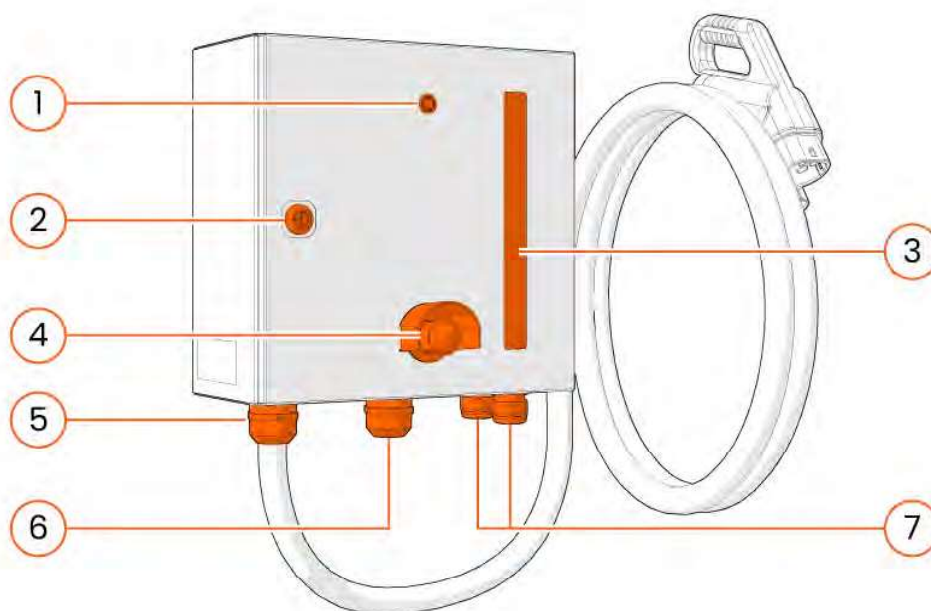
3.6.4. Control Unit


NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.

Kempower Control Unit is the charging point connected to the charging power unit. Control Unit has one vehicle connector. See the product datasheet for the available charging cable and vehicle connector types.

Figure 16. Kempower Control Unit overview



- | | | | |
|---|--|---|--|
| 1 | Control button with LED indicator | 5 | Charging cable |
| 2 | Front panel lock | 6 | Supply DC power cable |
| 3 | Charging status indicator ^a | 7 | Cable strain reliefs for control cable, control bus, and additional equipment stop cable |
| 4 | Equipment stop button | | |

^aGreen: OK, ready to charge. Blue: charging. Red: error.

3.7. Kempower AC Satellites

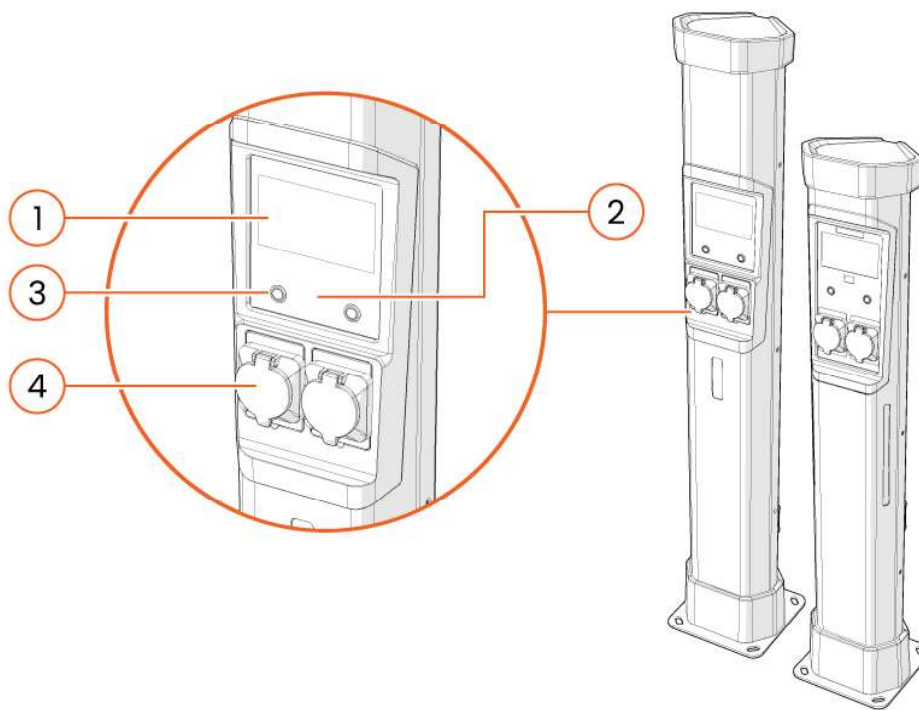
3.7.1. AC Satellite


NOTE

AC Satellite Version 2 does not have charging status indicator LEDs.

Kempower AC Satellite is a standalone AC charging point that is not connected to the charging power unit but directly to the main power supply. The single AC Satellite has one AC charging socket and the double has two.

Figure 17. AC Satellite overview

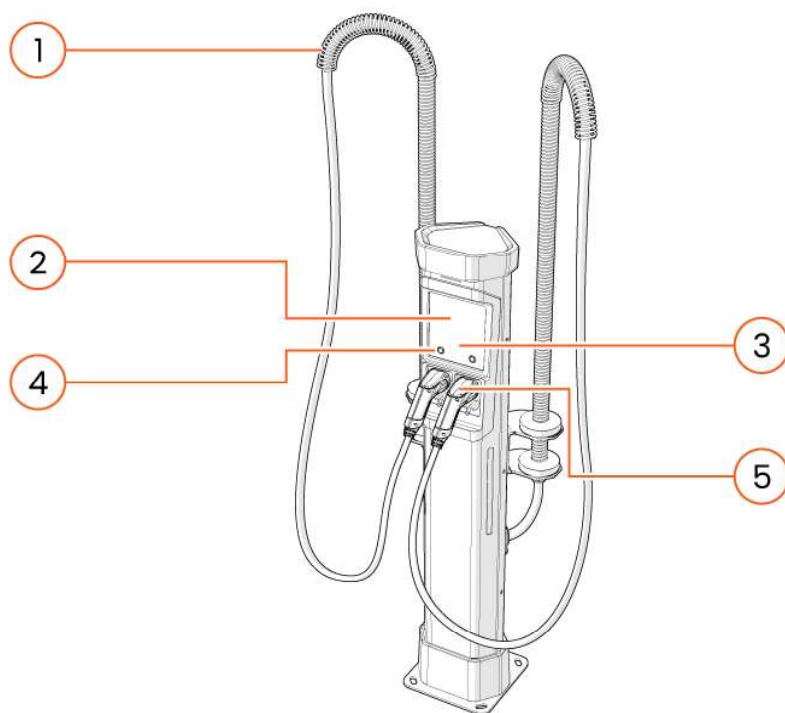


- 1 Touch screen
- 2 RFID reader
- 3 Function buttons
- 4 Charging connectors

3.7.2. AC Satellite with charging cables

The Kempower AC Satellite with cables is a standalone AC charging point that is not connected to a charging power unit but directly to the main power supply. The single AC Satellite has one AC vehicle connector and the double has two.

Figure 18. Kempower AC Satellite with charging cables overview



- 1 Charging cable support spring
- 2 Touch screen
- 3 RFID reader
- 4 Function buttons
- 5 Vehicle connectors and holders

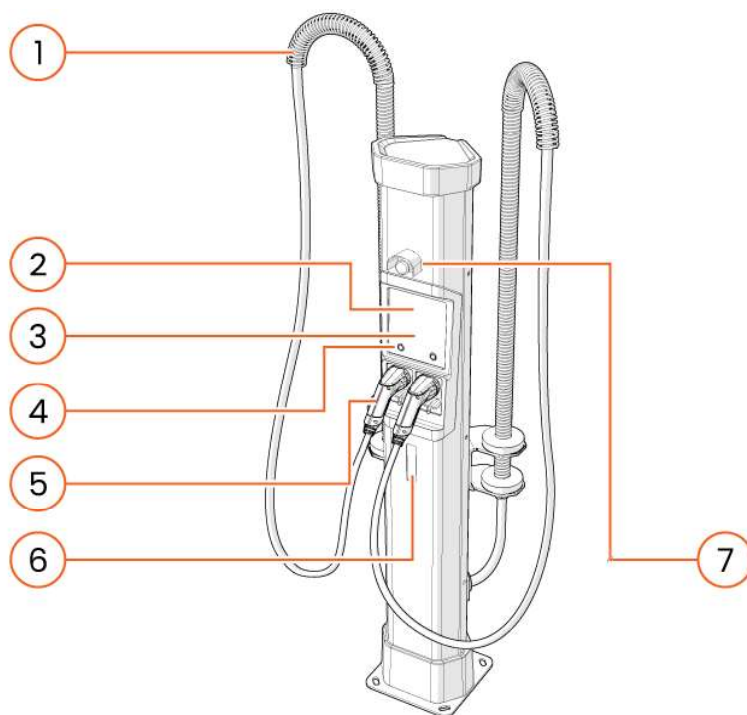
3.7.3. AC Satellite Version 2 with charging cables


NOTE

AC Satellite Version 2 does not have charging status indicator LEDs.

Kempower AC Satellite with cables is a standalone AC charging point that is not connected to a charging power unit but directly to the main power supply. The single AC Satellite has one AC vehicle connectors and the double has two.

Figure 19. Kempower AC Satellite with charging cables overview



- | | | | |
|---|-------------------------------|---|--------------------------------|
| 1 | Charging cable support spring | 5 | Vehicle connectors and holders |
| 2 | Touch screen | 6 | Energy meter window |
| 3 | RFID reader | 7 | Emergency stop button (option) |
| 4 | Function buttons | | |

3.8. Mounting tube for Satellites (option)

The standard installation flange of the Satellite cannot be used if the Satellite is installed in a concrete element typically used for e.g. lamp posts. In this case, order the mounting tube separately as an option.

The optional mounting tube is compatible with concrete elements designed for posts that have a diameter of 127 mm and it is available in different lengths. For assistance, contact [Kempower Sales Support](#).

Figure 20. Optional mounting tube for Satellites

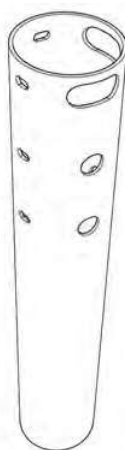
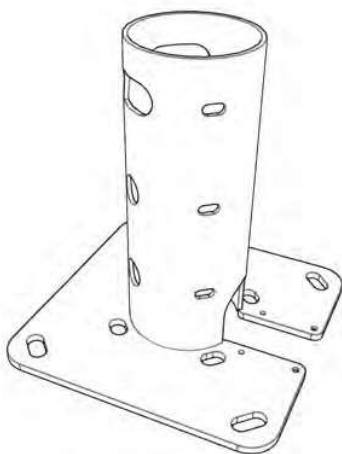
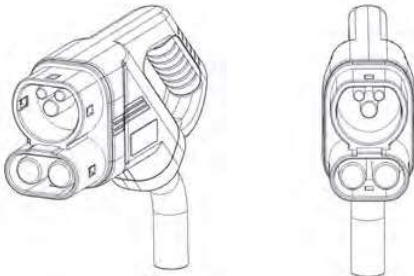
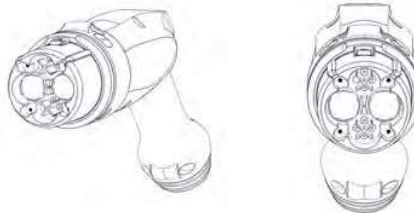
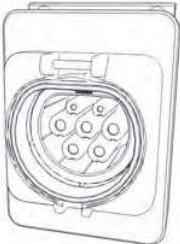
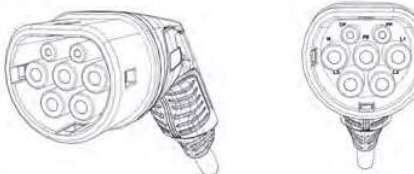


Figure 21. Standard installation flange for Satellites



3.9. Vehicle connector types

	Combined Charging System (CCS2) ^a
	CHAdeMO
	Type 2 AC socket
	Type 2 AC vehicle connector

^aOnly option available for Liquid Cooled Satellite and Control Unit.

4. PLANNING THE ELECTRIC VEHICLE CHARGING SITE



DANGER

Electric vehicle charging equipment must be located at a safe distance from potentially explosive atmospheres. Know and obey local laws and regulations.



NOTICE

The site plan is the customer's responsibility. Kempower does not provide plans for individual installations.



NOTICE

Branding according to Kempower Branding Guidelines. Applying additional painting or stickers to the unit by the customer voids the warranty.



NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.

As the requirements of individual installations vary significantly, it is not possible to give detailed instructions that are valid for all sites. Take into account at least the following general issues when you plan the layout of the electric vehicle charging site:

- The local rules and requirements on civil works, electrical installations, cable routing, and cable dimensioning. Cable dimensioning is the electrical designer's responsibility. For assistance, contact [Kempower Sales Support](#).
- When you determine cable lengths:
 - Leave an additional 1000 mm of supply power cable length above the installation surface.
 - For Satellites, leave an additional 1700 mm of control cable and communication cable length above the installation surface.
- How the units are moved to and within the installation site. The maximum allowed tilting for the charging power units is 6 degrees.
- The installation surfaces of the site:
 - The units can be installed directly on a flat, level, and solid surface that can withstand the weight of the unit, or on concrete foundations that are prefabricated or made on site. See [13: Examples of concrete foundations](#).
 - The cables can be routed above or below the ground. If the cables are installed in cable channels, make sure that the cable channels are wide enough for all required cables.

- The specific requirements and ambient conditions of the site:
 - If you plan to install the charging power unit in a closed space, contact [Kempower Sales Support](#) to approve the location before installation. If the unit is installed indoors, make sure that the air flow to the unit is sufficient.
 - If the temperature stays above 30 °C for long periods of time, we recommend placing the charging power unit in a well-ventilated shelter with the display screen facing away from direct sunlight. For assistance, contact [Kempower Sales Support](#).
- The location of the main supply point: supply grid main distribution board or one of the secondary substations.
- The configuration of your communication system. Connectivity to the Kempower ChargeEye and possible OCPP backend system requires an Internet connection, either with a SIM card or Ethernet (SuperCat 6/7 shielded) cabling to your wide area network (WAN) router.
- The charging power unit must be easily accessible for maintenance without disturbing traffic or other movement in the charging area.
- The charging points must be easily accessible to the end users.
- The maximum distance between the charging power unit and a connected charging point is approximately 80 m.

4.1. Mechanical planning



NOTE

See the product datasheets for the dimensions and weights of the units. Product datasheets are available at mediabank.kempower.com.

As the requirements of individual installations vary significantly, it is not possible to give detailed instructions that are valid for all sites. Take into account the local rules and requirements on civil works, electrical installations, cable routing, and cable dimensioning. For assistance, contact [Kempower Sales Support](#).

The Kempower delivery includes the charging equipment and cabling inside the units. The steel base is the standard installation foundation for the Station Charger, and it is included in the delivery. If the cables are routed above the ground, order the optional steel base for the Power Unit to add installation space below the unit. See [3.5: Steel base \(option\)](#).

The standard installation flange of the Satellite cannot be used if the Satellite is installed in a prefabricated concrete element typically used for

e.g. lamp posts. In this case, order the mounting tube separately as an option. See [3.8: Mounting tube for Satellites \(option\)](#).

All other installation requirements such as concrete elements or foundations, cable channels etc. are the customer's responsibility. For assistance, contact [Kempower Sales Support](#).

- For the footprints and clearances, see [9: Unit footprints and clearances](#).
- For examples and indicative dimensions of concrete foundations, see [14: Indicative dimensions for concrete foundations](#).
- Take into account the bending radius of the cables, especially if units are installed near walls. The cables to all units are always routed from below the unit.
 - The AC mains power cables are routed to the charging power unit from the front or the left side of the unit. See [4.2.1: AC mains power cables to the charging power unit](#).
 - The connection cables to the charging point(s) are routed from behind or the right side of the charging power unit. See [4.2.2: Cabling between the charging power unit and DC charging points](#).
- The maximum distance between the charging power unit and a connected charging point is approximately 80 m. To reduce the cable diameter:
 - Place the charging points as close to the charging power unit as possible.
 - Place the charging power unit approximately midway between the charging points connected to it.
- Make sure that the charging points are placed and oriented so that the charging cables easily reach the vehicles to be charged.
 - The maximum reach of the 5 m charging cable (nominal length, the actual length is 6 m) is approximately 4 m.
 - The maximum reach of the 7 m charging cable (nominal length) is approximately 6 m.
 - Place the Satellites in the top corner of each parking slot, on the driver's side of the vehicle.
 - As the charging socket can be located on either side of the vehicle, we recommend that the width of each parking slot is at minimum 3 m.
 - Rotate the single Satellite 45–60 degrees to provide maximum operating area for the charging cable.