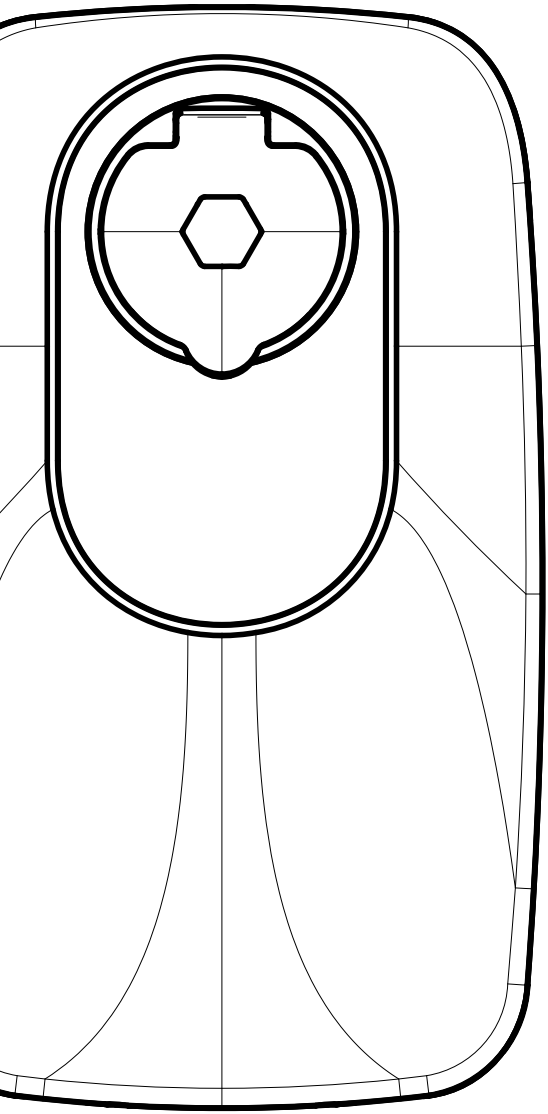
Single Wallbox

Installation manual



SWB_4xx_22_T2
SWB_4xx_22_C7
SWB_4xx_22_T2S
SWB_4xx_22_T2SE

English

To access the Single Wallbox Installation Manual
please scan the QR code or use the link
https://www.enovates.com/manual-installation-manual/

To access the Pedestal Installation Manual
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To access the Single Wallbox Acessories Manual
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CONTENTS

1. SAFETY INSTRUCTIONS

1.1. Purpose

Safety instructions are provided below in order to ensure safe, long-term use of the product. Failure to comply with the instructions and general safety guidelines for electrical systems may lead to an electric shock, fire hazard, damage, malfunction, injury and/or death.

Read the safety instructions in this document before installing and using the product.

1.2. Safety terminology

 **DANGER**	Danger texts provide important information to avoid situations with a high chance to cause severe malfunction, damage, injuries or death.
 **WARNING**	Warning texts provide important information to avoid situations with a significant chance to cause malfunction, damage, injuries or death.
 **CAUTION**	Caution texts provide important information to avoid situations that may cause some degree of malfunction, damage or injuries.

DANGER

- Do not let the product be used by children, or individuals who cannot assess the risks associated with unintended product use. Children in the vicinity must be supervised by adults while the product is in use.
- Do not have the product serviced by non-qualified personnel in order to avoid the risk of serious injury from electric shock or damage to the product. None of the product's parts are intended to be serviced by users. Do not attempt to disassemble, tamper with, or modify the product. If the product requires servicing, repair or relocation, contact a qualified electrician to perform these operations.
- If an accident has occurred or a hazardous situation has developed with regard to the product, have a certified electrician immediately disconnect the product's electrical supply.
- Do not use the product if one or more of its components may have become damaged or compromised.
- Always make sure the product is not submerged in water, and is not located near water. Do not handle the product with wet hands, and make sure no liquid is sprayed on it or comes into contact with it. Store the charging cable in the socket to prevent unnecessary exposure to contamination or moisture. Handling the product or its components while conductive liquids are present may cause an electric shock with the risk of serious injury or death.
- Do not use or install the product in the vicinity of explosive, volatile, combustible or highly flammable substances. Note that some electric vehicles release hazardous or explosive gasses when charging, which may cause an explosion with the risk of serious injury or death. Refer to the vehicle's manual to check if this is the case, and follow the instructions it specifies before choosing the location of the product.

⚠ WARNING

- The product must be grounded through a permanent wiring system or grounding conductor.
- Disconnect input power at the circuit breaker before installing, cleaning, removing or relocating the product.
- The product should be used to charge Mode 3 compatible electric vehicles only. Check the vehicle's compatibility using the information in the vehicle manual.
- Avoid using a private power generator, adapters, conversion adapters or cord extensions with the product. The introduction of accessories not prescribed for the product may create technical incompatibilities that can cause malfunction or damage, and result in injury or death.
- Do not let the product and charging cable come into contact with heat sources. High temperatures may impair functionality, cause damage or cause hazards.
- Damage to the product may cause injury or death. Respect the product's operating parameters and technical specifications, and make sure damage is not inflicted or allowed to accumulate on the product. Do not use the product if it fails to operate normally or appears cracked, frayed, broken or otherwise damaged. If you suspect the product may have been damaged, have it checked by a qualified electrician as soon as possible.
- Take care not to apply force or pressure to any part of the product or to damage it with sharp objects or impacts.
- Use of the product may interfere with the proper functioning of medical or implantable electronic devices in the user, such as a pacemaker or defibrillator. The user should check with the manufacturer of such electronic devices whether electric charging may affect such a device before using the product.

! CAUTION

- Installing and/or testing the product incorrectly may result in damage to the product and/or a connected vehicle's battery. Such damage is excluded from the vehicle and charging product's warranties.
- The charging cable must be completely unwound and overlapping loops must be avoided before charging to prevent overheating, which may damage the product.
- Do not put fingers or objects in the socket or any other exposed part of the product, as doing this may cause injury or damage.
- Keep (electro)magnetic devices away from the product, as their use in the vicinity of the product may negatively affect the product's functionality, even to the point of causing damage to the product.
- Use the product only in temperatures within its operating range of -30°C to 50°C.
- Only transport and store the product in its original packaging. Do not subject the product to strong force, impact, pull, twist, tangle or drag and do not step on any part of the product. If the product is damaged in transport, while it was not transported in its original packaging, no damage liability can be accepted.
- Store the product in a dry environment and within the temperature range provided in the technical specifications.

2. TECHNICAL SPECIFICATIONS

	Residential & Fleet	Professional
Charging Mode	Mode 3 (IEC 61851-1ed. 3) ISO-15118	Mode 3 (IEC 61851-1ed. 3) ISO 15118
Charge Control	RFID (IEC 14443 A/ B, ISO 15693) Plug & Charge (ISO-15118-2)	RFID (IEC 14443 A/ B, ISO 15693) Plug & Charge (ISO-15118-2)
Connectivity	BLE 5.X Wifi Client Mode Ethernet (2x LAN, bridged)	BLE 5.Xw Wifi (AP & Client) Ethernet (WAN + LAN, router) 2G / 4G / LTE
Multi-charge (Parking Lot)	Satellite	Main Charger/ Satellite*
Backend Protocol	OCPP 1.6J OCPP 2.0	OCPP 1.6J OCPP 2.0
Metering	MID meter	MID meter
Load Balancing	Supported via optional hardware	Supported via optional hardware
HMI	BLE app	BLE app
Options	Broken PEN Detection BiDirectional Charging (V2G AC) HEMS Integration (EEBus)	Broken PEN Detection BiDirectional Charging (V2G AC) HEMS Integration (EEBus)

* A network with one main charger and one or multiple satellites acts as a charging hub. In this setup, satellite charge points are dependent on a main charger. The main charging station handles the loadbalancing in the charging hub.

Electrical Properties	
Supply network system	AC
Electric connection method	Permanently connected
Protective class	Class I equipment
Voltage Rating	1x230V+N (50Hz) 3x400V+N (50Hz) 3x230V (50Hz)
Current Rating	32A
Rated impulse voltage	4kV

Electrical Properties	
Max Charging Power	7.4kW (single phase) 22kW (triphase)
Charging socket	AC–Type2 socket Optional: T2S, T2SE
Cable plug	Cable (7m) with AC-Type2 plug
Installation wiring	0.75 .. 10mm²
Earth Leakage Detection	DC 6mA (included)
Compliancy	The products described above are in conformity with the relevant Union harmonization legislation: -Low Voltage Directive LVD (2014/35/EU and changes) -Electromagnetic Compatibility EMC Directive (2014/30/EU and changes) -Radio Equipment and repealing Directive (2014/53/EU) -Waste electrical and electronic equipment WEEE directive (2012/19/EU) -Registration, Evaluation, Authorization and Restriction of Chemicals REACH directive (No 1907/2006) -RoHS directive (2002/95/EC) -RoHS 2 Directive (2011/65/EU) and are compliant with the following standards: -IEC 61851-1:2017 -IEC 61851-21-2:2018 -IEC 62196 -IEC 60529:1989 + A1: 1999 + A2:2013 -IEC 61439-7:2018 -OCPP1.6 Full incl. Security -EV-Ready 1.4G1 -ZE-Ready 1.4G1

Physical Properties	
Access	Locations with non-restricted access
Dimensions (W x H x D)	248 x 426 x 120 (T2 or C7) 248 x 426 x 165 (T2S or T2SE)
Weight (kg)	3.5 - 5.0 kg
Enclosure rating	IK10 (IEC 62262) IP54 (IEC 60529)
Operating Temperature	-30°C … +50°C
Humidity	Max 95% (non condensing)

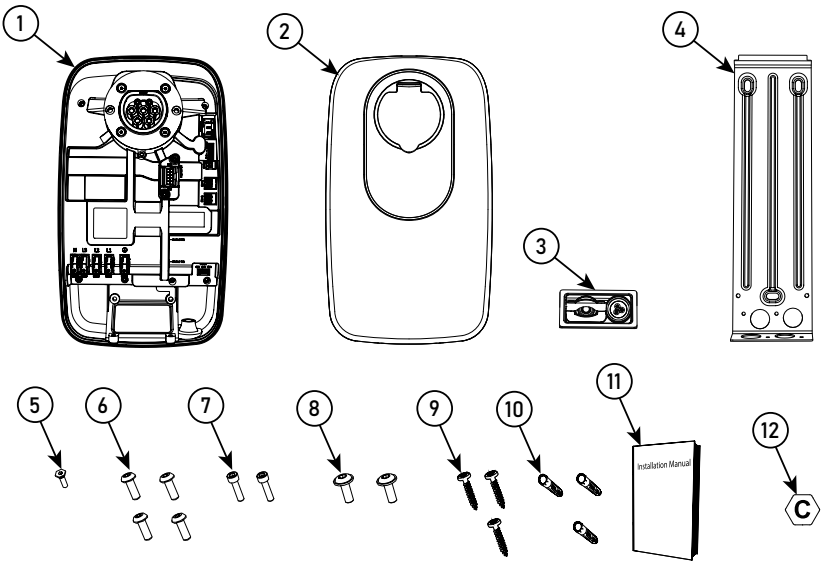
Physical Properties	
Mounting	Wall mount (included) Single side pedestal (optional) Double side pedestal (optional)
Warranty	2 years

3. INSTALLATION SUPPLIES

Not all the necessary tools for installation are delivered with the product.

Before you start, please check that all tools and components, required for an easy installation, are available.

3.1. Box content



#	Description	Amount
1	Charger unit (T2 version or C7 version with fixed cable)	x1
2	Cover (contains socket lid)	x1
3	Cable block	x1
	Cable bridge	x1

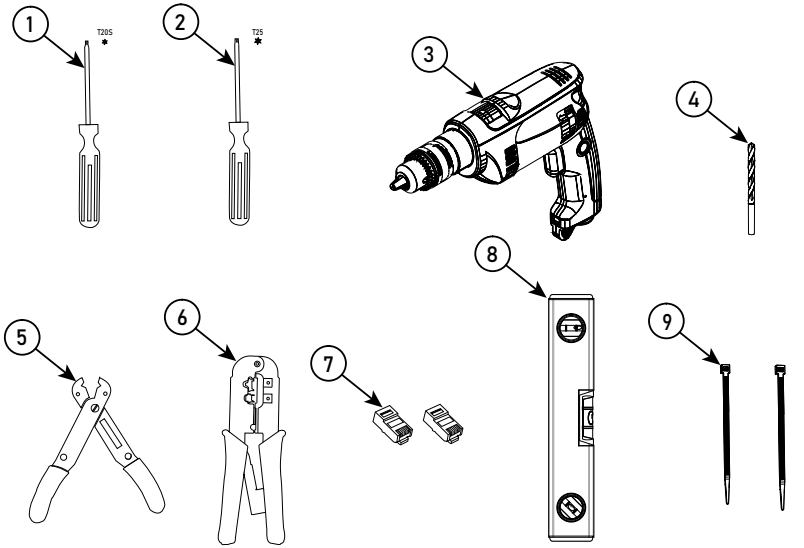
#	Description	Amount
4	Wall bracket	x1
5	Security screw M4x8 (Torque 1.2Nm)	x1
6	Screws M5x14 (Torque 1.2Nm)	x4
7	Screws M5x16 (Torque 1.2Nm)	x2
8	Screws M6x14 (Torque 1.2Nm)	x2
9	Screws 6x30 (Torx T25)	x3
10	Plugs 8mm	x3
11	Installation Manual	x1
12	C sticker (hexagonal)	x1

3.2. Accessories

#	*Can be additionally purchased*	**Residential & Fleet**	**Professional**
1	eDSBI	x	x
2	eDSBIII	x	x
3	eDLB		x
4	eDP1B: Dynamic P1 Balancer	x	x
5	External Coil set	x	x
6	Single Side Pedestal	x	x
7	Double Side Pedestal	x	x
8	Pedestal Anchor (flat for solid soil)	x	x

Compatible external tools	**Residential & Fleet**	**Professional**
Potential-free on/off peak contact	x	x
Shunt device	x	x

3.3. Required tools



#	Description	Amount
1	Torx screwdriver T20S	x1
2	Torx screwdriver T25	x1
3	Drill for pedestal mounting (suited to mounting surface)	x1
4	Hand drill 8mm for wall mounting (suited to mounting surface)	x1
5	Cable stripper	x1
6	Ethernet RJ45 cable crimper	x1
7	Ethernet connector RJ45 for cable crimping	x2*
8	Spirit level tool	x1
9	Tie wraps	x2

* When installing a charging hub, 1 or 2 ethernet connectors are used for each charge point. This depends if charging hub is configured as a daisy chain or a star.

4. INSTALLATION REQUIREMENTS

4.1. Installer specifications

Only authorized technicians should install and maintain the product. The technician should conform to the following qualifications:

- safety measures as well as the parts of this manual that relate to the installation of the product;
- The technician should be aware of and comply with all applicable local, national and international laws and regulations;
- The technician should be capable of acknowledging the potential hazards of the product and take the necessary precautions to protect people and property from hazard damage.

4.2. General cable specifications

The product requires a proper power cord. An ethernet cable is recommended (not required) to connect the charge point with the internet. Wifi and 4G (only professional) are also possible to connect the charge point with the internet. The ethernet cable is not to be used underground unless through a holding tube or reinforced (STP) cable in order to prevent corrosion by moisture or rupture by ground shifts.

Insofar as is possible, the cables should already be present and ready to connect to the product at the start of the product installation procedure. Use of sheathed cables is recommended when running cables underground. Do note that the RJ45 connectors should be connected only after feeding the cable through the grommet into the product.

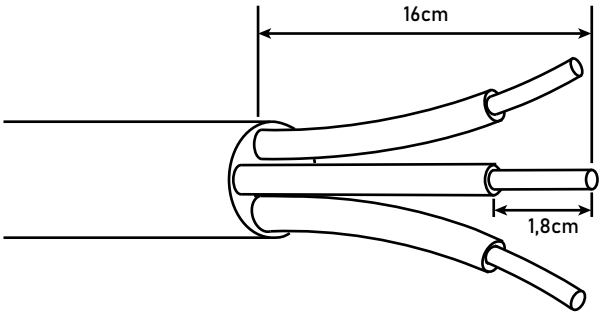
Always use shielded ethernet cable when installing.

4.3. Power cord specifications

The electrician should select the type and dimensions of the power cord and safety components as appropriate for the installation environment and situation, compliant with local regulations.

The power cord should be able to provide power continuously at maximum load for the charging station.

- Power cord thickness: Ø 10 – 22.5 mm.
- Power cord cross-section: solid wires max 10 mm² | string wires 6 mm² .



1. Strip ±16 cm from the exterior insulating coating of the power cord. Consider shortening cable length if that makes installation easier.
2. Strip ±1,8 cm from the exterior insulating coating of the N, L3, L2, L1 and PE wires.

4.4. Grounding specifications

The charging station should be grounded in accordance with local regulations.

4.5. Required nominal input voltage

- 1-phase: 230 V ± 10 % - 50 Hz.
- 3-phase: 400 V (3 × 400 V + N) ± 10 % - 50 Hz.

A 3-phase charging station can also be connected to a 1-phase setup. Important note: when connecting only 1 phase, the charge point MUST be connected to L1, NOT to L2 or L3. Make sure there is 230V between L1 and N at the power input of the charge point.

Some electrical vehicles may have a more limited voltage tolerance than 10%. If issues occur when charging, and the voltage is close to the 10% voltage tolerance, check that the electrical vehicle type is suitable for charging with this voltage.

4.6. Electrical protection specifications

Circuit breaker

The installer must select a suitable circuit breaker (type B or C, rated 40A) to match the charging limit of the charging station, taking into account the specifications of the circuit breaker manufacturer, selectivity regulations and EV-Ready guidelines.

<table>
<tr><th colspan="2">Set a lower load limit on the charging station than the nominal current of the charging station protection.</th></tr>
<tr><td>The overcurrent protection is built in as part of other electrical components in an existing consumer unit.</td><td>Set the load limit to 80% of the rated current.</td></tr>
<tr><td>The overcurrent protection is built into a special case with adequate cooling.</td><td rowspan="2">Set the load limit to 90% of the rated current.</td></tr>
<tr><td>A simultaneity factor of 1 was used in the design of the consumer unit.</td></tr>
</table>

Residual current protection

According to IEC 60364-7-722:2015, this charging station must be installed with a minimum residual current protection type of A, rated 30mA. IEC 60364-7-722:2015, paragraph 722.531.2.101:

Excluding circuits that use electrical isolation as a safety measure, each connection point shall be shielded using residual current protection.

Note: When installing in accordance with EV-Ready guidelines, each residual current protection system must be type A high immunity: type HPI, SI, HI, KV... depending on the supplier.

RCBO

Has overcurrent and residual current protection as described above.

Note: The charging station comes with a DC fault current detection device, certified in accordance with IEC 62955.

The electrician is responsible for selecting a suitable residual current protection that complies with local rules and regulations.

5. WALL MOUNTING

Note: For mounting the charger on a pedestal, see the installation booklet, which is accessible through the QR code or web link on the first page of this manual.

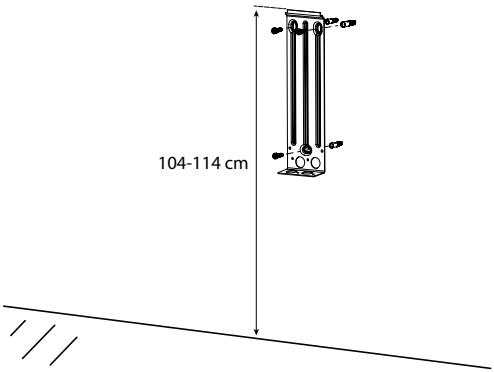
The wall mounting procedure consists of a few steps.

1. Install the wall bracket.
2. Secure the cable block to the wall bracket.
3. Slide the charger onto the wall bracket.
4. Secure the charger to the wall bracket.
5. Connect the cables.
6. Attach and secure the cover.
7. Attach and secure the socket lid.
8. If necessary, attach a C sticker.

More detailed information about each step is available.

Install the wall bracket.

1) The standard installation height is 100 to 110 cm from the floor or ground, measured from the center of the socket. The wall bracket contains three pill-shaped clearance holes for installation. Use the clearance holes to mark the positions on the wall where the holes should be created, and then drill the three holes.



Note: Use proper levelling tool to make sure that the wall bracket is levelled.

Make sure the position of the bracket provides at least 30 centimeters of space around the charger when the charger is attached to it.

Lead the cables through the circular holes at the bottom of the bracket. Use either the holes in the back support, or the holes in the bottom support, as is most convenient for your cable setup.

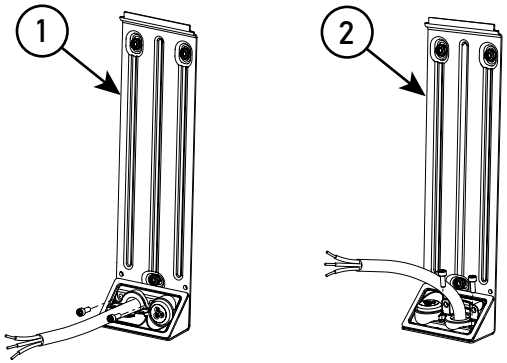
2) If the mounting surface consists of concrete or brick, fix the bracket securely to the wall using the provided 3 8mm plugs and 3 M6x30 screws. If there is a different type of mounting surface, another fixing method must be used.
Note: Make sure the bracket is level and sturdy.

Secure the cable block to the wall bracket.

1) Position the cable block onto the bottom of the wall bracket using

your preferred orientation. There are circular holes in the bottom and the back of the wall bracket, from which cables can pass through the cable block into the charger unit. Remove the bridge component from the cable block. Pull the cables through the circular holes and through the cable block.

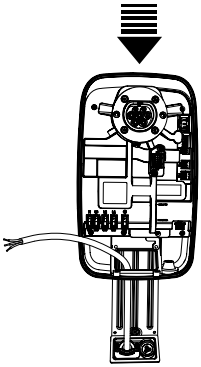
2) Use the provided 2 M5x16 (Torque 1.2Nm) screws to secure the cable block to the wall bracket. Keep the bridge component nearby.



1: cable from back (wall)
2: cable from below (ground)

Slide the charger onto the wall bracket.

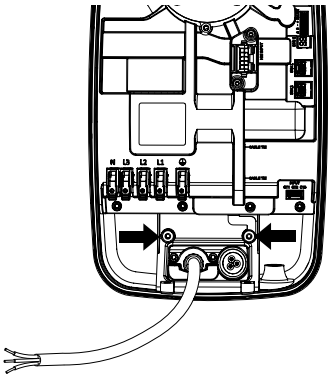
1) Align the niche with the wall bracket.



Note: The back of the charger unit contains a niche, designed as a connection slot for a wall bracket or pedestal bracket.

2) Carefully slide the charger unit onto the wall bracket so that the wall bracket slots into the back of the charger unit. Lead the cables into the charger unit through the hole at the bottom.

Secure the charger to the wall bracket.

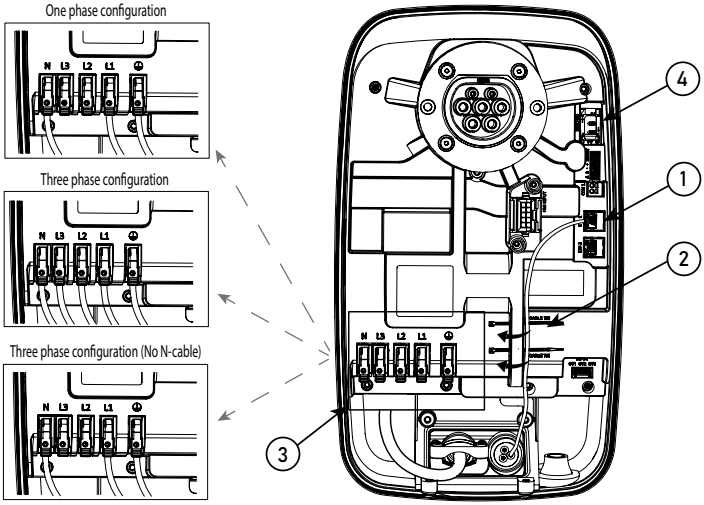


Use the provided 2 M6x14 (Torque 1.2Nm) screws to secure the charger unit to the wall bracket through the clearance holes and tapped holes inside of the mounted charger.

Connect the cables.

Feed all cables into the charger unit through the cable block.

1) Lead the power cables through the grommet with the attachable bridge component that provides tensile protection. The bridge component has already been removed and will be attached later.



2) Connect each cable to its corresponding cable slot using the locking system: lift the slot lid, insert the cable and close the slot lid.

   The charger unit contains labelled cable slots ③. In order from left to right, cables should be attached to the slots as follows:

   N slot: blue cable

   L3 slot: grey cable

   L2 slot: black cable

   L1 slot: brown cable

   PE slot: yellow-green cable

The cable colors are dictated by the IEC 60445 standard.

If you are using a 3x230V setup without N cable, attach the PE cable to the PE slot and attach one cable to the L1 slot, the other to the N slot. This is identical to the 1 phase configuration.

3) Use the provided 2 M5x16 (Torque 1.2Nm) screws to attach the tensile protection bridge. The cable should be attached at the unstripped portion under the slot. The unstripped cable portion should protrude from the bridge by 1 centimeter.

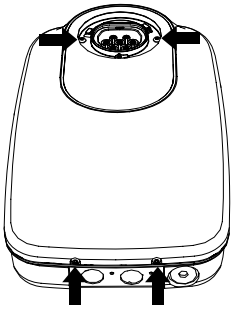
   Professional edition only: Install a SIM card in the SIM card slot at the top right of the charger unit ④.

4) Lead the ethernet cable through the 3 cable grommet in the cable block and pinch the connector onto the cable ① .

5) Connect the ethernet cable to the top ethernet slot, marked 'ETH1', at the right side of the charger unit.

6) Secure the ethernet cable to the charger with tie wraps, using the two positions inside of the charger unit designated 'cable tie' ②.

Attach and secure the cover.

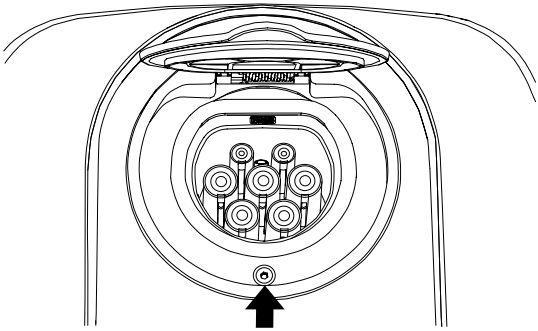


1) Line the back of the cover up with the front of the charger unit. The cover should slot into place if done correctly.
2) Use the provided 4 M5x14 screws (Torque 1.2Nm) to secure the cover onto the charger unit using the holes around the charger socket and at the bottom of the cover.
   Note: It is recommended to use copper grease when securing the cover with the screws.

Attach and secure the socket lid.

The socket lid is attached and secured using a bayonet locking system.

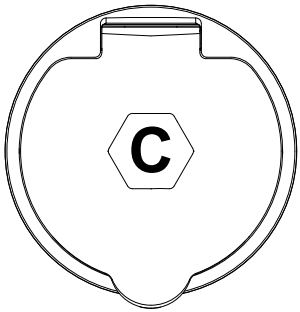
1) Place the socket lid diagonally onto the charger socket frame and turn clockwise to slot the socket lid in place.
2) Lift the socket lid to reveal a tapped hole at the bottom of the socket lid frame.



3) Use the provided 1 M4x8 screw (Torque 1.2Nm) to secure the socket lid frame to the charger socket frame.

If necessary, attach a C sticker.

If the charger is installed in a public place, attach a C sticker (adhering to the EN-17186 standard) to the front of the lid, in line with the hexagonal indentation on the lid.



6. CHECK BEFORE CONFIGURATION

Checks before switching on

1) Check that all screws and connections are attached firmly.
2) Check that all phase cables have been connected correctly.

3) Check that the Ethernet cable has been connected correctly.
4) Check the power throughput at the overcurrent protection, residual current protection or circuit breaker in the meter box, before turning on the charging station protection.

Switching on the charging station

1) Switch on the power for the circuit on which the charging station is installed.

   As the charging station initializes, its LED light will flicker yellow.

2) Wait until the LED light stops flickering and stays off, indicating the initialization is complete. This may take 5 to 10 minutes.
   Note: Tripping the overcurrent protection or residual current protection may be caused by a grounding error, leakage or faulty relay. If, after resetting the protections, the product cannot be reactivated or the protections are tripped again, contact the installer or relevant provider(s).

   You are now ready to configure the charger.

7. HOW TO CONFIGURE

The charger can be configured using the My-eNovates app, available in the App Store and Play Store. The app is compatible with phones running Apple IOS 12 or a more recent version, as well as phones running Android 10 or a more recent version.

You will need the following tools and information to configure the charger using the app.

- Installer QR code (check the back of this guide)
- Bluetooth connectivity on phone
- Max current charger
- Max current house
- Manual or preset configuration
- Optional loadshedding and loadshedding type

- Authentication procedure you requested
- Charge tester or electric car to validate the configuration

Scan the installer QR code to get started, and follow the app's instructions.

App Store

https://apps.apple.com/us/app/my-enovates/

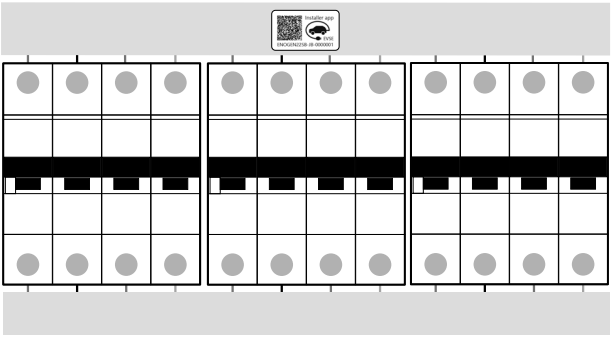
Google Play

https://play.google.com/store/apps/details?id=com.enovates.myeNovates

8. FINAL NOTE

The box contains an extra "Installer" and "User" QR sticker. The "User" QR code should be kept by the user and should not be displayed publicly.

The "Installer" QR code should be pasted above the miniature circuit breaker (MCB) in the electrical control cabinet.



9. SUPPORT

If you require customer support, please contact the installer or distributor of your purchase.

10. ABBREVIATIONS

2G:	Second Generation cellular network
4G:	Fourth Generation cellular network
A:	Ampere
AC:	Alternating Current
AP:	Access Point
BLE:	Bluetooth Low Energy
C7:	Fixed cable
CE:	Conformité Européenne
DC:	Direct Current
eDLB:	Enovates Dynamic Load Balancing
eDSB:	Enovates Distribution Switchboard
EEBus:	Protocol suite for interface standardization between electrical consumers, producers, storages and (logical) managing consumers, producers, storages and (logical) managing
EMC:	Electromagnetic Compatibility
EN:	European Norm
EU:	European Union
EV:	Electric Vehicle
HEMS:	Home Energy Management System
HMI:	Human Machine Interface
Hz:	Hertz
IEC:	International Electrotechnical Commission
IK:	Impact Protection rating
IP:	Ingress Protection code
ISO:	International Organization for Standardization
kW:	Kilowatt
LAN:	Local Area Network
LTE:	Long Term Evolution
LVD:	Low Voltage Directive
mA:	Milliampere
MCB:	Mini Circuit Breaker
MID:	Measurement Instruments Directive
N:	Neutral
Nm:	Newton meter

OCPP:	Open Charge Point Protocol
P1MB:	P1 to Modbus
PE:	Protective Earth
PEN:	Protective Earth & Neutral
QR:	Quick Response
RCBO:	Residual Current Breaker with Over-Current
REACH:	Registration, Evaluation, Authorization and Restriction of Chemicals
RFID:	Radio Frequency Identification Device
RoHS:	Restriction of (the use of certain) Hazardous Substances in electrical and electronic Equipment
SIM:	Subscriber Identity Module
STP:	Shielded Twister Pair
T2	Type 2 socket
T2S:	Type 2 socket + shutter
T2SE:	Type 2 socket + shutter + schucko
UTP:	Unshielded Twisted Pair
V:	Volt
V2G:	Vehicle To Grid
WAN:	Wide Area Network
WEEE:	Waste Electrical and Electronic Equipment
Wifi:	Wireless Fidelity
XVB:	Cable with individually isolated VOB wires, protected by a plastic shell
ZE:	Zero Emission

11. SOFTWARE

Used software licenses:

AGPL
AFL-2.1
Artistic-1.0
BSD
BSD-2-Clause
BSD-3-Clause
BSD-4-Clause
bzip2
CLOSED
EPL-1.0
GFDL-1.2
GPL-2.0
GPL-2+
GPL-3.0-with-GCC-exception
GPLv2
GPLv2+
GPLv3
GPLv3+
ISC
LGPL-2.1
LGPL-2.1+
LGPLv2
LGPLv2.1
LGPLv2.1+
LGPLv2+
LGPLv3
LGPLv3+
MICROCHIP_CRYPTOAUTHLIB_LICENSE
MIT
MIT-style
MPL-1.1
MPL-2.0

NTP
openssl
PD
Proprietary
PSFv2
Zlib

NOTES

Paste Installer App sticker here

Paste User App sticker here

EN.I.WL.2.00.0

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