

CLIPPERCREEK

A division of Enphase Energy, Inc.



User Manual

• • • • •

Model ECS

PLEASE NOTE

This user's manual includes the latest information at the time of printing. Enphase Energy, Inc. reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service facility may void the product warranty.

If you have questions about the use of this product, contact your customer service representative. Refer to the Customer Support section located in this guide.



WARNING: This product can expose you to chemicals, including Carbon Black, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

**To view the latest version of this manual please visit
clippercreek.com/installation-manuals**

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS	5
Instructions Pertaining to a Risk of Fire or Electric Shock	5
Additional Safety Information	6
FCC INFORMATION.....	7
OPERATION	8
THE ECS FRONT PANEL - Ground (Earth) Monitor	9
THE ECS FRONT PANEL - Isolation (Insulation) Monitor	10
MOUNTING THE SAE J1772 ECS CONNECTOR HOLSTER	12
CHARGE CABLE WRAP GUIDELINES.....	13
MAINTENANCE.....	14
SPECIFICATIONS.....	15
CUSTOMER SUPPORT.....	16
WARRANTY INFORMATION.....	17

ILLUSTRATIONS

Figures

1. The ECS with Ground Monitor Front Panel	9
2. The ECS with Isolation Monitor Front Panel	10
3. Mounting the Holster using the Exterior Wood Screws and Washers....	12
4. Drape the Charge Cable Loosely around the ECS Enclosure.....	13

Tables

1. Front Panel LED Information for Ground Monitor-equipped ECS.....	9
2. Front Panel LED information for an Isolation Monitor-equipped ECS ...	11

IMPORTANT SAFETY INSTRUCTIONS

Carefully read these instructions and the charging instructions in your vehicle owner's handbook before charging your electric vehicle.

The following symbols may be found in this manual or on labels affixed to the charge station:

NOTE: *This means pay particular attention.* Notes contain helpful suggestions.



CAUTION: *This symbol means be careful.* You are capable of doing something that might result in damage to the equipment.



WARNING: *This symbol means danger.* This is a situation that could cause bodily injury. Before working on any electrical equipment, be aware of the hazards involved with electrical circuitry and standard practices for preventing accidents.

Instructions Pertaining to a Risk of Fire or Electric Shock

When using the the ECS, basic electrical safety precautions should be followed:

- Use this charge station to charge electric vehicles equipped with an SAE J1772 *charge port only*. Consult the vehicle owner's manual to determine if the vehicle is equipped with the correct charge port.
- Make certain the charge station SAE J1772 charge cable is positioned so it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- This product contains no user serviceable parts. Consult the Customer Support section in this manual for service information. Do not attempt to repair or service the charge station yourself.
- Do not operate your charge station if it or the SAE J1772 charge cable is physically open, cracked, frayed, or otherwise visibly damaged. Contact your Service Representative for service immediately. Consult the Customer Support section in this manual for information on the Service Representative in your area.
- Not for use in commercial garages where a COMMERCIAL GARAGE is defined as a facility (or portion thereof) used for the repair of internal combustion vehicles in which the area may be classified due to flammable vapors being present (such as from gasoline.)
- Do not place fingers inside of the coupler end of the SAE J1772 charge cable.
- Do not allow children to operate this device. Adult supervision is mandatory when children are in proximity to a charge station that is in use.

- 230V plugs are specifically designed for **occasional** relocation, such as moving from one home to another home.
- For personal safety, the circuit breaker **MUST** be turned off prior to plugging in AND/OR unplugging 230V appliances (including this EVSE).
- A dedicated NEMA outlet is **highly recommended**. NEMA outlets wear out over time particularly when repeated insertion and removal of NEMA plugs occur. A worn outlet can cause the plug connection to overheat and become a fire hazard. It is recommended that plug-in EVSE remain plugged in.
- Have an electrician verify all wiring to the outlet is correct and in compliance with local code requirements before connecting the EVSE.
- **Do Not** use this EVSE with an extension cord or wall plug adapter. Plug this EVSE directly into the outlet.
- Ensure that the EVSE is mounted to the wall or placed on a support so it does not hang from the outlet. Outlets are not designed to support the weight of the EVSE.

Additional Safety Information



WARNING: Turn off power to the EVSE at the circuit breaker panel before moving, servicing or cleaning the unit.

NOTE: **VENTILATION** - Some electric vehicles require an external ventilation system to prevent the accumulation of hazardous or explosive gases when charging indoors. Consult the vehicle owner's manual to determine if your vehicle requires ventilation during indoor charging.

NOTE: Vehicles which conform to the SAE J1772 standard for communication can inform the charge station that they require an exhaust fan. The ECS is not equipped to control ventilation fans. Do not charge the vehicle with the ECS if ventilation is required.



CAUTION: DO NOT CHARGE a vehicle indoors if it requires ventilation. Contact your Service Representative for information.

Save these instructions for future reference.

***THIS DEVICE IS NOT INTENDED FOR USE WITH
AN EXTENSION CORD.***

FCC INFORMATION

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However, there are some instances where high powered radio signals or nearby RF-producing equipment (such as digital phones, RF communications equipment, etc.) could affect operation.

If interference to your charge station is suspected, we suggest the following steps be taken before consulting your ClipperCreek Sales and Service Representative for assistance:

1. Reorient or relocate nearby electrical appliances or equipment during charging.
2. Turn off nearby electrical appliances or equipment during charging.



CAUTION: Changes or modifications to this product by other than an authorized service facility may void FCC compliance.

OPERATION

The ECS Electric Vehicle Charging Station is a Portable charging station that provides the Plug-in Hybrid or Battery Electric Vehicle (together Plug-In Electric Vehicles, or “PEV”) user with a safe and manageable link between the power grid and the PEV.

The ECS is very easy to use. Just unwrap the SAE J1772 charge cable, insert the service power plug into any 230V wall socket and plug the vehicle connector firmly into the vehicle’s charge port.

Normally, the vehicle will immediately request a charge using a special communication line in the cable. Within a few seconds the green “Charging” light on the face of the ECS will turn on and the charging cycle will begin. After an average driving day the vehicle battery pack will require several hours to recharge completely. Charging overnight is the most convenient way to maintain healthy batteries and ensure the vehicle’s full range will be available for the next day.

When the vehicle has stopped charging the green “Charging” light on the ECS will turn off. To remove the charge coupler once a charge cycle has completed (or to interrupt a charge in progress) press and hold down the latch release lever on the charge coupler handle then unplug the charge coupler from the vehicle charge port.

When disconnecting the ECS, always remove the vehicle connector first, then remove the service power plug from the wall socket. When not in use, the cord may be rewrapped around the ECS and the entire assembly secured with the nylon buckle strap.

If charging always takes place in the same location, such as the home garage at night, the ECS may be left plugged into the wall socket without damage.

THE ECS FRONT PANEL - Ground (Earth) Monitor

The front panel on the ECS has four indicator lights:

POWER (amber), indicates that power is available to the ECS.

CHARGING (green), indicates that the vehicle is requesting a charge and AC power is currently applied to the vehicle.

POWER FAULT (red), indicates that the ECS is not wired correctly. The problem can be due to improper grounding or a missing Earth Ground. The wiring should be examined by a qualified electrician.

CHARGING FAULT (red), indicates that the ECS is unable to communicate with the vehicle correctly, or a safety fault condition has been detected by the unit.

Figure 1: The ECS with Ground Monitor Front Panel

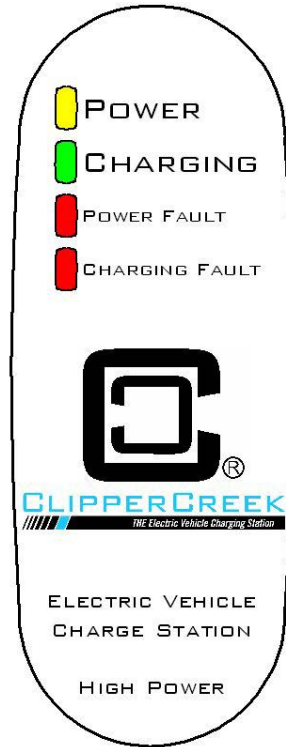


Table 1: Front Panel LED Information for Ground Monitor-equipped ECS

#	Amber Power LED	Green Charging LED	Red Power Fault LED	Red Charging Fault LED	Fault Condition
1	OFF	OFF	OFF	OFF	No power to EVSE. Check circuit breaker.
2	ON	OFF	OFF	OFF	Not plugged into the EV or the EV is not ready to charge.
3	ON	ON	OFF	OFF	Charging enabled, power is applied to the vehicle.
4	ON	OFF	ON-not blinking	OFF	Improper grounding or ground is not present.
5	ON	OFF	OFF	ON-not blinking	Problem with EV communications Disconnect and restart.
6	ON	OFF	OFF	blinking	EV ground fault trip. Check vehicle connection.
7	ON	OFF	blinking	blinking	Internal EVSE fault. Call for service.

**ECS will automatically restart after 15 seconds.*

THE ECS FRONT PANEL - Isolation (Insulation) Monitor

The front panel on the ECS has 4 indicator lights with a distinct label for each.

An ECS may be configured from the factory with either a ground (earth) monitor circuit or an isolation (insulation) monitor circuit. Refer to the front panel overlay or serial number label to distinguish which circuit the ECS is configured with.

The front panel description on this page applies to an ECS configured with an isolation monitor, as indicated by the presence of an amber “Ground Present” indicator light.

POWER (amber), indicates that power is available.

CHARGING (green), indicates power has been applied to the vehicle.

GROUND (EARTH) PRESENT (amber), indicates the status of the ECS isolation monitor. Should there be less than approximately 50KOhms of measured resistance to ground (earth), the LED turns on. When the resistance to ground (earth) exceeds 50KOhms, this LED turns off. The ECS will charge the vehicle in either condition.

CHARGING FAULT (red), indicates that the ECS is unable to communicate with the vehicle correctly.

**Figure 2: The ECS with
Isolation Monitor Front Panel**

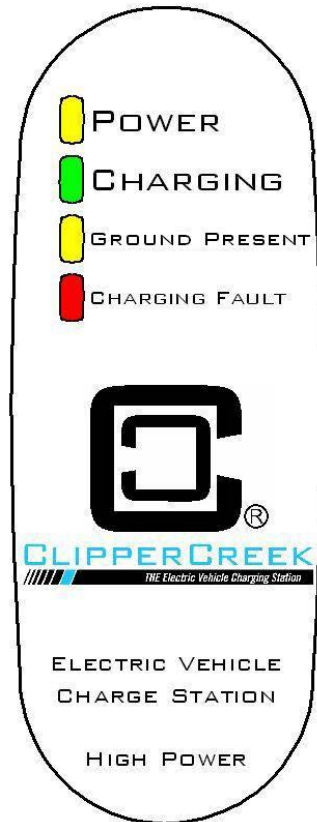


Table 2. Front panel LED information for an Isolation Monitor-equipped ECS

#	Amber Power LED	Green Charging LED	Amber Ground Present LED	Red Charging Fault LED	Fault Condition
1	OFF	OFF	OFF	OFF	No power to EVSE. Check circuit breaker.
2	ON	OFF	ON or OFF	OFF	Not plugged into the EV or the EV is not ready to charge.
3	ON	ON	ON or OFF	OFF	Charging enabled, power is applied to the vehicle.
4	ON	ON or OFF	ON-not blinking	OFF	Isolation monitor detects low resistance to ground.
5	ON	ON or OFF	OFF	OFF	Isolation monitor detects high resistance to ground.
6	ON	OFF	ON or OFF	ON-not blinking	Problem with EV communications Disconnect and restart.
7	ON	OFF	ON or OFF	blinking	EV ground fault trip. Check vehicle connection.
8	ON	OFF	blinking	blinking	Internal EVSE fault. Call for service.

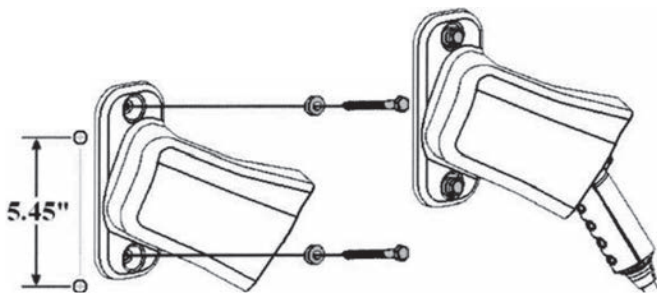
**ECS will automatically restart after 15 seconds.*

MOUNTING THE SAE J1772 CONNECTOR HOLSTER

The SAE J1772 connector holster comes standard to provide a convenient, protective housing for the SAE J1772 connector head when it is not in use.

- The SAE J1772 connector holster should be placed so that users have easy and safe access to the SAE J1772 connector.
- For indoor installation, mount the SAE J1772 connector holster between 18 and 48 inches above the ground or grade.
- For outdoor installation, mount the SAE J1772 connector holster between 24 and 48 inches above the ground or grade.
- The SAE J1772 connector holster has two vertically aligned mounting holes spaced 5.45" apart, one each on the enclosure top and bottom. Use a ruler or template to mark hole locations on the mounting surface.
- The vertical alignment of the ECS and SAE J1772 connector holster mounting holes allows for the convenient mounting of both components onto the same post or wall structure. For example, the holster may be mounted directly above the ECS.
- Place the SAE J1772 connector holster such that both mounting holes can take advantage of solid structural framing inside of the wall or a strong wall surface such as plywood.
- A set of exterior wood screws and stainless steel washers are included for the purposes of mounting the SAE J1772 connector holster to a wooden surface.
- For mounting to a solid surface such as concrete, brick, or stone, alternate hardware may need to be procured. Examples of solid-wall mounting hardware include multi-sets, wedge anchors and sleeve anchors. Use the type of mounting hardware most appropriate for the supporting structure.

Figure 3: Mounting the Holster using the Exterior Wood Screws and Washers

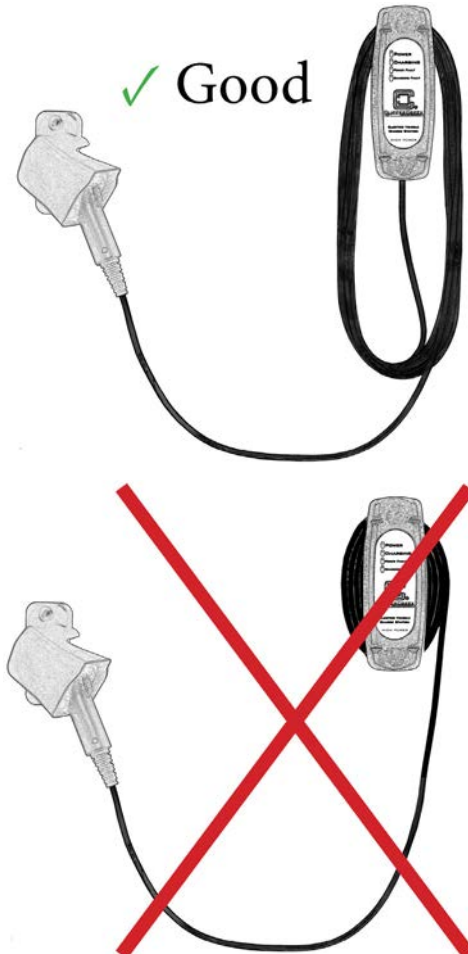


CHARGE CABLE WRAP GUIDELINES

The ECS enclosure body is sculpted to allow the charge cable to be wrapped around it for convenient storage as well as to keep the bulk of the cable off of the ground and out of the way. As the charge cable is comprised of a number of wires, coiling the charge cable too tightly around the ECS enclosure will result in the charge cable feeling warmer to the touch than would ordinarily be the case.

To minimize this effect, it is recommended that the charge cable be loosely draped around the ECS enclosure body with larger loops. This will also permit greater convenience in “pulling off” additional loops if a longer charge cable reach is desired.

Figure 4: Drape the Charge Cable Loosely around the ECS Enclosure



MAINTENANCE

The ECS requires no periodic maintenance other than occasional cleaning.



WARNING: To reduce the risk of electrical shock or equipment damage, exercise caution while cleaning the EVSE and the EV charge connector cable.

1. Turn off the EVSE at the circuit breaker.
2. Unplug the EVSE from the receptacle.
3. Clean the EVSE using a soft cloth lightly moistened with mild detergent solution. Never use any type of abrasive pad, scouring powder, or flammable solvents such as alcohol or benzene.

SPECIFICATIONS

Line Input Power 230V AC
Voltage & Wiring:

Voltage Range: 185V AC to 264V AC

Frequency: 50 Hz

Current:	<u>ECS Model</u>	<u>Maximum Current</u>
	ECS-10	6A or 8A
	ECS-15	10A or 12A
	ECS-16	13A
	ECS-20	15A or 16A

NOTE that the maximum current for the vehicle is set by the duty cycle of the Pilot waveform. Refer to the ECS serial number label for the specific factory-set maximum current rating.

Output Power: Variable depending upon the ECS model and vehicle demand. At 230V AC, the ECS-10 outputs approximately 1.4kW (6A) or 1.8kW (8A), the ECS-15 2.3kW (10A) or 2.7kW (12A), the ECS-16 3.0kW (13A) and the ECS-20 3.5kW (15A) or 3.7kW (16A).

Dimensions:

Height	280mm (11 in)
Width	100mm (4 in)
Depth	80mm (3 in)

Weight: 3.4kg (7.5 lbs.) with SAE J1772 connector and 6.5m (20') of cable

Environment:

Operating Temperature	-30°C (-22°F) to +50°C (+122°F)
Enclosure Rating	NEMA 4X - watertight

Agency Approvals: ETL-EU Listed, FCC Part 15 Class B

CUSTOMER SUPPORT

Call your ClipperCreek Service Representative at any time, 24 hours a day, at the number below. **PLEASE HAVE THE MODEL NUMBER AND SERIAL NUMBER AVAILABLE WHEN YOU CALL.** This information is printed on the label on the side of the ECS enclosure. If your call is made after business hours or on weekends, please leave your name, telephone number, the unit serial number, and a brief description of the problem. A Service Representative will call back at the earliest opportunity.

**Distributor Service
Number Here**

**TO CONTACT CLIPPERCREEK DIRECTLY FOR SERVICE,
CALL (877) 694-4194 MONDAY - FRIDAY 8AM - 5PM PACIFIC TIME.**



LIMITED WARRANTY – ELECTRIC VEHICLE SUPPLY EQUIPMENT and ACCESSORIES

Enphase Energy, Inc. through its ClipperCreek division
11850 Kemper Road
Auburn, California 95603
Phone: 877-694-4194
Email: information@clippercreek.net

Subject to the terms and conditions below, Enphase Energy, Inc. (“**Enphase**”) provides the following limited warranty the original purchaser of the products (“**Covered Owner**” or “**you**”):

Product 3-year parts, 3-year factory labor:

Subject to the terms and conditions below, Enphase warrants the product to be free from defects in material and workmanship for a period of 3 years commencing on the date of installation (first use) (the “**Warranty Start Date**”). Except where prohibited by applicable law, the product installation date must be evidenced and communicated to Enphase by way of the warranty registration card (or its equivalent). The product registration card must be filled out completely and accurately, and returned to Enphase within 30 days after installation, and the product installation date shall be within 6 months after the purchase date. If a Product installation date is not communicated to Enphase as described above, the product purchase date indicated in the Covered Owner’s proof of purchase for the product shall serve as the start date of the Warranty Period.

If Enphase confirms the existence of a defect that is covered by this Limited Warranty, Enphase will, at its option, repair or replace the product, or refund the actual purchase price for the product less reasonable depreciation based on use at the time the Enphase is notified of the defect. Enphase will not elect to issue a refund unless (i) Enphase is unable to provide a replacement and repair is not commercially practicable or cannot be timely made, or (ii) Covered Owner is willing to accept such a refund. If a defect in material or workmanship exists in the product, to the extent permitted by law, these are the sole and exclusive remedies. Repair parts and/or replacement products may be either new or reconditioned at Enphase’s discretion. This limited warranty does not cover defects caused by improper installation or use, including but not limited to improper connections with peripherals, external electrical faults, accident, disaster, misuse, abuse, or modifications to the product not approved in writing by Enphase. Any service repair outside the scope of this limited warranty shall be at applicable rates and terms then in effect. This warranty covers factory parts and factory labor only; it does not cover field service or removal and replacement of the product or any other costs.

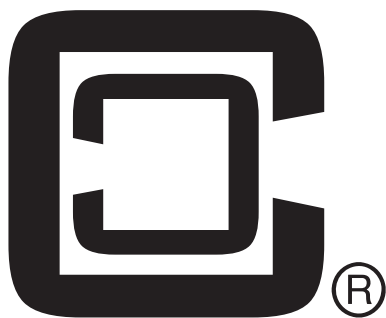
All other express and implied warranties for this product including the warranties of merchantability, fitness for a particular purpose, and non-infringement are hereby disclaimed. Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In no event will Enphase, any of its authorized sales and service representatives, or its parent company be liable to Covered Owner or any third party for any damages in excess of the purchase price of the product. This limitation applies to damages of any kind including any direct or indirect damages, lost profits, lost saving or other special, incidental, exemplary or consequential damages whether for breach of contract, tort or otherwise or whether arising out of the use of or inability to use the product, even if Enphase or an authorized Enphase representative or dealer has been advised of the possibility of such damages or of any claim by any other party. Some states do not allow the exclusion or limitation of incidental damages for some products, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

To obtain warranty service:

Call your nearest authorized Service Representative or the ClipperCreek division of Enphase at the above number. You will receive information as to how service for the product will be provided. If you mail or ship the product in for service, you must insure the product, prepay all shipping charges, and properly pack it for shipment in its original shipping container or its equivalent. You are responsible for all loss or damage that may occur in transit. You must provide proof of purchase for the product and the purchase date before any warranty service can be performed.

This page is intentionally blank.

This page is intentionally blank.



CLIPPERCREEK

A division of Enphase Energy, Inc.

WWW.CLIPPERCREEK.COM

877-694-4194