Green Motion DC 44/66 User manual

Powering Business Worldwide

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Content overview

1. Introduction

Thank you for purchasing the Green Motion DC 44/66 EV charger. The Green Motion DC 44 and the Green Motion DC 66 are DC fast chargers for public or private parking facilities. They offer fast charging at high efficiency in a compact design as well as a quiet charging experience. They are Vehicle-to-Grid (V2G) ready and can be mounted on the floor, indoors or outdoors.

Before you start

This manual contains important instructions that must be followed during the installation, operation and maintenance of the Green Motion DC 44/66 EV charger. All instructions must be read before installing and operating the equipment. This manual should be retained for future reference. Please note that the Green Motion DC 44/66 EV charger must only be installed by professional and qualified personnel, i.e. an Eaton technical support representative or a professional installer. There are no user-serviceable parts inside the Green Motion DC 44/66 EV charger. Failure to observe the above will void the guarantee provided and Eaton cannot be held legally accountable.

Technical disclaimer

All drawings, descriptions or illustrations contained in this document serve to provide a clear overview and/or technical explanation of the present product and its various components and accessories. In line with our goal to continuously improve the products and the customer service we provide, all specifications contained in this document are subject to change without notice.

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1.1 Scope of the document

This manual is intended for end users of the Green Motion DC 44 and Green Motion DC 66 EV chargers. It describes the operating environment, the product and its operating behaviour. The document does not cover installation and uninstallation, commissioning guidance or troubleshooting.

1.2 Symbols used in this manual

Imminent dangers that could cause serious injury. Danger of death.

Hazardous behaviours that could cause serious injuries.

Hazardous behaviours that could cause death.

Behaviours that could cause minor injury or minor property damage.

An electric shock can be fatal.

Avoid touching internal or external parts that are normally live while the system is powered on.

Notes preceded by this symbol relate to technical issues and ease of operation.

The EU Directive on Waste Electrical and Electronic Equipment (WEEE).

2. Cautions

Ensure that you have read and understood this manual before carrying out any operations. Do not make changes and do not carry out maintenance operations that are not described in this manual. The manufacturer does not accept responsibility for injury or property damage that occurs if the information within this manual has not been read and followed.

Installation, commissioning, maintenance or retrofitting must be carried out by professional and qualified personnel only.

Opening the EV charger is strictly prohibited.

2.1 Operating environment and restrictions

Each system must be used exclusively for the operations for which it was designed and within the operative ranges specified in the nameplate and/or in the relevant technical datasheet, in accordance with the national and international safety standards.

Any application other than the intended use specified by the manufacturer is to be considered wholly inappropriate and dangerous, and the manufacturer declines all responsibility in this case.

Check the regulations applied by the electricity provider.

The unit can be connected to the distribution network in accordance with local rules.

The unit must only be used in accordance with the technical specifications.

Improper or unauthorised use:

Although carefully constructed, the unit can catch fire as with all electrical appliances.

The unit is intended for indoor or outdoor installation.

Operation of the unit is recommended to be in the temperature range -25 °C to +45 °C.

The unit must be transported and stored in indoor locations in the temperature range -25 °C to +45 °C.

The unit must be used in locations that are free from acids, gases and other corrosive substances.

The unit must be used and stored in locations with a relative humidity below 95 %.

The unit must be transported in conditions with a relative humidity below 95 %.

The unit must be used at an altitude not exceeding 2000 m above sea level.

3. Discover your Green Motion DC 44/66

3.1 Packing list

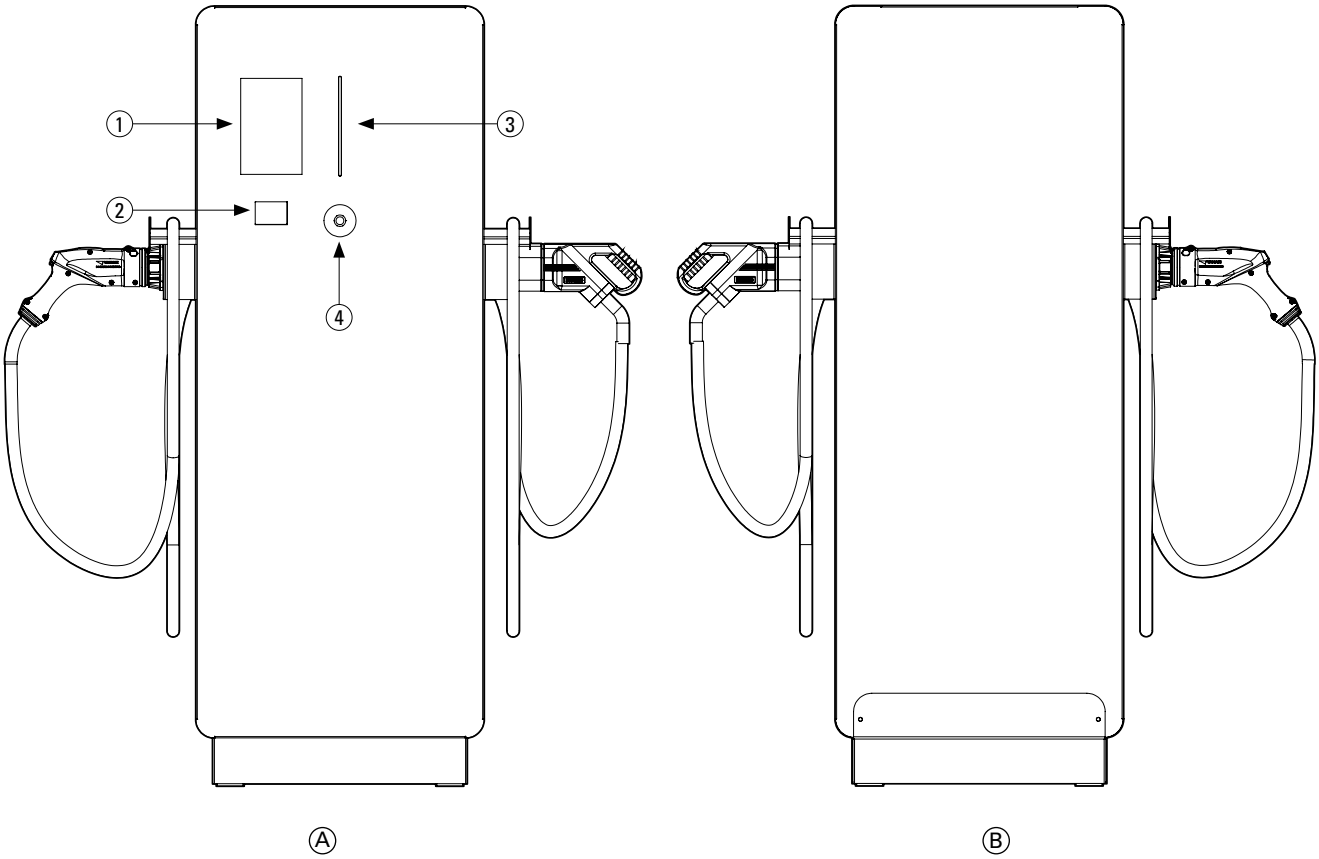
The Green Motion DC 44/66 EV charger package contains the following parts:

- Green Motion DC 44/66 EV charger
- Quick start guide
- Safety guidelines

3.2 Front and back views

Green Motion DC 44/66 EV charger is designed for seamless use.

Figure 1. Front and back views of Green Motion DC 44/66 EV charger



Tag	Description
A	Front view
B	Back view
1	Colour touchscreen display
2	RFID reader
3	LED indicator
4	Emergency stop button

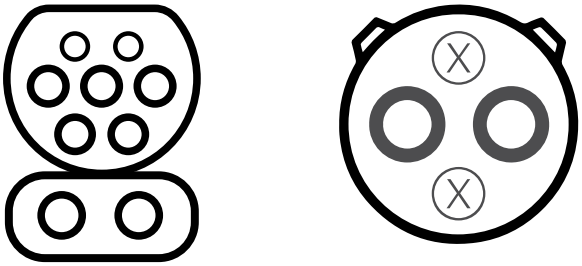
3.3 Types of cables

The Green Motion DC 44/66 EV charger is supplied with two types of cables and connectors:

1. Combined Charging System (CCS) for the EU market. This is the default cable.
2. CHAdeMO. This cable is optional.

The maximum power that the EV charger can supply is 44 kW or 66 kW, depending on the charger model. Varying external conditions including, but not limited to, available grid power, installation, battery status, environmental temperature and car model, can cause output de-rating. Hence, Eaton cannot accept liability for the instantaneous charging power value.

Figure 2. Illustration of connector types available with the Green Motion DC 44/66 EV charger



Tag	Description
Ⓐ	CCS Type 2
Ⓑ	CHAdeMO

The unit can be equipped with either one CCS cable, or CHAdeMO and CCS cables as reported in Table 1.

Table 1. Possible cable configurations available with the charger

Green Motion DC 44/66 cable options	CCS	CHAdeMO
Default	X	
Optional	X	X

4. How to start and stop charging

Electrical systems or devices must be checked by professional and qualified personnel before commissioning and switching on the unit for the first time.

Follow these steps to charge:

Step 1. Check that the EV charger is ready for use and the LED is green. See Chapter 5.

Step 2. Take the cable connector of the EV charger and plug it into the appropriate car socket.

Step 3. If the charging station is equipped with a RFID reader, place the RFID card close to the reader to authenticate yourself.

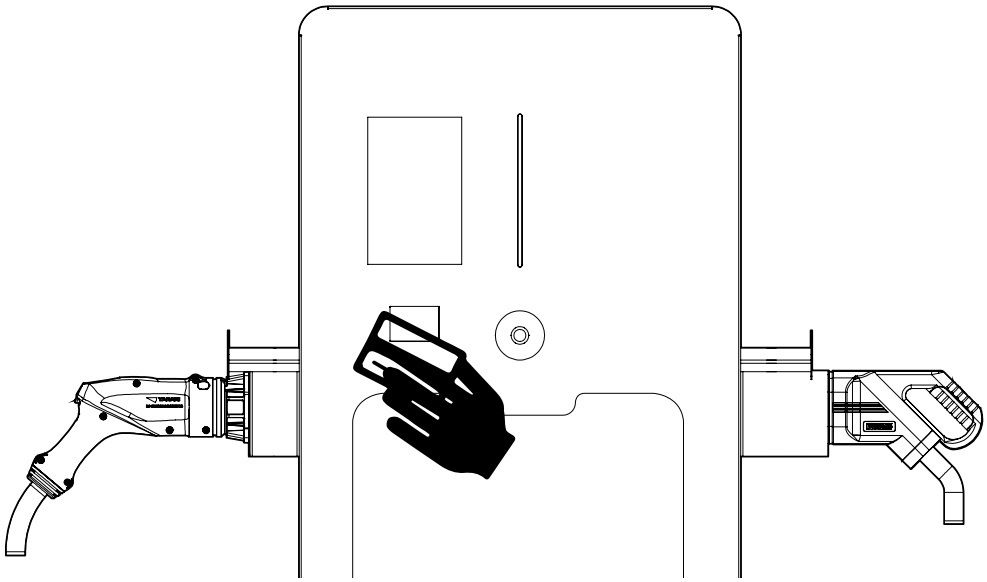
If the card is recognised, charging will start. During charging, the LED starts flashing blue and then shows the state of charge. See Figure 3.

If the CHAdeMO plug is used, it is necessary for the user to select the plug on the screen. Refer to the next section.

If the card is not authorised, charging will not start and an error will appear on the EV charger status display. See Chapter 5.

If the charging cable is disconnected from the car and there is no power consumption within two minutes, the user is automatically deauthenticated.

Figure 3. Where to place the RFID card on the EV charger for user authentication



While your vehicle is charging, the EV charger display shows that the LED as charging with a blue light that fades in/out. See Chapter 5.

When the battery is fully charged, the EV charger display shows that the LED is fully charged with a solid blue light. See Chapter 5.

Step 4. To stop charging, unplug the connector from your vehicle. The connector usually needs to be released from inside your vehicle first. See the instruction manual for your vehicle.

5. Indicators and user interfaces

The EV charger has one indicator and two user interfaces embedded, as shown in the Chapter 3.2:

- LED indicator
- Colour touchscreen display
- Emergency stop button

5.1 LED indicator

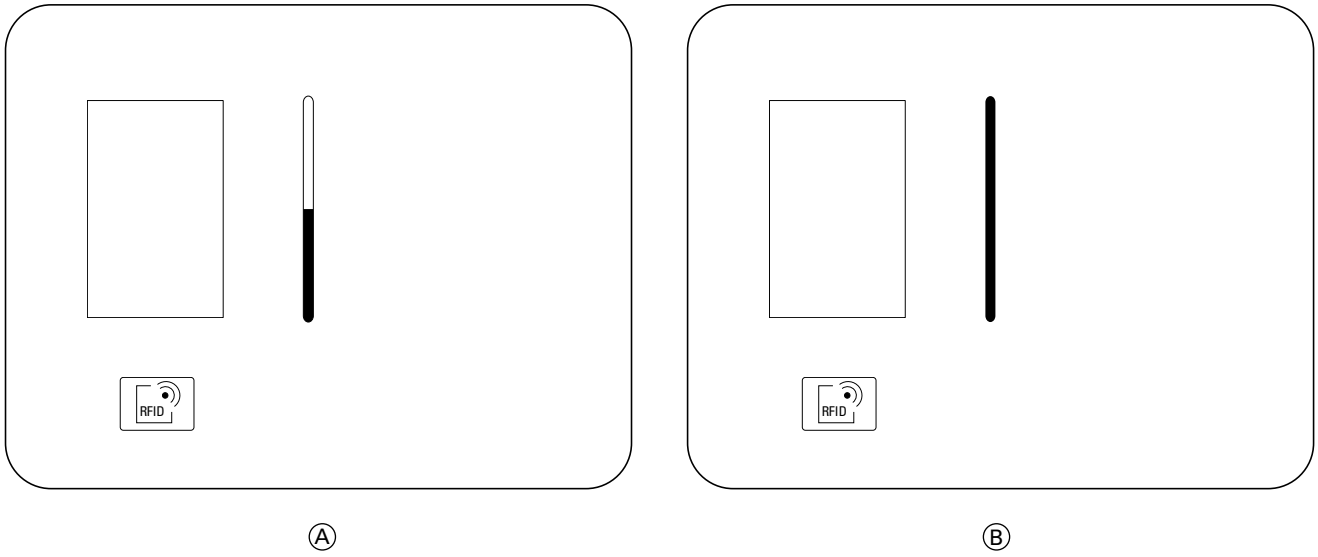
The EV charger is equipped with a LED indicator located on the front door. See Figure 1. Table 3 summarises the possible LED indications during operation.

Table 2. LED indications of the DC charger

Visual indicator	Description	Status
	Green light on	Ready for use
	Flashing green light	Startup stage
	Green light fades in/out	Waiting for user interaction
	Flashing blue light	Charging session startup
	Blue light fades in/out	Charging session is in progress.
	Blue light on	Charging session completed
	Red light on	Charging error
	No light	Stopped or not switched on
	Orange pulse	An update is in progress
	White + red dot flashing	Network error. EV charger cannot connect to the internet/backend
	Yellow light on	Charger is set to unavailable

During the charge, the LED indicator also shows the vehicle's state of charge, as per Figure 4.

Figure 4. LED indicator for the state of charge



Tag	Description
Ⓐ	Vehicle battery state of charge at 50 %
Ⓑ	Vehicle battery state of charge at 100 %

5.2 Colour touchscreen display

Green Motion DC 44/66 EV charger is equipped with a colour touchscreen display located on the front door. See Figure 1. Table 4 provides an example of the screens shown during the startup phase. Due to continuous improvements, it is possible that changes will be implemented in the future to enhance the user experience.

Table 3. Examples of information available from the colour touchscreen display

Display	Description
	Touchscreen display. Touch the screen to wake it up.
	Authentication screen. Before any operation, ensure that the 4G sign is coloured blue. If the bar graph is RED, there is no connection to the server. Choose the language by touching the flag. Present the RFID badge to the RFID reader to initiate authentication. See Figure 3.
	Select the appropriate plug.
	Vehicle's state of charge.

The display of the Green Motion DC 44/66 EV charger can show the following warnings:

Table 4. Examples of warning screens

Display	Description
	This charger is not part of your eMSP and you do not have roaming rights. You cannot charge with your RFID card. If available, use Scan & Charge.
	Authentication failed due to network issues. Please try again. Check that the 4G sign is displayed in blue.
	Charger is out of order. Maintenance is needed before the charger can be put back into service.
	Contact technical support to have the charger put back into service.
	Charging station is already booked by a user. If you are not the one who booked it you cannot start charging.
	Unplug and reconnect the vehicle to correct the error.
	After checking that there are no further risks, release the emergency stop button located on the front door.
	Open door detected. Door needs to be closed before starting a new charging session

5.3 Emergency stop button

The emergency stop button is located on the front door of the Green Motion DC 44/66 EV charger, as per Figure 1. Push the button in case of emergency. The screen shown in Figure 5 will be displayed on the touchscreen after the emergency stop button is pressed.

Figure 5. Touchscreen display when emergency stop button is pressed

Before deactivating the emergency stop button, make sure that the EV charger is safe to operate.

To release the emergency stop button, rotate it to the right.

6. Software suite

The Green Motion DC 44/66 EV charger works in combination with an advanced software called Charging network manager. This is an all-in-one software management system designed to control the charging station network. Refer to the Eaton Charging network manager user manual, available on www.eaton.com, for further details.

7. Maintenance

Installation, commissioning, maintenance or retrofitting of the charging station must be performed by professional and qualified personnel who are responsible for complying with existing standards and local installation regulations.

Before starting connection operations, make sure that the external AC-line main switch is disconnected and that the circuit breakers are open.

Any operation that requires opening the housing of the EV charger can lead to electric shock hazards.

In the case that the unit shows a failure and the emergency stop button is pushed, check the integrity of the unit, cables and connectors before starting the maintenance process.

Opening of the EV charger as well as any configuration changes must be carried out by professional and qualified personnel in accordance with the local safety and electrical regulations and laws.

Before carrying out any maintenance on the unit, disconnect the unit from the power supply and wait at least ten minutes to allow its components to cool down and any static electricity storage devices to discharge. The housing could overheat during operation or heat up in direct sunlight. Contact with the housing can therefore cause burns. To avoid burns, please use suitable PPE or wait for the equipment to cool down before accessing it.

7.1 How to set the unit as out of order

The Green Motion DC 44/66 EV charger can be set as out of order by following the steps below:

1. On-site method: Press the emergency stop button.
2. Remote method: Access the Eaton Charging Network Manager and set the unit as out of order.

7.2 Station updates

It is mandatory to install and maintain the units with the latest system updates to enable new features and bug fixes, otherwise the guarantee conditions may be voided.

For units that are online, this must be done via the Eaton Charging network manager software platform. Please refer to the Eaton Charging network manager user manual, available on www.eaton.com, for further details. For units that are not connected to the network, please contact your Eaton service representative at: BGTechSupport@eaton.com.

7.3 Cleaning or replacing filters

Check the filters on an annual basis to ensure that they are not obstructed and that they work properly.

If obstructed, the filters need to be replaced as soon as possible. Eaton recommends not using the unit while waiting for the filters to be replaced.

Before starting any operations, please contact your Eaton service representative at: BGTechSupport@eaton.com.

7.4 Disposal

When the charging station reaches the end of its service life, the end user should contact professional and qualified personnel for disposal instructions. Please refer to www.eaton.com/recycling for further details.

The EU Directive on Waste Electrical and Electronic Equipment (WEEE) (Directive 2012/19/EU) establishes common rules on the management of electrical and electronic equipment and on minimising its impact—from design through to disposal—on the environment. As a manufacturer of electrical and electronic equipment, Eaton actively supports the requirements of the WEEE Directive.

In compliance with EU standard EN 50419 on marking electrical and electronic equipment, we include the crossed-out wheeled bin symbol on our products. This symbol alerts users that these products should be recycled in accordance with local environmental regulations and not discarded with household waste. When end users recycle WEEE, they are helping to ensure that it is neither incinerated nor sent to landfills, minimising the potential negative impact on human health and the environment.

Any device that is no longer needed must therefore be returned to the distributor or disposed of in an authorised collection and recycling centre in the area. Eaton encourages all its customers and end users to make responsible decisions when it comes to the disposal of its products.

Eaton is not responsible for the transportation of products to the collection point or recycling centre.

8. Frequently asked questions

This section contains information and procedures for solving problems that may potentially occur with the EV charger.

Table 5. Frequently asked questions

Potential problems	Solutions
The EV charger does not start	• Check that the connection between the connector of the charging cable and the car socket has been established correctly. • Check the LED status colour and read the indication on the touchscreen display.
The EV charger visual indicators are red	• Unplug the connector from the vehicle and reinsert it. Check the LED status colour and read the indication on the touchscreen display.
The vehicle does not charge	• Visually inspect the condition of either the CCS or CHAdeMO cable. • If the CHAdeMO cable is in use, select the appropriate plug on the touchscreen to initiate the charging session.
The charging cable cannot be released from the vehicle	• Check that the charging session has been stopped. • Check the LED status colour and read the indication on the touchscreen display. • The connector usually needs to be released from inside your vehicle first. Refer to the instruction manual for your vehicle. • In case of an emergency, the cable can always be unlocked using the emergency stop button.
Authentication refused	• Check the LED status colour and read the indication on the touchscreen display. • Check that the connection between the EV charging station and the backend is available.
How long is the warranty period?	• The warranty period is two years.

If the problem persists, contact your local installer or your Eaton technical support representative using the email address BGTechSupport@eaton.com.

9. Technical data

9.1 Rating plate

To locate the rating plate on the equipment, refer to Figure 6.

The technical specifications shown in this manual do not replace those that appear on the rating plate attached to the equipment.

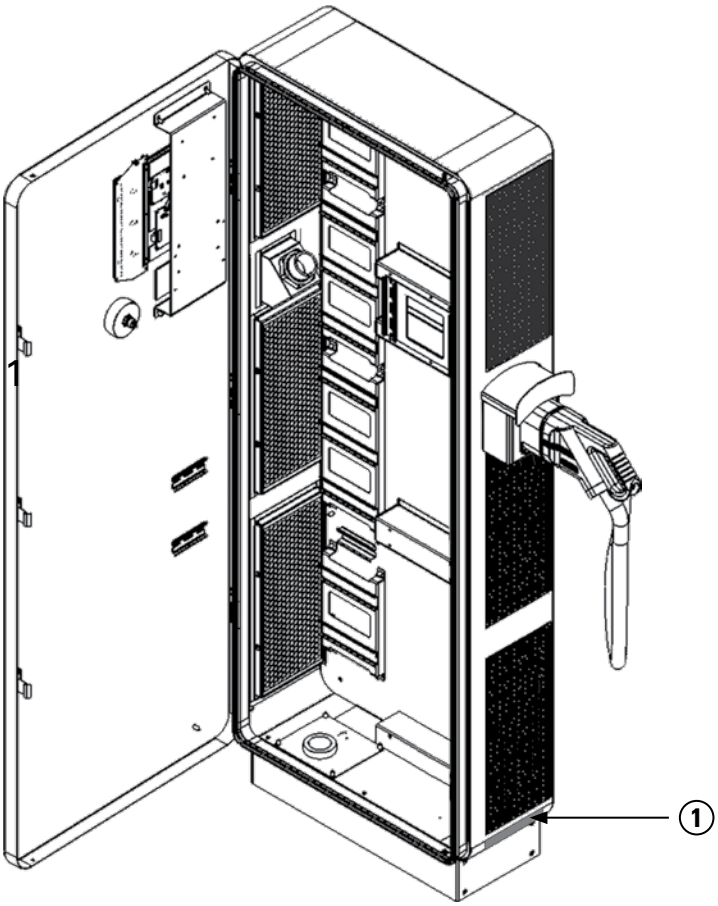
The labels attached to the equipment must NEVER be removed, damaged, soiled or hidden for any reason.

The information displayed on the rating plate is as follows:

1. Manufacturer
2. Model
3. Ratings
4. Certification marks
5. Warnings
6. Serial number

The labels must NOT be hidden using foreign objects (rags, boxes, equipment etc.); they must be periodically cleaned and kept clearly visible at all times.

Figure 6. Location of the rating plate



Tag	Description
1	Rating plate

9.2 Technical datasheet

The latest version of the technical datasheet is available to download from www.eaton.com/greenmotiondc44_66.

CE certification is also available at www.eaton.com/greenmotiondc44_66 or contact your local Eaton service representative at: BGTechSupport@eaton.com.

10. Information for contacting support

Should any technical problems arise when operating the charging station, contact your Eaton technical support representative for assistance using the email address BGTechSupport@eaton.com. The following information should be provided when contacting the Eaton technical support representative:

- Product model and serial number
- Fault messages

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