



Troubleshooting Guide

Version 1.0, 06/06/2025

Table of Contents

| | |
|---|---|
| Overview | 1 |
| Recommended Troubleshooting Procedure | 1 |
| Warning Lights | 1 |
| Indicators | 1 |
| Faults | 2 |
| Reading Fault Codes | 2 |
| Clearing Fault Codes | 3 |
| Fault Actions | 3 |
| Contacting Technical Support | 4 |

Overview

This document describes the steps for initial troubleshooting of common drivetrain issues. This is intended to be a guide for troubleshooting common issues and will help collect the necessary information to help diagnose issues with Ampere EV technical support.

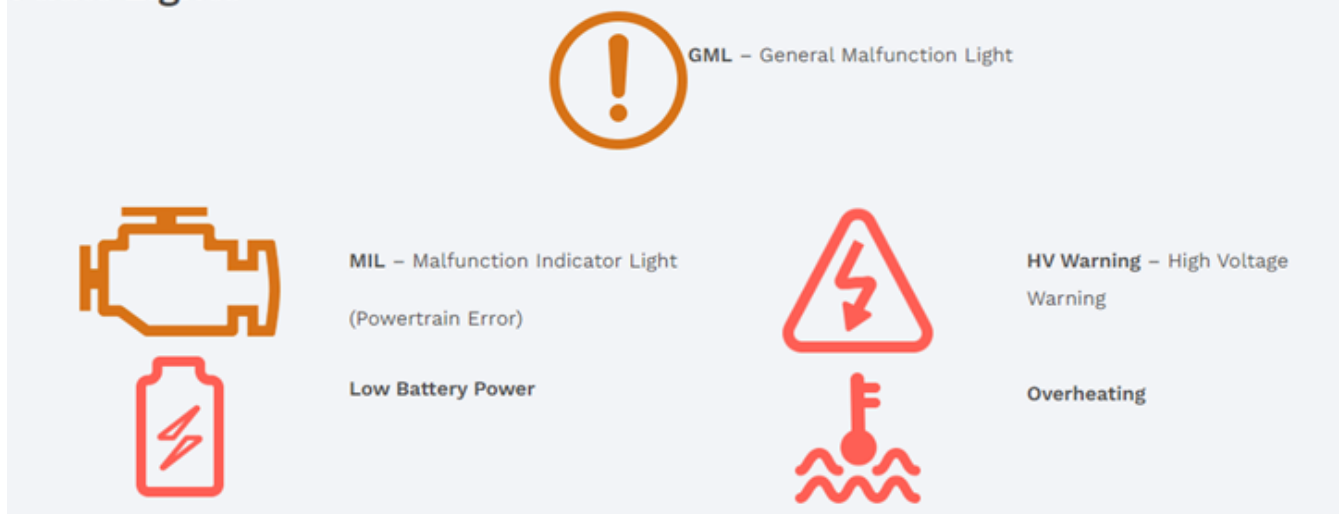
Recommended Troubleshooting Procedure

1. Check the Ampere EV GUI for any active warning lights. See [Warning Lights](#) section below for more information.
2. Read the fault codes on the Ampere EV GUI. See [Reading Fault Codes](#) section below for more information.
3. Decode the faults reported, if any, and determine what system may be causing the issue.
4. Compare the vehicle behavior to the listed fault actions in [Fault Actions](#) section below.
5. If none of these steps help identify and resolve the issue, contact Ampere EV technical support with the required information listed in the [Contacting Technical Support](#) section below.

Warning Lights

Indicators

Fault Lights



Above are the fault indication lights shown on the Ampere GUI. When a fault is active and requires correction, one of these lights may be shown.

MIL: The Malfunction Indicator Light (MIL) is a general warning light indicating a drivetrain fault with the vehicle. When this is shown there may be affects to the driveability of the vehicle, and the vehicle may enter limp mode or be disabled.

WARNING

If the MIL is red, the vehicle should not be driven until the fault is resolved. This indicates a severe drivetrain fault.

GML: The General Malfunction Light (GML) is a general warning light indicating a non-drivetrain fault with the vehicle. When this is shown, it indicates that the vehicle has an accessory or communication fault that does not affect the drivability of the vehicle.

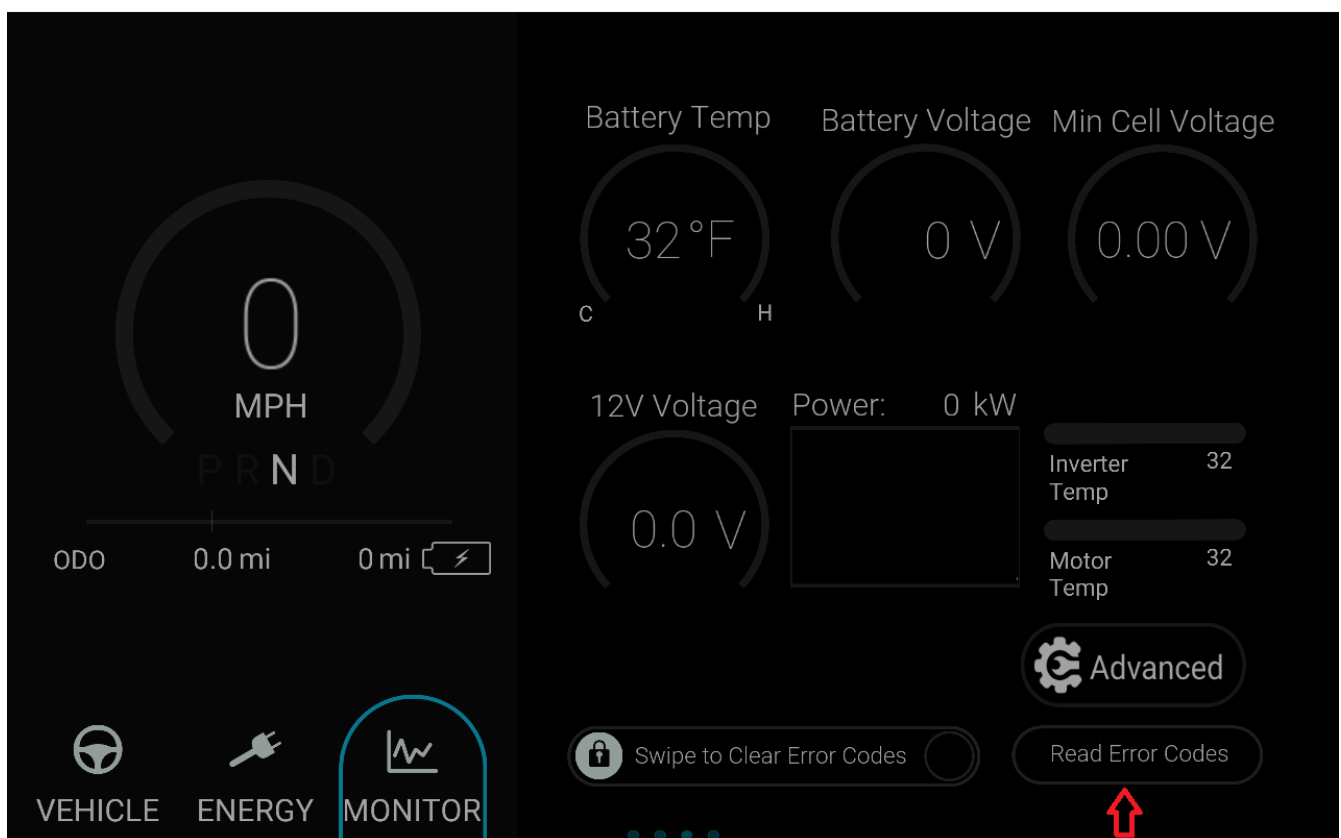
HV Warning: The High Voltage Warning light indicates that the vehicle has a fault with the high voltage system. This may be a fault with the battery, inverter, or other high voltage components. If this light is on, the vehicle should not be charged or driven until the fault is resolved. The fault will be displayed by reading codes on the GUI. See [Reading Fault Codes](#) section below.

Overheating: The Overheating light indicates that the vehicle has detected an overheating component. This may be the motor, inverter, battery pack, or other component. Fault codes will indicate which component is overheating, see [Reading Fault Codes](#). Corrective action should be taken to cool the component before driving the vehicle.

Faults

Reading Fault Codes

Reading fault codes can be done on the Monitor page of the Ampere GUI. Press "Read Codes" to display a list of currently reported faults.



Fault Decoding

Faults will be separated into three categories:

1. **Pending:** These faults are currently active, but may not have occurred on multiple drives.
2. **Confirmed:** These faults have occurred on multiple drives and are currently active.
3. **Permanent:** These faults have set on a previous drive cycle and are considered permanently stored history codes. These do not clear with a normal "clear codes" operation and remain even if the problem has been resolved. Permanent faults are meant to indicate issues that may be important for future diagnostic information. They can be cleared by a technician if required, see the [Contacting Technical Support](#) section below.

Fault codes begin with a letter indicating the type of fault:

- P: Powertrain fault
- B: Body fault
- C: Chassis fault
- U: Network/Communication fault

The number following the letter indicates the specific fault.

Fault Descriptions

OBD2 faults will typically include a brief fault description on the GUI indicating the meaning of the fault code. For instance, P0A7E indicates Hybrid/EV Battery Pack "A" Over Temperature. Not all OBD2 code readers will provide the correct fault descriptions.

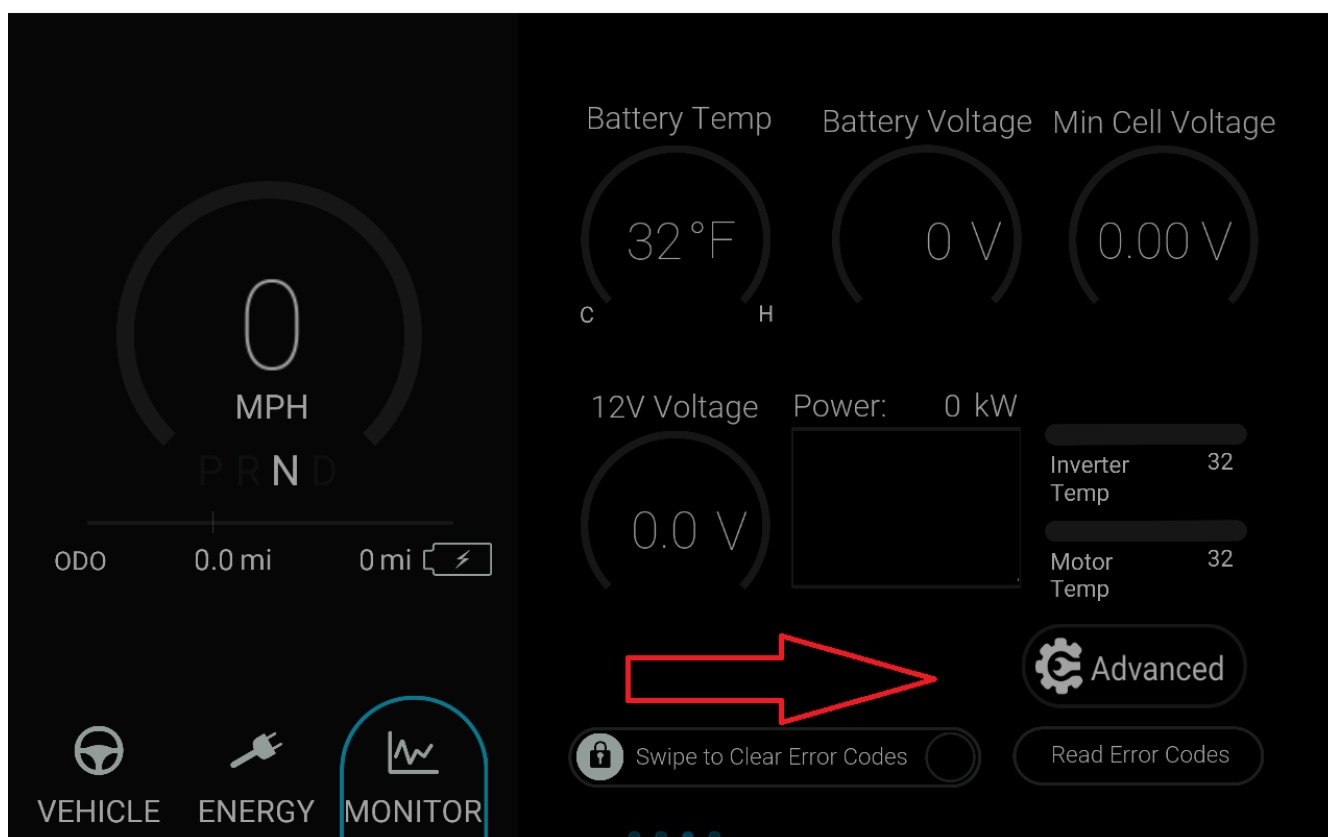
Fault definitions vary based on the VCU software version. DTC definition PDFs are available for each VCU release at <https://help.ampereev.com/hc/en-us/sections/29998623445399-VCU-Software>.

Clearing Fault Codes

Fault codes can be cleared on the Monitor page of the Ampere GUI. Swipe "Clear Codes" slider to the right all the way to clear all currently active faults.

NOTE

Permanent faults will not be cleared with this operation. Permanent faults are stored in the VCU memory and will remain until cleared by a service tool.



Fault Actions

Faults can make the VCU alter vehicle behavior to preserve system safety and protect equipment. Below are some common vehicle fault behaviors and some of the potential causes.

NOTE

The following is a list of common fault behaviors and their causes. This is not an

exhaustive list, and other faults may cause similar behaviors. See [Contacting Technical Support](#) for additional information.

Limp Mode

The vehicle will be limited to roughly 20 MPH and have reduced motor torque. Limp mode is intended to get the vehicle and the driver to a safe place to stop and should not be driven in limp mode for extended periods of time. Both fans will be on regardless of temperature in limp mode.

Potential Causes: Caused by drivetrain-related faults such as sensor failures, CANbus errors, or overheating.

HV Disable

If any faults cause a serious problem that may endanger the vehicles occupants or the car itself, the vehicle high voltage system may be disabled. Level 1 disable (most common) turns the car off after it has come to a stop. Level 2 Disable immediately turns the car off (e.g., in the event of a wreck). Some faults may cause only the drive motor inverter to be disabled. The vehicle should be serviced immediately and may require a tow for service.

Potential Causes: This is typically caused by high voltage faults such as isolation issues, battery voltage abnormalities, overcurrent, severe overheating, or similar faults.

HV Startup Disable

If a critical fault is detected at startup such as no motor CAN, no battery CAN, or high voltage faults, the VCU will prevent startup of the high voltage system.

Potential Causes: This is typically caused by high voltage faults such as battery communications, motor communication, or by high voltage faults such as isolation issues, battery voltage abnormalities, or similar faults.

Charge Disable

Charging system faults will prevent the car from entering charge mode.

Potential Causes: Communication issues with the onboard charger, faults reported by the onboard charger, or AC power issues from the wall charger.

Contacting Technical Support

Ampere EV's technical support team can be reached via the Helpdesk at <https://help.ampereev.com>.

In order to receive the best support from the Ampere EV technical team, please provide the following information when creating a support ticket. Failure to do so may extend the time it takes to resolve the issue.

- ☒ Vehicle name/description
- ☒ Description of the issue
- ☒ List of active warning lights
- ☒ List of fault codes
- ☒ List of actions taken to resolve the issue, if any
- ☒ Steps to reproduce the issue, if applicable