

SOLLATEK AVR-L RESOLVES FAILURES CAUSED BY OVER VOLTAGE



Client: AVR-L and EV charger at Sollatek House

Country: United Kingdom

Year: 2025

Product: AVR3LS-K With Advanced Display Module & Connectivity

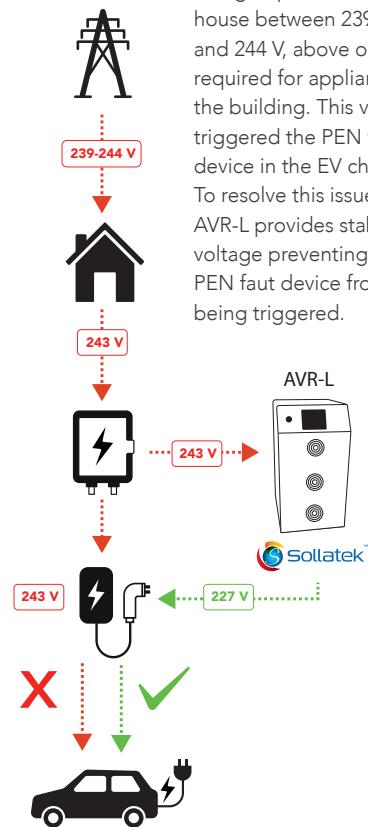
Although EV charging systems are generally reliable, faults can arise. Stations located near high-load grid infrastructure may experience power quality issues, which in some cases have been linked to charger overheating or malfunction.

EV chargers are vulnerable to unreliable power and specifically, they could disconnect if the incoming voltage is too high (over 250 V). After conducting tests at the Sollatek house, where the same problem occurred, it was determined that the EV charger was getting damaged due to excessive repeated over voltage.

The consistent incoming high voltage fluctuated between 243 V and 253 V which is the above optimal range required for appliances in the UK. This excessive voltage led to overheating and failure of the PEN fault device, which detects overvoltage and cuts off

all conductors, including live, neutral, and earth, to prevent electrical shocks. In this case, the EV charger in use had a capacity of 22 kW with a 7.6 W output. To resolve this issue, Sollatek installed the AVR-L, a three-phase automatic voltage regulator with an advanced display module and WiFi connectivity (optional). The AVR provides a stable 230 V output to the EV charger, preventing overheating and stopping the repeated activation of the PEN fault device. The AVR-L monitors the voltage and automatically adjusts its taps in response to voltage fluctuations, ensuring a consistent and safe voltage supply.

The grid provides Sollatek house between 239 V and 244 V, above optimal required for appliances in the building. This voltage triggered the PEN fault device in the EV charger. To resolve this issue, the AVR-L provides stable voltage preventing the PEN fault device from being triggered.



TECHNICAL SPECIFICATION

INPUT	
Input Voltage	230/400 V±20%
Frequency Range	45 Hz to 75 Hz
Additional Voltage THD	<0.2% at input (tested at 100% linear load)
Maximum Input THD	Can withstand <10% THD from the supply
OUTPUT	
Output Accuracy	230/400 V±3%
Speed of Correction	750 V/s

The installation of the AVR-L successfully eliminated overvoltage-related failures, ensuring that the EV charger operates efficiently and safely. The solution has extended the lifespan of the charger while providing a seamless and uninterrupted charging. Sollatek continues to deliver innovative voltage regulation solutions that protect electrical equipment and improve energy efficiency.



Sollatek House is receiving a voltage between 239 V and 243 V. The AVR-L is regulating this input, ensuring the EV charger receives a stable 227 V.



Sollatek's expertise extends worldwide through local networks

Established for over 40 years in the United Kingdom, Sollatek is a manufacturer of innovative products in power control, energy saving, temperature control and solar energy. Operating from 12 countries and a global distribution network in 60 more. Sollatek has grown to become a household name, particularly in harsh and demanding environments where reliability and affordability are essential to everyday life. The Sollatek voltage protection product range now includes full lines of voltage switches, stabilisers, conditioners and uninterruptible power supplies (UPS).

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