

Electric Vehicle Infrastructure, Inc.
SERVICE BULLETIN: #199905001
PRODUCT: ICS-200A and ICS-200B
ISSUE: Ranger double current
DATE: 5/28/1999

1. Where has it happened?

The first occurrence was seen by Mickey at the Ford testing grounds in early 1999. Since then, this problem has become fairly widespread although uncommon.

2. What are the symptoms?

Typically, the Ranger will start charging and 1 minute later charging will stop and the message "charging power exceeded since" *TIME*. If the ICS-200 is in maintenance mode, the error message will be "maintenance power exceeded, charging will begin at" *TIME* after 10 seconds. Magma will indicate that about twice the normal current is being drawn by the EV. During charging, this would be from 42 to 54 Amps. Maintenance current depends on configuration, typically the draw would read 10 to 14Amps. 40Amp circuit breakers will not necessarily trip.

It is very unlikely any component failures in the ICS-200 will cause a Magma reading of twice the expected current. Most ICS-200 failures cause small fluctuations, zero current, or full current (64Amps).

3. What is broken?

In each case so far, the problem has been a failure of the power factor corrector on board the Ranger. The best way to check this is with an oscilloscope and current clip. You can verify the current waveform does not follow a sinusoid wave shape. The current waveform will have extreme peaks.

RMS volt meters WILL NOT read the symptom correctly as they average the waveform. The ICS-200 can read peak current waveforms and is therefore able to recognize this problem. Use symptoms from #2 to identify the problem.

4. Comments?

This particular problem can be very difficult for us if it is wide spread. The ICS-200 is the only charging station on the market capable of detecting this error and attempting to take corrective action. In this case, shutting down the charge cycle and informing the customer that something is wrong with the vehicle. This failure on the vehicle is serious and hopefully will be recognized and fixed by the Ford service people.

Ford engineering is aware of this potential problem and is addressing the issue.

Although the Ranger displaying this symptom is in need of repair, it may appear to charge correctly on OTHER SUPPLIER'S UNITS as they do not measure EV current draw. Please do not ignore or disbelieve the ICS-200's voice messages, data log, and symptoms. If you are experiencing the symptoms described in #2, it is very likely the Ranger charging is damaged.

5. Recommendations

If you are charging a Ranger, and you get the symptoms listed, take these steps:

- a. Use Magma to confirm that the current is around twice normal, 48Amps.
- b. If possible, try the Ranger on another ICS-200A or B station, *DO NOT USE* the DS-50 or another vendors products to verify correct operation.
- c. Call EVI® facility anytime if you have questions, toll free service line 877-438-3844

Jason France
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