

**California Type Evaluation Program**  
**Certificate of Approval**  
**Weighing and Measuring Devices**

**For:**

Electric Vehicle Fueling Systems (EVFS)

Models: Terra AC W9-P8-RD-MCD-0, Terra AC W19-P8-RD-MCD-0

Software Version Number:  
V1.5.13**Submitted By:**

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**Standard Features and Options****Standard Features:**

- Alternating Current (AC) system in kilowatt-hour (kWh)
- 0.5 kWh Minimum Measured Quantity (MMQ)
- 0.0001 kWh registration display
- Maximum Current Deliverable: 40 A (Amperes) for model AC W9-P8-RD-MCD-0 and 80 A for model AC W19-P8-RD-MCD-0
- Maximum rate of energy transfer: 9.6 and 19.2 kW
- Voltage Rating: 208-240 VAC (Volts Alternating Current)
- Activation via Radio-Frequency Identification Card (RFID), Quick Response (QR) Code, Toll-Free number, and App with ChargeLab account
- Electronic receipts provided via mobile device app, email, and text message
- Non-resettable totalizer in kWh
- Continuous display for kWh consumption and price computing

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.



Kristin Macey, Director  
Effective Date: February 22, 2023

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Electric Vehicle Fueling Systems (EVFS) / Terra AC-W9-P8-RD-MCD-0 and Terra AC-W19-P8-RD-MCD-0

**Application:** For use as an Electric Vehicle Fueling System (EVFS) in commercial applications under the California Code of Regulations (CCR) National Institute of Standards and Technology (NIST) Handbook 44 Section 3.40. EVFS are also known as Electric Vehicle Supply Equipment (EVSE).

**Identification:** The required EVFS identification (ID) label is permanently attached to the side of the device. See **Figure 1** below for an example of the ID label and its location. The non-resettable totalizer is always visible in the upper left corner of the display screen and the software version is continuously shown in the bottom right of the display screen. See **Figure 2** for totalizer and software version locations.



**Figure 2.** Totalizer and software version locations on the Terra EVFS screen

**Figure 1.** Sample ID label and its location on the side of the Terra EVFS

**Sealing:** The Terra AC EVFS has a Category 2 sealing provision with an adhesive tamper-evident security seal placed on the internal cover when the device is placed into service. See **Figure 3** for an example of the Category 2 physical sealing provision. The hardware enabling remote access is the terminal block of the RS485 port (**Figure 4**).

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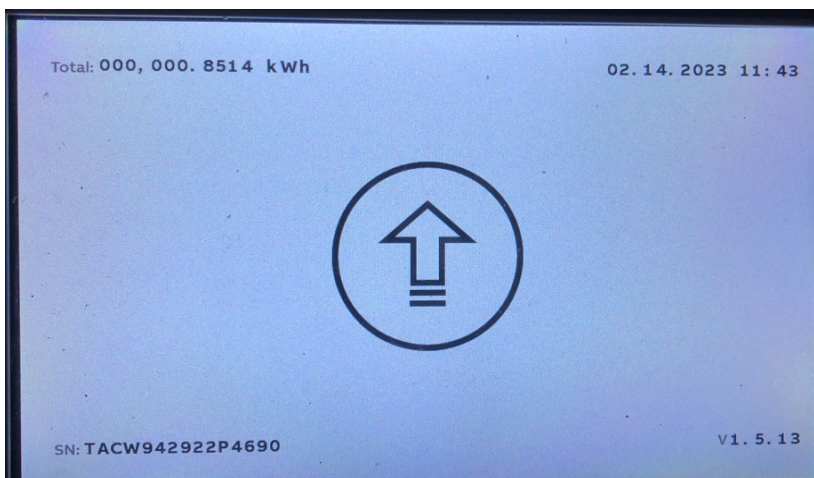


**Figure 3.** Location of the tamper evident security seal on the interior cover



**Figure 4.** Terminal blocks of the 485 port

To access the RS 485 port, remove the two M5X10 anti-theft screws at the bottom of the exterior cover. Once the external decorative cover is removed, apply, or verify the adhesive tamper-evident seal preventing undetected access to the RS 485 port is in place. When the device is in configuration mode, the display screen will show an up arrow (**Figure 5**).



**Figure 5.** Up arrow indicates device is in configuration mode

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**Operation:** The Terra AC EVFS can be activated via QR code and by visiting on a mobile device the URL listed on the display screen.

The EVFS can also be activated via an RFID card. The user taps the RFID card on the front of the device to start a charge session and uses the same RFID card to stop the session.

For an initial charge, a user needs to provide a name, email address, phone number, and a payment card (credit/debit) number to sign up.

At the end of the charge session, the electronic receipt (**Figure 6**) will be sent to the user via mobile device app, email, and text message.

The image shows a sample customer receipt from ChargeLab UAT. It is divided into two main sections: 'Charging summary' and 'Cost detail'. The 'Charging summary' section includes the date and time of the session (February 02, 2023, 1:24 PM - 1:26 PM), a note about a power outage at 1:26 PM, the duration (2 min), the location (#872 2967 Dundas St. W., Toronto, ON, M6P 1Z2), the charger ID (TACW942922P4690), the power rating (22 kW AC), the energy added (0.0083 kWh), and the total cost (\$0.42). The 'Cost detail' section breaks down the charges: Charging (\$0.42), Sub total (\$0.37), HST (13%) incl. (\$0.05), and Total (\$0.42). At the bottom, it states 'Price set by ChargeLab - UAT'.

|                                     |        |
|-------------------------------------|--------|
| Charging summary                    |        |
| February 02, 2023 1:24 PM - 1:26 PM |        |
| Power outage @ February 02, 1:26 PM |        |
| 2 min                               |        |
| Time                                |        |
| ChargeLab UAT                       |        |
| #872 2967 Dundas St. W.             |        |
| Toronto, ON, M6P 1Z2                |        |
| Location                            |        |
| TACW942922P4690                     |        |
| 22 kW AC                            |        |
| Charger                             |        |
| 0.0083 kWh                          |        |
| Energy added                        |        |
| \$0.42                              |        |
| Total                               |        |
| Cost detail                         |        |
| Charging                            | \$0.42 |
| 0.0083 kWh @ \$50.00/kWh            | \$0.42 |
| 1:24 PM - 1:26 PM                   |        |
| Sub total                           | \$0.37 |
| HST (13%) incl.                     | \$0.05 |
| Total                               | \$0.42 |
| Price set by ChargeLab - UAT        |        |

**Figure 6.** Sample customer receipt

**Test Conditions:** The emphasis of the evaluation for the Terra AC EVFS system was on device design, performance, markings, sealing, receipt requirements, and accuracy. Measurement accuracy of the Terra 40A was tested at 20% of the Maximum Deliverable Amperes (MDA): 8 A over 0.5 kWh and at 100% MDA: 40 A over 1.0 kWh. Measurements for the Terra 80A were tested at 10% of the MDA: 8 A over 0.5 kWh and 50 % MDA: 40 A over 1.0 kWh. A 40 A test is valid for an 80 A MDA and meets the 7.2 kW test condition using the Tesco T400 device. Repeatability and permanence tests were conducted. No-load and starting-load tests were also conducted.

**Evaluated By:** M. Lawrence (CA)

**Type Evaluation Criteria Used:** *California Code of Regulations, Title 4, Division 9, Chapter 1, Article 1. General Code 1.10. and Section 3.40., 2022 Edition*

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**Conclusion:** The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

**Example(s) of the Device:**

