

California Type Evaluation Program

Certificate of Approval

Weighing and Measuring Devices

<p>For:</p> <p>Electric Vehicle Fueling Systems (EVFS) DC only</p> <p>Model: Terra 54 Terra 54HV</p> <p>Model number may be followed by alphanumeric values that do not affect metrological parameters</p>	<p>Submitted By:</p> <p>ABB E-mobility B.V. Heertjeslaan 6 2929 JG, Delft The Netherlands</p> <p>Contact: ABB E-Mobility Service Tel: 1-800-825-2556 option 2 Email: us-chargerdesk@abb.com Web site: https://e-mobility.abb.com/</p>
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Standard Features and Options

Standard Features:

- Direct Current (DC) system in kilowatt-hour (kWh)
- Accuracy Class 2.0 for DC with 1% accuracy or better
- Maximum Rate of Energy Transfer: 50kW DC
- Maximum Current Deliverable: 125 amperes (A)
- Minimum Measured Quantity (MMQ): 0.1 kWh
- Voltage Rating:
 - Combined Charging System 1 (CCS1): 150 - 950V DC
 - CHArge de Move (CHAdeMO): 150 - 500V DC
 - North American Charging Standard (NACS): 150 - 1000V DC
- Temperature rating: - 35°C to 50°C (-31°F to 122°F)
- 0.0001 kWh registration display
- Software version 4.7.4.1 or higher
- Continuous display for energy delivery and price computing
- Non-resettable totalizer and downloadable event log
- Activation via payment card reader and radio-frequency identification card (RFID)

Options:

- Single or Dual outlet with CCS, CHAdeMo, and NACS connectors
- PIN code authorization
- Autocharge support for plug and play authentication

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

Kristin Macey, Director
Effective Date: September 8, 2023

ABB E-mobility B.V.

Electric Vehicle Fueling Systems / Terra 54, Terra 54HV

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

Identification: The required identification label is located towards the back of the device, on the left side when facing the EVFS (**Figure 1**). The ID label is approximately 30" from the ground.




ABB			 Global ID
MODEL: TERRA 54HV CJ			
SAP PN 3P639919000A	SN	T54HV-IT1-1221-110	
Global ID 6AGC082821	Weight: 350Kg	SN	
FOR USE WITH ELECTRIC VEHICLES			
Conductive connection		Refer to manual Rainproof	
AC Input	480/277V ~	64A/60 Hz SCCR 65 kA	
DC Output (CCS1)	150-950V ==	0 - 125A 50kW	
DC Output (CHAdeMO)	150-500V ==	0 - 125A 50kW	
MMQ = 0.1kWh		Operating Temperature: -35 C to 50 C (-31 F to 122 F)	
ABB E-Mobility B.V. Heertjeslaan 6, 2629 JG Delft, The Netherlands			
			
MADE IN ITALY		Prod. date 12 2021	



Figure 1. ID label and location

The CTEP Certificate of Approval (COA) number, software version, totalizer values, and event log can all be viewed on the display screen. First, ensure the idle screen is active and that no connector is in use. Then press the “?” icon on the top right of the display screen for the “Help” page and press the audit icon (pictogram of a page with a magnifying glass) to display the “Audit” page. The CTEP COA and software version number can be found on the top of the screen; pressing the “View Logs” button will show the most recent logbook events and totalizer values at the bottom of the screen.

Sealing: The ABB EVFS is a Category 3 device and provides access to the event log via internet download and passcode provided on the display. The “View Logs” page (**Figure 2**) will display the most recent events and the full log can be downloaded by pressing the red “Download” icon. After using the quick response (QR) code or accessing the website provided on the download screen (**Figure 3**), enter the passcode that is provided, and the log will be available in portable document format (PDF). The event logger may contain “Configuration,” “Calibration,” and other device updates (**Figure 4**). When the EVFS is out of service, the screen will display that it is “Out of Order.” Nothing will happen if the screen is touched.

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Electric Vehicle Fueling Systems / Terra 54, Terra 54HV

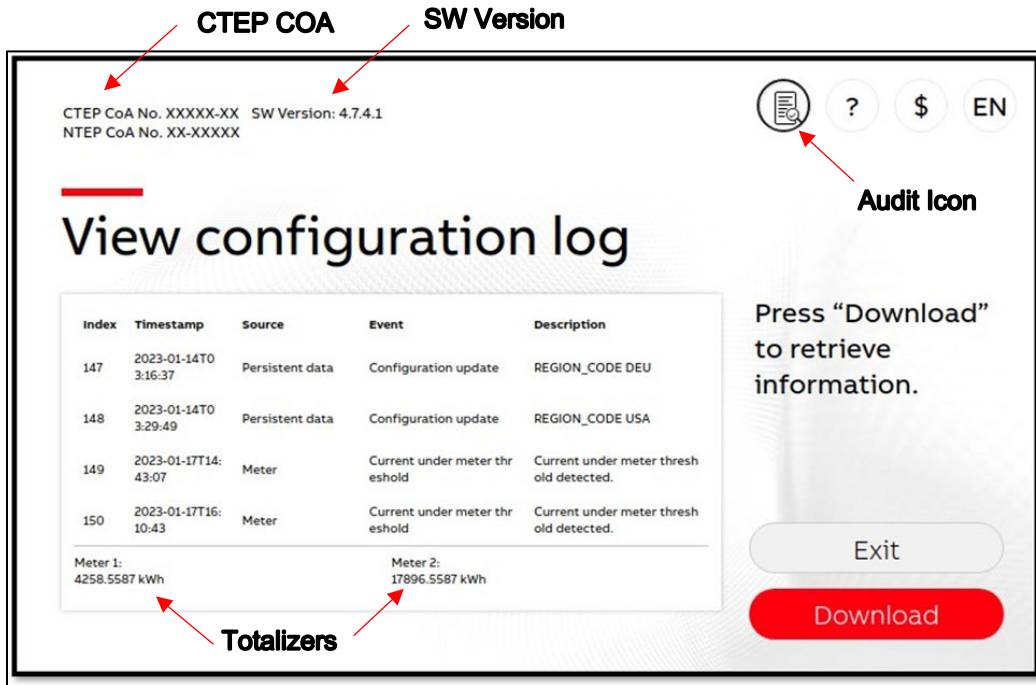


Figure 2. View Logs page with ID markings

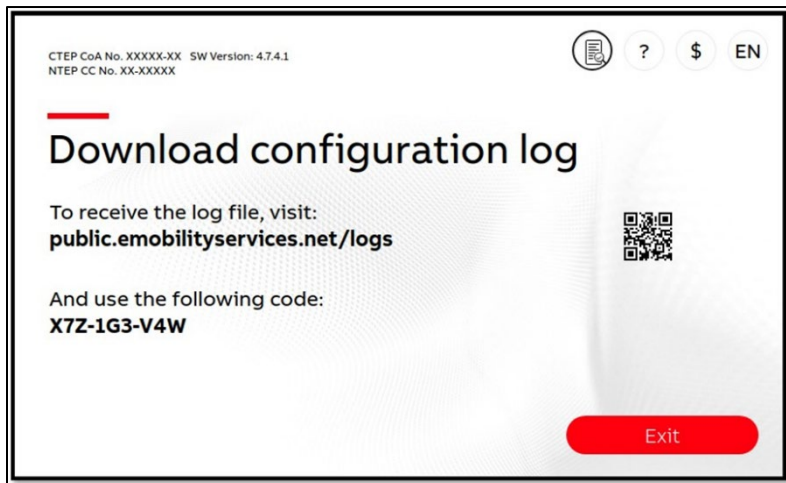


Figure 3. Download screen with QR code, web access page, and passcode

Index	Timestamp	Source	Description
176	2023-02-22T20:14:53.000Z	Configuration	Persistent data update TIME_ZONE +01:00
175	2023-02-22T20:14:43.000Z	Configuration	Persistent data update REGION_CODE USA
174	2023-02-22T20:05:38.000Z	Configuration	Persistent data update REGION_CODE DEU
173	2023-02-22T20:05:38.000Z	Configuration	Persistent data update TIME_ZONE +01:00

Figure 4. Sample of Event Log with configuration updates

Operation: A charging session may be activated by payment card or RFID. After activation, the user is prompted to enter a telephone number which will provide access to the receipt after the charging

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session. Receipts are provided via text message. If the user needs additional assistance, the Electric Vehicle Service Provider's (EVSP) telephone number is available on the "Help" page.

In the event of a power loss or unauthorized disconnection from the vehicle, the EVFS will terminate the charging session. The receipt will be available to the user via text message only after power has been restored and the remaining information related to the charging session is retrieved by the EVSP. The EVFS may be equipped with an Emergency Stop button.

Test Conditions: The emphasis of this evaluation focused on device design, performance, markings, sealing, and energy measurement accuracy. The EVFS under test was configured with the standard 6-meter cable and CCS1 connector. Test measurements were taken at 10% Maximum Deliverable Amperes (MDA): 12A over 0.5 kWh, and at 54% MDA: 68A over 1.0 kWh. Permanence testing was performed after 200 kWh of throughput usage. No Load and Starting Load tests are unable to be performed using this test method. This DC test system utilized a Kia EV6 Electric Vehicle as the test load and the test conditions reflect the specifications presented by that vehicle.

Evaluated By: J. Burbridge (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 Electric Vehicle Fueling Systems, 2023 Edition*

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

Example(s) of the Device:

Terra 54 CJ



Terra 54HV C