

# FEV500

## Fast DC EV Charging Station Analyzer

### Safety Information



**2-Year Limited Warranty.**  
See the Users Manual for the full warranty.

To register your product, or to view, print, or download the latest manual or manual supplement, go to our website:

<http://www.fluke.com/productinfo>.

### Safety Information

A **Warning** identifies hazardous conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.



**Warning**

**To prevent possible electrical shock, fire, or personal injury:**

- **Read all safety information before you use the Product.**
- **Do not alter the Product and use only as specified, or the protection supplied by the Product can be compromised.**
- **Carefully read all instructions.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**
- **Do not use the Product if it is altered or damaged.**
- **Do not use the Product if it operates incorrectly.**



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Fluke Corporation  
6920 Seaway Blvd.  
Everett, WA 98203  
U.S.A.

Fluke Europe B.V.  
P.O. Box 1186  
5602 BD Eindhoven  
The Netherlands

- Do not use the Product around explosive gas, vapor, or in damp or wet environments.
- Do not touch voltages >30 V ac rms, 42 V ac peak, or 60 V dc.
- Comply with local and national safety codes. Use personal protective equipment (approved rubber gloves, face protection, and flame-resistant clothes) to prevent shock and arc blast injury where hazardous live conductors are exposed.
- Use the correct terminals, function, and range for measurements.
- Use only current probes, test leads, and adapters supplied with the Product.
- Do not use test leads if they are damaged. Examine the test leads for damaged insulation.
- Remove all probes, test leads, and accessories that are not necessary for the measurement.
- Keep fingers behind the finger guards on the probes.
- Do not use a shrouded banana jack accessory such as an alligator clip with an unshrouded 4 mm banana probe tip terminal in a hazardous electrical installation. Due to the lack of a shroud, the probe tip connector does not provide suitable insulation to accessible parts with this type of assembly for prevention of electric shock or fire.
- Do not operate the Product with covers removed or the case open. Hazardous voltage exposure is possible.
- Do not short the battery terminals together.
- Do not disassemble or crush battery cells and battery packs.
- Disconnect the battery charger and move the Product or battery to a cool, non-flammable location if the rechargeable battery becomes hot (>50 °C / 122 °F) during the charge period.
- Do not keep cells or batteries in a container where the terminals can be shorted.
- Remove the input signals before you clean the Product.
- Have an approved technician repair the Product.
- Use only specified replacement parts.
- Validate earth ground connection of installation with appropriate earth ground tester prior to using Product.
- Use caution around the exhaust vents. Air temperatures and surface temperatures around the vents can be hot.
- Do not put battery cells and battery packs near heat or fire. Do not store in sunlight.
- Do not touch ungrounded parts of EVSE until safety is validated by Product.
- Do not close the lid while the cooling fans are still operating. Closing the lid during fan operation may cause overheating or damage to internal components.

## Symbols

The table below lists the symbols that can be used on the Product or in this document.

| Symbol                                                                              | Description                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | WARNING RISK OF DANGER.                                                                                                                                                                                                                                                                                                                                                |
|    | WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.                                                                                                                                                                                                                                                                                                                    |
|    | Consult user documentation.                                                                                                                                                                                                                                                                                                                                            |
|    | DC (Direct Current)                                                                                                                                                                                                                                                                                                                                                    |
|    | WARNING. HOT SURFACE. Risk of burns.                                                                                                                                                                                                                                                                                                                                   |
|    | Use proper lifting techniques. Product has a mass of 26 kg.                                                                                                                                                                                                                                                                                                            |
|    | This product contains a Lithium-ion battery. Do not mix with solid waste stream. Spent batteries should be disposed of by a qualified recycler or hazardous materials handler per local regulations. Contact your authorized Fluke Service Center for recycling information.                                                                                           |
|   | Conforms to European Union directives.                                                                                                                                                                                                                                                                                                                                 |
|  | Conforms to the Appliance Efficiency Regulation (California Code of Regulations, Title 20, Sections 1601 through 1608), for small battery charging systems.)                                                                                                                                                                                                           |
|  | This product complies with the WEEE Directive and its marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Do not dispose of this product as unsorted municipal waste. For information about take-back and recycling programs available in your country, see the Fluke website. |

## Specifications

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| <b>Input ratings</b> | 300 V CAT II, 1000 V dc MAX (EVSE DC+ to DC-), 7 A dc |
| <b>Battery</b>       | Li-ion, 10.8 V, 6.8 Ah, 73.4 Wh                       |
| <b>Temperature</b>   |                                                       |
| Operating            | -20 °C to 50 °C (-4 °F to 122 °F)                     |
| Storage              | -20 °C to 60 °C (-4 °F to 140 °F)                     |
| Battery Charging     | 0 °C to 45 °C (32 °F to 113 °F)                       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Humidity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                               |
| Operating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IEC 60721-3-3<br>≤100 % @ -25 °C to 30 °C /<br>(-13 °F to 86 °F)<br>55 % @ 40 °C (104 °F)<br>35 % @ 50 °C (122 °F)                                                            |
| <b>Altitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                               |
| Operating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3000 m                                                                                                                                                                        |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12 000 m                                                                                                                                                                      |
| <b>Safety</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IEC 61010-1: Pollution Degree 2<br>IEC 61010-2-034                                                                                                                            |
| <b>Ingress Protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IEC 60529                                                                                                                                                                     |
| Lid closed and latched                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | IP54 (protected against dust and splashing water)                                                                                                                             |
| Lid opened                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Electrical compartment:<br>IP40 (protected against objects ≥1 mm)<br>Air-cooling plenum:<br>IP20 (protected against objects ≥12.5 mm)<br>No protection against water ingress. |
| <b>Electromagnetic Compatibility (EMC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                               |
| International                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IEC 61326-1: Basic Electromagnetic Environment                                                                                                                                |
| <p><i>Group 1: Equipment has intentionally generated and/or uses conductively coupled radio frequency energy that is necessary for the internal function of the equipment itself.</i></p> <p><i>Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.</i></p> <p><i>Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.</i></p> <p><i>Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object.</i></p> <p><i>The equipment may not meet the immunity requirements of this standard when test leads and/or test probes are connected.</i></p> |                                                                                                                                                                               |
| USA (FCC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103                                                                                            |