

TECHNICAL DATA

Fluke FEV150 EV Charging Station Analyzer



Key features

- Test the safety and functionality of AC electrical vehicle charging stations with the all-in-one solution
- GFCI Trip Test
- Pass/fail test results
- Auto control pilot (CP) with waveform analysis
- Compatible with TruTest™ Data Management Software

Product overview: Fluke FEV150 EV Charging Station Analyzer

The FEV150 is a complete solution for safety and performance testing of AC EV charging stations with Type 1 (J1772) or Tesla type connectors. Deliver uptime reliability with Fluke's next generation of EV Charging test solutions, designed for technicians to perform and document multiple tests safely, quickly, and efficiently without carrying multiple tools.

The all-in-one solution includes TruTest™ EV Charging software. TruTest integrates seamlessly with the FEV150 via Bluetooth connection to provide predetermined test plans, pass/fail indications, and pre-test voltage safety information. Use the FEV150 and TruTest automation to get the job done safely, faster, and with less potential for errors.

The FEV150 EV Charging Station Analyzer is compliant with J1772 standards.

Applications:

- Safety testing of charging stations
- Performance testing of charging stations
- Troubleshooting/repair of charging stations

Available measurements:

- PE (protective) earth pre-test to ensure no dangerous voltage is present
- Visual inspection
- GFCI Trip Test
- Nominal voltage
- Auto control pilot (CP) with waveform analysis
- Error testing
- Proximity pilot
- Manual Control Pilot
- Advanced GFCI Test

Leverage TruTest automation to process test results and compile client reports with ease

TruTest is the modern, fast, and reliable software platform to cover your reporting and documentation needs. Now you can perform asset management, data storage, and reporting on a single platform that seamlessly integrates with the FEV150 on any job. Whether you are analyzing Control Pilot waveforms or safety testing the system, TruTest guides you through each test and generates easy-to-understand reports for clients.

- Easily manage measurement data from EVSE inspections
- Quickly create inspections and reports
- Control Pilot waveform analysis with easy pass/fail visuals
- Compare site data to previous site data to see changes over time
- Quickly access the latest firmware to update your FEV150

A free 60-day demo version of TruTest is available for [download](#). Purchase a software key to unlock the Lite or Advanced version. Compatible with Bluetooth 5.0

Specifications: Fluke FEV150 EV Charging Station Analyzer

The operational error specification reference for digit counts is defined as $\pm(\% \text{ of reading} + \text{digit counts})$.

The operational error for other specifications that reference a % are defined as the % of the reading unless otherwise specified. The operational error specification reference temperature for all readings is 23 °C ± 5 K temperature coefficient of 0.1 %/°C."

| Test/function | Display Range | Measurement Range | Operational Error | Nominal values |
|--------------------------------|--------------------------------|-------------------|--------------------------|-------------------------------------|
| PE pre-test | | | | |
| Touch voltage, safe range | ≤50 V ac/dc | | -50% | -- |
| Touch voltage, dangerous range | >50 V ac/dc | | 0% | -- |
| Visual inspection checklist | . | | -- | -- |
| GFCI Trip | | | | |
| Quick trip | 30 mA, trip time limit: 0.56 s | | Test current: 0% to 10% | 100 V ac to 253 Vac, 45 Hz to 66 Hz |
| Troubleshooting 6 mA GFCI | 3.5 mA, no trip | | Test current: -10% to 0% | |
| | 10 mA, trip time limit: 2.69 s | | Test current: 0% to 10% | |
| Troubleshooting 20 mA GFCI | 6 mA, no trip | | Test current: -10% to 0% | |
| | 30 mA, trip time limit: 0.56 s | | Test current: 0% to 10% | |
| Nominal voltage | | | | |
| L1-L2/N | 0 V ac to 280 Vac | 0 Vac to 253 Vac | ±(3% + 3 digits) | 40 Hz to 70 Hz, crest factor 2 |

| | | | | |
|---|------------------------------------|--|------------------------|---|
| Frequency | 40.00 Hz to 70.00 Hz | | ±0.20 Hz | -- |
| CP signal analysis | | | | |
| Voltage | -15.000 V to 15.000 V | -15.000 V to -2.000 V, 2.000 V to 15.000 V | ±0.5 % | RIN: 1 MΩ 0.9000 kHz to 1.1000 kHz; UCP+ >2.000 V, UCP- <-2.000 V |
| PWM duty cycle | 2.0 % to 98.0 % | 3.0 % to 97.0 % | ±5 digits | |
| Current indication | 0.0 A to 80.0 A | -- | Based on duty cycle[2] | |
| Frequency | 0.9000 kHz to 1.1000 kHz | | 0.1% | |
| CP state indication | A, B, C, D | -- | Based on voltage[1] | |
| | x1, x2 | -- | Based on frequency[1] | |
| CP state simulation | A | -- | -- | >900 kΩ ±0.2 % |
| | B | | -- | Upper level: 4610 Ω ±0.2 %[1] Nominal level: 2740 Ω ±0.2 %[1] Lower level: 1870 Ω ±0.2 %[1] |
| | C | | -- | Upper level: 1254.2 Ω ±0.2 %[1] Nominal level: 881.7 Ω ±0.2 %[1] Lower level: 611.7 Ω ±0.2 %[1] |
| | D | | -- | Upper level: 408.3 Ω ±0.2 %[1] Nominal level: 245.8 Ω ±0.2 %[1] Lower level: 130.2 Ω ±0.2 %[1] |
| Fault simulation | PE error (earth fault/PE open) | Pass/Fail | -- | -- |
| | CP error E | Pass/Fail | 0 Ω +2 Ω | -- |
| | Diode short | Pass/Fail | -- | -- |
| | Error D | Pass/Fail | -- | -- |
| PP resistor measurement Type 1 with cable (S3, R6, R7) | 50.0 Ω to 499.9 Ω, 500 Ω to 5000 Ω | | ±1.0 % | -- |
| CP resistor measurement (R1) | 800 Ω to 1200 Ω | | ±1.0 % | -- |
| [1] According to IEC 61851-1. [2] According to table A.8 of IEC 61851-1. | | | | |

| | |
|----------------------------|---|
| General specification | |
| Input electrical ratings | 250 V max 50/60 Hz, max 1 A |
| EV connector | SAE J1772 socket (type 1, 5P single-phase) |
| Internal power consumption | 3W max |
| Size (H x W x D) | II(263 mm x 123 mm x 63 mm) II(10.35 in x 4.84 in x 2.48 in) without the TY1 |
| Weight | II0.9 kg, without the TY1 connector II1.4 kg, with the TY1 connector |
| Battery | 4 x AA/IEC LR6 alkaline or IEC HR6 NiMH |
| Temperature | |
| Operating | -10 °C to 40 °C (14 °F to 104 °F) |
| Storage | -20 °C to 50 °C (-4 °F to 122 °F) |
| Relative humidity | |
| Operating | 10 % to 85 %, 0 °C to 40 °C (32 °F to 104 °F), non-condensing |
| Storage | up to 95 % |
| Altitude | 3000 m |
| Ingress protection | IP40 |



| | |
|-------------------------------------|--|
| Wireless radio, Bluetooth 5.0 | |
| Frequency range | 2400 MHz to 2483.5 MHz |
| Output power | <100 mW |
| Safety | IEC 61010-1: Pollution Degree 2, IEC 61010-2-030, CAT II 300 V, Protection Class II |
| Electromagnetic Compatibility (EMC) | |
| International | IEC 61326-1: Portable, Electromagnetic Environment, IEC 61326-2-2 CISPR 11: Group 1, Class A 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. 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. Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments. Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object. |
| USA (FCC) | 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103. |

Ordering information



FLK-FEV150/TY1

EV CHARGING STATION ANALYZER W/TYPE 1 PLUG, US

FLK-FEV150/TY1 includes:

- FEV150/BASIC Test Analyzer
- FEV-CON-TY1
- TPAK Magnetic Hanger
- Soft Carrying Bag

FLK-FEV150/TY1 PRO

FLK-FEV150/TY1 + TRUTEST

FLK-FEV150/TY1 includes:

- FEV150/BASIC Test Analyzer
- FEV-CON-TY1
- TPAK Magnetic Hanger
- Soft Carrying Bag
- TruTest Software License

FLK-FEV150/TY1/TSL

EV CHARGING STATION ANALYZER W/TYPE 1 & TESLA TYPE PLUG, US

FLK-FEV150/TY1 includes:

- FEV150/BASIC Test Analyzer
- FEV-CON-TS1
- TPAK Magnetic Hanger
- Soft Carrying Bag

FEV150/TY1/TSL PRO

FLK-FEV150/TY1 & TSL + TRUTEST

FEV150/TY1 includes:

- FEV150/BASIC Test Analyzer
- FEV-CON-TS1
- TPAK Magnetic Hanger
- Soft Carrying Bag
- TruTest Software License

FLK-FEV150/TY1/FPC

FLK-FEV150/TY1 WITH 1 YR PREMIUM CARE

FLK-FPC1S-FEV150-1

1 YR FLUKE PREMIUM CARE (NO LOANERS) FOR FEV150

FLK-FPC3S-FEV150-1

3 YR FLUKE PREMIUM CARE (NO LOANERS) FOR FEV150

Fluke. *Keeping your world up and running.®*

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