

EV CHARGE POINT TESTING

Megger's comprehensive solution for testing safety and operations of EV charge points, from installation, certification and routine maintenance.

Megger[®]



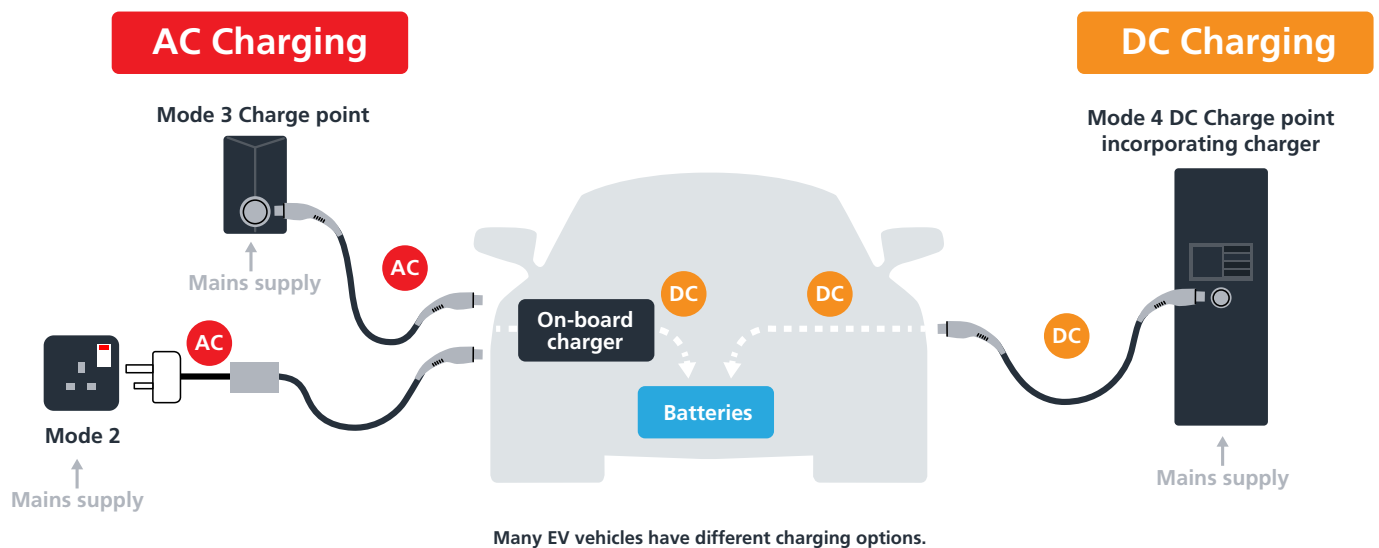
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EV Charge Point testing with Megger

As ever larger numbers of electric vehicles (EVs) take to our roads, there's inevitably a corresponding increase in demand for EV charge points. These range from relatively simple devices used by domestic residents to the high power fast chargers found in public locations such as motorway service areas. Installing and maintaining these charge points offers excellent opportunities for electrical contractors to grow their business and their profits.

To take advantage of these opportunities, contractors need the right equipment to test charge points during installation and throughout their working lives. This is an important requirement, as testing charge points without specialised equipment is almost impossible. Failing to test them correctly can lead to poor reliability, which is a major inconvenience for EV users, and serious electrical hazards, including risks of fire and electrocution.

To meet the need for EV charge point test equipment, Megger has developed products that enable contractors to safely, conveniently and cost-effectively test Mode 2 and Mode 3 EV single- and three-phase charge points. These products are the MFT-X1 multifunction installation tester, the EVX100 direct-connected charge point adaptor, the EVCA210 charge point adaptor, the EVCC300 charge point checker, and the CertSuite Installation software package.





Full Certification Testing

For testing newly installed EV charge points, and in other instances where test certificates are needed, Megger recommends using the MFT-X1 installation tester in conjunction with the EVX100 direct-connected charge point adaptor.

The MFT-X1 provides all the facilities needed to check domestic and commercial electrical installations, including the circuits supplying EV charge points. In addition, it has dedicated functions for testing RCD-DDs, the DC protection devices used in many charge points. The MFT-X1 has been designed with ease of use in mind, with a clear, intuitive user interface, and to provide lasting value and performance, with facilities for users to install updates themselves as new features become available.

For comprehensive testing of EV charge points, the MFT-X1 is used in conjunction with the EVX100 charge point adaptor. This mounts directly onto the MFT-X1 without trailing cables and is controlled from the MFT-X1 interface, which makes it faster and easier to use and reduces the possibility of making incorrect test selections.

The EVX100 adaptor provides the additional test facilities needed for charge point testing, including the ability to simulate the connection of a vehicle to the charge point and also to simulate faults on CP and PE circuits used for communication between an EV and the charge point.

The EVX100 also offers automated testing, which means that users no longer have to manually cycle the charge point through numerous CP states

every time a test trips a protective device such as an RCD or RDC. As protective devices are often located a considerable distance from the charge point, this feature can save a lot of time and walking.

As an alternative to the EVX100, Megger offers the EVCA210 charge point adaptor, which is compatible not only with the MFT-X1, but also with other modern installation testers. The EVCA210 uses a cable to connect to the installation tester and has its own controls. It provides facilities similar to the EVX100 adaptor, except that automated testing is not supported.

To help users work safely, the EVX100 and EVCA210 incorporate a range of safety functions. These include a PE pre-test feature that warns users of the presence of potentially dangerous voltages before they proceed with testing.

The EVX100 and EVCA210 adaptors make provision for safe, easy connection to the charge point. They are supplied with Type 2 connectors as standard and Type 1 connectors are available as an option, making it possible to test the vast majority of Mode 2 and Mode 3 charge points currently in use.

MFT-X1

Multifunction Tester

- ▶ True Loop™ test with patented Confidence Meter™
- ▶ CertSuite™ compatible Bluetooth® result transfer
- ▶ User upgradeable operating system
- ▶ High resolution 0.001Ω loop test
- ▶ Automatic volt-drop measurement
- ▶ Stabilised insulation test voltage
- ▶ Configurable RCD and EV auto-sequence tests
- ▶ Fast switch rechargeable plug-in battery pack
- ▶ Full colour TFT bonded display
- ▶ Re-designed lead set and carry case solution
- ▶ IP54 operational housing
- ▶ Next generation 2-wire and 3-wire non-trip loop testing

EVX100

Electric vehicle charge-point adaptor

- ▶ Test and certify single- and three-phase Mode 3 charge points up to 22 kW
- ▶ Fully integrated solution with no trailing interconnection cables
- ▶ Intuitive user interface using the MFT-X1
- ▶ Automatic confirmation of correct mode selection
- ▶ Automated testing – no manual cycle
- ▶ High capacity internal battery with USB-C charging port
- ▶ Type 2 charger connector supplied as standard, Type 1 available as an option
- ▶ Instant production of reports and certificates with CertSuite Installation

EVCA210

Electric vehicle charge-point adaptor

- ▶ Comply with Low Voltage Directive LVD 2014/35
- ▶ Push button for PE Error (Earth Fault) simulation
- ▶ Rotary switch providing PP State simulation
- ▶ Rotary Switch providing CP State simulation
- ▶ Type 1 to Type 2 Adaptor available (Supplied as standard with the EVCA210-UK)
- ▶ Push button for CP Error “E” simulation
- ▶ Push Button for PE Pre-Test
- ▶ CAT II 300V Rating



Test Certificates

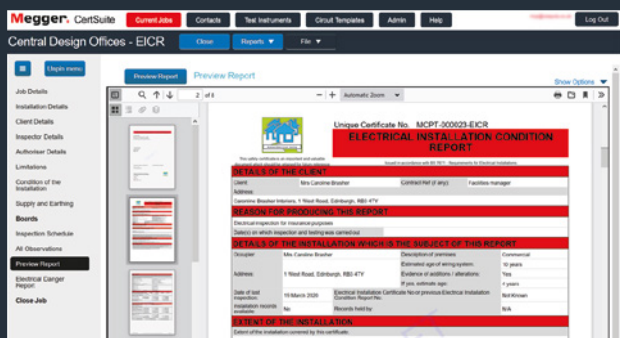
Like any other kind of test certificate, certificates for EV charge points can be produced by hand, but filling in test results on a pre-printed form is tedious and time consuming, and it's easy to make mistakes. Megger's Certsuite Installation software, which will run on almost any mobile device or computer, is a better, faster and more convenient option.

CertSuite Installation has pre-programmed certificates for EV charge point testing, but if they wish, users can easily customise these to add, for example, a company logo or contact information. CertSuite Installation captures results directly from the MFT-X1 via Bluetooth, saving time and eliminating the risk of errors. CertSuite Installation is not just for EV charge point testing – it incorporates certificates for every aspect of installation testing, making it an invaluable asset for all electrical contractors.

Megger CertSuite™

Electrical Certification Software

- ▶ Quick, reliable and flexible – works on any device in any location
- ▶ Unlimited certificate generation
- ▶ Unlimited storage for certification records
- ▶ Online and offline operation – enter data and results without internet access
- ▶ Free technical support and standards alignment
- ▶ Secure cloud-based certification on the Microsoft™ Azure™ platform
- ▶ Simultaneous job access for multiple users (licence required per user)



Routine EV Charge Point Testing



For routine testing and fault-finding on EV charge points without certification, the full range of facilities provided by the MFT-X1 multifunction installation tester used with the EVCA210 adaptor may not be needed. For these cases, Megger offers the compact and easy-to-use EVCC300 EV charge point checker. This self-contained handheld instrument plugs directly into Type 2 connectors and is supplied with an adaptor for Type 1 connectors.

The EVCC300 provides all of the essential safety and operational checks, including touch voltage tests and confirmation of the correct operation of the PP and CP circuits. These features make it ideal for performing rapid but thorough checks on EV charge points to ensure that they continue to operate safely and reliably throughout their working lives.

EVCC300

Electric Vehicle Charger Checker

- ▶ Checks mode 2 and single phase mode 3 (level 1 and two phase level 2) chargers
- ▶ Checks chargers with SAE J1772 Type 1 and Type 2 connectors
- ▶ Performs four EV charger safety checks
- ▶ Performs four EV charger operation checks
- ▶ Checks to see if nuisance tripping or RCD/GFCI is likely to occur
- ▶ Reads control pilot state response from EV Charger to IEC61852-1



Our Support

With the right equipment to hand, electrical contractors will find that testing EV charge points is straightforward and potentially very profitable. Nevertheless, for many contractors, it is a new service venture, and the technology used in charge points is still evolving and maturing. For these reasons, it's comforting to know that expert technical support for charge point testing is readily available. And, for users of its products, Megger is always ready to provide that support, drawing on the unparalleled experience the company has gained as one of the world's leading developers of portable test equipment for well over a century.

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