CHAUVIN ARNOUX

CA 6652

Test adapter for type-2 AC electric vehicle charging stations

From qualification to maintenance

Effective and economical

- Immediate diagnosis of your AC EVSE installations for BEV/PHEV electric vehicles
- Simplified connection of measuring and test instruments
- Safe for indoor and outdoor use

Designed and manufactured in France

CAT II 300 V | IP 54 | IEC 61851-1 | IEC 60364-7-722

Measure up

Quick, comprehensive diagnosis of EVSE charging stations

On its own, the **CA 6652** is capable of providing a quick diagnosis of **EVSE charging** station operation and the safety procedures in the event of fault conditions.

When coupled with a multifunction installation tester, it can be used for all the electrical safety tests required by the reference standards.

Terminal of the PE protective earth conductor

Terminal of the CP* control pilot

Rotary selector for CP* status

Rotary selector for PP** status

N neutral terminal

L1, L2 and L3 phase terminals with visual voltage presence indication

Conductor key for detecting hazardous voltages on the PE protective earth with indicator light

Tests of fault conditions:
- CP-PE short-circuit
- CP-PE diode short-circuit
- Opening of PE

TYPE-2 EVSE connector

* CP: Control Pilot

** PP: Proximity Pilot
(maximum current admissible on the cable)

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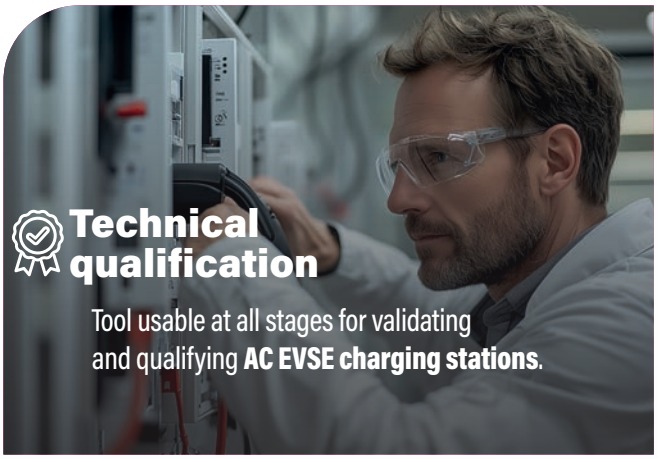
A qualified charging station means a well-charged vehicle

To ensure long-term operation of **EVSE installations**, the **CA 6652** adapter can be used to perform the measurements and tests required from the design phase through to the initial and periodic inspections of the charging stations. This helps to make electric vehicle battery charging optimized, reliable and sustainable.

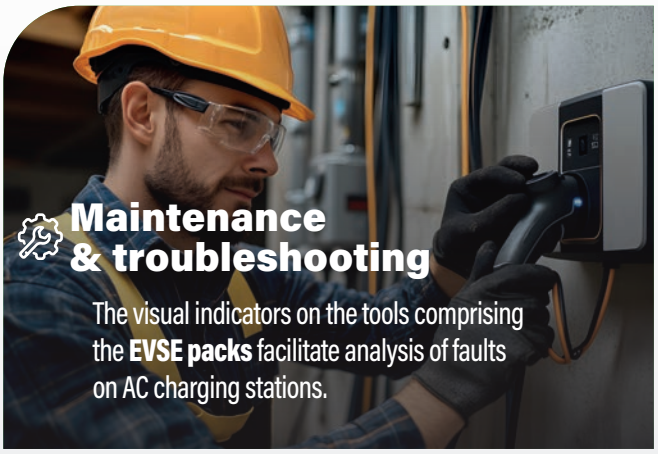


Technical qualification

Tool usable at all stages for validating and qualifying **AC EVSE charging stations**.

Installation & commissioning

The **CA 6652**'s compact design and ergonomics make it simple to use for all tests in the field.



Maintenance & troubleshooting

The visual indicators on the tools comprising the **EVSE packs** facilitate analysis of faults on AC charging stations.

Periodic tests

Our **AC EVSE packs**' compliance with the standards and tests ensures that measurements and tests are performed correctly during initial or periodic inspections.

EVSE training

The visual indicators and the ease of using the **EVSE packs** with the **CA 6652** offer a simple illustration of AC **EVSE station** operating and safety concepts.

Watch the video

Good working practices
Inspection of EVSE charging stations and installations

Professionals working on charging stations for BEV/PHEV electric vehicles need to have the skills and test and measuring instruments required by the installation and inspection standards stipulated by the EVSE regulations.

THE IEC 61851-1 STANDARD

The **IEC 61851-1 standard** applies to BEV / PHEV electric vehicle charging stations in low-voltage zones. It covers:

- The operation of EVSE installations
- The connection system between the charging stations and electric vehicles
- Electrical safety of EVSE installations

THE CA 6652, THE IDEAL ADAPTER FOR AC EVSE CHARGING STATIONS

The **CA 6652 adapter** is suitable for quick tests on type-2 AC **EVSE charging stations** because it is particularly easy to implement in the field. Its ability to simulate electric vehicle statuses (CP) and the various vehicle charging cable configurations (PP) make it ideal for quickly testing all the situations stipulated by the standard.

Lastly, the fault simulation buttons help to ensure **EVSE station** safety in the event of anomalies between the electric vehicle and the charging system, such as cases where the DC voltage to the CP (Control Pilot) control signal is not blocked.

Provision of the CP signal on the CA 6652's terminals

Any communication problems between the electric vehicle and the EVSE station are analysed using a **HANDSCOPE II** or **SCOPIX IV BUS** oscilloscope so that the CP signal on the **CA 6652**'s terminals can be viewed.

HANDSCOPE II CA 942

Ideal for maintenance

- 20 or 40 MHz portable oscilloscope
- Double 8,000-count multimeter
- Harmonic analyser
- 600 V CAT III

SCOPIX IV, OX 9302-BUS

For testing the physical integrity of fieldbuses

- 300 MHz portable digital oscilloscope
- 2 isolated channels
- Intuitive, upgradable interface
- Communication interfaces Ethernet, Wifi and USB
- 600 V CAT III

ADVANTAGES OF THE CA 6652

- *Simulation of vehicle connection and the maximum current accepted by the cable*
- *Voltage presence indicator light*
- *Access to the charging station terminals via 4mm banana plugs*
- *Safety testing of the charging station in fault conditions*
- *Operator safety ensured by detection of the PE potential by means of a conductor key (stud)*
- *Availability of the CP signal to detect any communication problems*

THE IEC 60364-7-722 STANDARD

There are several charging modes available on type-2 EVSE stations. Charging modes 1 and 2 are reserved for domestic installations.

Charging stations intended for charging mode 3 (AC stations from 3.7 kW to 22 kW) must comply with the stipulations of the **IEC 60364-7-722 installation standard.**

Stipulations of the IEC 60364-7-722 installation standard

The **IEC 60364-7-722 standard** imposes checks on the electrical safety aspects of **EVSE installations:**

- Earthing of the EVSE station
- Continuity of the PE protective conductor
- Testing of the isolation of the conductors from one another and in relation to the chassis
- Trip test of the RCDs ensuring people's safety

OUR EVSE SOLUTIONS, IDEAL FOR TESTING CHARGING INSTALLATIONS

To carry out these operations in total safety for the operator, the **EVSE** decree stipulates a number of measurements.

The operator must have access to the necessary equipment: VAT, universal tester, earth tester, insulation and continuity tester, RCD tester, phase sequence tester and charging station tester.

It is possible to meet these requirements by using an installation tester, a **CA 6652** charging station tester and a VAT (voltage absence tester) in combination. It is necessary to test the type-A RCDs and, on some installations, type-B and EV 6 mA RCDs.

When used together, these 3 instruments provide all the essential measurements needed by EVSE charging station installers.

Grouped in several packs, these measuring instruments correspond to the different levels of intervention, depending on the system to be tested.

DID YOU KNOW?

Our EVSE Packs can be used for EVSE charging station safety testing:

- *Earthing test*
- *PE continuity test*
- *Test of isolation of the phases + neutral in relation to the PE*
- *Test of the charging station's RCD*

IEC 61851-1 **IEC 60364-7-722**

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ESSENTIAL EVSE PACK

Advantages of the Pack

- Complete solution for electrical safety testing on charging stations with type-A RCDs
- Storage of the results for report generation

CA 6652

EV* charging stations

CA 762 IP2X

DDT/VAT

- Full integrated autotest
- Voltage testing up to 690 VAC (16 2/3 Hz H - 800 Hz) / 750 VDC
- Phase sequence testing up to 400 Hz

CA 6133

Electrical installation tester

- Earth measurement by stake and loop method
- Continuity measurement at 0.2 A
- Insulation testing
- RCD testing: current and tripping time

Testing the voltages supplied by a charging station with a type-A RCD during charging

Watch the video

Simulation of EV status and charging station safety conditions
Detection of hazardous voltage on accessible part (PE)
Simulation of EV statuses
Simulation of maximum current accepted by the cable
Error simulation (CP-PE short-circuit, diode short-circuit, PE Open)
Verification of command signals (CP)
Charging station electrical safety check
Test of the continuity and insulation of the conductors in the measuring cable
Single or three-phase charging station electrical safety test
Type-A / AC RCD tripping test
Type-B/B+/EV 6 mA RCD tripping test
Inspection report

*Electric Vehicle

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ADVANCED EVSE PACK

Advantages of the Advanced Pack

- Optimum solution for electrical safety tests on charging stations with type-A/B/EV 6 mA RCDs
- Multi-level storage with indication of the sites and stations tested
- Integrated contextual help

CA 6652
Test adapter for charging stations

CA 762 IP2X
DDT/VAT

- Full integrated autotest
- Voltage test up to 690 VAC (16 $^{2/3}$ Hz - 800 Hz) / 750 VDC
- Phase sequence test up to 400 Hz

CA 6117
Electrical installation tester

- Earth measurement by stake and loop method
- Continuity measurement at 0.2 A
- Insulation testing
- Type-A, B, EV 6 mA RCD testing: current and trip time

CA 6652	ESSENTIAL EVSE PACK	ADVANCED EVSE PACK
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
Via oscilloscope		
-	✓	✓
-	✓	✓
-	✓	✓
-	-	✓
-	Android application	PC software

Testing the voltages supplied by a charging station with type-B/EV 6 mA RCD during charging

Watch the video

TECHNICAL SPECIFICATIONS

Charging station socket connector IEC 62196-2	
Operator safety	Detection of voltage on PE via conductor key
Simulation of vehicle presence	
Simulation of PP	Not connected NC, 13A, 20A, 32A, 63A
Simulation of CP	Statuses A, B, C, D
Simulation of fault conditions	CP-PE short-circuit, CP-PE diode short-circuit, opening of PE
4mm banana measurement terminals	L1, L2, L3, N, PE, CP signal
Indication of voltage presence	by LEDs
General specifications	
Environment	Operation -20 °C +55 °C, Storage -20 °C +70 °C
Casing dimensions (L x W x H)	221 x 100 x 44 mm
Cable length	Approx. 60 cm
Ingress protection	IP 40 / IP 54 - IEC 60529
Standards	
Electrical safety	Adapter: IEC/EN 61010 2 030 - Cable: IEC/EN 61010 2 031, 300 V CAT II pollution degree 2
EMC	IEC/EN 61326-1

STATE AT DELIVERY

- One CA 6652
- adapter for BEV/PHEV charging stations delivered in a cardboard box containing:
- 1 carrying bag
- 1 cable terminated by a type-2 socket
- 1 multilingual Quick Start Guide
- 1 multilingual safety datasheet
- 1 verification certificate.

The User's Manual is available for download from website at www.chauvin-arnoux.com

TO ORDER

CA 6652 ..... P01191309

CA 6652 Essential Pack.....P01300006

- 1 x CA 6652 adapter
- 1 x CA 762 IP2X VAT
- 1 x CA 6133 installation tester

CA 6652 Advanced Pack.....P01300002

- 1 x CA 6652 adapter
- 1 x CA 762 IP2X VAT
- 1 x CA 6117 installation tester

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