Easy Chester

Generation FLEX for CCS, NACS & CHAdeMO with the Variants mobile, EOL & Eichrecht

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The new champion in electromobility

The new Easy Chester, previously called “Mini-Charger-Tester”, is designed for mobile use in the field, for service and maintenance. This easy charger tester completely redesigned generation, which includes Flex technology, is operated intuitively via a touchscreen and also provides comprehensive reports.

The easy-to-use charging station tester

The number of charging stations in the field is increasing, and so is the cost of maintaining them. To ensure that a charging station works as expected, a final functionality test is essential after installation, a service interval or repairs have been carried out. The testers often use two different vehicles to test the charging stations, e.g. one with a CCS connection and the other with CHAdeMO.

To simplify these tests and obtain reliable and reproducible results, comemso offers the portable Easy Chester. The tester can simulate vehicle signals, communication protocols and the output of a small vehicle battery for the charging standards DC-CCS, NACS and CHAdeMO, as well as AC on request (but without load circuit).

The test results are displayed in real time on the touchscreen and can be saved in the device. The Easy Chester can therefore simulate two vehicles with different charging standards, all in an ultra-portable, very easy-to-use device with meaningful test reports. It also provides a standardized vehicle behaviour, as opposed to the individual behaviours of various vehicle brands.

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Testing of electrical systems

Testing electrical systems is a very important and preventative tool for increasing reliability and service life.

The standards of the last few decades have enormously increased the requirements for electrical installations. As a result, the importance of testing electrical devices for the field of electrical installation technology has developed into a very important line of work in its own right in the area of electrical installation technology. The following three standards are highly relevant for testing in the field, this means also on site at the respective charging station.

Standards

- **Initial tests – DIN VDE 0100-600**

  The initial tests are carried out to determine whether the protection of people and property is guaranteed. The test is intended to detect defects that may have been caused during the installation or operation of electrical systems.

- **Periodic testing – DIN VDE 0105-100**

  Periodic inspections at fixed intervals intended to determine the condition of electrical installations.

- **Testing after repair or modification – DIN VDE 0701-0702**

  Testing the electrical safety of electrical devices after repair work and modifications, for example, is regulated by the DIN VDE 0701-0702 standard „Testing after repair, modifications“. There are time specifications for the inspections - for charging stations these are inspections due after one year.

The initial and periodic inspection is not just a matter of safety. Early defects and sources of danger can be detected and resolved thanks to thorough testing procedures.

The advantage of this process is the early detection of initial damage, ageing processes and thus also preventive measures for major repairs.

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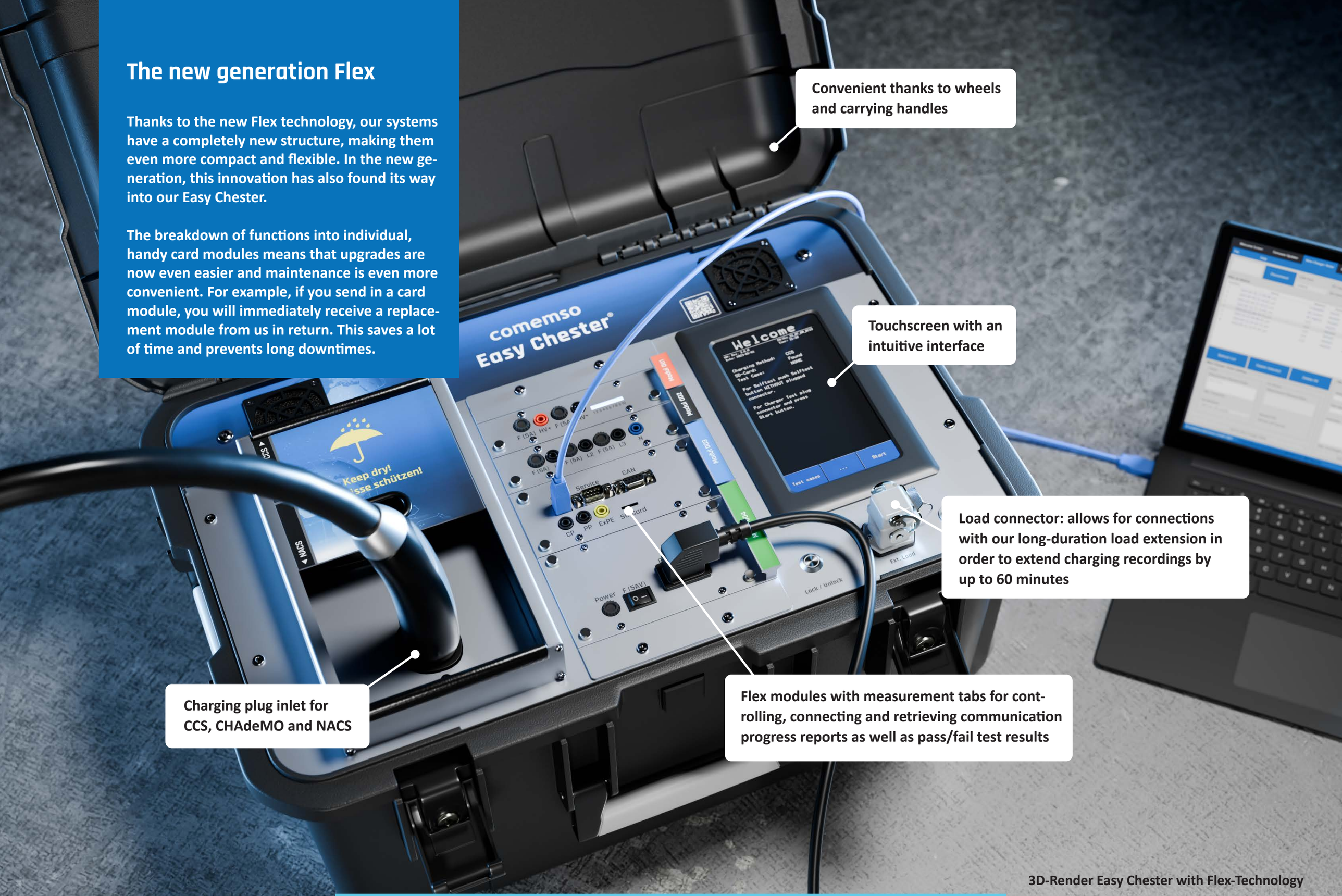
The new generation Flex

Thanks to the new Flex technology, our systems have a completely new structure, making them even more compact and flexible. In the new generation, this innovation has also found its way into our Easy Chester.

The breakdown of functions into individual, handy card modules means that upgrades are now even easier and maintenance is even more convenient. For example, if you send in a card module, you will immediately receive a replacement module from us in return. This saves a lot of time and prevents long downtimes.



Convenient thanks to wheels and carrying handles

Touchscreen with an intuitive interface

Load connector: allows for connections with our long-duration load extension in order to extend charging recordings by up to 60 minutes

Charging plug inlet for CCS, CHAdeMO and NACS

Flex modules with measurement tabs for controlling, connecting and retrieving communication progress reports as well as pass/fail test results

3D-Render Easy Chester with Flex-Technology

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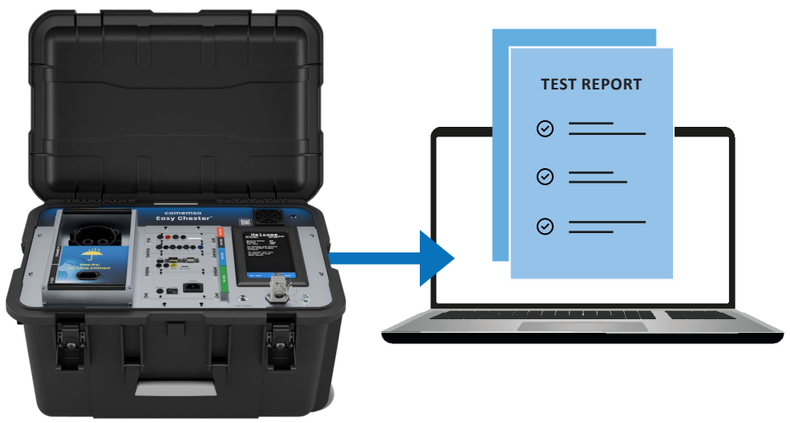
Testing charging stations the easy way

Operating the Easy Chester is as simple as can be

- Connect the charging cable and press Start to initiate the test
- Track the results on the display

A large memory to save all data even after maintenance

- The Easy Chester offers plenty of memory capacity to store all data
- Evaluate the protocols later from your computer or print them out whenever you like



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Power supply made easy

When the charging station has a service panel with an integrated socket, the Easy Chester can be easily operated via this socket (85 - 245 V AC).

With a 1 kW sine wave inverter that can be connected to a 12 V cigarette lighter, the Easy Chester is also easy to operate from a car.

DESIGNED FOR
FIELD USE

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1. **The Easy Chester simulates two different electric vehicles**

   With the Easy Chester, you don‘t need a vehicle for testing, as the device can simulate up to two different vehicles.

2. **Comprehensive EV simulation**

   Fully automatic EV simulation regarding communication and the DC load circuit.

3. **Results in real time**

   Test results are displayed in real time on the touchscreen and are also saved in the device.

4. **Portability**

   The Easy Chester is equipped with transport wheels and handles, making it ideal for mobile use.

5. **No computer required on site**

   No computer is required for on-site testing thanks to the built-in touch display.

6. **Recognizing the limits of the charging station**

   What is the true charging capacity? The charging station communicates the possible charging capacity to the Easy Chester, from where it is documented and can also be viewed in the test report.

7. **Advantages of simulated test vehicles**

   By simulating vehicles, it is possible to provide comprehensive test results for service technicians. With a vehicle, this would be quite a challenge.

8. **Supports various recurring safety tests**

   Leakage current, CP short circuit, PE line break, insulation monitor test, CP communication signal short circuit.

9. **Test report featuring your own company logo**

   You have the option of generating your test reports with your own company logo, giving them a personal touch.

Innovation that inspires

With the Mini-Charger-Tester, comemso is the **winner of the 2019 Innovation Award** of the district of Esslingen (Baden-Württemberg). These and other innovations live on in the new Easy Chester.

Innovationspreis 2019
des Landkreises Esslingen

Benefit from manufacturer-independent tests and check whether EVSEs can charge and function safely.

As the Easy Chester was developed specifically for service technicians and not for development purposes, the Easy Chester is expected to conform to the EVSE standard.

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Easy Chester in detail

Our Easy Chester can be adapted to your individual requirements. You will find options for personalized configuration in the chart below:

- Portable device for field use
- Charging test with approx. 1.8 kW
- Adjustable charging time ranging between 30 seconds (standard) and 60 minutes (requires our additionally available Long Duration Load Extension)

Konfiguration

NAME	ITEM NUMBER	DC-CCS COMBO 1	DC-CCS COMBO 2	CHADEMO	DC-NACS	AC TYP 1	AC TYP 2	POWER TRANSFER DURING EV SIMULATION	ISO. FAULT SIM.	FEATURE AC PLC	REPORT FILE
Combined 1 +F	118-1-005	•		•				appx. 300 V, 6 A	•		•
Combined 2 +F	118-1-006		•	•				appx. 300 V, 6 A	•		•
DC-CCS 1 +F	118-1-001	•						appx. 300 V, 6 A	•		•
DC-CCS 2 +F	118-1-002		•					appx. 300 V, 6 A	•		•
DC-CCS 1 + 2 +F	118-1-003	•	•					appx. 300 V, 6 A	•		•
CHAdeMO +F	118-1-004			•				appx. 300 V, 6 A	•		•
Combined 1 +AC, +PLC +F	118-1-010	•		•		•		appx. 300 V, 6 A	•	•	•
Combined 2 +AC +PLC, +F	118-1-011		•	•			•	appx. 300 V, 6 A	•	•	•
DC-CCS 1 +AC +PLC +F	118-1-007	•				•		appx. 300 V, 6 A	•	•	•
DC-CCS 2 +AC +PLC +F	118-1-008		•				•	appx. 300 V, 6 A	•	•	•
DC-CCS 1 + 2 +AC +PLC +F	118-1-009	•	•			•	•	appx. 300 V, 6 A	•	•	•
DC-NACS +F	118-1-013				•			appx. 300 V, 6 A	•		•
DC-NACS +CCS1 +AC +PLC +F	118-1-012	•			•	•		appx. 300 V, 6 A	•	•	•
MAINTENANCE & SERVICES											
1 year	118-7-002										
Calibration ISO 17025	118-8-001										
Long-Duration-Load-Extension	118-1-060										
TRAINING											
Training video	910-1-026										

Technical data

GENERAL	
AC power supply voltage	85 - 245 V AC (Input), Suitcase version can be connected to a 12 V DC cigarette lighter via an inverter (inverter not included).
Size (W x H x D) / Weight	600 x 330 x 400 mm / 16 Kg
Operating temperature	- 15 .. + 40 °C
Results	On display and PDF report stored in device.
Test / analysis standards	CHAdeMO: Ver. 0.9.1, 1.0.0, 1.0.1, 1.1 und 1.2, DC-CCS, NACS: DIN 70121 as well as AC for ISO 15118 on demand. Can be changed by configuration via touchscreen.
Power consumption	max. 500 VA, in rush current higher
Inrush current	CHAdeMO: appx. 10.7 A, DC-CCS: appx. 8.3 A
Water resistance according to IEC 60529	closed lid: IP66; open lid: IP43
MEASURING RANGE, ACCURACY ETC.	
Voltage measurement	
Range	0 .. 1000 V
Resolution (Display)	+/- 1 V
Accuracy	+/- (1 V + 0,5 % of measured value)
Voltage measurement	
Range	0 .. 7 A
Resolution (Display)	+/- 0,1 A
Accuracy	+/- 0,5 A
EV SIMULATION	
Integrated battery emulation	Resistive load with emulated battery voltage
Voltage	approx. 300 V (output)
Current	approx. 6 A
Duration charge cycle	approx. 30 sec. (Enough time to check whether the EVSE works in general.)
ISOLATION FAULT SIMULATION FOR DC-CCS	
Choose different resistors between DC+ to PE / DC- to PE	780 kOhm, 690 kOhm, 600 kOhm, 500 kOhm, 475 kOhm, 400 kOhm, 300 kOhm, 200 kOhm, 95 kOhm, 50 kOhm, 47 kOhm
MISCELLANEOUS	
Isolated Banana sockets	
DC / AC	to validate the voltage / connect AC load (up to max 32 A per phase)
Lock-Extension	for DC-CCS Inlet

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Next step: Safe and robust charging infrastructure from the experts

Ready to make the switch to world-class analysis and testing?

1 **Call or write to us:**

+49 711 982 98 - 200

sales@comemso.com

2 **We will go through all further steps with you personally**

3 **In the future, your charging infrastructure will operate in a standardized, safe and interoperable manner**

This is what will happen next

We will work with you to determine your specific needs

- Fill out the questionnaire
- An online meeting with our sales representative will be arranged.

You will then receive an offer with a detailed description of your solution both visually and in words

- Including an online demo of the desired functions

After order confirmation, we will stay in contact with you to deliver your perfect system

Customer feedback

"As a product-independent full-service provider for sustainable charging systems, comemso not only convinced us because of their market establishment, but above all because of the manufacturer-independent application options. In this way, we can guarantee our customers quick service calls and feedback on the reliable functioning of their charging points."

synfis

Michael Borowski
Leiter Produktmanagement Elektromobilität

"We´ve been using the comemso Mini-Charger-Tester to test our hyper-fast charging, and we´re impressed by the ease of use, stability and precision of the compact solution."

Clever

Jack Johansen
Project Manager, Clever A/S

"Comemso offers innovative solutions to the industry, offering support and a quality product. Highly recommended!!"

SGS

Antonio Puerta Vicente
GRUPO SGS ESPAÑA

"Fantastic piece of testing kit."

JOJU SOLAR

Joe Gabriel
Operations Director, JOJUSOLAR

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Easy Chester EOL – the new level in quality assurance

Ensure the quality of your charging station at the end of the production line with our unbeatable combination of vehicle simulation, testing and analysis.

The Easy Chester EOL helps you simulate production line vehicle signals and therefore reliably test and analyze the communication of your charging stations. The performance tests required for a comprehensive final inspection are also integrated and can be carried out simultaneously. With the High Power Charging model, you can even test up to 500 kW. Thanks to a specially developed interface, it also allows the integration of a control system for your production environment. This means that quality control can be incorporated seamlessly into your production with the Easy Chester EOL and individual production steps can be coordinated to optimize the process. Of course, this also applies to production lines during the planning phase.

Simple operation guaranteed

Enjoy the benefits of the Easy Chester product family for a diverse range of testing options. Whether on the road or as part of your production line: all versions are easy to use, designed for service technicians in the field and for workers throughout the production line.

3D-Render Easy Chester EOL with Flex-Technology

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Easy Chester EOL in detail

If your focus is on end-of-production testing, we offer a suitable solution with the end-of-line (EOL) variant.

- Designed for continuous operation with approx. 2.5 kW power at laboratory conditions
- Dual device for production (EOL test) and portable for field tests
- Functionality test for average charging loops at reduced power (~ 1 h)
- The recommended operating time for the device is 8 hours/day

Konfiguration

NAME	ITEM NUMBER	DC-CCS COMBO 1	DC-CCS COMBO 2	CHADEMO	DC-NACS	AC TYP 1	AC TYP 2	POWER TRANSFER DURING EV SIMULATION	ISO. FAULT SIM.	FEATURE AC PLC	REPORT FILE
Combined 1 EOL, +F	118-1-025	•		•				appx. 360 V, 7 A	•		•
Combined 2 EOL, +F	118-1-026		•	•				appx. 360 V, 7 A	•		•
DC-CCS 1 EOL, +F	118-1-021	•						appx. 360 V, 7 A	•		•
DC-CCS 2 EOL, +F	118-1-022		•					appx. 360 V, 7 A	•		•
DC-CCS 1 + 2 EOL +F	118-1-023	•	•					appx. 360 V, 7 A	•		•
CHAdeMO EOL +F	118-1-024			•				appx. 360 V, 7 A	•		•
Combined 1 EOL +AC +PLC +F	118-1-027	•		•		•		appx. 360 V, 7 A	•	•	•
Combined 2 EOL +AC +PLC +F	118-1-028		•	•			•	appx. 360 V, 7 A	•	•	•
Combined 1 + 2 EOL +AC +PLC +F	118-1-029	•	•	•		•	•	appx. 360 V, 7 A	•	•	•
DC-NACS + CCS 1 + 2 EOL +AC +PLC +F	118-1-030	•	•		•	•	•	appx. 360 V, 7 A	•	•	•
DC-NACS + Combined 1 + 2 EOL +F	118-1-031	•	•	•	•			appx. 360 V, 7 A	•		•
DC-NACS + Combined 1 + 2 EOL +AC +PLC +F	118-1-032	•	•	•	•	•	•	appx. 360 V, 7 A	•	•	•
MAINTENANCE & SERVICES											
1 year	118-7-002										
Calibration ISO 17025	118-8-001										
TRAINING											
Training video	910-1-026										

Technical data

GENERAL	
AC power supply voltage	85 - 245 V AC (Input), can be connected to a 12 V DC cigarette lighter via an inverter (inverter not included).
Size (W x H x D) / Weight	appx. 483 x 532 x 584 mm / appx. 25 Kg
Operating temperature	- 15 .. + 40 °C
Results	On display and CSV report stored in device (PDF exportable).
Test / analysis standards	CHAdeMO: Ver. 0.9.1, 1.0.0, 1.0.1, 1.1 und 1.2, DC-CCS, NACS: DIN 70121 as well as ISO 15118 on demand. Can be changed by configuration via touch-screen.
Power consumption	max. 500 VA, in rush current higher
Inrush current	CHAdeMO: ca. 10,7 A, DC-CCS: ca. 8,3 A
MEASURING RANGE, ACCURACY ETC.	
Voltage measurement	
Range	0 .. 1000 V
Resolution (Display)	+/- 1 V
Accuracy	+/- (1 V + 0,5 % of measured value)
Current measurement	
Range	0 .. 7 A
Resolution (Display)	+/- 0,1 A
Accuracy	+/- 0,5 A
EV SIMULATION	
Integrated battery emulation	Resistive load with emulated battery voltage
Voltage	approx. 360 V (output)
Current	approx. 7 A
Duration charge cycle	up to 60 min.
ISOLATION FAULT SIMULATION FOR DC-CCS	
Choose different resistors between DC+ to PE / DC- to PE	780 kOhm, 690 kOhm, 600 kOhm, 500 kOhm, 475 kOhm, 400 kOhm, 300 kOhm, 200 kOhm, 95 kOhm, 50 kOhm, 47 kOhm
MISCELLANEOUS	
Isolated Banana sockets DC / AC	to validate the voltage / connect AC load (up to max 32 A per phase)
Lock-Extension	for DC-CCS Inlet

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Easy Chester EOL HPC in detail

If your focus is on end-of-line (EOL) tests with high-power charging (HPC), we offer a suitable solution for loads up to 500 kW.

- Designed for operation in an end-of-line test bench
- Performs functionality tests during long charging cycles
- For high-performance charging tests up to 500 kW (1000 V / 500 A)

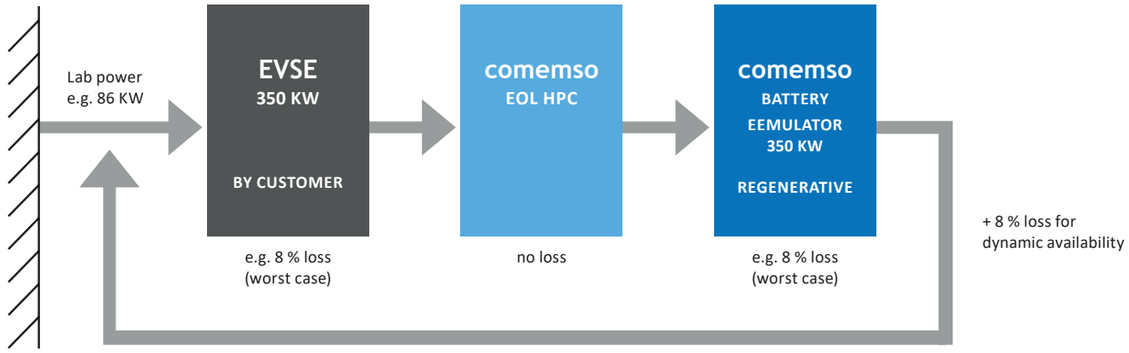
Konfiguration

NAME	ITEM NUMBER	DC-CCS COMBO 1	DC-CCS COMBO 2	CHADEMO	DC-NACS	AC TYP 1	AC TYP 2	POWER TRANSFER DURING EV SIMULATION	ISO. FAULT SIM.	FEATURE AC PLC	REPORT FILE
DC-CCS 1 +F	118-1-041	●						depends on request	●		●
DC-CCS 2 +F	118-1-040		●					depends on request	●		●
DC-CCS 1 + 2 +F	118-1-043	●	●					depends on request	●		●
Combined 1 + 2 +F	118-1-044	●	●	●				depends on request	●		●
Combined 1 + 2 +AC +PLC, +F	118-1-045	●	●	●		●	●	depends on request	●	●	●
DC-CCS 1 + 2 +F with MUX	118-1-050	●	●					depends on request	●		●
Combined 1 + 2 +F with MUX	118-1-051	●	●	●				depends on request	●		●
Combined 1 + 2 +AC +PLC +F with	118-1-052	●	●	●		●	●	depends on request	●	●	●
POWER RANGE											
For a personal offer, please let us know the current voltage and power required for the desired HPC application. In addition, whether you already have a battery emulator.											
MAINTENANCE & SERVICES											
1 year	118-7-003										
calibration ISO 17025	118-8-001										
TRAINING											
Online training 1/2 day	910-1-012										

Technical data

GENERAL	
Size (W x H x D) / Weight	depends on customers requirements
Operating temperature	- 15 .. + 40 °C
Results	On display and CSV report stored in device (PDF exportable).
Test / analysis standards	CHAdeMO: Ver. 0.9.1, 1.0.0, 1.0.1, 1.1 und 1.2, DC-CCS, NACS: DIN 70121 as well as ISO 15118 on demand. Can be changed by configuration via touch-screen.
MEASURING RANGE, ACCURACY ETC.	
Voltage measurement	
Range	0 .. 1000 V
Resolution (Display)	+/- 1 V
Accuracy	+/- (1 V + 0,05 % of measured value)
Current measurement	
Range	0 .. 500 A
Resolution (Display)	+/- 0,1 A
Accuracy	+/- 0,5 A
EV SIMULATION	
battery emulation	depends on customers request
ISOLATION FAULT SIMULATION FOR DC-CCS	
Choose different resistors between	780 kOhm, 690 kOhm, 600 kOhm, 500 kOhm, 475 kOhm, 400 kOhm,
DC+ zu PE / DC- zu PE	300 kOhm, 200 kOhm, 95 kOhm, 50 kOhm, 47 kOhm
MISCELLANEOUS	
Isolated Banana sockets	
DC / AC	to validate the voltage / connect AC load (up to max 32 A per phase)
Lock-Extension	for DC-CCS Inlet

Power connection with battery charger 350 KW



Example of conducting a 350 kW charging test with a lower grid connection, using the battery emulator's regenerative power capability.

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Easy Chester Eichrecht – verified accuracy for your measurements

The Easy Chester Eichrecht (Easy Chester calibration law device) ensures that your customers can always trust the invoice issued by the charging station. It guarantees that they only ever pay the actual amount of electricity received. As the world‘s first standardized and mobile test system for calibrating charging stations in the field in accordance with ISO 17025, the Easy Chester Eichrecht is ideal for calibration offices, calibration laboratories, charging station manufacturers and charging infrastructure operators. You can move it wherever you need using a trailer or van so that you can test your charging stations directly on site.

The integrated cross measurement gives you maximum flexibility and allows you to detect even the smallest of deviations from the standard. And don‘t worry: operating the Easy Chester calibration device isn’t rocket science. With some basic knowledge of electrical engineering and a short training period, anyone can carry out measurements with the Easy Chester Eichrecht.

Many satisfied customers are already using Easy Chester devices in the field or in production. We are now also making this technology available for our Easy Chester Eichrecht device. This gives you a proven, easy-to-use system with an unbeatable price to performance ratio.

A head start based on skills

As a full member of the DKE standardization group, we are actively involved in the implementation of the requirements for the conformity of DC charging stations with calibration law. The know-how gained from this flows directly into the development of the Easy Chester calibration law. You can benefit from this head start and contact us at:

+49 711 982 98 - 200

sales@comemso.com

- **Crossover measurement up to 150 kW (up to 1000 V Umax and 500 A Imax)**
- **Accurate and calibration law-conform measurement in accordance with the charging power limits communicated by the charging station**
- **Measurement of Umax/Imin and Umin/Imax at the charging station**
- **Available calibration according ISO 17025 with certificate. You can find more information here: https://www.comemso.com/dakks-accreditation**

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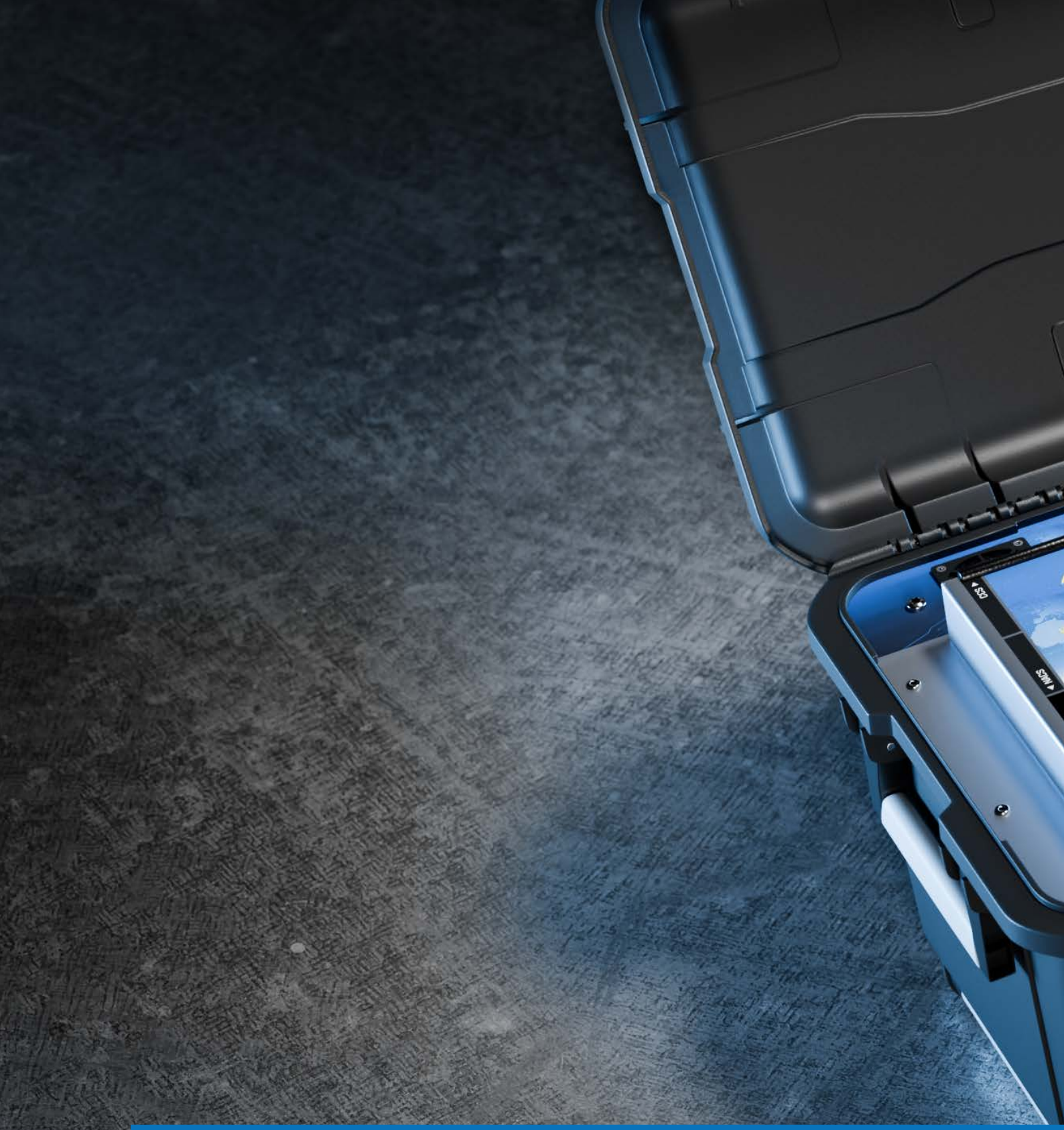

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