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mts

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MTS (MODULAR TEST SYSTEM) OVERVIEW

The Baumann MTS is a modular test system designed for versatile use in laboratories, prototype development, and high-volume production environments:

- Cell, module and battery test benches (End-of-Line, End-of-Repair, Second-Life testing)
- Test recipe modifications without the need for advanced programming skills
- Testing of power electronics and converters
- Intuitive and user-friendly operation
- Compact system design
- Testing of control units
- Flexible expandability

MTS
up to 9 units

MTS COMPACT
up to 5 units

HIGHLIGHTS OF THE MTS

- Modular design with scalable architecture; modules can be reused across different projects
- Rapid and flexible installation into a complete system with minimal footprint
- Easy integration of third-party systems
- Measurement access points for calibration and fault diagnostics
- Stand-alone functionality
- Short delivery times thanks to module stock and pre-configuration
- Mobile version available for laboratory use
- Wide range of communication interfaces for DUT (Device Under Test) connections

In addition to our MTS modules, Baumann offers flexible solutions for both manual and automated contacting via low- and high-voltage connectors. With our in-house adapter manufacturing, we provide a broad spectrum of contacting solutions – fast, safe, and precisely tailored to your requirements.

SELECTION OF FUNCTIONAL AND COMPONENT TESTS

- Verification software version of Device under Test (DUT)
- Evaluation of fault memory entries
- Measurement of insulation resistance
- Dielectric strength test
- Measurement of Y-capacitance
- Plausibility check of internal voltage measurement
- Current consumption measurement
- Interlock function test
- Internal temperature measurement
- Current pulse test
- State-of-charge monitoring
- Flashing function
- Impedance measurement
- Voltage and current of terminal power supply

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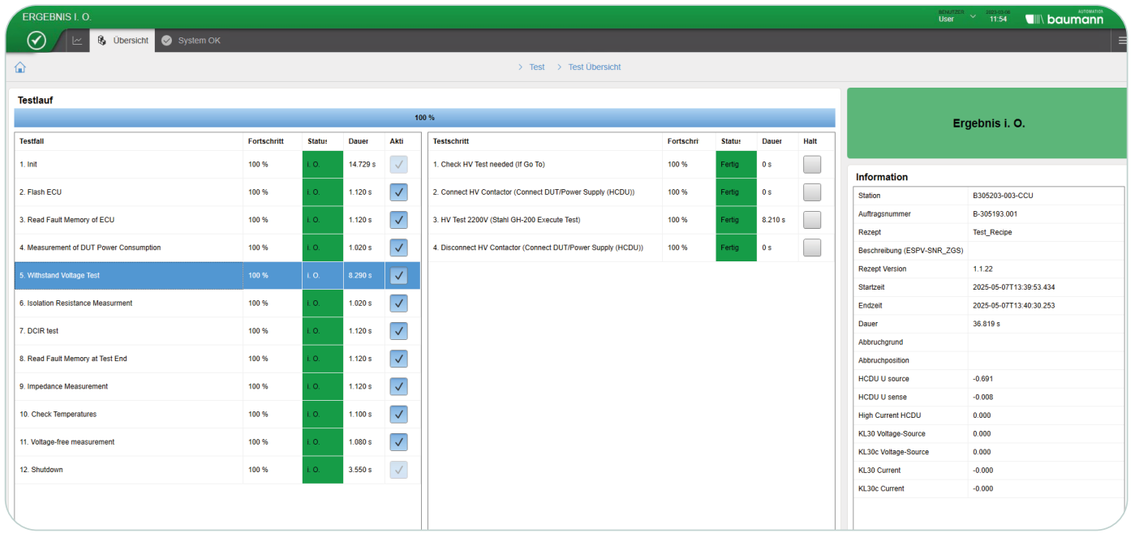
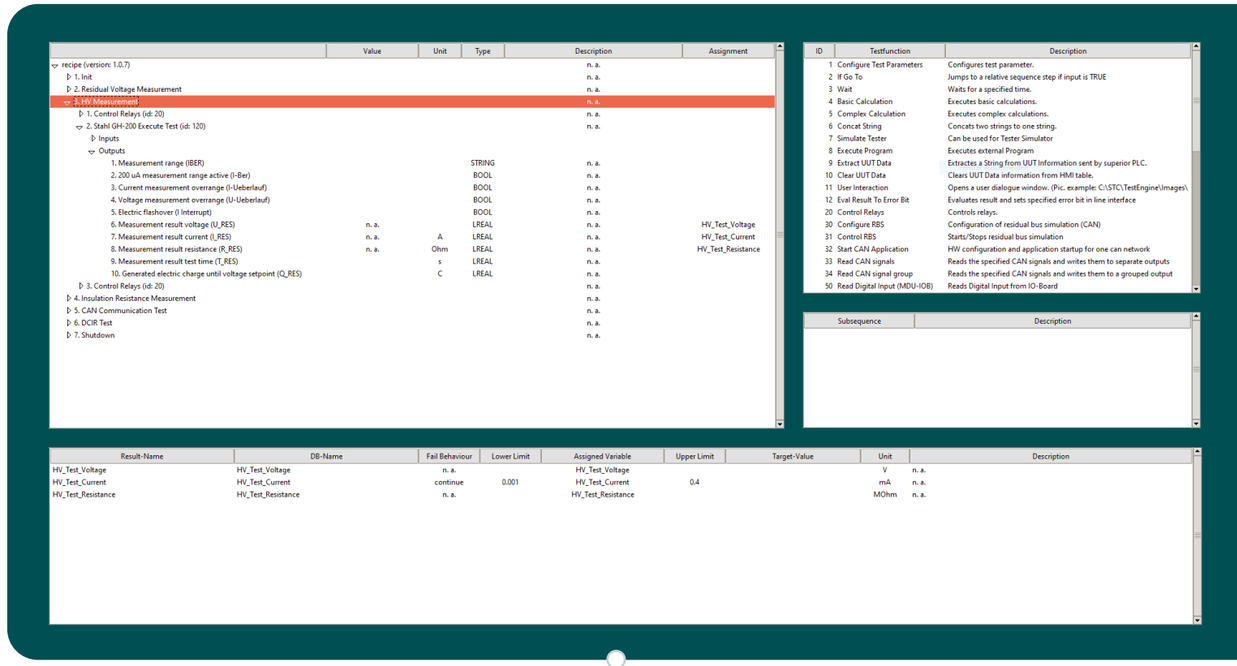
SOFTWARE AND INTERFACES

Baumann provides a tailored test framework designed to complement the modular hardware. Based on predefined test functions, individual test sequences can be created and configured using our standalone editor. Execution is then performed by a high-performing test engine.



The core component of the architecture is the test engine, which is responsible for controlling the test hardware. Test sequence configuration is carried out using the test recipe editor, while the head system manages data exchange between the customer system and the tester.



The core feature of the test recipe editor is the simple creation and modification of test recipes without the need for advanced programming skills. Individual steps are assembled into a sequence using drag-and-drop and can be parametrised with a high degree of flexibility. Results can be freely defined, and the type of evaluation can be customised. It is also possible to specify whether the results should be sent to the MES. The test recipe editor is the tool of choice for implementing any type of test specification with maximum flexibility.

ADVANTAGES OF THE TEST FRAMEWORK

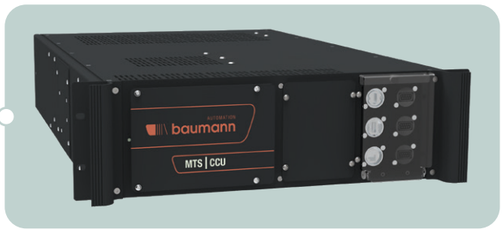
- Customisable test recipes and test sequences tailored to the customer's requirements
- Seamless implementation of test recipes with a large number of individual steps and result types
- Intuitive graphical user interface with extensive graphical diagnostic and analysis tools
- Integration of special functionalities (e.g. flashing, authentication, etc.)
- The execution of the test engine in a real-time environment ensures robust and highly consistent test sequences.
- Standardised data interfaces to production and customer systems (e.g. MES systems such as MQTT, SQL, OPC UA, TCP/IP, ModBUS, PROFINET – depending on customer needs)
- Process monitoring of both the DUT and the test system during execution, including emergency case detection
- Communication with the DUT via all common automotive bus systems (CAN, LIN, isoSPI, Automotive Ethernet)
- Open data structure using JSON or XML file formats
- Connection to automation lines via standardised PROFINET interface

MTS I CCU
CONTROL & COMMUNICATION UNIT

The MTS is composed of flexible units – each unit is precisely configured to match your testing requirements.

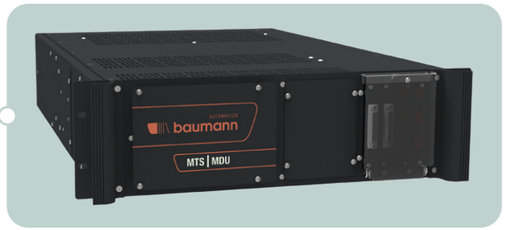
CCU – Control & Communication Unit

For control of the tester, communication, and data management.
Interface to the client's IT system:
Ethernet TCP/IP interface
Safety circuit: dual-channel input



MDU – Measurement Distribution Unit

Central measurement unit for capturing voltage and current readings

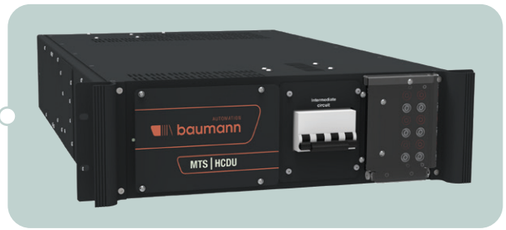


HVDU – High Voltage Distribution Unit

For management of measurement circuits up to 3 kV, connection monitoring (sensing), return measurement for validation, and integrated insulation and dielectric strength testing device.

HCDU – High Current Distribution Unit

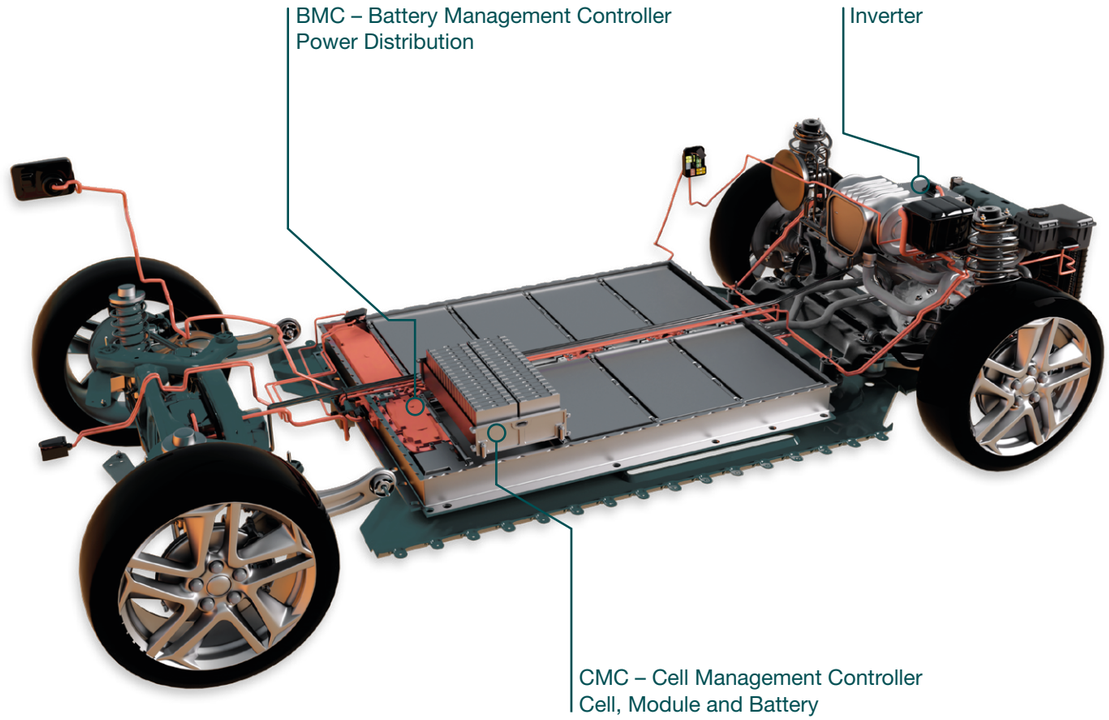
For control and protection of high-current circuits.



PDU – Power Distribution Unit

For the supply and protection of individual measurement units as well as an optional DC system. Connection to the individual units via pre-assembled connection cables.

TEST CASES
APPLICATION EXAMPLES



Baumann MTS

baumann-automation.com

@Baumann GmbH

@baumannautomation

CONTACT
Baumann GmbH • Oskar-von-Miller-Str. 7 • 92224 Amberg
Tel.: +49 9621 6754-0 • info@baumann-automation.com