QUALITY ASSURANCE

- Fully integration in production automation
- Worker-oriented operator guidance via touch screen operator panel
- Fully automated test run with “one-button operation”
- DMC scan including connection to production database
- Manual or fully automated adaption
- Pressure-, leak- and performance tests
- BMS implementation and test
- Input parameters test including electrical tests of the battery
- Insulation test and voltage proof

HORIBA FuelCon

Evaluator EOL

OPERATION

Operator panel	Worker oriented One-button operation
Client PC	Experts level Diagnosis and supervision

INTERFACES

Data logging	SQL database Backup server Connection to production database
Scanner	DMC scanner for identification of test items
CAN gateway	BMS communication Writing and reading of dbc files Implementation of external devices
Connectivity	USB RS232 Ethernet

TESTING ENVIRONMENT

Safety cabin	Door monitoring Sensors Exhaust air monitoring Extinguishing device
Adaption	Manual Fully automated
Test item transportation	Heavy weight trolley Implementation of EOL test station into product line
Chiller	Cooling water and draining station Ethernet
Safety features	Fail safe PLC control PLC controlled 3-level alarming system

CHARGING-DISCHARGING UNIT

Energy recovery	> 96 %
Cascadability	Up to 1,000 kW
Range	Up to 1,000 A / 1,000 V
Accuracy	±0.03 % MV, ±0.015 % FS

ELECTRICAL TESTS

Input parameter test	Customized (temperature and cell voltage control, BMS communication test, etc.)
BMS test	Plausibility test of sent values Reading out the error status State change of the battery Function test of the HV contactors Interlock test Behavior in case of crash
Open circuit voltage	Comparision of BMS data and measured voltage Calculation of SOC
Insulation test	Voltage proof insulation resistance
Performance test	Capacity test Pulse power test Adjusting the SOC
Impedance analyzer	TrueData-EIS Measuring under load Up to 500 A / 100 kHz

PRESSURE- AND LEAK TESTS

Cooler leakage and blockage	Flow volume at excess pressure (approx. 15 bar)
Degassing unit	Flow volume at light low atmospheric or excess pressure

The End-of-Line system of the Evaluator series is tailored to the needs of complex production processes for batteries. Through a sophisticated process engineering the system can be adjusted to the operation point of the test item which reduces the costs.

End-of-Line test stations are perfectly designed to perform fast quality assurance testing of all battery cells and packs.

Product carrier provide easy handling of any test item transport including self-coupling or quick connection systems for the trolleys. The cost-efficient design can contain conveyer belts with semi-automated or fully-automated product-specific battery bonding.

As option, the system can be equipped with industrial PC or operator panel.

The station is controlled via production software for simplified start and stop of procedures.

Furthermore, the EOL system allows automated display of pass / fail criteria and read / write access to customer production database. High safety standards with a fail-safe PLC control ensures maximum performance under safe conditions.

The TrueData-CAN additionally allows the communication with a customer-specified battery management system (BMS).

Please feel free to download the latest information available at www.horiba-fuelcon.com. If you have any questions, please do not hesitate to contact us. We will be happy to support you and discuss your testing requirements!

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