FUEL CELL SYSTEM TESTING

- 250+ kW power range available
- Optimized for PEM fuel cell system testing
- For simulation of all requirements for mobile applications
- Extended safety features including LEL hydrogen detector and cabin ventilation
- Fully automated for safe, reliable and unattended operation
- Customized test system design
- Power supply for system peripherie components
- CAN Bus interface for simulation and hardware-in-the-loop option
- Automated test procedures for real driving cycles

HORIBA FuelCon

Evaluator SX200-LT

GENERAL FACTS

Gas supply anode	Hydrogen from tank system, pressure controlled, no conditioning of test station for temperature or humidity
Gas supply cathode	Free suction of system out of test station environment
Standard flow ranges [Nl/min]	Anode: 50 to 5,000 Cathode: 100 to 10,000 (more on request)
Electronic load	Up to 1,000 A / 800 V / 200 kW (more on request)
Common ATEX design exhaust path	Exhaust path in ATEX (secondary explosion protection) design pressureless disposal of anode and cathode exhaust gases
Primary cooling loop for thermal management	Water-based liquid loop up to 130 °C
CAN interface	HiL and RBS - connection of external divices (e. g. sensors)
Safety features	PLC controlled 3-level alarming system, programmable nitrogen purge, emergency stop, hydrogen LEL-detector
Data logging	SQL data base

ELECTRICAL OPTIONS

CVM (cell voltage monitoring)	CVMpro-G4 MCM-IntelliProbe-U10 (SMART Testsolutions) -1 to 5 V or -3 to 3 V; accuracy ±0.1 %; up to 800 channels
Sensors	Additional sensors for humidity, temperature, pressure, electrical parameters

SYSTEM ENGINEERING OPTIONS

Altitude simulation
Environmental chamber connection
Shaker and tilt unit operation
Gas flow and gas conditioning system for anode gases
Pre- or back pressure regulating system (similar to stack test stations)
Intake air conditioning system for cathode supply
Frost start simulation for gases and liquid cooling system
Auxiliary power supply (e.g. for electric compressor)

SAFETY

CE conformity marking (according to)
- EMC directive 2014/30/EC
- Low voltage directive 2014/35/EC
- ATEX directive 2014/34/EC
- General product safety directive 2001/95/EC
- Machinery directive 2006/42/EC
- Pressure equipment directive 2014/68/EC

Risk assessment
- DIN EN ISO 13849
- DIN EN ISO 12100

The testing and evaluation of complex fuel cell systems is linked to high dynamic requirements that exact highest accuracy and reliability. Therefore, HORIBA FuelCon designed the Evaluator SX200-LT - dedicated to fuel cell system testing. The design allows endurance testing and accelerated life time simulation which can be optimized for the typical needs of stationary or mobile applications. The system includes modern state-of-the-art safety features like a closed test cabin or an integrated ventilation system with LEL hydrogen detectors and door monitoring to safeguard the operator and your facility. Due to our open automation system architecture, the integration of environmental chambers, shakers or tilt units is a standard procedure.

High dynamic operation is perfectly supported by our sophisticated and powerful TestWork automation software. The integration of CAN devices or third party hard- and software is as mandatory as real-time trend charts or an extensive export manager. Furthermore, TestWork enables fully automated, unattended operation of single test stations or complete test fields for long term testing.

The integration of energy efficient TrueData X-HVT charge-discharge units helps to reduce operational expenses by using modern IGBT technology for optimized energy recovery.

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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