EVALUATOR S25-HT

Testing of Hot-Boxes and SOFC/SOEC Systems

EMISSIONS

ELECTRIFICATION

CAV

DATA

- Power range up to 50 kW
- Advanced testing of stationary and mobile SOFC/SOEC applications
- Extended safety features including LEL hydrogen detector and enclosure ventilation
- Fully automated for safe, reliable and unattended operation in hydrogen safe area
- Sophisticated HT inline gas heaters
- Excellent reliability due to inhouse developed controller strategy

HORIBA Automotive

EVALUATOR S25-HT

The Evaluator S25-HT is tailored to the needs of complex high temperature stack and system testing and evaluation. Combined with our sophisticated TestWork software, this system provides full flexibility for your specific application. Offering a huge variety of different fuel inlet gases such as hydrogen, methane or reformate fuels, the S25-HT is ideally suited for stack and system developers performing initial application studies, duty cycle tests as well as durability and performance evaluations.

Multiple options such as back-pressure control, active gas pre-heating or hardware-in-the-loop functions can be added to further expand the capabilities of the Evaluator S25-HT. An unique manifold concept ensures a seamless and air-tight stack adaption making this test station a powerful tool for benchmarking stack modul designs and optimizing production processes. The S25-HT is a best-in-class measurement platform covering testing demands from stacks, hot boxes with or without external BOP components up to entire systems

The Evaluator S25-HT is operated in a fully automated way: The stack activation and conditioning, normal operation and customized test protocols for e.g. thermal cycling are all handled by pre-defined script and sequences. The integration of several devices from our diagnostic products such as our impedance analyzer allows operators to perform detailed studies on durability and performance in the final system configuration.

GENERAL FACTS	
STANDARD FUEL FLOW RANGE [NL/MIN]	10 to 1,000
STANDARD AIR FLOW RANGE [NL/MIN]	50 to 5,000
FOOT PRINT L x W x H, [METER] (INCHES)	3.2 x 1.6 x 2.8 (125” x 63” x 110”)
GAS HUMIDITY RANGE	Saturator: Dry (by-pass) to TDP = 95 °C corresponding to 0...85 % steam in humidified gas stream; Steam generator: 0.01 to 1,000 g/min steam for 0...100 % steam
ELECTRONIC LOAD	Up to 1,000 V/1,000 A/50 kW True-0-Volt-Mode and additional power supply (SOEC mode) upon request
ACTIVE TEST ITEM TEMPERATURE SETTING	Up to 1,050 °C (1,922 °F) Active pre-heating up to 900 °C (1,652 °F) available
SAFETY GAS PURGE	Programmable, separate and independent nitrogen / protection gas purge function for anode and cathode
SAFETY FEATURES	4-level alarming system, emergency stop, hydrogen LEL detector, optional CO detector, enclosure ventilation
DATA LOGGING	SQL data base

OPTIONS

Reformer and desulfurizer for CH4 and biogas operation
Reformate and biogas simulation
Cell voltage monitoring (CVM)
Impedance analysis
Reversible load operation (electrolysis and fuel cell mode) / grid feedback
Compression load control
Automated leakage test
Furnace atmosphere sampling
UPS

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

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