SMART
TESTSOLUTIONS

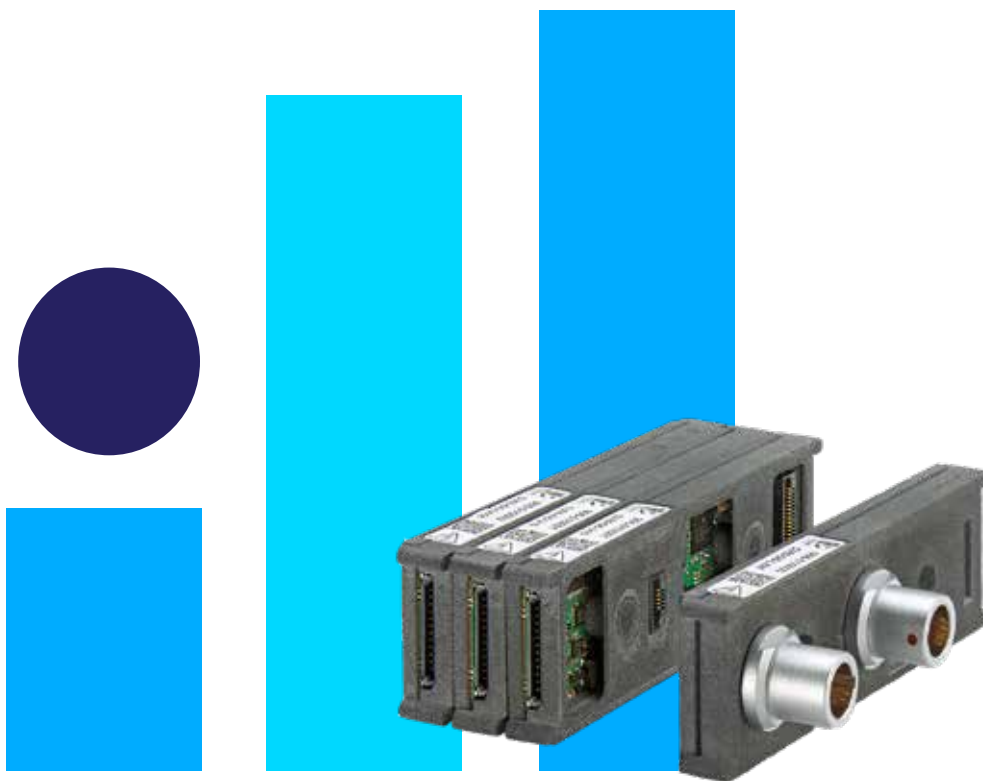# CELL VOLTAGE SIMULATION OF FUEL CELLS

MCM INTELLISIM U06AII

BE SMARTER.

▶ Parallel and fully synchronous output of the cell voltage signals.

▶ Up to 60 modules with 6 simulation channels per line. Strings can be cascaded for large numbers of channels.

▶ Remote control via CAN bus for low data rates. An Ethernet interface is available for HiL operation.

▶ Suitable for single cell and block cell simulation.

▶ Simulation of bidirectional signals is supported.

▶ The outputs are galvanically decoupled and short-circuit proof.

▶ Insulation-proof against BUS and supply for system voltages up to 1000 V.

PRODUCT DIVISION
MULTICHANNAL I/O-MODULES

Simulation modules MCM-IntelliSim plus Link module

Areas of application

For the commissioning and testing of cell voltage measurement electronics and FuelCell control units, and in particular for the software testing of such ECUs, it is necessary to simulate cell-specific voltage values. The simulation modules of the MCM IntelliSim series, in conjunction with a master module enable active simulation of a fuel cell stack without the need to integrate a real stack into the test environment.

The modularity and the individual isolation of the channels for each module allow the simulation system to be configured to suit the respective test object. The Intellisim U06AII is designed for the development and testing of fuel cell systems and can be easily adapted to new requirements at any time.

The design was developed for high channel numbers with a focus on a favorable channel price. It follows the successful modular design principle of the MCM Intelliprobe product family for single-cell voltage measurement, which is used worldwide by manufacturers of fuel cell vehicles and their suppliers.

The master module ensures the connection of the simulation via Ethernet or EtherCAT enabling real-time operation. For less dynamic applications, operation via CAN without a master module can be sufficient.

Technical data	IntelliSim U06AII
Dimensions per module (LxWxH)	108 x 105 x 30 mm
Simulation channels per module	6
Simulation range per channel	-5 to +5 V
Accurancy	≤ 3 mV in the range 20°C ± 20 K
Output rate per channel	≤ 1.000 Hz
Resolution	16 Bit/DAC
Resistance to external voltage	app. ± 36 V
Galvanic insulation	1.400 V_{DC} (Channel against system side)
Communication interfaces	1 x CAN 4 x RS485 Receiver
Power supply	5 to 36 V_{DC}
Operating temperature	- 20 °C to + 70 °C
Protection class	IP 54, optional IP 65
Start-up time	< 0,5 s
System size	60 modules, 360 channels

Order information

A simulation system consists of:
- ▶ 1 to 60 x MCM-IntelliSim U06AII, art. no. 986-010514
- ▶ 1 x IntelliProbe-Link module V3, art. no. 986-010515
- ▶ Optional: SLIM Master as Ethernet interface, item no. 986-010508
- ▶ Contact: Wajih Wertateni, Email: wajih.wertateni@smart-ts.de

▶ **FLEXIBLE AND ROBUST**

▶ **SIMPLE APPLICATION**

Optional Ethernet interface MCM-SlimMASTER