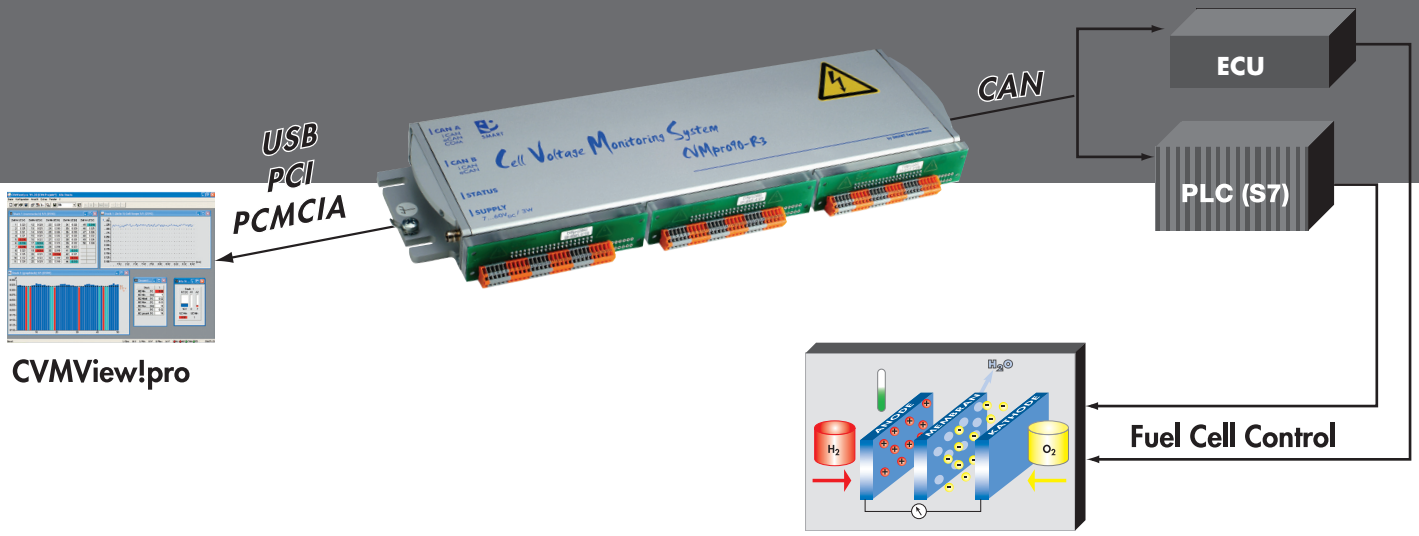


Multichannel Measurement and Monitoring for Fuel Cells, Li-Ion-Batteries and Electrolysis

PERFORMANCE

- CVMS is a realtime multichannel data acquisition system. It is optimized for measuring the voltages of fuel cells, Li-Ion-batteries and electrolytical processes.
- CVMS is a modular system. The system operates stand-alone, allowing data acquisition for both PC-based and embedded systems. Configuration and measurement data are exchanged via two CAN buses.
- The CVM measurement modules are equipped with a microcontroller with comprehensive firmware functions. This allows real time measurements and enables later updates through reprogramming.
- CVMS is a complete system. The hardware modules are complemented by software libraries for measurement and control.
- The CVMS is a field-proven product and yields reliable results even in harsh environments

FEATURES

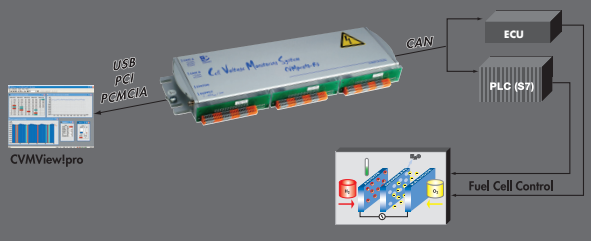
- robust and compact measurement module
- tailored for multichannel cell voltage measurements
- supports multiple PC and API interfaces (e.g. USB, LabView)
- intelligent signal conditioning within the measurement module
- can be placed close to the device under test
- 2 separate bus systems
- complete solution including comprehensive range of accessories

BENEFITS

- suitable for both mobile and stationary applications
- low cost per channel, low volume per channel
- easy integration into existing test environments, works with interface cards of National Instruments
- runs stand-alone without PC („set&forget")
- reduces noise and interference distortions by early digitization
- allows parallel operation of controls and diagnosis.
- fast and efficient test set-up

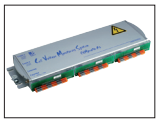
SMART

Multichannel Measurement and Monitoring for Fuel Cells, Li-Ion-Batteries and Electrolysis



PRODUCT OVERVIEW

HARDWARE



Cell Voltage Monitoring Module CVMpro R3

Standard modules with 60 or 90 measurement channels, cascadable for up to 2790 channels. Compact housing, protection class IP54, extended temperature range (-25°C to +85°C).

Measurement range ±1.2V / ±2.4V or ± 4.8V, measurement uncertainty 0.5%, sampling time per channel 1ms, galvanic isolation, isolation voltage 1kV.

Detection of contact breaks, masking of individual cells, alarming at violations of thresholds.

Control through reprogrammable microcontroller with own firmware.

Wide supply voltage range (7 to 60 VDC), 2 CAN interface buses for configuration and measurement data (one for PC, one for ECU), measurement connections via clamping units.

SOFTWARE

CVMView!pro

Graphical user interface for the configuration of measurement systems, visualisation and storage of measurement data. Allows to build simple monitoring systems without programming. Intuitive user interface, project oriented loading and storing of setups, simultaneous display of up to 4 x 180 single measurements, data logging function for up to 4 selectable channels.

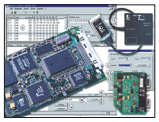
CVMLIB!pro

Software driver and interface for own user applications. Allows configuration and communication with the measurement module via CAN bus and CAN-PC interface cards (see below). Programming interfaces: C/C++ and LabVIEW.

ACCESSORIES

Cables

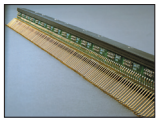
System cable set for one CVM module (CVMproFP-CS). Individual cables for CAN bus (CVMproCAN) and for supply voltage (CVMproBAT). Available as standard products, with customized lengths, in zero halogen material or with MIL approval.



CAN-PC Interfaces

- for PCI bus: SMART PCCom-PCI or National Instruments CAN Series 2
- for PCMCIA bus: National Instruments CAN Series 2 or Vektor CANcardXL
- for USB: SMART USB-CANmodul1

SPECIAL APPLICATIONS



Examples:

- Cell voltage monitoring with protection class IP67
- Cell voltage monitoring with 127 to 160 channels for automotive PEM fuel cells
- Cell voltage monitoring with 12 and 70 channels for submarine applications
- 2 x 90 channels surveillance system for electrolysis in chlorine gas production
- Software drivers for SIMATIC S7
- Various contact arrays with needle contacts or flat cable connection

SMART

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