Datasheet

kolibrik

Cell Voltage Monitor

Precise 5 V-range voltage monitor with CAN for fuel-cells, batteries and electrolyzers

CVM-24P

Product description

Stackable cell voltage monitoring (CVM) system designed for H2 fuel-cell stack research, testing and applications. CVM system can be used to prevent damage to individual cells, to monitor lifetime conditions, and to ensure optimal working conditions in applications. CVM-24P module is ideal for testing and research purposes.

CVM-24P module are designed as a precise automotive-ready solution with additional CAN bus for use mainly in hydrogen fuel cells and electrolyzers research, testing and applications.

For precise 2.5 V-range solution see **CVM-64H** module and sets. For cost-effective solution for applications see **CVM-32A** module and kits. For general temperature and voltage monitoring see **TEVOMET**.

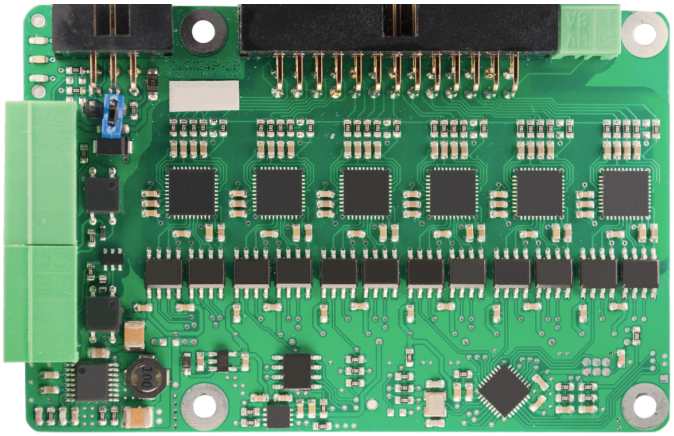
Features

Channel count	24	
Channel voltage range	± 5 V	
Input impedance	≥ 1 MΩ	
A/D converters resolution	24-bit	
Sample rate	up to 500 sps	
Board dimension	85 x 58 x 13.5 mm	
Cell connection	26-pin IDC connector (automotive-grade connectors on request)	
Communication bus	CAN bus MODBUS RTU RS-485 / XC2 Compatible with other kolibrik.net modules	
Inputs / outputs	Opto-isolated I/O with serial communication capability	
Accessories	Power supply module USB to RS-485 interface Raspberry PI connection	3D-printed enclosures DIN-rail and wall-mount holders Custom cables and cell voltage pickup

Technical Parameters

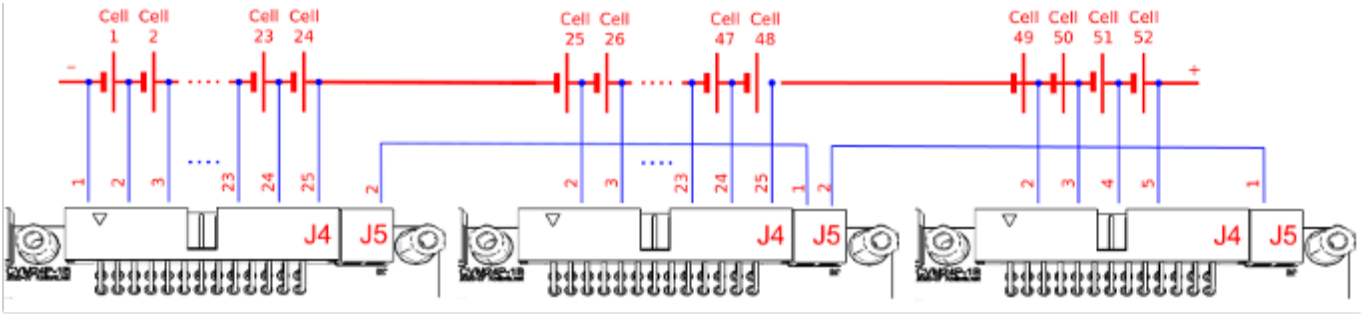
Power supply	7 ... 33 V DC / 2.2 W max
Dimensions	85 x 58 x 13.5 mm (without connector plugs)
Mounting	4x mounting holes 2.7mm, hex spacers with M2.5 thread
Channel count	24 Multiple modules can be daisy-chained to measure hundreds of channels
Channel voltage range	-5 ... +5 V *)
Input impedance	1 MΩ
Isolation	1 kV between channels and power supply + communication bus Additional isolation can be provided by isolating bus segments
Sampling	Precise 24-bit ADCs All-channel sample rate up to 500 sps
Accuracy	0.02 % of range + 0.05 % of reading
Communication	CAN bus, RS-485 (XC2 protocol or MODBUS)
I/O	Optional digital optocoupler input and output, may work as additional serial line
Ambient operating temperature	-40 °C to +85 °C

*) Channels are organized by groups of 4 channels. Channels in one group can measure up to ±20 V if the sum of group channels does not exceed 20 V. So, one channel can measure up to ±20 V, if other channels in group are short-circuited. Note that adjacent channels and groups are chained together and are not independent.



CVM24P module

Examples



Example of 52-channel connection with chaining
of 3 **CVM-24P** modules (2x24 + 1x4 cells)