kolibrik

TEVOMET

Multi-channel temperature and voltage monitor/meter

TEVOMET TV16

Product Description

TEVOMET is a multi-channel meter suitable for laboratory and industrial use. It features 16 independent channels with high precision

A/D converters with low noise, automatic offset cancellation and AC filtering.

Features

Channel count	16 independent channels for temperature sensors and voltage measuring Each channel is galvanically isolated
Channel voltage range	Multiple order of magnitude input voltage range
Basic voltage ranges	± 1.5 V and ± 150 V
Most common temperature sensors	Thermocouples, built in precise cold junction compensation RTD sensors (Pt100, Pt1000) NTC thermistors up to 10 kΩ
A/D converters resolution	16-bit precise A/D converters with low noise Automatic offset cancellation and AC filtering
Board dimension	230 x 170 x 55 mm
Cell connection	26-pin IDC connector (automotive-grade connectors on request)
Communication bus	USB RS-485 (XC2 protocol or MODBUS) Compatible with other Kolibrik 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 Piggyback submodules for current ranges 4 - 20 mA Piggyback for voltage range 5 V Piggyback for voltage range 10 V

Technical Parameters

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Power supply	7 ... 33 V DC / 2.2 W max
Dimensions	230 x 170 x 55 mm (without connector plugs)
Mounting	4x mounting holes 2.7 mm, hex spacers with M2.5 thread
Channel count	16 channels 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	USB RS-485 (XC2 protocol or MODBUS)
Measurement resolution	0.001% of selected range for ≤ 1 ksps sampling
Accuracy	Voltage ≤ 0.1% of range + 0.1% of reading Current ≤ 0.1% of range + 0.5% of reading
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 8 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.

Applications

Fuel-cell stack monitoring	Experimental instrumentation
Electrolyzer monitoring	Bakeout controllers
Battery monitoring	Test stand automation

Channel Connection and Configuration
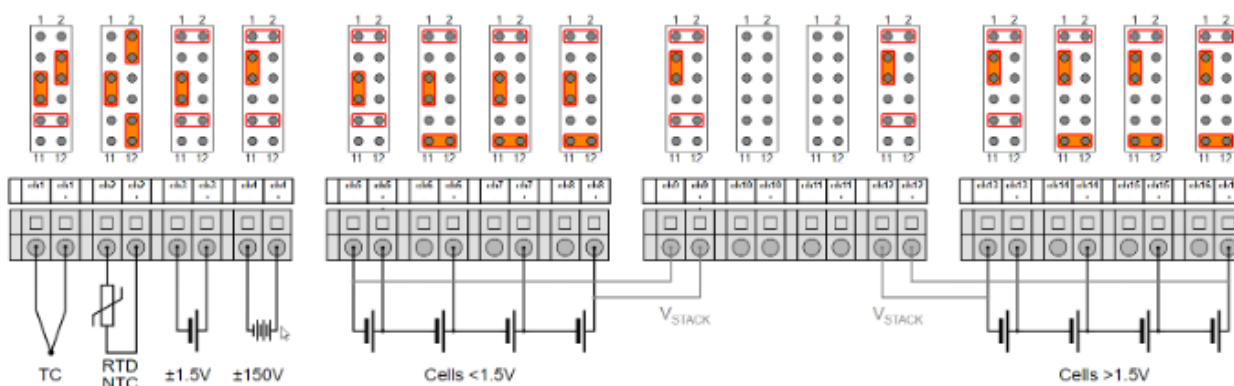
Examples of connections and jumper setup



Block scheme of modules in 120-channel

Ordering Information

TEVOMET TV16	16 independent channels, individually configurable by jumpers, connection to internal clamps, RS-485, USB

Piggyback submodules for custom voltage ranges. Other ranges on request.

TVM-PB-5	Piggyback for voltage range 5 V
TVM-PB-10	Piggyback for voltage range 10 V
TVM-PB-CL	Piggyback submodules for current ranges 4 – 20 mA
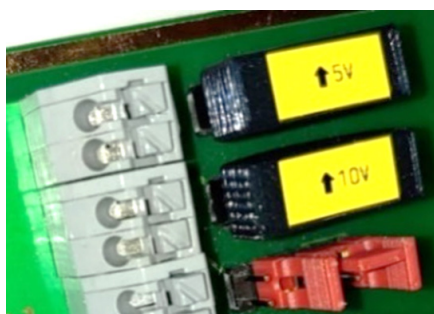
Example of voltage range piggybacks