

# TEVOMET

Multi-channel temperature and voltage monitor / meter

Version C  
2018-11-18



TEVOMET is a multi-channel meter suitable for laboratory and industrial use. It features 16 or 32 high precision A/D converters with low noise, automatic offset cancellation and AC filtering.

Measuring channels are configurable for high precision or wide voltage range. The product have multiple variants ranging from universal meter with individually configurable channels for both voltage and temperature monitoring to specialized variant tailored for fuel-cell or battery cell monitoring with minimal requirements for wiring.



## Features

- ❖ 16 independent galvanically insulated channels
- ❖ each channel can be configured for voltage or temperature monitoring
- ❖ voltage ranges 0-150 V or 0-1.5 V configurable by HW jumpers for each channel individually
- ❖ temperature sensors type (Thermocouples, RTD - Pt100, Pt1000, NTC) configurable for each channel
- ❖ temperature and voltage sensors can be mixed
- ❖ adjacent channels can be connected internally for battery/fuel-stack cells measurement
- ❖ multiple TEVOMETs can be daisy-chained by RS-485
- ❖ communication options: Ethernet, USB, RS-485
- ❖ Integrated USB/Ethernet to RS-485 converter, can be used for connection of other devices
- ❖ PC monitoring software
- ❖ LabView drivers

## Applications

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



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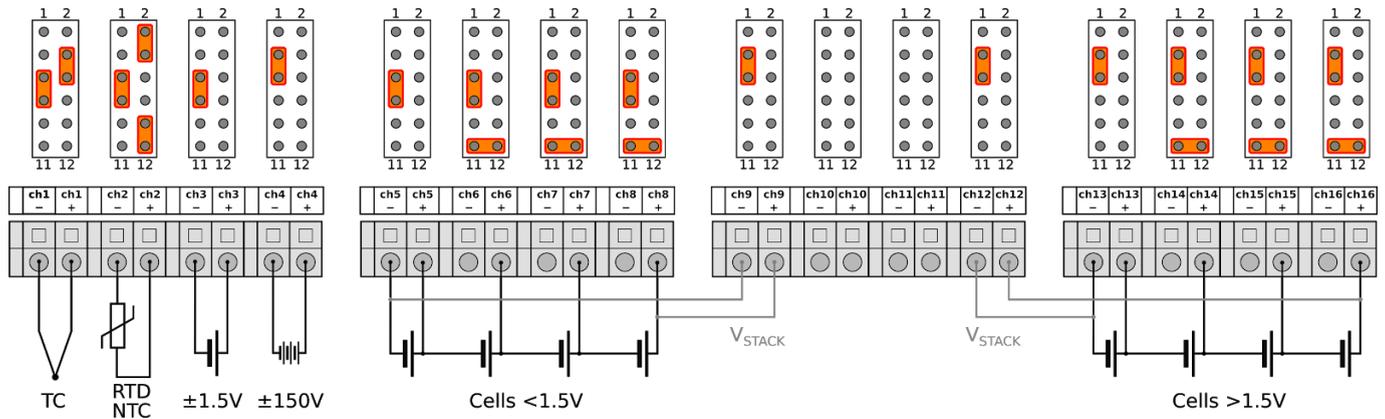
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## Technical Parameters

General	Number of channels	16
	Dimensions	165 x 225 x 52 mm
	Mounting options	stand-alone, DIN-rail mount
	Protection rating	IP20
Power supply	External power supply	12-24 V DC / 2,5 W
	USB	can be powered from USB 2.0 500 mV (except V32 and V32E variants)
Measuring channels	Input voltage ranges	-1.5 V ... +1.5 V - 150 V ... +150 V
	Max. sample rate	5 Hz
	Resolution	16 bits, adjustable input gain 1 - 256
	Offset	automatic offset cancellation
	noise RMS	< 2 $\mu$ V for 1,5 V range < 2 mV for 150 V range
	Input impedance	10 M $\Omega$
	Galvanic insulation	500 V power supply to channels 500 V between channels
	Thermocouples	Can be connected directly into clamps Integrated precise cold-junction compensation
	NTC	Two-wire, max. 10 k $\Omega$ at 25°C
	RTD	Two-wire, e.g. Pt100 or Pt1000, measured resistance up to 30 k $\Omega$
Interfaces	USB	USB 2.0 device
		USB-A connector
		USB-to-serial emulation
	Ethernet	10 BASE-T / 100BASE-TX
		RJ-45 connector
	RS-485	Screw terminals, chainable up to 1 Mbd configurable terminator and pull-up resistors

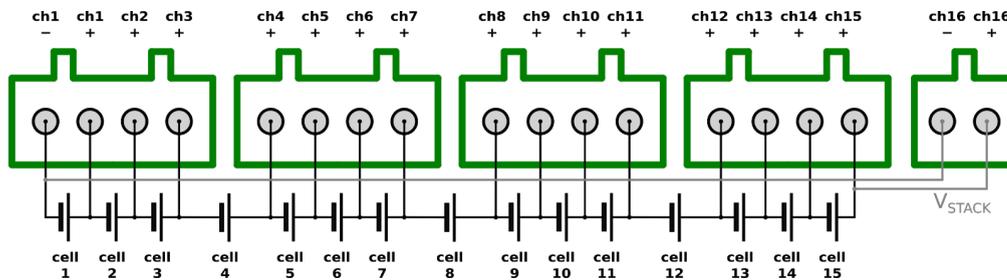
## Channel connection and configuration

TEVOMET TV16 - each channel individually configurable



TV16: Example of connections and jumper setup

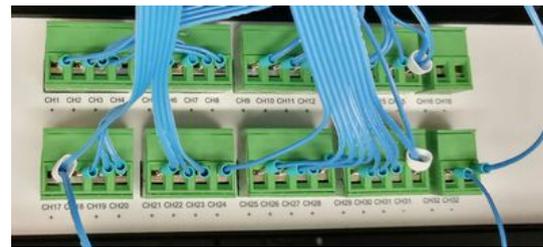
TEVOMET V16 - fixed channel configuration, for battery/fuel-stack cells measurement



V16: Example of connection for 15-cell battery



TEVOMET TV16 with removed cover for connection clamps and configuration jumpers



Detail of TEVOMET V32 connection terminal

## Ordering information

Type	Description
TEVOMET TV16	16 channels, each individually configurable, connection to internal clamps, RS-485, USB
TEVOMET T16	16 channels pre-configured for thermocouples, connection to internal clamps, RS-485, USB
TEVOMET V16	15 channels pre-configured for 1,5 V range with shared adjacent terminals 1 individual channel pre-configured for 150 V range total 16 channels, connection external connector + plug with screw terminals
TEVOMET V32	15+15 channels pre-configured for 1,5 V range with shared adjacent terminals 1+1 channel pre-configured for 150 V range total 32 channels, connection external connector + plug with screw terminals RS-485, USB

Options available for each type upon request:

- ❖ Ethernet communication
- ❖ DIN-rail holder
- ❖ Customization of 150V input voltage range - please contact us with requirements