EIFFAGE TESEO

SOVM03
Serial Optical VoltMeter

OVERVIEW

This is the third-generation of EMI shielded and battery powered digital multimeters.

The SOVM03 equipment is a 8-channel digital voltmeter with fiber optic connection to a control PC via a USB Interface.

It is particularly suited for the monitoring of EUT slowly changing voltages in a harsh electromagnetic environment like that encountered during the performance of a radiated immunity test.

The small size of the satellite unit acquiring the channels allows the use of the system not only in an anechoic chamber, but also in smaller EMC enclosures like TEM and GTEM cells, striplines or every application where a rugged voltage monitor is needed.

- Up to 8 simultaneously unbalanced sampled inputs, or 4 simultaneously balanced sampled inputs
- True bipolar DC analog input ranges: $\pm 40\ V_{DC}$.
- AC measurement capability up to $28V_{RMS}$ in the 30-200 Hz frequency range.
- Differential capability using a pair of inputs.

SYSTEM CAPABILITIES

The system is able to measure:

- unbalanced AC and DC voltage between each input and ground;
- differential voltage between any pair of inputs;
- level of the battery
- (internal) ambient temperature

The PC through the application software allows the reading of the acquired signals and the setting for each channel.

The SOVM03S enclosure is shielded and consequently is not susceptible to the RF field coupled on its external surface.

The connection to the EUT requires particular attention as any signal picked-up by the copper wires adds directly to the voltage level under measurement.

QUICK-CHANGE BATTERY

Thanks to a standard battery cell and a quick-change structure, the battery can be easily removed by the operator and replaced with another one. The battery is a standard Lithium cell rechargeable model, and it can be recharged apart with a standard battery charger.

The battery is retained by a EMC-proof seal metallic cap, than can be easily unscrewed using a screwdriver or a small coin.

SYSTEM CONFIGURATION

The SOVM03 system is composed by of:

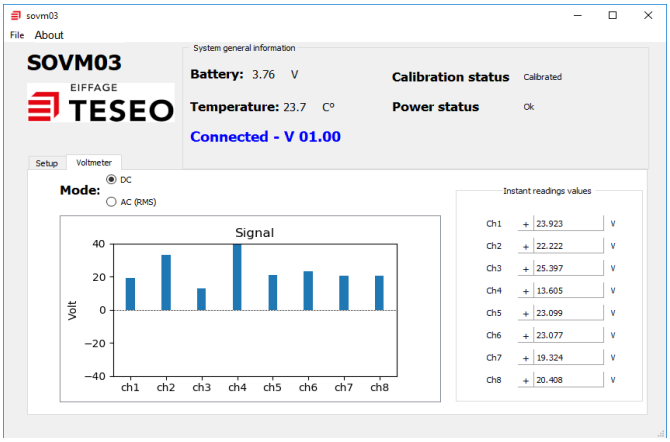
- **SOVM-03S** satellite unit, battery powered acquisition equipment shielded up to 200 V/m from 10 kHz to 18 GHz;
- **SOVM03 GUI** software for WINDOWS that allows remote control of the satellite unit;
- **USB-IF** electro/optical transducer that plugs into the USB port of the PC, and is compatible with USB 2.0 Standard.
- **CB12** standard battery charger for two Lithium cells
- **FB008** bifibre optical cable 8 meters length, connecting the SOVM03S satellite unit to the USB-IF converter.

Fibre optic cables having different lengths are available upon request.

SOVM03 GUI SOFTWARE

A software GUI (Graphical User Interface) is delivered together with the system.

It supports Windows® 7 and Windows® 10 Operative systems.



Using this software the User can easily control and manage all the SOVM03 functions.

For User who need to integrate the SOMV03 use into a measurement system, a complete set of low-level commands can be found in the User's Guide, in order to allow the development of special or dedicated software routines.

OPTIONS

- Individual certificate of calibration
- FBxxx: Bifibre optical cable, ST connectors, xxx = length in meters, 200/230 µm
- FCxxx: Monofibre optical cable, ST connectors, xxx = length in meters, 200/230 µm
  NOTE: two FCxxx cables for each SOVM03 system are needed

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TECHNICAL CHARACTERISTICS

SOVM03

Number of channels	8 (single handed); 4 (differential)
Full scale input	± 40 V_{DC} (28 V_{RMS}) respect to analog ground
AC Bandwidth (-3dB)	30-200 Hz
Max. safe input	± 150 Volt DC
Resolution	1 mV
Measuring unit	V_{DC} or V_{RMS}
Input impedance	1 MOhm
Amplitude accuracy	DC ± 0.5% ± 20 mV AC ± 2% ± 20 mV
Measurement rate	Standard mode: >10 meas/sec; Streaming mode: >1000 meas/sec (No AC function)
Input connector	D-type, 15 poles female
Optical connectors	ST type
Fiber cable type	200 µm glass-type fiber multimode
Fiber cable length	Up to 100 mt at max data rate
Battery type	rechargeable 1 element Li-Ion 18650
Battery charging time	< 1 hour, using a standard external battery charger
Battery operating time	8 hours in standard mode (full charge) @25°C.
Communication Protocol	USB 2.0 compatible
Dimensions & Weight	150 x 50 x 100 mm (W x H x D) - 630 g (battery included)
Operating temperature	0 °C to +50 °C
Storage temperature	-20 °C to +70 °C
EMI/EMC (SOVM03S)	EMI shielded 200V/m up to 18GHz Immune to BCI up to 300mA up to 400MHz ESD protected up to 25kV

CB12

Mains Power Supply	100÷240Vac 50/60 Hz, 12 W max (optional DC input see manual)
Li-Ion 3.7V battery format	2 x 18650
Dimensions & Weight	133 x 35 x 70 mm (W x H x D) - 190 g (cable included)
Operating temperature	-25 °C to +55 °C
Storage temperature	-55 °C to +85 °C

Visuals and technical specifications subject to change without notice

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