

10.2013 SOFO VII SOFO / MUST PORTABLE READING UNIT



GENERAL DESCRIPTION

The SOFO VII/MuST Portable Reading Unit is a universal reading unit able to measure both SOFO (Interferometric) and MuST (Fiber Bragg Grating) sensors.

The Portable measurement units employ proven continuous swept laser scanning technology. They include a NIST traceable wavelength reference that provides continuous calibration to ensure system accuracy over long term operation. The high dynamic range and output power allow high resolution to be attained even for long fiber leads and lossy connections.

TECHNICAL DESCRIPTION

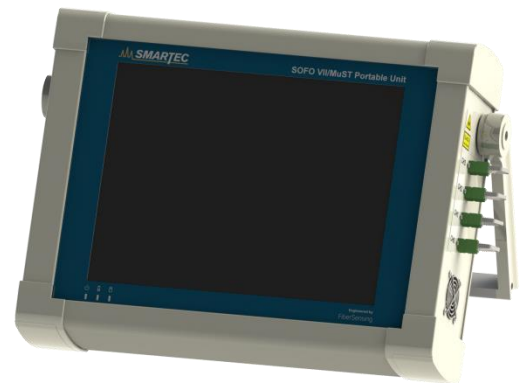
The SOFO VII MuST Portable Reading Unit allows to measure 4 channels. On each channel it is possible to connect up to 5 SOFO sensors (external 1x5 splitter needed) and from 7 to 25 MuST sensors (depending on sensor type, see sensor datasheets for details). The unit contains a PC that provides data logging and remote interfacing functionalities.

The main features are:

- **Robustness & portability:** 24/7 operation ensured by clever design, careful selection of components (electronic, optical, mechanical), compact assembling and rugged carrying case optimized for field use.
- **High interrogation capacity:** broadband tuning range and 4 parallel optical channels allowing the simultaneous measurement of a large number of sensors.
- **iLog software:** full data logging capacity with an intuitive graphical user interface for data saving, managing and exporting, optical spectrum analysis and sensor configuration.
- **Easy control:** The intuitive and easy-to-use graphical user interface via touchscreen provides the user with datalogging functions for automated sampling and archiving. Configuring sensors is easy and straightforward. The Optical Spectrum Analyzer tool helps to optimize the sensing network in field applications. A high-performance local database manages multiple sensor configurations and large datasets. Acquired data can be exported via USB to analysis tools through Excel™ compatible files.

Options

- SOFO sensor 1x5 splitters



FEATURES

- Fiber optic technology
- Compatible with all SOFO sensors
- Compatible with all MuST FBG sensors
- Mix-and-match SOFO and MuST technologies in a single project
- Up to 3h autonomy
- Possibility of using spare batteries
- High dynamic range
- 12" touch screen
- Intuitive user interface
- Software with full data logger capability
- Optical spectrum analyzer
- High resolution and precision
- No calibration required

PERFORMANCES

	SOFO Sensors Measurement	MuST (FBG) Sensor Measurement
Measurement resolution	2 µm RMS	1 pm
Linearity / Accuracy	< 2 %	±2 pm
Sample rate	1 S/s (1Hz)	1 S/s (1Hz)
Measurement range	Max. 50 mm	100 nm (1500 to 1600 nm)
Sensors per channel	Max 5 SOFO Deformation sensors	Max 7 MuST (FBG) Deformation sensors Up to 12 Strain FBG sensors Up to 25 Temperature FBG sensors
Calibration	None, not required	NIST traceable wavelength reference
Optical Connectors	E-2000 PC (8°), patch cord or splitter needed	E-2000 AC (8°)
Dynamic range	N/A	>50 dB
Measurement time	< 2 s (incl. SDB writing) per channel	< 2 s (incl. SDB writing) per channel
Autonomy	Up to 3 hours, with 1 battery pack; extra battery available upon request	
Available channel count	4 channels, software configurable between SOFO and MuST	

SPECIFICATIONS

AC power supply	230 V 50 Hz / 110 V 60 Hz Auto detect
Voltage	18-20 VDC
Nominal consumption	45 Watt (Peak 90W)
Communication	RJ45 Ethernet; USB
Control interface	12" touchscreen GUI; Ethernet TCP / IP; USB
Data logging functions	Sampling; archiving
Data logging format	mySQL database; Excel™ compatible files
Dimensions	~ 360 mm x 275 mm x 100 mm
Weight	~ 7,3 kg – Aluminum enclosure
Operating temperature	+10°C to 40°C
Relative humidity	<90%, non-condensed
Operating temperature	+10°C to + 40°C
Relative humidity	< 90% non-condensed