



PORTABLE FIBER OPTIC INTERROGATOR READS BOTH SOFO AND FBG SENSORS

Reliable and versatile fiber optic datalogger for field applications.
Robust and portable enclosure and integrated PC, touch screen and battery.

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. The SOFO VII MuST Portable Reading Unit allows measuring 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 FBG 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.

Options: SOFO sensor 1x5 splitters

Key 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 on battery
- Possibility of using spare batteries
- High dynamic range
- 12" touch screen
- Intuitive user interface (SDB)
- Software with full data logger capability
- Optical spectrum analyzer
- High resolution and precision
- No calibration required

Applications

- Sensor installation
- Manual periodic measurements
- Bridge Structural Health Monitoring SHM
- Building monitoring
- Dam instrumentation
- Tunnel deformation monitoring
- Pipeline local deformation analysis

Performances

SOFO Sensors Measurement		MuST FBG Sensor Measurement
Measurement resolution:	2 μ m RMS	1 μ m
Linearity / Accuracy:	< 2 ‰	\pm 2 μ m
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 total, software configurable between SOFO and MuST FBG	

Specifications

AC power supply:	230 V 50 Hz / 110 V 60 Hz Auto detect
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

Ordering information

10.2013 SOFO VII MuST Portable Reading Unit

Options:

- Number of 1x5 splitters

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