

10.2011 SOFO VII SOFO / MUST UNIVERSAL READING UNIT



GENERAL DESCRIPTION

The SOFO VII reading unit is a universal reading unit able to measure both SOFO (Interferometric) and MuST (Fiber Bragg Grating) sensors. The system is designed for static, long-term measurements. Each channel can be software configured for one of the two technologies. The SOFO VII is integrated in a compact steel housing designed for permanent installation in any structure that requires continuous monitoring.

TECHNICAL DESCRIPTION

The SOFO VII reading unit allows to measure 4 or 8 channels. On each channel it is possible to connect up to 5 SOFO sensors (external 1x5 splitter needed) and up to 25 MuST FBG sensors (depending on sensor type, see sensor datasheets for details). The unit contains a field PC that provides data logging and remote interfacing functionalities.

The main features of SOFO VII are: flexibility in the choice of the options allowing the customer to configure a system tailored to his needs in terms of sensing technology, data logging capability, communication and temperature range.

The SOFO VII has been designed for surface installation and for specific project requirements. The housing (IP 66, housing and door: e-coat primer, powder painted, RAL 7032 pebble grey) grants protection from water, rodents, accidental crashes and a key lock grants protection against vandalism.

Options

- 8 channels option
- SOFO sensor 1x5 splitters
- Heating and thermal isolation for use in rigid climates

FEATURES

- Permanent instrumentation
- Compatible with SOFO sensors
- Compatible with all MuST FBG sensors
- Mix-and-match SOFO and MuST technologies in a single project
- High resolution and precision
- No calibration required
- Integrated PC with SDB measurement engine software
- Compact size and modular design
- Automatic and remote control
- Ethernet interface for easy networking

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
Available channel count	4 or 8* channels total, software configurable between SOFO and MuST	

SPECIFICATIONS

AC power supply	230 V 50 Hz / 110 V 60 Hz Auto detect
External connections	Ethernet connection, 8 optical ports, power supply, display and screen (optional)
Data logger capacity	Typical 5 year of data with measurements every 1h.
Dimensions	~ 500 mm x 500 mm x 210 mm
Weight	~ 25 kg
Operating temperature	10°C to + 40°C - 40°C to + 40°C with heating option*
Humidity	90% non-condensed

**optional*

ORDERING INFORMATION

- Number of channels
- Number of 1x5 splitters