



**COST EFFECTIVE FIBER OPTIC INTERROGATOR  
READS BOTH SOFO AND FBG SENSORS**

**Reliable and versatile fiber optic datalogger for field applications.  
Robust and self-contained enclosure and integrated industrial PC.**

**Description**

The SOFO VII reading unit is a universal reading unit able to measure both SOFO (Interferometric) and MuST FBG (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. 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 is supplied with 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.



*Outdoor enclosure including SOFO VII unit with two splitters and field PC.*

**Key Features**

- Compatible with SOFO sensors
- Compatible with MuST FBG sensors
- 4 or 8 Channels
- Combine SOFO and FBG technologies
- High resolution and accuracy
- No calibration required
- Integrated PC with SDB software
- Automatic and remote control
- Ethernet interface for easy networking

**Applications**

- 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 µm RMS	<0.5 pm
Linearity / Accuracy:	< 2 ‰	1 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 using optional 1x5 splitter	Max 7 MuST (FBG) Deformation sensors Up to 12 Strain FBG sensors Up to 25 Temperature FBG sensors
Calibration:	Not required	NIST traceable wavelength reference
Optical Connectors:	FC/APC, patch cord or splitter required	FC/APC
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 FBG	

### Specifications

AC power supply:	230 V 50 Hz / 110 V 60 Hz Auto detect
External connections:	Ethernet connection, 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:	0°C to +50°C -40°C to +50°C with heating option
Humidity:	<95% non-condensed

### Ordering information

10.2011 SOFO VII MuST Reading Unit

Options:

- 4 or 8 Channels
- Number of 1x5 splitters

**Telemac SAS**  
 10, avenue Eiffel  
 77220 Gretz-Armainvilliers  
 France

Phone +33 1 64 06 40 80 | Email info@telemac.fr  
 Fax. +33 1 64 06 40 26 | Web www.telemac.fr