

FiberSensing

bringing light to measurement

FS2100 | FS2200 INDUSTRIAL BraggMETER
MULTIPURPOSE MEASUREMENT UNIT FOR FBG SENSORS

BraggMETER

- : high performance laser scanning
- : NIST traceable wavelength reference
- : real-time operating system
- : robust design for 24/7 operation
- : up to 8 parallel optical channels
- : full control through SCPI commands
- : self data logging
- : scheduled acquisition with sleep mode
- : compatibility with iLog



FiberSensing Industrial BraggMETER measurement unit is specially designed to interrogate FBG sensors in industrial environments. It employs proven continuous swept laser scanning technology to measure the absolute Bragg wavelength.

BraggMETER

FiberSensing industrial measurement units meet the growing demand and versatility needed for field deployments in Civil, Aeronautics and Energy applications.

The BraggMETER measurement unit includes 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.

INDUSTRIAL MODULARITY

FS2100 | FS2200 measurement units have robust and compact design for 24/7 operation. The real-time operating system makes them the perfect measurement tool for industrial applications. Available with 1, 4, and 8 parallel optical channels and a broadband tuning range, these units allow the simultaneous interrogation of more than one hundred sensors. With the use of a PC, the FS2100/ FS2200 measurement units can also be combined with FiberSensing external multiplexing modules. It is, therefore, possible to further expand the FBG based sensing network without the need of extra measurement units.

REMOTE CONTROL

FiberSensing Industrial BraggMETER measurement units have Ethernet interface, which allows their remote connection to any standard PC through TCP/IP. The units can be fully controlled using SCPI commands (ASCII textual strings). With this

functionality, it is possible to program an acquisition schedule that includes sleep mode for power budget optimization. The PC can then be disconnected, since the unit provides self data logging through internal memory.

Optionally, the standard GUI application for FiberSensing's measurement units (iLog FS 9100) can be installed on the remote PC. This easy-to-use software interface features built-in datalogger functions such as automated sampling, archiving and transmitting. A high-performance local database manages both multiple sensor network configurations and large datasets. Acquired data can also be exported as Excel™ compatible files to several analysis tools

Configuring sensors with iLog is easy and straightforward. Each FiberSensing sensor is provided with a configuration file, allowing its characteristics to be automatically inserted, so measurements can start immediately after plugging the sensor.

ORDERING INFORMATION

FS2100 – Industrial BraggMETER

p/n

002 100 001 112

FS2200 – Industrial BraggMETER

p/n

002 200 001 412

13.Jul.2009

■ ■ ■ ■ measurement units

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SPECIFICATIONS

Wavelength Measurement	
operating range	100 nm (1500 to 1600 nm)
resolution	1.0 pm
absolute accuracy	2.0 pm
repeatability	1.0 pm
sensors per fiber ¹	25 (maximum recommended)
optical channels	FS2100: 1 FS2200: 4 or 8 (in parallel)
sample rate	1 S/s
dynamic range	40 dB
Laser Source	
optical output power	FS2100: 0 dBm FS2200: -3 dBm (quad) FS2200: -6 dBm (octo)
linewidth	500 MHz
optical isolation	> 70 dB

¹considering sensor wavelengths equally spaced over the operating range and maximum measurement range of ± 2 nm per sensor

Inputs / Outputs	
optical connectors	FC/APC
communication interface	Ethernet (TCP/IP)
Control	
commands ²	SCPI (ASCII textual strings)
Environmental	
operation temperature	0 to 40° C
relative humidity	< 90% at 40° C
Mechanical	
dimensions	275x155x110 (mm)
mounting	6 screws M6 - 19x117.5mm
enclosure	aluminum
weight	4 kg
Power	
voltage	9-36 VDC
consumption	
normal operation	40 W
sleep mode	1.5 W

²standard Commands for Programmable Instruments

Specifications may change without notice

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