



FS42PI

Portable BraggMETER PI

Special features

- 4 optical connectors with parallel acquisition
- Smart Peak Detection (SPD)
- 5 hours of autonomy per charge
- Replaceable batteries
- Intuitive embedded software with data logging capability
- Data streaming and remote control via Ethernet

Description

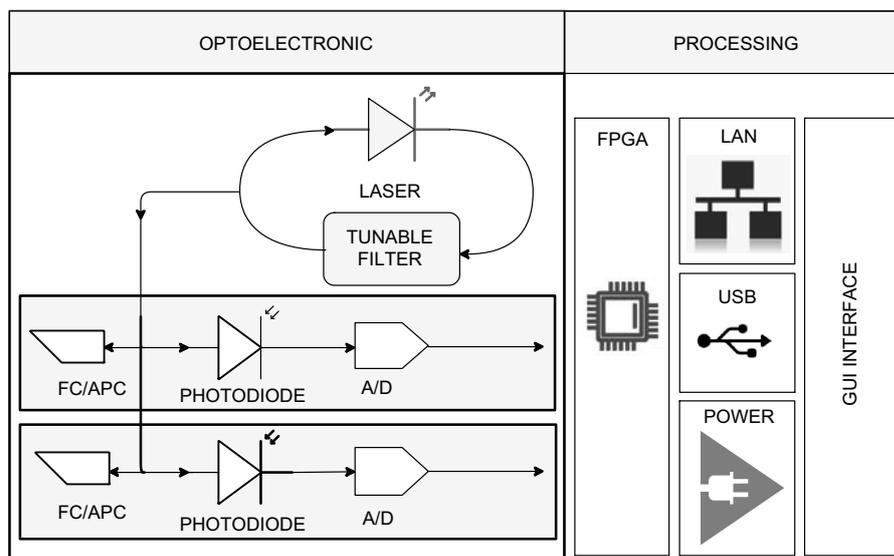
FS42PI Portable BraggMETER Interrogator is a high-end instrument designed to measure Fiber Bragg Grating (FBG) sensors, being most suited for **supporting installations on field** or for **short measurement tasks** as seen on **laboratory applications**. It runs on **batteries** or plugged to an external power source and is supplied with an easily removable bag for protection and transport. The dedicated **embedded software** and **touch screen** interface provide an easy and effective way to control the unit without any further devices. It is also possible to control the unit remotely via the Ethernet port by using SCPI commands or stream measurement data in real time. The interrogator is based on continuous swept laser scanning technology, with a NIST traceable wavelength reference that provides **continuous calibration** and **ensures system accuracy** over long term operation. The combination of high dynamic range and high output power allow **high resolution** to be attained even for long fiber leads and/or lossy connections.

Benefits and applications

- Portability with battery operation and built in PC with touch screen interface
- Changeable batteries for longer usage periods without power connection
- Intuitive and powerful software with all features needed for field and laboratory measurements
- Perfect for use in Civil, Aeronautics, Energy and R&D applications

Fiber Bragg grating technology

- Absolute reference measurement
- Insensitive to EM/RF interferences
- Passive (can be used in Ex-areas)
- Intrinsic multiplexing capability reducing cabling complexity
- Compatible with long distances between sensors and interrogators
- Interrogation of all FBG sensor measurands



Specifications

General		
Measurement range	nm	100 [1500 ... 1600]
Resolution/Repeatability ¹⁾	pm	<0.5
Stability/Reproducibility ¹⁾	pm	1
Optical connectors (simultaneous acquisition)	n.a.	4; FC/APC or SC/APC
Sample Rate	S/s	1
Max # sensors per optical connector	n.a.	125
Max # sensors total	n.a.	500
Optical detection method	n.a.	Logarithmic amplification with >50 dB dynamic range ²⁾
OSA ³⁾	n.a.	Yes
Max. Optical Output Power	dBm	-3
Operating System ⁴⁾	n.a.	Windows 10 IoT Enterprise
Processor	n.a.	Intel® Celeron®, CPU N2930, Regular formatting 1.83GHz, RAM 4GB
Available memory for data saving	GB	30
Software	n.a.	BraggMONITOR PI
Power supply	VDC	18 ... 20
Power connector	n.a.	2.5 x 5.5 DC socket panelmount ⁵⁾
Consumption ⁶⁾	W	Charging:45; Running: 50 (cumulative)
Batteries and autonomy	n.a.	PCGA-BP Li-ion 14.4V 4400mAh; 6 hours ⁷⁾
Interface and Communication	n.a.	12" touch screen; 1 Gigabit Ethernet (RJ45 ⁸⁾); SCPI ⁹⁾ (ASCII textual strings) over TCP/IP; 2 USB 2.0 ports
Environmental and mechanical		
Operation and storage temperature	°C	0 ... 40; -20 ... 70
Operation and storage humidity	%	< 90% (at 40 °C); < 95% (non-condensing)
Shock resistance ¹⁰⁾ (EN60068-2-27)	n.a.	20 g (in each axis); 11 ms pulse
Sinusoidal vibration resistance ¹⁰⁾ (EN60068-2-6)	n.a.	2.5 g (5 Hz to 65 Hz); 30 min/axis
Random vibration resistance ¹¹⁾ (EN60068-2-64)	n.a.	9 g (10 Hz to 500 Hz); Power Spectral Density=1 g ² /Hz
Dimensions (width x height x depth)	mm	360 x 280 x 125
Weight	kg	6.2
Enclosure	n.a.	Aluminum; Cordura fabric carrying bag
Degree of protection (EN60529; IEC529)	n.a.	IP20

Ordering information

Standard Item	
1-FS42PI-4FC	FS42PI Portable BraggMETER with 4 FC/APC Connectors
1-FS42PI-4SC	FS42PI Portable BraggMETER with 4 SC/APC Connectors

- ¹⁾ Measurements carried out using calibrated instrument against a NIST traceable gas cell. Accuracy as per NIST Technical Note 1297. Further details on HBM FiberSensing technical notes.
- ²⁾ Considered as the ratio between the optical power emitted at an optical channel and the minimum detectable optical power reflected by a fiber Bragg grating.
- ³⁾ Optical Spectral Analysis (1S/s refresh rate; 20000 points per sample, 5pm resolution).
- ⁴⁾ Protection provided by Windows Defender and System integrity supported by Unified Write Filter (UWF).
- ⁵⁾ Supplied with 100-230V power adapter and Type F plug cable. Different plug format can be added upon request.
- ⁶⁾ Typical values. Peak consumption may reach 50 W (during start up).
- ⁷⁾ Typical battery duration under continuous operation. Healthy battery consumption of 18%/h. Critical battery level is reached at 7% and shutdown is forced.
- ⁸⁾ Connection with twisted-pair cable (CAT-5) and maximum 30 m length.
- ⁹⁾ Standard Commands for Programmable Instruments.
- ¹⁰⁾ During tests the interrogator is powered off. The correct functioning of the equipment is confirmed after the test (transport simulation).
- ¹¹⁾ As per EN60529 (IEC529).

Subject to modifications.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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Bringing light to measurement

