



# FS22DI

## Industrial BraggMETER DI

### Special features

- Up to 8 optical connectors with parallel acquisition
- Dynamic selectable acquisition rates up to 1000 S/s
- NTP synchronization
- Catman® compatibility

### Description

FS22DI Industrial BraggMETER Interrogators are specifically designed to interrogate Fiber Bragg Grating (FBG) sensors. Based on continuous swept laser scanning technology, these Interrogators include a 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.

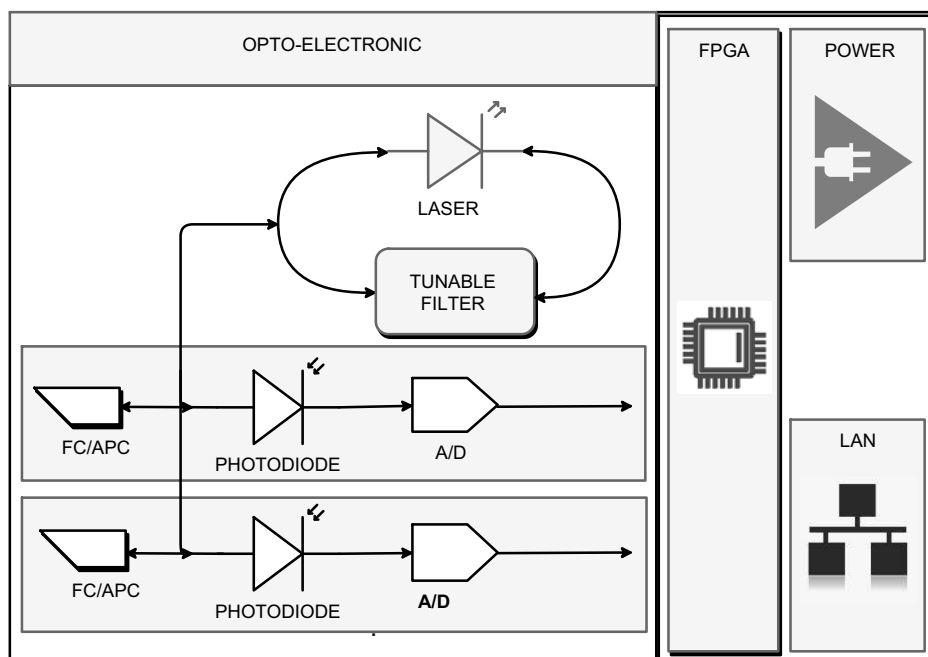
HBM FiberSensing Industrial BraggMETER interrogators run on a **real-time operating system** for consistent and deterministic acquisition of a large number of sensors provided by the combination of a **broadband tuning range** and the **simultaneous** and **parallel acquisition** over **1, 4 or 8 optical connectors**.

### Benefits and applications

- Laboratory and field deployment in Civil, Aeronautics, Energy and R&D applications
- Full control through SCPI Commands for integration in user's own software
- Multiple device or hybrid (electrical+optical) measurements possible by combining and synchronizing multiple interrogators and other HBM data acquisition devices

### Fiber Bragg grating technology

- Absolute reference measurement
- Insensitive to EM/RF interferences
- Passive (can be used in Ex-areas)
- Intrinsic multiplexing capability reducing cabling requirements
- Long distances between sensors and the interrogators possible
- Combination of different sensor measurands



## Specifications

General						
Measurement range	nm	100 [1500 ... 1600]				
Resolution/Repeatability <sup>1)</sup>	pm	<1				
Stability/Reproducibility <sup>1)</sup>	pm	5				
Optical connectors (simultaneous acquisition)	n.a.	1, 4 or 8; FC/APC or SC/APC				
Sample rate <sup>2)</sup>	S/s	1000	500	200	100	50
Max. # sensors/OC	n.a.	31	63	127	127	127
Max # sensors total	n.a.	48	96	200	400	600
Optical detection method	n.a.	Linear (selectable gain steps)				
Dynamic range <sup>3)</sup>	dB	> 25				
OSA <sup>4)</sup>	n.a.	Yes				
Max. Optical Output Power	dBm	One connector: 0; Two connectors: -3; Eight connectors: -6				
Power supply	VDC	Standard: 11-36; Rack- Mountable: 100-240 (50-60Hz)				
Power connector	n.a.	Standard: Weidmüller Terminal Block SLDF 5.08 2-way <sup>6)</sup> ; Rack-Mountable: C14 (IEC/EN 60320-1) <sup>7)</sup>				
Consumption <sup>5)</sup>	W	Nominal: 22.5; Stand by: 2				
Communication	n.a.	Ethernet (RJ45); SCPI <sup>8)</sup> (ASCII textual strings) over TCP/IP				
Synchronization	n.a.	NTP				
Environmental and mechanical						
Operation and storage temperature	°C	0 to 50; -20 to 70				
Operation and storage humidity	%	< 90% (at 40 °C); < 95% (non-condensing)				
Shock resistance <sup>9)</sup> (EN60068-2-27)	n.a.	20 g (in each axis); 11 ms pulse				
Sinusoidal vibration resistance <sup>9)</sup> (EN60068-2-6)	n.a.	2.5 g (5Hz to 65Hz); 30 min/axis				
Random vibration resistance <sup>9)</sup> (EN60068-2-64)	n.a.	9 g (10Hz to 500Hz); Power Spectral Density=1g <sup>2</sup> /Hz				
Dimensions	mm	155 x 125 x 275			483 x 88 x 400	
Weight	kg	4.5 (w/o mounting brackets)			7 kg	
Mounting	n.a.	6 screws M6			19" rack mountable – 2U	
Enclosure Material	n.a.	Aluminum				
Degree of protection (EN60529; IEC529)		IP20				

## Ordering information

Configurable Item		Standard item <sup>10)</sup>
<b>K-FS22 – 1 - 2 - 3</b>		
<b>Options</b>		
<b>1</b>	<b>01</b> - Standard (ST) - FC/APC; <b>03</b> - Standard (ST) - SC/APC; <b>11</b> - 19" rack (RM) - FC/APC; <b>13</b> - 19" rack (RM) - SC/APC	1-FS22DI-ST/4CH 1-FS22DI-ST/8CH
<b>2</b>	<b>500</b> - Dynamic (up to 1000S/s)	
<b>3</b>	<b>120</b> - 1 optical connector; <b>420</b> - 4 optical connectors; <b>820</b> - 8 optical 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) All available, user selectable.
- 3) Considered as the ratio between the optical power emitted at an optical connector and the minimum detectable optical power reflected by a fiber Bragg grating.
- 4) Optical Spectral Analysis (1S/s refresh rate; 7050 points per sample, ~15pm resolution)
- 5) Typical values. Peak consumption may reach 50 W (during start up).
- 6) Supplied with 100-230V power adapter and Type F plug cable. Different plug format can be added upon request.
- 7) Supplied with Type F plug cable. Different plug format can be added upon request.
- 8) Standard Commands for Programmable Instruments.
- 9) During tests the interrogator is powered off. The correct functioning of the equipment is confirmed after the test (transport simulation).
- 10) Standard Items correspond to a configuration: Standard format and FC/APC connectors. With 4 or 8 optical connectors.

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

**HBM FiberSensing S.A.**  
Rua Vasconcelos Costa 277 · 4470-640 Maia · Portugal  
Tel. +351229613010 · Email: [fibersensing@hbm.com](mailto:fibersensing@hbm.com) · [www.hbm.com/fs](http://www.hbm.com/fs)

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