

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.

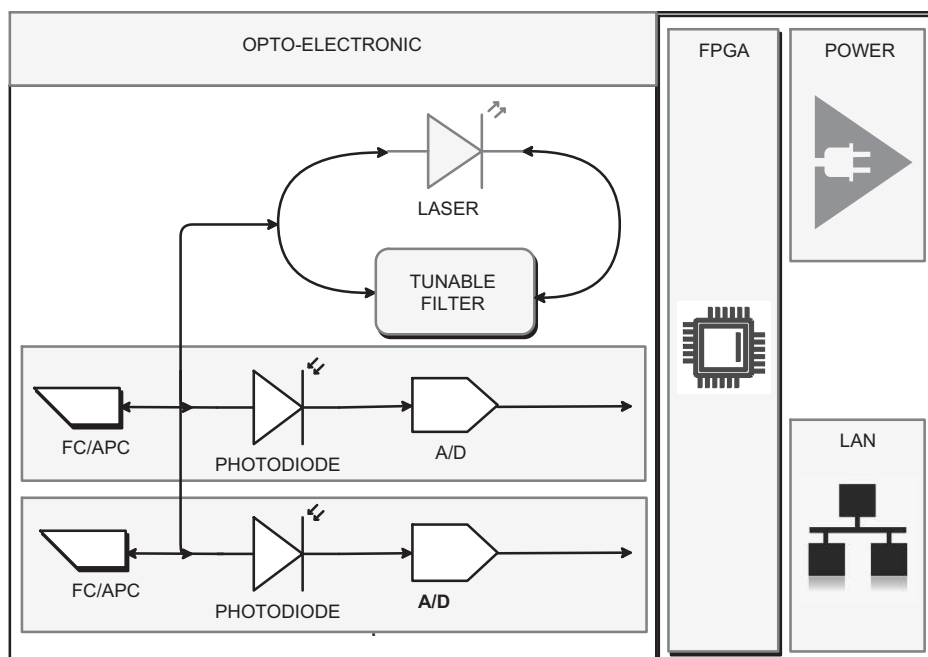
HBK FiberSensing Industrial BraggMETER interrogators run on a real-time operating system for consistent and deterministic acquisition of a large number of sensors provided by the combination of a broadband tuning range and the simultaneous and parallel acquisition over 1, 4 or 8 optical connectors.

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 HBK 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 ¹⁾	pm	<1.5				
Stability/Reproducibility ¹⁾	pm	5				
Optical connectors (simultaneous acquisition)	n.a.	1, 4 or 8; FC/APC or SC/APC				
Sample rate ²⁾	S/s	1000	500	200	100	50
Max. # sensors/OC	n.a.	31	63	127	127	127
Max # sensors total	n.a.	80 ³⁾	96	200	400	600
Optical detection method	n.a.	Linear (selectable gain steps)				
Dynamic range ⁴⁾	dB	> 25				
OSA ⁵⁾	n.a.	Yes				
Max. Optical Output Power	dBm	One connector: 3; Four connectors: -1; Eight connectors: -4.5				
Power supply	VDC	Standard: 11 ... 36; Rack-Mountable: 100 ... 240 (50 ... 60Hz)				
Power connector	n.a.	Standard: ODU Medi-Snap S11M08-P04MJGO-5280 ⁷⁾ ; Rack-Mountable: C14 (IEC/EN 60320-1) ⁸⁾				
Consumption ⁶⁾	W	Nominal: 22.5; Stand by: 2				
Communication	n.a.	Ethernet (RJ45); SCPI ⁹⁾ (ASCII textual strings) over TCP/IP				
Synchronization	n.a.	NTP				
Environmental and mechanical						
Operation and storage temperature	°C	0 ... 50; -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 ... 65 Hz); 30 min/axis				
Random vibration resistance ¹⁰⁾ (EN60068-2-64)	n.a.	9 g (10 Hz ... 500 Hz); Power Spectral Density=1g ² /Hz				
Dimensions (W x H x D)	mm	Standard: 155 x 125 x 275; Rack-Mountable: 483 x 88 x 400				
Weight	kg	Standard (w/o mounting brackets): 4.5; Rack-Mountable: 7				
Enclosure Material	n.a.	Aluminum				
Degree of protection (EN60529; IEC529)		Standard: IP40; Rack-Mountable: IP20				
EMC requirements	n.a.	Per EN 61326				

1) Measurements carried out using calibrated instrument against a NIST traceable gas cell. Accuracy as per NIST Technical Note 1297. Further details on HBK FiberSensing technical notes.

2) All available, user selectable.

3) When operating the device with catman or SCPI commands with binary reply. The maximum number of sensors at 1000 S/s acquisition rate is limited to 48 when operating the device with BraggMONITOR DI or SCPI commands with ASCII reply.

4) 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.

5) Optical Spectral Analysis (1S/s refresh rate; 7050 points per sample, ~15 pm resolution)

6) Typical values. Peak consumption may reach 50 W (during start up).

7) Supplied with 100 ... 240 V power adapter with international AC plugs and 1.5 m cable length. For additional orders use 1-NTX001 material number.

8) Supplied with Type F plug cable. Different plug format can be added upon request.

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).

Ordering information

Configurable Item		Standard item ¹¹⁾
K-FS22 – 1 - 2 - 3		
Options		1-FS22DI-ST/4CH
1	01 - Standard (ST) - FC/APC; 03 - Standard (ST) - SC/APC; 11 - 19" rack (RM) - FC/APC; 13 - 19" rack (RM) - SC/APC	1-FS22DI-ST/8CH
2	500 - Dynamic (up to 1000S/s)	
3	120 - 1 optical connector; 420 - 4 optical connectors; 820 - 8 optical connectors	

¹¹⁾ 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.

HBK FiberSensing S.A.
Rua Vasconcelos Costa 277 · 4470-640 Maia · Portugal
Tel. +351229613010 · Email: info.fs@hbkworl.com · www.hbm.com/fs

