FiSens

FiSpec FBG X100

Datasheet Rev3- January 2024

Ultraminiature, precise and rugged fully-integrated FBG Interrogator with embedded light source and on-board processing.

Overview

With an unprecedented small size, the FBG X100 integrates all necessary components for the accurateanalysis of up to 30 fiber Bragg grating (FBG) sensors. Its compact and energy-efficient design enables FBG based applications where space and power is limited.

Key Features

- Plug & Play
- Ultra-compact
- Low Weight
- High Precision
- High Accuracy
- High Thermal Stability
- Energy-efficient
- On-board FBG Analysis

Applications

- Process Control
- Predicitive Maintenance
- Condition Monitoring
- Thermal Mapping

Used for

- Force
- Strain
- Pressure
- Temperature

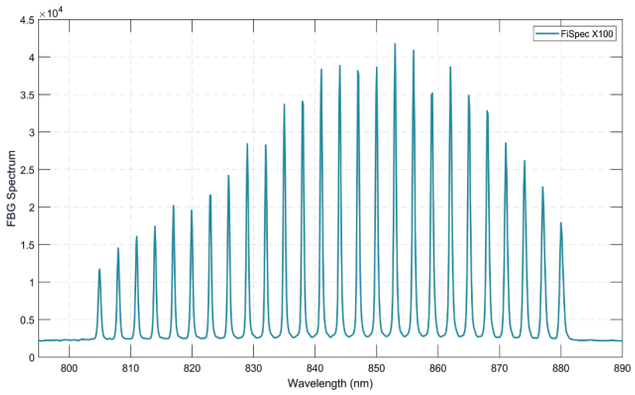
Performance Properties	
Number of Channels	1
FBG Sensors per Channel	30
Sampling Range	1-200Hz (simultanous)
Wavelength Range	808-880nm
Measurement Precision	from 0,1°C | 1με (10Hz)
Digital Measurement Res.	0,01°C | 0,01με
Thermal Stability	<0,1°C/°C
Polarization Stability	±7με/±0,7°C (typical)

Physical Properties	
Operating Temperature	0-60°C
Storage Temperature	0-80°C
Dimensions	74 x 50 x 15mm
Weight	60g
Power Consumption	1W

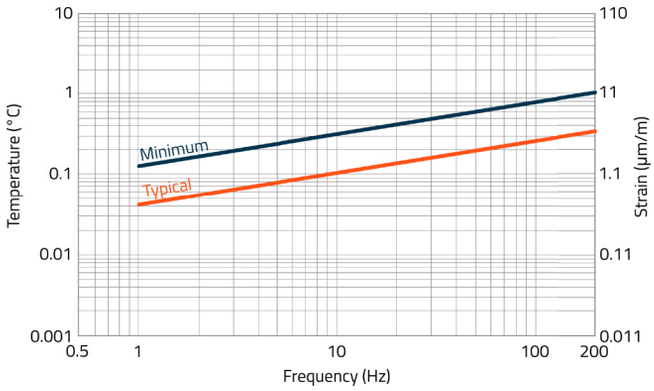
Communication	
Optical Interface	FC/APC
Electrical Interface	USB, UART (RS-232)
Software Protocol	User Data Protocoll (UDP)
Hardware Protocol	Direct Serial Communication

For more product information please
contact sales@fisens.de or visit www.fisens.com

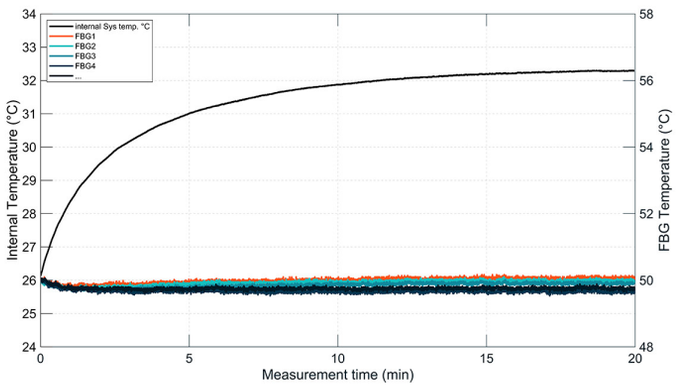
Exemplary FBG Spectrum @ 850nm



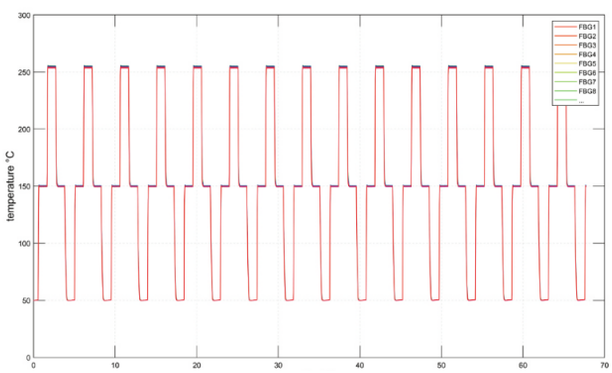
Precision in (με) vs. Sampling Rate (Hz) Noise level (2σ)



Heat-up Behaviour



High Repeatability



Technical Drawing