SERIES 05 / TECHNICAL PRODUCT GUIDE

OFDR interrogators

Dense measurement.
Fine spatial detail.



Ultra-weak FBG arrays, engineered cables and optical interrogation systems for position-aware strain, temperature and acoustic measurement.

2026 EDITION / RS MODEL DESIGNATIONS

PORTFOLIO / SELECT THE MEASUREMENT PATH

A connected sensing chain

Select the sensing element, packaging and interrogator together. Distance, spacing, optical response and installation conditions define the complete measurement.

SENSE	Controlled optical reflection or distributed backscatter
TRANSFER	Cable structures that couple strain, heat or vibration
INTERROGATE	Wavelength, phase, time or frequency-domain analysis

RS-UOFDR-01 / UW-FBG OFDR module

RS-UOFDR-02 / UW-FBG OFDR analyzer

SERIES 05 / OFDR INTERROGATORS

RS-UOFDR-01

UW-FBG OFDR module



OPERATING PRINCIPLE

A swept-frequency optical source interferes with reflections from the sensing fiber. Beat-signal demodulation maps reflection position and spectral response into strain, temperature and deformation profiles. Embedded FPGA/ARM processing and host GPU/CPU resources support dense UW-FBG arrays.

TYPICAL APPLICATIONS

- Dense strain and temperature monitoring
- Wind-blade inspection and oil/gas well-wall measurement
- Battery thermal monitoring
- Nuclear-equipment maintenance and aerospace-composite testing

RS-UOFDR-01

UW-FBG OFDR module

TECHNICAL SPECIFICATIONS

Maximum length	50 m
Spatial resolution	10 / 15 mm typical grating values
Strain range	±2000 με
Strain accuracy	≤±2 με
Temperature accuracy	≤±0.2°C
Typical demodulation rate	2 Hz; distance-dependent
Fiber connector	FC/APC
Communication	Ethernet
Power	12 V DC / 22 W full load

Typical values. Custom spacing and configurations are available where specified. Confirm the complete sensing-chain configuration before ordering.

SERIES 05 / OFDR INTERROGATORS

RS-UOFDR-02

UW-FBG OFDR analyzer



OPERATING PRINCIPLE

Frequency-swept interrogation reads dense UW-FBG arrays, with compatibility for ordinary single-mode fiber. Position-dependent optical responses provide strain and temperature profiles for deformation and shape analysis. Four channels support synchronous measurement in the stated configuration.

TYPICAL APPLICATIONS

- Scientific equipment and laboratory instrumentation
- Bridge monitoring and wind-blade deformation
- Battery-pack temperature monitoring
- Shape sensing

RS-UOFDR-02

UW-FBG OFDR analyzer

TECHNICAL SPECIFICATIONS

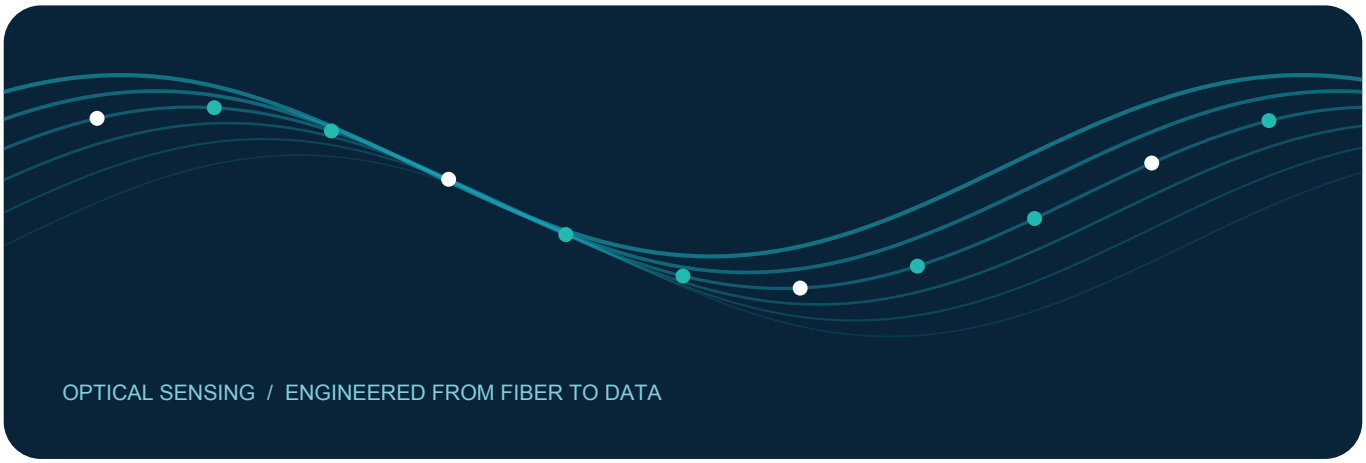
Maximum length	100 m; custom lengths available
Spatial resolution	10 / 15 mm typical
Strain range	±5000 με
Strain accuracy	≤2 με
Temperature range	-40 to +150°C
Temperature accuracy	≤1°C
Channels	4; customizable
Typical demodulation rate	1 Hz
Fiber connector	FC/APC
Communication	Ethernet

Typical values. Custom spacing and configurations are available where specified. Confirm the complete sensing-chain configuration before ordering.

PROJECT PLANNING

Specify the complete sensing chain.

Share the measurand, sensing length, point spacing, environmental limits, installation method and preferred integration format. Our team can help define the appropriate product combination.



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