



RTS125+

Real Time Fiber Optic Sensing



Features

- Ruggedized
- 8 simultaneously monitored fiber optic sensing channels
- 2048 equally spaced sensors per fiber
- Software selectable spatial resolution down to 6.3mm.
- Real time strain and temperature measurements through FBGs
- Up to 100 Hz refresh rate
- Deflection sensing capability
- 3D shape sensing capability
- Immune to EMI/RFI and radiation for reliable operation in demanding environments.
- Networking capability via Ethernet

Benefits

- *Lifecycle Monitoring:* Monitor a product during design, development, production and operation with the same platform.
- *More Data:* Fully distributed sensing provides enough data for confident testing and model validation.
- *Multi-Sensing:* Simultaneously measure strain, temperature, deflection, 3D shape, liquid level and magnetic fields.
- *Adjustability:* The lead length is fully adjustable so users can place the sensor exactly where it needs to be.
- *Reduces Risk:* Having access to better data empowers engineers to detect design flaws earlier in product development, preventing costly failures after a product is launched.
- *Improves efficiency:* Replacing multiple technologies in a single platform, the RTS125 + allows organizations to consolidate their testing and monitoring equipment.

Application examples

- *Aerospace:* Monitor changes in wing load distribution, shape, liquid level and more in real time.
- *Automotive:* Studying truck or automobile frames to improve safety and performance.
- *Structures:* Monitoring the overall health of structures that undergo constant stress, such as bridges, dams and buildings
- *Medical:* Determining the shape of medical instruments used in non-invasive and minimally invasive surgical procedures.

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RTS125+ ¹	
Interrogator accuracy	1.25 $\mu\epsilon$ / 0.15 °C
Strain repeatability	$\pm 2.0 \mu\epsilon$ after time filtering, $\pm 6.5 \mu\epsilon$ continuous output
Temperature repeatability ²	± 0.25 °C after time filtering, ± 0.78 °C continuous output
Features	
Channels	8
Total sensors	16,384
Total sensing length	104 m
Sensing length per channel	13 m
Gage spacing	25.4 mm to 6.3 mm
Gage length	25.4 mm to 6.3 mm
Performance	
Data rate ³	Up to 100 Hz
Spatial resolution	6.3 mm
Interrogator strain measurement range ⁴	$\pm 17,500 \mu\epsilon$
Interrogator temperature measurement range	-270-1200 °C
Sensor temperature range ⁵	-200-400 °C
Mechanical and Environmental	
Lead length ⁶	User defined between 0-30 m. Contact Sensuron for longer lengths.
Dimensions	181mm x 162mm x 330mm (WxHxD)
Weight	13 lbs

¹Upgrades are available for deflection and 3D shape sensing. Contact Sensuron for more details.

²This figure was calculated via a conversion from strain repeatability.

³RTS125+ data rates are independent of sensor length. 100 Hz yields approximately $\pm 800 \mu\epsilon$.

⁴The strain range is software adjustable within the listed range.

⁵This figure is for the standard fiber and coating supplied by Sensuron. Contact us for other fiber options for temperatures up to 900 °C.

⁶Lead lengths greater than 30m are possible. Contact Sensuron for more information.

Please contact Sensuron at 512-827-2040 or info@sensuron.com to discuss your specific application needs.

The individual specifications listed on the data sheet above are specific to each individual attribute. Overall Product performance may vary based upon each specific use case and may vary depending upon combinations of Products, use with other hardware or software or conditions of use.