T910 / FBG Hydrogen Detection Sensor

Description

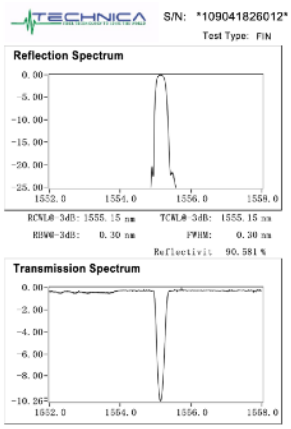
The T910 is a rugged Single-Mode (SM) Fiber based Self-Temperature Compensated Hydrogen Detection Sensor.

The T910 optical Hydrogen Detection Sensor operates on a catalytic combustion type detection scheme, and consists of two customized for purpose Fiber Bragg Grating sensing elements embedded in a single-mode fiber and encapsulated into proprietary Hydrogen responsive materials. Further protected by stainless steel outer packaging.

Designed for use in single-sensing-point or daisy-chainable sensing applications with the added requirement of minimal intrusion. Immune to EMI and lightning.

Manufactured by Technica under International License from Raytheon Technologies

Key Features



Detection of the presence of Hydrogen. The precision made custom twin FBG structure manufactured for the T910 yields a transducer configuration of high resolution, linearity, and measurement repeatability. Unlike standard fiber FBGs that simply do not respond to the presence of Hydrogen, the T910 reliably provides Hydrogen detection within seconds.

Small form-factor. Well suited for projects that include the need to monitor for the presence of Hydrogen at individual points, or in multi-point configurations, with small form-factor optical sensors. Multiple T910 sensors can be connected on a single optical fiber to be monitored by a single channel of an optical sensing interrogator. Standard connectors termination, or splicing to specialty cables available.

Reliable measurements. Designed for projects that require both the availability of Hydrogen responsive FBG sensors and stable operation for highly accurate measurements over the long-term.

Proven field performance. The T910 Hydrogen Detection Sensors have undergone more than one year of active testing and qualification. While they are still undergoing testing for long-term reliability, the company is now offering them commercially, as these sensors are gradually being manufactured in increasing volume. These world leading sensors extend the range of applications addressable by FBG sensors.

Parameter	Specifications
Wavelengths, CW Tolerance	1460 to 1620 nm (2 FBGs inside) , +/-1 nm
Reflection BW (FWHM), Reflectivity %, SLSR	0.25 nm +/- 0.05 nm > 50 % >15 dB
Measurement Range, Sensitivity	0-4vol% 0.5vol%
Temperature Range, Operational Humidity Range	-10°C to +45°C 10% to 85% RH
Response Time	~40 seconds
Fiber Type	SMF28 or equivalent
Sensor Configuration	Double-ended sensing probe w optical cable pigtails
Sensor Material	Stainless Steel SUS304
Sensing Probe Diameter (OD), Length	8mm OD, 200mm
Weight	25 grams
Pigtail Length and OD, Bend Radius	1m and 3mm, > 17 mm,
Pigtail Protection Material	Armored Cable
Connector Options	FC/APC or LC/APC

Applications in Industrial, Chemical, Medical, Materials Test Labs, and Research

Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

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