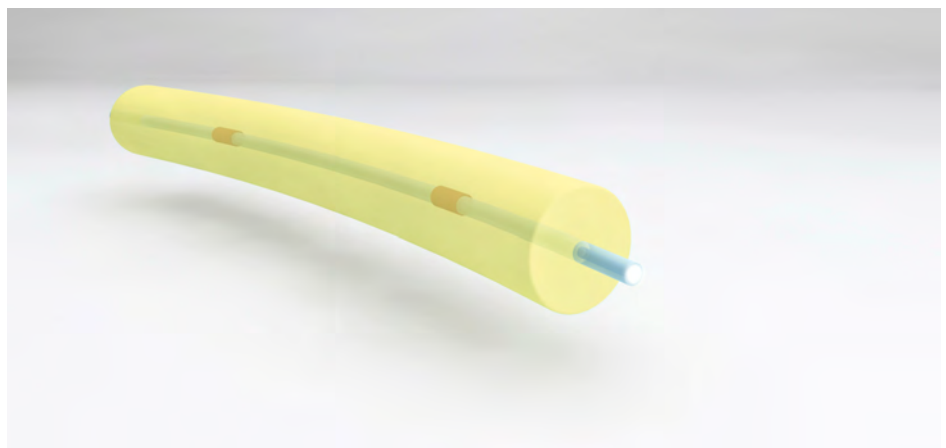


Strain Measurements Wire SMW-01

Fiber Bragg Gratings reinvented

Draw Tower Gratings (DTG®s) are produced during the drawing process of the fiber itself, before the primary coating is applied. This is a cost effective production process for high quality Fiber Bragg Gratings. This offers unique characteristics such as extremely high breaking strength, insensitivity to bending, spliceless array configurations and uniform coating coverage. FBG parameters and coating material can be selected based on customer needs.

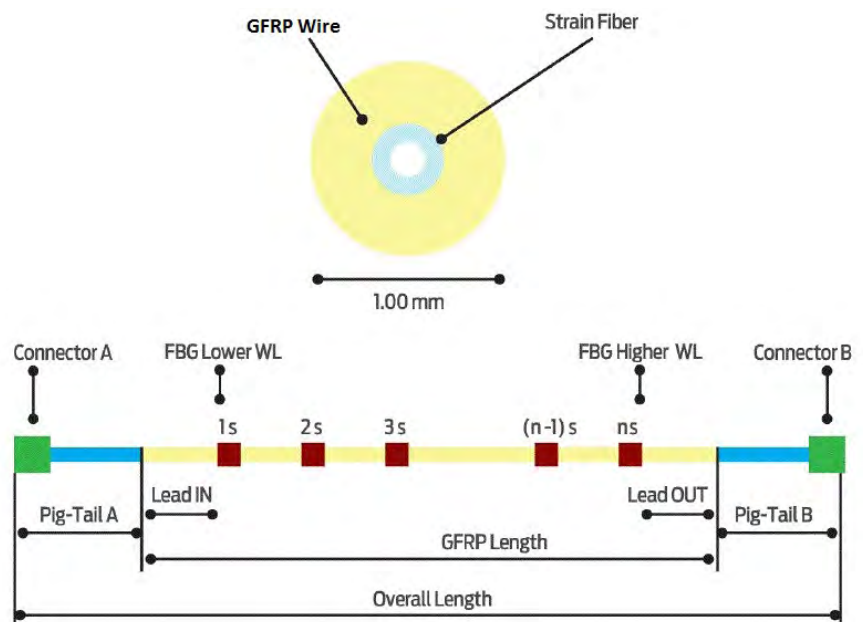


Description

A Draw Tower Grating (DTG®) array is embedded in a Glass Fiber Reinforced Plastic (GFRP) round profile. The DTG® array embedded in the GFRP is designed to measure the total strain caused by both the thermal expansion and the mechanical stress.

The position and the wavelength of each DTG®, as well as the pigtail length and connector type, are specified by the customer.

The SMW-01 comes with a standard GFRP outer diameter (OD) of 0.5mm or 1mm and can optionally be protected with an additional High-Density Polyethylene (HDPE) outer jacket.



Features

- For strain sensing in harsh environments
- Easy installation: both surface mounting (GFRP OD= 0.5mm) and embedding
- Robust mechanical protection
- Good adhesion between buffer material and sensing fiber

Standard Specification

Geometrical specifications

Parameters	Value
Overall Length	≤ 660m ± 1%
GFRP Length	≤ 630 m ± 1%
Lead in Length	≥ 0.5 ± 0.1 m
Lead out length	≥ 0.5 ± 0.1 m
Pigtail A Length	≤ 15 ± 0.1 m
Pigtail B Length	≤ 15 ± 0.1 m
Distance Between FBGs	≥ 1cm
GFRP Wire Diameter	0.5 or 1.0 ± 0.1 mm

Connectors

Parameters	Value
Number of Connectors	up to 2
Connectors Type *	FC/APC

* Other choices available on request

Fiber Specifications

Draw Tower Gratings type DTG-A3A4	
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Physical specifications

Parameters	Value
GFRP Resin	Vinyl Ester
GFRP Glass Fiber	ECR Glass
Temperature Range	-40° to +120° C
Weight	0.35 kg/km OD=0.5mm
	1.65 kg/km OD=1.0mm

Mechanical Specifications

Parameters	Value
Elastic Modulus	≥ 30 GPa (OD=0.5mm)
	≥ 48 GPa (OD=1.0mm)
Maximum Tensile Strain	25000 με
Maximum Longitudinal Load	145 N (OD=0.5mm)
	950 N (OD=1.0mm)
Minimum Bend Radius After Installation	60mm (OD=0.5mm)
	100mm (OD=1.0mm)

Ordering information

Please contact our sales department