

Embossed cable for strain measurement

FEATURES

- Built-in 2 singlemode optical fibers for strain measurements
- Non-slippery embossed sheath
- CALIBRATED WITH HIGH-PRECISION NEUBREScope INTERROGATOR
- Flexible, Easy handling on site and tensile strength up to 40 kg-f
- Length marks for easy identification of installation position



The FN-EBSS-01 is a strain and/or temperature sensing cable designed for distributed fiber optics sensing. It offers excellent, linear responses to mechanical or thermal loads, providing accurate strain or temperature values along the cable. By incorporating two singlemode optical fibers in the center of the cable, a loop structure of optical fiber can be created to realize BOTDA measurement with a single cable, or provides redundancy, if required.

Its embossed surface enables very good adhesion to measured object, preventing any slippage. In addition, two strength members provide a tensile strength up to 40 kg force.

The resin sheath of FN-EBSS-01 is flexible and easy to bend. Optical fibers can be easily extracted for splicing.

The length marks on cable make the installation and position identification easy and efficient.

Applications

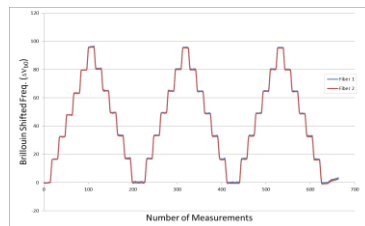
- Distributed Strain / Displacement measurement
- BOTDA measurements with double-end connections
- Embedding in concrete, installation on rebar
- Pipes / structures deformation
- Installation in borehole
- Monitoring of floor slabs, shoring, piles, etc.
- Monitoring of the ground, seabed, etc.

Supports NEUBREScope's high-precision measurement

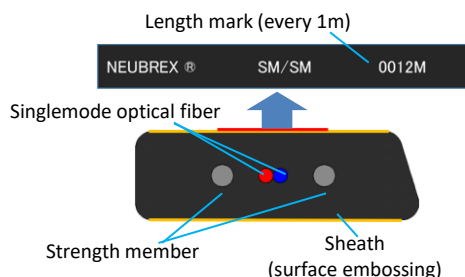
The FN-EBSS-01 is calibrated with state-of-the-art NEUBREScope's Brillouin and Rayleigh sensing technology. It has excellent characteristics that supports not only Brillouin scattering measurement (BOTDR, BOTDA method) but also high-precision Rayleigh scattering measurement (TW-COTDR method).

The Figure right presents measurements results in both fibers of embossed cable subject to 40 hours of thermal load test (20-80-20C, with 10C step). In total, 640,000+ data points were available for hysteresis effects analysis.

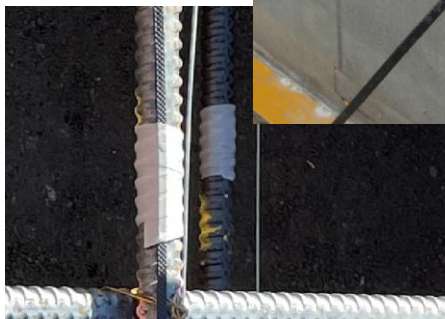
The results clearly demonstrate that the cable maintained its structure while reinforcing members its elongation and deformation characteristics during temperature increase and decrease.



Structure Diagram



Embedded in concrete structures



Tied to rebar of concrete



Winded on the casing pipe

Specification FN-EBSS-01

Optical fiber type	10 / 125 μ m SMF
Number of Optical fibers	2
Attenuation	< 0.5 dB/km
Strain Sensing Range*($\Delta\epsilon$)	5000 $\mu\epsilon$
Temperature Sensing Range	-20 to +80 C
Bending radius	> 40 mm
Outer sheath	Thermoplastic elastomers
Strength member	ϕ 0.4mm, GIPS x2
Tensile strength	40 kg-f
Dimensions (W x H)	5.1 x 1.7 mm
Weight	13 g / m
Length mark	Yes (1m interval)
Operating temperature	-20 to +80 C
Storage temperature	-40 to +85 C

* Depends on cable installation. Please contact us for more information.

** All specifications are subject to change without notice.