

Fiber Optic Distributed Strain/Bending/Temperature Sensing Cables

UniSignal is the sole company in the world capable of designing, fabricating and marketing the metal sheathed fiber optic distributed strain/bending/temperature sensing cables for average strain/bending and temperature monitoring of structures or environments over a long distance, required by the sensing technology of Fiber Bragg Grating or Brillouin scattering. The designed hybrid sensing cables are especially suitable for applications in challenging and demanding environments of temperature from cryogenic to 300°C, high pressure, strong corrosion and the presence of hydrogen.

Cable Number: DTSS_C21FBG (for sensing with Fiber Bragg Grating Array)
DTSS_C21PBS (for sensing with Brillouin scattering)

Cable structure: composed of a metal capillary (outside diameter: 0.25" maximum) and specialty fibers with/without Bragg grating

Features:

Metal sheathed cable with different strength and application-targeted designs
Extremely high strain sensing range (up to 3%)
Strained designs with preset value on sensing fiber
Hybrid strain/bending/temperature measurements
Reliable use for a wide range of temperature from cryogenic to 300°C, pressure up to 26,000psi
High resistance to strong corrosion and hydrogen environments

Technical Characteristics:

Cable sheath material:	one thick layer of metal tubing (stainless steels, high nickel alloys, etc.)
Cable dimension:	maximum outside diameter: 0.25", maximum wall thickness: 0.065"
Length of sensing zone (LSZ):	from 10m to thousand meters
Sensing range:	10000 $\mu\epsilon$ (-1%) in shortening 30000 $\mu\epsilon$ (+3%) in elongation
Best cable sensitivity:	2.0 $\mu\epsilon$
Calibration:	not required after production
Thermal compensation:	through temperature sensing
Max yield pulling load:	up to 1400 kg
Max tensile strength:	up to 1700 kg
Environmental temperature:	from cryogenic to 300°C
Max hydrostatic pressure:	26,000psi
Optical Fiber:	Single mode fibers for strain/bending/temperature measurements

Note: For application temperature up to 700°C, please contact: contact@unisignal-inc.com