



TENSMEG - Tension Measuring Gauge for 7-Wire Strands



The TENSMEG (tension measuring gauge) for monitoring strains in 7-wire strands, is an elongated spiral strain gauge comprised of a Teflon® coated resistive wire, extending between two hard, rubber end anchors.

The TENSMEG is an accurate and cost-effective means to examine load and strain in rock and soil anchors, and also in cable bolts used for rock support. Pre-stressed and post-tensioned concrete load and strain may also be effectively measured.

Due to its construction, the resistance wire is precisely inserted into the spiral grooves of the 7-wire strand used for anchors and therefore is well protected. The gauge has an excellent linear response, accuracy, and long term stability with water resistance capability. Specifications are unaffected when the TENSMEG is surrounded by cement grout or embedded in concrete structures.

The P3 Strain Gauge Readout can be used on the TENSMEG for readings.

specifications

ITEM	DESCRIPTION
Full Scale Tension	Exceeds 50,000 $\mu\epsilon$
Full Scale Compression	3000 μ , dependent on level of pre-tension applied during installation
Resolution	1 $\mu\epsilon$
Accuracy	2% F.S.
Length	48 cm (18.9 in) - other lengths available upon request
Gauge Factor	2.0 nominal
Gauge Resistance	120 Ohm
Excitation Voltage	1 V - 10 V DC
Initial Creep	Less than 30 $\mu\epsilon$, 48 hrs. after installation
Total Creep	Less than 100 $\mu\epsilon$, 3 months after installation
Yield Limit of Resistance Wire	4,000 - 18,000 $\mu\epsilon$ depending on gauge length
Maximum Water Pressure	Tested to 2 MPa
Temperature Effect	Less than 1 $\mu\epsilon$ / °C (-10° to 75°C)

ordering info

ITEM	PART #
TENSMEG Strain Gauge 48 cm long	ELTM4800LH
TENSMEG Electrical Isolation Coating	ELTM1040
TENSMEG Installation Tool Set	ELTM1000
TENSMEG Bonding System (10 gauges)	ELTM1020
Heat Shrink Tubing (1 per gauge)	ELTM1050
Cable (4 conductor x 22 AWG, polyurethane jacket 0.250" diameter)	EL380004
AQUASEAL Waterproofing Tape (1/5 gauges)	ELTM1030
TENSMEG Readout	ELTM-QB120

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applications

Measure load and strain in 0.6" (15.2 mm) , 7-wire strands.

Measure load and strain in the bond length of rock and solid anchors.

Measure load and strain in pre-stressed and post-tensioned concrete.

Measure load and strain in cable bolts used as ground support in underground and open pit mines.

features

Excellent linear response and accuracy in a low cost system.

Simple to use and implement on the job site.

Sturdy design with Teflon® coated resistance wire provides ultimate reliability and durability.

Specifications or performance are not compromised when embedded in concrete or surrounded by cement grout .

Water resistant.

optional equipment

flexDAQ Dataloggers

WORKS WITH



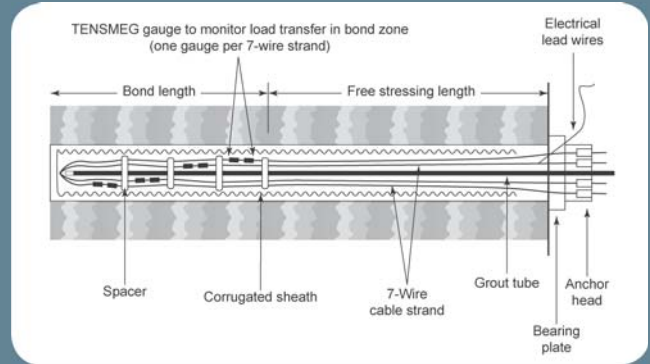


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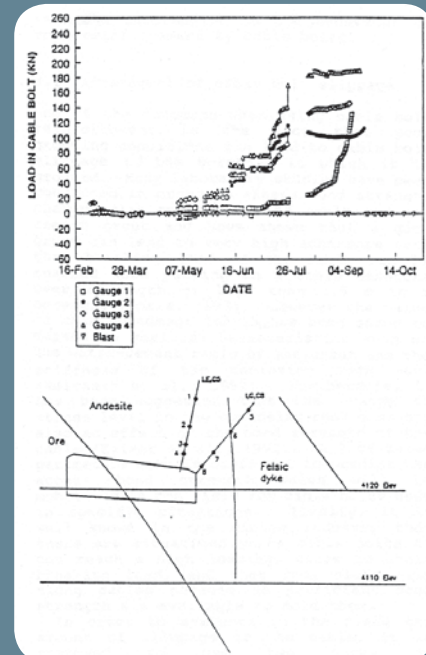
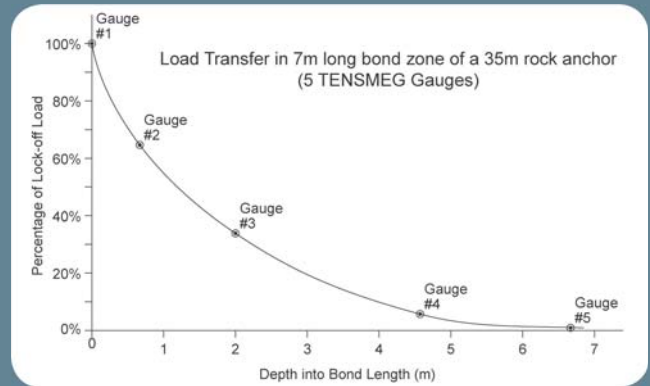
TENSMEG gauge with water proofing installed on one 7-wire strand of a multi-strand anchor.



Layout of TENSMEG gauges in bond zone of DCP (double corrosion protection) multi-strand anchor.



Finished multi-strand anchor with DCP (double corrosion protection) instrumented with 4 TENSMEG gauges.



Load in cable bolt, instrumented with 4 TENSMEG gauges in an underground mining stope.

GEOTECHNICAL . MINING . ENVIRONMENTAL . STRUCTURAL