



SMART ANCHOR X7

Sensor for measuring Tension in mining anchors with AI.



SOLMIN TECH

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EXPERTS IN:

- VIBRATION AND STABILITY MONITORING
- ENVIROMENTAL MONITORING
- STRAIN MONITORING

DESCRIPTION:

An High-Precision Electronic System that allows real-time measurement of TENSION in Anchors and Cables installed in Underground Mining, Dams, Tailings Dams, Slopes, Bridges, and Civil Works/Buildings. Designed to be installed *after* the Anchor / Cable placement (on both newly or previously installed anchors), without the need to modify its form or geometry.

MEASUREMENT SENSOR FROM 0 TO +20 TONS.

TECHNICAL SPECIFICATIONS:

External sensors connect via Wi-Fi and transmit anchor tension readings, providing 24/7 real-time information in the cloud accessible from any device (PC, tablet, smartphone). AI-powered reports. IP65 water and dust protection.

WHAT'S INCLUDED?

- Calibrated Voltage Sensor. WiFi Transmission Module.
- Long Battery Life (24 to 36 months).
- SOLMIN TECH Software for Data Reading.
- Installation Guide and Video.
- Optional: Installation and/or Training.

WHAT IS ON OFFER?

Real-time readings via WiFi (Bluetooth optional). Data logging (by anchor, by zone, by date). Alerts for sudden changes or overloads. Programmable. Data export.

TYPES OF ANCHORS AND CABLES:

- Smooth or Corrugated Bars.
- Threaded or Standard Bars.
- Swellex Anchors.
- Split Set Anchors.
- Suspension Cables, Tie Rods, and Strands.
- Various Lengths and Diameters. Fiberglass Anchors.

KEY BENEFITS:

- **Early Detection of Geotechnical Failures:** Detects deformations, displacements, or accumulated stress in anchors before collapse occurs.
- **Real-Time Stress Monitoring (24/7):** Provides continuous and reliable anchor stress readings via Wi-Fi.
- **Programmable Overload Alerts:** Automatically notifies of sudden changes or overloads, enabling immediate personnel response.
- **Optimized Geotechnical Control:** Improves control without the need for large data loggers or complex wiring.
- **Universal Adaptability:** Easily installed on any type of existing anchor (smooth or corrugated bars, Swellex, Split Set, etc.) without altering their geometry.
- **Minimal Intervention and Maintenance:** The long-life battery (24 to 36 months) minimizes the need for frequent inspections.

NORMS:

Geotechnical Standards for Anchors: By using a Load Cell of 0 to 20 Tons and measuring the tension, the system helps to verify that the installation of the anchors complies with the design and load specifications required for the reinforcement of the rock mass (established by standards such as ASTM, Eurocode 7 or local standards of each country, depending on the location of use).

		C	D	
		Tension (kN)	Tension (kg)	Tension
		70.25	7,163.78	7.1
		110.88	11,304.76	11.1
		150.14	15,315.17	15.1
		185.53	18,820.26	18.8
		95.91	9,780.05	9.7
		175.76	17,908.77	17.1
	03/10/2025	160.09	16,324.96	16.3
30-R1	03/10/2025	80.45	8,203.97	8.2
30-R2	03/10/2025	155.33	15,838.08	15.8
40-R1	03/10/2025	100.17	10,214.35	10.2
40-R2	03/10/2025	145.62	14,849.57	14.8
40-R3	03/10/2025	120.79	12,317.02	12.3
65-C1	03/10/2025	170.94	17,431.13	17.4
65-C2	03/10/2025	90.11	9,188.75	9.1
65-C3	03/10/2025	130.40	13,296.14	13.3
10-C1	03/10/2025	125.33	12,735.24	12.7
10-C2	03/10/2025	75.66	7,716.03	7.7
10-C3	03/10/2025	165.99	16,926.26	16.9
45	03/10/2025	140.24	14,302.85	14.3