



## **Breakthrough in Tension Control Technology!**

Wire and cable makers now have an affordable way to monitor and control tension in individual wires on rotating machines. This technology by FMS is called Radio Transmitted Tension Monitoring (RTM). An RTM System can be easily applied on most planetary or tube stranders, bunchers, twisters, or any rotating machinery.

***What's the secret of the system?*** It sends the signals by radio transmission thus avoiding the many drawbacks of mechanisms such as slip rings (cost, wear, signal noise, installation issues, etc.) and telemetry systems (unidirectional analog data transmission, multi-positional prohibitive cost, etc.). RTM technology is also secure and stable using industry standard BlueTooth technology for signal transmission.

***How does it work?*** The RTM System equipment packages can be configured in various ways to handle nearly any tension measurement or control task. The monitoring system is comprised of tension sensors, tension measuring amplifiers, a bus system with radio transceiver, and software. All of the components are specially designed by FMS for rotating applications (not effected by centrifugal and coriolis forces based on accelerations up to 40g). A wide range of tension sensors are available for any tension requirement, and if closed loop control is required, digital controllers are used instead of measuring amplifiers. The RTM System is powered by 24VDC and is reliable, accurate, economical, easy to operate, and virtually maintenance-free.

***What if I don't have power on the rotating portion of my machine?*** The RTM rechargeable Battery Power Pack option comes in three different sizes (and power duration), includes a power monitoring system, and is easily combined with the signal transmitter on one plate for easy mounting. The transmitter sends the power signal to the PC for onscreen display of the remaining battery life. Battery life depends on the number of sensor positions on the machine but the Battery Power Packs are designed to produce a minimum of 1 shift of power (8 hours). The batteries are completely rechargeable, reusable, and changeable in only a few seconds.

***How about retrofitting older machines?*** The RTM system can easily be used with existing equipment as it bolts down in a small footprint, utilizes standard FMS load cells and amplifiers, and runs on PC software so a new PLC installation is not required to utilize the system.

***What if my machine has numerous tension positions?*** The RTM System digitally monitors tension in real time on up to 32 individual positions and displays the values on a PC screen. The software also includes data logging for each position and records minimum and maximum values for quality assurances purposes. There is also an option available to log data based on feet or meter measurements.



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***How about tension control?*** Tension control is easy utilizing the PC or an output card. The amplifiers or controllers can be parameterized from the PC. Controller parameters can be adjusted from the PC while the machine is running. The system can be set-up to provide a warning signal or output or stop the machine immediately in case of a wire break.

The RTM system can pay for itself typically in 1 to 2 years by reducing material breaks and eliminating overstressing and excessive slack in wires and cables. Therefore overall finished product throughput is increased. The RTM System also improves the overall quality of the products produced and can open a wire and cable manufacturer up to new markets that demand documented and verifiable manufacturing condition products. Many RTM systems are currently in operation throughout the world.

The RTM is the first radio transmitted system in the world designed specifically for the wire and cable industry. It was developed by FMS Force Measuring Systems AG, a Swiss company that designs and manufactures precision devices and systems for tension measurement and control in the wire and cable industry, especially for rotating machinery applications. The company, founded in 1993, has offices in Switzerland, Germany, Italy, the UK, and the USA.

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