

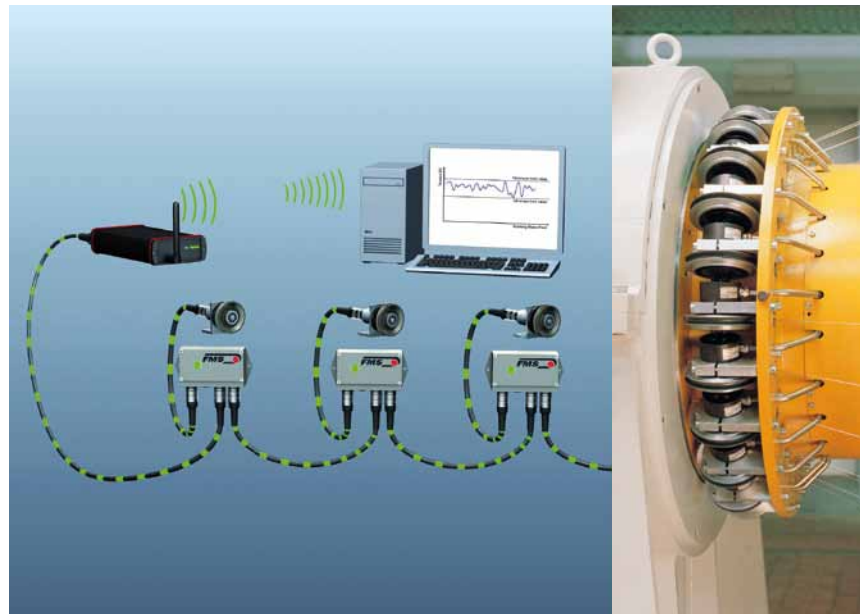
RTM 01 / RTM 02 Wireless Tension Monitoring System

Monitors tension in individual strands.
Force limits and wire break detection capability
Increases production yield and machine efficiency

Wireless transmission over Bluetooth®
Secure data link with ranges over 30 m

Powerful Control and Processing Unit
Generates tension data logs and quality reports

Fully consistent system from its electronics components to the dedicated load cells
Easy retrofit of existing stranding machines



● RTM 01 / RTM 02 System

FMS' **R**adio Transmitted **T**ension **M**onitoring (RTM) system is designed with fully compatible components to improve production rates and product quality on rotating strand-handling machinery.

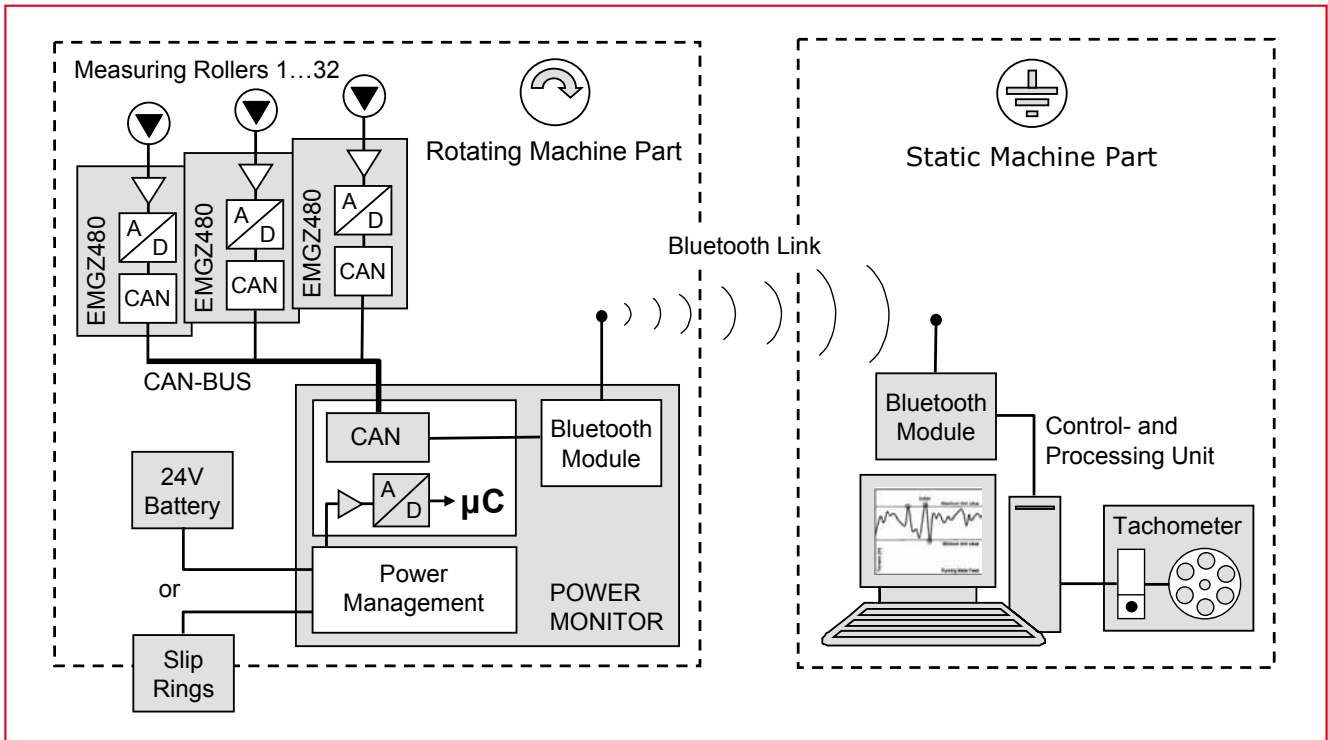
The system utilizes load cells to obtain a force measurement signal from individual material strands. Thanks to the powerful Control and Processing Unit the tension data is collected, processed, analyzed, and stored. It can be printed in the form of a record file, histogram, or raw data log. The records enable you to analyze and optimize the production process. The RTM01 and RTM02 systems are suitable for use by OEMs on new machinery or by integrators/end users for use in upgrading existing machinery.

● Functional Description

Main tasks of the RTM system:

- Tension data is captured, conditioned and sent wirelessly to the Control and Processing Unit.
- The RTM.PowerMonitor establishes the radio link between sensor amplifiers EMGZ 480.M16 (Slaves) and control unit (Master). It handles all power supply management tasks.
- The Control and Processing Unit (with RTM software) controls the data link and undertakes data logging, printing, and display.
- The Control Unit is the man/machine interface for parameter setting and operation of the RTM system.
- Violations of min./max. force limits, as set for each individual strand, can be detected and be used to improve production operations.

RTM 01 / RTM 02 • Block Diagram



PowerMonitor
Monitoring / Radio Link



- Bluetooth link between rotating and static machine parts
- Display of Operating Status
- Power Supply Management

EMGZ 480
Measuring Amplifier



- Amplification and Conditioning of Force Sensor Signals
- CAN-Bus-Device

RMGZ Series
Force Sensors



- Dedicated series of measuring rollers covering a tension range of 6...8000 N
- Engineered to work in rotating applications

Battery and Charger
Power Supply RTM01



- 24 V Batteries available as 4, 8, 12, 16 Ah Packs
- Battery Charger

Control and Processing Unit
Tension Data Management



- Parameter Setting
- Data Memory
- Data Logging and Printing
- Display of Tension Data

Bluetooth-Dongle
Bluetooth USB Module



- Bluetooth Radio Link
- Connects to USB Port of the Control and Processing Unit

RTM-Systems	
RTM 01	Battery based 24 VDC system, sized to suit application
RTM 02	External 24 VDC power supply over slip rings

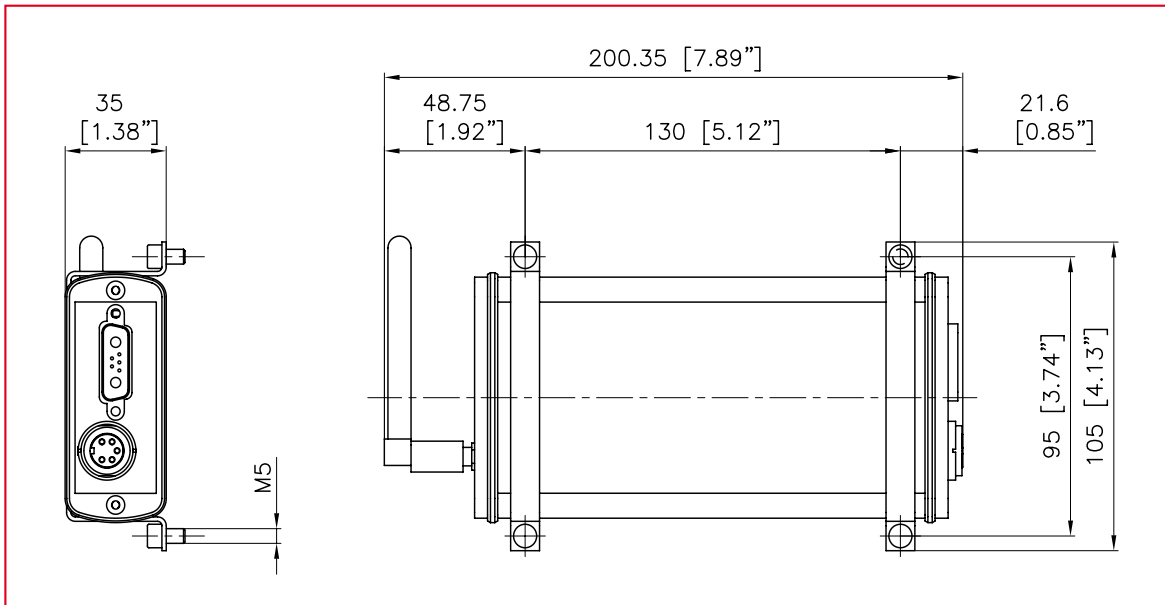
PowerMonitor • Technical Specification	
Number of Measuring Points	1...32
Display	Operating status over 4 LEDs
Power Supply	24 VDC (18...36 VDC); max. 120 mA
Wireless Interface	Bluetooth V2.0, Class 1 / +16.9 dBm
Carrier Frequency	2.44 GHz
Baud Rate/ Radio Interval	250 kBit/s; 50 ms
Temperature Range	-10...60 °C [14...140 °F]
Protection Class	IP 50
Weight	0.38 kg [0.84 lbs]

EMGZ 480 • Technical Specification	
Supply of Force Sensors	5 VDC
Analogue Input	0...9 mV (12.5 mV max.)
Max. Measuring Error	< 0.05 % FS max.
Cycle Time of Measurement	2 ms
System Interface	CAN CiA-DS 301 Slave
Power Supply (amplifier)	24 VDC (18...36 VDC), 50 mA max.
Temperature Range	-10...60 °C [14...140 °F]
Protection Class	IP 67
Weight	0.30 kg [0.66 lbs]

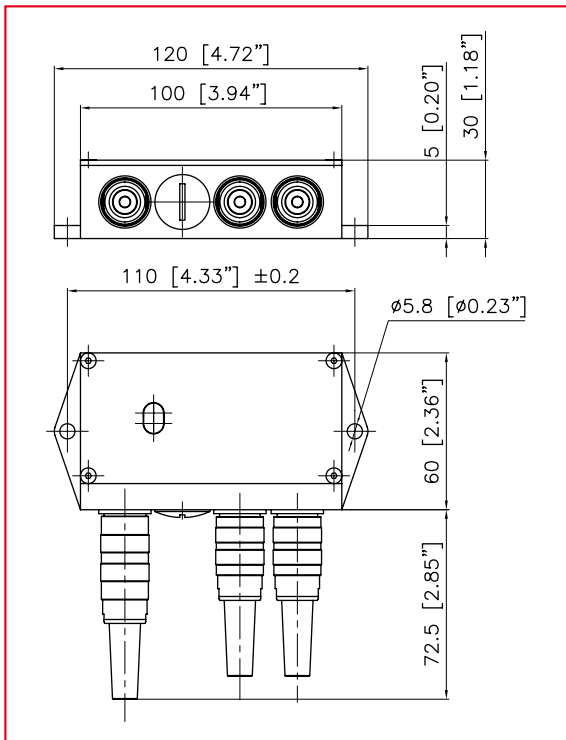
RTM Control and Processing Unit • Technical Specification	
Control and Processing Unit	Twister – CV763 A-4R10C fanless; 1 GHz CPU or equivalent unit
Ports (min. requirements)	VGA, 4 x LAN, 10/100 Mbit, 2 x PCMCIA, 2 x USB, 1 x PCI
Memory (min. requirements)	DDR2 RAM PC 533 1024 MB
Operating System/ Software	Windows XP Professional / Excel 2007
Bluetooth Dongle	BlueFRITZ USB, BT Class 1 range or equivalent
Dig. I/O-card (optional)	PCI-7250 (G)
Monitor	19" screen
Keyboard/ Mouse	USA PS/2.USB / mouse PS/2.USB
Weight	7.70 kg [17 lbs]

RTM 01 Battery Packs • Technical Specification	
RTM-Powerpack 04	Capacity: 4 Ah, Weight: 2.8 kg [6.2 lbs]
RTM-Powerpack 08	Capacity: 8 Ah, Weight: 4.2 kg [9.25 lbs]
RTM-Powerpack 12	Capacity: 12 Ah, Weight: 6.3 kg [13.9 lbs]
RTM-Powerpack 16	Capacity: 16 Ah, Weight: 8.6 kg [18.9 lbs]
Battery Charger	Weight: 5.6 kg [12.3 lbs]

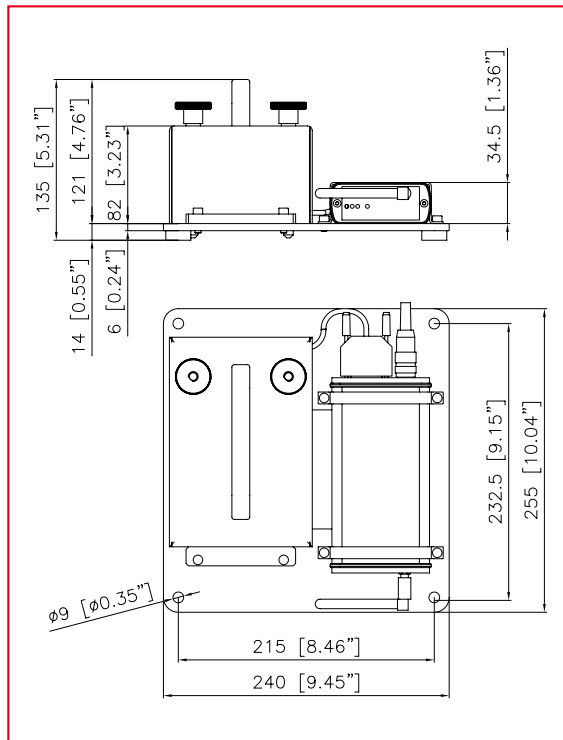
Power Monitor • Dimensions in mm [in]



EMGZ 480 Amplifier • Dimensions in mm [in]



RTM01 Base plate (8 Ah) • Dimensions in mm [in]



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