RTM X2 2-Channel Wireless Tension Control System

Fully consistent system from its electronics to the dedicated load cells
Easy retrofit in existing bunchers or twisters

Wireless transmission in the 2.4 GHz band
Secure date link up to 30 m

Force limits and wire break detection capability
Increases production yield and machine efficiency

Connectivity with PLC or equivalent devices
Provides tension control capability

RTM X2 System

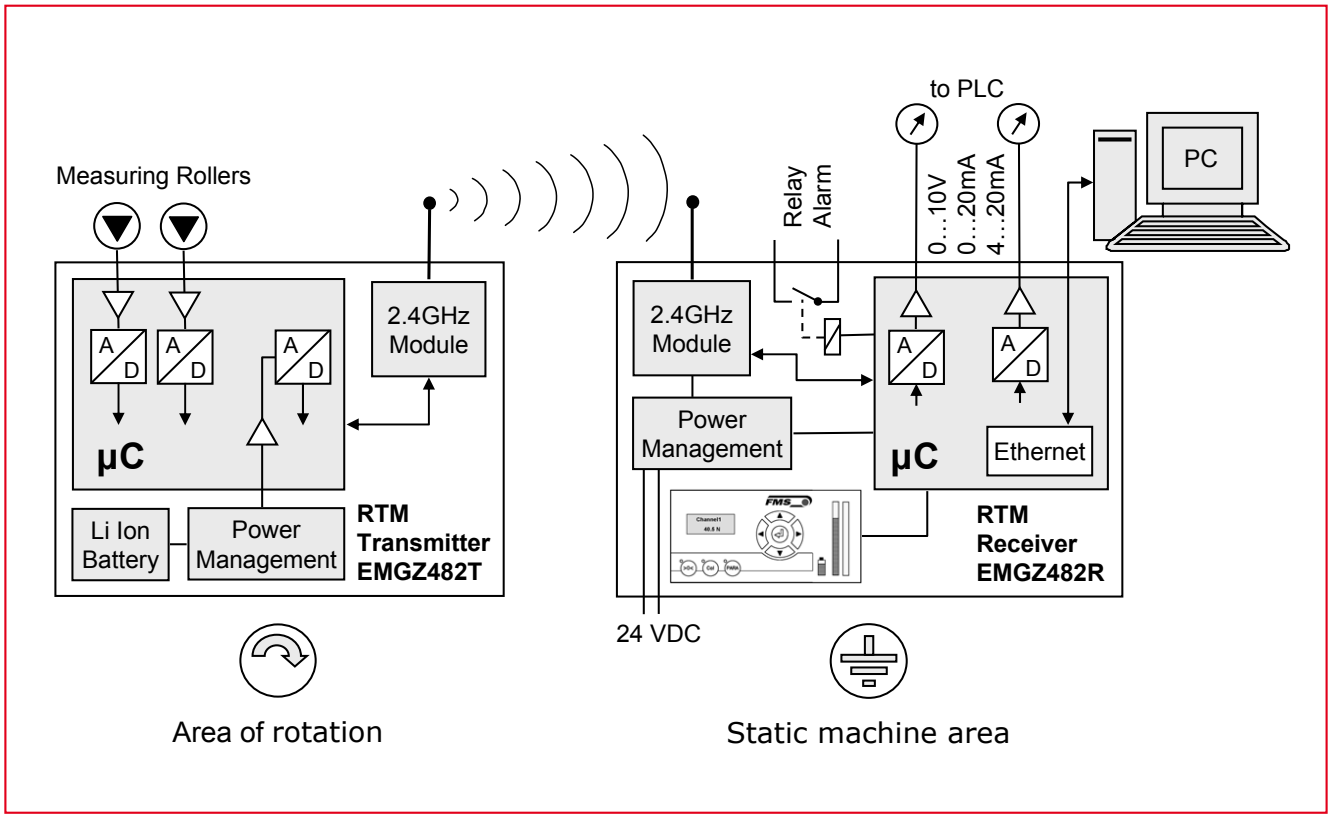
FMS' "Radio Transmitted Tension Monitoring" System RTM X2 is a fully consistent system from its electronics to the dedicated load cells. It has been developed to provide for the efficient and accurate measurement, processing, transmission, and evaluation of material tension values on rotating Wire Processing Machinery.
The expandable features of the RTM X2 System makes it ideal for applications in Bunchers and Twisters.
The System can be utilized in either a stand alone configuration or integrated with an existing PLC, and thus is suitable for use by OEMs on New Machinery or by Integrators/End Users when upgrading Existing Machinery.

Functional Description

The RTM X2 System consists of a Transmitter, a Receiver unit and the Force Measuring Rollers. From the rollers captured tension data is amplified and fed directly to a high resolution A/D-converter. The Transmitter unit EMGZ 482 T is responsible for processing and transmitting the feedback values wirelessly and in real-time to a Receiver/Processing unit. This later unit EMGZ 482 R displays the tension data numerically on a LCD in [N], [lbs] or another chosen unit. The wire tension can also be monitored visually by means of two LED displays. Two analogue outputs can interface a PLC or equivalent devices for controlling purposes.

Force limits or wire breaks are detected and can trigger alarms or emergency stops via two relays outputs.

RTM X2 ● Block Diagram



EMGZ 482 T Transmitter

Signal conditioning and wireless transmission

- Reliable 2-channel amplifier for 2 force sensors
- Wireless transmission in the 2.4 GHz band
- Highly stable force sensor power supply
- Power supply via battery or slip rings
- Lowest power consumption with a battery autonomy of up to 150 h

EMGZ 482 R Receiver

Parameter setting. Wireless reception and force monitoring

- User friendly operation panel with 2-line LCD
- LED Bar graph indicates real time force for each channel
- Battery charge level indication
- Connectivity with PLC (0...10 V and 0/4...20 mA)
- Parameter setting via front panel and web browser

RMGZ-Series

Force measuring rollers for wire processing machinery

- Four dedicated series of measuring rollers covering a tension range of 6...8000 N
- Engineered to work in rotating applications
- Largely insensitive against centrifugal and coriolis forces
- 10 times overload protection
- Extremely durable and corrosion resistant

EMGZ 482T Series • Technical data

Number of Channel	2 channels for 2 sensors
Measuring error	<0.05 % FS
Sensor Supply	3.0 VDC, max. 60 mA, high stability
Power supply	3.7 V battery Li Ion (6.7 Ah) or 24 VDC via slip rings (18...36 VDC/10 W max. 0.5 A)
Resolution A/D converter	±8192 Digit (14 Bit)
Options	EMGZ 482T.24 V for 24 V supply via slip rings
Wireless Interface	2.44 GHz
Analogue input 1	1 sensor with strain gauges @ 350 Ω (0...9 mV, max. 12.5 mV) or (0...6.7 mV, max. 9.2 mV)
Analogue input 2	1 sensor with strain gauges @ 350 Ω (0...9 mV, max. 12.5 mV) or (0...6.7 mV, max. 9.2 mV)
Temperature range	– 10...60 °C [14...140 °F]
Protection class	IP 50
Weight	0.52 kg [1.15 lbs]

EMGZ 482R Series • Technical data

Number of Channel	2 channels
Displays	LCD 2 x 8 characters (8 mm) 2 LED rows for tension indication Battery load indicator
Cycle time of measurement	2 ms
Resolution D/A converter	±8192 Digit (14 Bit)
Control interface	Ethernet via web browser (Ethernet explorer 7 or higher)
Wireless Interface	2.44 GHz
Analogue output 1	0...10 VDC; min. 1.2 kΩ or 0/4...20 mA, max. 500 Ω
Analogue output 2	0...10 VDC; min. 1.2 kΩ or 0/4...20 mA, max. 500 Ω
Relay outputs	2 Relay contacts; DC: 48 V/1 A
Power supply	24 VDC (18...36 VDC) / 10 W (max. 0.5 A)
Temperature range	– 10...60 °C [14...140 °F]
Protection class	IP 50
Weight	0.65 kg [1.43 lbs]

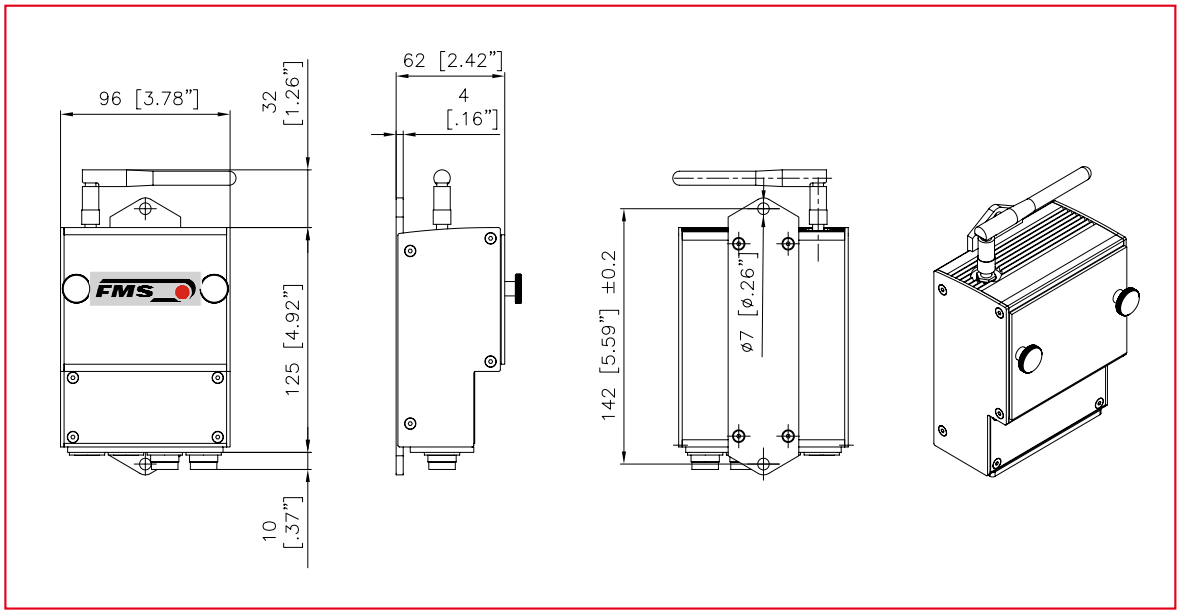
RTM X2 System • Radio Certification

Magnitude of Test (Coverage)	Article 3.2 of Directive 1999/5/EC (R&TTE Directive)
Certification	ETSI EN 300 440-2 V1.5.1 (2009-03) ETSI EN 300 440-1 V1.3.1 (2009-03)

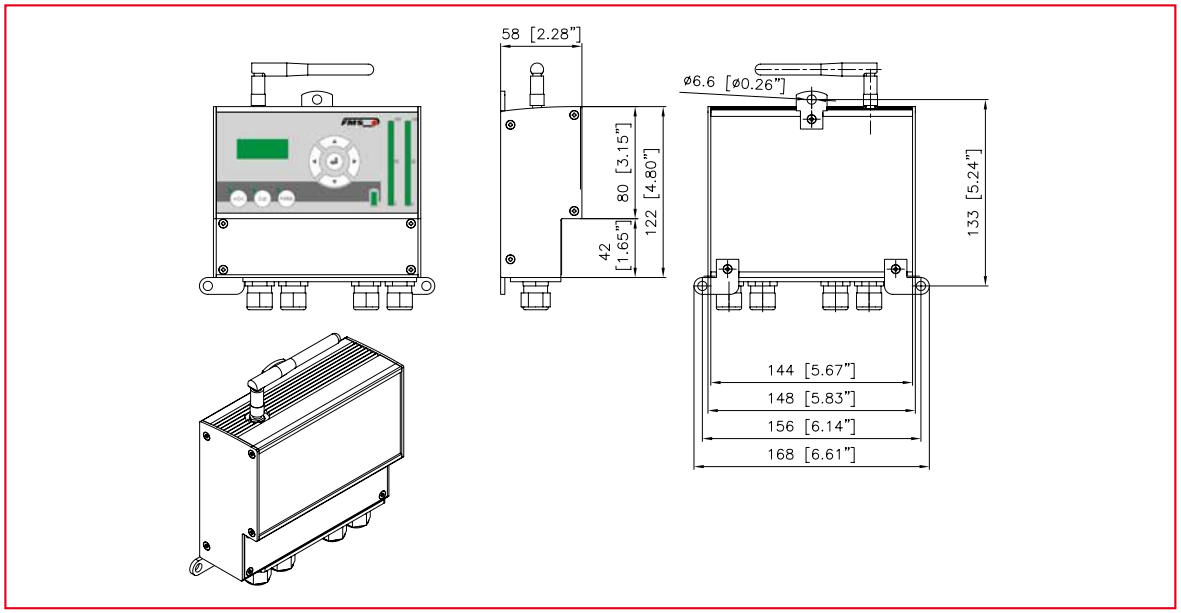
RTM X2 System • EMC Certification

Magnitude of Test (Coverage)	ECM-Test according to 98/37/EC and 2004/108/EC harmonized
Emission and Immunity Test	ETSI EN 489-3 EN 61326-1

EMGZ 482.T RTM X2 Transmitter, Outline Drawing • Dimensions in mm or [in]



EMGZ 482.R RTM X2 Receiver, Outline Drawing • Dimensions in mm or [in]



World Headquarters:
FMS Force Measuring Systems AG
Aspstrasse 6
8154 Oberglatt (Switzerland)
Phone + 41 44 852 80 80
Fax + 41 44 850 60 06
info@fms-technology.com

FMS USA, Inc.
2155 Stonington Avenue
Suite 119
Hoffman Estates, IL 60169
Phone + 1 847 519 4400
Fax + 1 847 519 4401
fmsusa@fms-technology.com

FMS UK
Highfield, Atch Lench Road
Church Lench
Evesham WR 11 4UG
Phone + 44 1386 871023
Fax + 44 1386 871021
fmsuk@fms-technology.com

FMS Italy
Via Baranzate 67
20026 Novate Milanese
Phone + 39 02 39487035
Fax + 39 02 39487035
fmsit@fms-technology.com

www.fms-technology.com