

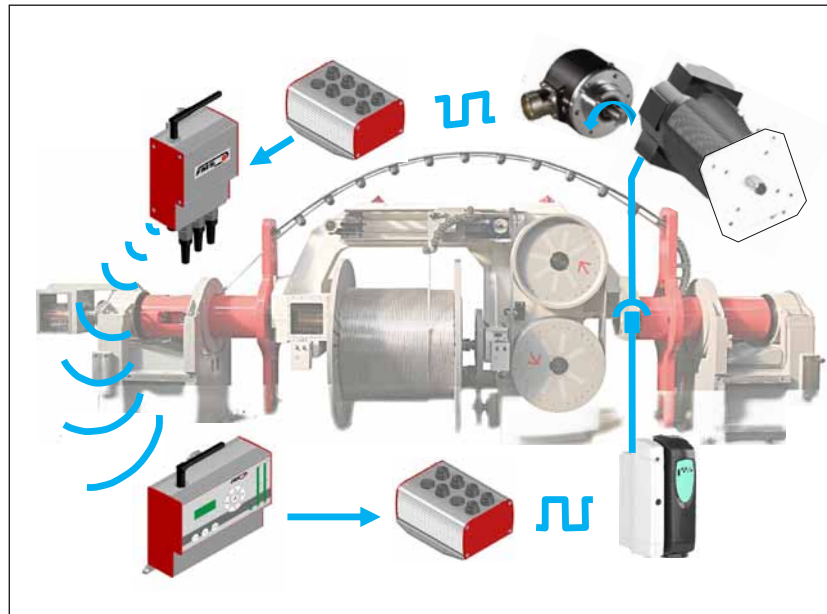
RTM X2.MP Radio Based Encoder Signal Transmission for Wire Control Systems

Optimised for Controlling Bow Type Stranding Machines (Bunchers and Twisters) via a PLC
Straightforward integration into the existing control infrastructure of the machine

Radio Transmission and Processing of Encoder signals and Wire Tension Data
Close loop control of drives and traverse guides in individual bobbins

Controlled Wire Tension
Increases production yield and machine efficiency

Wireless transmission in the 2.4 GHz band
Secure data link up to 30 m,
no slip rings necessary



● RTM X2.MP

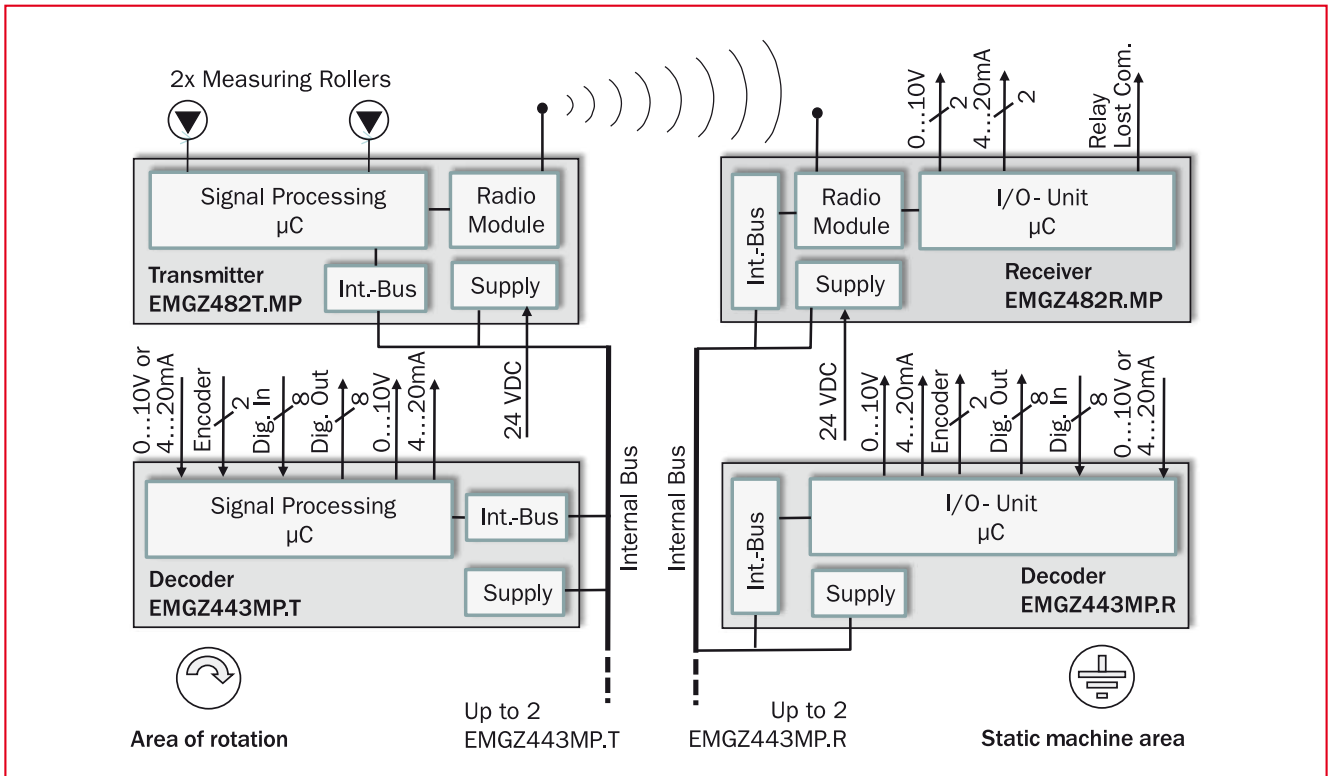
FMS' RTM X2.MP System has been developed to accurately measure, evaluate and transmit all kind of production relevant parameters in Wire Processing Machinery. A fully equipped system can handle up to 16 digital inputs, 16 digital outputs, one analogue input, one analogue output, two force measuring rollers and 4 encoder channels. The later can e.g. be used for close loop control of drives and the control of the traverse guides in individual bobbins.

RTM X2.MP is a compelling solution for use by OEMs on New Machinery.

● Functional Description

The RTM X2.MP System consists of transmitter, receiver, decoding modules and the force measuring rollers. Encoder signals and wire tension values are captured, conditioned and sent over a 2.4 GHz wireless link to the receiver unit EMGZ 482R.MP. Further processing of the encoder signals takes place in the decoding module EMGZ443MP.R. Here all relevant data for the actuator drivers or the machine control is available.

RTM X2.MP • Block Diagram

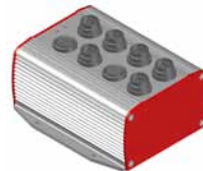


EMGZ 482 T.MP.24 VDC Transmitter



- Amplifier for 2 force measuring rollers
- Wireless transmission in the 2.4 GHz band
- Power supply via battery or slip rings (24 VDC)
- Bus-interface to EMGZ 443MP.T

EMGZ 443MP.T Decoding Transmitter Side



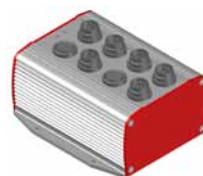
- 2 x Encoder Inputs
- 1 x analogue output 0...10V or 4...20 mA
- 1 x analogue input 0...10V or 4...20 mA
- 8 x digital inputs
- 8 x digital outputs

EMGZ 482R.MP Receiver



- Wireless reception
- Bus-interface to EMGZ 443MP.R
- Evaluation of Force Sensor signals

EMGZ 443MP.R Decoding Receiver Side



- 2 x Encoder outputs
- 1 x analogue output 0...10V or 4...20 mA
- 1 x analogue input 0...10V or 4...20 mA
- 8 x digital inputs
- 8 x digital outputs

EMGZ 482T.MP.24 VDC • Technical Data

Number of Channel	2 channels for 2 sensors
Measuring error	<0.05 % FS
Sensor Supply	3.0VDC, max. 20 mA, high stability
Power supply	24 VDC via slip rings (18...36VDC/10 W max. 0.5A)
Wireless Interface	2.44 GHz
Resolution A/D-Converter	± 8192 Digit (14 Bit)
Analogue inputs 1 – 2	Each for 1 sensor with strain gauges @ 350 Ω (0...5.4 mV, max. 7.4 mV)
Temperature range	0...50 °C [32...122 °F]
Protection class	IP52
Weight	0.52 kg [1.15 lbs]

EMGZ 482R.MP • Technical Data

Number of Channel	2 channels
Displays	LCD 2 x 8 characters (5 mm) 2 LED rows for tension indication Supply voltage indicator
Propagation delay	5.5 ms
Wireless interface	2.44 GHz
Resolution D/A-Converter	0...4096 (12 Bit)
Analogue inputs 1 – 2 (Force Measuring Rollers)	0...10VDC; min. 1.2 kΩ or 4...20mA, max. 500 Ω
Relay output (radio lost)	1 Relay contact; DC: 24 V/0.5 A/12 W; AC: 24 V/0.5 A/62.12 VA
Power supply	24 VDC (18...36VDC) / 10 W (max. 0.5A)
Temperature range	0...50 °C [32...122 °F]
Protection class	IP52
Weight	0.65 kg [1.43 lbs]

EMGZ 443MP.T and EMGZ 443MP.R • Technical Data

Propagation delay	5.5 ms
Interface	RS 485 Proprietary
Analogue output	0...10 VDC or 4...20mA
Analogue input	0...10 VDC or 4...20mA
Encoder inputs	2 channels max. 100 kHz
Digital outputs	8 outputs; max. 100 mA / output (source)
Digital inputs	8 inputs 5...36 VDC
Power supply	24 VDC (18...36VDC) max. 0.4 A
Encoder power supply	HTL (15...30VDC; max. 2 W)
Power consumption	EMGZ 443MP.R = max. 15 W; EMGZ 443MP.T = max. 10 W
Temperature range	0...50 °C [32...122 °F]
Protection class	IP52
Weight	0.6 kg [1.32 lbs]

RTM X2.MP System • Radio Certification ETSI

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)

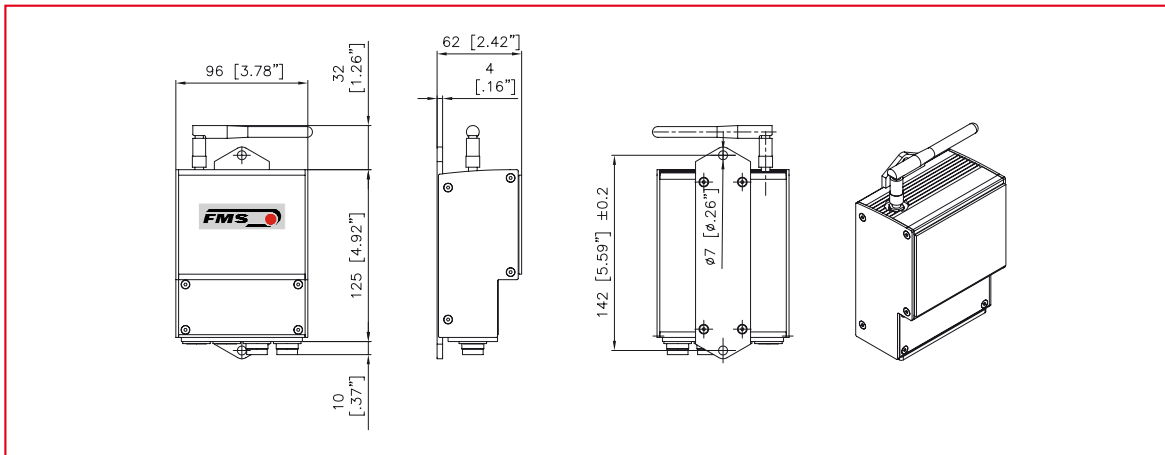
RTM X2.MP System • FCC Certification USA, Canada

Magnitude of Test (Coverage)	Class A digital device, pursuant to Part 15 of the FCC Rules
Certification	FCC Registration #: 0020311882

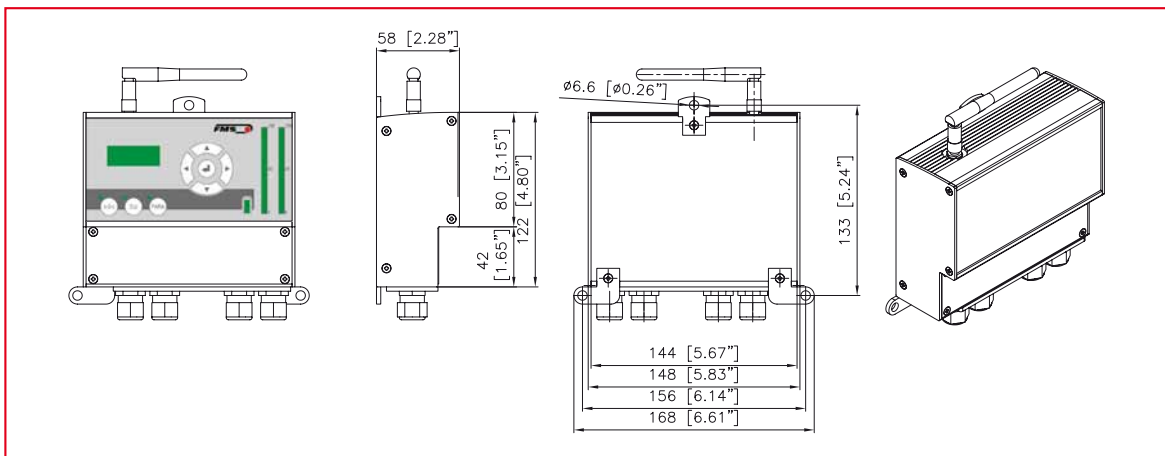
RTM X2.MP System • CAB Radio Certification for Japan

Magnitude of Test (Coverage)	Low power data communi. FXD; Art. 38 – 24, Paragraph 1 of radio law
Certification	Article 2, Clause 1 Item 19, Certification ID #: 202WWSM10126721

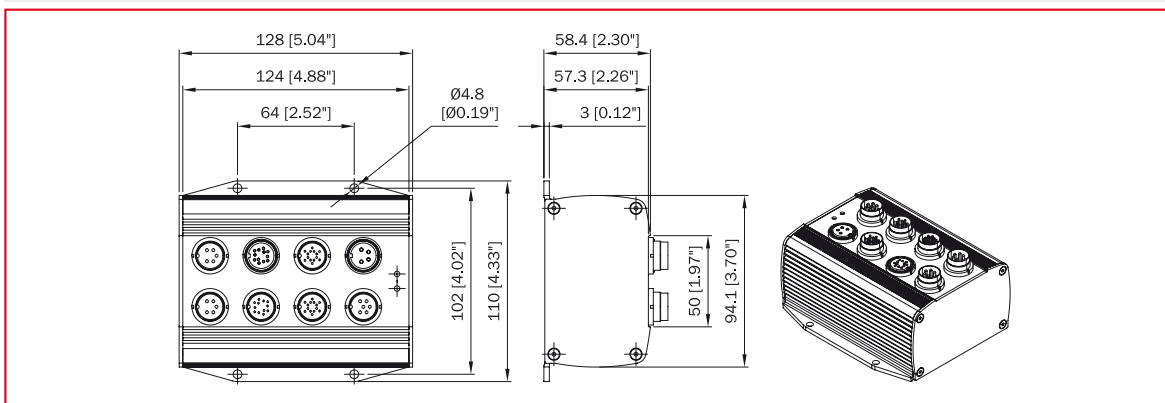
EMGZ 482T.MP.24 VDC Transmitter, Outline Drawing • Dimensions in mm or [in]



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



EMGZ443MP.T and R Decoding Modules, Outline Drawing • Dimensions in mm or [in]



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