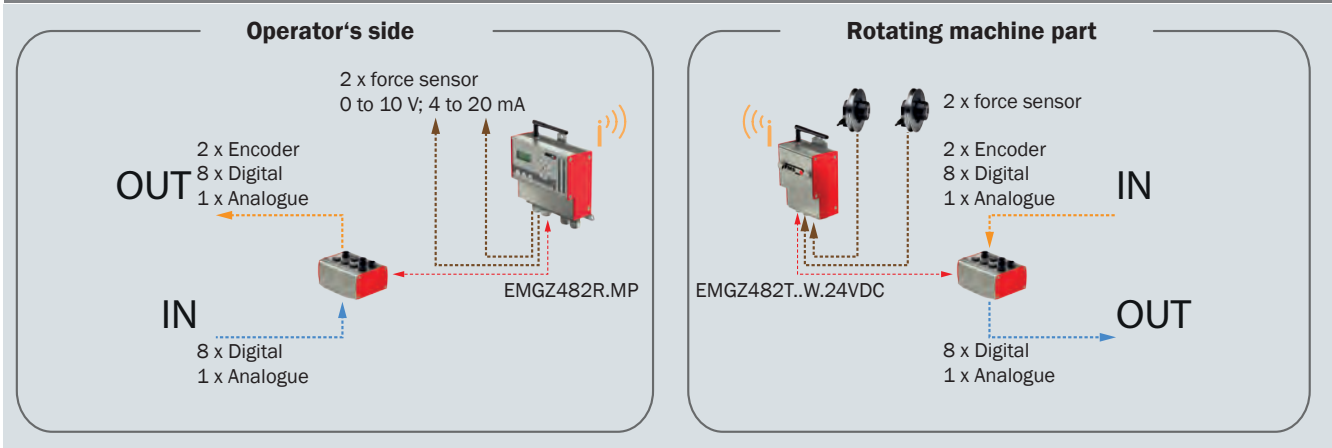


## **RTM MP Compact, wireless signal transmission for rotating machinery**

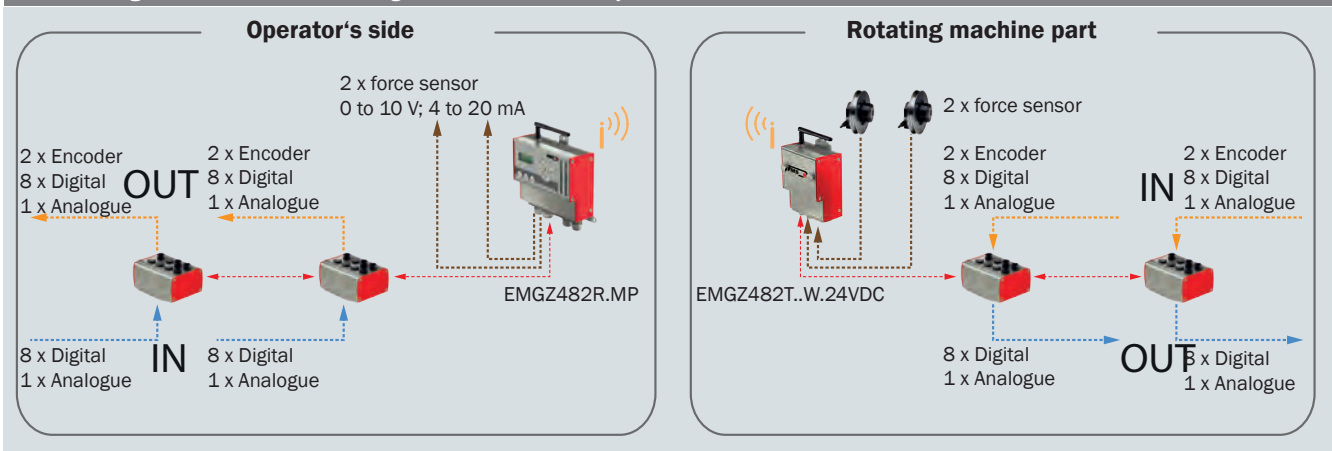
- [illegible]

The main difference between the RTM MP and the RTM MP Plus system concerns the components inside the rotating part of the machine. There is no decoding module required and the housing is much more compact. An internal antenna is installed. The RTM MP system can be extended, the RTM MP Plus cannot be extended.

**RTM MP Signal Transmission : Configuration basic system**



**RTM MP Signal Transmission : Configuration of extended system**



**RTM MP Signal Transmission : Main Components**

**RTM MP Transceiver  
EMGZ482T.24VDC**

located within the rotating machine section



- Inputs
  - 2 x Encoder
  - 1 x Analog
  - 8 x Digital
  - 2 x Force sensor
- Outputs
  - 1 x Analog
  - 8 x Digital
- Integrated measuring amplifiers for the force sensors
- Directly connected to 24 VDC power supply of machine

**RTM MP Sender/Empfänger  
EMGZ482R.MP**

located near the operator's station



- Outputs
  - 2 x Analog (from force sensors)
- Interface to decoding module

**RTM MP Decoding Module  
EMGZ443.MP.R; EMGZ443.MP.T**

one located near the operator's station (R), one in the rotating machine part(T)

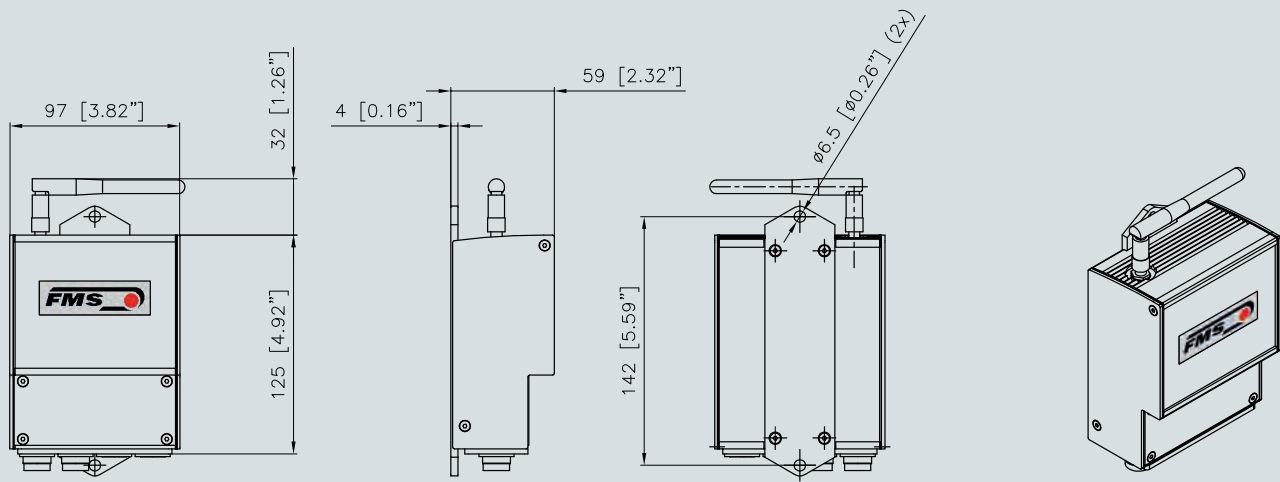


- Outputs
  - 2 x Encoder
  - 1 x Analog
  - 8 x Digital
- Inputs
  - 1 x Analog
  - 8 x Digital

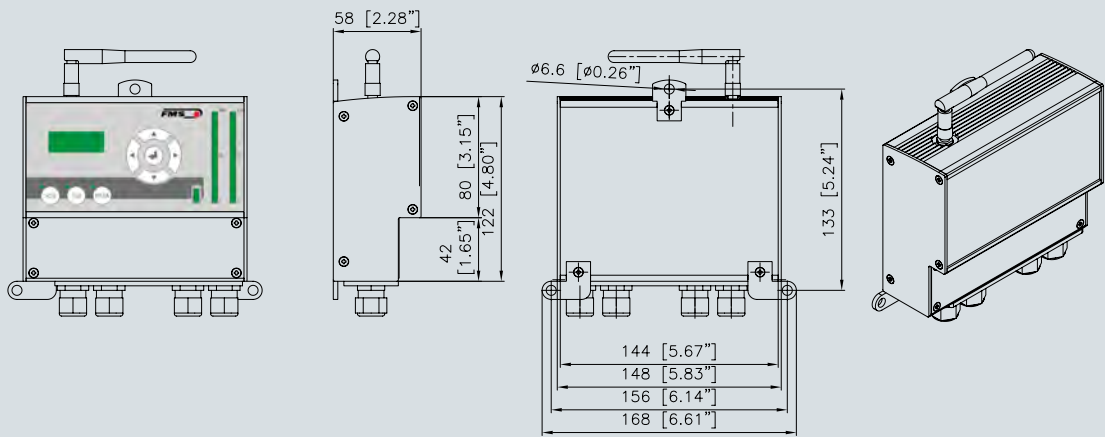
<b>RTM MP transceiver (rotating section) EMGZ 482T.24VDC : Technical Data</b>	
Encoder inputs	2 channels max. 100 kHz
Analog input	0 to 10 VDC or 4 to 20 mA
Force sensor inputs	2 sensors with strain gauges @ 350 $\Omega$ (0 to 5.4 mV, max. 7.4 mV)
Digital input	8 x; 5 to 36 VDC
Digital output	8 x; max. 100 mA / output (source)
Analog output	0 to 10 VDC and 4 to 20 mA
Wireless interface	2.44 GHz
Encoder supply	HTL (15...30 VDC; max. 2 W)
Sensor supply	3.0 VDC, max. 20 mA, highly stable
Power supply	24 VDC (18 to 36 VDC / 10 W max. 0.5 A)
Resolution A/D-converter	$\pm$ 8192 Digit (14 Bit)
Measuring error	< 0.05 % FS
Temperature range	0 to 50 °C [32 to 122 °F]
Protection class	IP 52
Weight	0.52 kg (1.15 lbs.)
<b>RTM MP Transceiver (operator's station) EMGZ 482R.MP : Technical Data</b>	
Force sensor outputs	2 x 0 to 10 VDC or 4 to 20 mA
Relay output (radio lost)	1 relay contact; DC: 24 V / 0.5 A / 12 W; AC: 24 V / 0.5 A / 62.12 VA
Displays	LCD 2 x 8 digits, 5 mm(0.2 in.), 2 LED rows for tension indication Supply voltage indicator
Wireless interface	2.44 GHz
Power supply	24 VDC (18 to 36 VDC) / 10 W (max. 0.5 A)
Propagation delay	5.5 ms
Resolution D/A-converter	0 to 4096 (12 Bit)
Temperature range	0 to 50 °C [32 to 122 °F]
Protection class	IP 52
Weight	0.52 kg (1.15 lbs.)
<b>RTM MP Decoding Module EMGZ 443MP.R and EMGZ 443MP.T : Technical Data</b>	
Encoder outputs	2 channels max. 100 kHz
Analogue outputs	0 to 10 VDC or 4 to 20 mA
Digital outputs	8 outputs; max. 100 mA / output (source)
Digital inputs	Digital inputs 5 to 36 VDC
Analog input	0 to 10 VDC or 4 to 20 mA
Power supply	24 VDC (18 to 36 VDC) max. 0.4 A
Power consumption	max. 15 W
Temperature range	0 to 50 °C [32 to 122 °F]
Protection class	IP52
Weight	0.45 kg (1.0 lbs.)
<b>Radio Certification ETSI</b>	
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)
<b>FCC Certification : USA, Canada</b>	
Testumfang	Class A digital device, pursuant to Part 15 of the FCC Rules
Zertifizierung	FCC Registration #: 0020311882
<b>CAB Funk-Zertifizierung : Japan</b>	
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
<b>Lloyd's Register Zertifizierung</b>	
Magnitude of Test (Coverage)	Appraisal Document No. HTS/ETS 37656-18 Certification
Certification	Lloyd's Register Type Approval Certificate No. 18/20083



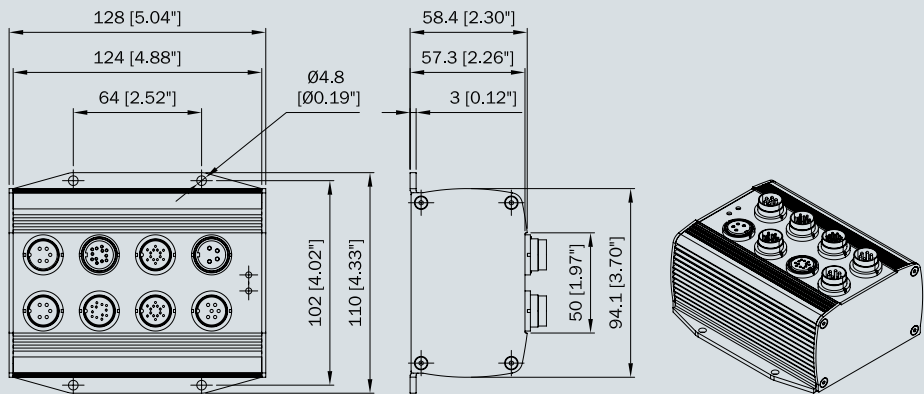
RTM MP Transceiver (rotating section) EMGZ 482T.24VDC : Dimensions in mm (in)



RTM MP Transceiver (operator's station) EMGZ 482R.MP.R : Dimension in mm (in)



RTM MP Decoding Module (operator's station) EMGZ443.MP : Dimensions in mm (in)



RTM MP : Options	
Cable lengths	Standard cable sets are available in 1.5 m (5 ft) or 5 m (16 ft)
Installation and start-up	Our specialst are available upon request
RTM MP : Accessories	
Force sensors	We will be pleased to advise you on the selection of suitable force sensors for strand tension monitoring
Pulleys / sheeves for force sensors	Upon request we can provide design and production

**Telemetry Systems** : Other solutions for the wire & cable industry

**RTM X42 : Strand tension monitoring and control**

- Modular system, easy to retrofit to existing stranding machines
- Fully automated monitoring
- Data display, recipe management and quality protocols with own software
- Uninterrupted, closed-loop strand tension control

The diagram illustrates the RTM X42 system. It features a central stranding machine with multiple strands. Sensors are attached to the strands, connected to a 'Tension Monitoring' unit (RTM X42.Modbus). This unit is linked to a 'Tension Control' unit (RTM X42.BC Brake Control). Both units communicate with a 'local PLC' and a 'gateway'. The system also includes a 'Data display and management' unit (RTM X42.CC Control Center) which is connected to the gateway and provides a visual interface for the operator.

**RTM 10 : Strand tension monitoring up to 10 strands**

- Straightforward system for easy retrofit to existing stranding machines
- Fully automated monitoring
- Simple LCD for tenison values of the 10 channels
- Analogue outputs all channels for further processing, e.g. within the local PLC.

The diagram shows the RTM 10 system. It consists of a stranding machine with sensors monitoring up to 10 strands. These sensors are connected to a 'Tension Monitoring, max. 10 strands' unit (RTM X42 10). This unit is directly connected to a 'local PLC'.

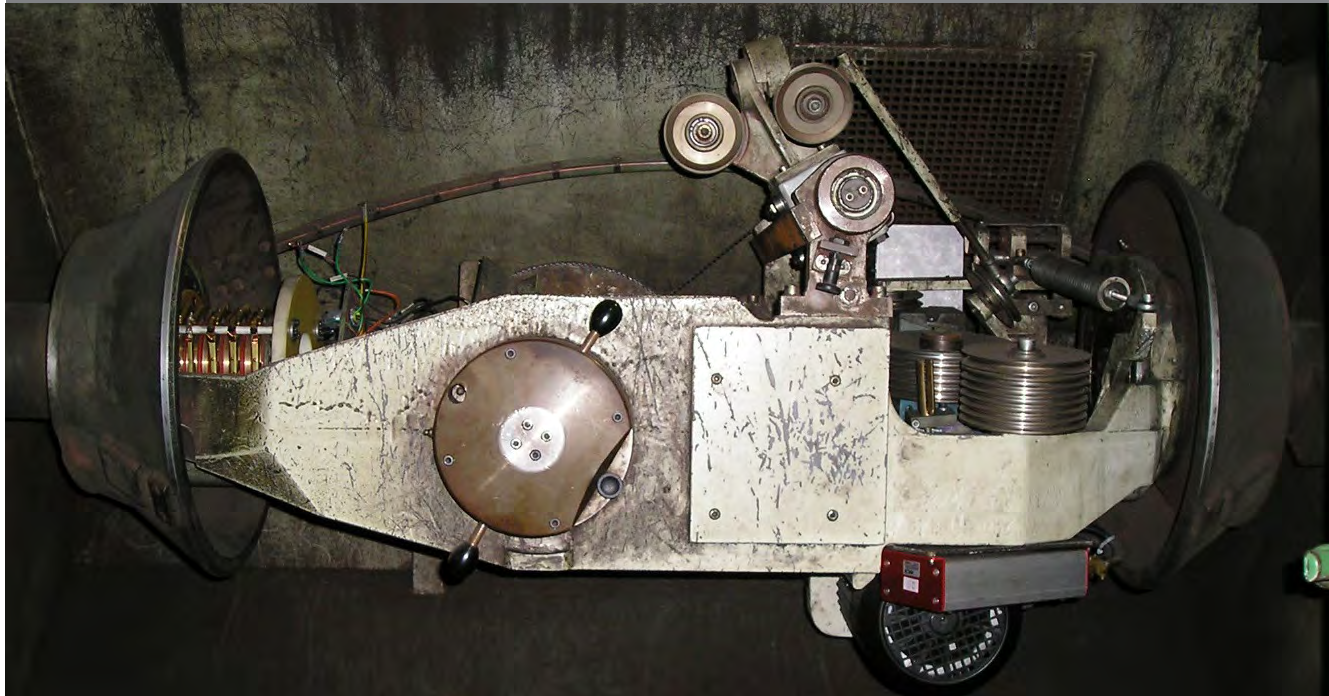
**FMS-cradleGUARD : Reliable safety-monitoring of all cradles**

- Improved machine safety
- Fast troubleshooting, short downtimes
- Easy to retrofit
- Universally applicable, up to 42 cradles

The diagram depicts the FMS-cradleGUARD system. It shows a yellow cradle with a 'wire break' sensor, a 'Pintle lock' sensor, and a 'tilt detection (tubular strander)' sensor. These sensors are connected to an FMS unit, which in turn communicates with a 'PLC' (Programmable Logic Controller) via a wireless signal.







**RTM MP Plus** : Typical application in buncher / twister



**Other FMS products for the Wire & Cable Industry**

FMS offers a wide range of measuring sensors that can be used in combination with our telemetry systems. With numerous styles and available load ratings from 3 to 8000 N, it is likely that we can provide a solution for your application. FMS measuring amplifiers and tension controllers are applicable when wireless data transmission is not required or when wiring of the components is not an issue. You can rely on our years of experience and proven technology in this field. Contact us directly to learn how we are able to assist you with your application..

**Other products** : Accessories

RMGZ200	RMGZ300	Measuring amplifiers	Tension controllers
			

**About us**

FMS Force Measuring Systems AG is the market leader in the field of web tension measurement, control and specialist for web guiding solutions. For the wire industry we are the only manufacturer offering a complete range of technologies for force measurement, data processing and radio transmission of signals. Our in house developed products are used in the manufacturing industry, converting, metals, paper, textiles, as well as in cable and wire rope production. Utilising the latest technology, high quality components and a firm understanding of customer applications, FMS supports customers worldwide in the effort to maximize the productivity of their machines. Since 1993, our highly qualified employees have been creating high-end solutions for machine builders and plant operators. As an owner-managed company, we pride ourselves on being personal and approachable with the ability to make decisive moves fast.

**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 • [www.fms-technology.com](http://www.fms-technology.com)

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