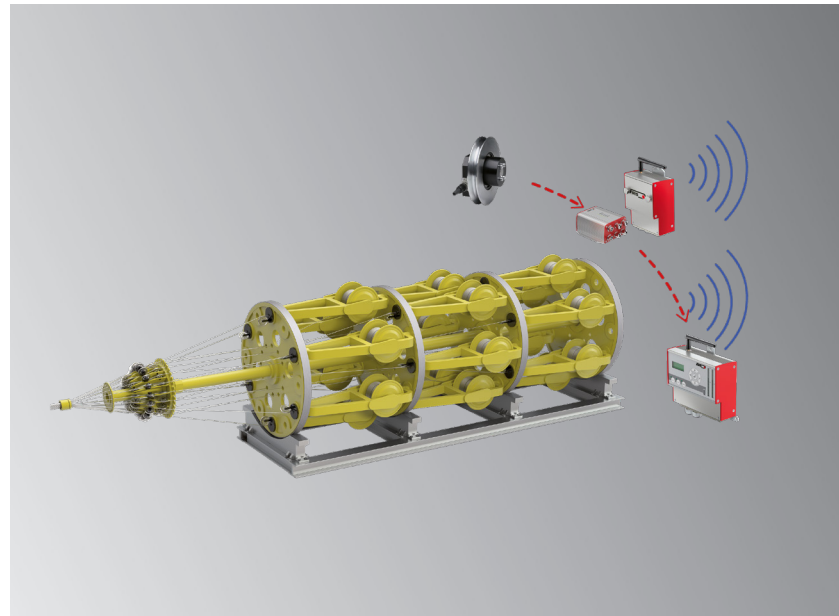


FMS Solutions for Telemetry Systems

RTM IO Telemetry System for Wire Tension Monitoring in Cage and Tubular Stranders – with analogue outputs

- **Continuous Measurement**
Display of measuring values via integrated LED bar graph
- **Increased Product Quality and Efficiency**
Repeatable product quality, increased process safety and quality assurance, shorter downtimes
- **Easy Retrofit, Reliable Data Transmission**
For cage and tubular type stranders of various designs and sizes, no need for slip rings
- **Simple Integration into Existing Control Infrastructure**
Simple installation of the compact components, standardized analogue outputs



RTM IO

The RTM IO Telemetry System provides the tension values of single strands or wires in cage or tubular type stranding machines. All personnel involved in the production environment gain easy access to these important process parameters. For controlling purposes a PLC can be interfaced via analogue outputs. Many OEMs currently deliver their new machines with preinstalled RTM IO systems, but due to the modular concept and the compact components, retrofitting our system to your existing machinery is also straightforward. Reliable radio transmission of the data and optional battery-packs make slip rings obsolete. The typical RTM IO system can handle the measurement of up to 10 individual wires or strands, but it is also possible to interconnect multiple telemetry systems to allow for an unlimited number of force sensors.

Functional Description

The RTM IO system basically consists of a transmitter and a receiver. Depending on the number of force sensors, up to 2 extension modules could be utilized. The wire tension is captured with force sensors in the rotating part of the machine. Integrated electronics process and amplify the signal before it is reliably sent to the receiver that is located outside of the rotating part of the machine. The visualization and the further processing of the measuring data can be carried out via the LED bar graphs in the receiver module or via your PLC.

RTM IO Receiver EMGZ482.R : Technical Data	
Interface to SPS	Standardized analogue outputs
Display	LCD 2 x 8 digits; LED indication of tension readings; Indication of the battery status of the transmitter
Propagation delay	≤ 10 ms
Control interface	Ethernet via web browser (Internet Explorer 7 or higher)
Radio frequency	2.44 GHz
Digital input	24 VDC galvanically isolated (impulse for continuous length registration)
Analog input	0 to 10 VDC, min. 1.2 kΩ, (for core measurement)
Relay outputs (thresholds, alarms)	4 relay contacts, DC: 24 V/0.5 A/12 W, AC: 24 V/62.12 VA
Power supply	24 VDC (18 to 36 VDC) / 10W (max. 0.5 A)
Temperature range	0 to 50 °C (32 to 122 °F)
Protection class	IP52
Weight	0.65 kg (1.43 lbs.)

RTM IO Transmitter EMGZ482.T : Technical Data	
Measuring error	< 0.05% FS
Sensor supply	3.0 VDC, max. 20 mA, highly stable
Power supply	3.7 V Battery Li Ion (20 Ah), optional via existing 24 (18 to 36) VDC power supply
Radio frequency	2.44 GHz
Resolution A/D converter	± 8192 Digit (14 Bit)
Analog inputs	2 for force sensors @ 350 Ω (0 to 5.4 mV, max. 7.4 mV)
Temperature range	0 to 50 °C (32 to 122 °F)
Protection class	IP52
Weight	0.52 kg (1.15 lbs.)

RTM IO Extension Module EMGZ484.T : Technical Data	
Measuring error	< 0.05% FS
Sensor supply force sensor	3.0 VDC, max. 20 mA, highly stable
Power supply	via bus and power cable from transmitter EMGZ482 T
Resolution A/D converter	±8192 Digit (14 Bit)
Analog inputs	for 4 force sensors @ 350Ω (0 to 5.4mV, max. 7.4mV)
Temperature range	0 to 50 °C (32 to 122 °F)
Protection class	IP52
Weight	0.45 kg (1.0 lbs.)

ETSI 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)

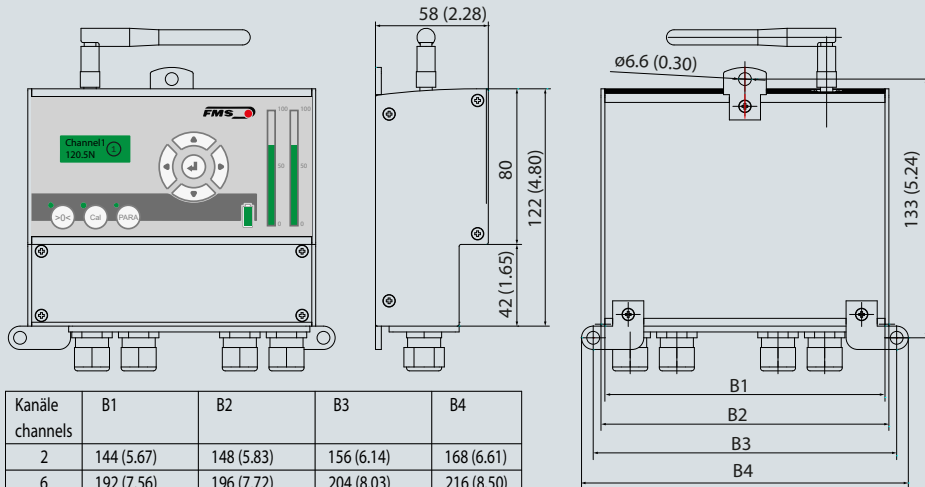
FCC Certification : USA, Canada	
Magnitude of Test (Coverage)	Class A digital device, pursuant to Part 15 of the FCC Rules
Certification	FCC Registration #: 0020311882

CAB Radio Certification : 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

Lloyd's Register Certification	
Magnitude of Test (Coverage)	Appraisal Document No. HTS/ETS 37656-18 Certification
Certification	Lloyd's Register Type Approval Certificate No. 18/20083

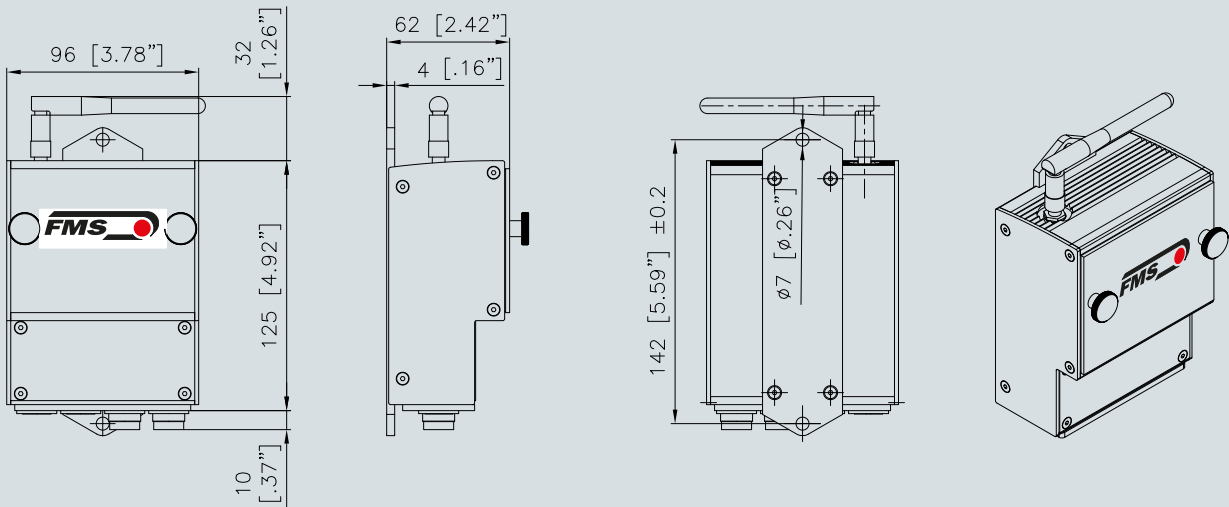


RTM IO Receiver Module EMGZ482.R : Dimensions mm (in.)

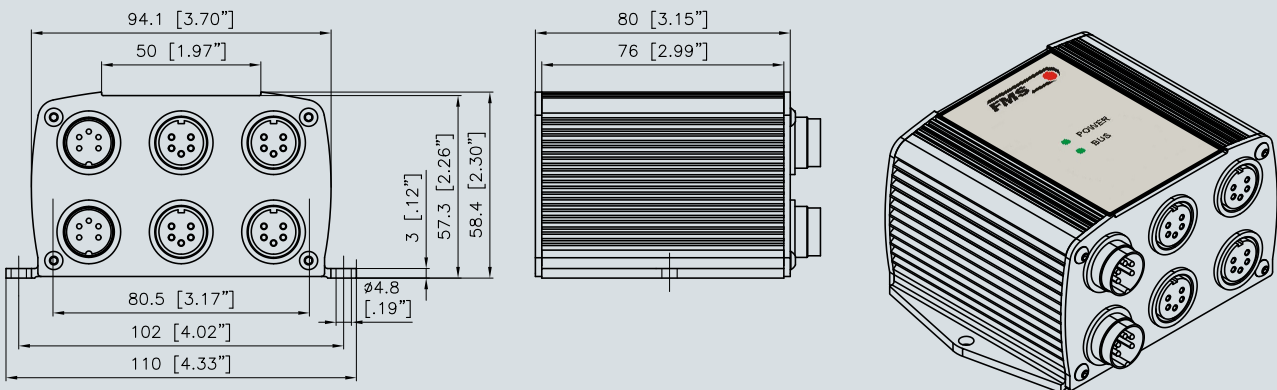


Kanäle channels	B1	B2	B3	B4
2	144 (5.67)	148 (5.83)	156 (6.14)	168 (6.61)
6	192 (7.56)	196 (7.72)	204 (8.03)	216 (8.50)
10	240 (9.45)	244 (9.61)	252 (9.92)	264 (10.39)

RTM IO Transmitter Module EMGZ482.T : Dimensions mm (in.)



RTM IO Extension Module EMGZ484.T : Dimensions mm (in.)



RTM 10 : Typical Application



RTM 10 : Typical Application



Other solutions : Telemetry Systems



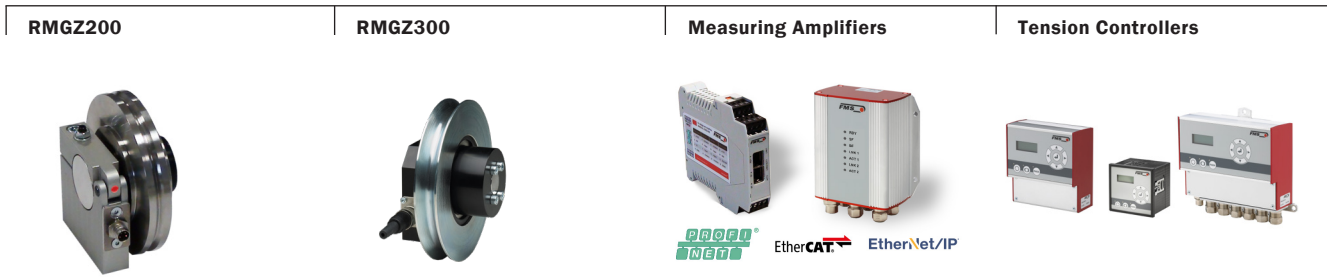
RTM IO : Options

Transmitter with 24VDC power supply	Transmitter w/o battery pack if 24VDC supply is available on the machine
Pulleys for force sensors	Design and manufacturing on request
Installation and start-up	Our specialist offer the best site support

Other FMS Products for the Wire & Cable Industry

FMS offers a wide range of force measuring rollers that can all be used in combination with our telemetry systems. A huge variety of nominal sizes (3 to 8000N) and designs offers solutions for almost any application. FMS measuring amplifiers and tension controllers are applicable when wireless data transmission is not required or when connecting cables between the components are not an issue. Rely on us and our proven technology in this field. Contact us directly to get more information about our portfolio of analog and digital devices as well as our bus capabilities.

Other products : Accessories Measuring Rollers



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.

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