FMS Telemetry Systems

**FMS-cradleGUARD™ Wireless Transmission of Safety Relevant Signals from Cradle to the Operator’s Station**

- **Improved Machine Safety**
  Reliable transmission, without slip rings, standard batteries with long lifetime, optional 24 VDC

- **Fast Troubleshooting, short Downtimes**
  Explicit text messages on which cradle the fault lies, saves time and money

- **Easy to retrofit**
  Compact package can be fit to most machines, robust, sealed aluminum housing

- **Extendable up to 42 Cradles**
  3 independent inputs for pintle lock status, wire break detection, cradle tilt switch, etc.

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**FMS-cradleGUARD**

The FMS-cradleGUARD system was developed to improve safety and decrease downtime on older machinery. The current use of slip rings to obtain signals relating to the pintle lock status and cradle tilt are maintenance intensive and with the limited information provided contribute to production downtime. They are more frequently a source of error rather than a contribution to machine safety. With the FMS-cradleGUARD, the safety relevant signals are transmitted directly from the payo cradle to the operator’s station. The explicit indication of the faulty cradle allows for fast, reliable trouble shooting, and therefore the ability to put the machine back into production as quickly as possible.

**Functional description**

The FMS-cradleGUARD consists of only two components: A transmitter module and a receiver module. The Transmitter Module, FMS-cradleGUARD.T, is mounted at the cradle and includes the power supply (2 each of standard 9 V batteries or 24 VDC power supply), connection terminals for up to 3 switches, and the radio module. Radio frequencies are individually selected to provide operational safety. The Receiver Module, FMS-cradleGUARD.R, is mounted near the operator’s station and indicates the status of the signals from each transmitter module in a clear text message on its large display. Integrated relay outputs can be used to connect to a PLC or to a remote alarming signal. System set up, including the assignment of the transmitter modules to specific cradles, can be performed using the integrated web browser and a connection to a PC. The optional FMS-cradleGUARD software can provide online status indication as well as full system configuration.

www.fms-technology.com
**FMS-cradleGUARD** : System Overview

**FMS-cradleGUARD**

**Main Components**

**FMS-cradleGUARD Receiver module FMS-cradleGUARD.R**
Near the operator’s station, receiving data from the transmitter module

**FMS-cradleGUARD Transmitter module FMS-cradleGUARD.T**
Mounted on the cradle, terminal block for switches and radio chip

- Cleat text indication of error in the display
- 4 freely configurable relay outputs
- Configuration via web browser

- 3 inputs NPN or PNP and NC / NO, freely configurable
- Power supply from (2) 9 V batteries (2400 mAH), optional 24 VDC (18 to 36 VDC)
- Robust mounting brackets on aluminum housing

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**FMS-cradleGUARD.R : ETSI Radio-Certification**

**Test scope**

**Certification**
ETSI EN 300 440-2 V1.5.1 (2009-03); ETSI EN 300 440-1 V1.3.1 (2009-03)

**FMS-cradleGUARD.T : FCC Certification USA, Canada**

**Test scope**
Class A digital device, pursuant to Part 15 of the FCC Rules

**Certification**
FCC Registration #: 0020311882

**FMS-cradleGUARD.T : CAB Radio-Certification for Japan**

**Magnitude of Test (Coverage)**
Low power data commun. FXD; Art. 3B -24, Paragraph 1 of radio law

**Certification**
Article 2, Clause 1 Item 19, Certification ID #: 202WWSM10126721
### FMS-cradleGUARD.T: Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>LCD 2 x 8 Digits (5 mm)</td>
</tr>
<tr>
<td>Propagation delay</td>
<td>8.4 s</td>
</tr>
<tr>
<td>Interface</td>
<td>Ethernet via web browser (Internet Explorer 7 or higher)</td>
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<tr>
<td>Radio interface</td>
<td>2.44 GHz</td>
</tr>
<tr>
<td>Relay outputs</td>
<td>4 relay contacts DC: 24 V / 0.5 A / 12 W; AC: 24 V / 0.5 A / 62.12 VA</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 VDC (18 bis 36 VDC) / 10 W (max. 0.5 A)</td>
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<tr>
<td>Temperature range</td>
<td>0 to 50 °C (32 to 122 °F)</td>
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<tr>
<td>IP protection rating</td>
<td>IP 52</td>
</tr>
<tr>
<td>Weight</td>
<td>0.65 kg (1.43 lbs.)</td>
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</tbody>
</table>

### FMS-cradleGUARD.R: Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>2 x standard 9 V, lithium-metal batteries, total 2400 mAH, optional 24 VDC (18 to 36 VDC)</td>
</tr>
<tr>
<td>Radio interface</td>
<td>2.44 GHz</td>
</tr>
<tr>
<td>IP protection rating</td>
<td>IP 65</td>
</tr>
<tr>
<td>Weight</td>
<td>0.4 kg (0.9 lbs.)</td>
</tr>
</tbody>
</table>

### Receiver FMS-cradleGUARD.T: Dimensions mm (in.)

![Dimensions Diagram](image)

### Receiver FMS-cradleGUARD.R: Dimensions mm (in.)

![Dimensions Diagram](image)

### FMS-cradleGUARD: Scope of supply

- FMS-cradleGUARD receiver module
- FMS-cradleGUARD transmitter module(s), incl. batteries
- operating manual

### FMS-cradleGUARD: Not in scope

- switches (incl. cable)
- installation material

### FMS-cradleGUARD: Accessories

- Ethernet cable (please indicate length)
- installation and start up support (our specialist will support you on request)
- 24 VDC power supply (for FMS-cradleGUARD.R receiver module)
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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DATA SHEET
FMS Telemetry Systems  |  FMS-cradleGUARD