FMS Tension Control / Force Sensors

**RMGZ 300 A Series** Force Measuring Roller

- **Engineered to work in high revolution applications:**
  - Resistant against Centrifugal and Coriolis forces

- **Sheave support by single or double bearing:**
  - High measuring accuracy even with heavy sheaves and high strand tensions

- **20:1 force measuring range:**
  - Wide measuring capability

- **Nominal forces from 50 – 1000 N:**
  - Sizes available for every application

**RMGZ 300 A Series**
The RMGZ 300 A Series force measuring roller is used to measure the tension in wires, cables and similar materials. This dedicated measuring roller family was developed to work in stranding machines with high revolutions. Its special design enables very effectively the compensation of centrifugal and coriolis forces. For applications with high strand tensions the sheave can be supported by two bearings extending considerably the range of usable sheaves and increasing the precision of the product.

**Functional Description**
The RMGZ 300A works according to the dual flexion beam design with a build-in mechanical overload protection. A quadruple foil type strain gauge mounted in a full Wheatstone bridge configuration performs the actual tension measurement. This measuring principal ensures tension measurement with the highest accuracy also for low forces and at small wrap angles. Load dependent torque influences are eliminated even under high loads. The overload protection devices provide a high safety standard and ensure that frequent calibration is not required.
**RMGZ 300 A Series** | **Dimensions in mm and [inch]**

1-bearing support for high revolution applications

2-bearings support for high strand tensions

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Nominal Force N</th>
<th>G-limits * g</th>
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</thead>
<tbody>
<tr>
<td>RMGZ 315 A</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>RMGZ 321 A</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>RMGZ 322 A</td>
<td>200</td>
<td>56</td>
</tr>
<tr>
<td>RMGZ 325 A</td>
<td>500</td>
<td>90</td>
</tr>
<tr>
<td>RMGZ 331 A</td>
<td>1000</td>
<td>125</td>
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</tbody>
</table>

* with a sheave weight of 1 kg [2.2 lbs]

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**RMGZ 300 A Series** | **Forces**

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Option</th>
<th>RMGZ325A. H14.H25</th>
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<tbody>
<tr>
<td>RMGZ 300 A</td>
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**RMGZ 300 A** | **Texture of the order code**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>H14</td>
<td>Right angle connector</td>
</tr>
<tr>
<td>H15</td>
<td>Red point left (ref. drawing)</td>
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<tr>
<td>H21</td>
<td>PG-gland connection</td>
</tr>
<tr>
<td>H23</td>
<td>2 bearings 61812</td>
</tr>
<tr>
<td>H25</td>
<td>Connector left (ref. drawing)</td>
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</tbody>
</table>

**RMGZ 300 A** | **Options**

- 1 Force measuring roller
- 1 Bearing 61812
- 1 Distance ring and snap ring
- 1 Straight connector

**RMGZ 300 A** | **Scope of delivery**

- Sheave

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**Technical data**

- **Sensitivity**: 1.8 mV/V
- **Sensitivity tolerance**: < ±0.2 %
- **Accuracy class**: ±0.3 % (F<sub>nominal</sub>)
- **Temperature coefficient**: ±0.1%/10 K
- **Temperature range**: –10…+60 °C
- **Input resistance**: 350 Ω
- **Supply voltage**: 1…12 VDC
- **Maximum overload**: 10 times rated nominal force
- **Sensor material**: Stainless steel
- **Sheave Support**: 1 or 2 bearings
- **Protection class**: IP 40
- **Weight**: 0.6 kg [1.32 lbs]

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All data have been prepared and checked carefully. However, we cannot assume liability for any errors or incompleteness. Subject to modifications serving progress.

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