FMS Tension Control / Force Sensors

**CA-Series** Compact force sensors with flexible installation options for use with dead shaft rolls

- For machines with restricted installation space
  Compact dimensions and various installation options

- For a wide range of applications
  Nominal force ratings from 50 to 1'500 N (110 to 330 lbf.)

- No need to change a standard machine design for special applications
  Options include high temperature and vacuum chamber construction

- Precise measuring results
  Measuring range 30:1
  Accuracy class ±0.5%

- Robust and durable
  Overload protection rating of 10-times nominal force, stainless steel sensor body

**CA-Series**
The CA-Series force measuring sensor offers compact dimensions and flexible installation options, and is designed for the measurement of tension on continuous material processing lines where dead shaft idler rolls are utilized. The product can be supplied with a Pilot or without a Pilot at the back the unit. In addition, flexible mounting options include the ability to install the unit utilizing either four fasteners from the front or a single fastener from the rear. The included dowel pin can also be incorporated between force measuring bearing and the machine frame to ensure proper unit orientation. For installations where a Pillow Block mount is required the optional bracket can be utilized. Adapter diameters are available in various dimension, in metric as well as in imperial sizes.

**Functional description**
The CA-Series force measuring sensor combines the bracket for the dead shaft idler roll and the force sensor within the same housing, thus minimizing the required installation space. The substantial overload protection translates to eliminated/minimized.
CA-Series: Dimensions

CA-Series: Nominal forces, Total deflection

CA-Series: Diameter, Weight

CA-Series: Mounting options
**CA-Series: Technical data**

- **Sensitivity**: 1.8 mV/V
- **Tolerance of sensitivity**: < ±2%
- **Accuracy class**: ±0.5% (F<sub>Nom</sub>)
- **Temperature coefficient**: ±0.1% / 10 K
- **Temperature range**: −10 °C to +60 °C (14 F to 140 F)
- **Input resistance**: 350 Ω
- **Power supply**: 1 to 10 VDC
- **Overload protection rating**: 10-times nominal force F<sub>Nom</sub>
- **Material main body**: Stainless steel
- **Protection class**: IP 42
- **Electrical connection**: Male receptacle, flange mounting M14x1, 5-pole
- **Repeatability error**: 0.05%
- **Measuring range**: 30:1

**CA-Series: Order code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CA203-125</td>
<td>125 FL H14.H16</td>
</tr>
<tr>
<td>Options</td>
<td>Installation option FL flat with dowel pin for centering</td>
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<tr>
<td>Nominal force rating in N</td>
<td>Size: shaft ø in inches (1.25 in.) or in mm (e.g. M20 = 20 mm)</td>
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**CA-Series: Options**

- **FL**: Flat face of force sensor, without shoulder, single screw mount, with dowel pin
- **PH**: Flange mount with 4 screws, pilot hole for centering
- **H14**: Right-angle connector in scope of supply, replaces straight connector
- **H16**: Temperature range up to 120°C (248°F)
- **H21**: Electrical connection with PG gland with 5 m (16.4 ft.) cable, replaces connector
- **H31**: For vacuum applications to 1E-7 hPa, 1E-5 Torr, temperature range up to 120°C (248°F)
- **H32**: Vacuum to 1E-7 hPa, 1E-5 Torr, up to 150°C (302°F), with pg-gland and 5 m (16.4 ft.) cable
- **H33**: Temperature range up to 150°C (302°F), with pg-gland and 5 m (16.4 ft.) cable

**CA-Series: Scope of supply**

- Force sensor
- Straight connector (female)
- Setting gauge
- Installation option PH: 4 pcs. DIN912 M6 x 40
- Installation option FL: dowel pin

**CA-Series: Accessories**

- Cable, 2 m (6.5 ft.) without connector
- Cable, 10 m (32.8 ft.) without connector
- Cable, 5 m (16.4 ft.) without connector
- Cable, 1 m (3.25 ft.) without connector
- Connector M14 x 1, 5-pole, right angle
- Connector M14 x 1, 5-pole, straight
- Installation bracket CA203 MB
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.