

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 $\pm 0.5\%$
- **Robust and durable**
Overload protection rating of 10-times nominal force, stainless steel sensor body



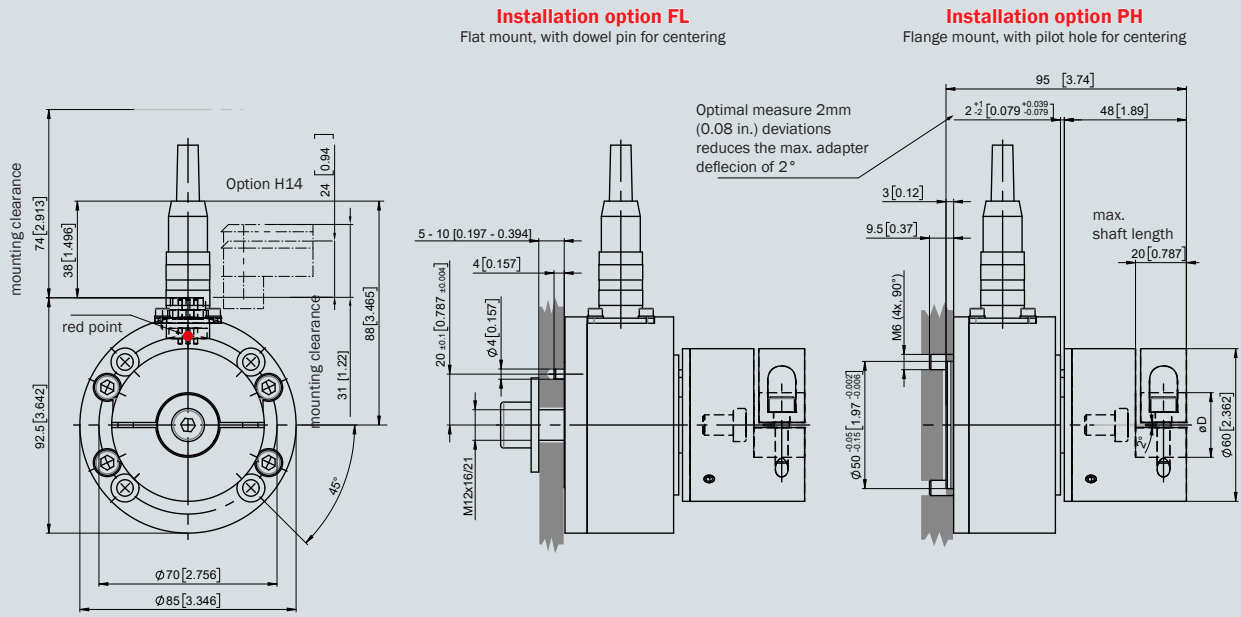
CA-Series

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



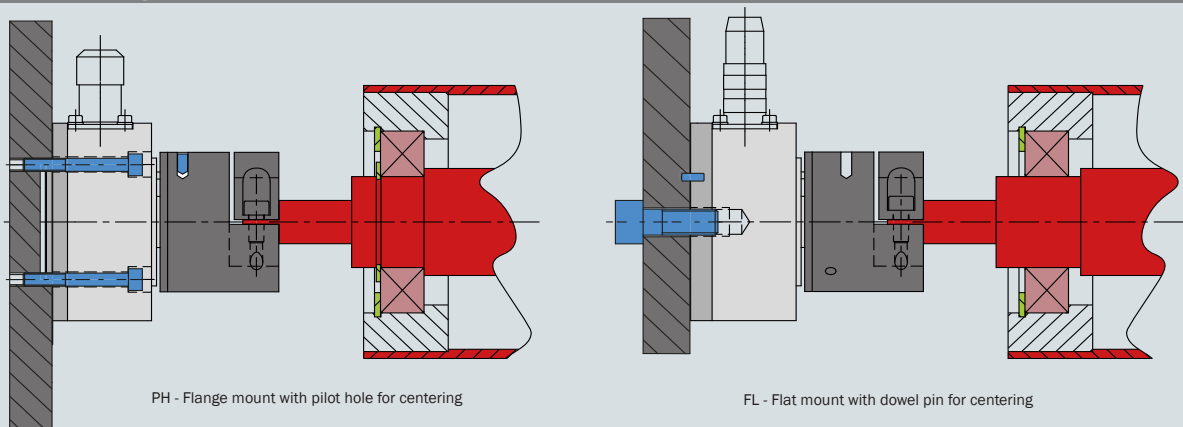
CA-Series : Diameter, Weight

Sensors	Diameter D		Weight	
Type	mm (in.)		kg (.lbs)	
CA 203-100	25.4	(1.00)	1.96	(4.32)
CA 203-125	31.75	(1.25)	1.96	(4.32)
CA 203-150	38.1	(1.50)	1.96	(4.32)
CA 203-M20	20	(0.79)	1.96	(4.32)
CA 203-M25	25	(0.98)	1.96	(4.32)
CA 203-M30	30	(1.18)	1.96	(4.32)
CA 203-M40	40	(1.57)	1.96	(4.32)

CA-Series : Nominal forces, Total deflection

Size	Nominal force		Total deflection	
Type	N (lbf.)		mm (.in)	
CA 203	50	(11)	0.10	(0.0039)
CA 203	125	(27)	0.11	(0.0043)
CA 203	250	(55)	0.15	(0.0059)
CA 203	500	(110)	0.16	(0.0063)
CA 203	1000	(220)	0.17	(0.0067)
CA 203	1500	(337)	0.19	(0.0075)

CA-Series : Mounting options



CA-Series : Technical data	
Sensitivity	1.8 mV/V
Tolerance of sensitivity	< ± 2%
Accuracy class	± 0.5% (F _{Nom})
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 _{Nom}
Material main body	Stainless steel
Protection class	IP 42
Electrical connection	Male connector M16x0.75, 5-pole
Repeatability error	0.05%
Measuring range	30:1

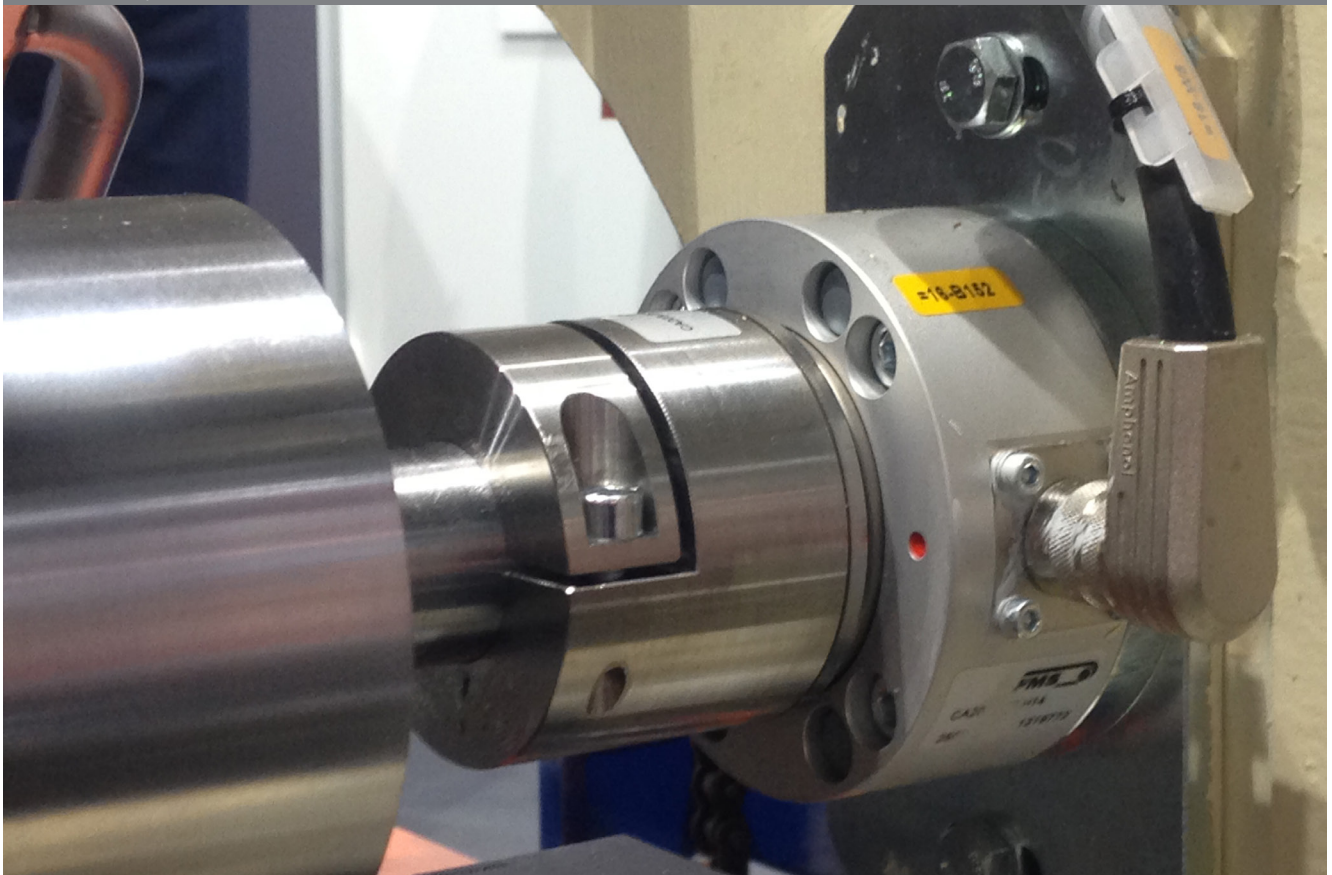
CA-Series : Order code	
CA 203-125 .125 .FL .H14.H16	
	Options
	Installation option FL flat with dowel pin for centering
	Nominal force rating in N
	Size: shaft-∅ in inches (1.25 in.) or in mm (e.g. M25 = 25 mm)
	Series

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	
<ul style="list-style-type: none"> ● force sensor ● straight connector (female) ● setting gauge ● installation option PH: 4 pcs. DIN912 M6 x 40 ● installation option FL: dowel pin 	

CA-Series : Accessories	
<ul style="list-style-type: none"> ● prefabricated cable (1 m (3.25 ft.), 5 m (16.4 ft.), 10 m (32.8 ft.), or specify other length), with straight or right-angle female connector ● installation bracket CA203.MB 	

CA-Series : Typical application



Other products : Tension Control

Measuring Amplifiers	Tension Controllers	Intrinsically Safe Barrier
		

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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