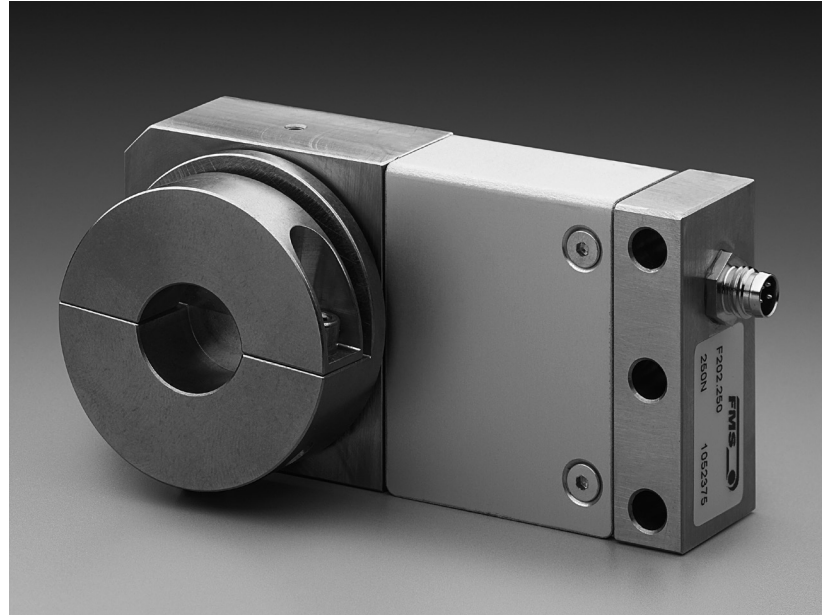


FMS Tension Control / Force Sensors

FA-Series Ultra-flat, stainless steel force sensor for use with dead shaft rolls

- **For machines with limited installation room**
Extremely flat design
- **Highest precision**
Measuring range 30:1
Accuracy class $\pm 0.5\%$
- **For small to medium web tension**
Nominal forces from 50 to 500 N
(11 to 112 lbf.)
- **Robust and durable**
Measuring body from stainless steel

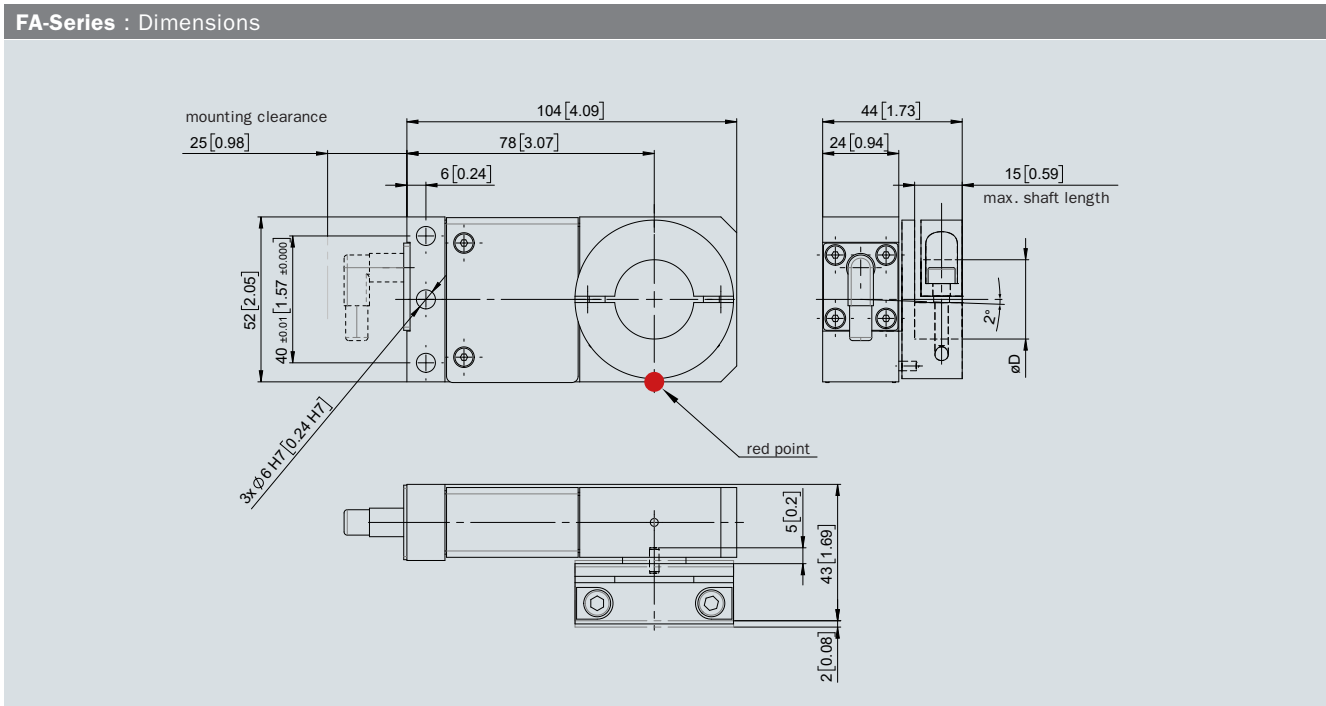


FA-Series

The force sensors of the FA-Series feature an extremely slim design. The dead shaft adapter allows for a quick exchange for the roll and the bearings. The installation on the machine is simply realized with two shoulder bolts. Adapter diameters are available in various dimension, in metric as well as in imperial sizes.

Functional description

The FA-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 calibration issues due to machine upset conditions. The design includes dual bending beams, and this serves to eliminate the load specific influence of torque. The movement of the bending beams, which is proportional to the applied force, is detected by strain gauges arranged in a full bridge circuit and then converted into an electrical signal. This simple measurement principle delivers precise results even with low material tension and small web wrap angles. The Red Point, as located on the sensor body, should be aligned with the direction of the resultant force due to web tension.



FA-Series : Journal diameter, Weight

Size	Journal diameter D		Weight	
Type	mm (in.)		kg (.lbs)	
FA202-075	19.05	(0.75)	1.18	(1.96)
FA202-100	25.4	(1.00)	1.18	(1.96)
FA202-M20	20.0	(44.09)	1.18	(1.96)
FA202-M25	25.0	(55.12)	1.18	(1.96)

FA-Series : Nominal forces, Deflection

Size	Nominal force		Deflection	
Type	N (.lbf)		mm (in.)	
FA202-075	50, 125, 250, 500	(11, 27, 55, 110)	0.15	(0.33)
FA202-100	50, 125, 250, 500	(11, 27, 55, 110)	0.15	(0.33)
FA202-M20	50, 125, 250, 500	(11, 27, 55, 110)	0.15	(0.33)
FA202-M25	50, 125, 250, 500	(11, 27, 55, 110)	0.15	(0.33)

FA-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	10-times nominal force F _{Nom}
Material main body	Stainless steel
Protection class	IP 42
Electrical connection	Male connector M8, 4-pole
Repeatability error	0.05%
Measuring range	30:1

FA-Series : Order code	
FA 202-M20 .50	
	Nominal force rating in N
	Size: shaft-ø in mm (20 mm) or in inches (e.g. 075 = 0.75 in.)
	Series

FA-Series : Scope of supply

● force sensor ● clip ring ● setting gauge

FA-Series : Accessories

● connecting cable, 10 m (32.8 ft.) with right angle M8 connector ● connecting cable, 5 m (16.4 ft.) with right angle M8 connector
 ● connecting cable, 2 m (6.4 ft.) with right angle M8 connector ● connecting cable, 10 m (32.8 ft.) with straight M8 connector
 ● connecting cable, 5 m (16.4 ft.) with straight M8 connector ● connecting cable, 2 m (6.4 ft.) with straight M8 connector ● dowel screw ø 6 x 30, M5 for F-/FA-series ● dowel pin ø 6 h6 x 20 for F-/FA-series

FA-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.

World Headquarters: FMS Force Measuring Systems AG

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