

FMS Tension Control / Force Sensors

RMGZ300A-Series Compact force sensor for stranding machines with medium wire tension

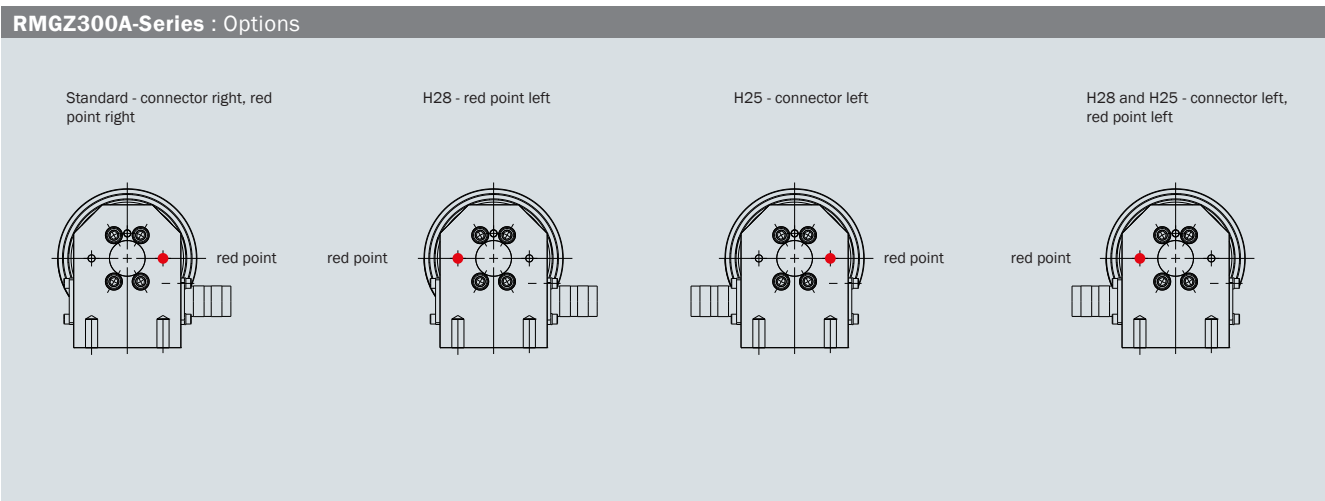
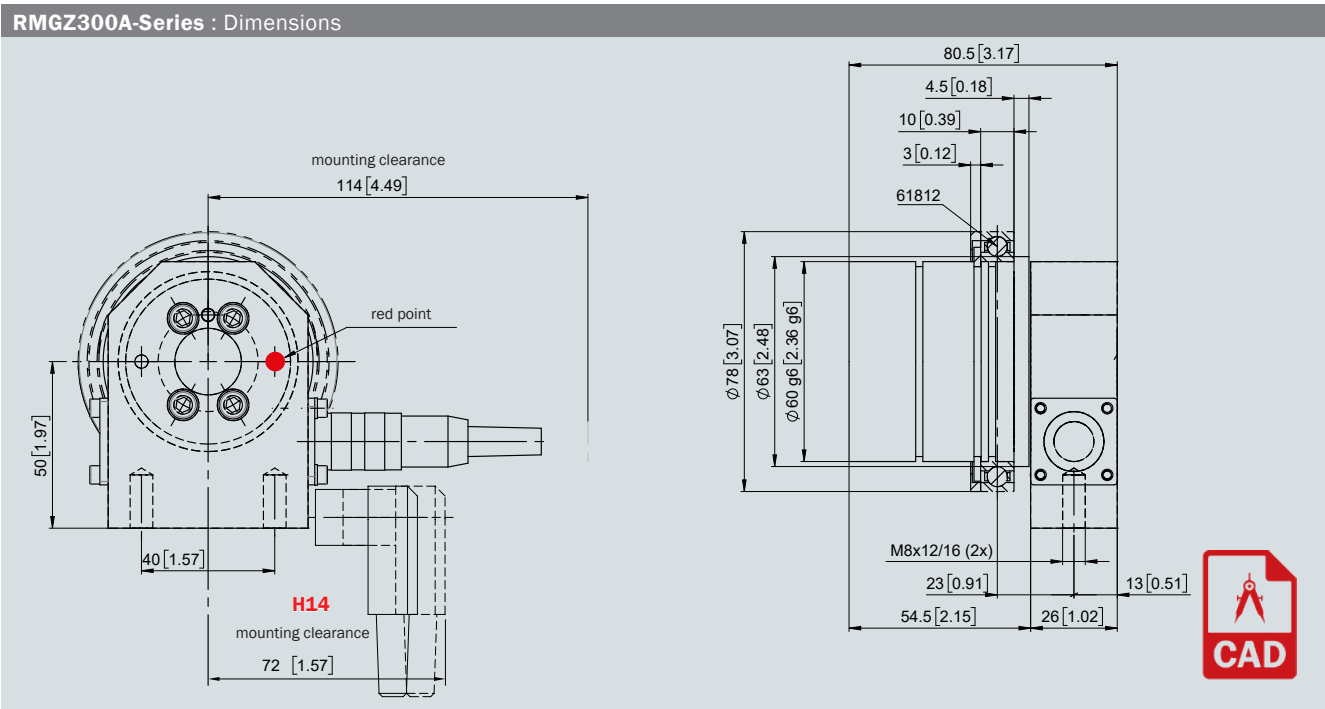
- **For applications with high revolutions**
Compensation of centrifugal and coriolis forces
- **For a wide range of applications**
Nominal forces from 20 to 1'000 N
(4.5 to 225 lbf.)
- **Robust and durable**
Overload protection up to 10-times nominal force
- **Precise performance even at low tension values**
Measuring range 30:1
Accuracy class $\pm 0.5\%$

**RMGZ300A-Series**

Designed to meet the requirements of planetary and tubular stranders, a force sensor of the RMGZ300-Series is also applicable to bunchers and twisters. The innovative dual flexion beam construction provides the foundation for accurate and reproducible measurements in difficult operating conditions. Once the load rating and housing configuration are properly specified for the application, the sensor is easily mounted to the machine with two fasteners. A single cable (power in/signal out) is connected at the sensor housing. Standard pulleys are not supplied by FMS.

Functional description

The RMGZ300-Series force measuring sensor combines the bearing seat of the pulley 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 material tension.



RMGZ300A-Series : Nominal forces, Deflection, Weight					
Size	Nominal force		Deflection		Weight
Type	N (.lbf)		mm (.in)		kg (.lbs)
RMGZ300A	20	(4.50)	0.21	(0.0083)	1.43 (3.15)
	50	(11.24)	0.19	(0.0075)	1.43 (3.15)
	100	(22.48)	0.18	(0.0071)	1.43 (3.15)
	200	(44.96)	0.15	(0.0059)	1.43 (3.15)
	500	(112.40)	0.12	(0.0047)	1.43 (3.15)
	1000	(224.81)	0.11	(0.0043)	1.43 (3.15)

RMGZ300A-Series : Technical data	
Sensitivity	1.8 mV/V
Tolerance of sensitivity	< ± 0.2%
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 40
Electrical connection	Male connector M16x0.75, 5-pole
Repeatability error	0.05 %
Measuring range	30 : 1

RMGZ300A-Series : Order code	
RMGZ300A.20.H25.H28	
	Options
	Nominal force rating in N
	Size, design revision A
	Series

RMGZ300A-Series : Options	
H14	right-angle connector in scope of supply, replaces straight connector
H21	electrical connection with PG gland with 5 m (16.4 ft.) cable, replaces connector
H23	additional 1 pcs. ball bearing 61812 in scope of delivery
H25	connector offset 180°
H28	red point offset 180°

RMGZ300A-Series : Scope of supply	
● force sensor ● straight connector (female) ● 3 pcs. clip rings ● thin-section bearing ● distance ring	

RMGZ300A-Series : Accessories	
● cable, 1 m (3.25 ft.) without connector ● cable, 10 m (32.8 ft.) without connector ● cable, 5 m (16.4 ft.) without connector ● cable, 2 m (6.5 ft.) without connector	



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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