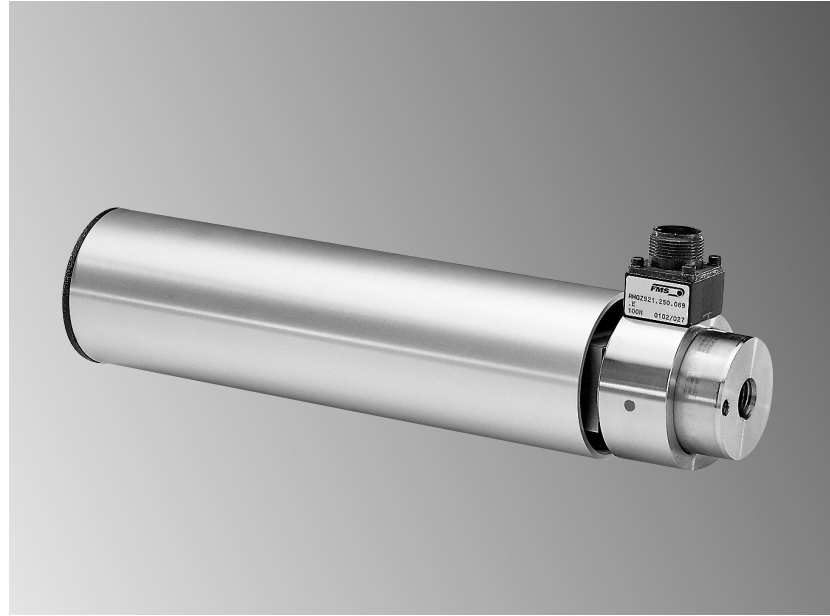


FMS Tension Control / Force Sensors

## RMGZ9-Series Freely configurable cantilever force measuring roller

- **For a wide range of applications**  
Nominal forces from 50 to 1'000 N  
(11 to 220 lbf.)
- **Robust and durable**  
Overload protection up to 10-times  
nominal force, measuring body from high  
strength aluminum
- **Precise performance even at low tension  
values**  
Measuring range 30:1  
Accuracy class  $\pm 0.5\%$



### RMGZ9-Series

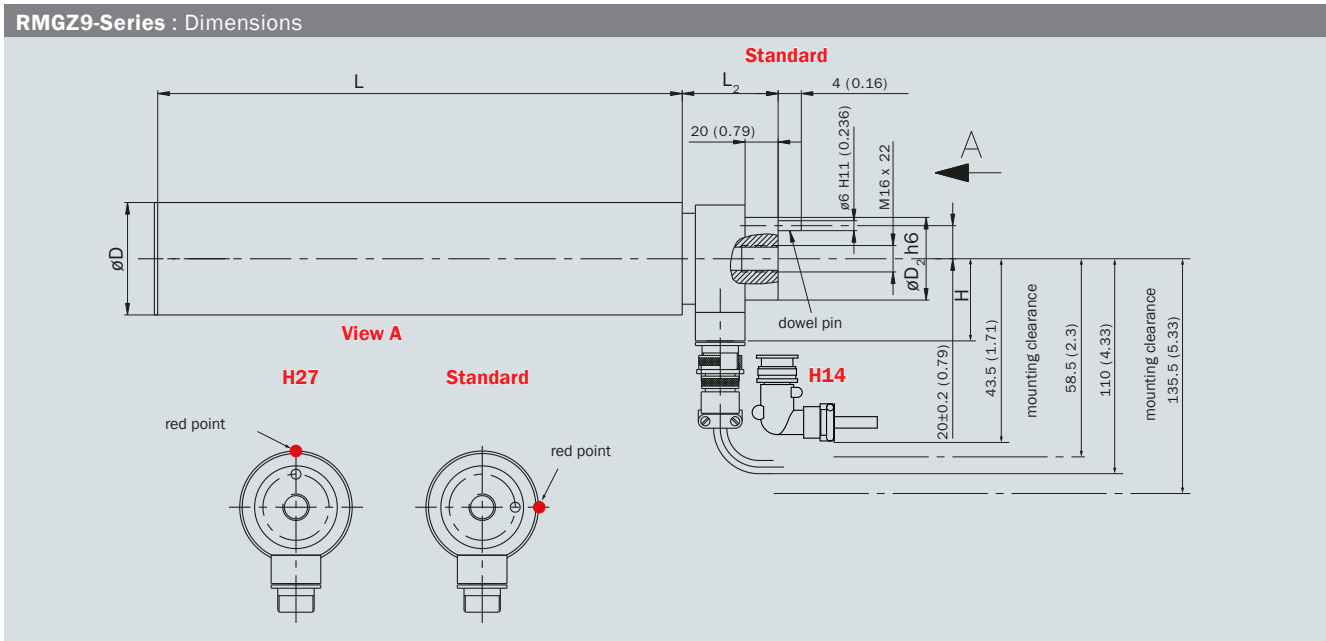
The force measuring rollers of the RMGZ9-Series combine force sensor and roller. The RMGZ9-Series design, incorporating dual bending beams, eliminates the load-specific influences of torque and ensures accurate measurement at any position on the roller while maintaining the parallel position of the material and eliminating angular deflection. The movement of the bending beams is detected by a set of strain gages arranged in a full bridge circuit. The resulting electrical signal, which is proportional to the applied force, is then amplified for use in monitoring or controlling web tension. With the superior performance of the RMGZ9-Series, accurate tension readings are obtained even with low web wrap angles and low material tension.

### Functional description

The RMGZ9-Series force measuring rollers are designed as self-contained cantilever mount sensors that minimise machine space requirements in continuous material processing applications. They can be mounted horizontally or vertically directly or by means of an optionally available flange to the machine frame. Force measuring rollers of the RMGZ9-Series are available with a huge variety of roller materials and surface finishing, as well as a wide range of different dimensions.

DATA SHEET

FMS Tension Control | Force Sensors | **RMGZ9-Series**



RMGZ9-Series : Dimensions									
Size	Dimensions mm (.in)								
Type	L		L2		D		D2		H
<b>RMGZ9-250-69</b>	250	(9.84)	58	(2.28)	69	(2.72)	50	(1.97)	63.5 (2.5)
<b>RMGZ9-320-69</b>	320	(12.60)	58	(2.28)	69	(2.72)	50	(1.97)	63.5 (2.5)
<b>RMGZ9-400-69</b>	400	(15.75)	58	(2.28)	69	(2.72)	50	(1.97)	63.5 (2.5)
<b>RMGZ9-500-99</b>	500	(19.69)	55	(2.17)	99	(3.90)	75	(2.95)	77 (3.03)
<b>RMGZ9-630-99</b>	630	(24.80)	55	(2.17)	99	(3.90)	75	(2.95)	77 (3.03)
<b>RMGZ9-800-119</b>	800	(31.50)	58	(2.28)	119	(4.69)	75	(2.95)	77 (3.03)
<b>RMGZ9-900-119</b>	900	(35.43)	60	(2.36)	119	(4.69)	75	(2.95)	77 (3.03)

Other dimensions, roller material and surface treatments available on request.

RMGZ9-Series : Weight		
Size	Weight	
Type	kg (.lbs)	
<b>RMGZ9-250-69</b>	4.2	(9.26)
<b>RMGZ9-320-69</b>	4.4	(9.70)
<b>RMGZ9-400-69</b>	4.6	(10.14)
<b>RMGZ9-500-99</b>	9.4	(20.72)
<b>RMGZ9-630-99</b>	13.0	(28.66)
<b>RMGZ9-800-119</b>	18.4	(40.57)
<b>RMGZ9-900-119</b>	21.2	(39.09)

The RMGZ9-series force measuring rollers can be mounted in 2 different ways. Either directly with a pilot hole to the machine or with a mounting flange which can be ordered as an accessory.

RMGZ9-Series : Nominal forces, Shaft diameter								
Size	RMGZ9-250-69		RMGZ9-400-69		RMGZ9-630-99		Shaft diameter	
Type	RMGZ9-320-69		RMGZ9-500-99		RMGZ9-800-119		RMGZ9-900-119	
	mm (.in)							
<b>Nominal force</b>	50	(11.24)						0.15 (0.0059)
<b>N (.lbs)</b>	100	(22.48)	100	(22.48)				0.13 (0.0051)
	200	(44.96)	200	(44.96)	200	(44.96)		0.16 (0.0063)
	500	(112.40)	500	(112.40)	500	(112.40)		0.15 (0.0059)
	750	(168.61)	750	(168.61)	750	(168.61)		0.13 (0.0051)
	1000	(224.81)	1000	(224.81)	1000	(224.81)		0.12 (0.0047)

RMGZ9-Series : Technical data	
<b>Sensitivity</b>	1.8 mV/V
<b>Tolerance of sensitivity</b>	< ± 0.2%
<b>Accuracy class</b>	± 0.5% (F <sub>Nom</sub> )
<b>Temperature coefficient</b>	± 0.1% / 10 K
<b>Temperature range</b>	-10 °C to +60 °C (14 F to 140 F)
<b>Input resistance</b>	350 Ω
<b>Power supply</b>	1 to 10 VDC
<b>Overload protection</b>	10 times nominal force F <sub>Nom</sub>
<b>Material main body</b>	Stainless steel
<b>Protection class</b>	IP 42
<b>Electrical connection</b>	Male flange connector, amphenol, 4-pole
<b>Repeatability error</b>	0.05%
<b>Measuring range</b>	30:1

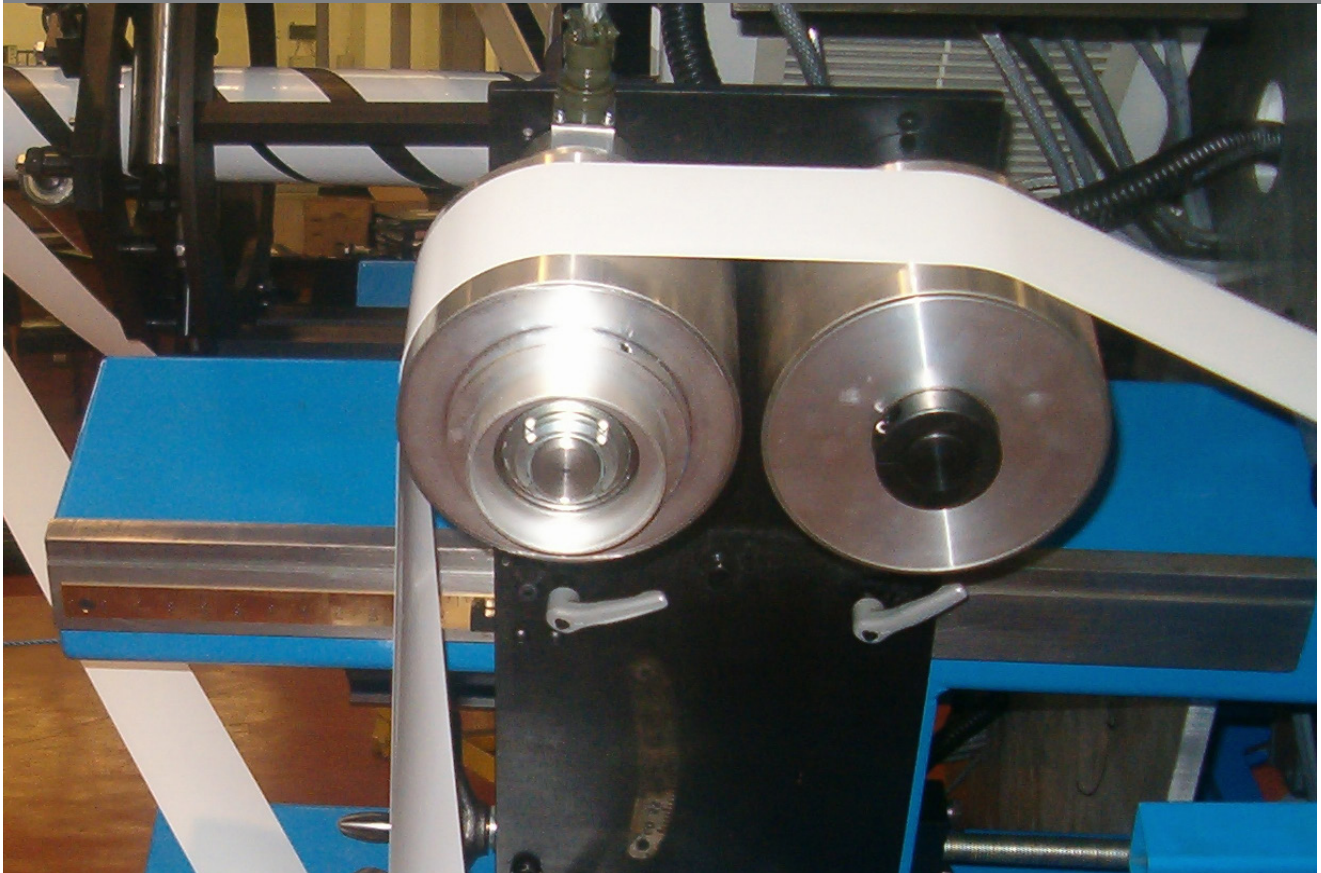
RMGZ9-Series : Order code	
<b>RMGZ9</b>	
<b>-400-69</b>	
<b>.E</b>	Options
<b>.200</b>	Nominal force rating in N
<b>.H27</b>	Roll material and surface finish Aluminum, clear anodized
	Size: Roll length - roll ø in mm
	Series

RMGZ9-Series : Options	
<b>H11</b>	small connector, round type C 091
<b>H12</b>	axial electrical connection, repases radial, small connector, round type C 091
<b>H14</b>	right-angle connector in scope of supply, replaces straight connector
<b>H16</b>	temperature range up to 120 °C (248 °F)
<b>H18</b>	with water tight, straight connector, replaces original conector
<b>H21</b>	electrical connection with PG gland with 5 m (16.4 ft.) cable, replaces connector
<b>H27</b>	connector rotated 90 ° (red point on opposite side of connector)
<b>H31</b>	for vacuum applications to 1E-7 hPa 1E-5 Torr, temperature range up to 120 °C (248 °F)
<b>D</b>	material aluminum, Ra = 1.6
<b>E</b>	material aluminium, surface clear anodized
<b>EB</b>	material aluminum, surface anodized black
<b>SS</b>	material stainless steel

RMGZ9-Series : Scope of supply	
● force sensor ● straight connector (female)	

RMGZ9-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 ● connector, amphenol, 4-pole, straight ● connector, amphenol, right angle ● mounting flange RMGZ900.581699-Flansch (D120) ● mounting flange RMGZ900.581185-Flansch (D150)	

**RMGZ9-Series** : Typical application

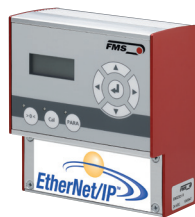


**Other products** : Tension Control

**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.