

FMS Tension Control / Force Sensors

## RMGZ400C-Series Medium size force sensor for pulley

- **For a wide range of applications**  
Nominal forces from 60 to 1'000 N  
(13 to 224 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  $\pm 0.5\%$



### RMGZ400C-Series

The force sensors of the RMGZ400-Series are used for the tension measurement in filamentary material. A large variety of standard pulleys can be mounted on the rotating flange. The installation of the force sensor to the machine frame is realized by means of a bore with keyway. The force sensors of the RMGZ400-Series can be used in static applications as well as for measurements in rotating applications (planetary or tubular stranders, bunchers, twisters, etc.). Standard pulleys are not supplied by FMS.

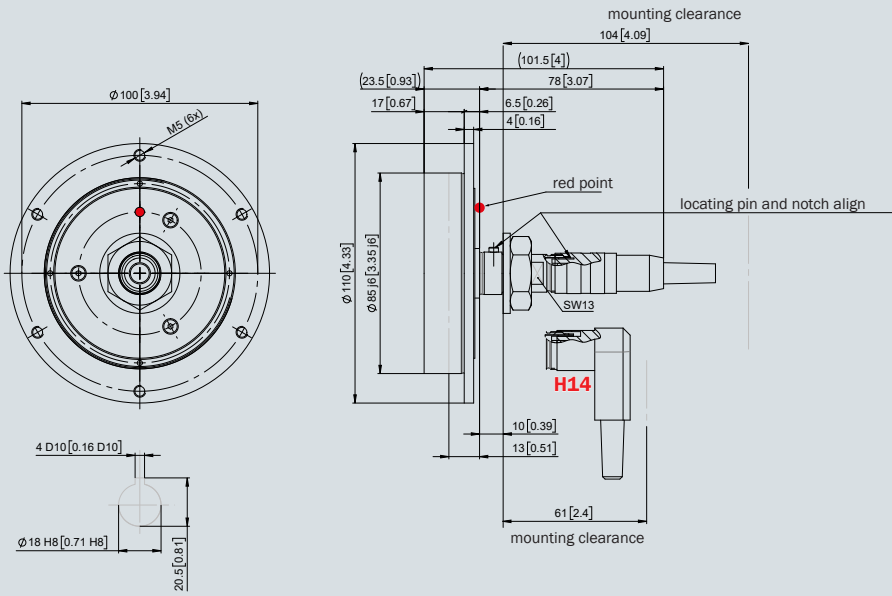
### Functional description

The RMGZ400-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 up-set conditions. The movement of the bending beam, 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.

DATA SHEET

FMS Tension Control | Force Sensors | **RMGZ400C-Series**

**RMGZ400C-Series : Dimensions**



**RMGZ400C-Series : Nominal forces, Deflection, Weight**

Size Type	Nominal force N (.lbf)		Deflection mm (.in)		Weight kg (.lbs)	
<b>RMGZ400C</b>	60	(13.49)	0.19	(0.0075)	0.82	(1.81)
	100	(22.48)	0.16	(0.0063)	0.82	(1.81)
	200	(44.96)	0.17	(0.0070)	0.82	(1.81)
	500	(112.40)	0.17	(0.0070)	0.82	(1.81)
	1000	(224.81)	0.12	(0.0047)	0.82	(1.81)

RMGZ400C-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>	Steel
<b>Protection class</b>	IP40
<b>Electrical connection</b>	Male connector M16x0.75, 5-pole
<b>Repeatability error</b>	0.05%
<b>Measuring range</b>	30:1

RMGZ400C-Series : Order code	
<b>RMGZ4 00C .100 .H22</b>	
	Options
	Nominal force rating in N
	Size, design revision C
	Series

RMGZ400C-Series : Options	
<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 connector

RMGZ400C-Series : Scope of supply	
● force sensor ● straight connector (female) ● installation nut with washer	

RMGZ400C-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	

**RMGZ400C-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**

Aspstrasse 6 • 8154 Oberglatt (Switzerland) • Phone + 41 44 852 80 80 • Fax + 41 44 850 60 06  
 info@fms-technology.com • [www.fms-technology.com](http://www.fms-technology.com)