

FMS Tension Control / Force Sensors

DMGZ-Series Force sensor for compressive and tensile force measurement

- **For a wide range of applications**
Nominal forces from 300 to 50'000 N
(67 to 11'240 lbf.)
- **Robust and durable**
Overload protection up to 10-times
nominal force, stainless steel body, high
strength aluminum housing
- **Precise performance even at low tension
values**
Measuring range 30:1
Accuracy class $\pm 0.5\%$

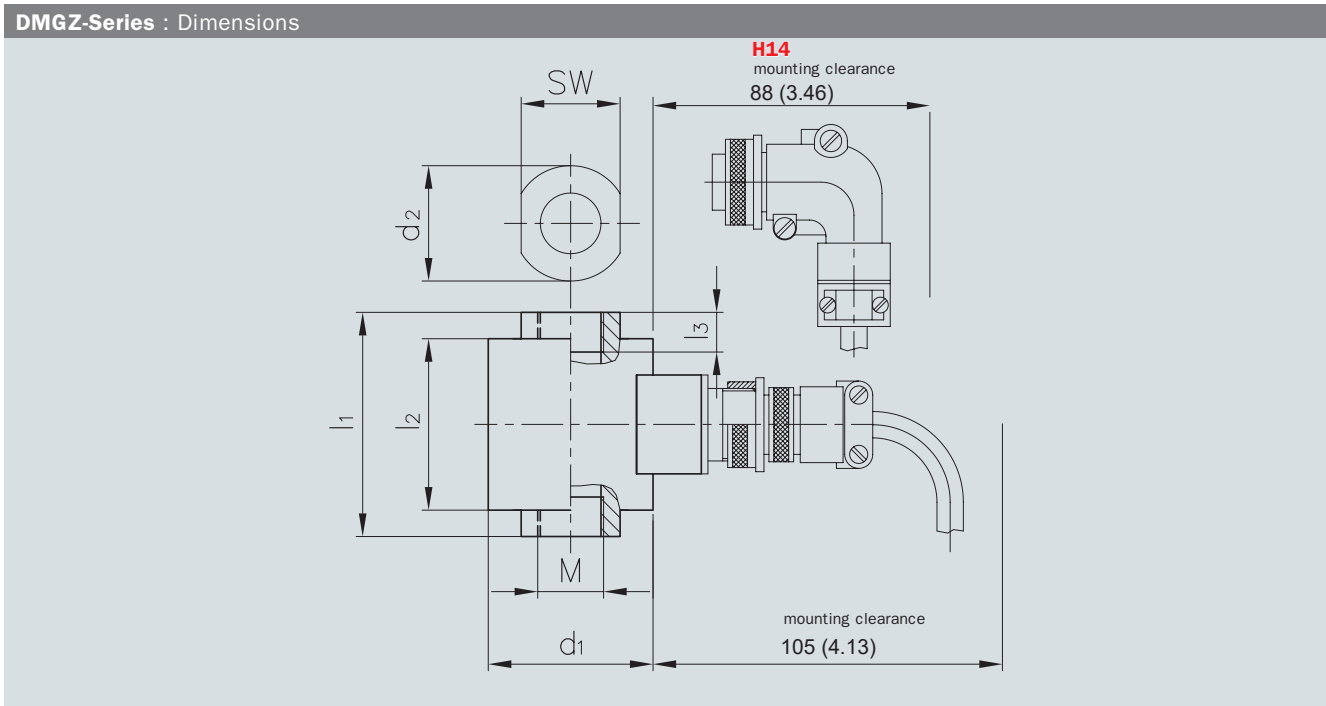


DMGZ-Series

The force sensors of the DMGZ-Series feature compact dimensions and flexible installation options. The force sensors of the DMGZ-Series are designed for the measurement of axial forces in thrust rods or ropes. The internal threads allow for easy installation of push rods or ring bolts.

Functional description

The force sensor of the DMGZ-Series work with the measuring principle of the double bending beam. The substantial overload protection translates to eliminated/minimized calibration issues due to machine upset conditions. 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 small forces.



DMGZ-Series : Dimensions

Size	Dimensions mm (.in)						
Type	d1	d2	l1	l2	l3	M	SW
DMGZ200A	50 (1.9685)	38 (1.4961)	68 (2.6772)	52 (2.0472)	20 (0.7874)	M20 x 1.5	30 (1.1811)
DMGZ300A	60 (2.3622)	48 (1.8898)	76 (2.9921)	60 (2.3622)	20 (0.7874)	M30 x 2	36 (1.4173)

DMGZ-Series : Nominal forces, Overload protection, Deflection, Weight

Size	Nominal force	Overload protection		Deflection	Weight
		compressive	tensile		
Type	N (.lbf)			mm (.in)	kg (.lbs)
DMGZ200A	300 (67)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	500 (112)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	1000 (224)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	1200 (269)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	2500 (562)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	3000 (674)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	5000 (1124)	10x	10x	0.15 (0.0059)	0.78 (1.7196)
	10k (2248)	10x	6x	0.15 (0.0059)	0.78 (1.7196)
	20k (4496)	10x	3x	0.15 (0.0059)	0.78 (1.7196)
DMGZ300A	50k (11240)	3x	3x	0.15 (0.0059)	1.05 (2.3149)

DMGZ-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 42
Electrical connection	Male flange connector, amphenol, 4-pole, 4-polig
Repeatability error	0.05%
Measuring range	30:1

DMGZ-Series : Order code	
DMGZ	300A .50k .H14.H16
	Options
	Nominal force rating in kN
	Size, design revision A
	Series

DMGZ-Series : Options	
H14	right-angle connector in scope of supply, replaces straight connector
H16	temperature range up to 120°C (248°F)
H18	with water tight, straight connector, replaces original conector
H29	resistant against aggressive media, especially acids (please specify), up to 120°C (248°F)
H30	resistant against aggressive media, especially hydrocarbons (please specify) up to 120°C (248°F)
H31	for vacuum applications to 1E-7 hPa 1E-5 Torr, temperature range up to 120°C (248°F)

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

DMGZ-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, 4-pole, right angle	

DMGZ-Series : Typical application



Other products : Tension Control

Measuring Amplifiers	Tension Controllers	Intrinsically Safe Barrier
		

Über uns

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