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# MBB-02 Miniature Force Transducers

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## FEATURES

- Nominal capacity: 0.01 N, 0.05 N, 0.1 N, 0.5 N, 1 N and 5 N
- Semiconductor strain gauges
- Built-in high-capacity overload protection
- Minute displacement
- High natural frequency
- High-strength aluminum alloy measuring spring
- Compact dimensions
- Force applicable in two positions (① and ②)



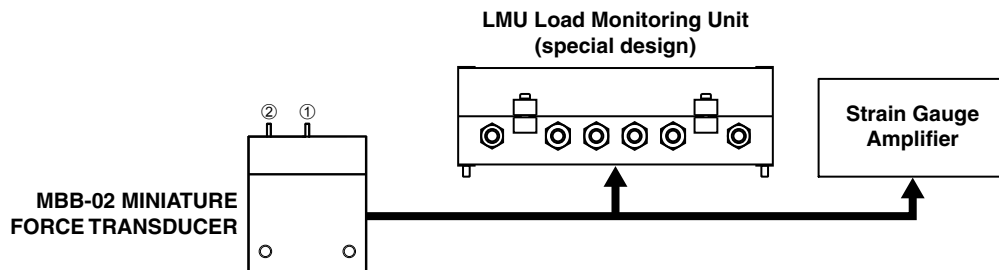
## DESCRIPTION

The Magtrol MBB-02 Miniature Force Transducer is designed for measuring very small loads. Made entirely of aluminum for very high measurement stability, this transducer features built-in high-capacity overload protection. For more flexibility, force can be applied to the transducer in one of two positions.

## APPLICATIONS

The small dimensions of the MBB-02 permit its adaptation to numerous small and precision applications (watchmaking, for example), as well as long-term dynamic measurements.

## SYSTEM CONFIGURATION



## ORDERING INFORMATION

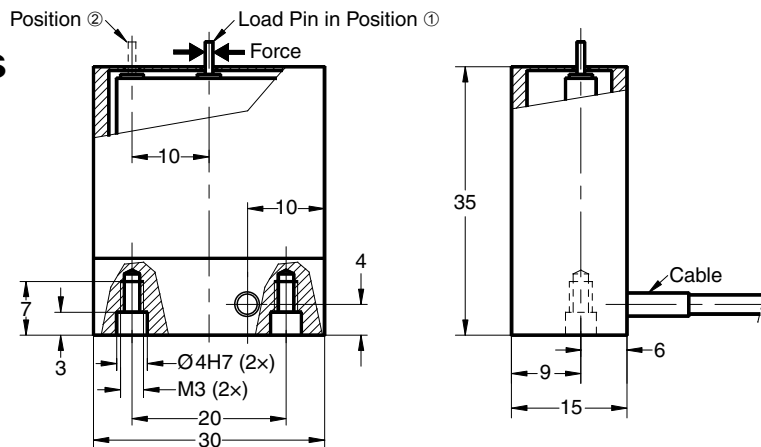
PART NUMBER	MBB - 02 -	
• Nominal Force (N) 0.01; 0.05; 0.1; 0.5; 1 or 5		
• Humidity compensation?		
No (standard)		blank
Yes		A

## TECHNICAL RATINGS

	MBB-02-0.01	MBB-02-0.05	MBB-02-0.1	MBB-02-0.5	MBB-02-1	MBB-02-5
<b>MECHANICAL CHARACTERISTICS</b>						
Nominal Force	± 0.01 N	± 0.05 N	± 0.1 N	± 0.5 N	± 1 N	± 5 N
Overload Limit	0.25 N	0.25 N	0.3 N	2 N	2 N	15 N
Overload at Rupture	> 1.5 N	> 1.5 N	> 1.5 N	> 150 N	> 150 N	> 300 N
Displacement at Nominal Force	< 0.02 mm	< 0.04 mm	< 0.08 mm	< 0.02 mm	< 0.04 mm	< 0.02 mm
<b>ELECTRICAL CHARACTERISTICS</b>						
Nominal Sensitivity	4 mV/V	20 mV/V	40 mV/V	20 mV/V	40 mV/V	40 mV/V
Input Impedance	750 Ω nom.					
Output Impedance	750 Ω nom.					
Insulation Resistance	≥ 10 <sup>9</sup> Ω					
Supply Voltage	5 V DC					
Natural Frequency	≈ 170 Hz			≈ 700 Hz		≈ 3000 Hz
Combined Error (nonlinearity + hysteresis)	< ± 0.2%		< ± 0.1%			
<b>ENVIRONMENTAL CHARACTERISTICS</b>						
Long-term Stability and Error Caused by Changes in Air Humidity (MBB-02-A transducers only)	max. ± 2% proportionate to nominal sensitivity in relative humidity range of 30% to 60% for a maximum of 72 hours					
Operating Temperature	+15 °C to +30 °C					
Temperature Influence: On Zero	< ± 0.05% / 10 K		< ± 0.02% / 10 K			
Temperature Influence: On Sensitivity	≤ +0.02% / K					
Protection Class	IP 42					
<b>CONNECTION CABLE</b>						
Shielded Cable Length	0.5 m					
Pin Connections:*	Color Code (according to DIN):					
supply (+)	black					
supply (-)	green					
signal (+)	red					
signal (-)	white					

\* The shield is not connected on the transducer side.

## DIMENSIONS



Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



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