MBB-01 Miniature Force Transducers

FEATURES
- Nominal capacity: 0.5 N, 1 N, 2 N, 3 N, 5 N, 10 N and 20 N
- Full bridge strain gauges
- Built-in high-capacity overload protection
- Minute displacement
- High-strength aluminum alloy measuring spring
- Compact dimensions

DESCRIPTION
The Magtrol MBB-01 Miniature Force Transducer is designed for measuring very small positive and negative loads. Made entirely of aluminum for very high measurement stability, this transducer features built-in high-capacity overload protection.

APPLICATIONS
The small dimensions of the MBB-01 Transducer permit its adaptation to numerous small and precision applications, as well as long-term dynamic measurements.

SYSTEM CONFIGURATION OPTIONS

LMU Load Monitoring Unit (special design)

Strain Gauge Amplifier

AN Load Monitor
**Specifications**

**MBB-01**

**TECHNICAL RATINGS**

<table>
<thead>
<tr>
<th>MECHANICAL CHARACTERISTICS</th>
<th>MBB-01-0.5</th>
<th>MBB-01-1</th>
<th>MBB-01-2</th>
<th>MBB-01-3</th>
<th>MBB-01-5</th>
<th>MBB-01-10</th>
<th>MBB-01-20</th>
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</thead>
<tbody>
<tr>
<td>Nominal Force</td>
<td>± 0.5 N</td>
<td>± 1 N</td>
<td>± 2 N</td>
<td>± 3 N</td>
<td>± 5 N</td>
<td>± 10 N</td>
<td>± 20 N</td>
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<tr>
<td>Overload Limit</td>
<td>5 N</td>
<td>5 N</td>
<td>50 N</td>
<td>50 N</td>
<td>50 N</td>
<td>50 N</td>
<td>100 N</td>
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<tr>
<td>Displacement at Nominal Force</td>
<td>&lt; 0.05 mm</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Angular Deviation of Ø 3H7 Hole at Nominal Force</td>
<td>≤ 0.005°</td>
<td></td>
<td></td>
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**ELECTRICAL CHARACTERISTICS**

| Nominal Sensitivity        | 1 mV/V ±1% |
| Input Impedance            | 1000 Ω to 1200 Ω | 345 Ω to 450 Ω |
| Output Impedance           | 1000 ±10 Ω | 350 ±3 Ω |
| Insulation Resistance      | > 10⁹ Ω |
| Supply Voltage             | ≤ 10 V DC/AC | ≤ 12 V DC/AC |
| Combined Error (nonlinearity + hysteresis) | ≤ ± 0.1 % | ≤ ± 0.05 % |

**ENVIRONMENTAL CHARACTERISTICS**

| Max. Relative Humidity (indoor conditions) | 90% |
| Protection Class               | IP 42 |

**CONNECTION CABLE**

- Shielded Cable Length: 0.5 m
- Pin Connections:
  - supply (+)
  - supply (–)
  - signal (+)
  - signal (–)

*Color Code (according to DIN): black, blue, red, white*

*Caution: The length of the cable attached to the MBB-01 Transducer should never be shortened. Doing so would remove the internal adjustment of the sensor.*

**DIMENSIONS**

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

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