Durable and space-saving

*HDmag MHAD* – high-resolution absolute encoder without bearings with additional incremental signals
Lots of product benefits where space is a constraint.

**Minimum space requirements**
With its narrow dimensions of only 20 mm in width the compact housing fits into any tight spot. The pole wheel allows flexible attachment to the shaft, the end remains available for any other purpose.

**Quick and easy installation**
The integrated LED indicator acts also as an installation aid and will ensure observing the tolerances during attachment. This way, pole wheel and sensor are quickly and accurately installed without effort.

**Capable of large shaft tolerances**
Allowing for a wide air gap up to 1 mm between rotor and sensing head, the sensor provides dependable operation even with axial shaft displacements of ±1 mm.

**Ultimate level of operational safety**
The magnetic sensing technique withstands dust, dirt and humidity. With an extended operating temperature range between -40 and +85 °C and insensitive to condensing the encoders master also outdoor applications.

**Two interfaces in one device**
Besides the absolute value, the singleturn encoder provides additional incremental signals via SSI or CANopen interface which can be used for speed control or further processing in a second loop.

Fitting into any tight spot:

**HDmag MHAD — Absolute encoder without bearings with additional incremental signals.**

The HDmag series by Baumer, a product platform of high-resolution absolute and incremental encoders with magnetic sensing, offers a wide product selection for direct installation at large shafts. Our customers in mechanical engineering and industry automation rely on the robust technique.

New HDmag MHAD builds further on our successful technology concept. With a pole wheel diameter of 50 mm the encoder is all but perfect for shafts up to 42 mm. Forgoing any additional fittings or shaft couplings, it provides most convenient and quick installation capabilities.
Maximum availability thanks to monitoring functionalities and redundant sensing.

Absolutely precise and reliable position values at all times: You can be sure by virtue of the integrated sine/cosine signal monitoring functionality. The integrated LED will always provide you with the current encoder activity state. Any errors, alarms or warnings are immediately transmitted via interface to the master control.

The special housing design opens up new possibilities for reliable and cost-saving deployment in applications with up to four sensors. Flexible redundant systems with maximum availability and minimum space requirements – the perfect fitting solution for your application.

Ultimate reliability and nearly unlimited longevity.

Bearingless encoders with non-contacting technique forgo any mechanical wearing parts. Your product benefit: A nearly unlimited service life which is further backed by the tight sensor housing enclosure compliant to IP 67.

Baumer encoders operate on the magnetic sensing technique. It allows for large mechanical tolerances of 1 mm on the air gap between sensor and pole wheel, thus eliminating any direct sensor impact by shaft displacements. Shocks and vibrations are compensated to ensure absolutely dependable measured values even under extreme conditions and in demanding applications.
Fitting any shaft.

<table>
<thead>
<tr>
<th></th>
<th>High resolution</th>
<th>Industry</th>
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<tbody>
<tr>
<td><strong>HDmag MHAP</strong> 100/200/400</td>
<td><strong>HDmag MHAD</strong> 50 100/200/400/800</td>
<td><strong>ITD 69</strong> <strong>MDFK</strong> <strong>MEFK</strong></td>
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<tr>
<td><strong>Incremental</strong></td>
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<tr>
<td>Resolution (steps/turn)</td>
<td>1 to 131072 1 to 262144 1 to 524288</td>
<td>1024 to 8192 64 to 4096 128 to 8192 256 to 16384 512 to 32768</td>
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<tr>
<td><strong>Absolute</strong></td>
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<tr>
<td>Resolution</td>
<td>17 bit</td>
<td>16 bit</td>
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<tr>
<td><strong>Interfaces</strong></td>
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<td><strong>Shaft diameters</strong></td>
<td>16 to 80 mm 50 to 180 mm 70 to 340 mm</td>
<td>20 to 42 mm 16 to 80 mm 50 to 180 mm 70 to 340 mm 650 to 740 mm</td>
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Full product information on our bearingless encoders is available under www.baumer.com/MHAD or gladly provided by our encoder experts. Contact us.