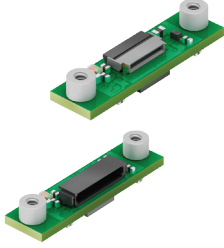
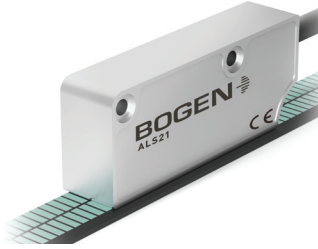
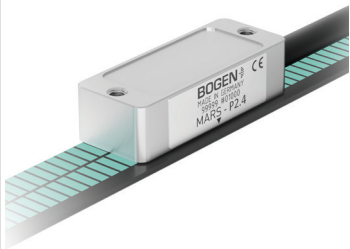


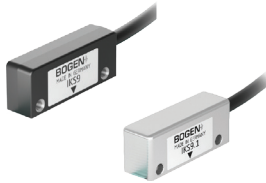
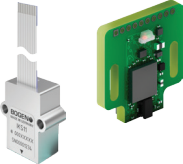


# Absolute Magnetic Sensing Heads

BOGEN absolute encoders and the corresponding magnetic scales offer cost-efficient solutions for industrial applications where positions and motions have to be measured with a high degree of accuracy and reliability, even in harsh environments. All encoders are available for linear, rotary-radial or rotary-axial measurement and include multiple sensor output protocols. Small dimensions ensure implementation even in confined spaces.

	 <p><b>AKP18</b></p>	 <p><b>ALS21</b></p>	 <p><b>xMARS</b></p>
<b>description</b>	<ul style="list-style-type: none"> <li>space-saving implementation</li> <li>daisy-chainable with wire to board connector</li> </ul>	<ul style="list-style-type: none"> <li>linear applications</li> <li>absolute measuring</li> </ul>	<ul style="list-style-type: none"> <li>Multi Adaptive Range Sensor</li> <li>high resolution absolute sensing</li> <li>virtually unlimited ring sizes and tape lengths</li> </ul>
<b>max. resolution</b>	<ul style="list-style-type: none"> <li>18 - 20 bit absolute resolution</li> </ul>	<ul style="list-style-type: none"> <li>up to 1 <math>\mu\text{m}</math></li> </ul>	<ul style="list-style-type: none"> <li>absolute: up to 0.29 <math>\mu\text{m}</math></li> <li>incremental: 2400 <math>\mu\text{m}</math></li> </ul>
<b>distance sensor/scale</b>	<ul style="list-style-type: none"> <li>0.4 - 0.6 mm, depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.1 - 0.6 mm</li> </ul>	<ul style="list-style-type: none"> <li>2 mm <math>\pm</math> 0.2</li> </ul>
<b>movement speed</b>	<ul style="list-style-type: none"> <li>6.000 - 24.000 rpm, depending on resolution</li> <li>up to 15 m/s</li> </ul>	<ul style="list-style-type: none"> <li>1.4 - 7 m/s, depending on resolution</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 20 m/s</li> </ul>
<b>output signals interface</b>	<ul style="list-style-type: none"> <li>absolute: BiSS-C, SSI</li> </ul>	<ul style="list-style-type: none"> <li>absolute: SSI, BiSS-C</li> <li>incremental: NPN o.c. (AB)</li> </ul>	<ul style="list-style-type: none"> <li>absolute: SSI, BiSS-C</li> <li>incremental: 1 V<sub>PP</sub></li> </ul>
<b>power supply</b>	<ul style="list-style-type: none"> <li>5 V <math>\pm</math> 5 %</li> </ul>	<ul style="list-style-type: none"> <li>5 Vdc <math>\pm</math> 5 %</li> </ul>	<ul style="list-style-type: none"> <li>5 Vdc <math>\pm</math> 5 %</li> </ul>
<b>electric connections</b>	<ul style="list-style-type: none"> <li>FFC 10 pin, 0.5 mm pitch</li> <li>wire to board</li> </ul>	<ul style="list-style-type: none"> <li>Hi-flex cable M8 2,0 m or M12 8 pin inline plug</li> </ul>	<ul style="list-style-type: none"> <li>M12 inline connector 8 pin (BiSS/SSI only)</li> <li>M12 inline connector 12 pin (BiSS/SSI + sin/cos only)</li> </ul>
<b>dimensions</b>	<ul style="list-style-type: none"> <li>22.5 x 6 x 3.9 mm (1.28 and 1.50 mm pole pitch)</li> <li>22.5 x 8 x 3.9 mm (2.00 mm pole pitch)</li> </ul>	<ul style="list-style-type: none"> <li>62 x 25 x 14 mm</li> </ul>	<ul style="list-style-type: none"> <li>16 x 10 x 3 mm</li> </ul>
<b>max. operating temperature</b>	<ul style="list-style-type: none"> <li>- 40 to + 100 °C (- 40 to +212 °F)</li> </ul>	<ul style="list-style-type: none"> <li>-25 to +85 °C (-13 to +185 °F)</li> </ul>	<ul style="list-style-type: none"> <li>- 40 to + 85 °C (- 40 to +185 °F)</li> </ul>
<b>IP code</b>	<ul style="list-style-type: none"> <li>IP00</li> </ul>	<ul style="list-style-type: none"> <li>IP67</li> </ul>	<ul style="list-style-type: none"> <li>IP67</li> </ul>
<b>applications</b>	<ul style="list-style-type: none"> <li>robotics and handling systems</li> <li>factory automation</li> <li>electro-medical devices</li> </ul>	<ul style="list-style-type: none"> <li>linear motors</li> <li>factory automation</li> </ul>	<ul style="list-style-type: none"> <li>linear motors</li> <li>torque motors</li> <li>handling systems</li> </ul>

# Incremental Magnetic Sensing Heads

BOGEN offers compact incremental magnetic sensing heads featuring extremely high accuracy and a particularly high degree of modularity. They deliver reliable measuring results even for fast movement speeds and an almost unlimited measuring length. BOGEN sensing heads come with a robust design for customers in automation, instrumentation and motion control applications. Several adjustable parameters allow easy modification of the sensing heads to application-specific needs.

				
	<b>IKS9 / IKS9.1</b>	<b>IKS11/ IKP11</b>	<b>IKS15 / IKS15.1</b>	<b>IKS23</b>
<b>description</b>	<ul style="list-style-type: none"> <li>high performance encoder for high speed measuring</li> <li>linear and rotary applications</li> <li>available in plastic or die cast housing</li> </ul>	<ul style="list-style-type: none"> <li>compact size</li> <li>linear and rotary applications</li> <li>for scales with or without index mark</li> </ul>	<ul style="list-style-type: none"> <li>fast analog output interface (1 V<sub>pp</sub>, 2 V<sub>pp</sub>)</li> <li>non-contact quick position measurement</li> </ul>	<ul style="list-style-type: none"> <li>linear and rotary applications</li> <li>non-contact quick position measurement</li> </ul>
<b>max. resolution</b>	<ul style="list-style-type: none"> <li>0.02 to 500 µm, depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.02 to 500 µm, depending on pole pitch and interpolation</li> </ul>	<ul style="list-style-type: none"> <li>depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.5 - 50 µm</li> </ul>
<b>distance sensor/scale</b>	<ul style="list-style-type: none"> <li>0.1 to 2.5 mm, depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.1 to 2.5 mm, depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.1 to 2.5 mm, depending on pole pitch</li> </ul>	<ul style="list-style-type: none"> <li>0.1 - 2.0 mm, depending on pole pitch and cover tape</li> </ul>
<b>movement speed</b>	<ul style="list-style-type: none"> <li>&gt; 100 m/s, depending on pole pitch, resolution and max. output frequency</li> </ul>	<ul style="list-style-type: none"> <li>&gt;100 m/s, depending on pole pitch, resolution and max. output frequency</li> </ul>	<ul style="list-style-type: none"> <li>up to 5000 m/s, depending on pole pitch, resolution and max. output frequency</li> </ul>	<ul style="list-style-type: none"> <li>max. 16 m/s</li> </ul>
<b>output signals interface</b>	<ul style="list-style-type: none"> <li>Line Driver RS422</li> <li>Push-Pull (TTL)</li> </ul>	<ul style="list-style-type: none"> <li>RS422</li> <li>Push-Pull (TTL)</li> </ul>	<ul style="list-style-type: none"> <li>sin/cos 1 V<sub>pp</sub></li> <li>sin/cos 2 V<sub>pp</sub></li> </ul>	<ul style="list-style-type: none"> <li>Line Driver RS422</li> <li>Push-Pull (HTL)</li> </ul>
<b>power supply</b>	<ul style="list-style-type: none"> <li>5 V ± 5 %</li> <li>24 V on request</li> </ul>	<ul style="list-style-type: none"> <li>5 V ± 10% (3.3 V on request)</li> </ul>	<ul style="list-style-type: none"> <li>5 V ± 5 %</li> <li>7 - 32 V</li> </ul>	<ul style="list-style-type: none"> <li>+ 5 Vdc ± 5%,</li> <li>+ 10 Vdc ÷ + 30 Vdc</li> </ul>
<b>electric connections</b>	<ul style="list-style-type: none"> <li>D-SUB 9 (male)</li> <li>D-SUB 15 (male)</li> <li>M12 inline connector 8 pin</li> <li>customer specific connector</li> </ul>	<ul style="list-style-type: none"> <li>FFC connector</li> <li>solder pads</li> </ul>	<ul style="list-style-type: none"> <li>cable</li> <li>cable + DSub/M12 inline connector</li> </ul>	<ul style="list-style-type: none"> <li>D-SUB 9 (male)</li> <li>D-SUB 15 (male)</li> <li>M12 plug (male)</li> <li>customer specific connector</li> </ul>
<b>dimensions</b>	<ul style="list-style-type: none"> <li>IKS9 (plastic housing): 9 x 13.6 x 35 mm</li> <li>IKS9.1 (die cast housing): 11 x 14.1 x 36 mm</li> </ul>	<ul style="list-style-type: none"> <li>15.8 x 15.4 x 4.76 mm (FFC connector, solder pads)</li> <li>15.8 x 13.4 x 4.76 mm (FFC connector)</li> <li>7.8 x 13.4 x 4.76 mm (FFC connector)</li> </ul>	<ul style="list-style-type: none"> <li>IKS9 (plastic housing): 9 x 13.6 x 35 mm</li> <li>IKS9.1 (die cast housing): 11 x 14.1 x 36 mm</li> </ul>	<ul style="list-style-type: none"> <li>10 x 25.4 x 40 mm</li> </ul>
<b>max. operating temperature</b>	<ul style="list-style-type: none"> <li>- 20 to + 70 °C (- 4 to +185 °F)</li> </ul>	<ul style="list-style-type: none"> <li>- 40 to + 125 °C (-40 to + 257 °F)</li> </ul>	<ul style="list-style-type: none"> <li>- 20 to + 70 °C (-4 to +158 °F)</li> </ul>	<ul style="list-style-type: none"> <li>- 25 to + 85 °C (-13 to +185 °F)</li> </ul>
<b>IP code</b>	<ul style="list-style-type: none"> <li>IP67</li> </ul>	<ul style="list-style-type: none"> <li>IKP11: IP00</li> <li>IKS11: IP67</li> </ul>	<ul style="list-style-type: none"> <li>IP67</li> </ul>	<ul style="list-style-type: none"> <li>IP67</li> </ul>
<b>applications</b>	<ul style="list-style-type: none"> <li>linear motors</li> <li>printing</li> <li>factory automation</li> </ul>	<ul style="list-style-type: none"> <li>robotics and handling systems</li> <li>automation</li> <li>medical technology</li> </ul>	<ul style="list-style-type: none"> <li>linear motors</li> <li>printing</li> <li>factory automation</li> </ul>	<ul style="list-style-type: none"> <li>linear motors</li> <li>factory automation</li> </ul>