LP series
Programmable Absolute Encoder
Cable or M12 connection

- Low profile package saves space
- Excellent resistance to shock and vibration
- 30mm standard through shaft, PEEK reduction hub available
- High protection level of IP66
- High performance in temperatures from -40°C to +100°C
- SSI output
- Programmable resolution up to 16 bits

Certifications:
The LP35 Absolute Encoder is available with the following certifications:

* 2004/108/CE
* UL and cUL Listed (Proc. Cont. Equip. E477683)

Mechanical Characteristics:

<table>
<thead>
<tr>
<th>Material</th>
<th>Vibrations (EN60068-2-6)</th>
<th>Shaft inertia</th>
<th>Static/Dynamic torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover : anodised aluminum</td>
<td>≤ 200m.s⁻² (55 ... 2 000 Hz)</td>
<td>&lt; 84000 g.mm²</td>
<td>30 / 300 mN.m</td>
</tr>
<tr>
<td>Body : anodised aluminum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft : AISI 303 stainless steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ball bearings</td>
<td>6807 - Sealed</td>
<td>Shaft inertia</td>
<td>Static/Dynamic torque</td>
</tr>
<tr>
<td>Maximum loads</td>
<td>Axial: 40 N</td>
<td>Continuous max. speed</td>
<td>4000 min⁻¹</td>
</tr>
<tr>
<td></td>
<td>Radial: 80 N</td>
<td>Permissible max. speed</td>
<td>6000 min⁻¹</td>
</tr>
<tr>
<td>Shocks (EN60068-2-27)</td>
<td>≤ 3000m.s⁻² (during 5 ms)</td>
<td>Encoder weight (approx.)</td>
<td>450g</td>
</tr>
</tbody>
</table>

Output:
Serial Synchronous Interface SSI output provides effective synchronisation in a closed-loop control system. A clock pulse train from a controller is used to shift out sensor data: one bit of position data is transmitted to the controller per clock pulse received by the sensor.

Available mechanics – shaft options:

- AHU9: Through Hollow Shaft
- AHK9: Blind Hollow Shaft
- AHA9: Shaft with Integrated coupling
- AHM9: Solid Shaft

* continuous max. speed = ½ max. load – ISO 281, L10
Programmable Absolute Encoder

**LP series**

Floating Mountings

Cable or M12 connection

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**Dimensions**

**AHU9** – Through hollow shaft – with cable output

Note:

CHc : Hexagonal Socket head cap screws  
HC : Hexagonal socket set screws

**Dimensions**

**AHU9** – Through hollow shaft – with M12 output and anti-rotation 9445/053

**Dimensions**

**AHK9** – Blind hollow shaft – with cable output

Changes possible without further notice - Version 151013
Dimensions
AHA9 – Shaft with integrated coupling – with M12 connection

Dimensions
AHM9 – Solid shaft – with cable output
**Programmable Absolute Encoder**

**Cable or M12 connection**

### Electrical Characteristics:

<table>
<thead>
<tr>
<th>Version</th>
<th>Output signals</th>
<th>Resolution</th>
<th>Operating Voltage Vcl</th>
<th>Supply current (no loads)</th>
<th>Current per channel pair</th>
<th>Max Frequency capability</th>
<th>Encoder accuracy</th>
<th>Short circuits proof</th>
<th>Reverse polarity tolerant</th>
<th>Temperature range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPX</td>
<td>RS422</td>
<td>up to 16 bits</td>
<td>5-30V = 250mA</td>
<td>75mA</td>
<td>40mA</td>
<td>1MHz</td>
<td>+/-0.1°</td>
<td>Yes (except to Vcl)</td>
<td>Yes</td>
<td>-40°C +100°C</td>
</tr>
</tbody>
</table>

### Connection:

<table>
<thead>
<tr>
<th>SL</th>
<th>M12 (1)</th>
<th>-</th>
<th>+</th>
<th>Clk+</th>
<th>Clk-</th>
<th>Data+</th>
<th>Data-</th>
<th>RAZ</th>
<th>Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM</td>
<td>PUR cable (1)</td>
<td>8 pins</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

(1) UL listed : -20°C +80°C

### Programmable possibility:

The programmable LP35 absolute encoder features a patented dynamic encoder resolution capability that allows users to easily program the encoder resolution to any value between 1 and 16 bits per turn. The LP35 allows for virtually unlimited resolution variations.

Using the simple programming interface software and USB interface cable, users can program the encoder resolution on site as needed. In the software, type the encoder resolution and click ‘Program’. A new resolution is now programmed. It’s that easy!

With the LP35, resolution can be programmed and reprogrammed at any time by the user.

For users with multiple requirements, LP35 can be kept in stock and programmed as needed.

LP35 programming cable has to be ordered separately: consult us.

### LP35 Absolute Ordering Options

Use this diagram, working from left to right to construct your model number (Example: AHU9_E6//PPX//xx//SLR//U6)

<table>
<thead>
<tr>
<th>AH</th>
<th>PPX</th>
<th>xx</th>
<th>SLR</th>
<th>U3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH9</td>
<td>hollow shaft</td>
<td>E5 = 5/8”</td>
<td>E6 = 3/4”</td>
<td>E8 = 1”</td>
</tr>
<tr>
<td>AHK9</td>
<td>blind shaft</td>
<td>30 = 30mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHA9</td>
<td>hollow shaft with integrated coupling</td>
<td>E6 = 3/4”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHMP</td>
<td>solid shaft</td>
<td>E3 = 3/8”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stainless steel option available

Anti-rotation accessory: M9445/053 to be ordered separately

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