TIMKEN

THS25 INDUSTRIAL PACKAGE MAGNETIC ENCODER

Timken® magnetic encoder technology offers clear operational and cost benefits over other commonly used technologies. Our superior sensing products provide reliable speed and position data even in harsh operating environments.

A Superior Sensing Solution

In almost every application, patented Timken® magnetic encoder technology provides the needed resolution with higher reliability at a comparable cost to optical encoders.

The THS25 high-resolution, magnetic, hollow-shaft, incremental encoder, like all Timken encoders, relies on the interaction between a sensor and magnetic target. This approach doesn’t require a clear line of target-to-sensor sight like optical encoders.

Durability
As a result, Timken encoders operate reliably even in environments filled with dirt, dust, oil, water or other contaminants.

A patented differential magnetic sensor circuit design also protects it from high-frequency electrical noise and interfering magnetic fields.

Timken Design
The Timken design combines a direction-sensing Hall Effect encoder with an integrated index pulse and a high-accuracy resolution multiplying circuit. The encoder produces and processes the Hall Effect signals to create high-resolution quadrature output signals that provide zero-speed and direction sensing.

Customers with unique application requirements can rely on Timken application engineers to provide expertise and experience.

The Attraction of Magnetic Encoders
- Fully integrated on-chip Hall Effect sensor technology generates industry-standard digital, high-resolution signals and synchronized index pulse signals
- Use as a drop in replacement for current optical encoder applications
- Resistant to shock and vibration
- Standard high-temperature capability up to 105°C
- Sensing for magnetics is not impeded by contamination
- Compact packages for shaft sizes more commonly addressed by bulkier competitor models up to 1.125 in. and 28 mm.
- Range of resolutions from 100 CPR to 2,560 CPR
- Speeds for Quadrature signals up to 200 kHz/channel (800kHz data rate)
More details regarding specifications, installation and instructions available at www.timkenencoders.com

To Order
The part numbering for the Timken Modular Magnetic Encoder provides the information to select the best encoder for your needs. Use the chart below to determine the proper part number for your order.

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<table>
<thead>
<tr>
<th>MOUNTING</th>
<th>BORE</th>
<th>SEAL</th>
<th>CHANNEL</th>
<th>ELECTRICAL</th>
<th>CONNECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 point</td>
<td>41.3-2.75 in</td>
<td></td>
<td>1 - quadrant</td>
<td>1 - open collector</td>
<td>3-pin 0.044 in, 71.2N/m</td>
</tr>
<tr>
<td>Re-mount</td>
<td>31-2.55 in</td>
<td></td>
<td>2 - quadrant</td>
<td>2 - line driver</td>
<td>1-pin MIS Style</td>
</tr>
<tr>
<td>C-lobe</td>
<td>35.5-2.75 in</td>
<td></td>
<td>3 - blind shaft</td>
<td>3 -二线 IP66</td>
<td>2-pin MIS Style</td>
</tr>
<tr>
<td>8-6.5 in</td>
<td>50-0.000 in</td>
<td></td>
<td>4 - blind shaft IP66</td>
<td>4 -二线 MS Style</td>
<td>4-pin MIS Style</td>
</tr>
<tr>
<td>8-6 in</td>
<td>50-0.000 in</td>
<td></td>
<td>5 - 6 in</td>
<td>5 - two wires</td>
<td>8-pin AL2</td>
</tr>
<tr>
<td>8-5.5 in</td>
<td>50-0.000 in</td>
<td></td>
<td>6 - 6 in</td>
<td>6 - 6 in</td>
<td>8-15 pin backlead</td>
</tr>
</tbody>
</table>
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Optimum Applications
- Feedback and vector control
- Robotics
- Web processing
- Specialty machines
- Printing

Specifications and Features
**Mechanical**
- Shaft bore: Diameters up to 28 mm and 1.125 in. Inserts supplied for smaller diameters
- Allowable misalignment: 0.01 mm (0.005 in.)
- T.I.R. on mating shaft, 19.05 mm (0.75 in.) from shaft end
- Bore run-out: -0.0000 in. / +0.0008 in. (-0.000 mm / +0.020 mm) T.I.R. maximum
- Starting torque at 25°C (75°F): 1 in-oz (7 mN•m), max. IP50; 4 in-oz (28 mN•m), max. IP65 seal
- Shaft material: 304 stainless steel
- Bearing housing: Polymer
- Design bearing life: 6,300,000 revs
- Maximum RPM: 6,000 RPM standard; intermitent to 8,000; 4,000 RPM for IP66 seal
- IP50 package in rugged polymer housing standard, with IP66

**Electrical**
- Output format: Two channels in quadrature with gated index
- Cycles per shaft turn: 100 to 2,560 (see nomenclature chart)
- Supply voltage: 5-28 VDC
- Current requirements: 65mA + output load (80mA total max.)
- Output device: Open collector or line driver
- Protection level: Over voltage, reverse voltage and output short circuit
- Frequency response: 200 kHz

**Environmental**
- Enclosure rating: IP50 standard/IP66 optional
- Operating temperature: -20° to 105° C (68° to 221° F)**
- Storage temperature: -25° to 125° C (-13° to 257° F)
- Shock: 100 g for 11 msec duration
- Vibration: 5 to 2000 Hz @ 30gms IEC 60068-2-6
- Humidity: 98% RH without condensation

*Consult Timken for other electrical options.
**Not available at all voltages or configurations. Contact your Timken representative.

**TIMKEN**
The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets high-performance steel as well as mechanical components, including bearings, gears, chain and related mechanical power transmission products and services.

www.timken.com