



## Model 25T/H

### Incremental Thru/Hollow Bore Encoder

# Model 25T/H

## Advanced, Versatile, Reliable

The EPC Model 25T/H embodies the latest advances in materials, sensor and signal technology, and more. These design features combine to provide a single replacement solution for 2.0" to 3.5" encoders, including HS20, HS25 and HS35 style encoders.

### Features

- 2.5" Opto-ASIC encoder with a low profile (2.0")
- Standard bore sizes ranging from 0.625" to 1.125"
- Metric bore sizes ranging from 6 mm to 28 mm
- Up to 1 MHz maximum frequency
- Resolutions to 10,000 CPR
- Temperature range from -40° C to +105° C
- Versatile flex-mount options
- RoHS compliant
- CE marking available

### Applications

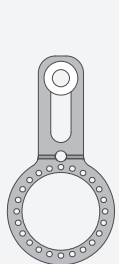
Motor-Mounted Feedback and Vector Control | Specialty Machines | Robotics | Web Process Control | Paper and Printing | High Power Motors

### IP66 Sealing for Shaft & Housing

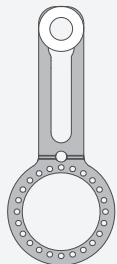
For applications where water or heavy, fine dust is present. Standard seal rating is IP50.

### Versatile Mounting Options

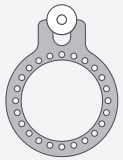
Anti-rotation flex-mounts accommodate a variety of mounting requirements for both OEM and retrofit applications.



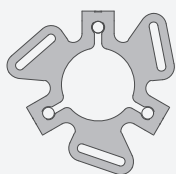
SG Tether Arm Kit



SJ Tether Arm Kit



SH Tether Arm Kit



SE 3-point Flex Mount



### Multiple Output Types

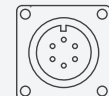
To allow for maximum versatility in new applications or retrofitting to existing systems, the 25T/H is equipped with six different output types: Open Collector, Push-Pull, Line Driver, Pull-Up Resistor. A 5V fixed output option is available with Line Driver or Push-Pull.

### Wide Range of Disc Resolution

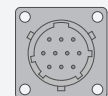
From coarse positioning to demanding precision feedback, the 25T/H can accommodate a wide range of application requirements. Resolution ranges from 1 to 10,000 Cycles Per Revolution.

### Versatile Connectivity

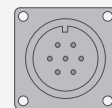
With wide a range of choices, the 25T/H accommodates industry standard connectors.



6-pin MS Style



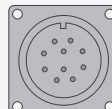
10-pin Bayonet



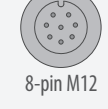
7-pin MS Style



5-pin M12



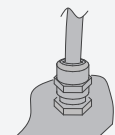
10-pin MS Style



8-pin M12



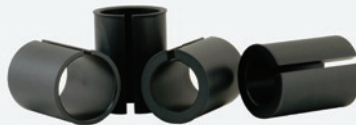
9-pin D-Sub



Cable Gland

### Bore Sleeves

Our Bore Sleeve Kits allow the 25T/H to replace several encoders with just one encoder. Offering 22 bore sizes – ranging from 1/4" through 1 1/8" (6 mm to 28 mm) – the non-conducting ULTEM bore sleeve material provides thermal and ESD isolation.



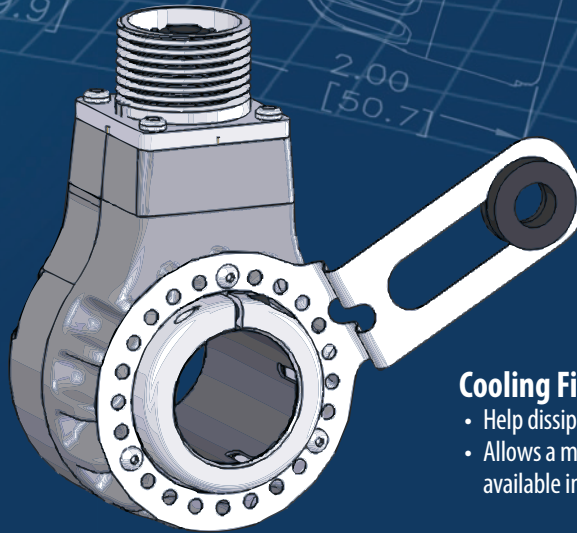
# Advanced Design for Superior Performance

## Housing Construction

- Comprised of a proprietary high-strength, lightweight composite
- Low mass results in reduced bearing wear on motors and other devices
- Embedded particles in the composite offer noise protection for internal circuitry

## Bore Sleeve Material: ULTEM 1000

- Effective thermal barrier
- Provides electrical isolation from electrically induced bearing damage

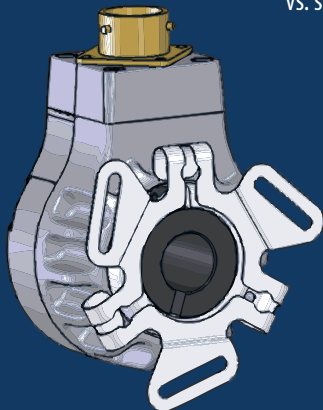


## Cooling Fins

- Help dissipate heat away from the bearings and electronics
- Allows a max bore size of 1.125" diameter, the largest available in a 2.5" housing

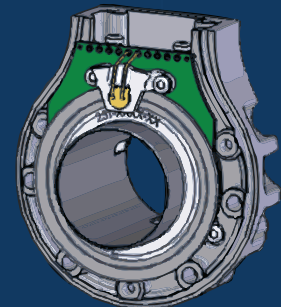
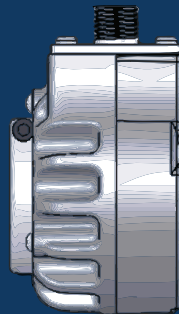
## Radial Ball Bearings

- Large, robust bearings with 30 mm internal diameter
- Polyrex EM grease for extended temperature vs. speed performance



## Opto-ASIC Sensing and Signal Processing Technology

- "Board-on-a-chip" design reduces the number and size of components
- Highly stable over a broad thermal profile (-40° C to +105° C)
- Reduced susceptibility to shock and vibration
- Phased-array sensor provides for a clean, reliable signal
- Wide sensor-to-disk air gap



## Additional Options

### Corrosion Resistance

Your encoder can face tough enemies: washdown, chemicals, salts, acids, solvents and more. For applications in these conditions, specify the corrosion resistant option. This protects your encoder from caustic environments and corrosive atmospheres. You'll prolong encoder life, reduce downtime and ensure reliable feedback.



Corrosion resistant option includes:

- Stainless steel M12 connector
- Corrosion resistant gland/cable
- Non-corrosive nylon composite housing
- Stainless steel shaft collar and mounting hardware

### Motor Kits

Simplify the process of selecting an encoder, mating connector, protective cover, and installation hardware with a 25T Motor Kit. Designed around popular motor style encoders and configurations, all the feedback components you need are bundled together, saving you time and ensuring compatibility. To protect this high performance encoder, our cage style 56C Protective Cover is included with every kit.

Model 25T Motor Kit includes:

- Flex-mount
- 56C Protective Cover
- Mating connector



### Magnetic Couplings

When you need to install an encoder quickly and cost-effectively, self-centering magnetic couplings allow for simple integration to any ferrous rotating shaft, and they withstand up to 100 lbs shear force.



# Model 25T/H Product Specifications

## Electrical

Input Voltage ..... 4.75 to 28 VDC max for temperatures up to 85° C  
4.75 to 24 VDC max for temperatures between 85° C and 105° C

Input Current ..... 100 mA max with no output load

Output Format ..... Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the mounting face.

Output Types ..... Open Collector – 20 mA max per channel  
Pull Up – Open Collector with 2.2K ohm resistor, 20 mA max per channel  
Push-Pull – 20 mA max per channel  
Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply)

Index ..... Once per revolution.  
1 to 360 CPR: Ungated  
361 to 10,000 CPR: Gated to output A

Max Frequency ..... 250 kHz for 1 to 2500 CPR  
500 kHz for 2501 to 5000 CPR  
1 MHz for 5001 to 10,000 CPR

CE Testing ..... Emissions tested per EN61000-6-3:2001 as applicable. Immunity tested per EN6100-6-2: 2005 as applicable.

Min. Edge Sep ..... 45° electrical min, 63° electrical or better typical

Rise Time ..... Less than 1 microsecond

Accuracy ..... Within 0.1° mechanical from one cycle to any other cycle, or 6 arc minutes.

## Mechanical

Max Shaft Speed ..... 6000 RPM, 8000 RPM intermittent  
4000 RPM for IP66 seal option

Bore Tolerance ..... -0.0000"/+0.0008"

User Shaft Tolerances  
Radial Runout ..... 0.005" max  
Axial Endplay ..... ±0.050" max

Starting Torque ..... IP50 sealing: 1.0 oz-in typical  
IP66 sealing: 4.0 oz-in typical  
Note: Add 1.0 oz-in typical for -20° C operation

Moment of Inertia .....  $7.6 \times 10^{-4}$  oz-in-sec<sup>2</sup>

Max Acceleration .....  $1 \times 10^5$  rad/sec<sup>2</sup>

Housing ..... Proprietary nylon composite

Weight ..... 8 oz typical

## Environmental

Storage Temp ..... -20° C to 85° C

Humidity ..... 98% RH non-condensing

Vibration ..... 20 g @ 5 to 2000 Hz

Shock ..... 80 g @ 11 ms duration

Sealing ..... IP50, IP66 with shaft seals at both ends

