

# Model 25T Thru-Bore Encoder Model 25H Hollow Blind Bore



Incremental Thru-Bore  
& Motor Mount Encoders

## Features

- 63.50mm Opto-Asic Encoder with a low profile (50mm)
- Bore Sizes Ranging From 0.250" to 1.125" and 6mm to 28mm
- Resolutions to 10,000 PPR, Frequencies up to 1MHz
- Single Replacement Solution For 50.80mm to 88.90mm Encoders
- Versatile Flexible Mounting Options
- RoHS Compliant

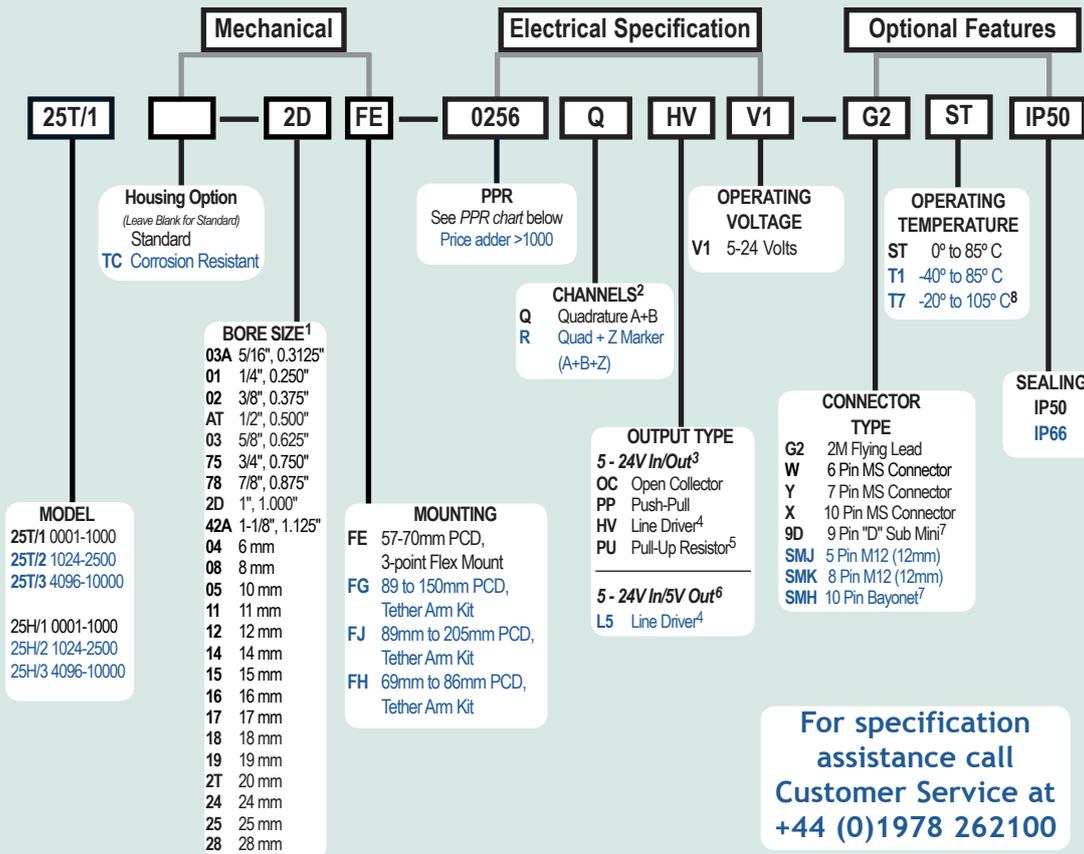
Introducing the next generation of high performance encoders - the Model 25T/H. As contemporary as its appearance, the Model 25T/H features the largest bore available in a 63.50mm encoder, mounting directly on shafts as large as 28 mm. With resolutions of up to 10,000 PPR, and frequencies of up to 1MHz this industrial strength encoder is perfect for fast revving motors. The 25T/H features the next generation of proprietary Opto-ASIC sensor which provides superior accuracy and precision counts. The injection moulded housing, made from a blend of nylon composites, is grooved with "cooling fins" and can take the extreme heat of the motion control industry. With sealing available up to IP65 and many new rugged flexible mounting options, the Model 25T/H can perform in demanding industrial environments.

## Common Applications

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

## Model 25T/H Ordering Guide

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.



### Model 25T PPR Options

0002	0003	0004	0005	0008	0010	0011
0012	0024	0025	0030	0032	0060	0064
0070	0080	0100	0105	0115	0120	0125
0150	0192	0240	0250	0256	0300	0336
0360	0500	0512	0600	1000	1024	1200
2000	2048	2500	4096	5000	10,000	

Contact Customer Service For other disc resolutions.

### NOTES:

- 1 [More Bore Sizes Available](#) - Contact Customer Service for additional options not shown.
- 2 Contact Customer Service for non-standard index gating.
- 3 24Vcc Max for T2 temperature option.
- 4 Not available with 5-pin M12 or 6-pin MS style connectors. Available with 7-pin MS style connector without index Z.
- 5 With Input Voltage above 16 Vcc, operating temperature is limited to 85° C max.
- 6 Standard operating temperature only.
- 7 Not available with corrosion resistant option.
- 8 Contact Sales for availability on resolutions < 360 PPR.

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## Model 25T/H Specifications

### Electrical

- Input Voltage.....5 to 24 Vcc max
- Input Current.....100 mA max (65mA Typical) 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.  
See *Waveform Diagram*.
- 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 Vcc supply)
- Index .....Once per revolution.  
361 to 10,000 PPR: Gated to output A  
1 to 360 PPR: Ungated  
See *Waveform Diagram*.
- Max Frequency.....250 kHz for 1 to 2500 PPR  
500 kHz for 2501 to 5000 PPR  
1 MHz for 5001 to 10,000 PPR
- 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
- Quad Phasing.....90° (±22.5°) electrical
- Symmetry .....180° (±18°) electrical
- Rise Time.....Less than 1 microsecond
- Accuracy.....Within 0.1° mechanical from one cycle to any other cycle, or 6 arc minutes.

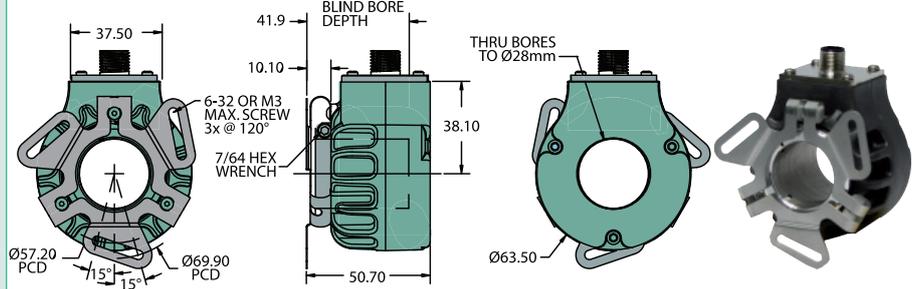
### Mechanical

- Max Shaft Speed.....6000 RPM, 8000 RPM intermittent  
4000 RPM for IP66 seal option
- Bore Size .....0.250" through 28mm
- Bore Tolerance .....-0.00mm/+0.02mm
- User Shaft Tolerances  
Radial Runout.....0.127mm max  
Axial Endplay.....±1.27mm max
- Starting Torque .....IP50 sealing: 7.0 x 10<sup>-3</sup> Nm  
IP66 sealing: 28.0 x 10<sup>-3</sup> Nm  
Note: Add 7.0 x 10<sup>-3</sup> for -20° C operation
- Electrical Conn .....6-, 7-, or 10-pin MS Style, 5- or 8-pin M12 (12 mm), 10-pin Bayonet or gland with 2 Metres of cable (foil and braid shield, 24 AWG conductors), 9-pin D-Sub
- Housing.....Proprietary nylon composite
- Mounting.....57.1mm to 69.8mm PCD 3-point flex mount  
88.9mm to 149.8mm PCD tether arm kit,  
88.9mm to 205.7 PCD tether arm kit and  
69mm to 86.8mm PCD tether arm kit.  
See mechanical drawing for dimensions
- Weight.....226 grams typical

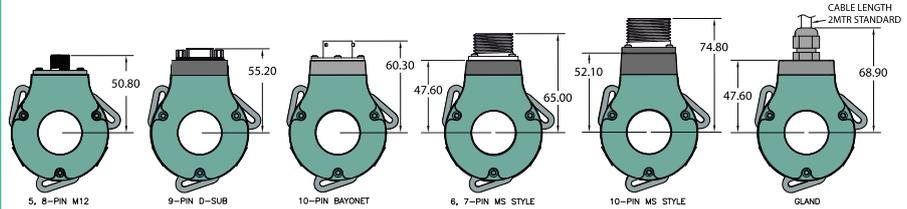
### Environmental

- Operating Temp.....-20° to 85° C for standard models  
-20° to 105° C for high temperature option
- Storage Temp.....-20° 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

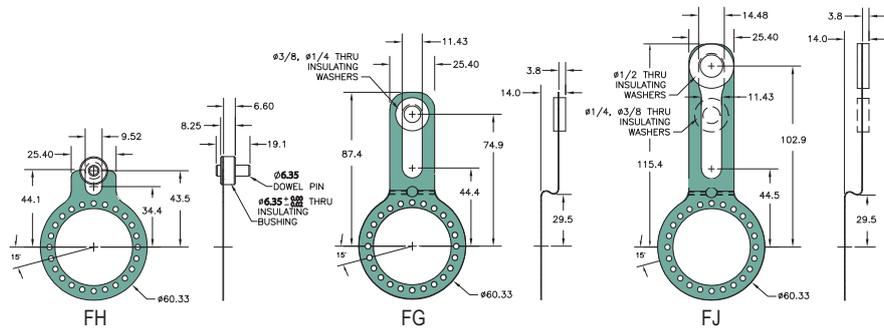
## Model 25T/H



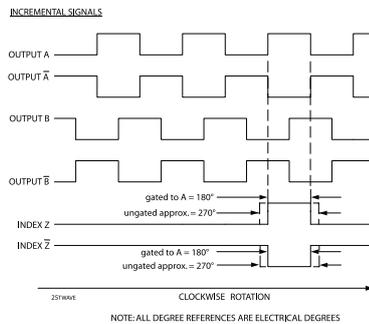
## Model 25T/H Connector Options



## Model 25T/H Mounting Options



## Waveform Diagrams



## Wiring Table

Function	Gland Cable Wire Color	5-pin M12	8-pin M12	10-pin MS	7-pin MS HV.L5	7-pin MS PU, PP, OC	6-pin MS PU, PP, OC	9-pin D-sub	10-pin Bayonet HV, LS, OD PU, PP, OC
0 Volts	Black	3	7	F	F	F	A, F	9	F
+VCC	White	1	2	D	D	D	B	1	D
A	Brown	4	1	A	A	A	D	2	A
A'	Yellow	---	3	H	C	---	---	3	H
B	Red	2	4	B	B	B	E	4	B
B'	Green	---	5	I	E	---	---	5	J
Z	Orange	5	6	C	---	C	C	6	C
Z'	Blue	---	8	J	---	---	---	7	K
Case	---	---	---	G	G	G	---	8	G
Shield	Bare <sup>1</sup>	---	---	---	---	---	---	---	---

<sup>1</sup>Cable shield (bare wire) is connected to internal case

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