

# Model 260 Ultra Versatile Commutated Thru-Bore

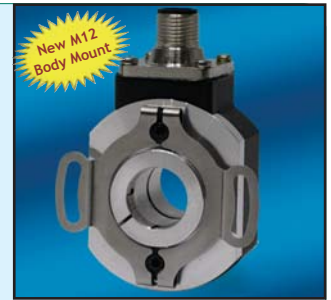


# Principle Engineering



## Features

- Low Profile 30.30mm
- Up to 12 Pole Commutation Available
- Thru-Bore Style
- Simple, Innovative Flexible Mounting System
- Incorporates Opto-ASIC Technology



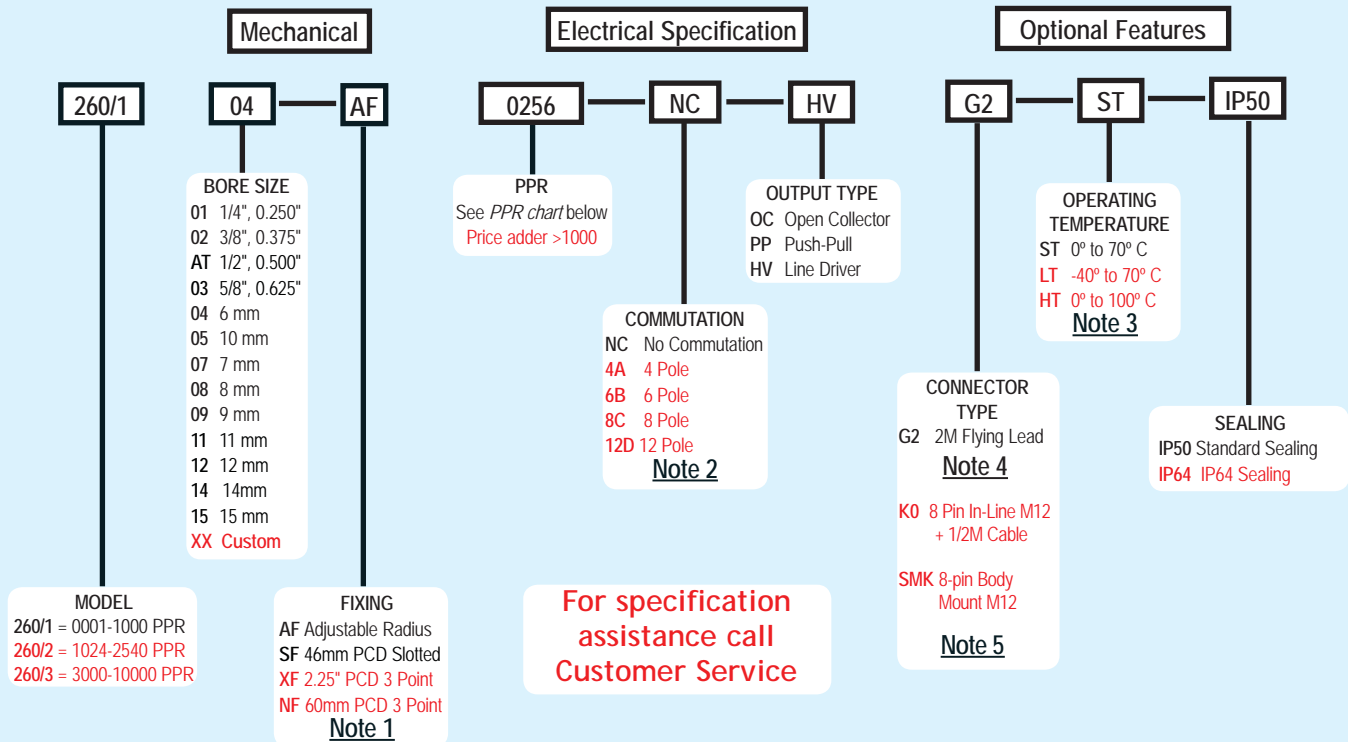
The Model 260's larger bore (up to 15.875mm) and low profile make it the perfect solution for many machine and motor applications, and is provided with a full Thru-Bore. The Model 260 uses a pioneering Opto-ASIC design, and innovative anti-backlash mounting system, allowing simple, reliable, and precise encoder attachment. Unlike traditional kit or modular encoder designs, its integral bearing set provides stable and consistent operation without concerns for axial or radial shaft runout. For brushless servo motor applications, the Model 260 can be specified with three 120° electrical phase tracks to provide up to 12 pole commutation feedback. The optional extended temperature capability allows servo motors to operate at higher power outputs and duty cycles.

## Common Applications

Brushless Servo Motor Commutation, Robotics, Motor-Mounted Feedback, Assembly Machines, Digital Plotters, High Power Motors

## Model 260 Ordering Guide

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



### Model 260 PPR Options

0001*	0010*	0011*	0012*	0020*	0025*	0030*
0040*	0060	0100	0120	0128*	0200	0250
0254	0256	0300	0360	0400	0500	0512
0600	0720	0800	0840	1000	1024	1200
1220	1250	1270	1500	1800	2000	2048
2500	2540	3000	4096	6000	8192	10000

\*Contact Customer service for High Temp option

Contact Customer Service for other disc resolutions; not all disc resolutions available with every commutation option.

### NOTES:

- 1 Contact Customer Service for additional options not shown.
- 2 Not available in all configurations. Contact Customer Service for availability.
- 3 5 to 16 VCC supply only for HT option.
- 4 For non-standard cable lengths contact sales office for details and cost.
- 5 Not available with commutation.

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## Model 260 Specifications

### Electrical

- Input Voltage.....4.75 to 24 VCC for temperatures up to 70° C  
5 to 16 VCC for 0° to 100° C operating temperature
- 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. See *Waveform Diagrams* below.
- Output Types.....Open Collector- 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 gated to channel A. See *Waveform Diagrams* below.
- Freq. Response.....200 kHz standard (up to 1MHz)
- Noise Immunity.....Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6, BS EN55011
- Symmetry.....180° (±18°) electrical
- Quad. Phasing.....90° (±22.5°) electrical
- Min. Edge Sep.....67.5° electrical
- Accuracy.....Within 0.01° mechanical from one cycle to any other cycle, or 0.6 arc minutes.
- Commutation.....Up to 12-pole. Contact Customer Service for availability.
- Comm. Accuracy.....1° mechanical

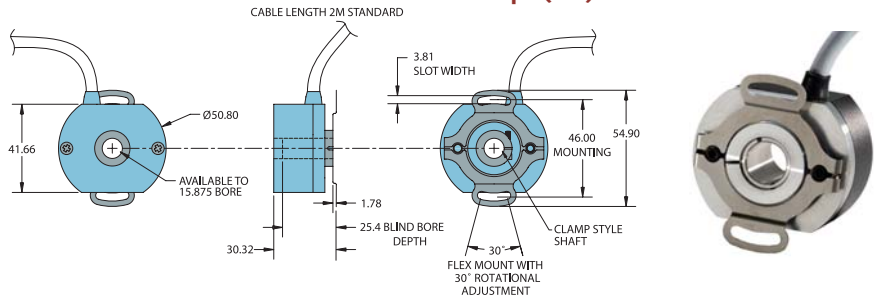
### Mechanical

- Max Shaft Speed.....7500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
- Bore Size.....6mm through 0.625" (15.875mm)
- Bore Tolerance.....H7 (SLIDING FIT FOR g6)
- User Shaft Tolerances  
Radial Runout.....0.2mm max TIR  
Axial Endplay.....0.75mm max
- Starting Torque.....IP50 Thru-Bore: 3.53 x 10<sup>-3</sup> Nm  
IP64 Thru-Bore: 1.765 x 10<sup>-2</sup> Nm  
38.84 x 10<sup>-3</sup> Nm for -40° C operation
- Max Acceleration.....1 X 10<sup>5</sup> rad/sec<sup>2</sup>
- Electrical Conn.....2M cable (foil and braid shield, 24 AWG conductors non-commutated, 28 AWG commutated), or 8-pin M12 (12 mm) in-line connector with 0.5M cable (foil and braid shield)
- Housing.....Black non-corrosive finish
- Mounting.....Slotted Flex Mount standard, additional flex mount options available (see Ordering Guide)
- Weight.....200 gms typical

### Environmental

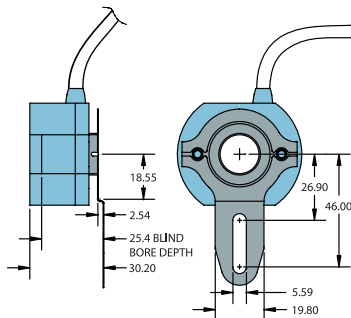
- Operating Temp.....0° to 70° C for standard models  
-40° to 70° C for low temperature option  
0° to 100°C for high temperature option
- Storage Temp.....-40° to +100° C
- Humidity.....98% RH non-condensing
- Vibration.....10 g @ 58 to 500 Hz
- Shock.....50 g @ 11 ms duration
- Sealing.....IP50; IP64 available

## Model 260 With Front Shaft Clamp (SF)

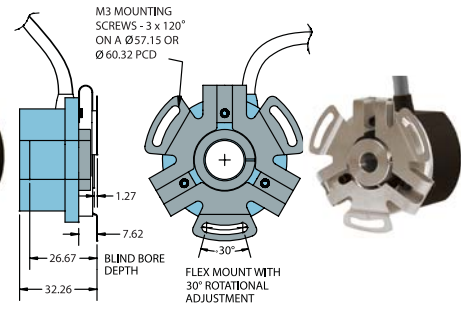


## Model 260 Additional Mounts

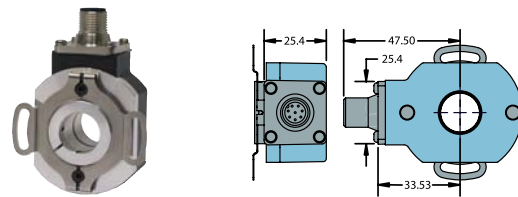
### Flex Arm (AF)



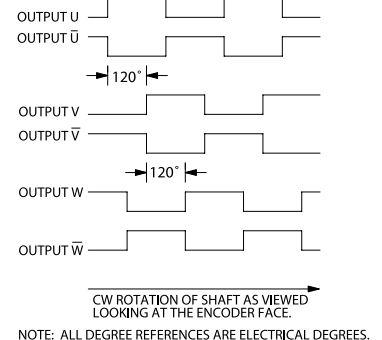
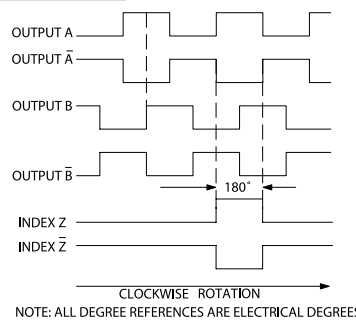
### Three Point Flex Mount (NF, XF)



### Body Mount M12 (SMK)



## Waveform Diagrams



## Wiring Table

Function	Cable Wire Color	8-pin M12**
Com	Black	7
+VDC	White	2
A	Brown	1
A'	Yellow	3
B	Red	4
B'	Green	5
Z	Orange	6
Z'	Blue	8
U	Violet	--
U'	Gray	--
V	Pink	--
V'	Turquoise	--
W	Red/Green	--
W'	Red/Yellow	--
Shield	Bare *	--