

# Model 260 Ultra Versatile Commutated Encoder



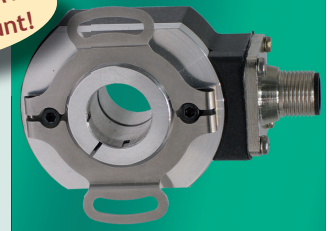
Incremental Thru-Bore & Motor Mount Encoders



## Features

- Low Profile 30.30mm
- Up to 12 Pole Commutation
- Thru-Bore and Hollow Bore (Blind) Styles
- Simple, Innovative Flexible Mounting System
- Incorporates Opto-ASIC Technology

Optional M12 Body Mount!



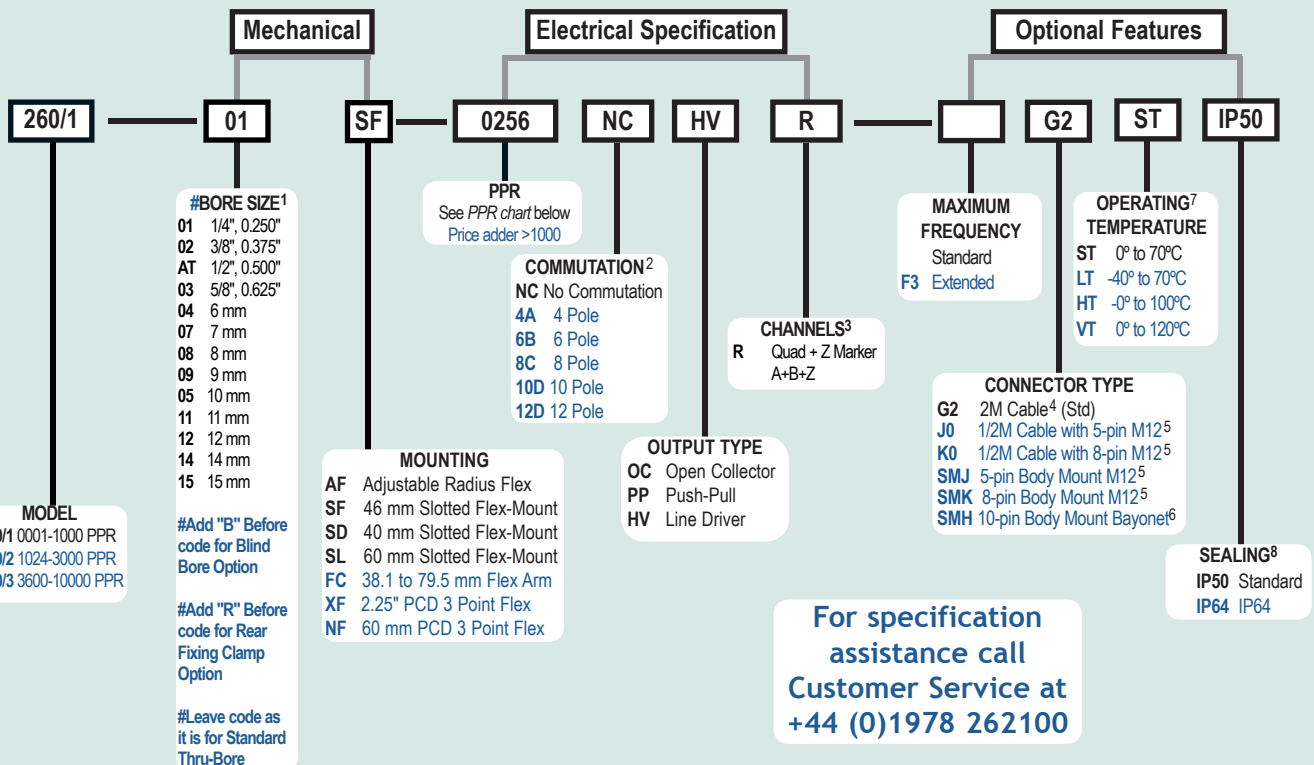
The Model 260's larger bore (up to 15.87mm) and low profile make it the perfect solution for many machine and motor applications. Available in two distinct formats - a Hollow Bore and a complete Thru-Bore - the Model 260 uses pioneering Opto-ASIC design. The Model 260 uses innovative anti-backlash mounting 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

Servo Motor Control, Robotics, Speciality Assembly Machines, Digital Plotters, High Power Motors

## Model 260 Ordering Guide

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



For specification assistance call Customer Service at +44 (0)1978 262100

## Model 260 PPR Options

0001 thru 0189*	0200	0250	0254	0256
0300	0360	0400*	0500	0512
0720	0800	0840	1000	1024
1220	1250	1270	1500	1800*
2048	2500	2540	3000	3600*
4096	5000	6000	8192	7200*
10,000				8192

\* Contact customer service for availability

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 Contact Customer Service for non-standard marker gating or phase relationship options.
- 4 For non-standard cable lengths contact sales for availability and cost.
- 5 Not available with commutation or extreme temperature (VT) Option. 5-Pin not available with Line Driver (HV) output. Additional cable lengths available. Please consult customer service.
- 6 Not available with commutation.
- 7 5 to 16 Vcc supply only for HT option. 5 Vcc supply only for VT option.
- 8 Increased starting torque with IP64 Option.

# Model 260 Ultra Versatile Commutated Encoder



## Model 260 Specifications

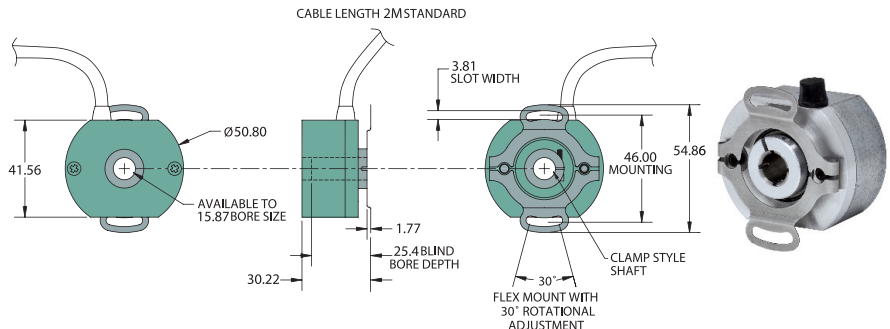
### Electrical

Input Voltage.....	5 to 24 Vcc for temperatures up to 70° C 5 to 16 Vcc for 0° to 100° C operating temperature 5 Vcc for 0° to 120° 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 <i>Waveform Diagrams</i> .
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 Vcc supply)
Index.....	Once per revolution gated to channel A. See <i>Waveform Diagrams</i> .
Max. Frequency.....	Standard Frequency Response is 200 kHz for PPR 1 to 2540 500 kHz for PPR 2541 to 5000 1 MHz for PPR 5001 to 10,000 Extended Frequency Response (optional) is 300 kHz for PPR 2000, 2048, 2500, and 2540
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

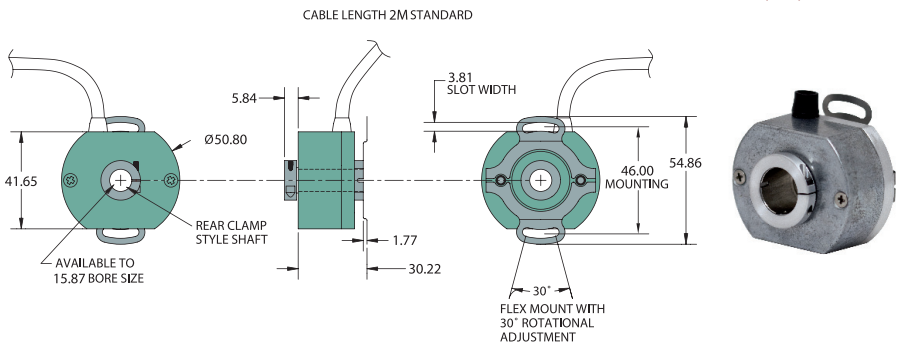
### Mechanical

Max Shaft Speed.....	7500 RPM. Higher shaft speeds may be achievable, contact Customer Service. Note: For extreme temperature operation, de-rate temperature by 5° C for every 1000 RPM above 3000 RPM
Bore Size.....	0.250" through 0.625" 5 mm through 15 mm
Bore Tolerance.....	H7 (Sliding fit for g6)
User Shaft Tolerances	
Radial Runout.....	0.2mm max
Axial Endplay.....	±0.75mm max
Starting Torque.....	IP50 Thru-Bore: 3.53 x 10 <sup>-3</sup> Nm IP50 Hollow Bore: 2.12 x 10 <sup>-3</sup> Nm IP64 Thru-Bore: 1.765 x 10 <sup>-2</sup> Nm IP64 Hollow Bore: 1.141 x 10 <sup>-2</sup> Nm Note: Add 38.84 x 10 <sup>-3</sup> Nm for -40° C operation
Electrical Conn.....	2M cable (foil and braid shield, 24 AWG conductors non-commutated, 28 AWG commutated), 5- or 8-pin M12 (12 mm) in-line connector with 0.5M cable (foil and braid shield), 5- or 8-pin M12 body mount, 10-pin Bayonet
Housing.....	Non-Corrosive material
Mounting.....	Slotted Flex Mount standard, additional flex mount options available (see Ordering Guide)
Weight.....	200 grams typical
<b>Environmental</b>	
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 0° to 120° C for extreme 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

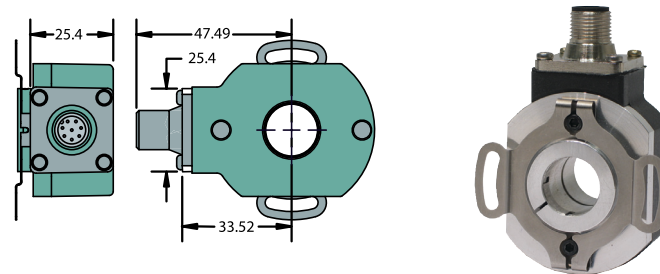
## Model 260 with Front Shaft Clamp (Standard) With 46mm PCD Slotted Flex (SF)



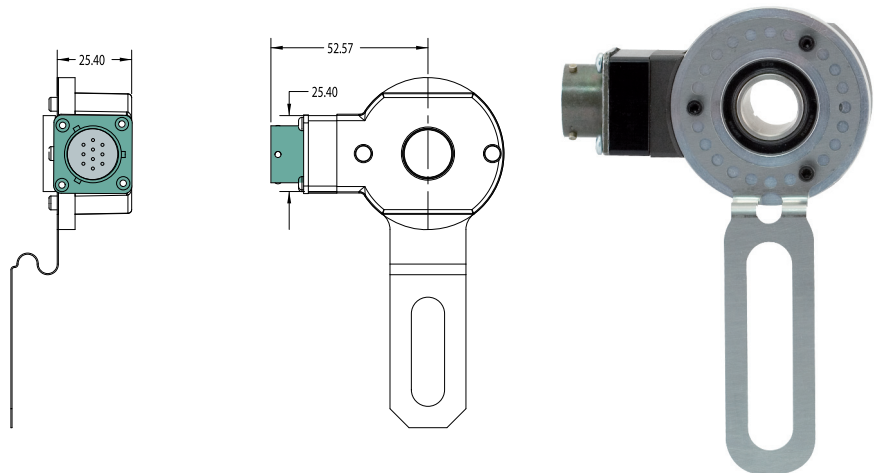
## Model 260 with Rear Fixing Clamp With 46mm PCD Slotted Flex (SF)



## Body Mount M12 (SMJ & SMK)



## Body Mount 10-Pin Bayonet (SMH)



All dimensions are in mm with a tolerance of ±0.127mm or ±0.254 unless otherwise specified

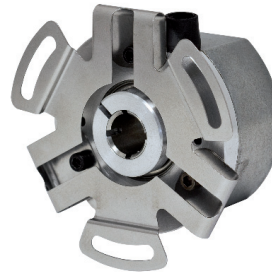
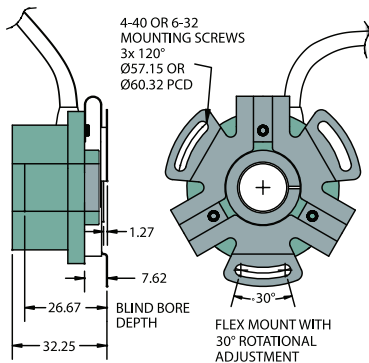
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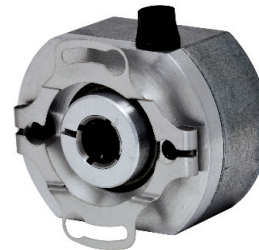
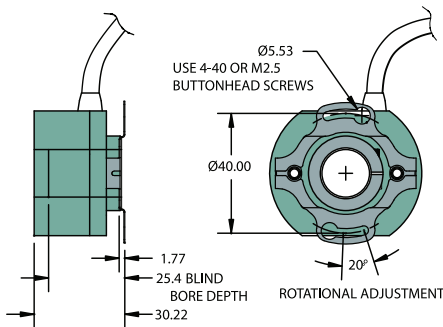


Incremental Thru-Bore & Motor Mount Encoders

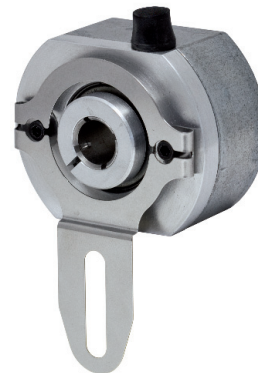
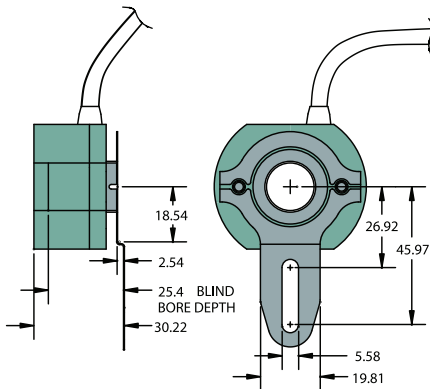
## Three Point Flex Mount (XF,NF)



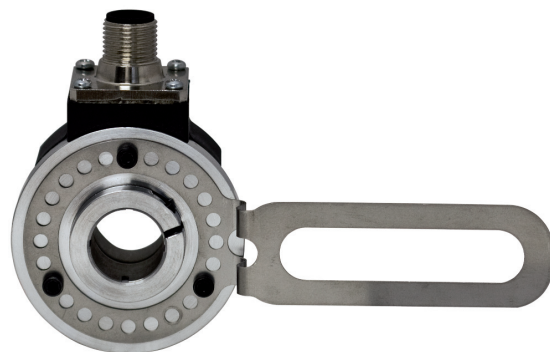
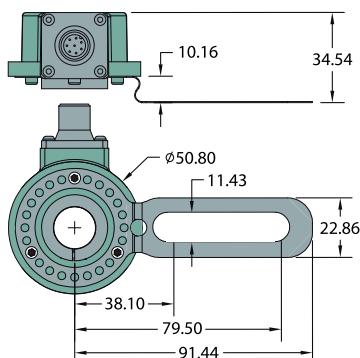
## 40mm PCD Flex Mount (SD)



## Adjustable Radius Flex Arm (AF)



## 38.1 to 79.5mm Flex Arm (FC)

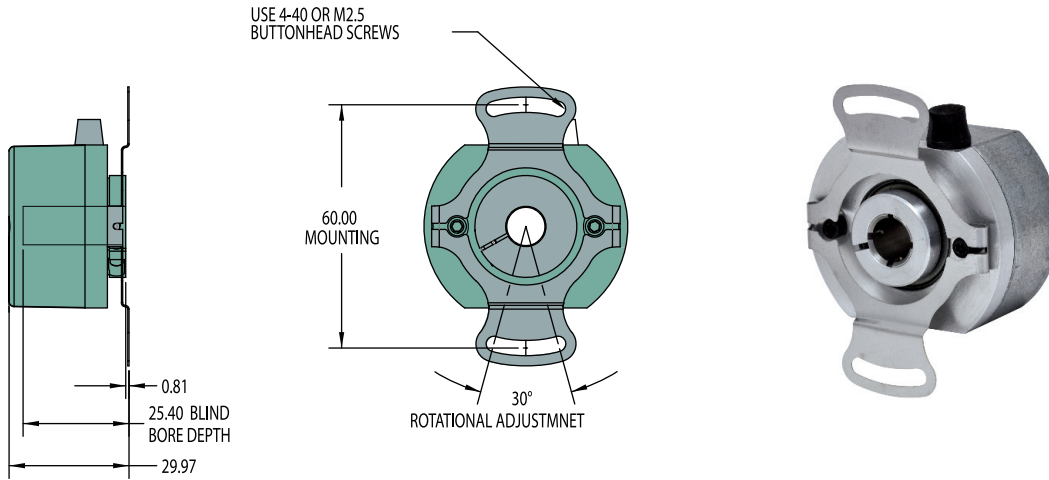


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# Model 260 Ultra Versatile Commutated Encoder



## 60mm PCD Flex Mount (SL)

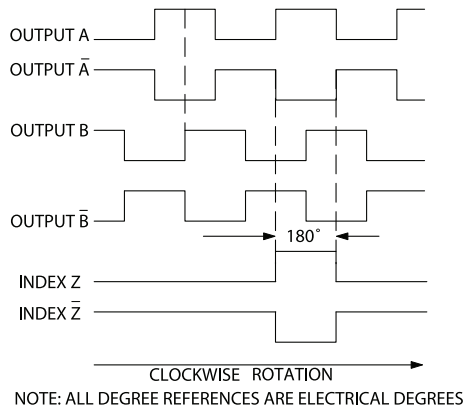


All dimensions are in mm with a tolerance of  $\pm 0.127\text{mm}$  or  $\pm 0.254\text{mm}$  unless otherwise specified

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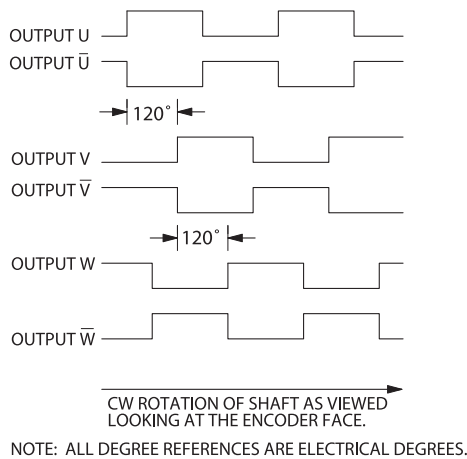
## Model 260 Connector Options

### Waveform Diagrams



### Wiring Table

Function	Cable Wire Color	5-pin M12 <sup>2</sup>	8-pin M12 <sup>2</sup>	10-pin Bayonet <sup>3</sup>	
0 Volts	Black	3	7	F	1 Cable shield (bare wire) is connected to internal case.
+ Vcc	White	1	2	D	
A	Brown	4	1	A	
A'	Yellow	--	3	H	
B	Red	2	4	B	2 Cable shield and M12 connector body is connected to internal case.
B'	Green	--	5	J	
Z	Orange	5	6	C	
Z'	Blue	--	8	K	3 Pin G is connected to internal case.
U	Violet	--	--	--	
U'	Gray	--	--	--	
V	Pink	--	--	--	
V'	Turquoise	--	--	--	
W	Red/Green	--	--	--	
W'	Red/Yellow	--	--	--	
Shield	Bare <sup>1</sup>	--	--	G	



### Connector Pin-Outs

