

Model 86A Extra Heavy Duty Machine Tool Encoder



Incremental Shaft Encoders



Features

- Standard 68mm Diameter Package
- Up to 30000 PPR, Opto-Asic Technology
- Square Flange Mounting
- IP65 Double O-ring Sealed

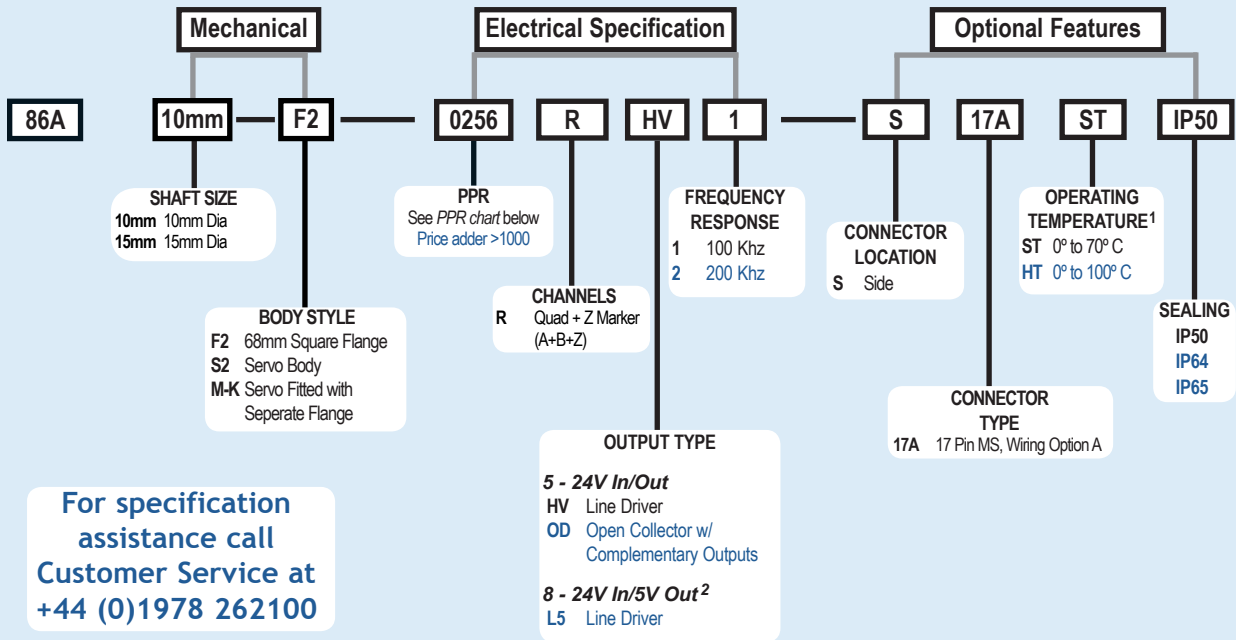
The Model 86A is an extra heavy duty unit which employs a highly reliable Opto-Asic encoder module mounted with a rugged mechanical housing. The heavy duty sealed bearings, together with double O-ring sealing makes this encoder a serious and reliable alternative to a wide range of machine tool encoders, and at an advantageous price.

Common Applications

Motor Control Feedback, Conveyors, Elevator Controls, Machine Control, Food Processing, Process Control, Robotics, Material Handling, Textile Machines.

Model 86A Ordering Guide

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



Model 86A PPR Options

0001*	0002*	0004*	0005*	0006*	0007*	0008*	0010*	0011*
0012*	0014*	0020	0021*	0024*	0025*	0028*	0030*	0032*
0033*	0034*	0035*	0038*	0040*	0042*	0045*	0050*	0060
0064*	0100	0120	0125	0128*	0144*	0150*	0160*	0192*
0200	0240*	0250	0254*	0256*	0300	0333*	0360	0400
0500	0512	0600	0625*	0635	0665*	0720	0768*	0800
0889	1000	1024	1200	1201 ^a	1203 ^a	1204 ^a	1250 ^a	1270 ^a
1440	1500	1800	2000	2048	2400 ^a	2500	2540 ^a	2880 ^a
3000 ^a	3600 ^a	4000 ^a	4096 ^a	5000 ^a	6000 ^a	7200 ^a	7500 ^a	9000 ^a
10,000 ^a	10,240 ^a	12,000 ^a	12,500 ^a	14,400 ^a	15,000 ^a	18,000 ^a	20,000 ^a	20,480 ^a
25,000 ^a	30,000 ^a							

NOTES:

- 1 24 Vcc Max for high temperature option.
- 2 Standard temperature, 60 to 3000 PPR only.

* Contact Customer Service for High Temperature Option.

^a High Temperature Option (H) limited to 85° C maximum for these PPR options.

Contact Customer Service to determine all currently available PPR values. Special disk resolutions are available upon request. A one-time NRE fee may apply.

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Model 86A Specifications

Electrical

Input Voltage.....4.75 to 24 VCC max for temperatures up to 70° C
 Input Current.....100 mA max with no output load
 Input Ripple.....100 mV peak-to-peak at 0 to 100 kHz
 Output Format.....Incremental- Two square waves in quadrature with channel A leading B for clockwise rotation, as viewed from the encoder mounting face. See *Waveform Diagrams* below.
 Output Types.....Push-Pull- 20 mA max per channel
 Line Driver- 20 mA max per channel (Meets RS 422 at 5 VCC supply)
 Index.....Occurs once per revolution. The index is Ungated. See *Waveform Diagrams* below.
 Freq Response.....Up to 200 KHz
 Noise Immunity.....Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; DDENV 50141; DDENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2
 Symmetry.....180° (±18°) electrical at 100 kHz output
 Quad Phasing.....1 to 2540 PPR: 90° (±22.5°) electrical at 100 kHz output
 Min Edge Sep.....1 to 2540 PPR: 67.5° electrical at 100 kHz output
 Rise Time.....Less than 1 microsecond
 Accuracy.....Instrument and Quadrature Error: For 0500 to 2540 PPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle.

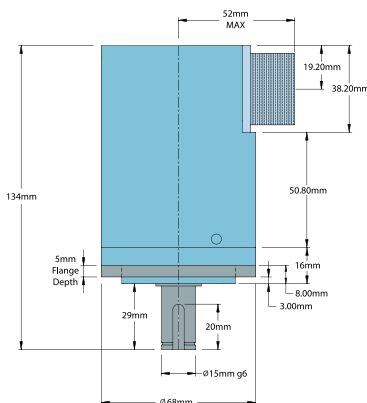
Mechanical

Max Shaft Speed.....3600 RPM. Higher shaft speeds may be achievable, contact Customer Service.
 Shaft Size.....See order code
 Shaft Material.....303 stainless steel
 Shaft Rotation.....Bi-directional
 Radial Shaft Load.....35kg max
 Axial Shaft Load.....35kg max
 Starting Torque.....2.118 x 10⁻² Nm typical.
 Electrical Conn.....17-pin MS Style, or gland with 2M of cable (foil and braid shield, 24 AWG conductors)
 Housing.....Anodised Aluminium
 Bearings.....Precision ABEC ball bearings
 Mounting.....Square Flange with 4 Holes 5.50mm Dia on a 71.19 PCD
 Weight.....800 grams typical

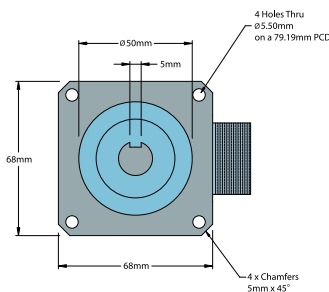
Environmental

Operating Temp.....0° to 70° C for standard models
 0° to 100° C for high temperature option
 Storage Temp.....-25° to +85° C
 Humidity.....95% RH non-condensing
 Vibration.....10 g @ 58 to 500 Hz
 Shock.....50 g @ 11 ms duration
 Sealing.....IP64, (IP65 optional)

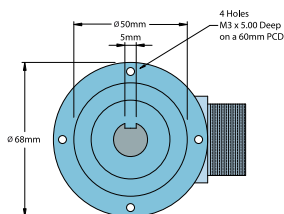
Model 86A F2 Body Option



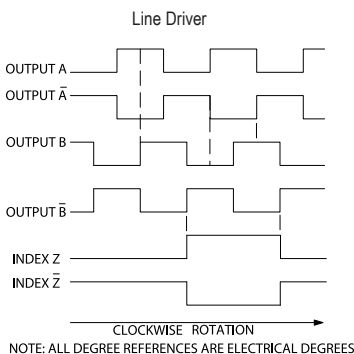
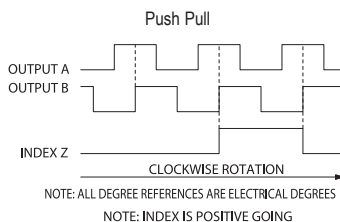
Model 86A M-K Body Option



Model 86A S2 Body Option



Waveform Diagrams



Wiring Tables

17pin Conn	Option A
A	A
B	Z
C	B
D	—
E	—
F	—
G	—
H	+Vcc
J	—
K	0 Volts
L	—
M	—
N	/A
P	/Z
R	/B
S	—
T	—

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