

Model 86F Extra Heavy Duty Machine Tool Encoder



Ø90.0 mm

Features

- Transverse Slotted Shaft
- Up to 30000 PPR, Opto-Asic Technology
- 90mm Round Flange with 3 x 4.5mm Dia Fixing Holes at 120° Apart on a 82mm PCD
- Double O-ring Sealed

The Model 86F is an extra heavy duty unit which employs a highly reliable Opto-Asic encoder module mounted to 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.

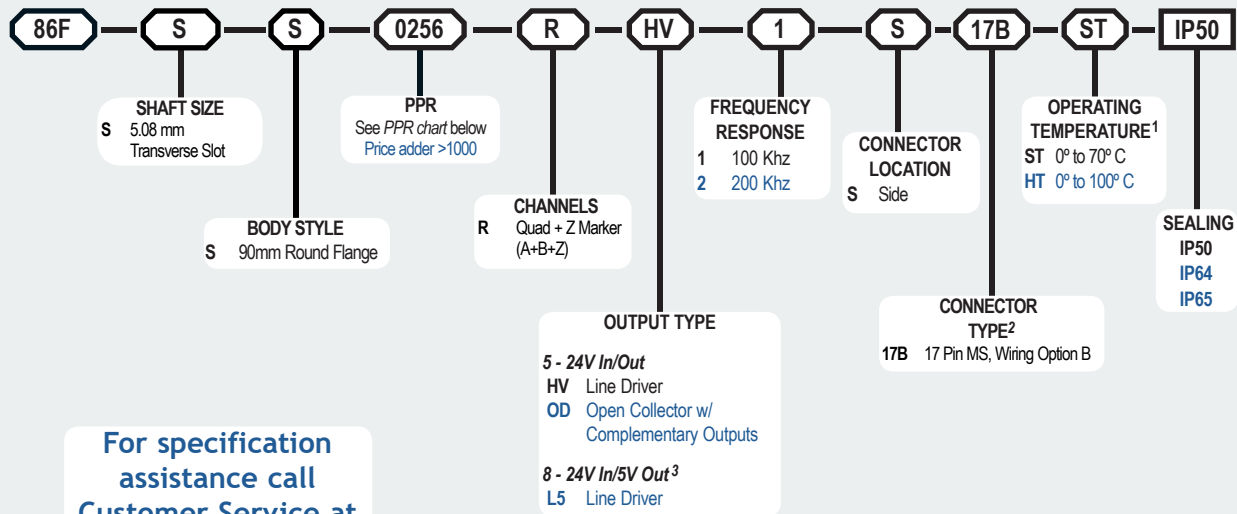
Common Applications

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

Model 86F 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 86F 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*	0150*	0192*
0200	0240*	0250	0254*	0256*	0300	0333*	0360	0400
0500	0512	0600	0625*	0635	0665*	0720	0889	1000
1024	1200	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		

* 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.

NOTES:

- 1 24 Vcc Max for high temperature option.
- 2 Option 17B + 0.5M Cable standard.
- 4 Standard temperature, 60 to 3000 PPR only.

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Model 86F 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 shaft 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.....Transverse Slotted

Shaft Material.....303 stainless steel

Shaft Rotation.....Bi-directional

Axial Shaft Load.....35kg max

Starting Torque..... 2.118×10^{-2} Nm typical.

Electrical Conn.....17-pin MS Style

Housing.....Anodised Aluminium

Bearings.....Precision ABEC ball bearings

Mounting.....90mm Round Flange with 3 x 4.5mm Dia Holes at 120° Apart on a 82mm 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

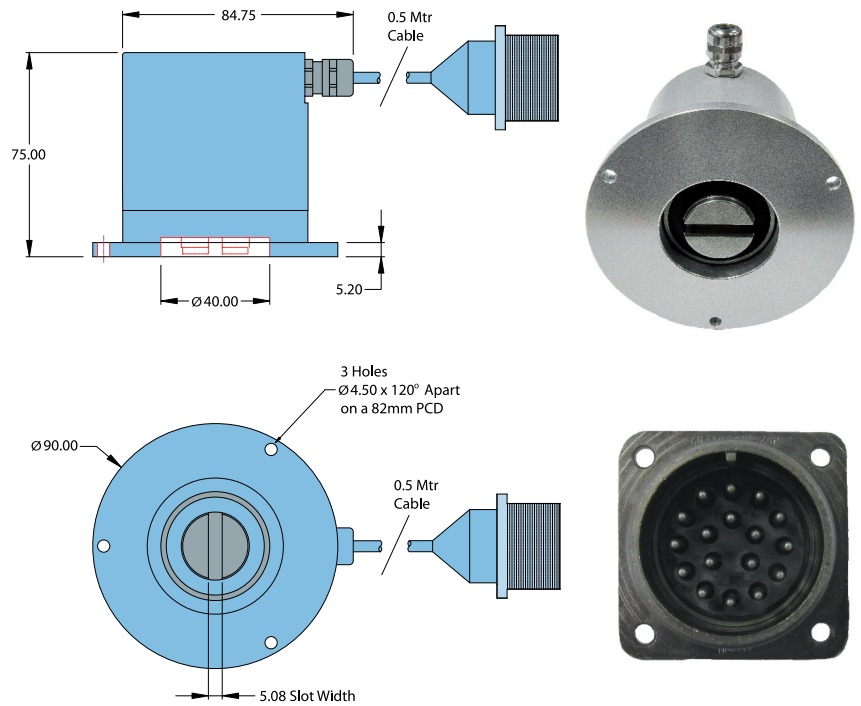
Humidity.....95% RH non-condensing

Vibration.....10 g @ 58 to 500 Hz

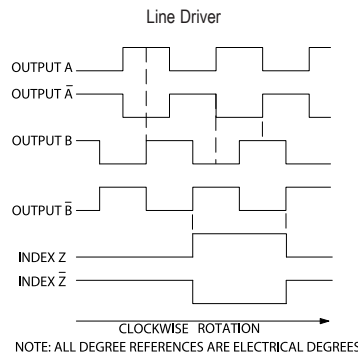
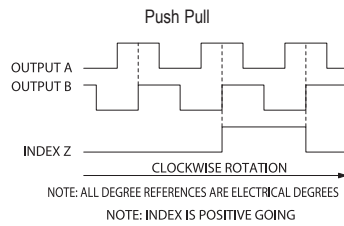
Shock.....50 g @ 11 ms duration

Sealing.....IP50, IP64, IP65

Model 86F Round Flange



Waveform Diagrams



Wiring Table

17 Pin Conn*	Option B**
A	A Channel
B	B Channel
C	+ Vcc
D	/A Channel
E	/B Channel
F	Z Channel
G	/Z Channel
H	Screen
J	+ Vcc
K	+ Vcc
L	--
M	--
N	0 Volts
P	0 Volts
R	#T#
S	#T#
T	0 Volts

*CE: Cable shield (bare wire) is connected to internal case.

#T#: Thermal Wire

**CE: Shield is connected to connector case unless otherwise specified.