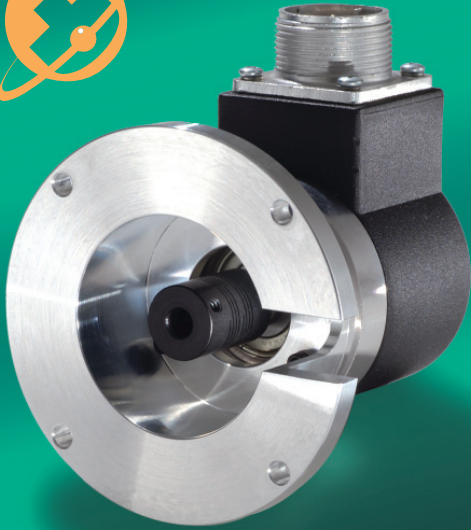


Model 702M Motor Mount Encoder



Incremental Thru-Bore
& Motor Mount Encoders

Features

- Up to 30,000 PPR
- IP66 Sealing Available
- Mounting Flange Available With Boss

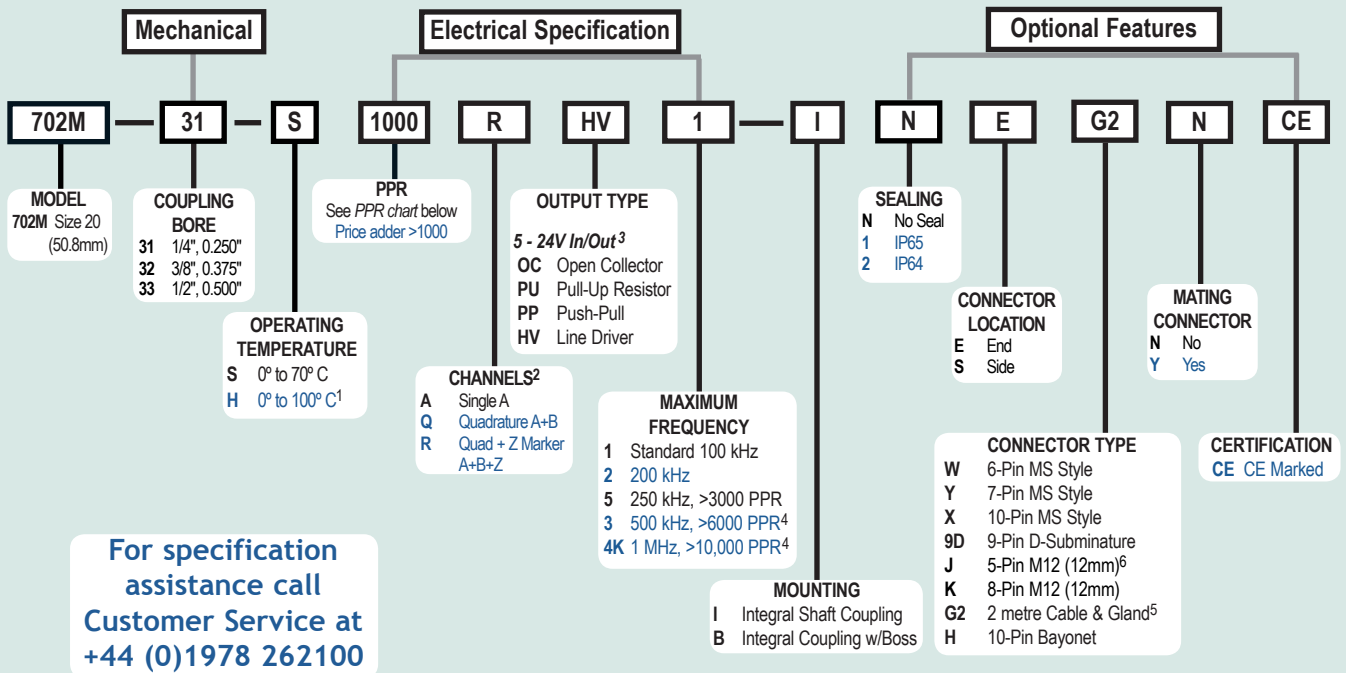
The Model 702M Motor Mount is a heavy duty, ultra-rugged, reliable, yet compact industry standard 50.8mm diameter encoder. It is designed to withstand harsh factory and plant floor environments. The mounting flange with integral shaft and coupling, allows the 702M encoder to be easily installed on a motor or shaft assembly, without the need for additional brackets or couplings. With the ability to handle shaft speeds of up to 8000 RPM, and withstand the shock and vibration of high speed servo motors, you are sure to be pleased with the 702M Motor Mount.

Common Applications

Servo & Stepper Motor Control, Robotics, X-Y Positioning Tables, Machine Tools

Model 702M Motor Mount Ordering Guide

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



Model 702M Motor Mount 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							

* 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 0° to 85°C for certain resolutions - Please see PPR options table.
- 2 Contact Customer Service for marker gating options.
- 3 24Vcc Max for high temperature option.
- 4 Standard cable lengths only.
- 5 For non-standard cable lengths, please call our sales office.
- 6 5-pin not available with Line Driver (HV, L5) outputs. Additional cable lengths available. Please consult Customer Service.

Model 702M Motor Mount Encoder



Model 702M Specifications

Electrical

Input Voltage.....4.75 to 28 Vcc max for temperatures up to 70° C
4.75 to 24 Vcc for temperatures between 70° C to 100° C

Input Current100 mA max with no output load
Input Ripple100 mV peak-to-peak at 0 to 100 kHz

Output FormatIncremental- 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.....Open Collector- 100 mA max per channel
Pull-Up- 100 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)

IndexOccurs once per revolution. The index for units >3000 PPR is 90° gated to Outputs A and B. See *Waveform Diagrams* below.

Max Frequency.....Up to 1 MHz

Noise Immunity.....Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; DENV 50141; DENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2

Symmetry1 to 6000 PPR: 180° (±18°) electrical at 100 kHz output 6001 to 20,480 CPR: 180° (±36°) electrical

Quad Phasing.....1 to 6000 PPR: 90° (±22.5°) electrical at 100 kHz output 6001 to 20,480 PPR: 90° (±36°) electrical

Min Edge Sep.....1 to 6000 PPR: 67.5° electrical at 100 kHz output 6001 to 20,480 PPR: 54° electrical >20,480 PPR: 50° electrical

Rise Time.....Less than 1 microsecond

Accuracy.....Instrument and Quadrature Error: For 200 to 1999 PPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 3000 PPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 PPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

Mechanical

Max Shaft Speed.....8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.

Coupling Size0.250", 0.375", or 0.500"

Starting Torque7.0615 x 10⁻³ Nm typical with IP64 seal or no seal
2.0118 x 10⁻² Nm typical with IP66 shaft seal

Connector Type6-, 7-, and 10-pin MS Style, 5- or 8-pin M12 (12 mm), 9-pin D-subminiature, or gland with 2 Metres of cable (foil and braid shield, 24 AWG conductors), 10-pin Bayonet

Housing.....Black non-corrosive finish

Bearings.....Precision ABEC ball bearings

Weight.....396 grams typical

Environmental

Operating Temp.....0° to 70° C for standard models
0° to 100° C for high temperature option (0° to 85° C for certain resolutions, see PPR Options.)

Storage Temp.....-25° to +85° C

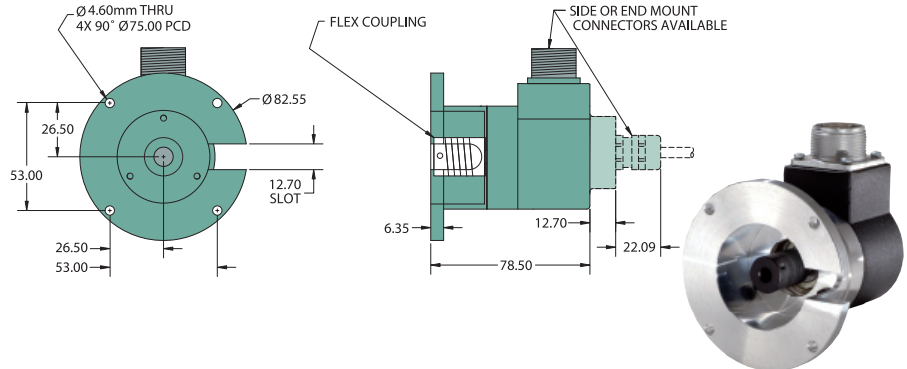
Humidity.....98% RH non-condensing

Vibration.....20 g @ 58 to 500 Hz

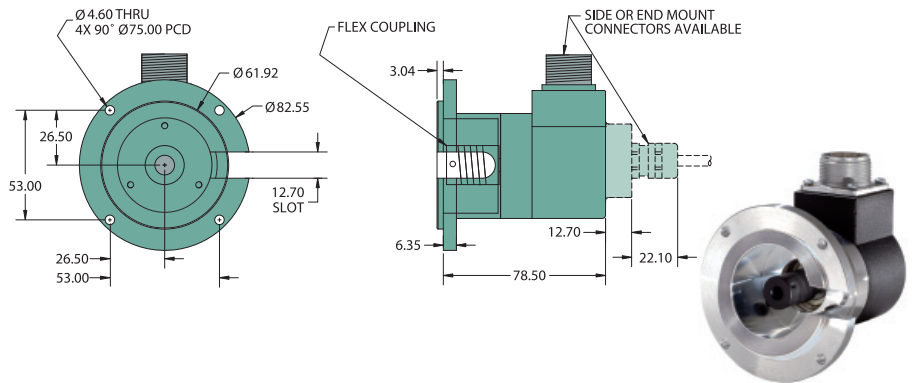
Shock.....75 g @ 11 ms duration

Sealing.....IP66 (NEMA 13 and 4/4X) with shaft seal; IP64 available

Model 702M With Integral Coupling (I)



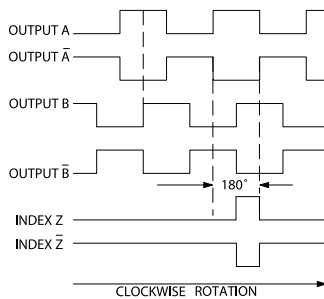
Model 702M With Integral Coupling and Boss (B)



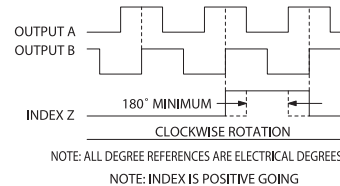
All dimensions are in mm with a tolerance of ±0.127 or ±0.254 unless otherwise specified

Waveform Diagrams

Line Driver (HV), Push-Pull (PP - No /A, /B & /Z)



Open-Collector, Pull-Up (OC, PU)



Wiring Table

Function	Gland Cable Wire Color	5-pin M12	8-pin M12	10-pin MS	7-pin MS L5 HV-Q	7-pin MS PP OC, LP HV-R	6-pin MS PP OC, LP HV-R	6-pin MS L5 HV-Q	9-pin D-sub	10-pin Bayonet
Com	Black	3	7	F	F	F	F	F	9	F
+Vcc	White	1	2	D	D	D	D	D	1	D
A	Brown	4	1	A	A	A	A	A	2	A
A'	Yellow	—	3	H	C	—	—	C	3	H
B	Red	2	4	B	B	B	B	B	4	B
B'	Green	—	5	I	E	—	—	E	5	I
Z	Orange	5	6	C	—	C	C	—	6	C
Z'	Blue	—	8	J	—	—	—	—	7	K
Case	—	—	—	G	G	G	—	—	8	G
Shield	Screen	—	—	—	—	—	—	—	—	—

Incremental Thru-Bore & Motor Mount Encoders