

Model 702M Motor Mount Encoder



Ø88.9 mm

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.

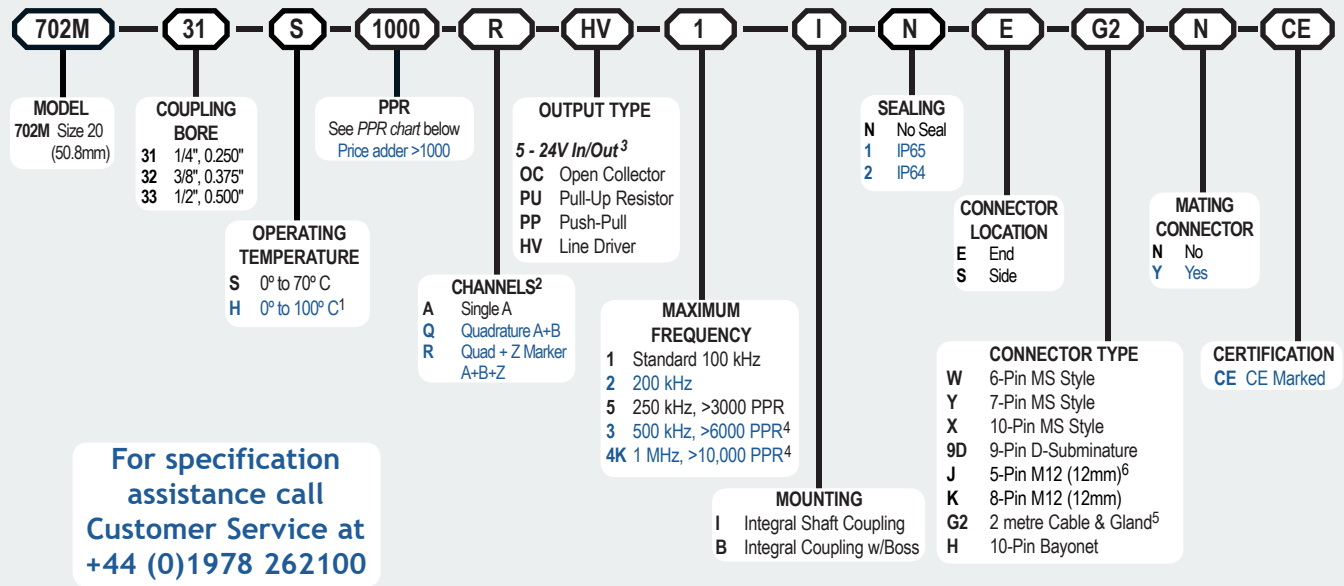
Common Applications

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	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 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.

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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 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 <i>Waveform Diagrams</i> 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)
Index.....	Occurs once per revolution. The index for units >3000 PPR is 90° gated to Outputs A and B. See <i>Waveform Diagrams</i> below.
Max Frequency.....	Up to 1 MHz
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.....	1 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
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)

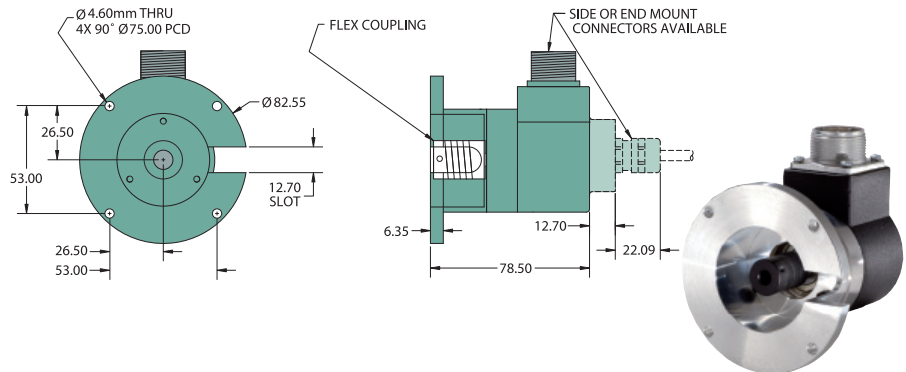
Mechanical

Max Shaft Speed.....	8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Coupling Size.....	0.250", 0.375", or 0.500"
Starting Torque.....	7.0615 x 10 ⁻³ Nm typical with IP64 seal or no seal 2.0118 x 10 ⁻² Nm typical with IP66 shaft seal
Connector Type.....	6-, 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

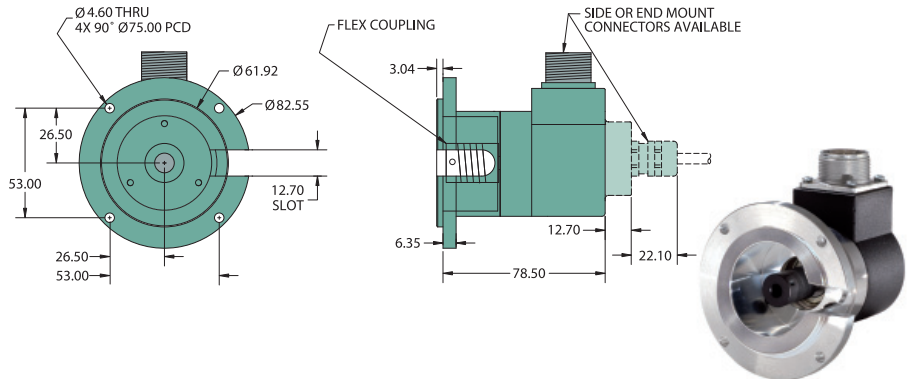
Environmental

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)



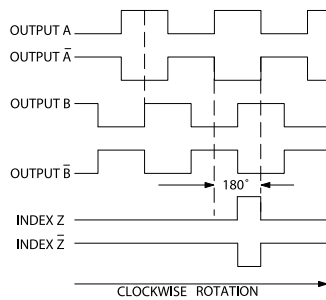
Model 702M With Integral Coupling and Boss (B)



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

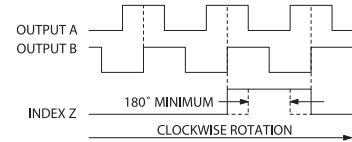
Waveform Diagrams

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



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES
Marker Gated A+B

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



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES
NOTE: INDEX IS POSITIVE GOING

Wiring Table

Function	Gland Cable† Wire Color	5-pin M12** PP,OC,PU	8-pin M12** HV	8-pin M12** OC,PP,PU	6 Pin MS** PU,OC,PP	6 Pin MS** HV	7 Pin MS** HV	7 Pin MS** PU,OC,PP	10 Pin MS** HV,LS	9 Pin D-SUB HV,LS	10 Pin Bayonet
0 Volts	Black	3	7	7	F	F	F	F	F	9	F
+VCC	White	1	2	2	D	D	D	D	D	1	D
A	Brown	4	1	1	A	A	A	A	A	2	A
A'	Yellow	--	3	--	C	C	--	H	H	3	H
B	Red	2	4	4	B	B	B	B	B	4	B
B'	Green	--	5	--	E	E	--	I	I	5	J
Z	Orange	5	6	6	C	--	--	C	C	6	C
Z'	Blue	--	8	--	--	--	--	J	J	7	K
Shield	Bare†	Case	Case	8	Case	Case	G	G	G	8	G

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

†Standard cable is 24 AWG conductors with foil and braid shield.

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