

Model 702 Motor Mount

Incremental Thru-Bore & Motor Mount Encoders



Features

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

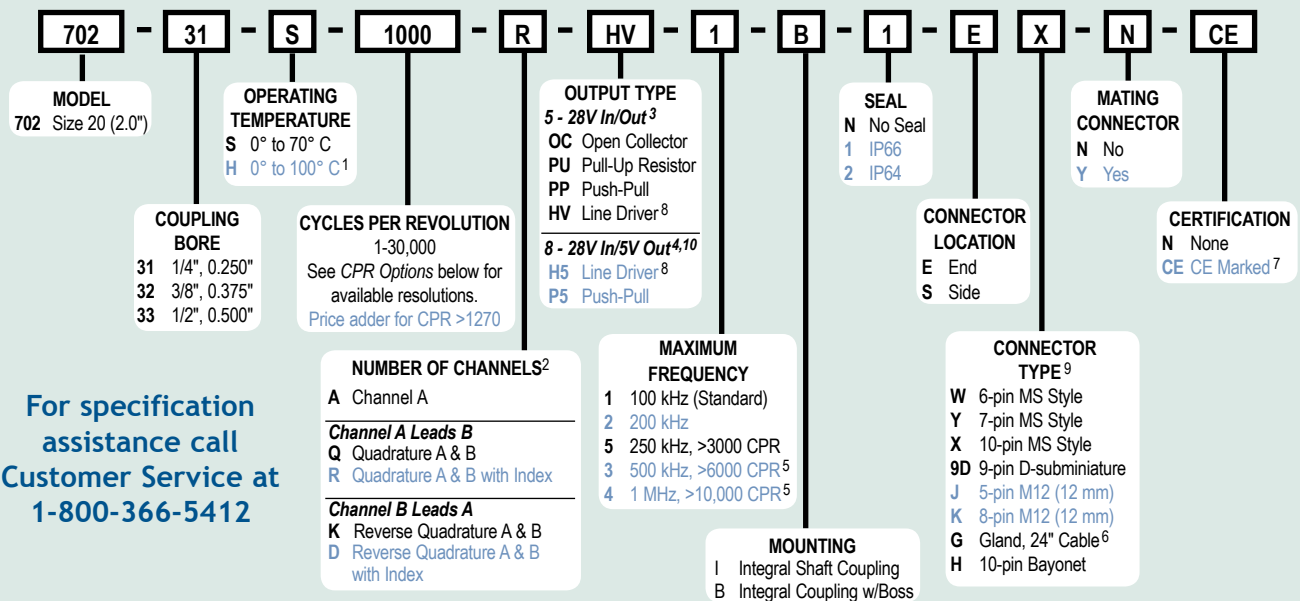
The Model 702 Motor Mount Accu-Coder™ is a heavy duty, ultra- rugged, reliable, yet compact industry standard 2-inch diameter encoder. It is designed to withstand harsh factory and plant floor environments. The mounting flange with integral shaft and coupling, allows the 702 encoder to be easily installed 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 702 Motor Mount Accu-Coder™.

Common Applications

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

Model 702 Motor Mount 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 1-800-366-5412

Model 702 Motor Mount CPR 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	0900*	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 CPR options.
 New CPR values are periodically added to those listed. Contact Customer Service to determine all currently available CPR values. Special disk resolutions are available upon request.
 A one-time NRE fee may apply.

NOTES:

- 1 0° to 85° C for certain resolutions, see CPR Options.
- 2 Contact Customer Service for non-standard index gating options.
- 3 24 VDC max for high temperature option.
- 4 Standard temperature, 60 to 3000 CPR only.
- 5 Standard cable lengths only. For details, please refer to **Technical Bulletin TB 116: Noise and Signal Considerations** on the web at www.encoder.com.
- 6 For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: G/6 = 6 feet of cable.
- 7 Please refer to **Technical Bulletin TB100: When to Choose the CE Option** at www.encoder.com.
- 8 Not available with 5-pin M12 or 6-pin MS Type connector. Available with 7-pin MS Type connector only without Index Z.
- 9 For Mating Connectors, Cables, and Cordsets see Electrical Accessories at www.encoder.com.
- 10 H5 and P5 outputs are not available with CE option.

Model 702 Motor Mount

Model 702 Motor Mount Specifications

Electrical

Input Voltage.....4.75 to 28 VDC max for temperatures up to 70° C
 4.75 to 24 VDC 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 *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)

Index Occurs once per revolution. The index for units >3000 CPR 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

Symmetry 1 to 6000 CPR: 180° (±18°) electrical at 100 kHz output
 6001 to 20,480 CPR: 180° (±36°) electrical at 100 kHz output

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

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

Rise Time.....Less than 1 microsecond

Accuracy.....Instrument and Quadrature Error: For 200 to 1999 CPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 3000 CPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 CPR 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 1.0 oz-in typical with IP64 seal or no seal
 3.0 oz-in typical with IP66 shaft seal

Moment of Inertia 5.2×10^{-4} oz-in-sec²

Max Acceleration 1×10^5 rad/sec²

Connector Type 6-, 7-, and 10-pin MS Style, 5- or 8-pin M12 (12 mm), 9-pin D-subminiature, or gland with 24 inches of cable (foil and braid shield, 24 AWG conductors), 10-pin Bayonet

Housing.....Black non-corrosive finish

Bearings.....Precision ABEC ball bearings

Weight.....14 oz 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 CPR Options.)

Storage Temp.....-25° to +85° C

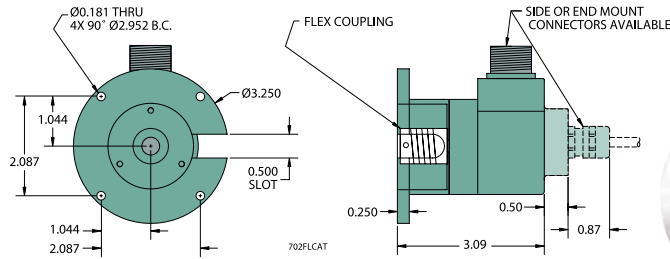
Humidity.....98% RH non-condensing

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

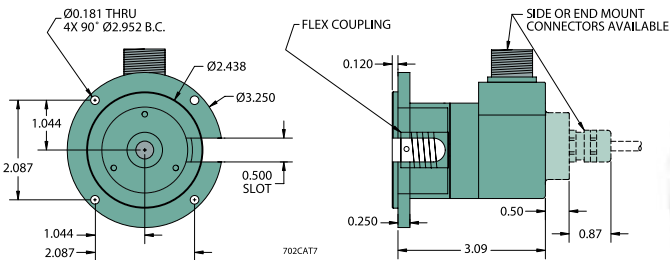
Shock.....75 g @ 11 ms duration

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

Model 702 With Integral Coupling (I)



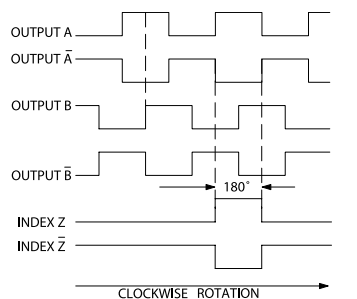
Model 702 With Integral Coupling And Boss (B)



All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified

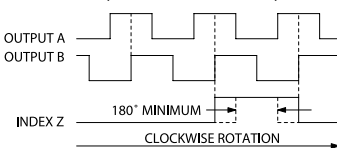
Waveform Diagrams

Line Driver and Push-Pull



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES

Open Collector and Pull-Up



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES

NOTE: INDEX IS POSITIVE GOING

Wiring Table

Function	Gland Cable Wire Color	5-pin M12 ²	8-pin M12 ²	10-pin MS	7-pin MS HV, H5	7-pin MS PU, PP, OC, P5	6-pin MS PU, PP, OC, P5	9-pin D-sub	10-pin Bayonet
Com	Black	3	7	F	F	F	A, F	9	F
+VDC	Red	1	2	D	D	D	B	1	D
A	White	4	1	A	A	A	D	2	A
A'	Brown	---	3	H	C	---	---	3	H
B	Blue	2	4	B	B	B	E	4	B
B'	Violet	---	5	I	E	---	---	5	J
Z	Orange	5	6	C	---	C	C	6	C
Z'	Yellow	---	8	J	---	---	---	7	K
Case	Green	---	---	G	G	G	---	8	G
Shield	Bare ¹	---	---	---	---	---	---	---	---

¹CE Option: Cable shield (bare wire) is connected to internal case

²CE Option: Read Technical Bulletin TB111

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