

Model 755 NEMA Motor Mount Encoder



Incremental Thru-Bore
& Motor Mount Encoders

Features

- Standard NEMA Mounting
- Up to 30,000 Cycles Per Revolution
- High Temperature Option

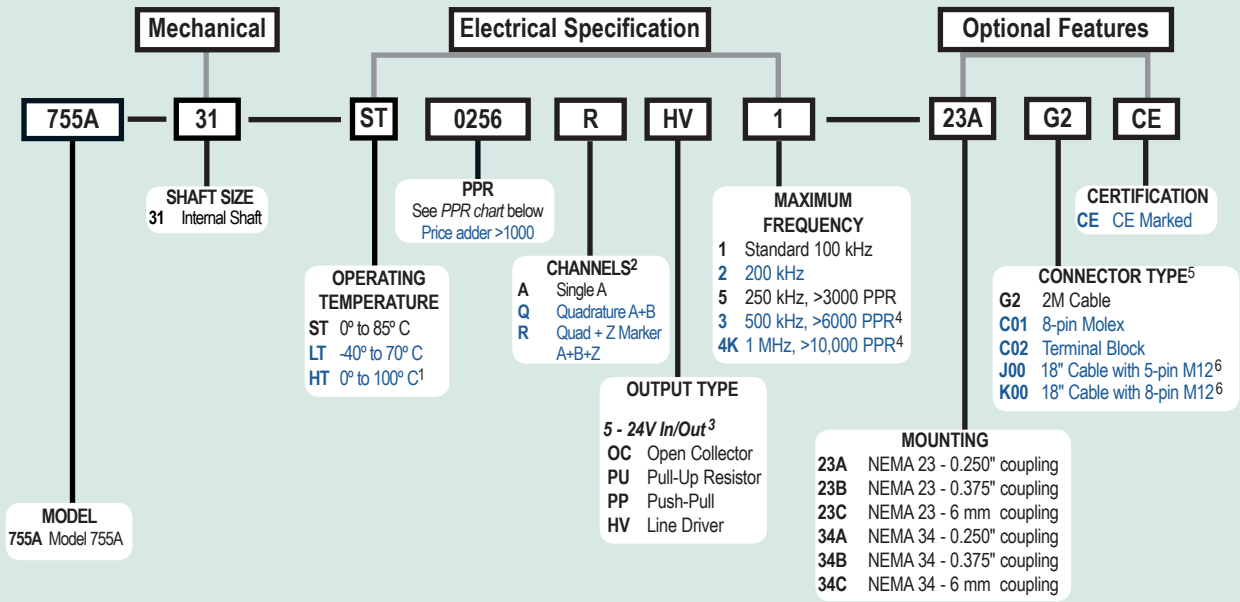
The Model 755A NEMA Mount with its integral shaft coupling, mounts directly onto NEMA motors. It is designed for easy installation on industrial size 23 or 34 motor frames. It features standard bolt circle patterns, and can accommodate shaft sizes of 0.250", 0.375", or 6 mm. With its rugged all metal housing, and a wide range of PPR options, it will fit in many different applications, providing years of trouble free use.

Common Applications

Robotics, Assembly Machines, Motor-Mounted Feedback, Phototypesetters, Printers & Digital Plotters, Elevator Controls, Medical Diagnostic Equipment

Model 755 NEMA Ordering Guide

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



Model 755 NEMA 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 | 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 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.

For specification assistance call
Customer Service at
+44 (0)1978 262100

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) output. Additional cable lengths available. Please consult Customer Service.

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Model 755 NEMA 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 *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 Vcc 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 PPR: 180° (±18°) electrical at 100 kHz output
 6001 to 20,480 PPR: 180° (±36°) electrical

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

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.....7500 RPM. Higher shaft speeds may be achievable, contact Customer Service.

Coupling Bore.....0.250", 0.375" or 6mm

User Shaft Tolerances

Radial Shaft.....0.2mm max
 Axial End Play.....±0.8mm max

Starting Torque.....9.886 x 10⁻⁴ typical
 2.824 x 10⁻² typical for -40° C operation

Electrical Conn.....2M cable (foil and braid shield, 24 AWG conductors), 5- or 8-pin M12 (12 mm) in-line connector with 2M cable (braid shield), 8-pin Molex, Terminal Block, 5 Pin Cover, 6 Pin Cover, 8 Pin Cover, Gland Cover (See appendix sheet for cover options)

Housing.....Black non-corrosive finish

Bearings.....Precision ABEC ball bearings

Mounting.....Servo or Optional Flange

Weight.....100 grams typical

Environmental

Operating Temp.....0° to 70° C for standard models
 -40° to 70° C for low temperature option
 0° to 100° C for high temperature option
 (0° to 85° C for certain resolutions, see PPR Options.)

Storage Temp.....-25° to +85° C

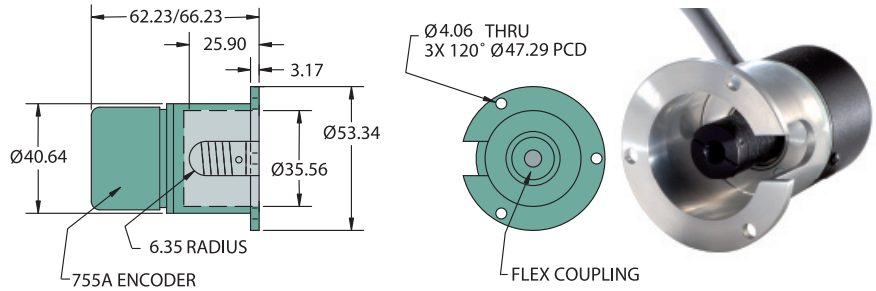
Humidity.....98% RH non-condensing

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

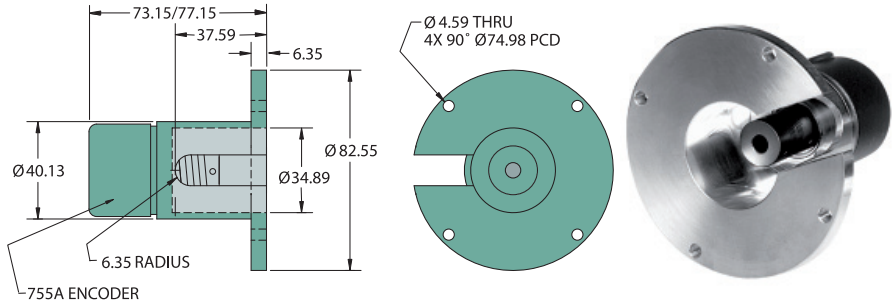
Shock.....50 g @ 11 ms duration

Sealing.....IP50 Standard

Model 755A Size 23 NEMA Mount (23A, 23B, 23C)



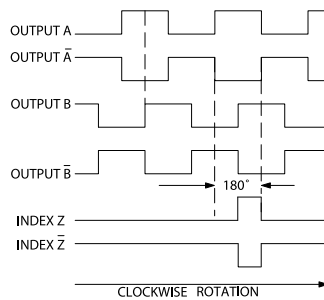
Model 755A Size 34 NEMA Mount (34A, 34B, 34C)



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

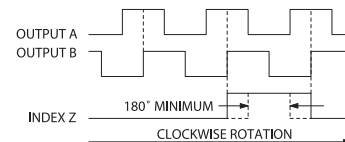
Waveform Diagrams

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 | Cable Wire Color | Terminal Block | 8-pin Molex | 5-pin M12 | 8-pin M12 |
|----------|-------------------|----------------|-------------|-----------|-----------|
| Com | Black | 7 | 2 | 3 | 7 |
| +Vcc | White | 8 | 1 | 1 | 2 |
| A | Brown | 1 | 8 | 4 | 1 |
| A' | Yellow | 2 | 7 | — | 3 |
| B | Red | 3 | 4 | 2 | 4 |
| B' | Green | 4 | 3 | — | 5 |
| Z | Orange | 6 | 6 | 5 | 6 |
| Z' | Blue | 5 | 5 | — | 8 |
| Shield | Bare ¹ | — | — | — | — |

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