

# Model 755 NEMA Motor Mount Encoder



## Features

- Standard NEMA Mounting
- Up to 30,000 Pulses 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.

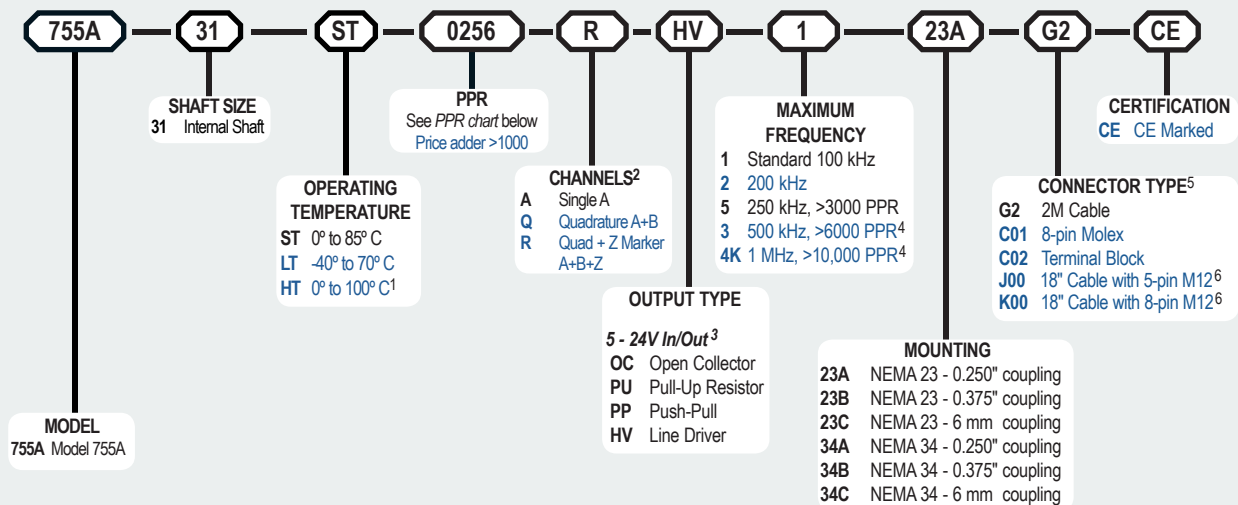
## Common Applications

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	0889	1000
1024	1200	1204* <sup>a</sup>	1250 <sup>a</sup>	1270 <sup>a</sup>	1440	1500	1800	2000
2048	2400 <sup>a</sup>	2500	2540 <sup>a</sup>	2880 <sup>a</sup>	3000 <sup>a</sup>	3600 <sup>a</sup>	4000 <sup>a</sup>	4096 <sup>a</sup>
5000 <sup>a</sup>	6000 <sup>a</sup>	7200 <sup>a</sup>	7500 <sup>a</sup>	9000 <sup>a</sup>	10,000 <sup>a</sup>	10,240 <sup>a</sup>	12,000 <sup>a</sup>	12,500 <sup>a</sup>
14,400 <sup>a</sup>	15,000 <sup>a</sup>	18,000 <sup>a</sup>	20,000 <sup>a</sup>	20,480 <sup>a</sup>	25,000 <sup>a</sup>	30,000 <sup>a</sup>		

\* Contact Customer Service for High Temperature Option.

<sup>a</sup> 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.

# Model 755 NEMA Motor Mount Encoder

## Model 755 NEMA Specifications

### Electrical

Input Voltage.....4.75 to 24 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 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

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 PPR: 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<sup>-4</sup> typical  
 2.824 x 10<sup>-2</sup> 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

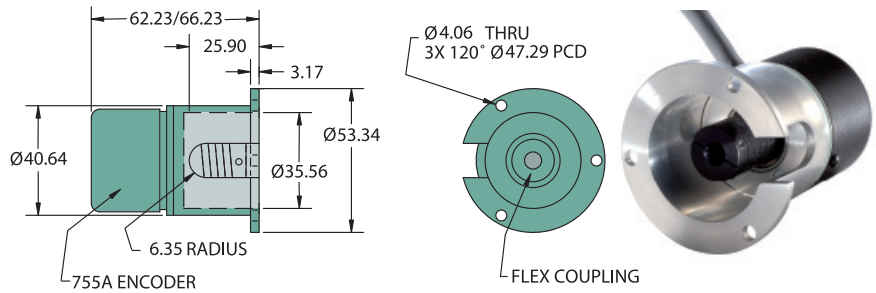
Humidity.....98% RH non-condensing

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

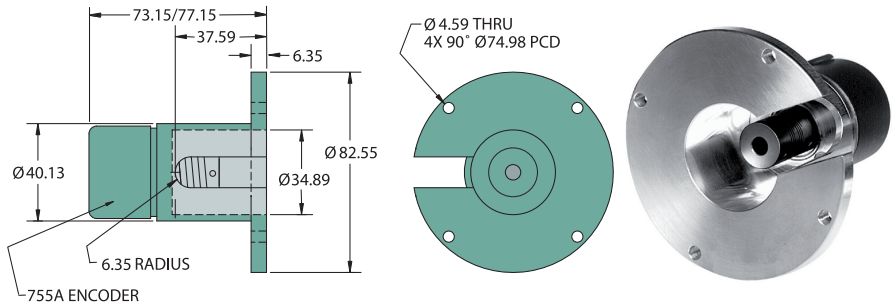
Shock.....50 g @ 11 ms duration

Sealing.....IP50 Standard

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



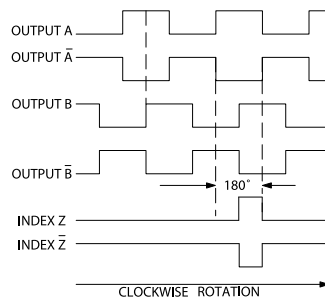
## Model 755A Size 34 NEMA Mount (34A, 34B, 34C)



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

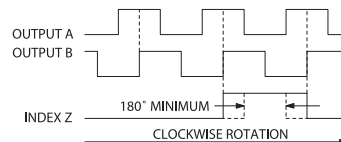
### Waveform Diagrams

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	Gland Cable <sup>1</sup> Wire Color	Terminal Block	8-pin Molex	5-pin <sup>**</sup>	8 Pin M12 <sup>**</sup>	6 Pin MS <sup>**</sup>
0 Volts	Black	7	2	3	7	A
+VCC	White	8	1	1	2	B
A	Brown	1	8	4	1	D
A'	Yellow	2	7	--	3	--
B	Red	3	4	2	4	E
B'	Green	4	3	--	5	--
Z	Orange	6	6	5	6	C
Z'	Blue	5	5	--	8	--
Shield	Bare*	--	--	Case	Case	Case

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

<sup>1</sup>Standard cable is 24 AWG conductors with foil and braid shield.

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