

MODEL 755A – INCREMENTAL SHAFT ENCODER



Ø1.5"

FEATURES

Miniature Size (1.5" Diameter)

Up to 30,000 CPR

Servo or Flange Mounting

1 MHz Frequency Response Available

Extended Temperature Operating Range Available

The Model 755A Size 15 Accu-Coder™ is ideal for applications requiring a small, high precision, high performance encoder. Approximately 1.5" in diameter and 1.5" long, it will fit where many encoders cannot. Designed with all metal construction and shielded ball bearings, it will provide years of trouble-free use. The standard servo mount (S) version is available with a variety of shaft sizes and lengths. Three additional servo style mounts (S1, S2, S3) are also available. The optional flange mounting (MF) is ideal for applications requiring a bolt-on, high precision encoder. With its high reliability and quick delivery, the Model 755A encoder is the perfect replacement encoder in this size category.

COMMON APPLICATIONS

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

MODEL 755A ORDERING GUIDE

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

755A	07	S	1000	R	HV	1	S	S	CE
MODEL 755A Model 755A	SHAFT SIZE¹ 07 1/4", 0.250" 08 5 mm 06 6 mm 32 1/4", 0.250" Servo 1,2, or 3 only 20 6 mm x 0.500" 19 1/4", 0.250" x 0.500"	CYCLES PER REVOLUTION 1-30,000 See CPR Options below for available resolutions. Price adder for CPR >1270	OUTPUT TYPE 5 - 28V In/Out ⁴ OC Open Collector PU Pull-Up Resistor PP Push-Pull HV Line Driver 8 - 28V In/5V Out ⁵ H5 Line Driver ⁶ P5 Push-Pull ⁶	CERTIFICATION N None CE CE Marked ¹¹					
OPERATING TEMPERATURE L -40° to 70° C S 0° to 70° C H 0° to 100° C ²	NUMBER OF CHANNELS³ A Channel A Channel A Leads B Q Quadrature A & B R Quadrature A & B with Index Channel B Leads A K Reverse Quadrature A & B D Reverse Quadrature A & B with Index	MAXIMUM FREQUENCY 1 Standard 100 kHz 2 200 kHz 5 250 kHz, >3000 CPR 3 500 kHz, >6000 CPR ⁷ 4 1 MHz, >10,000 CPR ⁷	CONNECTOR TYPE⁸ S Standard 18" Cable ⁹ C01 8-pin Molex C02 Terminal Block J00 18" Cable with 5-pin M12 ¹⁰ K00 18" Cable with 8-pin M12 ¹⁰						
MOUNTING & HOUSINGS S Standard Servo Mount MF Square Flange S1 Servo Mount (Choose shaft 32) S2 Servo Mount (Choose shaft 32) S3 Servo Mount (Choose shaft 32)									

MODEL 755A 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	1250a
1270a	1440	1500	1800	2000	2048	2400a	2500	2540a
2880a	3000a	3600a	4000a	4096a	5000a	6000a	7200a	7500a
9000a	10,000a	10,240a	12,000a	12,500a	14,400a	15,000a	18,000a	20,000a
20,480a	25,000a	30,000a						

*Contact Customer Service for High Temperature Option (H).

aHigh 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:

- Contact Customer Service for additional options.
- 0° to 85° C for certain resolutions, see CPR Options.
- Contact Customer Service for index gating options.
- 24 VDC max for high temperature option.
- Standard temperature, 60 to 3000 CPR only.
- H5 and P5 outputs are not available with CE option.
- Standard cable lengths only. For details, please refer to **Technical Bulletin TB116: Noise and Signal Considerations** at www.encoder.com.
- For mating connectors, cables, and cordsets see Encoder Accessories on page 102 or visit www.encoder.com. For Pin Configuration Diagrams, see page 107 or visit www.encoder.com.
- For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: S/6 = 6 feet of cable.
- 5-pin not available with Line Driver (HV, H5) outputs. Additional cable lengths available. Please consult Customer Service.
- Please refer to **Technical Bulletin TB100: When to Choose the CE Option**.

MODEL 755A 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 <i>Waveform Diagrams</i> .
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 <i>Waveform Diagrams</i> .
Max Frequency	100 kHz std; Up to 1 MHz optional. (See Ordering Guide for availability)
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°)
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)

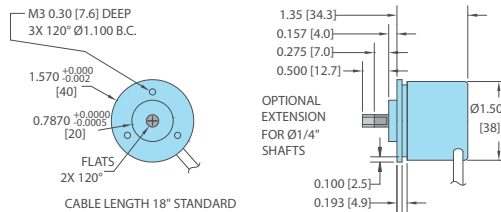
Mechanical

Max Speed	7500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Shaft Rotation	Bi-directional
Radial Shaft Load	5 lb
Axial Shaft Load	3 lb
Starting Torque	0.14 oz-in typical 4.0 oz-in typical for -40° C operation
Moment of Inertia	2.8×10^{-4} oz-in-sec ²
Max Acceleration.....	1×10^5 rad/sec ²
Housing	Black non-corrosive finish
Bearings.....	Precision ABEC ball bearings
Weight.....	3.10 oz servo mount, typical

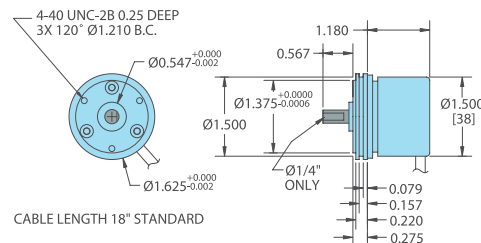
Environmental

Storage Temp	-25° to +85° C
Humidity.....	98% RH non-condensing
Vibration.....	10 g @ 58 to 500 Hz
Shock.....	50 g @ 11 ms duration

MODEL 755A STANDARD SERVO MOUNT (S)



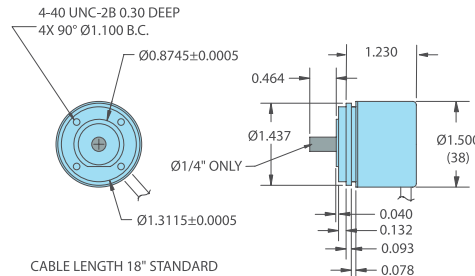
MODEL 755A SERVO MOUNTS (S1 & S2)



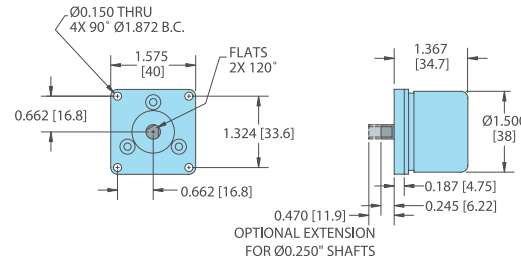
S2 Pictured below has a 0.750" Boss. S1 has a 0.547" Boss. See www.encoder.com to download drawings



MODEL 755A SERVO MOUNT (S3)



MODEL 755A 1.575" SQUARE FLANGE (MF)



All dimensions are in inches with a tolerance of $\pm 0.005"$ or $\pm 0.01"$, unless otherwise specified metric dimensions are given in brackets [mm].

WIRING TABLE

Function	Cable† Wire Color	Term. Block	8-pin Molex	5-pin M12**	8-pin M12**
Com	Black	7	2	3	7
+VDC	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*	--	--	--	--

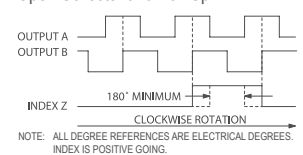
*CE Option: Cable shield (bare wire) is connected to internal case.

**Non-CE Option: Cable shield is connected to M12 connector body. CE Option: Cable shield and M12 connector body is connected to internal case.

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

WAVEFORM DIAGRAMS

Open Collector and Pull-Up



Line Driver and Push-Pull

