

Model 755A Hollow Bore

Incremental Thru-Bore & Motor Mount Encoders



Features

- Miniature Size (1.5" Diameter)
- Up to 30,000 Cycles Per Revolution
- Flex Mounting
- Large Hollow Bore Option (up to 0.750")
- High Temperature Option

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. All metal construction and shielded ball bearings provides years of trouble-free use. A variety of blind hollow bore sizes are available. Large bores allow for shafts up to 0.750" or 14 mm. Attaching directly to a motor is quick and simple with the innovative flex mount, first developed by EPC. This industry standard mount eliminates couplings, increases reliability, while reducing overall length and cost. Where critical alignment is required, a Slotted Flex (SF) is available. A perfect replacement encoder where high reliability is required.

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 - 01 - S - 1000 - R - HV - 1 - S - S - CE

MODEL
755A Model 755A

CYCLES PER REVOLUTION
1-30,000
See CPR Options below for available resolutions.
Price adder for CPR >1270

OUTPUT TYPE
5 - 28V In/Out⁴
OC Open Collector
PU Pull-Up Resistor
PP Push-Pull
HV Line Driver
8 - 28V In/5V Out^{5,9}
H5 Line Driver
P5 Push-Pull

CERTIFICATION
N None
CE CE Marked⁸

CONNECTOR TYPE
S Standard 18" Cable⁷
C01 8-pin Molex
C02 Terminal Block
J00 18" Cable with 5-pin M12¹⁰
K00 18" Cable with 8-pin M12¹⁰

OPERATING TEMPERATURE
L -40° to 70° C
S 0° to 70° C
H 0° to 100° C²

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 CPR⁶
4 1 MHz, >10,000 CPR⁶

BORE SIZES¹
15 3/16", 0.1875" 16 4 mm
01 1/4", 0.250" 18 5 mm
03 5/16", 0.3125" 04 6 mm
02 3/8", 0.375" 14 8 mm
10 1/2", 0.500" 05 10 mm
11 5/8", 0.625" 12 12 mm
17 3/4", 0.750" 13 14 mm

MOUNTING
S Standard Flex Mount
SF Slotted Flex Mount

For enhanced connectivity, available with an M12 in-line connector

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	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:

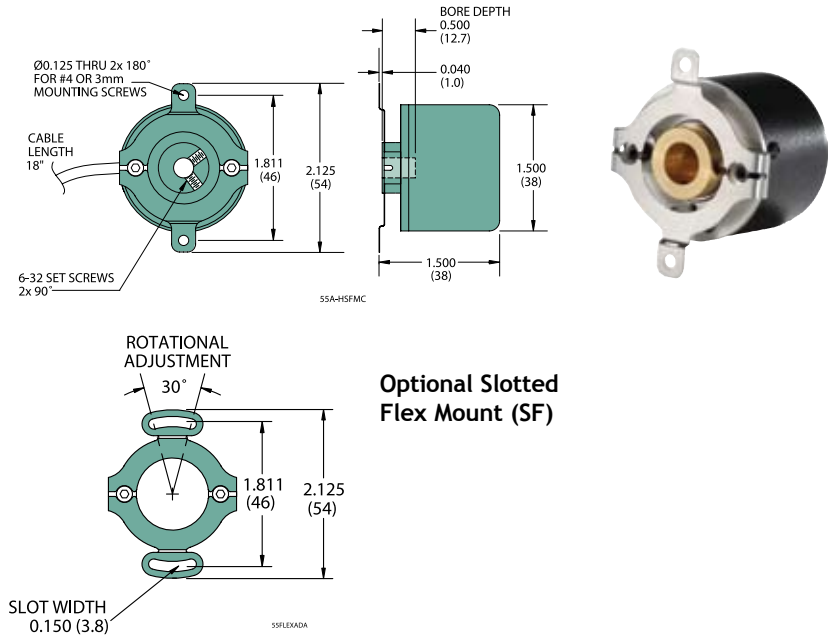
- 1 Contact Customer Service for additional options.
- 2 0° to 85° C for certain resolutions, see CPR Options.
- 3 Contact Customer Service for index gating options.
- 4 24 VDC max for high temperature option.
- 5 Standard temperature, 60 to 3000 CPR only.
- 6 Standard cable lengths only. For details, please refer to **Technical Bulletin TB116: Noise and Signal Considerations** at www.encoder.com.
- 7 For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: S/6 = 6 feet of cable.
- 8 Please refer to **Technical Bulletin TB100: When to Choose the CE Option**.
- 9 H5 and P5 outputs are not available with CE option.
- 10 5-pin not available with Line Driver (HV, H5) outputs. Additional cable lengths available. Please consult Customer Service.

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Model 755A Specifications

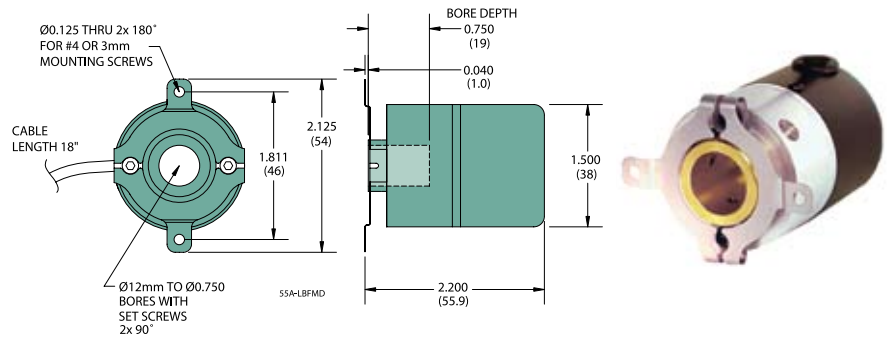
Electrical	
Input Voltage.....	4.75 to 28 VDC max for temperatures up to 70° C 4.75 to 24 VDC for temperatures between 70° C to 100° C
Input Current.....	100 mA max with no output load
Input Ripple.....	100 mV peak-to-peak at 0 to 100 kHz
Output Format.....	Incremental- Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the encoder mounting face. See <i>Waveform Diagrams</i> 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 <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 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 Shaft Speed.....	7500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Bore Size.....	0.1875", 0.250", 0.3125", 0.375", 0.500", 0.625", 0.750", 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 14 mm
Bore Tolerance.....	-0.0000" / +0.0006"
User Shaft Tolerances	
Radial Runout.....	0.007" max
Axial End Play.....	±0.030" max
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
Electrical Conn.....	18" cable (foil and braid shield, 24 AWG conductors), 5- or 8-pin M12 (12 mm) in-line connector with 18" cable (braid shield), 8-pin Molex, Terminal Block
Housing.....	Black non-corrosive finish
Bearings.....	Precision ABEC ball bearings
Mounting.....	Flex, and Slotted Flex Mounting
Weight.....	3.50 oz 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 CPR 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

Model 755A Flex Mount (S)



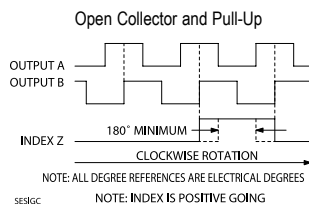
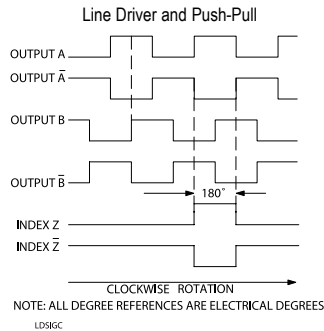
Optional Slotted Flex Mount (SF)

Model 755A Large Bore Flex Mount (S)



All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified
Metric dimensions are given in brackets [mm]

Waveform Diagrams



Wiring Table

Function	Cable Wire Color	Terminal Block	8-pin Molex	5-pin M12 ²	8-pin M12 ²
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 ¹	-----	-----	-----	-----

¹CE Option: Cable shield (bare wire) is connected to internal case
²CE Option: Read Technical Bulletin TB111

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