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MODEL ARJ - C-FACE ENCODER

- *THRU-SHAFT DESIGN FOR EASY MOUNTING*
- *EXCELLENT CHOICE FOR VECTOR MOTOR DRIVE CONTROL*
- *DESIGNED FOR INDUSTRIAL ENVIRONMENTS*
- *QUADRATURE OUTPUT*
- *1024 HIGH RESOLUTION OUTPUT*
- *POSITIVE INDEX PULSE*

DESCRIPTION

The Model ARJ C-face encoder is a rugged, high resolution, high temperature (100°C [212°F]) encoder designed to mount directly on NEMA C-face motors. The ARJ contains a precision bearing and internal coupling that virtually eliminates inaccuracies induced by motor shaft runout. This encoder is ideal for applications using high performance AC vector motors.

The thru-shaft design allows fast and simple mounting of the encoder directly to the accessory shaft or to the drive shaft of the motor, using the standard motor face (NEMA sizes 56C, 143TC, 145TC, 182C, 184C). The tough anodized aluminum housing with thru-shaft design resists the vibration and hazards of an industrial environment.
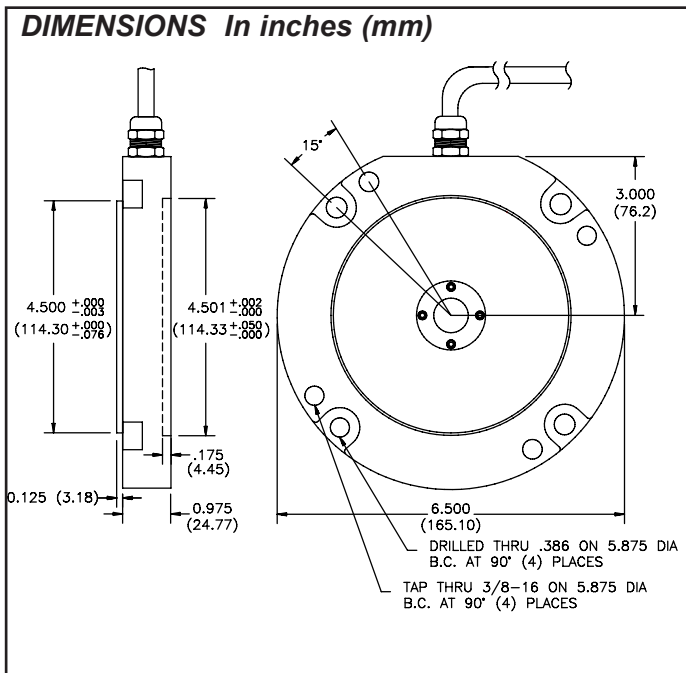
SPECIFICATIONS

1. **SUPPLY:** 5 to 28 VDC, 40 mA current draw typical, 100 mA maximum.
2. **OUTPUT:** NPN Open Collector transistor , V_{OH} = 40 VDC max.; 100 mA max. current. Two square waves in quadrature, with positive pulse index.
3. **CYCLES PER REVOLUTION:** 256 or 1024
   Note: Review the max. input rate of the RLC counter being used. The high output rate of the 1024 version will quickly reach the max. input capability of RLC quadrature counters. At 1024 PPR, high pulse rates are reached at low RPM.
4. **MOUNTING:** NEMA 56C, 143TC, 145TC, 182C and 184C
5. **MAX MECHANICAL SPEED**: 6000 RPM
6. **BORE DIAMETER:** 0.625" or 0.875"
7. **MOMENT OF INERTIA:** 3.8×10^{-4} oz-in-sec^2 (2.68×10^{-3} N-mm-sec^2)
8. **CABLE CONNECTION:** 24" pigtail

WIRE COLOR	FUNCTION
WHITE	DATA A
BLUE	DATA B
ORANGE	INDEX Z
RED	+ VOLTS DC
BLACK	COMMON

9. **OPERATING TEMPERATURE:** -20°C to 100°C (-4°F to 212°F)

DIMENSIONS In inches (mm)

4.500 +.000 -.003 (114.30 +.000 -.076)

4.501 +.002 -.000 (114.33 +.050 -.000)

3.000 (76.2)

15°

.175 (4.45)

0.125 (3.18)

0.975 (24.77)

6.500 (165.10)

DRILLED THRU .386 ON 5.875 DIA B.C. AT 90° (4) PLACES

TAP THRU 3/8−16 ON 5.875 DIA B.C. AT 90° (4) PLACES

ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PPR	BORE SIZE	PART NUMBER
ARJ	NEMA C Face Encoder 0.625" DIA. 56C	256	0.625	ARA10256
		1024	0.625	ARA11024
	NEMA C Face Encoder 0.875" DIA. 143TC, 145TC, 182C, 184C	256	0.875	ARC10256
		1024	0.875	ARC11024

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MOUNTING INSTRUCTIONS

Mounting Kit Items Included:

4 ea. - 3/8" 16 x 1.0" Length Socket Head Cap Screws, Black Alloy.

4 ea. - 3/8" High Collar Spring Lock washer, Steel Zinc.

1 ea. 3/32" Hex Allen Wrench, Long arm.

Note: The ARJ encoder can mount to many types of C face devices. In these mounting instructions, we will refer to the device as a motor.
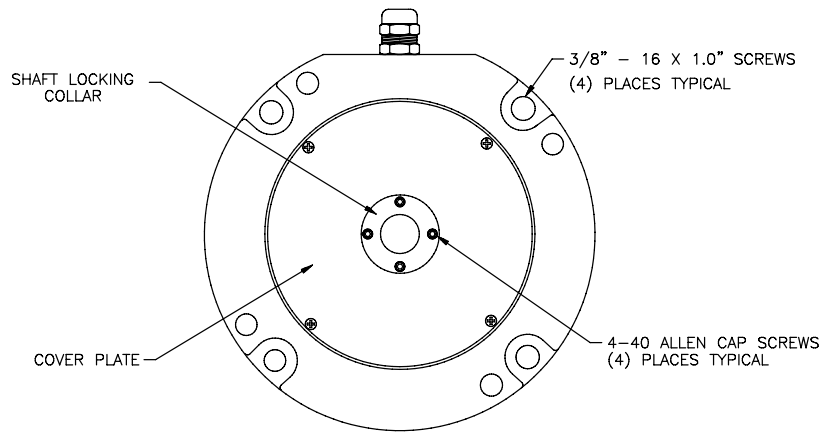
Step 1

After carefully unpacking the unit, inspect to insure the motor shaft is the correct size and free of all burrs or aberrations. Slide the ARJ Encoder over the motor shaft. DO NOT USE UNDO FORCE: There is a rubber O-ring in the Encoder locking collar that will provide a small amount of resistance as it engages the shaft. If the encoder does not slide easily See Note 1 below.

Step 2

Install the four 3/8" 16 x 1.0" socket head cap screws with lock washers through the holes in the Encoder C face and tighten securely to the motor.

Step 3

Insure the shaft locking collar is flush with the Encoder cover plate. Prevent the motor shaft from turning (See Note 2 for additional information) and tighten the four 4-40 Allen head cap screws in the locking collar evenly in a crossing pattern. See Figure 1. Make sure the screws are securely tightened and the front of the locking collar remains flush with the encoder cover plate. If the collar does not turn true when the motor shaft is rotated, loosen the four screws and repeat the procedure.

SHAFT LOCKING COLLAR

3/8" – 16 X 1.0" SCREWS (4) PLACES TYPICAL

4–40 ALLEN CAP SCREWS (4) PLACES TYPICAL

COVER PLATE

In Case of Difficulty:

Note 1: Make sure the four 4-40 Allen head cap screws in the front of the Encoder locking collar are loose and the collar is not cocked or jammed. Clean the shaft of any burrs using fine crocus cloth. The O- ring in the Encoder locking collar may need a small amount of additional lubrication.

Note 2: When tightening the screws in the locking collar avoid holding the motor shaft with anything that may scar or burr the shaft.