

MODEL 771 – INCREMENTAL ENCODER



FEATURES

- Large Bore Size to 1.875" or 43 mm
- Fits NEMA Size 182TC Thru 256TC Motor Faces (8.5" AK)
- Incorporates Opto-ASIC Technology
- Resolutions to 4096 CPR

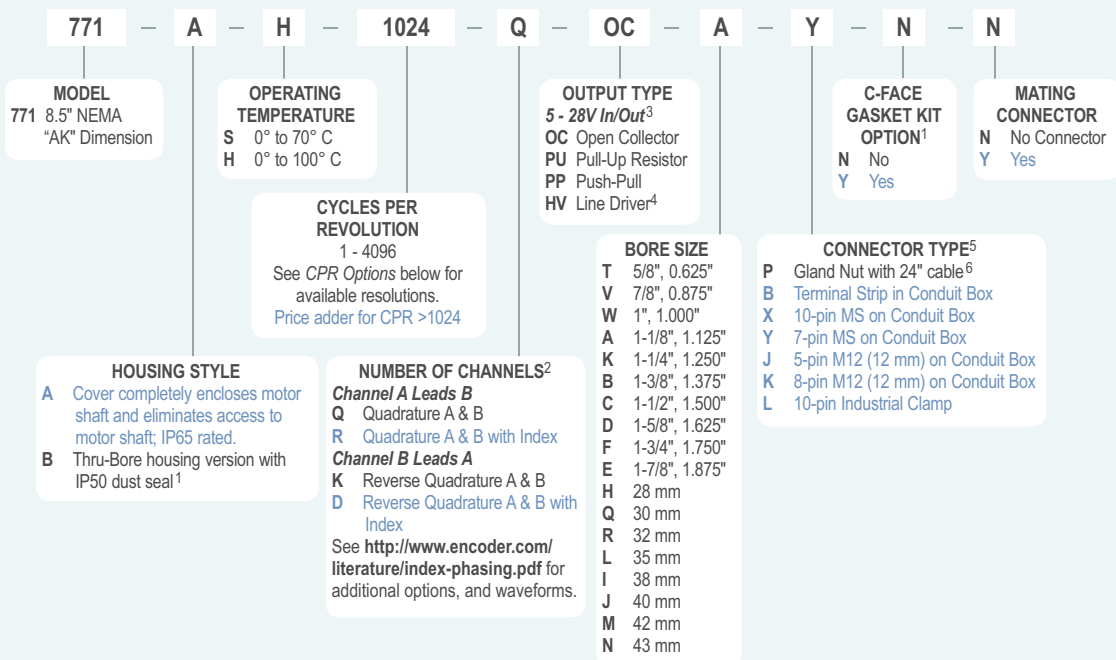
The Model 771 C-Face encoder is a rugged, high resolution encoder designed to mount directly on NEMA C-Face motors. Both sides of the encoder are C-Face mounts, allowing additional C-Face devices to be easily mounted. Many competitive C-Face units are kit type encoders, but the Model 771 contains precision bearings and an internal flex mount that virtually eliminates encoder failures and inaccuracies induced by motor shaft runout or axial endplay. The advanced Opto-ASIC design provides superior noise immunity necessary for many industrial applications. This encoder is ideal for applications using induction motors and flux vector control. A Thru-Bore design allows fast and simple mounting of the encoder directly to the accessory shaft or drive shaft of a motor using a NEMA standard motor face (sizes 182TC - 256TC). The tough, all metal housing resists the vibration and hazards of an industrial environment.

COMMON APPLICATIONS

Motor Feedback, Velocity & Position Control, Servo Control Systems, Assembly & Specialty Machines, Elevator Controls

MODEL 771 ORDERING GUIDE

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



MODEL 771 CPR OPTIONS

0060 0100 0120 0240 0250 0256 0500
0512 0600 1000 1024 2048 2500 4096

Contact Customer Service for other disk resolutions; not all disk resolutions available with all output types

NOTES:

- Thru-Bore version may be IP65 sealed if mounted between two C-Face devices with optional gasket kit. Select 'Yes' under C-Face Gasket Kit Option.
- Contact Customer Service for index gating options.
- 5 to 24 VDC max for high temperature option.
- Not available with 5-pin M12 connector. Available with 7-pin MS connector only without Index Z.
- 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: P/6 = 6 feet of cable.

MODEL 771 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 Current100 mA max with no output load
 Input Ripple.....100 mV peak-to-peak at 0 to 100 kHz
 Output FormatIncremental- Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the mounting face. See *Waveform Diagrams*.

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.....Once per revolution.
 0001 to 0474 CPR: Ungated
 0475 to 4096 CPR: Gated to output A
 See *Waveform Diagrams*.

Max Frequency200 kHz
 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

Quadrature.....67.5° electrical or better is typical,
 Edge Separation 54° electrical minimum at temperatures > 99° C

Rise Time.....Less than 1 microsecond

Mechanical

Max Shaft Speed.....3500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
 6000 RPM for 1.125", 1.250", 1.375", 28 mm, 30 mm, 32 mm bore diameter

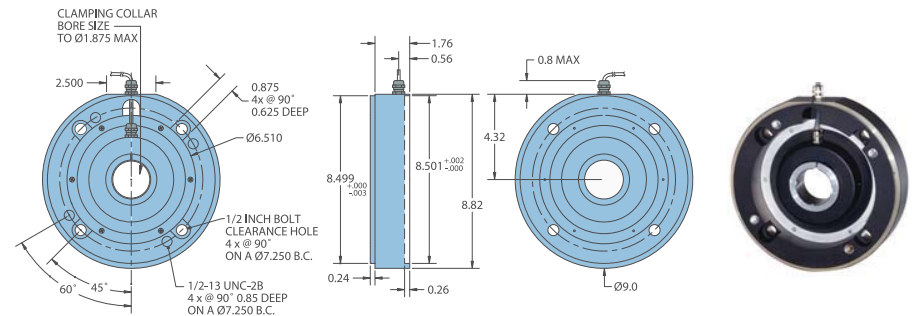
User Shaft Tolerances

Radial Runout0.005"
 Axial Endplay.....±0.1"
 Moment of Inertia ...3.3 x 10⁻³ oz-in-sec² typical
 HousingAll metal construction
 Weight.....7.0 lb typical

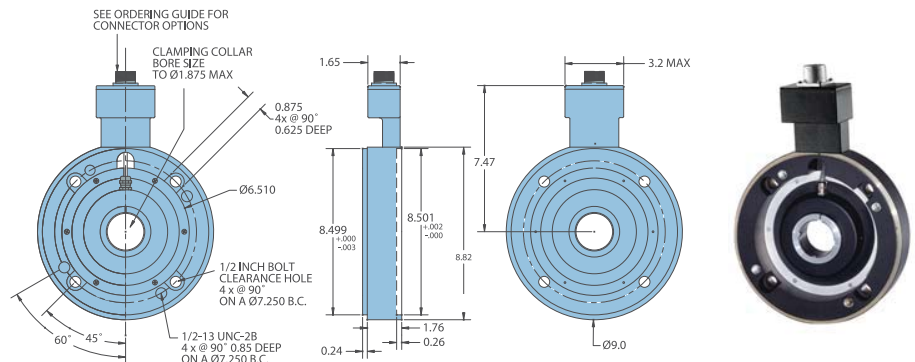
Environmental

Storage Temp-25° to 100° C
 Humidity.....98% RH non-condensing
 Vibration.....10 g @ 58 to 500 Hz
 Shock.....50 g @ 11 ms duration
 SealingIP65 for Option A housing style with gasket kit IP50 for Option B housing style

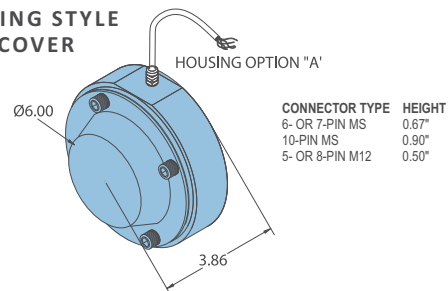
MODEL 771 WITH GLAND NUT CABLE (P)



MODEL 771 WITH CONDUIT BOX (B, X, Y, J, K)



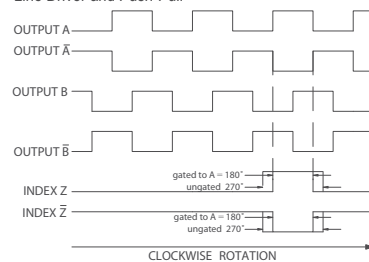
OPTIONAL HOUSING STYLE (A) PROTECTIVE COVER



All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified.

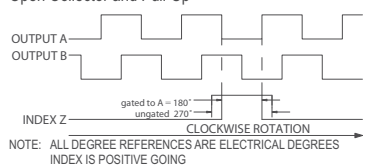
WAVEFORM DIAGRAMS

Line Driver and Push-Pull



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES. WAVEFORM SHOWN WITH OPTIONAL COMPLEMENTARY SIGNALS \bar{A} , \bar{B} , \bar{Z} FOR HV OUTPUT ONLY.

Open Collector and Pull-Up



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES. INDEX IS POSITIVE GOING

WIRING TABLE

Function	Gland Wire Color	5-pin M12 ⁺⁺ PU, PP, OC	8-pin M12 ⁺⁺	10-pin MS	7-pin MS HV	7-pin MS PU, PP, OC	Term Block	10-pin Indust. Clamp
Com	Black	3	7	F	F	F	2	1
+VDC	Red	1	2	D	D	D	1	6
A	White	4	1	A	A	A	3	3
A'	Brown	--	3	H	C	--	4	8
B	Blue	2	4	B	B	B	5	2
B'	Violet	--	5	I	E	--	6	7
Z	Orange	5	6	C	--	C	7	4
Z'	Yellow	--	8	J	--	--	8	9
Case	--	--	--	G**	G**	G**	9 [†]	10 [†]
Shield	Bare*	--	--	--	--	--	--	--

*CE Option: Cable shield (bare wire) is connected to internal Case.
 **CE Option: Pin G is connected to Case. Non-CE Option: Pin G has No Connection.
 †CE Option: Pin 10 is connected to Case. Non-CE Option: Pin 10 has No Connection.
 ‡CE Option: Read *Technical Bulletin TB111* at www.encoder.com.
 †Standard cable is 24 AWG conductors with foil and braid shield.