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

<table>
<thead>
<tr>
<th>771</th>
<th>A</th>
<th>H</th>
<th>1024</th>
<th>Q</th>
<th>OC</th>
<th>A</th>
<th>Y</th>
<th>N</th>
<th>N</th>
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<tbody>
<tr>
<td>MODEL</td>
<td>OPERATING TEMPERATURE</td>
<td>CYCLES PER REVOLUTION</td>
<td>OUTPUT TYPE</td>
<td>BORE SIZE</td>
<td>NUMBER OF CHANNELS</td>
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<tr>
<td>771</td>
<td>8.5&quot; NEMA &quot;AK&quot; Dimension</td>
<td>1 - 4096</td>
<td>5 - 28V In/Out</td>
<td>0° to 70° C</td>
<td>Channel A Leads B</td>
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<tr>
<td>S</td>
<td>See CPR Options below for available resolutions. Price adder for CPR &gt;1024</td>
<td>0° to 100° C</td>
<td>OC</td>
<td>1/8&quot;, 0.625&quot;</td>
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<td>T</td>
<td></td>
<td></td>
<td>Open Collector</td>
<td>1-1/8&quot;, 1.125&quot;</td>
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<td>V</td>
<td></td>
<td></td>
<td>Pull-Up Resistor</td>
<td>1-1/4&quot;, 1.250&quot;</td>
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<td>W</td>
<td></td>
<td></td>
<td>Push-Pull</td>
<td>1-3/8&quot;, 1.375&quot;</td>
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<td>H</td>
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<td>HV</td>
<td>1-5/8&quot;, 1.625&quot;</td>
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<td>FG</td>
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<td>Line Driver</td>
<td>1-7/8&quot;, 1.750&quot;</td>
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<td>J</td>
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<td>28 mm</td>
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<td>M</td>
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<td>38 mm</td>
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<td>40 mm</td>
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<td>G</td>
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<td>42 mm</td>
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<td>P</td>
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<td></td>
<td>43 mm</td>
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</table>

NOTES:
1. 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.
2. Contact Customer Service for indexing options.
3. 5 to 24 VDC max for high temperature option.
4. Line Driver Outputs not available with 5-pin M12 connector. Available with 7-pin MS connector only without Index Z.
5. For mating connectors, cables, and cordsets see Accessories at encoder.com.
6. For Connector Pin Configuration Diagrams, see Technical Information or see Connector Pin Configuration Diagrams at encoder.com.

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

CONTACT CUSTOMER SERVICE FOR DETAILS...
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 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 mounting face. See Waveform Diagrams.
Output Types Open Collector - 100 mA max per channel.
Pull-Up - Open Collector with 2.2k ohm internal resistor.
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 = 180˚.
0475 to 4096 CPR: Gated to output A.
See Waveform Diagrams.
Max Frequency 200 kHz.
Electrical Protection Reverse voltage and output short circuit protected. NOTE: Sustained reverse voltage may result in permanent damage.
Noise Immunity Tested to BS EN61000-6-2; IC801-3; BS EN61200-4-4; DDENV 50141; DDENV 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 1.25", 1.250", 1.375", 28 mm, 30 mm, 32 mm bore diameter.
User Shaft Tolerances
Radial Runout 0.005".
Axial Endplay +0.01".
Moment of Inertia 3.3 x 10⁻³ oz-in-sec² typical.
Housing All metal construction.
Weight 7.0 lb typical.

Environmental
Storage Temperature 25°C to 100°C.
Humidity 98% RH non-condensing.
Vibration 10 g @ 58 to 500 Hz.
Shock 50 g @ 11 ms duration.
Sealing IP65 for Option B housing style with gasket kit; IP50 for Option A 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

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.
Trim back and insulate unused wires.

<table>
<thead>
<tr>
<th>Function</th>
<th>Cable</th>
<th>Wire Color</th>
<th>5-pin M12**</th>
<th>8-pin M12**</th>
<th>10-pin MS</th>
<th>7-pin MS</th>
<th>Term Block</th>
<th>10-pin Induct. Clamp</th>
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<tbody>
<tr>
<td>VDC</td>
<td>Black</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>2</td>
<td>1</td>
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<tr>
<td>A</td>
<td>White</td>
<td>4</td>
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<td>A</td>
<td>3</td>
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<tr>
<td>A'</td>
<td>Brown</td>
<td>3</td>
<td>H</td>
<td>C</td>
<td>4</td>
<td>8</td>
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<tr>
<td>B</td>
<td>Blue</td>
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<td>6</td>
<td>B</td>
<td>5</td>
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<tr>
<td>B'</td>
<td>Violet</td>
<td>5</td>
<td>I</td>
<td>6</td>
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<tr>
<td>Z</td>
<td>Orange</td>
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<td>C</td>
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<td>Z'</td>
<td>Yellow</td>
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<td>J</td>
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<tr>
<td>Case</td>
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<td>G&quot;</td>
<td>G&quot;</td>
<td>G&quot;</td>
<td>9&quot;</td>
<td>10&quot;</td>
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<td>Shield</td>
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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: Pins 9 and 10 are connected to Case. Non CE Option: Pins 9 and 10 have No Connection.
CE Option: Use cable shield with shield connected to M12 connector coupling nut.
Standard cable is 24 AWG conductors with foil and braid shield.

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