

# MODEL 775 – INCREMENTAL ENCODER



Ø4.3"

## FEATURES

- Thru-Bore Design For Easy Mounting
- Bore Options to 1.375"
- Incorporates Opto-ASIC Technology
- Resolutions to 4096 CPR
- 100° C Operating Temperature Available
- CE Marking Available

The sleek design of the Model 775 Thru-Bore Series Accu-Coder™ makes form and function a successful reality. The slim profile and Thru-Bore design, makes installation easy by simply slipping the bore over motor shafts up to 1.375" in diameter. The advanced Opto-ASIC based electronics provide the superior noise immunity necessary in many industrial applications. With a variety of bore sizes, resolutions, and connector types, application possibilities are endless.

## COMMON APPLICATIONS

Motor Feedback, Velocity & Position Control, Food Processing, Robotics, Material Handling

## MODEL 775 ORDERING GUIDE

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

<b>775</b>	<b>A</b>	<b>H</b>	<b>1024</b>	<b>Q</b>	<b>OC</b>	<b>C</b>	<b>Y</b>	<b>N</b>	<b>N</b>	<b>CE</b>
<b>MODEL</b> 775 Slim Thru-Bore	<b>OPERATING TEMPERATURE</b> S 0° to 70° C H 0° to 100° C						<b>ANTI-ROTATION FLEX MOUNT</b> N None A Style A			<b>CERTIFICATION</b> N None CE CE Marked <sup>6</sup>
<b>HOUSING STYLE</b> A Completely encloses motor shaft, and eliminates access to motor shaft. For physical protection only. B Thru-Bore housing version. Allows access to motor shaft.	<b>CYCLES PER REVOLUTION</b> 1 - 4096 See CPR Options below for available resolutions. Price adder for CPR >1024	<b>OUTPUT TYPE</b> 5 - 28V In/Out <sup>2</sup> OC Open Collector PU Pull-Up Resistor PP Push-Pull HV Line Driver <sup>3</sup>	<b>CONNECTOR TYPE<sup>4</sup></b> P Gland Nut with 24" Cable <sup>5</sup> W 6-pin MS Y 7-pin MS X 10-pin MS J 5-pin M12 (12 mm) K 8-pin M12 (12 mm) 9D 9-pin D-subminiature	<b>MATING CONNECTOR</b> N No Connector Y Yes						
	<b>NUMBER OF CHANNELS<sup>1</sup></b> <i>Channel A Leads B</i> Q Quadrature A & B R Quadrature A & B with Index <i>Channel B Leads A</i> K Reverse Quadrature A & B D Reverse Quadrature A & B with Index See <a href="http://www.encoder.com/literature/index-phasing.pdf">http://www.encoder.com/literature/index-phasing.pdf</a> for additional options, and waveforms.	<b>BORE SIZE</b> A 5/8", 0.625" collet style B 3/4", 0.750" collet style C 7/8", 0.875" collet style D 1", 1.000" collet style O 1-1/8", 1.125" clamp style T 1-1/4", 1.250" clamp style V 1-3/8", 1.375" clamp style H 14 mm collet style I 19 mm collet style K 24 mm collet style M 25 mm clamp style L 28 mm clamp style Q 30 mm clamp style R 32 mm clamp style								

### MODEL 775 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:

- Contact Customer Service for index gating options.
- 5 to 24 VDC max for high temperature option.
- Not available with 5-pin M12 or 6-pin MS 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](http://www.encoder.com). For Pin Configuration Diagrams, see page 107 or visit [www.encoder.com](http://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.
- Please refer to **Technical Bulletin TB100: When to Choose the CE Option** at [www.encoder.com](http://www.encoder.com).

## MODEL 775 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- 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 Frequency .....200 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.....6000 RPM. Higher shaft speeds may be achievable, contact Customer Service.

User Shaft Tolerances  
 Radial Runout .....0.005"  
 Axial Endplay.....±0.030" with appropriate flex mount  
 Moment of Inertia...3.3 X 10<sup>-3</sup> oz-in-sec<sup>2</sup> typical

Housing .....All metal construction

Weight.....1.0 lb with gland nut or D-sub connector option 1.5 lb with MS connector option  
 Note: All weights typical

### Environmental

Storage Temp .....-25° to 100° C

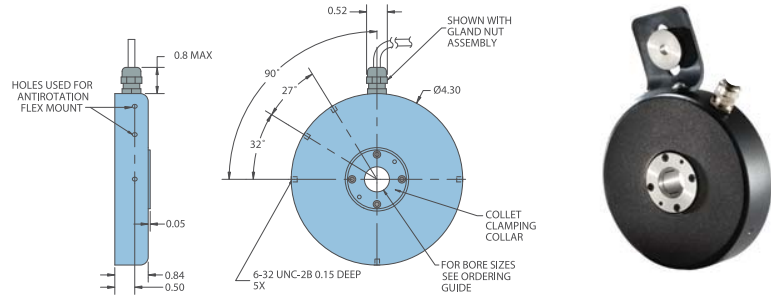
Humidity.....98% RH non-condensing

Vibration.....10 g @ 58 to 500 Hz

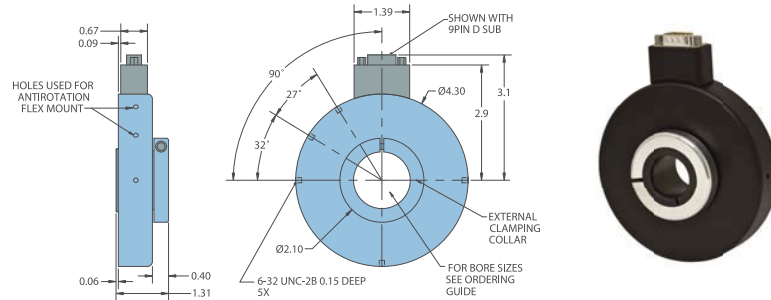
Shock.....50 g @ 11 ms duration

Sealing.....IP50

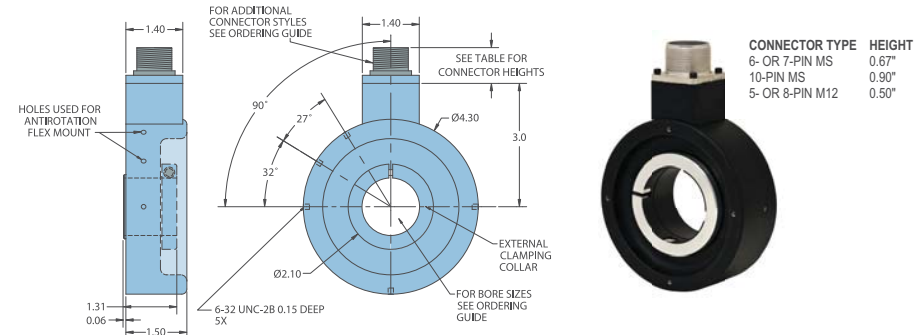
## MODEL 775 COLLET CLAMP (A, B, C, D, H, I, K)



## MODEL 775 CLAMP STYLE (O, T, V, M, L, Q)



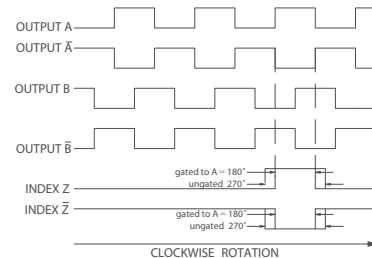
## MODEL 775 EXTENDED HOUSING (W, X, Y, J, K)



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

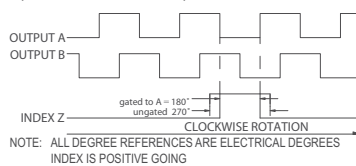
## WAVEFORM DIAGRAMS

### Line Driver and Push-Pull



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

### Open Collector and Pull-Up



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

## WIRING TABLE

Function	Gland Cable† Wire Color	5-pin M12++ PU, PP, OC	8-pin M12++	10-pin MS	7-pin MS HV	7-pin MS PU, PP, OC	6-pin MS PU, PP, OC	9-pin D-sub
Com	Black	3	7	F	F	F	A, F	9
+VDC	Red	1	2	D	D	D	B	1
A	White	4	1	A	A	A	D	2
A'	Brown	--	3	H	C	--	--	3
B	Blue	2	4	B	B	B	E	4
B'	Violet	--	5	I	E	--	--	5
Z	Orange	5	6	C	--	C	C	6
Z'	Yellow	--	8	J	--	--	--	7
Case	--	--	--	G**	G**	G**	--	8*
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 G is connected to Case. Non CE Option: Pin 8 has No Connection.

\*\*CE Option: Read Technical Bulletin TB111 at [www.encoder.com](http://www.encoder.com).

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