

MODEL 776 – INCREMENTAL ENCODER


FEATURES

Slim Profile – Only 1.36" In Depth
 Thru-Bore Design For Easy Mounting
 Incorporates Opto-ASIC Technology
 Resolutions to 4096
 Bore Options to 1.875"
 CE Marking Available

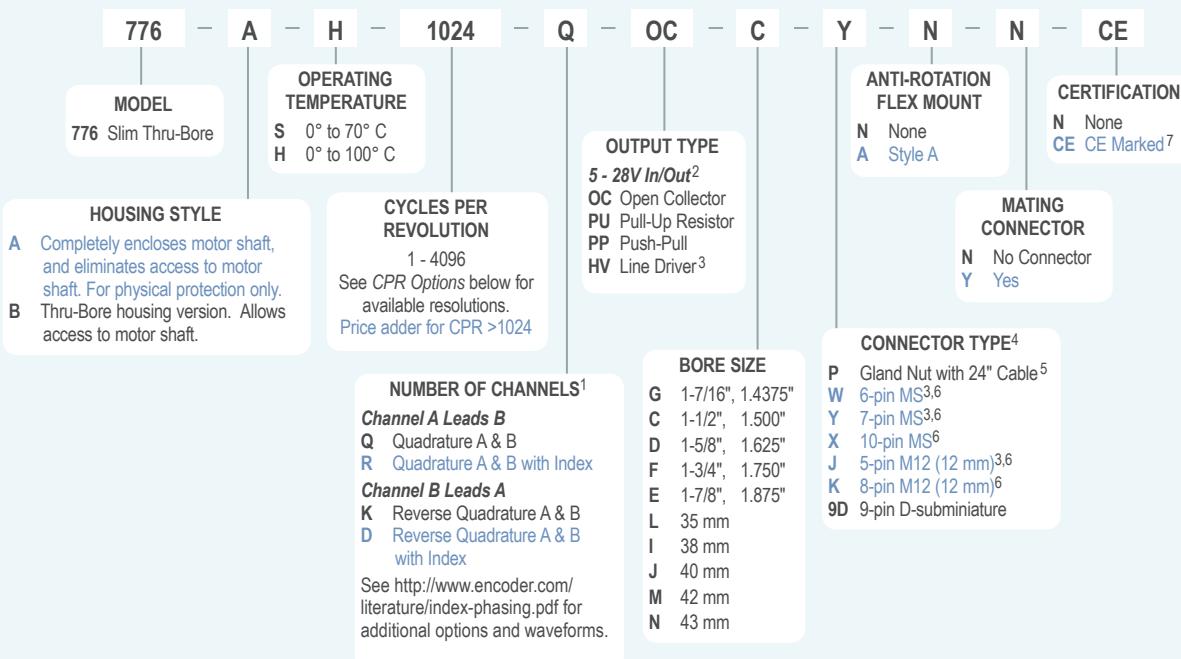
The Thru-Bore Series Accu-Coder™ Model 776 encoder is designed to fit directly on either a motor or other shaft where position, direction, or velocity information is needed. The advanced Opto-ASIC based electronics provide the superior noise immunity necessary in many industrial applications. The Model 776 conveniently features a clamp type mount for fast and easy mounting over a large range of shaft sizes. An optional anti-rotation flex mount maintains housing stability.

COMMON APPLICATIONS

Motor Feedback, Velocity & Position Control, Robotics, Conveyors, Material Handling

MODEL 776 ORDERING GUIDE

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


MODEL 776 CPR OPTIONS

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

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

NOTES:

- 1 Contact Customer Service for index gating options.
- 2 5 to 24 VDC max for high temperature option.
- 3 Line Driver not available with 5-pin M12 or 6-pin MS connector. Available with 7-pin MS connector only without Index Z.
- 4 For mating connectors, cables, and cordsets see [Accessories](#) at encoder.com. For Connector Pin Configuration Diagrams, see Technical Information or see [Connector Pin Configuration Diagrams](#) at encoder.com.
- 5 For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: P/6 = 6 feet of cable.
- 6 Connector options other than 9D and P require extended housing. See drawing, next page.
- 7 Please refer to Technical Bulletin [TB100: When to Choose the CE Mark](#) at encoder.com.

MODEL 776 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 and 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, 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.

0475 to 4096 CPR: Gated to output A
0001 to 0474 CPR: Ungated

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 EN61000-4-2; IEC801-3; BS EN61000-4-4; DDENV 50141; DDENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2

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.

User Shaft Tolerances

Radial Runout 0.005"

Axial Endplay..... ± 0.030 " with appropriate flex mount

Moment of Inertia ... 3.3×10^{-3} oz-in-sec² 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

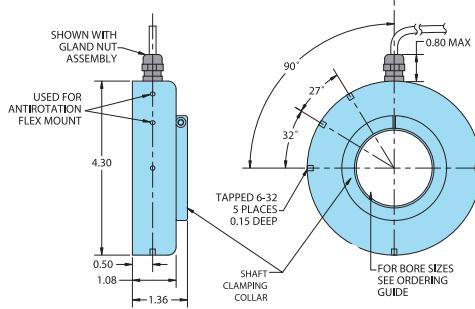
Humidity..... 98% RH non-condensing

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

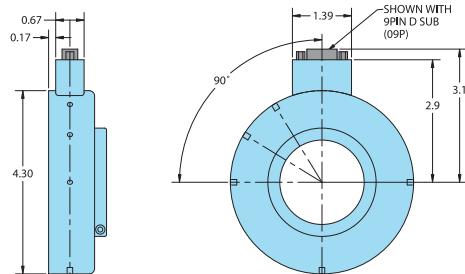
Shock..... 50 g @ 11 ms duration

Sealing..... IP50

MODEL 776 WITH GLAND NUT CABLE (P)

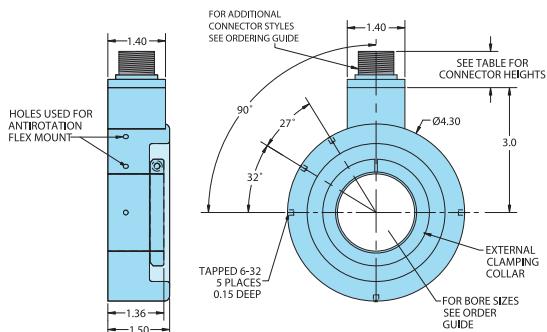


MODEL 776 WITH 9-PIN D-SUB CONNECTOR (9D)

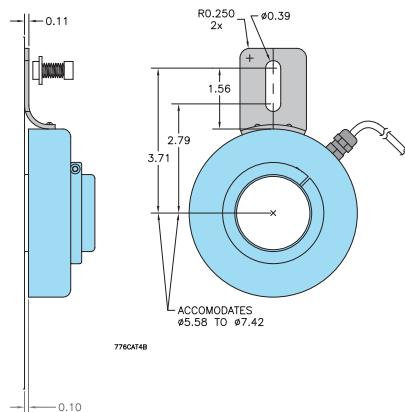


MODEL 776 EXTENDED HOUSING (W, X, Y, J, K)

CONNECTOR TYPE	HEIGHT
6- OR 7-PIN MS	0.67"
10-PIN MS	0.90"
5- OR 8-PIN M12	0.50"



MODEL 776 SHOWN WITH ANTI-ROTATION FLEX MOUNT



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

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.

Trim back and insulate unused wires.

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.

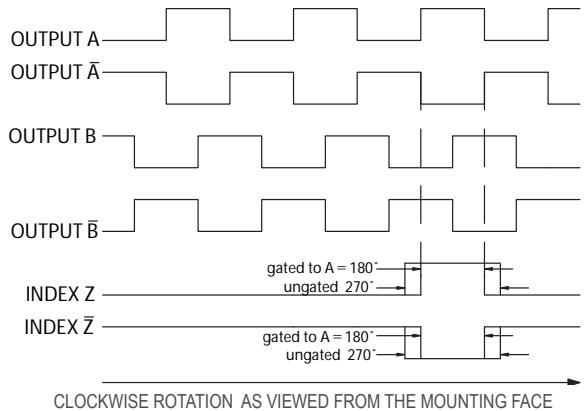
+CE Option: Pin G is connected to Case. Non CE Option: Pin 8 has No Connection.

++CE Option: Use cable cordset with shield connected to M12 connector coupling nut.

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

WAVEFORM DIAGRAMS

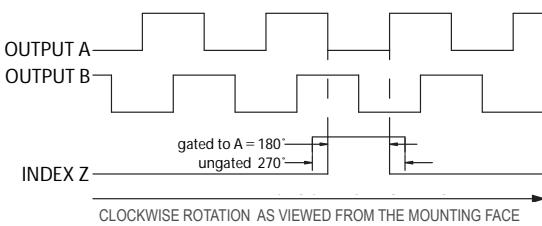
Line Driver and Push-Pull



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



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 INDEX IS POSITIVE GOING