Model 776 Large Bore Slim Thru-Bore Encoder

Features

- Slim Profile - Only 34.54mm In Depth
- Thru-Bore Design For Easy Mounting
- Incorporates Opto-ASIC Technology
- Resolutions to 4096
- Bore Options to 1.875"

The Thru-Bore Series 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, Food Processing, Robotics, Material Handling

Model 776 Ordering Guide

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

776	A	S	0256	R	HV	A	G2	N	N	CE

MODEL
776 Slim Thru-Bore

HOUSING STYLE
A completely encloses motor shaft and eliminates access to motor shaft for physical protection only
B Thru-Bore housing version Allow access to motor shaft

OPERATING TEMPERATURE
S 0º to 70º C
H 0º to 100º C

PPR
See *PPR chart* below
Price adder >1000

CHANNELS[1]
Q Quadrature A+B
R Quad + Z Marker A+B+Z
K Reverse Quadrature A+B
D Reverse Quad+Marker A+B+Z

OUTPUT TYPE
5-28V In/Out[2]
OC Open Collector
PP Push-Pull
HV Line Driver[4]
PU Pull-Up Resistor

BORE SIZE
G 1-7/16", 1.4375"
C 1-1/2", 1.500"
D 1-5/8", 1.625"
F 1-3/4", 1.750"
E 1-7/8", 1.875"
L 35 mm
I 38 mm
J 40 mm
M 42 mm
N 43 mm

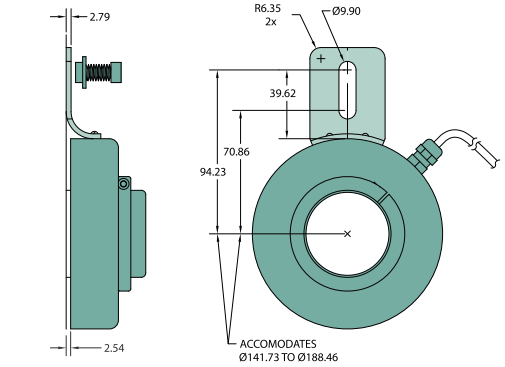
CONNECTOR TYPE
G2 2M Cable with Gland Nut[3]
W 6 Pin MS Style
X 10-pin MS Style
Y 7-pin MS Style
J 5-pin M12 (12mm)
K 8-pin M12 (12mm)
9D 9 Pin D-Subminiature

ANTI-ROTATION FLEX-MOUNT
N None
A Style A

MATING CONNECTOR
N No Connector
Y Yes

CERTIFICATION
CE CE Marked[5]

Model 776 Shown with Anti-Rotation flex-Mount



For specification assistance call Customer Service at +44 (0)1978 262100

Model 776 PPR 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/Marker gating options.
2 5 to 24 VCC max for high temperature option.
3 For non-standard cable lengths, Please contact the sales office.
4 Not available with 5-pin M12 or 6-pin MS connector. Available with 7-pin MS connector only without Index Z.
5 For 4096ppr - Please be aware that CE is not available if choosing High Temp option and over 2 Metre Cable Length.

Model 776 Large Bore Slim Thru-Bore Encoder

Model 776 Specifications

Electrical

Input Voltage	4.75 to 28 VCC max for temperatures up to 70° C 4.75 to 24 VCC 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 to100 kHz
Output Format	Incremental- Two square waves in quad-rature with channel A leading B for clock-wise shaft rotation, as viewed from the mounting face. See *Waveform Diagrams* below.
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. 0475 to 4096 PPR: Gated to output A 0001 to 0474 PPR: Ungated See *Waveform Diagrams* below.
Max Frequency	200 kHz
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 Edge Separation	67.5° electrical or better is typical, 54° electrical minimum at temperatures > 99° C
Rise Time	Less than 1 microsecond

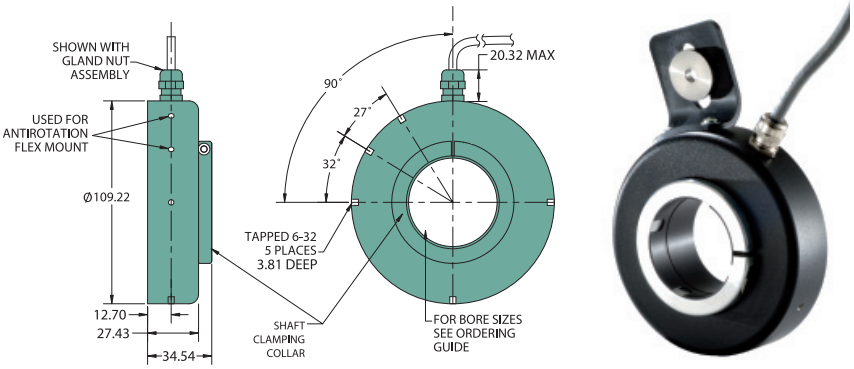
Mechanical

Max Shaft Speed	3500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Bore Size	1.500", 1.625", 1.750", 1.875", 35 mm, 38 mm, 40 mm, 42 mm, 43 mm
User Shaft Tolerances	
Radial Runout	0.15mm TR
Axial Endplay	±0.70mm with appropriate flex mount
Electrical Conn	Gland nut with 2M cable (foil and braid shield, 24 AWG conductors), 6-, 7-, or 10-pin MS Style, 5- or 8-pin M12 (12 mm), or 9-pin D-sub- miniature
Housing	All metal construction
Mounting	Thru-bore with single-screw clamp mount
Weight	450 grams with gland nut or D-sub connector option / 680 grams with MS connector option Note: All weights typical

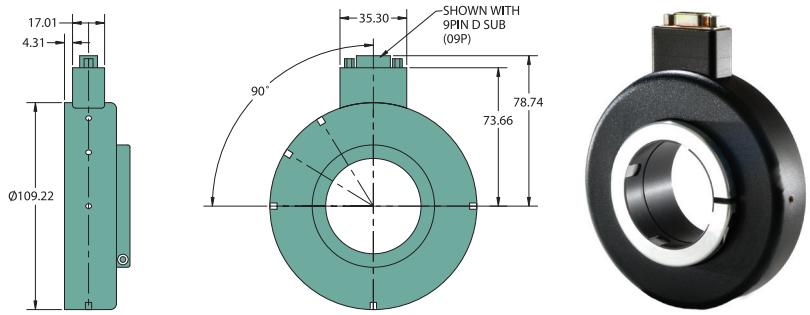
Environmental

Operating Temp	0° to 70° C for standard models 0° to 100° C for high temperature option
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

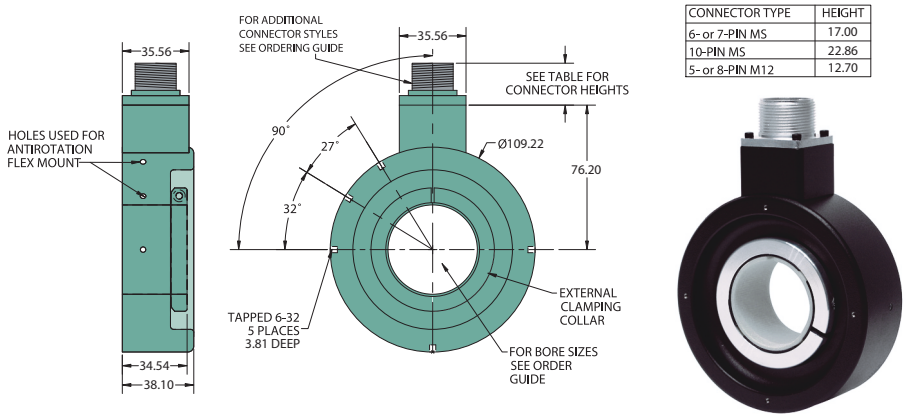
Model 776 With Gland Nut Cable (G2)



Model 776 With 9-Pin D-Sub Connector (9D)



Model 776 Extended Housing (W, X, Y, J, K)

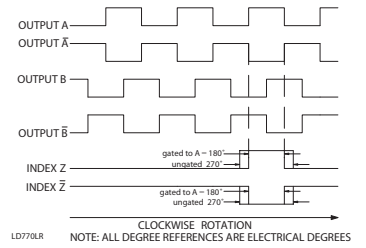


CONNECTOR TYPE	HEIGHT
6- or 7-PIN MS	17.00
10-PIN MS	22.86
5- or 8-PIN M12	12.70

All dimensions are in mm with a tolerance of ±0.254 unless otherwise specified.

Waveform Diagrams

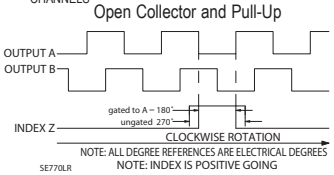
Line Driver and Push-Pull



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES

NOTE: PUSH-PULL OUTPUT DOES NOT INCLUDE COMPLEMENTARY CHANNELS

Open Collector and Pull-Up



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
+VCC	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
Shield	Bare	---	---	---	---	---	---	---
Case	---	---	---	G	G	G	---	8