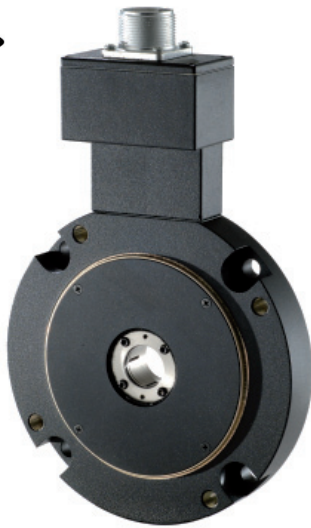


# Model 770 Thru-Bore Encoder



Ø165.1 mm

### Features

- Slim Profile - Only 25.4mm Deep
- Fits NEMA Size 56C Thru 184C Motor Faces (114.3mm AK)
- Incorporates Opto-ASIC Technology
- Resolutions to 4096 PPR

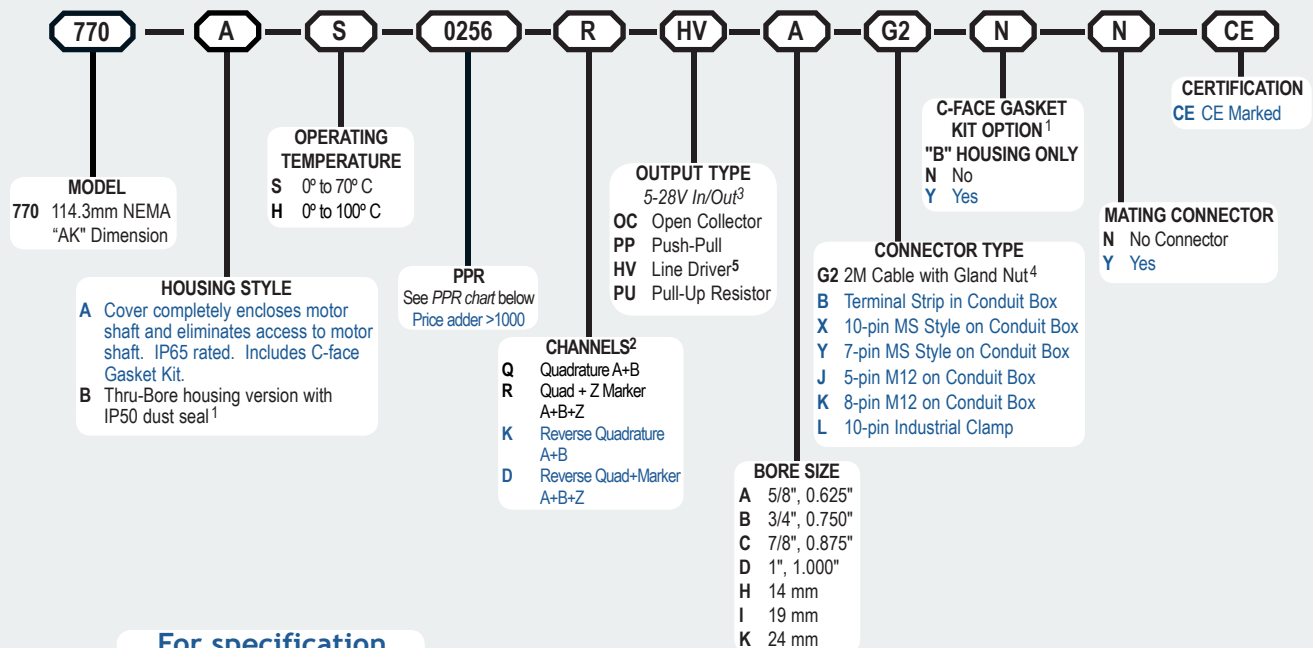
The Model 770 C-face encoder is a rugged, high resolution encoder designed to mount directly on NEMA C-face motors. Both sides of the encoder are C-face mounts, allowing additional C-face devices to be mounted to this encoder. Unlike many C-face kit type encoders, the Model 770 contains precision bearings and an internal flex mount, virtually eliminating encoder failures and inaccuracies induced by motor shaft runout or axial endplay. The advanced Opto-ASIC design provides advanced noise immunity necessary for many industrial applications. This encoder is ideal for applications using induction motors and flux vector control. The Model 770 provides speed and position information for drive feedback in a slim profile - only 25.4mm thick. The Thru-Bore design allows fast and simple mounting of the encoder directly to the accessory shaft or to the drive shaft of the motor, using the standard motor face (NEMA sizes 56C - 184C). The tough, all metal housing resists the vibration and hazards of an industrial environment.

### Common Applications

Motor Feedback, Velocity & Position Control, Conveyors, Variable Speed Drives, Mixing & Blending Motors, Assembly & Speciality Machines

### Model 770 Ordering Guide

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



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

### Model 770 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 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 Marker gating options.
- 3 5 to 24 VCC max for high temperature option.
- 4 For non-standard cable lengths, Contact the sales office for more information.
- 5 Not available with 5-pin M12 connector. Available with 7-pin MS connector only without Index Z.

# Model 770 Thru-Bore Encoder

## Model 770 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 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* 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 VCC supply)

Index .....Once per revolution.  
0513 to 4096 PPR: Gated to output A  
0001 to 0512 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

Symmetry .....180°(±18°) electrical  
Quad. Phasing.....90°(±22.5°) electrical  
Min. Edge Sep.....67.5° electrical  
Rise Time.....Less than 1 microsecond

### Mechanical

Max Shaft Speed.....6000 RPM. Higher shaft speeds may be achievable, contact Customer Service.

Bore Size .....0.625", 0.750", 0.875", 1.000", 14 mm, 19 mm, and 24 mm

Bore Tolerance .....+0.03/-0.00 mm

User Shaft Tolerances  
Radial Runout.....0.127mm  
Axial Endplay .....±1.27mm

Electrical Conn.....Gland nut with 2M cable (foil and braid shield, 24 AWG conductors), Terminal Strip in conduit box, 7- or 10-pin MS Style, 5- or 8-pin M12 (12 mm), 10-pin Industrial Clamp

Housing.....All metal construction  
Mounting.....NEMA 56C to 184C  
Weight.....1.17kg with gland nut  
1.36kg with all other connector options  
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

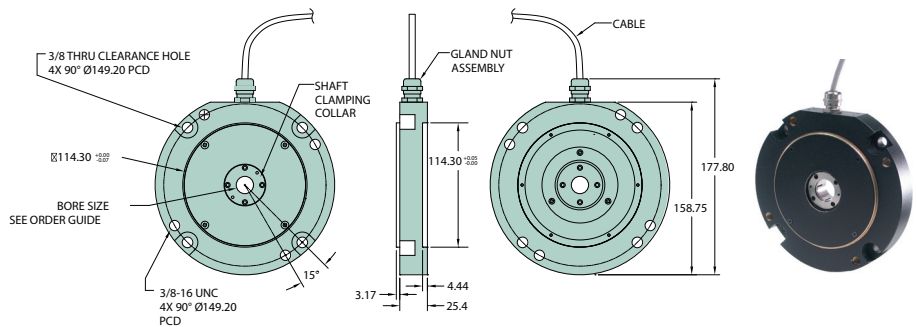
Humidity.....98% RH non-condensing

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

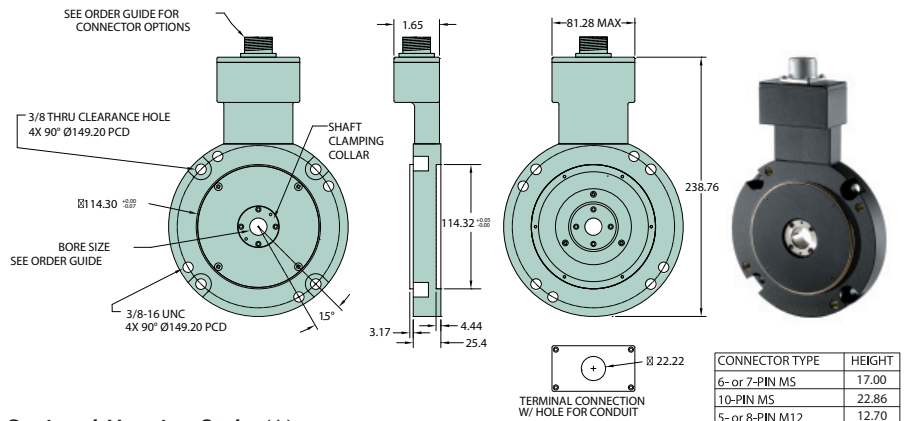
Shock.....50 g @ 11 ms duration

Sealing.....IP65 for Option A housing style with gasket kit  
IP50 for Option B housing style

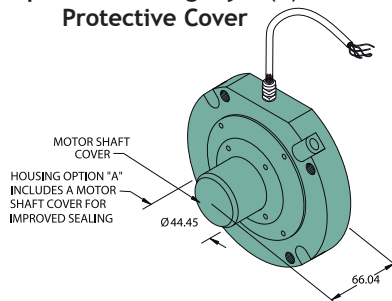
## Model 770 w/Gland Nut (G2)



## Model 770 w/Conduit Box (B, X, Y, J, K)

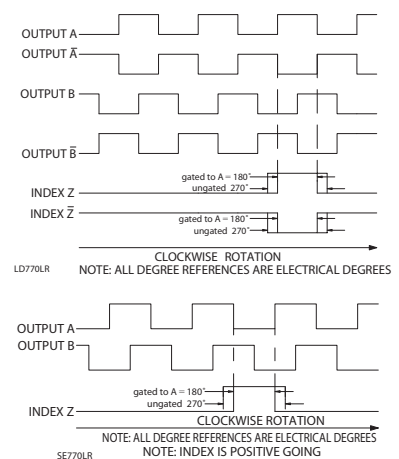


## Optional Housing Style (A) Protective Cover



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

## Waveform Diagrams



## Wiring Table

Function	Gland Cable <sup>1</sup> Wire Color	5-pin M12** PP,OC,PU	8-pin M12** HVL5	8-pin M12** OC,PP,PU	7 Pin MS** HV	7 Pin MS** PU,OC,PP	10 Pin MS** HV	Terminal Block	10 Pin Indust Clamp
0 Volts	Black	3	7	7	F	F	F	2	1
+VCC	Red	1	2	2	D	D	D	1	6
A	White	4	1	1	A	A	A	3	3
A'	Brown	--	3	--	C	--	H	4	8
B	Blue	2	4	4	B	B	B	5	2
B'	Violet	--	5	--	E	--	I	6	7
Z	Orange	5	6	6	C	C	C	7	4
Z'	Yellow	--	8	--	--	--	J	8	9
Shield	Bare*	Case	Case	8	G	G	G	9	10

\*CE: Cable shield (bare wire) is connected to internal case.  
<sup>1</sup>Standard cable is 24 AWG conductors with foil and braid shield.  
 \*\*CE: Shield is connected to connector case unless otherwise specified.