

Model 745 Heavy Duty 90mm Encoder



Incremental Shaft Encoders



Features

- European 90/80/40mm Configuration
- Up to 30,000 PPR
- Hohner 3000/4000 Direct Replacement
- IP64 Sealing Available

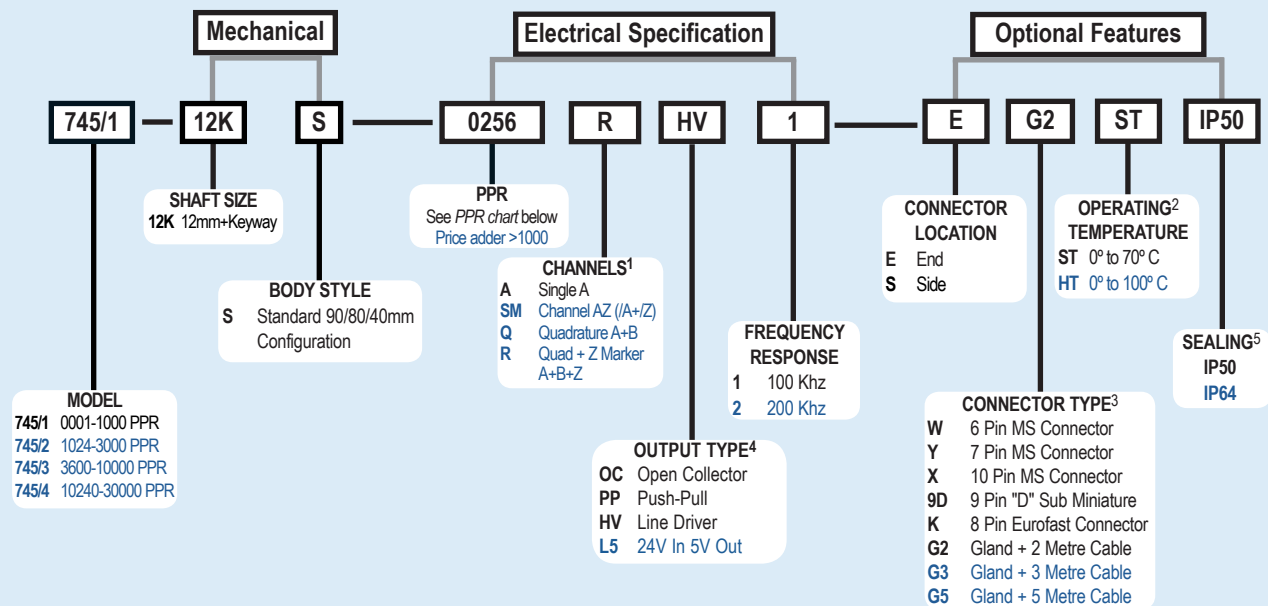
Due to some major technology enhancements, the 745 Encoder is now available from 0001 PPR thru to 30000 PPR. This Encoder is a direct replacement for the popular 90/80/40 spigot style encoder and may be ordered with a variety of output circuits, shaft sizes and connector styles. Using the same Opto-Asic technology as most of our encoder range, you have the advantage of high tech signal generation and a rugged mechanical assembly.

Common Applications

Motion Control Feedback, Conveyors, Elevator Controls, Machine Control, Food Processing, Process Control, Robotics, Material Handling, Textile machines

Model 745 Ordering Guide

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



Model 745 PPR Options

0001*	0002*	0004*	0005*	0006*	0007*	0008*	0010*	0011*
0012*	0014*	0020	0021*	0024*	0025*	0028*	0030*	0032*
0033*	0034*	0035*	0038*	0040*	0042*	0045*	0050*	0060
0064*	0100	0120	0125	0128*	0144*	0150*	0160*	0192*
0200	0240*	0250	0254*	0256*	0300	0333*	0360	0400
0500	0512	0600	0625*	0635	0665*	0720	0768*	0800
0889	0900*	1000	1024	1200	1201 ^a	1203 ^a	1204 ^a	1250 ^a
1270 ^a	1440	1500	1800	2000	2048	2400 ^a	2500	2540 ^a
2880 ^a	3000 ^a	3600 ^a	4000 ^a	4096 ^a	5000 ^a	6000 ^a	7200 ^a	7500 ^a
9000 ^a	10,000 ^a	10,240 ^a	12,000 ^a	12,500 ^a	14,400 ^a	15,000 ^a	18,000 ^a	20,000 ^a
20,480 ^a	25,000 ^a	30,000 ^a						

* Contact Customer Service for High Temperature Option.

^a High Temperature Option (H) limited to 85° C maximum for these PPR options.

New PPR values are periodically added to those listed. Contact Customer Service to determine all currently available PPR values. Special disc resolutions are available upon request.

A one-time NRE fee may apply.

NOTES:

- 1 Contact Customer Service for additional index gating options.
- 2 24 Vcc max for high temperature option.
- 3 Contact Customer Service for non-standard cable lengths.
- 4 Marker (Index) not available with 6-Pin (HV-Q) or 7-Pin MS connector & HV Output.
- 5 Increased starting torque with IP64 option.

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

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Model 745 Specifications

Electrical

Input Voltage4.75 to 24 VCC max for temperatures up to 70° C
 Input Current100 mA max with no output load
 Input Ripple100 mV peak-to-peak at 0 to 100 kHz
 Output FormatIncremental- Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the encoder mounting face. See *Waveform Diagrams* below.
 Output TypesOpen Collector- 50 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)
 IndexOccurs once per revolution. The index for units >3000 PPR is 90° gated to Outputs A and B. See *Waveform Diagrams* below.
 Freq ResponseUp to 200 KHz
 Noise ImmunityTested 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
 Symmetry1 to 6000 PPR: 180° (±18°) electrical at 100 kHz output
 6001 to 20,480 PPR: 180° (±36°) electrical
 Quad Phasing1 to 6000 PPR: 90° (±22.5°) electrical at 100 kHz output
 6001 to 20,480 PPR: 90° (±36°) electrical
 Min Edge Sep1 to 6000 PPR: 67.5° electrical at 100 kHz output
 6001 to 20,480 PPR: 54° electrical
 >20,480 PPR: 50° electrical
 Rise TimeLess than 1 microsecond
 AccuracyInstrument and Quadrature Error: For 200 to 1999 PPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 3000 PPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 PPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

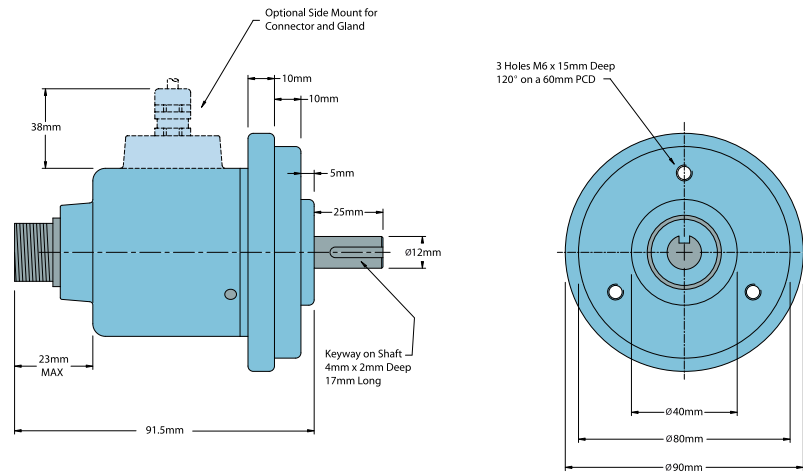
Mechanical

Max Shaft Speed6000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
 Shaft SizeSee order code
 Shaft Material303 stainless steel
 Shaft RotationBi-directional
 Radial Shaft Load120N Operating
 Axial Shaft Load120N Operating
 Starting Torque7.0615 x 10⁻³ Nm typical with no seal
 2.118 x 10⁻² Nm typical with IP64 shaft seal
 Electrical Conn6-, 7-, or 10-pin MS Style, 8-pin M12 (12 mm), 9-pin D-subminiature, or gland with 2M of cable (foil and braid shield, 24 AWG conductors)
 HousingBlack non-corrosive finish
 BearingsPrecision ABEC ball bearings
 Mounting90/80/40mm, 3 x M6 @ 60mm PCD
 Weight800 grams typical

Environmental

Operating Temp0° to 70° C for standard models
 0° to 100° C for high temperature option (0° to 85° C for certain resolutions, see PPR Options.)
 Storage Temp-25° to +85° C
 Humidity95% RH non-condensing
 Vibration10 g @ 58 to 500 Hz
 Shock50 g @ 11 ms duration
 SealingIP50 standard, IP64 optional

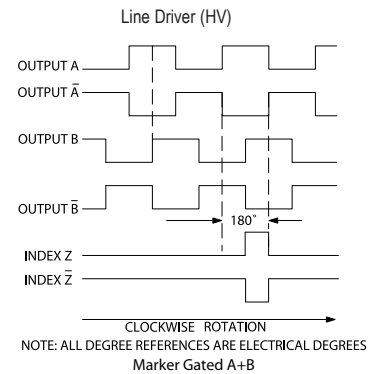
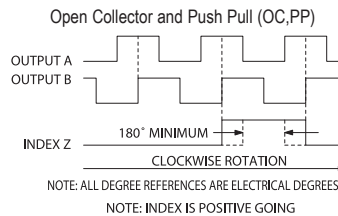
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All dimensions are in mm with a tolerance of ±0.127mm or ±0.254 unless otherwise specified



Waveform Diagrams



Wiring Table

Function	Gland Cable Wire Color	5-pin M12	8-pin M12	10-pin MS	7-pin MS L5 HV-Q	7-pin MS PP OC, LP HV-R	6-pin MS PP OC, LP HV-R	6-pin MS L5 HV-Q	9-pin D-sub
Com	Black	3	7	F	F	F	F	F	9
+Vcc	White	1	2	D	D	D	D	D	1
A	Brown	4	1	A	A	A	A	A	2
A'	Yellow	—	3	H	C	—	—	C	3
B	Red	2	4	B	B	B	B	B	4
B'	Green	—	5	I	E	—	—	E	5
Z	Orange	5	6	C	—	C	C	—	6
Z'	Blue	—	8	J	—	—	—	—	7
Case	—	—	—	G	G	G	—	—	8
Shield	Screen	—	—	—	—	—	—	—	—

CAUTION - Always check wiring colour code against Encoder Label due to changes in specification since September 2006

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