

# Model 725 Heavy Duty (Formerly 730 & 735 Series)



## Features

- Standard Size 25 Package 63.50mm Diameter
- Up to 30,000 PPR
- Servo and Flange Mounting
- IP65 Sealing Available

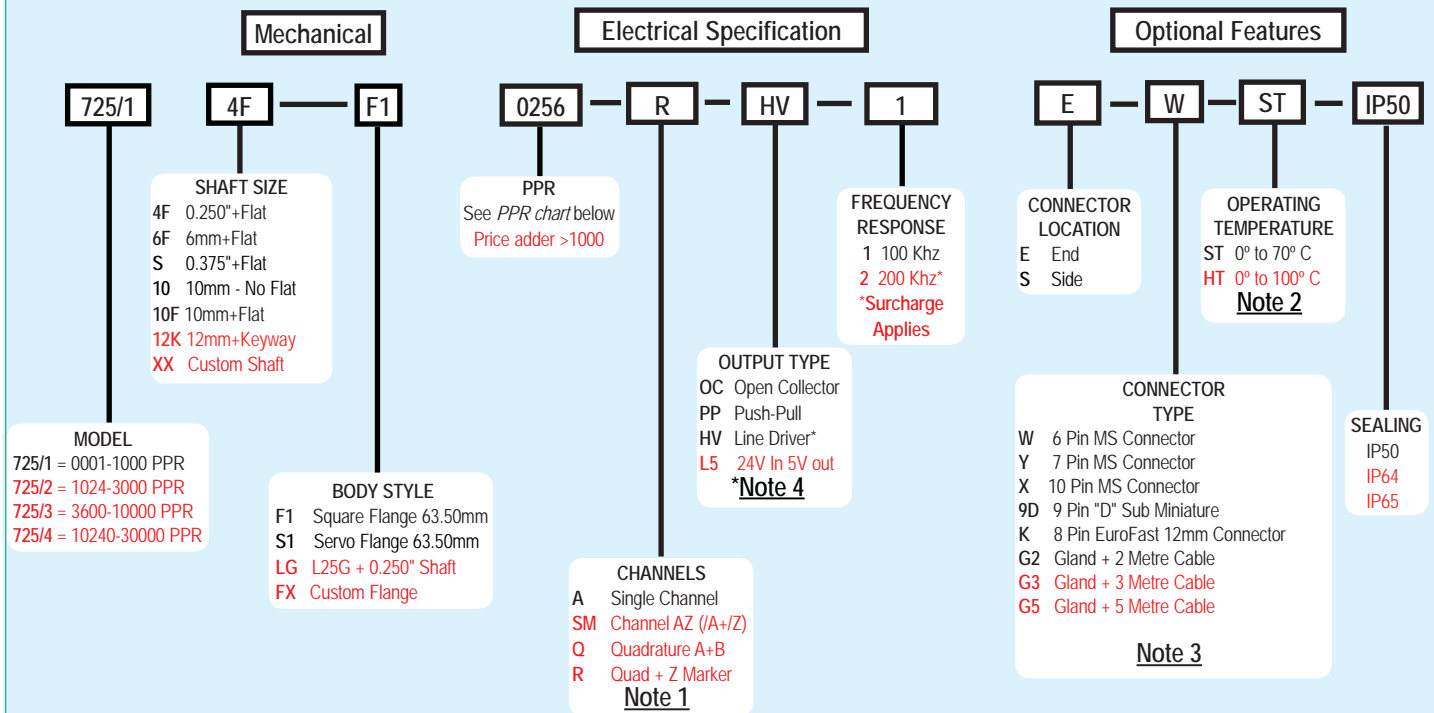
Model 725, (Formerly 730 & 735 Series) is specifically designed for the challenges of an industrial environment. But don't let its tough, industrial package fool you; it still has the performance to reach resolutions up to 30,000 pulses per revolution. The Model 725 is available with both flange and servo mounting options. The rugged housing isolates the internal electronics from the shock and stress of the outer environment.

## Common Applications

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

## Model 725 Ordering Guide

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



## Model 725 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*	0200
0240*	0250	0254*	0256*	0300	0333*	0360	0400	0500
0512	0600	0625*	0635	0665*	0720	0768*	0800	0889
0900*	1000	1024	1200 <sup>a</sup>	1201* <sup>a</sup>	1203* <sup>a</sup>	1204* <sup>a</sup>	1250 <sup>a</sup>	1270 <sup>a</sup>
1440	1500	1800	2000	2048	2400 <sup>a</sup>	2500	2540 <sup>a</sup>	2880 <sup>a</sup>
3000 <sup>a</sup>	3600 <sup>a</sup>	4000 <sup>a</sup>	4096 <sup>a</sup>	5000 <sup>a</sup>	6000 <sup>a</sup>	7200 <sup>a</sup>	7500 <sup>a</sup>	9000 <sup>a</sup>
10,000 <sup>a</sup>	10,240 <sup>a</sup>	12,500 <sup>a</sup>	14,400 <sup>a</sup>	15,000 <sup>a</sup>	18,000 <sup>a</sup>	20,000 <sup>a</sup>	20,480 <sup>a</sup>	25,000 <sup>a</sup>
30,000 <sup>a</sup>								

\* Contact Customer Service for High Temperature Option.

<sup>a</sup> 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 disk resolutions are available upon request.

A one-time NRE fee may apply.

For specification  
assistance call  
Customer Service at  
+31(0)78 6310599

## NOTES:

- 1 Contact Customer Service for index gating options.
- 2 24 VCC max for high temperature option.
- 3 For Non-Standard Cable Lengths Contact the sales office.
- 4 Marker not available with 6-pin or 7-pin MS connector & HV Output.

# Model 725 Heavy Duty (Formerly 730 & 735 Series)

## Model 725 Specifications

### Electrical

Input Voltage.....	4.75 to 24 VCC max for temperatures up to 70° 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 encoder mounting face. See <i>Waveform Diagrams</i> below.
Output Types.....	Open 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)
Index.....	Occurs once per revolution. The index for units >3000 PPR is 90° gated to Outputs A and B. See <i>Waveform Diagrams</i> below.
Freq Response.....	Up to 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.....	1 to 6000 PPR: 180° (±18°) electrical at 100 kHz output 6001 to 20,480 PPR: 180° (±36°) electrical
Quad Phasing.....	1 to 6000 PPR: 90° (±22.5°) electrical at 100 kHz output 6001 to 20,480 PPR: 90° (±36°) electrical
Min Edge Sep.....	1 to 6000 PPR: 67.5° electrical at 100 kHz output 6001 to 20,480 PPR: 54° electrical
Rise Time.....	>20,480 PPR: 50° electrical
Accuracy.....	Less than 1 microsecond
	Instrument 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)

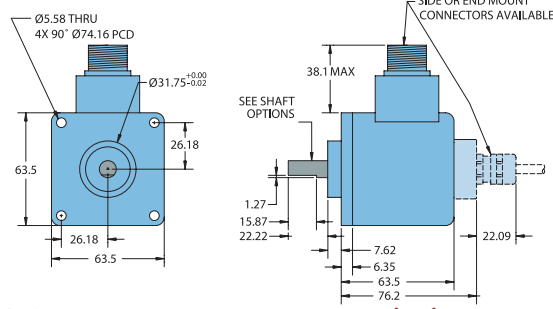
### Mechanical

Max Shaft Speed.....	6000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Shaft Size.....	See order code
Shaft Material.....	303 stainless steel
Shaft Rotation.....	Bi-directional
Radial Shaft Load.....	16kg max (standard housing)
Axial Shaft Load.....	18 kg max (standard housing)
Starting Torque.....	7.0615 x 10 <sup>-3</sup> Nm typical with IP64 seal or no seal 2.118 x 10 <sup>-2</sup> Nm typical with IP65 shaft seal
Max Acceleration.....	1 x 10 <sup>5</sup> rad/sec <sup>2</sup>
Electrical Conn.....	6-, 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)
Housing.....	Black non-corrosive finish
Bearings.....	Precision ABEC ball bearings
Mounting.....	Flange, servo
Weight.....	570gms typical

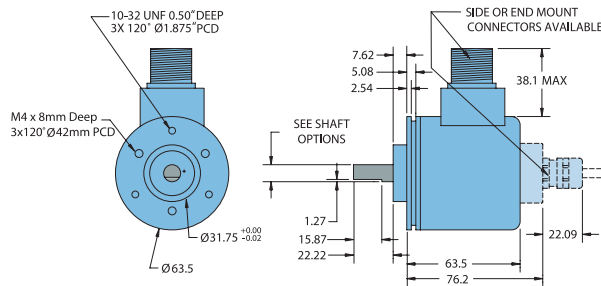
### Environmental

Operating Temp.....	0° 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
Humidity.....	95% RH non-condensing
Vibration.....	.725: 10 g @ 58 to 500 Hz
Shock.....	.725: 50 g @ 11 ms duration
Sealing.....	IP50 standard, IP64 and IP65 optional

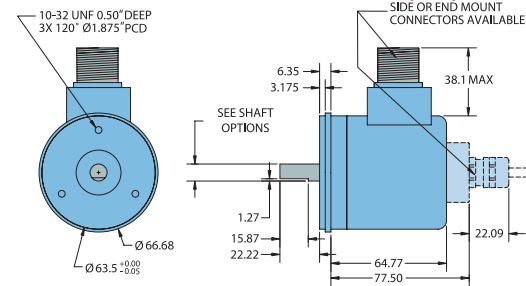
## Model 725 Flange Mount (F1)



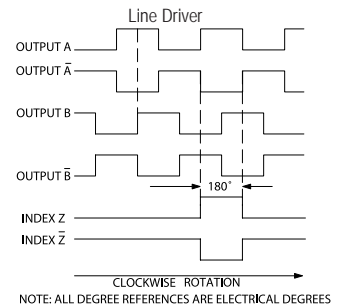
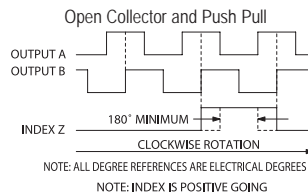
## Model 725 2.5" Servo Mount (S1)



## Model 725 2.62" Servo Mount (LG)



## Waveform Diagrams



## Wiring Table

Function	Gland Cable Wire Color	8-pin M12 <sup>2</sup>	10-pin MS	7-pin MS HV,L5	6-pin MS PP,OC	9-pin D-sub
Com	Black	7	F	F	F	9
+VDC	White	2	D	D	D	1
A	Brown	1	A	A	A	2
A'	Yellow	3	H	C	---	3
B	Red	4	B	B	B	4
B'	Green	5	I	E	---	5
Z	Orange	6	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**