ENCODER PRODUCTS COMPANY

Model 725

Incremental Shaft Encoder

Model 725

Robust, Reliable, Versatile

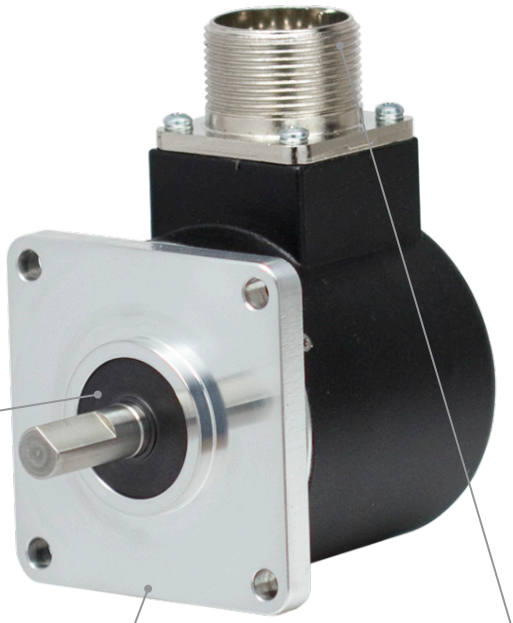
The EPC Model 725 has been specifically designed for challenging industrial environments. Its all metal construction, heavy duty bearings, IP67 sealing and "encoder-within-an-encoder" design result in a rotary encoder that delivers reliable performance under even the toughest operating conditions.

Features

- Standard Size 25 package
- Standard and industrial housings
- Servo and flange mounting
- Resolutions to 30,000 CPR
- Temperature range from -40° C to 100° C

Applications

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



IP67 Sealing

High-performance shaft seal and dual o-rings between the bearing hub and external case provdie an environmental rating up to IP67, including the M12 connector. Standard seal rating is IP50.

Multiple Output Types

Compatible with common motion control signal requirements, the 725 is available with six different output types: Open Collector, Push-Pull, Line Driver, Pull-Up Resistor. A 5V fixed output option is available with Line Driver or Push-Pull.

Wide Range of Disc Resolution

From coarse positioning to high speed precision feedback, the Model 725 can meet the demands of many industrial applications. Resolution available from 1 to 30,000 CPR.

Mounting Face Options

With flange or servo mounting options, the Model 725 is easily integrated into existing or new motion control systems.

Flange Mount (Standard)

2.5" Servo Mount (Standard)

2.5" Servo Mount

2.62" Servo Mount

Solid Construction

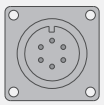
The bearing hub, pilot, and mounting flange are machined from a single piece of metal, yielding an extremely strong and stable unit.

Heavy Duty Bearings

Shaft loads are handled by a pair of heavy duty bearings, which are mechanically locked in place and have double the load capacity of the previous design.

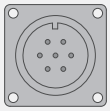
Versatile Connectivity

With a variety of options, the Model 725 accommodates industry standard connectors.



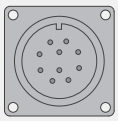
6-pin MS Style

5-pin M12

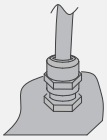


7-pin MS Style

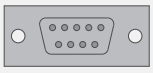
8-pin M12



10-pin MS Style



Cable Gland

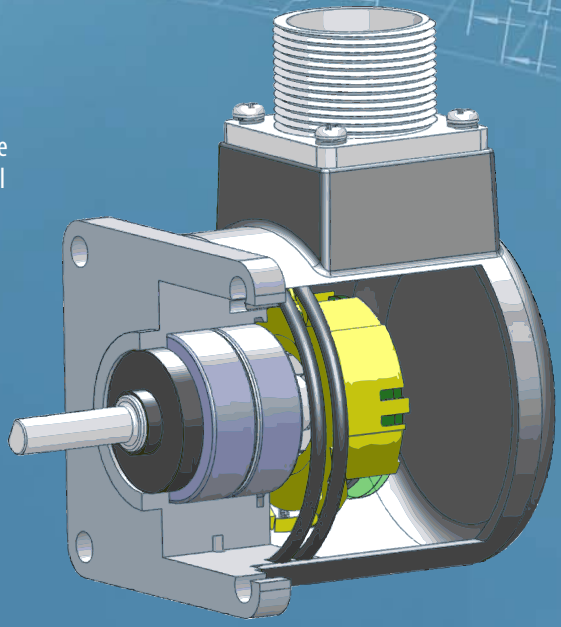


9-pin D-Sub

Rugged Design for Reliable Performance

All Metal Construction
- Bearing hub, pilot, and mounting flange constructed from a single piece of metal
- Enhanced stability and strength

Dual O-Rings
- Positioned between the bearing hub and external case
- Enhanced ingress protection, contributing to IP67 rating



Industrial Housing
- Encoder-within-an-encoder design
- Isolates electronics from external hazards
- Additional set of bearings

Heavy Duty Bearings
- Dual bearings, mechanically locked in place
- Load capacity 80 lbs radial, 80 lbs axial
- ABEC rated

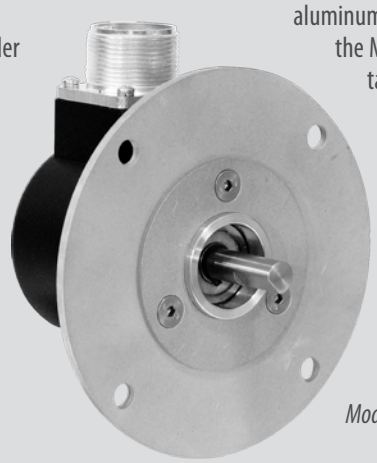
Internal Flex Mount
- Provides added stability to internal electronics
- Absorbs residual shock and vibration
- Mechanically isolates internal electronics from external conditions

Opto-ASIC Sensing and Signal Processing Technology
- "Board-on-a-chip"' design reduces the number and size of components
- Stable over a wide temperature range (-40° C to 105° C)
- Reduced susceptibility to shock and vibration
- Phased-array sensor provides for a clean reliable signal
- Wide sensor-to-disk air gap

Additional Options

Industrial Housing Option
The Model 725I *(shown above)* enhances the ruggedness of the 725N by means of an encoder-within-an-encoder design. An internal flex mount and second set of bearings enable reliable operation in harsh conditions.

5PY Mounting Adapter
The optional 5PY adapter *(shown at left)* is made of all aluminum construction and allows the Model 725 to replace DC tachometer technology. The 5PY adapter is mechanically interchangeable with any 5PY tach generator.



Model 725 with 5PY adapter.

Need a Multi-turn Absolute Encoder?
The rugged, industrial design of the Model 725 extends to Model MA63S

- Standard Size 25 package
- Durable magnetic technology
- Servo and flange mounting
- SSI and CANopen communications
- IP67 available

Model MA63 absolute encoder.

Model 725 Product 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 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 encoder mounting face.
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	Occurs once per revolution. The index for units >3000 CPR is 90° gated to Outputs A and B.
Max Frequency	Up to 1 MHz
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 CPR: 180° (±18°) electrical at 100 kHz output 6001 to 20,480 CPR: 180° (±36°) electrical
Quad Phasing	1 to 6000 CPR: 90° (±22.5°) electrical at 100 kHz output 6001 to 20,480 CPR: 90° (±36°) electrical
Min Edge Sep	1 to 6000 CPR: 67.5° electrical at 100 kHz output 6001 to 20,480 CPR: 54° electrical >20,480 CPR: 50° electrical
Rise Time	Less than 1 microsecond
Accuracy	Instrument and Quadrature Error: For 200 to 1999 CPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle.For 2000 to 3000 CPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 CPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

Mechanical

Max Shaft Speed	8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Shaft Material	303 Stainless Steel
Shaft Rotation	Bi-directional
Radial Shaft Load.	80 lb max (standard housing) 80 lb max (industrial housing)
Axial Shaft Load	80 lb max (standard housing) 80 lb max (industrial housing)
Starting Torque	1.0 oz-in typical with IP64 seal or no seal 3.0 oz-in typical with IP66 shaft seal 7.0 oz-in typical with IP67 shaft seal
Moment of Inertia	5.2×10^{-4} oz-in-sec^2
Max Acceleration	1×10^5 rad/sec^2
Housing	Black non-corrosive finish
Bearings	Precision ABEC ball bearings
Weight	20 oz typical

Environmental

Storage Temp	-25° to 85° C
Humidity	95% RH non-condensing
Vibration	20 g @ 58 to 500 Hz
Shock	75 g @ 11 ms duration
Sealing	IP50 standard; IP64, IP66 or IP67 optional

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