

Description

The HS25 incremental encoder fits onto an existing shaft and converts shaft rotation into square wave pulses: 50 pulses per revolution (ppr) on output A and 10 ppr on output B. Output C indicates the direction of shaft rotation, clockwise (CW) or counter-clockwise (CCW), viewed from the shaft collar end.

Model ID

HS25 - **P50/10/B** /

Shaft diameter:
 A = 5/16"
 B = 3/8"
 C = 1/4"
 M6 = 6mm
 M8 = 8mm

Supply voltage:
 5 or 8-30

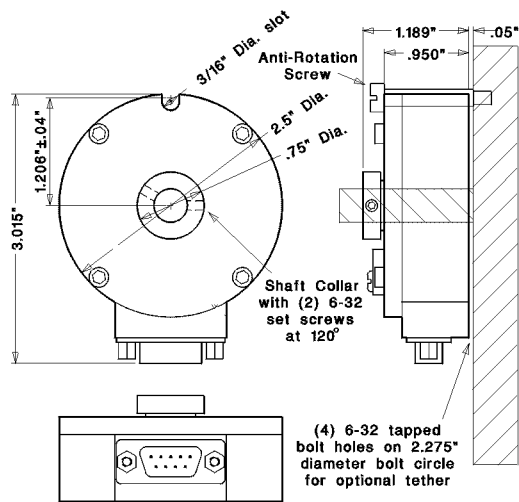
Output Circuit:
 Push/Pull is standard
 C = Open collector

Short lead time options are underlined.

Installation

- Slide HS25 onto shaft and tighten set screws.
Maintain clearance between the encoder and the existing mounting plate.
- Use an anti-rotation pin, a flexible mounting bracket, or other means to prevent rotation. Note: the encoder must be allowed to float - **do not** bolt it to the frame.
The combined tolerances of the anti-rotation pin location and shaft runout is $\pm .04"$ (± 1 mm).
- Attach the cable leads to the control device (e.g. PLC) ensuring that the power supply meets specifications.
- Attach the cable to the encoder.

Dimensions



Electrical

Supply Voltage (V_{IN}): (see Model ID)

- $5 \pm 5\%$ vdc
- 8 to 30 vdc

Output circuit: (See fig. 2 and Model ID)

- Push/Pull
- Combined sourcing/sinking output
- Open collector
- NPN Open collector sinking output ($V_{CC}=30$ vdc maximum)

Output Protection: ESD and Short Circuit

Supply Current: 50ma maximum (no load)

Output Current (I_O): 50ma max source/sink

Operating temperature: 0° to 70° C

Maximum operating speed: 2,500 rpm

Outputs

Pulses per Revolution Output: 50 ppr on

Output A, 10 ppr on Output B.
 "Low" when power is initially applied.

Output Waveform: 50/50 squarewave

- Pulse On-Off Ratio: $50\% \pm 10\%$
- Pulse Interval Jitter: $\pm 10\%$
- Pulse rise time: 2 μ sec (max)
- Pulse fall time: 5 μ sec (max)
- Voltage (high): $V_{in} - 2.5$ vdc (min)
- Voltage (low): 1.5 vdc (max)

(600 rpm, $V_{IN}=24$ vdc, $10ma < I_O < 50ma$, $25^\circ C$)

Direction output: Indicates the direction of rotation, and is updated at each $1/200$ th of a revolution. This output is "low" for clockwise rotation when viewed from the shaft collar end, and "high" for counter-clockwise rotation. This output is "low" when power is initially applied.

Output hysteresis: .07° approx.

Electrical Connections

Pin No.	Function	Wire Color
1	Ground	Black
2	Supply	Red
3	50 ppr	White
4	10 ppr	Green
5	Direction output	Brown
5 to 9	no connection	—
—	Case Ground	Plain

Specifications

Mechanical

Weight: 5.5 oz. (156 grams)

Shaft Loading: Radial: 5.5 lb. (2.5 kg.) max.
 Axial: 2.2 lb. (1 kg.) max.

Bearing Life (L_{10}): 42×10^6 /RPM = hours

Materials:

- Case: Aluminum, anodized
- Shaft: Aluminum
- Switch Access Door: Plastic

Connector: DB9P (9-pin)

Accessories

Cable Assembly (DB9-5-10): 10 ft. (3m) of 5 conductor, shielded cable with mating connector. Other lengths are available.
CE mark requires Photocraft cable, and surge protection if the cable exceeds 100' (30m) or leaves the building.

Anti-rotation Pin (550-SCR304): Precision shoulder screw, .187" dia. x 1" length, 8-32 thread

Flexible Mounting Bracket (MB-FB1): made from .015" (.38mm) thick stainless steel that flexes to accommodate the axial misalignment between the encoder's hollow shaft and the mounting shaft.

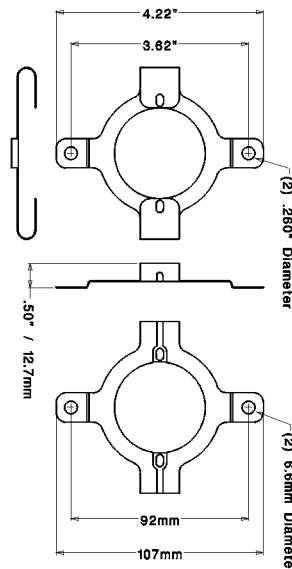


Figure 1 - MB-FB1 Bracket



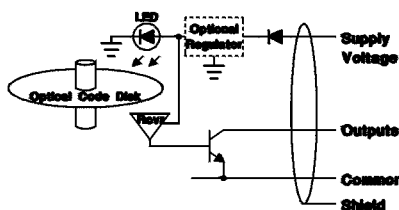
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NPN Open Collector Output (Current Sinking)



Push-Pull Output (Current Sourcing/Sinking)

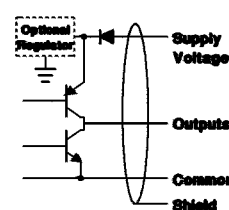


Figure 2 - Output Circuits