

Model H25® Absolute Encoder

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Long considered the industry standard for shafted incremental encoders, the Model H25 is now available in an absolute version with up to 13 Bits of resolution. It incorporates many of the great standard features of the incremental version, including: EMI shielding, 40-lb ABEC 7 bearings, matched thermal coefficients on critical components, and custom optics. This encoder features a 12 or 13 Bit absolute parallel gray code output, a selection line for count direction, and an output latch as standard. Output is standard gray code with options for natural binary or SSI compatible signals. Signals can be provided in either a single-ended multi-voltage line driver (TTL compatible when provided with 5 volts) or as an open-collector style of output. Typical applications include dam gate control, cranes, telescopes, tool changers, and robotics.

The H25 Absolute Encoder is available with the following certification:

 EN 55011 and EN 61000-6-2

Mechanical Specifications

Shaft Diameter: 3/8" (1/2" as special feature)

Flat On Shaft: 3/8" Shaft: 0.80 long X 0.03" deep; 1/2" Shaft: 0.80 long X 0.04" deep (1/2" shaft w/flat must be ordered as a special feature)

Shaft Loading: 3/8" shaft: Up to 40 pounds axial and 35 pounds radial; 1/2" shaft: Up to 90 pounds axial and 80 pounds radial

Shaft Runout: 0.0005 T.I.R. at midpoint regardless of shaft diameter

Starting Torque at 25°C: Without shaft seal 1.0 in-oz (max); With shaft seal 2.5 in-oz (max); 1/2" shaft with shaft seal: 3.5 in-oz (max)

Bearings: Class ABEC 7 standard, ABEC 5 for 1/2" shaft

Shaft Material: 416 stainless steel

Bearing Housing: Die cast aluminum with protective finish; stainless steel (special feature)

Cover: Die cast aluminum; stainless steel (special feature)

Bearing Life: 2 X 10⁸ revs (1300 hrs at 2500 RPM) at rated load 1 X 10¹⁰ revs (67,000 hrs at 2500 RPM) at 10% of rated load

Maximum RPM: 12,000 RPM nominal, 8000 RPM with 1/2" shaft (see Frequency Response, below) 30,000 RPM available on units with 3/8" shaft—consult with factory

Moment of Inertia: 4.1 X 10⁻⁴ oz-in-sec²; 5.2 X 10⁻⁴ oz-in-sec² with 1/2" shaft

Weight: 13 oz typical, 14.5 oz typical with 1/2" shaft

Electrical Specifications

Code: 12 or 13 bits NB or GC; excess gray and BCD available

Counts Per Shaft Turn: 4096 or 8192

Count Transition Accuracy: ± 1/2 bit maximum

Supply Voltage: 5–28 VDC

Current Requirements: 120 mA typical

Output Formats: Parallel: Gray Code, Natural Binary and Binary Coded Decimal; Serial: Serial Synchronous Interface (SSI) compatible; Analog: 4–20 mA, 0–10V

Voltage/Output: (see note 3)

28V/V: Line Driver, 5–28 VDC in, V_{out} = V_{in}

28V/5: Line Driver, 5–28 VDC in, V_{out} = 5 VDC

28V/OC: Open Collector, 5–28 VDC in OC_{out}

SSI: 5–28 VDC I_n/5V_{out}

Protection Level: Reverse, overvoltage and output short circuit protection

Frequency Response: 100kHz (1200 RPM for 12-bits, 600 RPM for 13-bits)

Output Termination Pinouts: see Table 1, back page

Environmental Specifications

Enclosure Rating: NEMA 4 & 13 (IP 66) when ordered with shaft seal (on units with an MS connector) or a cable gland (on units with cable termination).

Temperature: Operating, 0° to 70° C; extended temperature testing available (see note 5); Storage, -25° to 90° C unless extended temperature option called out.

Shock: 50 g's for 11 msec duration

Vibration: 5 to 2000 Hz @ 20 g's

Humidity: 98% RH without condensation

Connector

MS3112E14-19P, 19-pin connector on encoder body, mates to MS3116J14-19S (or equivalent)

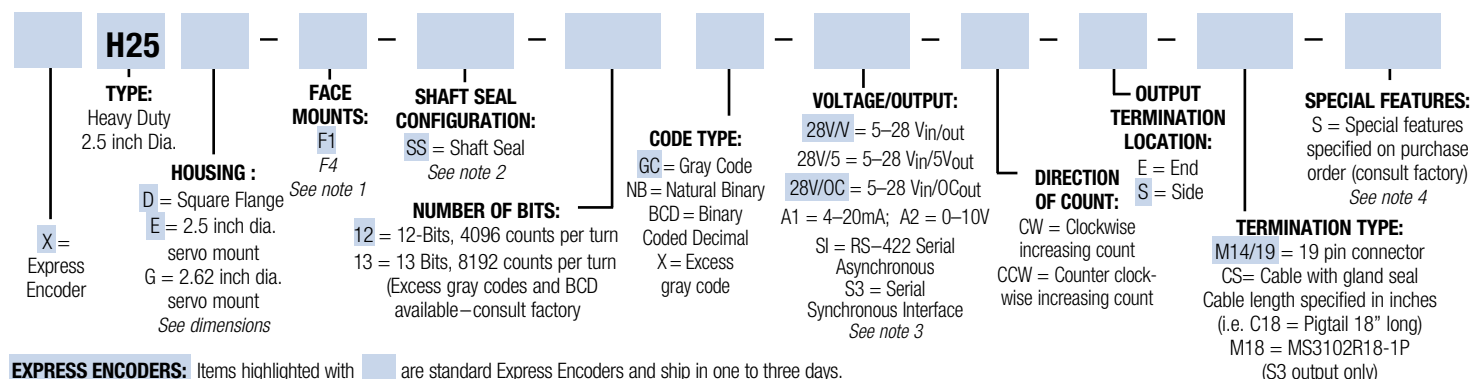
NOTES & TABLES: All notes and tables referred to in the text can be found on the back of this page.

H25 Absolute Encoder Ordering Options

for assistance call 800-350-2727

Use this diagram, working from left to right to construct your model number (example: H25E-F4-SS-12GC-28V/V-CW-SM14/19).

All notes and tables referred to can be found on the back of these pages.



EXPRESS ENCODERS: Items highlighted with  are standard Express Encoders and ship in one to three days.

BEISENSORS

Tel: 805-968-0782 / 800-350-2727 | Fax: 805-968-3154 / 800-960-2726
7230 Hollister Ave., Goleta, CA 93117-2807 | www.beisensors.com

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