

H38 Incremental Optical Encoder

BEISENSORS



The H38 is an explosion proof version of the field-proven H25 encoder series. The H38 is UL certified for NEMA Class 4X and 6 (outdoor non-hazardous locations) and Class 4X and 13 (indoor non-hazardous locations). It is available with Class 1, Group D, Division 1 or Class 2, Division 1 Group E, F, and G rating for use in hazardous locations. It features a standard shaft seal, double bearing seals, and a cast aluminum housing with hard anodized and dichromate sealed finish. The H38 is suitable for use in petroleum service industries, solvent refining operations, spray painting applications, and explosive dust environments.

The H38 Incremental Encoder is available with the following certifications:

EN 55011 and EN 61000-6-2

CENELEC EEX ia IIC T4

U.S. Standards Class I, Group A,B,C & D; Class II Group E,F & G

Canadian Standards Class I, Zone 0, Group IIC

The Mine Safety and Health Administration (MSHA) is an organization that operates in the United States and enforces compliance with safety and health standards in the Nation's mines. Consult factory for MSHA rated product.

Mechanical Specifications

Shaft Diameter: 3/8" nominal

Shaft Loading: Up to 40 pounds axial and 20 pounds radial applied 1/4" from housing

Shaft Runout: 0.0005 T.I.R.

Starting Torque at 25° C: 4.0 in-oz (max)

Bearings: Class ABEC 7 standard

Shaft Material: 303 stainless steel

Enclosure: Die cast aluminum, hard anodized with dichromate sealed finish. Shaft seals and sealed bearings are standard to achieve environmental ratings.

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: 10,000 RPM (see Frequency Response, below)

Moment of Inertia: 4.1 X 10⁻⁴ oz-in-sec²

Weight: 64 oz typical (approx 4 lbs)

Electrical Specifications

Code: Incremental or Absolute

Output Format: 2 channels in quadrature, 1/2 cycle index gated with negative B channel, or Absolute to 13 bits

Cycles per Shaft Turn: 1 to 72,000 (see table 2, back page). For resolutions above 3,600 see interpolation options in the 2008 BEI Spec Guide on pages 36 and 37; Absolute to 8192 counts per turn

Supply Voltage: 5 to 28 VDC available

Current Requirements: 100 mA typical

+output load, 250 mA (max)

Voltage/Output: (see note 3)

15V/V: Line Driver, 5–15 VDC in, V_{out} = V_{in}

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}

Protection Level: Reverse, overvoltage and output short circuit (see note 3)

Frequency Response: 100 KHz, Up to 1MHz with interpolation option (see note 5)

Output Terminations: see Table 1, back page

Termination Type: Compression type, UL recognized. Accepts AWG 14 to 22, stranded wire, strip 1/4"

Note: Consult factory for other electrical options

Environmental Specifications

Enclosure Rating: NEMA 4X & 6

(IP66), outdoor Non-Hazardous

locations, NEMA 4X & 13 (IP66),

indoor Non-Hazardous locations

Temperature: Operating, 0° to 70° C; extended temperature testing available (see note 6, back page); 80° C max for UL and CEN approved units; storage; -25° to 90° C.

Shock: 50 g's at 11 msec

Vibration: 5 to 2000 Hz @ 20 g's

Humidity: 100% RH

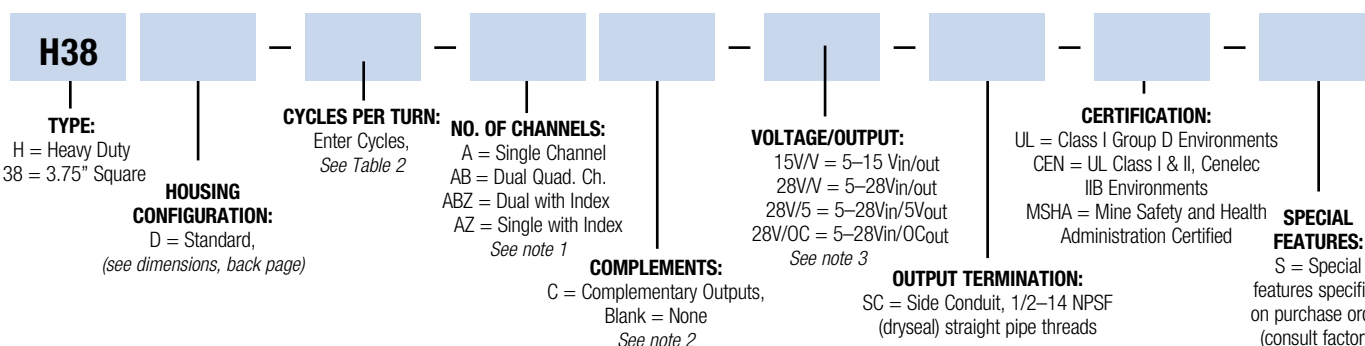
Hazardous Area Rating: Underwriters Laboratories listed for use in hazardous locations; Class I, Group C & D, Class II, Groups E, F & G. NEC Class 2 circuits only.

(All notes and tables referred to in the text can be found on the back page.)

H38 Explosion Proof Ordering Options FOR ASSISTANCE CALL 800-350-2727

Use this diagram, working from left to right to construct your model number (example: H38D-2000-ABZC-28V/V-SC-CEN).

All notes and tables referred to can be found on the back of this page.



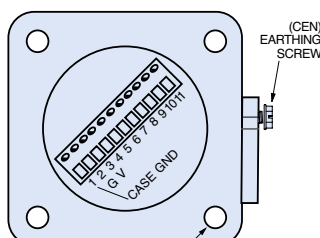
BEISENSORS

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Specification No. 02051-001 Rev.10-13

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Tables



Tables

TERMINAL PIN NO.	INCREMENTAL OUTPUT	8 BIT GRAY CODE OUTPUT*
1	CASE GRND.	CASE GRND.
2	OV	OV
3	+V	+V
4	A	G0
5	B	G1
6	Z	G2
7	\bar{A}	G3
8	\bar{B}	G4
9	\bar{Z}	G5
10	SPARE	G6
11	SPARE	G7

1, 2, 3, 5, 6, 7, 8, 10, 13, 16, 20, 24, 25, 26, 30, 32, 33, 34, 36, 37, 40, 45, 48, 50, 51, 56*, 60, 64, 66, 72, 75, 80, 86, 88, 90, 100, 102, 120, 122, 125, 127, 128, 132, 144, 148, 150, 158, 160, 175, 176, 180, 187, 192, 200, 202, 204*, 217, 220, 240, 250, 254, 255, 256, 264*, 274, 280, 283, 288, 292, 300, 312, 320, 321, 325, 360, 366, 372, 375, 377, 380, 381, 384, 385, 393, 400, 430, 432, 450, 462, 480, 490, 500, 502, 508, 512, 522, 530, 550, 560*, 576, 598, 600, 604, 625, 628, 635, 638, 640, 660, 672, 676, 680, 687, 690, 700, 720, 725, 735, 740, 744, 748, 750, 762, 768, 780, 785, 800, 812, 825, 850, 864, 878, 888, 900, 912, 914, 938, 942, 955, 960, 1000, 1016, 1024, 1030, 1035, 1036, 1040, 1054, 1056, 1074, 1076, 1080, 1088, 1100, 1101, 1125, 1136, 1200, 1237, 1250, 1257, 1270, 1280, 1300, 1314, 1332, 1333, 1390, 1400, 1414, 1427, 1440, 1484, 1500, 1562, 1570, 1596, 1600, 1650, 1666, 1718, 1745, 1774, 1800, 1840*, 1850, 1855, 1875, 1894, 1920, 1952, 1968, 1979, 1995, 2000, 2048, 2080, 2094, 2100, 2160, 2164, 2199, 2200, 2250, 2356, 2400, 2485, 2500, 2514, 2519, 2540, 3000, 3125, 3600, 4000, 4096, 5000

NOTE: Resolutions up to 72,000 are available.

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