

HS35 Incremental Optical Encoder



The HS35 combines the rugged, heavy-duty features usually associated with shafted encoders into a hollow shaft style. Its design includes dual bearings and shaft seals for NEMA 4, 13 and IP65 environmental ratings, a rugged metal housing, and a sealed connector or cable gland. The HS35 accommodates shafts up to 1" in diameter. With optional insulating inserts, it can be mounted on smaller diameter shafts. It can be mounted on a through shaft or a blind shaft with a closed cover to maintain its environmental rating. The HS35 is also available with a dual output option (inset) to provide redundant encoder signals, dual resolutions, or to supply two separate controllers from a single encoder. Applications include motor feedback and vector control, printing industries, robotic control, oil service industries, and web process control.



The HS35 Dual Output Encoder

Special Models of the HS35 Incremental Encoder are available with one or more of the following certifications. Consult factory for details.

EN 55011 and EN 61000-6-2

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

CENELEC II 1 G Ex ia IIB/IIC T4 II 3 G Ex nA IIB T4 Gc

Class I, Div 2, Group A,B,C & D; Class II, Div 2, Group F & G

Canadian Standards Class I, Zone 0, Group IIC

UL 12.0035X UL 12.0082X

Mechanical Specifications

- Shaft Bore:** 1.00", 0.875", 0.750", 0.625", 0.500". All are supplied with insulating sleeves.
- Allowable Misalignment:** 0.005" T.I.R. on mating shaft 0.75" from shaft end
- Bore Runout:** 0.001" T.I.R. maximum
- Starting Torque at 25°C:** Through shaft version (SS) = 7 in-oz (max); Blind shaft version (BS) = 4 in-oz (max)
- Bearings:** 52100 SAE High carbon steel
- Shaft Material:** 416 stainless steel
- Bearing Housing:** Die cast aluminum with protective finish
- Cover:** Die cast aluminum with protective finish
- Bearing Life:** 7.5 X 10⁹ revs (50,000 hrs at 2500 RPM)
- Maximum RPM:** 6,000 RPM (see Frequency Response below)
- Moment of Inertia:** 0.019 oz-in-sec²
- Weight:** 18 oz typical

Electrical Specifications

- Code:** Incremental
- Output Format:** 2 channels in quadrature, 1/2 cycle index gated with negative B channel
- Cycles Per Shaft Turn:** 1 to 80,000 (see table A, page 25). For resolutions above 5000 see interpolation options on pages 36 and 37
- Supply Voltage:** 5 to 28 VDC available (see note 5)
- Current Requirements:** 100 mA typical + output load, 250 mA (max)
- Voltage/Output:** (see note 5)
28V/V: Line Driver, 5-28 VDC in, Vout = Vin
28V/5: Line Driver, 5-28 VDC in, Vout = 5 VDC
28V/OC: Open Collector, 5-28 VDC in, OCout
- Protection Level:** Reverse, overvoltage and output short circuit (See note 5)
- Frequency Response:** 150 kHz (up to 5000 cpt resolution; 300 KHz above 5000 cpt, also see note 7)
- Output Terminations:** See table 1 page 65
- Note:** Consult factory for other electrical options

Environmental Specifications

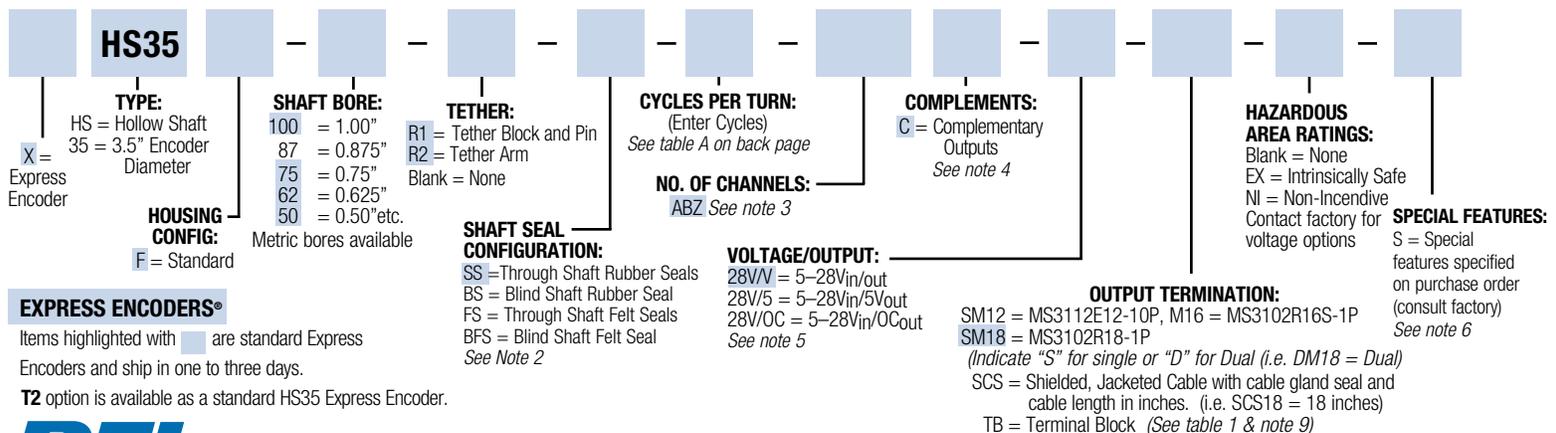
- Enclosure Rating:** NEMA 4 & 13 (IP65) when ordered with shaft seal (on units with an MS connector) or a cable gland (on units with cable termination)
- Temperature:** Operating, 0° to 70° C; extended temperature testing up to 105° C available (see note 8); Storage, -25° to 90° C unless extended temperature option called out
- Shock:** 50 g's for 11 msec duration
- Vibration:** 5 to 2000 Hz @ 20 g's
- Humidity:** 98% RH without condensation

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

HS35 Incremental Ordering Options FOR ASSISTANCE CALL 800-350-2727

Use this diagram, working from left to right to construct your model number (example: HS35F-100- R1-SS-2048-ABZC-28V/V-SM18).

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



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