ES20

Environmentally Sealed Incremental Encoder



The **ES20** is a rugged incremental encoder that is environmentally sealed through the use of a magnetic shaft coupling connection. This connection allows the encoder to be completely enclosed and sealed against water ingress. It is rated to IP67 and can operate while fully immersed in one meter of water for up to 30 minutes. The magnetic coupling also allows the encoder to be isolated from high shock and vibration, dust tight, and resistant to debris in the environment. Since the ES20 is not physically coupled to external equipment, the problem of shaft misalignment is eliminated, meaning no more broken couplings! The ES20 is ideal for applications with heavy wash-downs, temporary water immersions, and excessive environmental debris. It combines the high accuracy, repeatability and robustness needed for use in harsh environments and can help reduce costly downtime of your system.

Specifications

Mechanical

Mating Shaft Diameter: 1/4" and metric versions Magnetic Coupling Cover: Engineered plastic Starting Torque: 0.5 oz-in max Enclosure: Aluminum (sealed aluminum castings) Maximum RPM: 5000 RPM Moment of Inertia: 60.2 X 10⁻⁴ oz-in-sec² Maximum Acceleration: 25,000 rad/s/s Torsional flexibility: 0.37 deg/oz-in Kinematic Error: 3 arc-min_{RMS} Weight: 13 oz

Electrical

Supply Voltage: 5 to 28 VDC available Voltage/ Output:

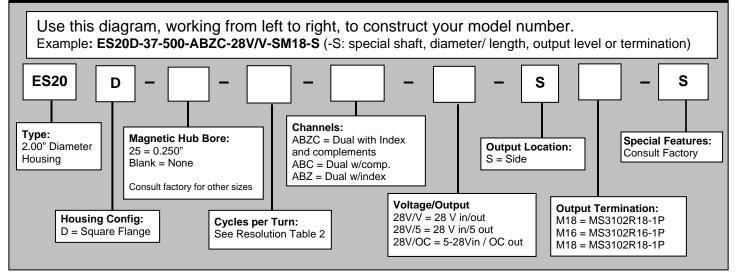
28V/V: Line Driver, 5-28 VDC in, Vout = Vin 28V/5: Line Drive, 5-28 VDC in, Vout = 5 VDC 28V/OC: Open Collector, 5-28 VDC in, OC out **Current Requirements:** 100 mA typical + output load, 250 mA (max) **Protection Level:** reverse, overvoltage and output short circuit **Code:** Incremental **Output Format:** 2 Channels in quadrature, with gated index and complementary outputs. **Cycles per Shaft Turn:** 1 to 1,024 (See Table 1) **Frequency Response:** 100 KHz **Output Terminations:** (See Table 2)

Environmental

Temperature: Operating, 0° to 70°C; storage (non-operating), -25° to 90°C. Consult factory for extended temperature ratings. **Shock:** 25 g's for 11 msec duration

Vibration: 5 to 2000 Hz @ 10 g's Humidity: 100% RH with condensation Enclosure Rating: IP67 / IP68 (Consult factory for IP68 applications)

ES20 Environmentally Sealed Incremental Encoder Ordering Options For assistance, call 800-350-2727



CST BEI

Tel:805-968-0782 / 800-350-2727 | Fax: 805-968-3154 / 800-960-2726 | 7230 Hollister Ave., Goleta, CA 93117 | www.beiied.com Specification No. 924-02106-001 Rev 0809

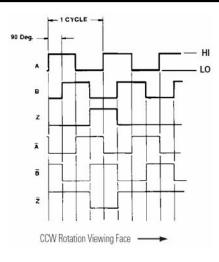
Table 1: Resolutions																	
	1*	2	3	5	6	8	10	11	12	24	25	30	32	40	50	60	64
	70	75	80	100	105	112	155	120	125	150	192	200	240	250	256	300	336
	360	400	410	500	510	512	600	720	785	1000	1024						

*No index.

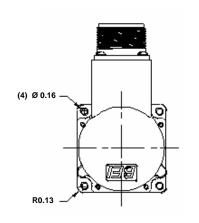
Table 2: Output Terminations

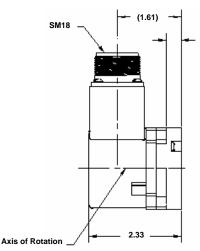
M18 Connector							
PIN	Channel						
Α	A						
В	В						
С	Z						
D	+V						
E							
F	0V						
G	CG						
Н	A/						
I	B/						
J	Z/						

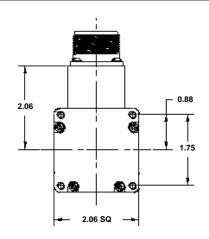
Output Waveform



ES20 Dimensions



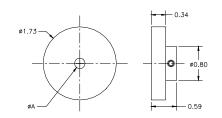




Magnetic Hub

Magnetic Hub Bore .250" BEI Part No. 924-38540-250 (supplied with encoder)

Consult factory for other bore sizes



These commodities, technology or software if exported from the United States must be in accordance with the Bureau of Industry, and Security, Export Administration regulations. Diversion contrary to U.S law is prohibited.

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