



| ES20

ENVIRONMENTALLY SEALED INCREMENTAL ENCODER



Introduction

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. It also ensures the encoder is 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

MECHANICAL SPECIFICATIONS

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-sec ²
Maximum Acceleration	25,000 rad/s/s
Torsional Flexibility	0.37 deg/oz-in
Kinematic Error	3 arc-min _{RMS}
Weight	13 oz

ELECTRICAL SPECIFICATIONS

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 SPECIFICATIONS

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)

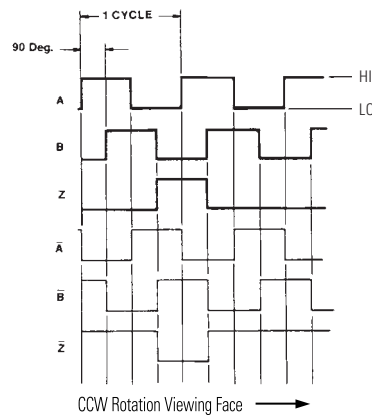
TABLE 1: RESOLUTIONS

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						

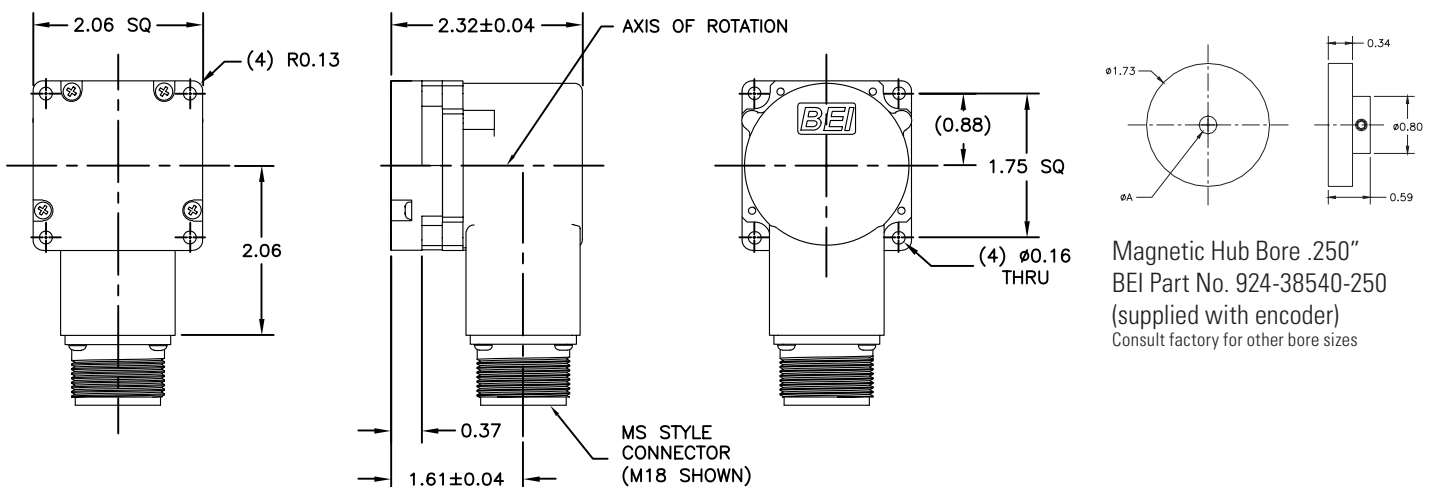
*No index.

TABLE 2: OUTPUT TERMINATIONS / OUTPUT WAVEFORM

M18 Connector	
PIN	Channel
A	A
B	B
C	Z
D	+V
E	-
F	0V
G	CG
H	A/
I	B/
J	Z/

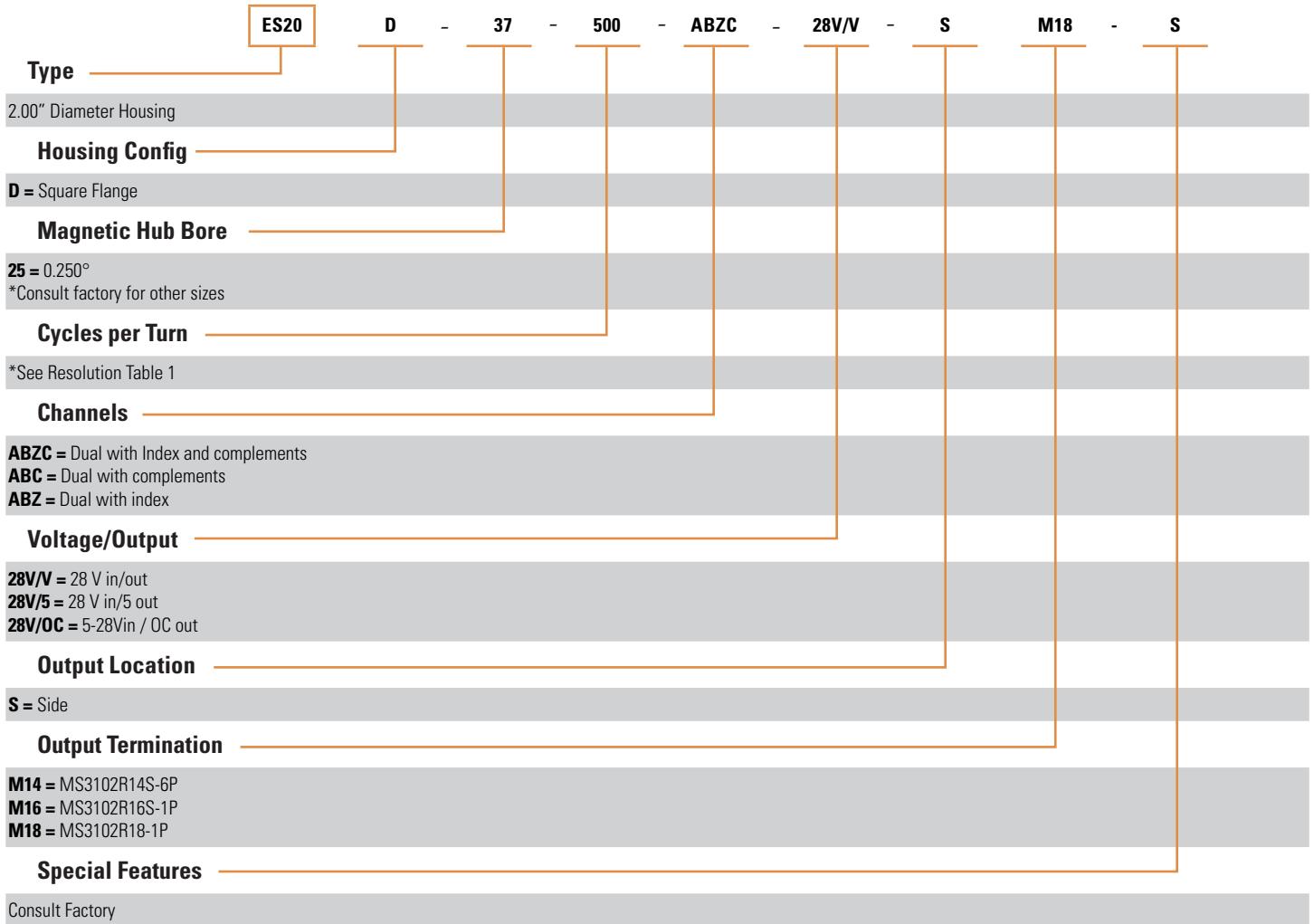


DIMENSIONS





Use this diagram, working from left to right to construct your model number. (-S: special shaft, diameter/ length, output level or termination)



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