



| ES25

Environmentally Sealed Incremental Encoder



Introduction

The ES25 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 ES25 is not physically coupled to external equipment, the problem of shaft misalignment is eliminated, meaning no more broken couplings! The ES25 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.

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	24,000 rad/s/s
Torsional Flexibility	0.37 deg/oz-in
Kinematic Error	3 arc-min _{RMS}
Weight	18 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 1/2 cycle index gated with negative B channel
Cycles per Shaft Turn	1 to 2,048 (See Table 1)
Frequency Response	100 KHz
Output Terminations	(See Table 2)

ENVIRONMENTAL SPECIFICATIONS

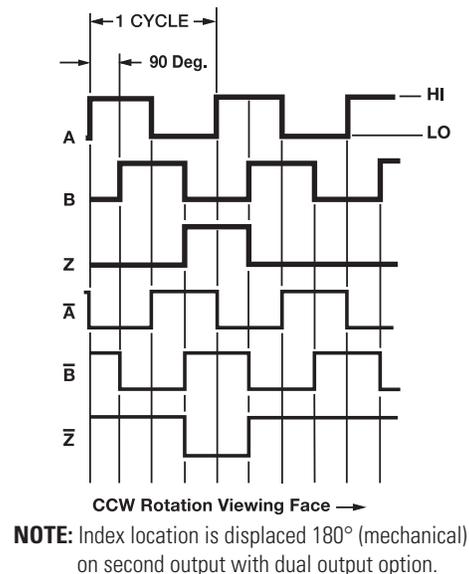
Temperature	Operating, 0° to 70°C; storage (non-operating), -25° to 90°C. Consult factory for extended temperature ratings.
Shock	25 g's for 11 msec duration
Vibration	5 to 2000 Hz @ 10 g's
Humidity	100% RH with condensation
Enclosure Rating	IP67 / IP68 (Consult factory for IP68 applications)

TABLE 1: RESOLUTIONS

1	2	3	5	6	8	10	11	13	16	20	24	25	26	30	32	33
34	36	37	40	45	48	50	51	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	217	220	240	250	254	255	256	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	576	598	600	604	625	628	635
638	640	660	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	1850	1855	1875	1894	1920	1952	1968	1979	1995	2000
2048																

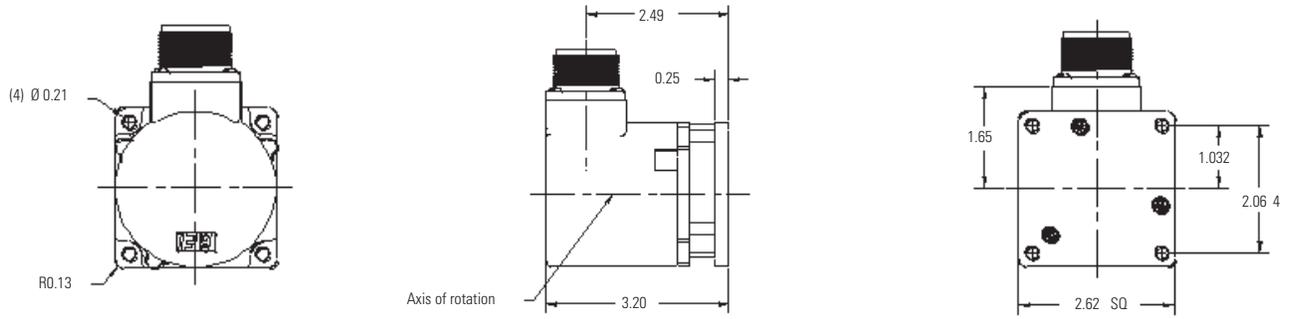
TABLE 2: OUTPUT TERMINATIONS / OUTPUT WAVEFORM

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



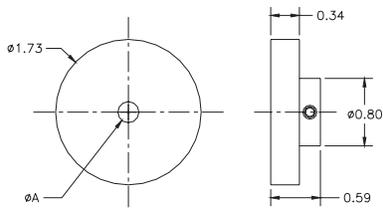


ES25 DIMENSIONS



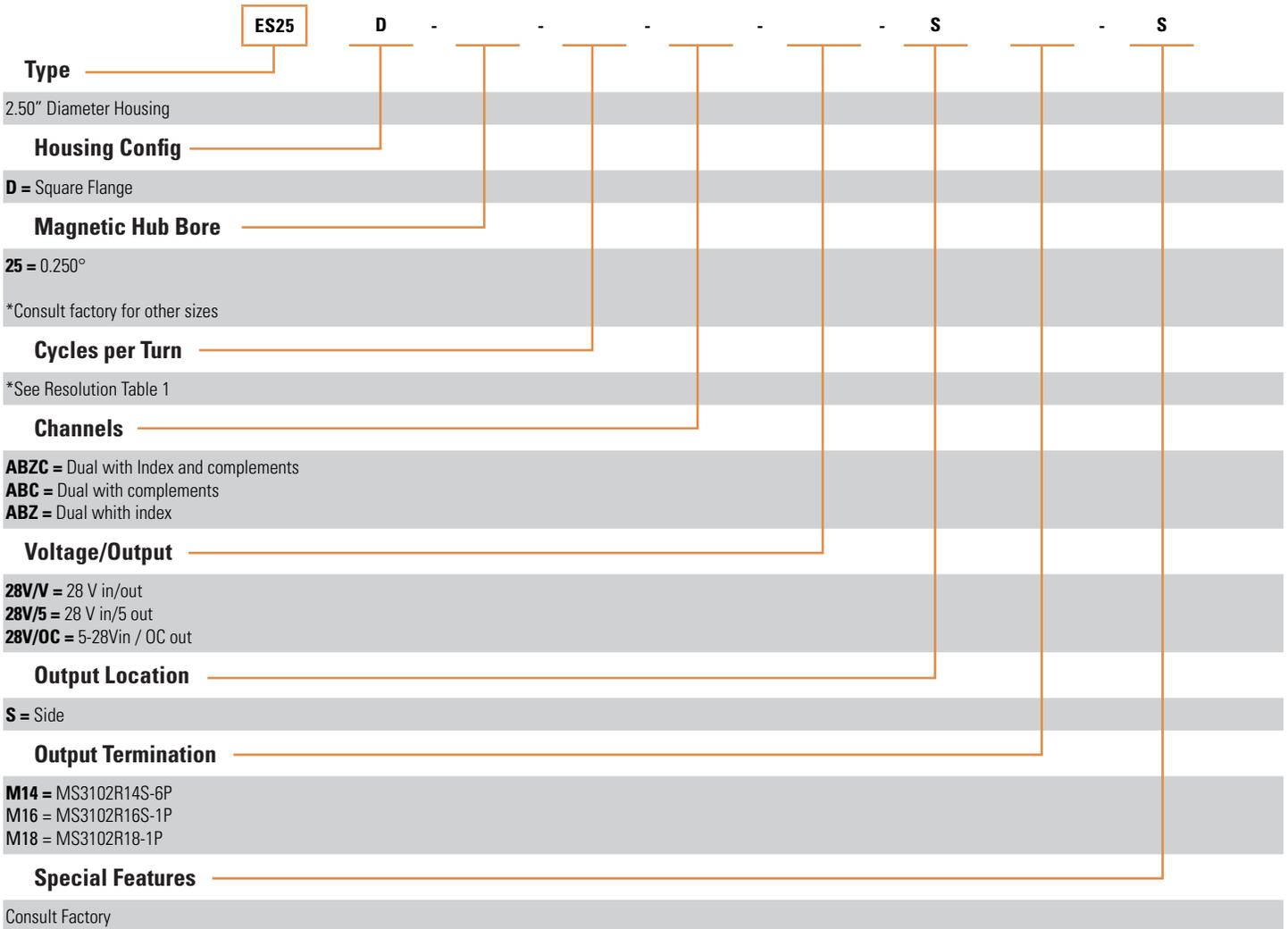
MAGNETIC HUB

Magnetic Hub Bore .250"
 BEI Part No. 924-38540-250
 (supplied with encoder)
 Consult factory for other bore sizes





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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