



| 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

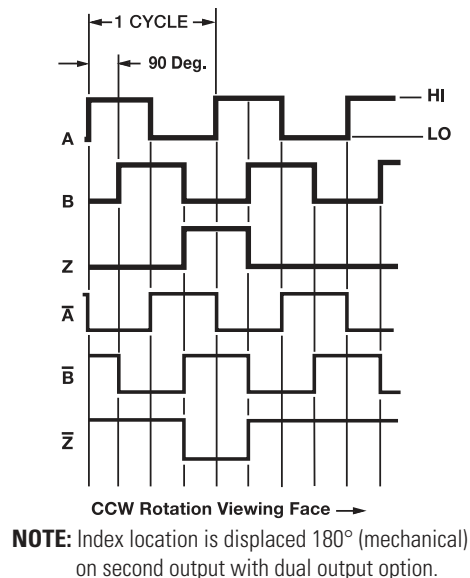
Temperature	Operating, 0° to 70°C; storage (non-operating), -25° to 90°C. Consult factory for extended temperature ratings.
Shock	25 g's for 11 msec duration
Vibration	5 to 2000 Hz @ 10 g's
Humidity	100% RH with condensation
Enclosure Rating	IP67 / IP68 (Consult factory for IP68 applications)

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																

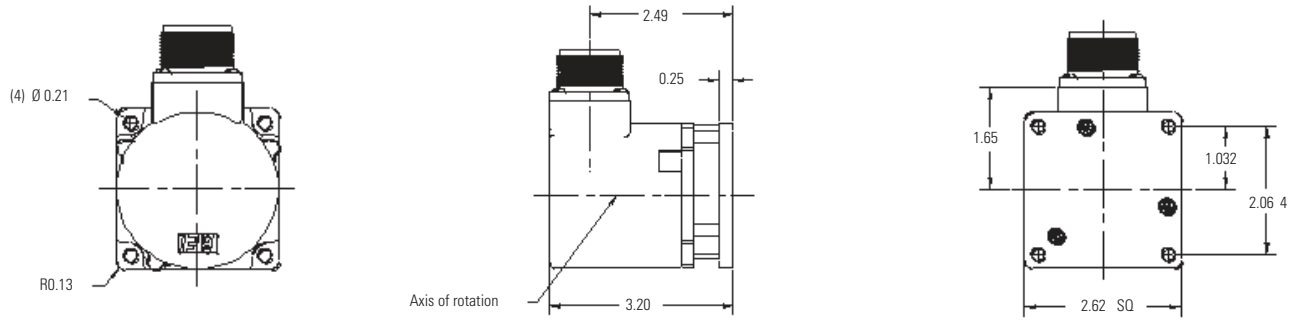
TABLE 2: OUTPUT TERMINATIONS / OUTPUT WAVEFORM

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



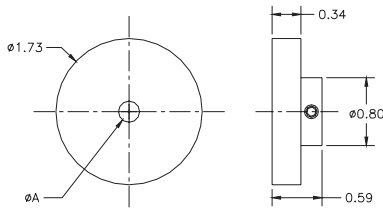


ES25 DIMENSIONS

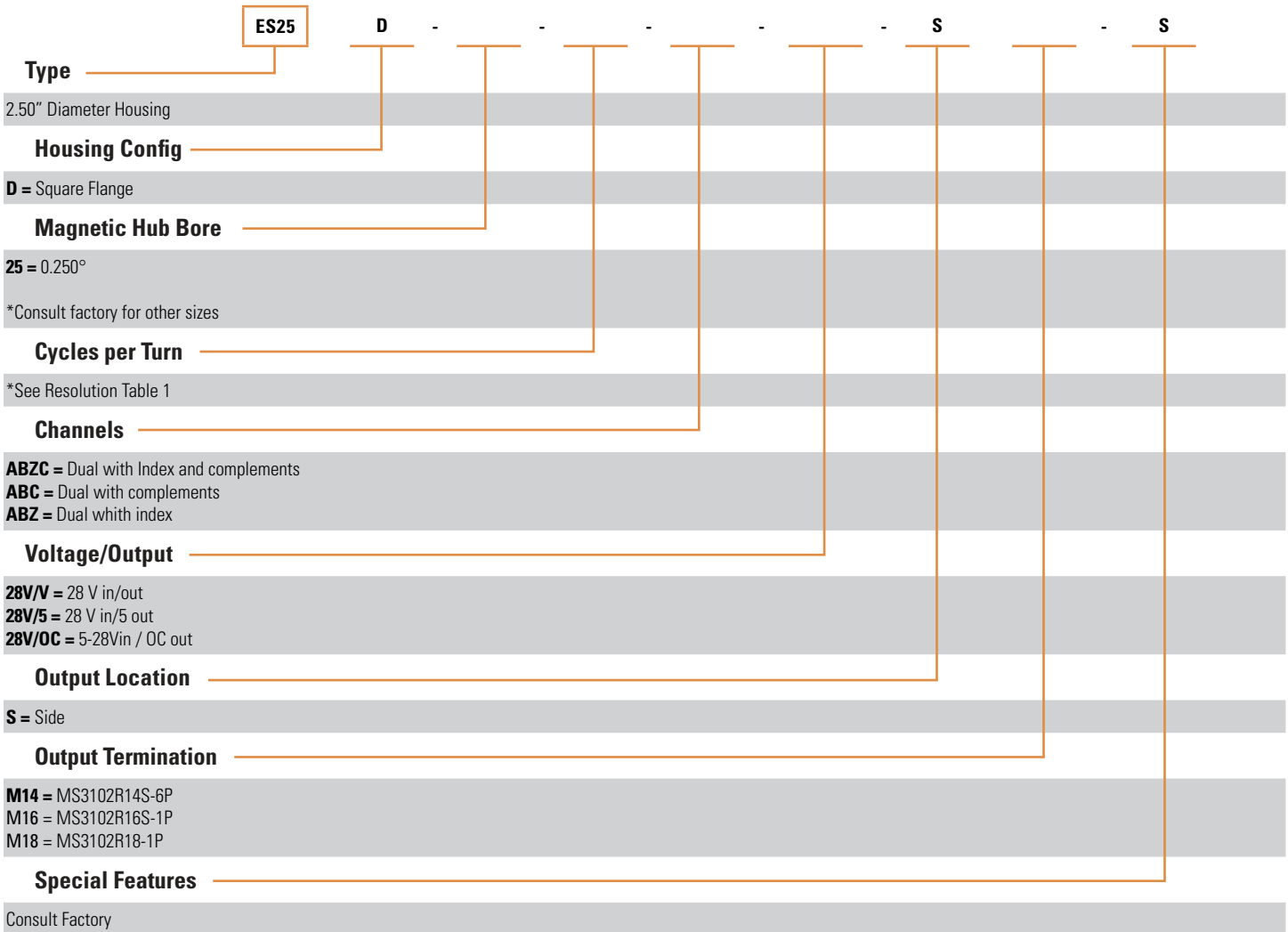


MAGNETIC HUB

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)



Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

+1 (800) 350 2727
sales.beisensors@sensata.com
Europe, Middle East & Africa
 +33 (3) 88 20 8080
position-info.eu@sensata.com

Asia Pacific

sales.isasia@list.sensata.com
 China +86 (21) 2306 1500
 Japan +81 (45) 277 7117
 Korea +82 (31) 601 2004
 India +91 (80) 67920890
 Rest of Asia +886 (2) 27602006
 ext 2808