

Encoder Technology's S20 Extreme Duty

Industrial Encoder is the compact version of ET's new S25. This compact heavy-duty encoder is designed to exceed IP66/IP67 and NEMA 6 enclosure requirements, is also available in stainless steel and exceeds NEMA 4X and NEMA 6P. This robust Encoder series has become the new industry standard for meeting stringent wash down environments. With 100 lb Axial and Radial Bearings, -40° to +100°C temperature range and unique labyrinth double-sealed housing, this design has been heartily accepted in applications where high pressure steam or caustic chemicals are needed to meet regulatory requirements. Redundant versions are also an option. Covered by a three-year warranty (one year for bearings), the S20 provides quality, reliability and value available only through Encoder Technology's proprietary design and manufacturing capabilities. This series is also available in an Intrinsically Safe version (IS20) certified to ATEX EEx ia IIB T4 when used with the appropriate IS Barrier. Barriers can be supplied with the encoder.

Technical Specifications

Mechanical

Shaft loading	Up to 100 lbs axial and radial
Shaft runout	0.0005 TIR at midpoint
Shaft	303 stainless steel (passivated)
Starting torque at 25°C	2.5 in-oz. maximum
Bearings	5200 ZZ double row
Bearing life	5 x 10 ⁸ revs at rated shaft Loading, 5 x 10 ¹¹ revs at 10% of rated shaft loading. (manufacturers' specs)
Housing and cover	Hard Anodized Aluminum. Also available in Electroless Nickel finish and Stainless Steel
Disc material	Metal or Mylar
Weight	11 ounces, typical

Electrical

Code	Incremental
Cycles per Revolution	See "Current Resolutions" list
Supply voltage	See ordering information
Current requirements	<50 mA (no load condition)
Output format	Channels A and B In quadrature ± 15° electrical
Output format options	Index, complementary outputs, and commutation signals
Output IC Options	2N2222, ET7272, ET7273
Illumination	LED
Frequency response	125 kHz (data and index)
Output termination	See Table 1
Circuit Protection	Reverse over voltage and output short circuit

Environmental

Operating temp	-40 to 100°C
Operating temp ATEX	-40 to 80°C
Storage temperature	-40 to 100°C
Shock	50G's for 11msec duration
Vibration	5 to 2000Hz @ 20 G's
Humidity	100%
NEMA	NEMA 4X, 6, IP66, IP67 NEMA 6P upon request

The above specifications are subject to change without notice. Dimensions shown in inches.

S20 Extreme Duty Wash Down Encoder

Also available in an intrinsically safe version
Certified to ATEX EEx ia IIB T4



Redundant Version

Ordering Information

S20 – Extreme Heavy Duty

IS20 - ATEX EEx ia IIB T4 Certified Version

Example part numbers:

S20	HA	37F	2000		AB	C	72	S18	28
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1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

1. Model

Extreme Heavy Duty	S20
Atex EEx ia IIB T4 Certified	IS20

2. Housing Options

Hard Anodized (standard).....	HA
Electroless Nickel	NF
Stainless Steel (300 series).....	SS

3. Shaft Diameter

0.3747/0.3745 (standard).....	37F
0.3935/0.3942 (10mm).....	39F

("F" = flat on shaft, i.e. 37F standard)

4. Standard Resolutions

Many resolutions from 1 to 16384. See "Current Resolutions" list. Others by special order. Consult the factory.

5. Redundant output option

Separate, isolated output electronics of same resolution (7272, 7273 only).....	R
Without	(blank)

Complements not available

6. Output Channels

Single.....	A
Dual quadrature	AB
Dual with index (standard).....	ABZ

7. Complements

With Complements	C
(available on Outputs 72 and 73 only)	
Without complements.....	blank

8. Output ICs

2N2222 open collector (5 to 28V).....	220C
2N2222 with pull-ups	221K or 222K

Differential line drivers

ET7272 (5 to 28V).....	72
ET7273 open collector (5 to 28V).....	73

9. Output Termination

MS3102R14S-6P (6 pin).....	S14
MS3102R16S-1P (7pin).....	S16
MS3102E18-1P (10 pin).....	S18
Side Cable with seal (18" std)	SCS18
Turck and Rota connectors available. Consult the factory	

10. Voltage - Standard

5 to 28Vdc	28
5 to 28Vdc in, 5Vdc out (ET7272 only)....	28/5

Voltage - ATEX

5Vdc	5A
7 to 28Vdc	28A
7 to 28Vdc in, 5Vdc out (ET7272 only) ..	28/5A



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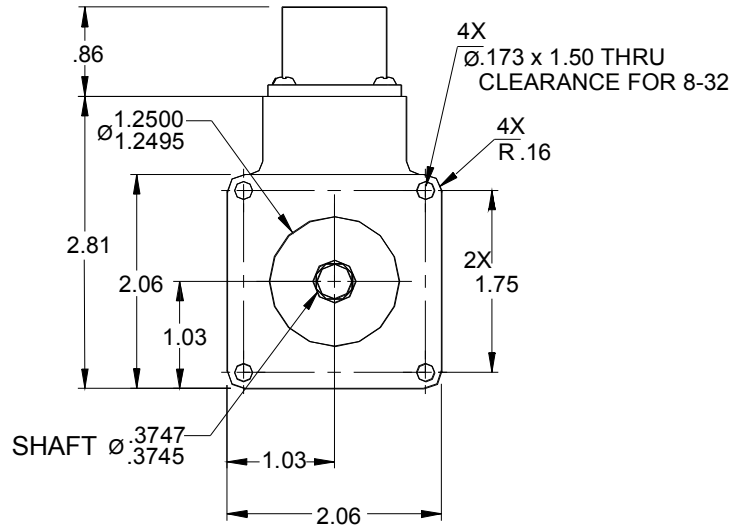
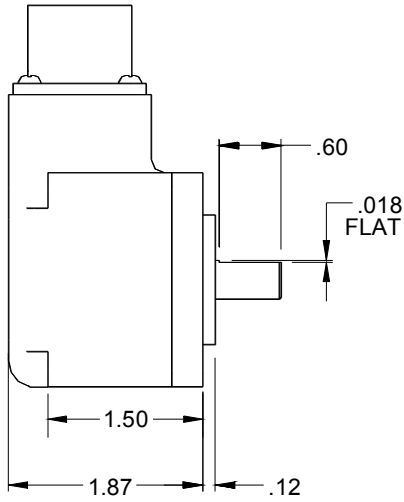
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Technical Support

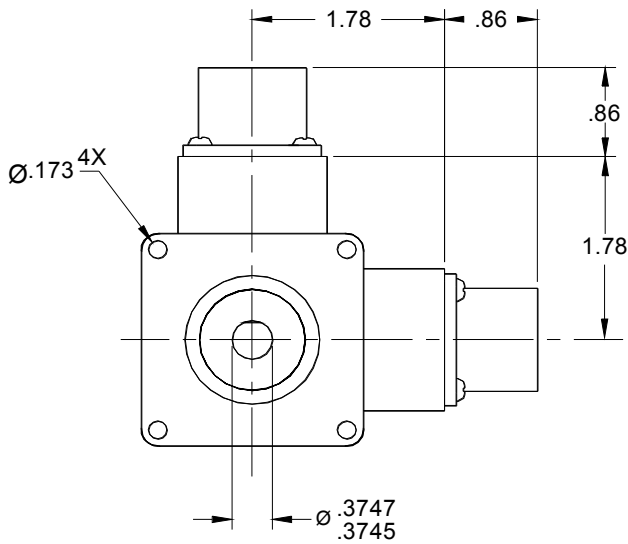
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Outline Dimensions Standard Housing



Redundant Version



Side Cable with Seal (SCS18)

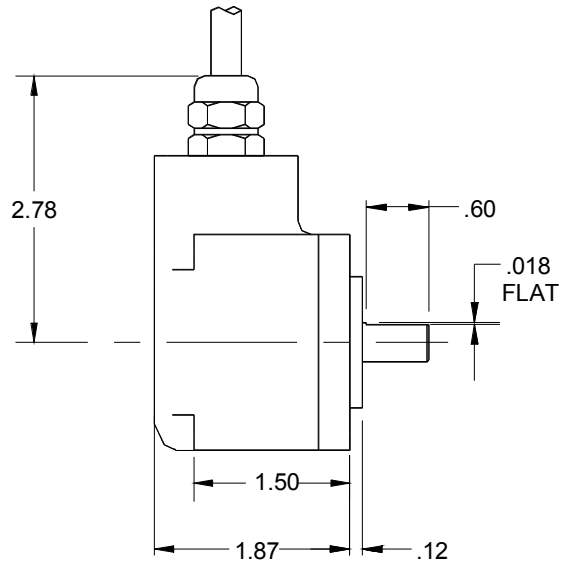


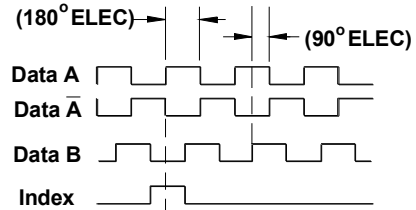
Table 1: Output Terminations (Pinout)

Connector Pins			Output Channels			Cable Termination	
M14	M16	M18	ABZ	ABC	ABZC	Wire Color	Function
E	A	A	A	A	A	Green	A
D	B	B	B	B	B	Blue	B
C	C	C	Z	A ^{Bar}	Z	Orange	Z
B	D	D	+V	+V	+V	Red	+Vdc
F	E	E	N/C	B ^{Bar}	N/C	Black	Ground
A	F	F	Circuit	Ground		Violet	A ^{Bar}
	G	G	Case	Ground		Brown	B ^{Bar}
	H	H	N/C	N/C	A ^{Bar}	Yellow	Z ^{Bar}
	I	I	N/C	N/C	B ^{Bar}	White	Case Gnd
	J	J	N/C	N/C	Z ^{Bar}		

Case Ground not available on ATEX Certified Units

Output Format

DATA AND INDEX
Not all complements shown.
A^{Bar} shown for reference.



A leads B, CCW



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