HD25 Industrial Rugged Metal Optical Encoder

Description

The HD25 is a rugged optical incremental shaft encoder designed for heavy-duty industrial applications. The housing, machined from a solid billet aluminum block and finished with clear anodizing, conforms to the industrial standard size 25 package. Size 25 encoders are widely used and are considered to be the backbone of feedback devices found in factory automation and industrial applications. The HD25 will drop directly into existing applications to provide a superior solution at a competitive cost. The HD25 is a factory stock product with little or no lead-time.

Typical applications include:

- Automation, robotics, motion control, elevator controls, machine tools, food processing, X-Y tables and conveyors.
- Lathes, grinders, CNC machine tools, high performance servos, test equipment, packaging machines, balance machines and cutting machines.
- Web processing, rotary tables, transfer machines, stacker cranes, press controls, printing presses and pump controls.
- Oil field equipment, saw mill machinery and construction machinery.

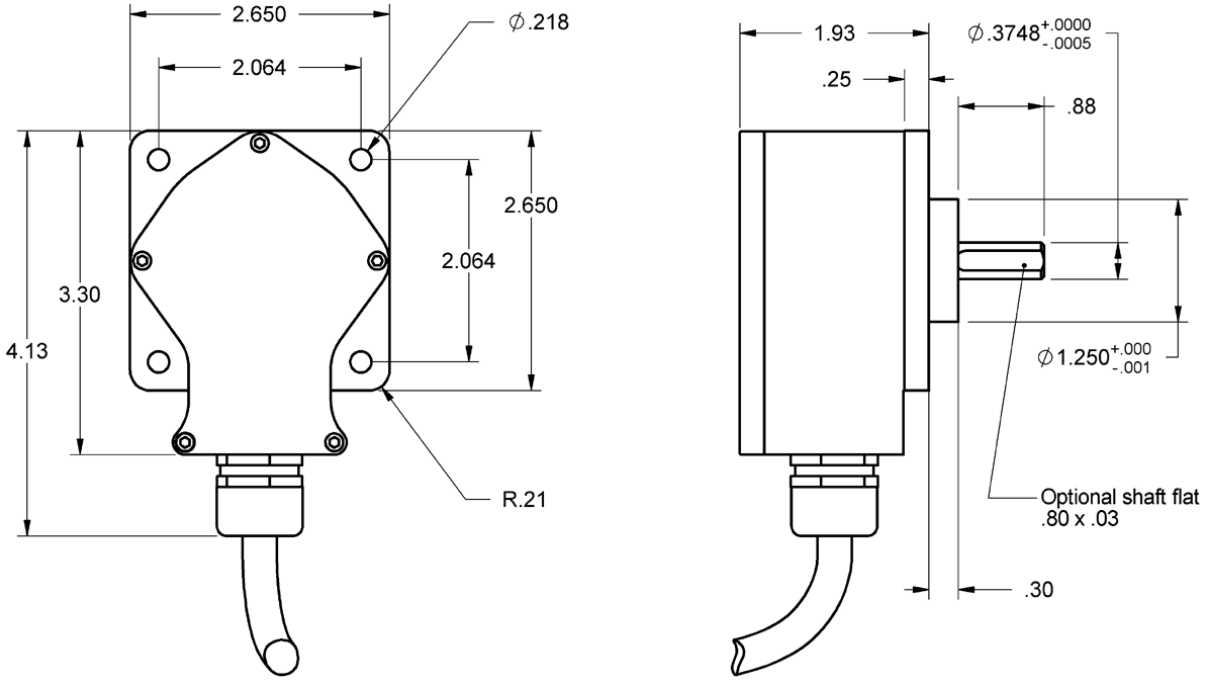
Our absolute encoders may be used in many stand alone applications that do not require a PC interface. For these applications we provide detailed communications protocols for all of our absolute products (see the SEI Absolute Encoder Communications Protocol page).

Features

- NEMA size 25 package
- Anodized milled aluminum housing with O-ring housing seal
- LED and phased array wide-gap monolithic encoder technology
- 64 to 10000 cycles per revolution (CPR)
- 256 to 40000 pulses per revolution (PPR)
- 2 channel quadrature squarewave outputs
- Single-ended or differential outputs
- Optional index (3rd channel)

Mechanical Drawing

1400 NE 136th Avenue
Vancouver, Washington 98684, USA
info@usdigital.com
www.usdigital.com
Local: 360.260.2468
Toll-free: 800.736.0194



Environmental

Parameter	Value
Operating Temperature	
Low voltage version, CPR < 3600	-40C to 100C
High voltage version CPR < 3600	-40C to 85C
Low voltage version, CPR ≥ 3600	-25C to 100C
High voltage version CPR ≥ 3600	-25C to 85C
Storage Temperature	-40C to 100C
Humidity	
Non-sealed	98% non-condensing
Sealed	100% condensing (NEMA IP65)
Vibration (5 to 2kHz)	20G
Shock, 11 mSec	60G
Electrostatic Discharge, IEC 61000-4-2	± 4kV

Mechanical

Parameter	Value
Size	NEMA size 25

Housing and Cover Material	Anodized aluminum
Shaft Material	Stainless steel
Weight	17 oz.
Shaft Diameter	0.3748 in. (+0.0000 in. -0.0003 in.)
Shaft Optional Flat Size	.08 in. long x .03 in. deep
Max. Acceleration	100000 rad / sec²
Max. Shaft Speed Non-sealed (mechanical) Sealed (mechanical)	 15000 rpm 6000 rpm
Shaft Torque Non-sealed Sealed	 < 0.5 in-oz 3.5 in-oz typical
Max. Shaft Load Axial Radial	 40 lb. 35 lb.
Max. Shaft Total Indicated Runout	0.0003 in.
Bearing Life @ 4 Pound Load	2.3 x 10^9 revolutions
Moment of Inertia	2.8 x 10^-4 oz-in-sec²
Technical Bulletin TB1001 - Shaft and Bore Tolerances	Download

Electrical

- Specifications apply over entire operating temperature range.
- Typical values are specified at 25 ° C.
- Output driver IC: ET7272B
- For complete details, see the EM1 and EM2 product pages.

Parameter	Min.	Typ.	Max.	Units	Conditions
Supply Voltage Low Voltage Version High Voltage Version	 4.5 9.5	 5.0	 5.5 30	 V	
Supply Current			138	mA	
Low-level Output		0.4	0.5	V	I_{OL} = 20mA
High-level Output		Vs - 2.0		V	I_{OH} = -20mA
Output Rise/Fall Time		700	980	nS	

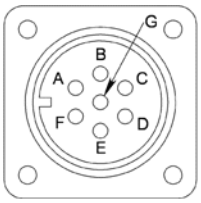
7-pin Connector Pin-out & Cable Wire

Pin	Quad. (AB)
A	A channel

Pin	Quad. (AB)
B	B channel
C*	Index
D	+VDC
E	NC
F	Common
G	Case ground

* Only available when Index channel is specified.

The 7-pin Connector

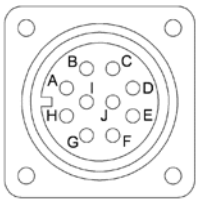


10-pin Connector Pin-out & Cable Wire

Pin	Quad. (AB)
A	A+ channel
B	B+ channel
C*	Index+
D	+VDC
E	NC
F	Common
G	Case ground
H	A- channel
I	B- channel
J*	Index-

* Only available when Index channel is specified.

The 10-pin Connector



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RoHS COMPLIANT

Ordering Information

HD25 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

CPR	Flat	Seal	Voltage	Index	Output
64 =	N =*Non-Flat Shaft*	N =*Non-Sealed*	L =*Low*	NE =*No Index*	S =*Single-ended*
100 =	F =*Flat Shaft*	S =*Sealed*	H =*High*	IE =*Index (3rd Channel)*	D =*Differential*
200 =					
400 =					
500 =					
512 =					
1000 =					
1024 =					
1800 =					
2000 =					
2048 =					
2500 =					
3600 =					
4000 =					
4096 =					
5000 =					
7200 =					
8000 =					
8192 =					
10000 =					

Notes

- Cables and connectors are not included and must be ordered separately.
- US Digital warrants its products against defects in materials and workmanship for two years. See complete warranty for details.

Base Pricing

Quantity	Price
1	$286.10
10	$243.50

For volume discounts, please contact us at sales@usdigital.com or 800.736.0194.

- Add 8% per unit for **CPR** of , , , , , , or
- Add $45.00 per unit for **Seal** of Sealed
- Add 4% per unit for **Index** of Index (3rd Channel)
- Add 5% per unit for **Output** of Differential

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