

HD25 Heavy Duty Incremental Encoder

Features

Rugged die-cast housing with
IP66 protection

Industry standard size 25
mounting via square flange or
servo flange

Resolutions up to 2,500 ppr

Differential line driver and open
collector outputs



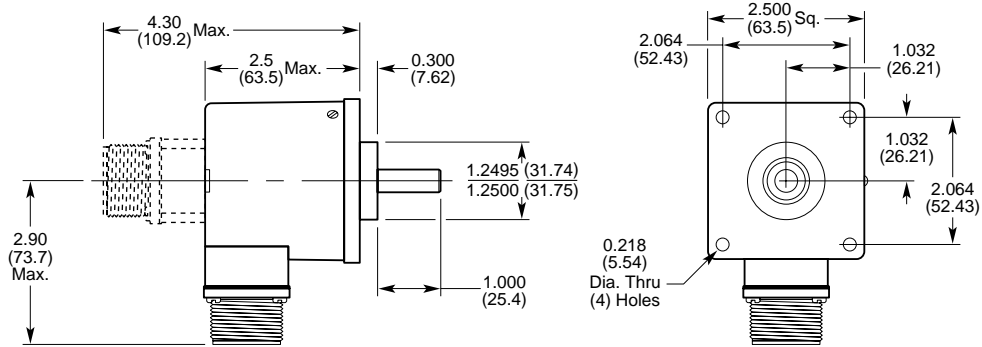
Technical Data/Features

Number of pulses (Z)	HD25L: 10, 20, 30, 50, 60, 75, 100, 128, 150, 180, 200, 240, 250, 256, 300, 336, 360, 400, 500, 512, 600, 720, 800, 900, 960, 1000, 1024, 1140, 1152, 1200, 1230, 1250, 1260, 1270, 1386, 1500, 1512, 1800, 1888, 2000, 2048, 2400, 2500	
Electrical Interface	1	+5 VDC in, +5 VDC line driver out (3487)
	2	+5 to 26 VDC in regulated, +5 VDC line driver out (3487)
	3	+5 to 26 VDC in, +5 to 26* line driver out (7272)
	4	+5 to 15 VDC in, +5 to 15 VDC line driver out (4469)
	6	+5 to 26 VDC in, +5 to 26 VDC open collector out (7406)
Dimensions	See drawing (mm)	
Mass	12–14 oz.	
Moment of inertia	Glass: 0.019 oz-in-sec ² ; Metal: 0.003 oz-in-sec ² ; Plastic: 0.00037 oz-in-sec ²	
Marker	Number	1
	Position	HD25L: Non-gated 180°±90°; optional, gated 180° nominal (gated with chan A)
Error limit	(45/Z)°	
Max. output frequency	HD25L: 100 kHz	
Max. operating speed	3000 RPM with shaft seal 12000 RPM without shaft seal	
Max. angular acceleration	5 x 10 ⁵ radians/sec ²	
Max. starting torque without shaft seal	1.5 oz-in.	
Max. starting torque with shaft seal	5 oz-in.	
Allowable shaft runout	±0.001 in. T.I.R. at midpoint	
Permissible shaft load (at shaft midpoint)	Radial: 35 lb., Axial: 40 lb.	
Design performance temperature range	0 to +75°C	
Operating temperature range	-20 to +75°C	
Storage temperature range	-40 to +85°C	
Permissible relative air humidity	95% (no condensation)	
Shock resistance	50/11 g/ms	
Vibration resistance	20 g/5 to 2000 Hz	
Protection class	IP66	
Working voltage range	±5%	
Working current at no load	125 mA typical, 175 mA max.	

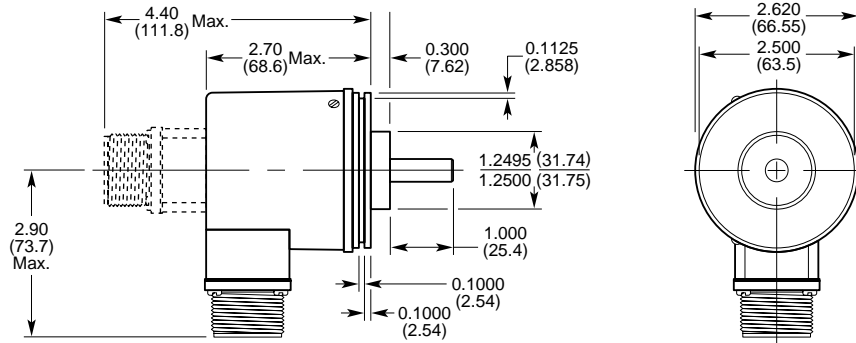
*Approx. 2 V drop on output voltage compared to input voltage.

Dimensions (mm)

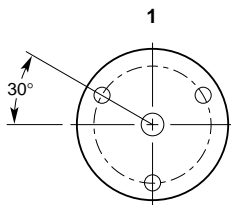
Square Flange Mount



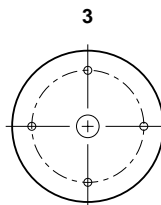
Servo Flange/Face Mount



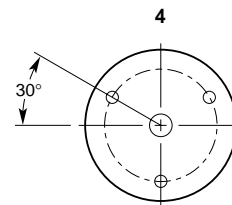
Face Mounting Options



10-32 UNF-2B 0.188 (4.78) Min. Deep
(3) Places Equally Spaced on a
1.875 (47.63) Dia. B.C.

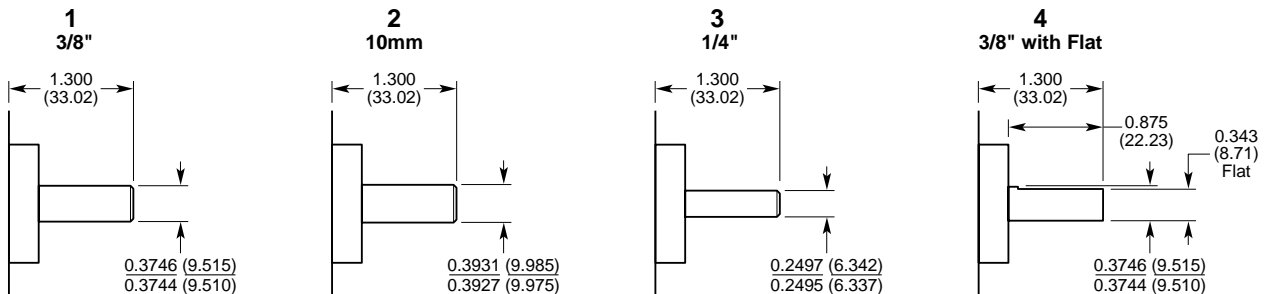


4-40 UNC-2B 0.250 (6.35) Min. Deep
(4) Places Equally Spaced on a
2.000 (50.8) Dia. B.C.



6-32 UNC-2B 0.250 (6.35) Deep
(3) Places Equally Spaced on a
2.000 (50.8) Dia. B.C.

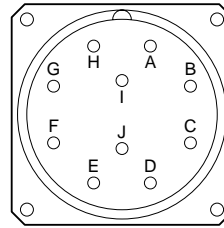
Shaft Options



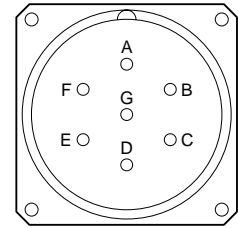
Output Terminations

Function	7-Pin	10-Pin	Cable
A	A	A	white
B	B	B	green
M	C	C	white/black
+VDC	D	D	red
Common	F	F	black
Case Ground	G	G	N/A
A not	N/A	H	blue
B not	N/A	I	orange
M not	N/A	J	red/black
Shield	N/A	N/A	drain wire

Connector Drawings

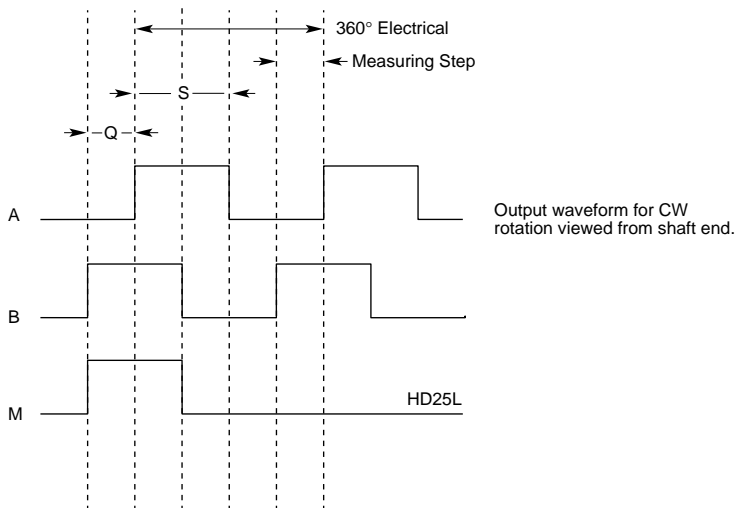


10 Pin MS3102R



7 Pin MS3102R

Signal Specification



Notes:

- 1 Channel B leads Channel A for clockwise rotation when viewed from shaft end.
- 2 Marker pulse is in phase with Channel A.
- 3 Complementary signals (\bar{A} , \bar{B} , and \bar{M}) are standard only with line drivers. Ten pin connector is required.

S: Symmetry $180^\circ \pm 18^\circ$ for HD25L

Q: Quadrature $90^\circ \pm 25^\circ$ for HD25L

M: Marker 180° for HD25L

HD25

STEGMANN

How To Order

<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">HD25</div> <p>Type H = Heavy Duty 25 = 2.500" Dia.</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">L</div> <p>Version L = Up to 2500 ppr</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">1</div> <p>Output Channels 1 = Dual channel with marker 2 = Dual channel with gated marker</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">- 02500 -</div> <p>Pulses per Revolution See technical data for available resolutions (specified as 5 digits with leading zeros)</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">4</div> <p>Supply Voltage Output Configuration (see technical data) 1 = 5vin, 5v line driver out (3487) 2 = 5-26vin, 5v line driver out (3487) w/ regulator 3 = 5-26vin, 5-26v line driver out (7272)* 4 = 5-15vin, 5-15v line driver out (4469) 6 = 5-26vin, 5-26v open collector out (7406) <small>*Approx. 2 V drop output voltage compared to input voltage.</small></p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">F</div> <p>Mounting F = 2.50" Square Flange S = 2.50" Servo/Face Mount</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">3</div> <p>Face Mounts* (see dimension drawings) <small>*Only available with 2.5" servo flange option</small> 0 = None 1 = 3 places equally spaced on a 1.875" dia. b.c. 3 = 4 places equally spaced on a 2" dia. b.c. 4 = 3 places equally spaced on a 2" dia. b.c.</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">- 0007 S -</div> <p>Connection Position S = Side B = Back</p> <p>Connection Type 0007 = 7 pin MS3106R-16S-1P 0010 = 10 Pin MS3102R-18S-1P Cxxx = CX pigtail cable, xxx = cable length in inches</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">- 1 A</div> <p>Shaft Seal A = With shaft seal 0 = Without shaft seal (IP40)</p> <p>Shaft Designation 1 = 3/8" 2 = 10 mm 3 = 1/4" 4 = 3/8" with flat</p>
---	--	---	---	--	---	---	---	---



Example for ordering

The above sample shows one possible configuration of the model HD25 encoder.

Accessories

Mating Connectors (and Ordering Codes)

7 Pin
MS3106F-16S-1S
(6-430065-00)

10 Pin
MS3106F-18-1S
(6-430080-00)

Cable and Connector Assembly (and Ordering Codes)

7 Pin MS
with shielded cable
(6-411569-XXX)

10-Pin MS
with shielded cable
(6-411570-XXX)

XXX = the length of cable in inches