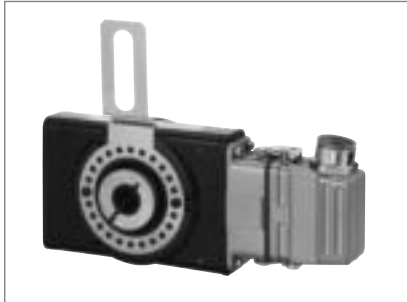


Incremental



- Hollow Shaft design eliminates mounting bracket, flexible shaft coupling, and installation labor
- Bore is electrically and thermally insulated
- Single or Dual output - Optional high current line driver
- Choice of Stamped Metal or Swivel Rod Tether
- High Resolution Unbreakable Disk
- Industrial Duty Latching Connector
- NEMA 4 / IP65 Rated

HEAVY DUTY

NorthStar CE

NUMBER OF PULSES

0001 / 0002 / 0003 / 0005 / 0006 / 0007 / 0010 / 0012 / 0025 / 0050 / 0060 / 0064 / 0100 / 0120 / 0128 / 0180 / 0200 / 0240 / 0250 / 0300 / 0360 / 0400 / 0500 / 0512 / 0600 / 0720 / 0800 / 0900 / 1000 / 1024 / 1200 / 1270 / 1500 / 1800 / 2000 / 2048 / 2400 / 2500

GENERAL INFORMATION

HEAVY DUTY SEALED HOLLOWSHAFT ENCODER

The NorthStar brand Series HSD35 Sealed Hollowshaft encoder is designed for easy installation on motor or machine shafts. Its hollowshaft design eliminates the need for a flexible shaft coupling, mounting bracket, flower pot, or flange adapter. This not only reduces the installation depth, but also lowers total cost.

The Series HSD35 Sealed Hollowshaft is equipped with an unbreakable disk that resists contamination and meets the demands of the most severe shock and vibration generating processes. Its floating shaft mount and spring tether eliminate bearing loads and flexible shaft couplings to eliminate wear and maintenance.

Series HSD35 has complete electrical protection from overvoltage, reverse voltage, and output short circuits. In addition, the Series HSD35 is not only electrically & thermally isolated, but also environmentally sealed with shaft seals at both ends.

APPLICATIONS

The HSD35 sealed hollow shaft encoder is ideal for motor and machine applications at resolutions to 2500 PPR. Choice of stamped metal or swivel rod tether provide flexible mounting for a wide variety of installations

- Vector Motor and Drive Feedback
- Converting Machinery
- Packaging Equipment
- Paper Processing

INDUSTRIES

Manufacturing, Assembly, Material Handling and any other where a precise, reliable feedback signal is required.

TECHNICAL DATA mechanical

Housing diameter	90.2 mm
Shaft diameter	6 mm / 8 mm / 10 mm / 12 mm / 15 mm / 25 mm / 28 mm / 31.75 mm (Through hollow shaft)
Flange (Mounting of housing)	Tether, Swivel rod
Mounting of shaft	Front clamping ring
Protection class shaft input (EN 60529)	IP65 or NEMA 4

Incremental

TECHNICAL DATA mechanical (continued)

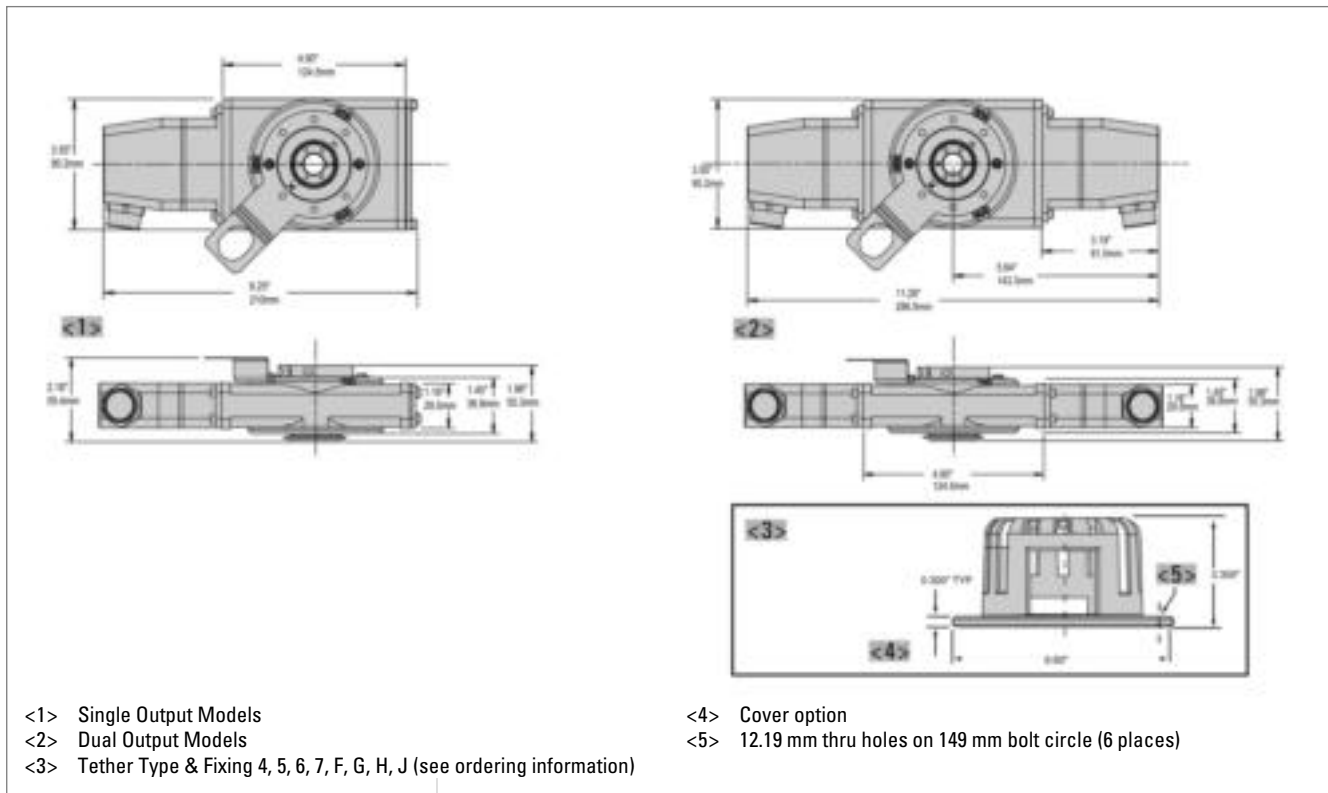
Protection class housing (EN 60529)	IP65 or NEMA 4
Axial endplay of mounting shaft (hubshaft)	± 1.27 mm
Radial runout of mating shaft (hubshaft)	± 0.63 mm
Max. speed	max. 3600 rpm
Bearing life	80 000 hours at 3600 rpm; 128 000 hours at 1800 rpm
Torque	3.53 Ncm (max.)
Vibration resistance (DIN EN 60068-2-6)	200 m/s ² (5 ... 2000 Hz)
Shock resistance (DIN EN 60068-2-27)	500 m/s ² (11 ms)
Operating temperature	-40 °C ... +70 °C Option: 0 °C ... +100 °C
Storage temperature	-40 °C ... +90 °C
Weight	max. 870 g
Connection	10 pin connector

TECHNICAL DATA electrical

Supply voltage	DC 4,5 - 26 V
Max. current w/o load	100 mA
Code	Incremental, optical
Max. pulse frequency	100 kHz
Phasing	Incremental signals (A leads B): A leads B by 90° for ccw shaft rotation viewing the shaft clamp end of the encoder
Pulse shape	Square wave

Incremental

DIMENSIONED DRAWINGS



Incremental

ORDERING INFORMATION

Type	Number of pulses	Shaft Ø	Tether Type & Fixing ^{1,2}	Format ³	Output	Seal	Housing, Tether, Options
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSD35	1 ... 2500	0 6 mm 1 1/4" 2 5/16" 3 8 mm 4 9.52 mm (3/8") 5 10 mm 6 12 mm 7 12.7 mm (1/2") 8 5/8" 9 15 mm A 16 mm B 19 mm C 3/4" D 20 mm E 7/8" F 24 mm G 1" H 1-1/8" J 14 mm K 18 mm M 25 mm N 28 mm P 1-1/4"	A Standard Tether C 180C Tether E 180C Tether with protective guard B 56C Tether D 56C Tether with protective guard 0 None - customer supplied H Same as 'A' w/ dual cover kit F Same as 'A', w/ cover kit J Same as 'B' w/ dual cover kit G Same as 'B', w/ cover kit	0 single ended, unidirectional (A) 1 single ended, bidirectional (AB) 2 single ended, bidirectional with index (ABZ) 3 differential, bidirectional (A-A B-B) 4 differential, bidirectional with index (A-A B-B Z-Z) 5 Dual isolated differential, bidirectional w/index (A-A B-B Z-Z)	0 5 - 26 V in, 5 - 26 V Open Collector out 0 5-26V in, 5-26V Open Collector out (7273) 2 5 - 26 V in, 5 - 26 V Push pull out 1 5-26V in, 5-26V open collector out with 2.2kΩ pullups 2 5-26V in, 5-26V Push-Pull out 3 5 - 26 V in, 5 - 26 V Differential Line Driver out 4 5-26V in, 5V Differential Line Driver out A same as '3' but up to +100°C B same as '4' but up to +100°C	1 Rugged Shaft Seals 0 Standard Shaft Seals	Blank None D LED Output Indicator

¹ Tether Type & Fixing Code "F" or Code "G" only available with Format Code "0" to "4"

² Housing Tether & Fixing Code "H" or Code "J" only available with Format Code "5"

³ Format Code "3" to Code "5" only available with Output Code "3" to Code "6" and Code "A" resp. "B"