SERIES SL85

NorthStar™ brand

Bearingless Encoder

Key Features

- **Bearingless Design Mounts to 180 C-Face Motors**

- **Magneto-Resistive Technology Resists Dust, Dirt, Oil, Water, and Other Contaminants**

- **Dual-C-Face Versions Available for "Sandwich" Mounting**

- **Single or Dual Isolated Outputs Available**

CE EN 61326   RoHS ✓

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Pulses per Revolution: 64-2048
Phasing Sense: A leads B for Counter-Clockwise rotation (CCW) viewing encoder-mounted end
Quadrature Phasing: $90° \pm 22°$
Symmetry: $180° \pm 54°$
Index: 270°, ungated (optional gated to falling B edge)
Number of Output Modules: Single or Dual Redundant

ELECTRICAL

Input Power Requirements: 5-15 Volts DC, 45 mA typical per sensor module plus line driver load
Output Signals: Line Driver, 150mA source/sink
Frequency Response: 0 - 120kHz Data & Index
Electrical Immunity: 2kV ESD, Reverse Polarity, Short Circuit
Connector: 10 pin industrial duty latching, sealed NEMA 4 &12, IP65

MECHANICAL

Max: Shaft Speed: 5,000 RPM
Mounting Configuration: 8.5" 180C face mount for NEMA MG1 standards
Housing Material: Cast Aluminum
Acceleration Rate: 3600 rpm/sec max
Shaft Length Required: 1.0" min
Allowable Shaft End-Play: ± 0.050"
Allowable Shaft Runout: 0.003" TIR

ENVIRONMENTAL

Operating Temperature Range: -40°C to +90°C
Storage Temperature Range: -40°C to +120°C
Humidity: to 98% RH (non-condensing)
Shock (Sensor Module): 1 meter drop test, 30 G's Min
Vibration: 18 G's @ 5-2000 Hz spectrum

ELECTRICAL CONNECTIONS

Signal	Connector Pin	Pigtail Cable	MS 3102E18-IT#
Common	1	Black	F
B	2	Green	B
A	3	Blue	A
Z *	4	Violet	C
No Connection	5	—	E
Vcc (5-15 VDC)	6	Red	D
$\overline{B}$	7	Yellow	I
$\overline{A}$	8	Gray	H
$\overline{Z}$ *	9	Orange	J
Shield	10	Braid	G

* Index (Z) optional. See Ordering Information
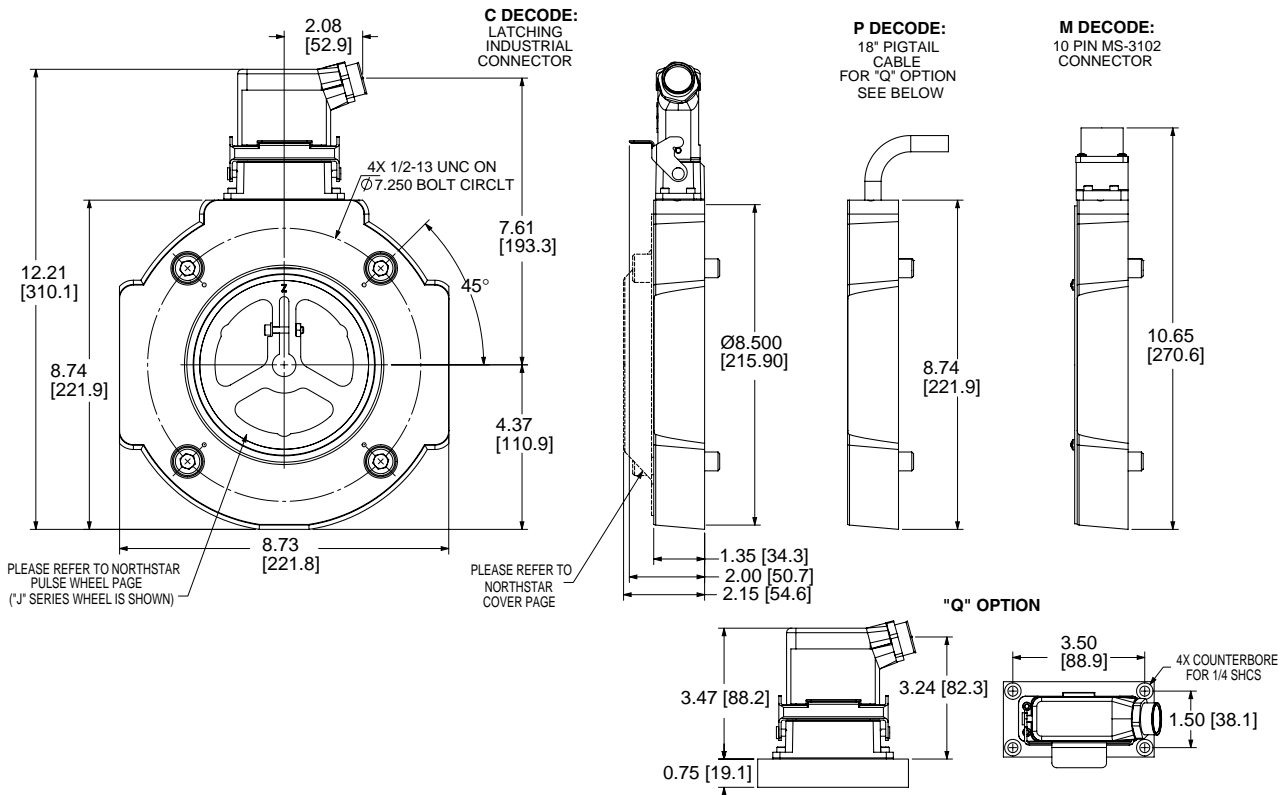
Ordering Information

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Index	Code 4: Wheel Bore	Code 5: Termination	Code 6: Electrical	Code 7: Cover/Adapter
☐8	☐☐☐☐	☐	☐☐☐	☐	☐	☐

Code 1: Model	Code 2: PPR	Code 3: Index	Code 4: Wheel Bore	Code 5: Termination	Code 6: Electrical	Code 7: Cover/Adapter
S8 Motor Mount Ring, for 8 1/2" C-Face Motors (180C) Single Output	**0064** **0128** **0256** **0512** **1024** **2048**	**L** No Index	**J04** 5/8" bore **J05** 7/8" bore **J06** 1.00" bore **J07** 1-1/8" bore	**C** Latching Industrial Connector with 1/2" NPT	**L** 5-15V in, 5-15V Line Driver (4428) out	**C** Standard Flat Cover **E** Extra heavy duty steel pie pan cover **F** Flat Thru-hole cover
		Available when Code 2 is 0512, 1024 or 2048	**K09** 1-3/8" bore **K10** 1-1/2" bore **K11** 1-5/8" bore **K12** 1-3/4" bore **K13** 1-7/8" bore **K14** 2.00" bore **K15** 2-1/8" bore **K16** 2-1/4" bore **K17** 2-3/8" bore **K18** 2-1/2" bore **K19** 2-7/8" bore	**M** 10 pin MS Connector	**H** Same as L with extended temp. to 120°C	
		G Gated Index (Z, Z̄)		**Double C-face Sandwich Version**	**V** 5-26V in, 5-26V Line Driver (IC-WE) out	Grounding brush kits available for End of Shaft Mounting, Consult Factory for ordering
D8 Motor Mount Ring, for 8 1/2" C-Face Motors (180C) Dual Output		**Z** Differential Index (Z, Z̄)	Additional Shaft Sizes Available Up to 3.75" Maximum	**D** 1" Extended height connector	**5** 5-15V in, 5V Line Driver (4428) out	
			End of Shaft Mounting for GE & Emerson Motors N01 1.125" EOS N06 2.375" EOS N08 2.625" EOS N10 2.875" EOS	**E** 3" extended height connector	Differential, bidirectional signals (A, Ā, B, B̄)	
				P 18" pigtail cable		
				Q Latching Industrial Connector on 18" pigtail cable		

Note: See ACCESSORIES Section For Connectors, Spare Parts and Pulse Wheels

DIMENSIONS inch [mm]

STANDARD HOUSING – SINGLE C-FACE

C DECODE: LATCHING INDUSTRIAL CONNECTOR

P DECODE: 18" PIGTAIL CABLE FOR "Q" OPTION SEE BELOW

M DECODE: 10 PIN MS-3102 CONNECTOR

2.08 [52.9]

4X 1/2-13 UNC ON Ø7.250 BOLT CIRCLT

7.61 [193.3]

45°

12.21 [310.1]

8.74 [221.9]

8.73 [221.8]

4.37 [110.9]

PLEASE REFER TO NORTHSTAR PULSE WHEEL PAGE ("J" SERIES WHEEL IS SHOWN)

Ø8.500 [215.90]

8.74 [221.9]

10.65 [270.6]

PLEASE REFER TO NORTHSTAR COVER PAGE

1.35 [34.3]
2.00 [50.7]
2.15 [54.6]

"Q" OPTION

3.47 [88.2]

3.24 [82.3]

0.75 [19.1]

3.50 [88.9]

4X COUNTERBORE FOR 1/4 SHCS
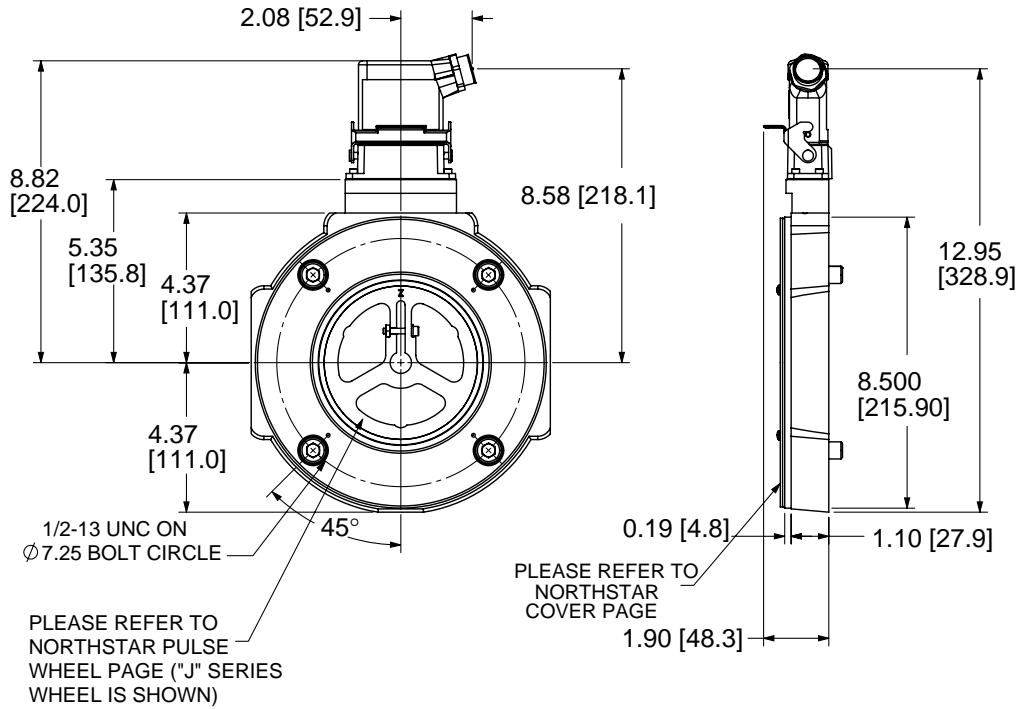
1.50 [38.1]

SERIES SL85

NorthStar™ brand

DIMENSIONS inch [mm]   DOUBLE C-FACE HOUSING

D-DECODE:
DOUBLE C-FACE
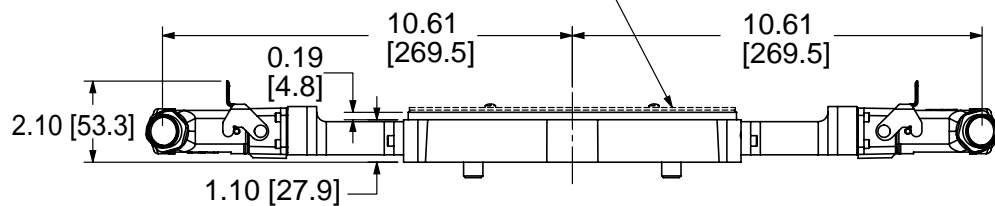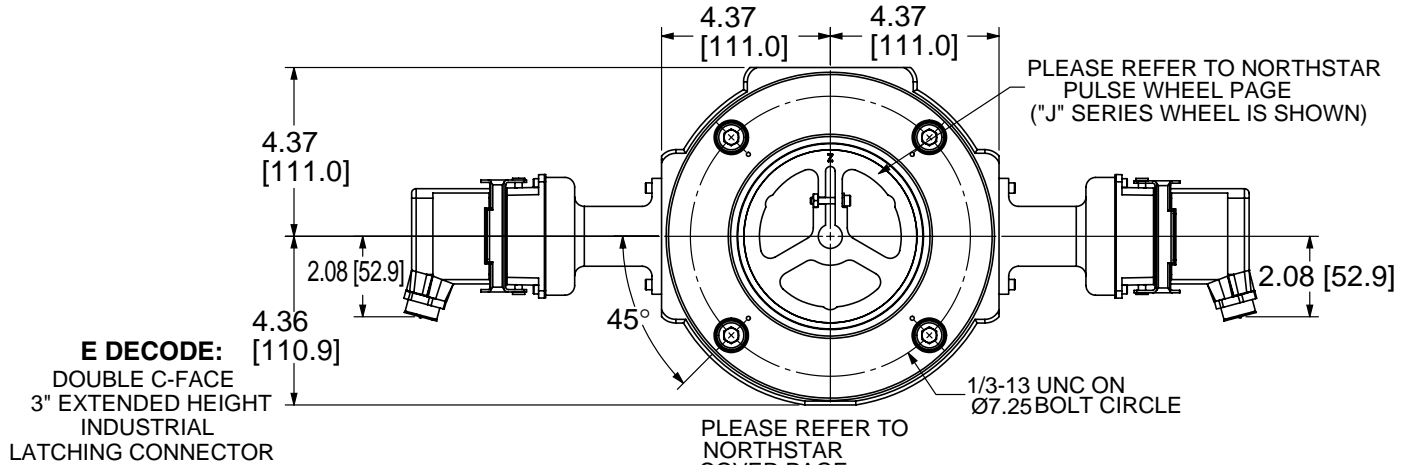INDUSTRIAL
1" EXTENDED HEIGHT
LATCHING CONNECTOR

2.08 [52.9]

8.82 [224.0]

5.35 [135.8]

4.37 [111.0]

4.37 [111.0]

8.58 [218.1]

12.95 [328.9]

8.500 [215.90]

0.19 [4.8]

1.10 [27.9]

1/2-13 UNC ON
∅7.25 BOLT CIRCLE

45°

PLEASE REFER TO
NORTHSTAR
COVER PAGE

1.90 [48.3]

PLEASE REFER TO
NORTHSTAR PULSE
WHEEL PAGE ("J" SERIES
WHEEL IS SHOWN)

P-DECODE:
DOUBLE C-FACE
18" PIGTAIL
SEE "Q"
OPTION BELOW

E-DECODE:
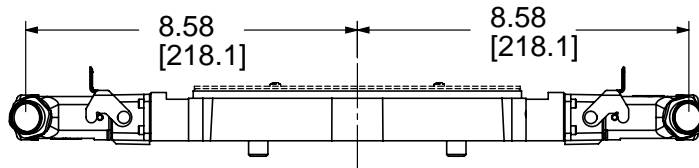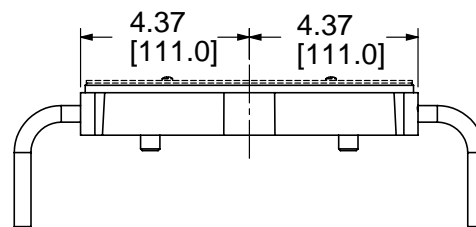DOUBLE C-FACE
3" EXTENDED HEIGHT
INDUSTRIAL
LATCHING CONNECTOR

14.98 [380.4]

8.74 [221.9]

"Q" OPTION

3.50 [88.9]

3.47 [88.2]

3.24 [82.3]

0.75 [19.1]

1.50 [38.1]

4X COUNTERBORE
FOR 1/4 SHCS

by **DYNAPAR**™
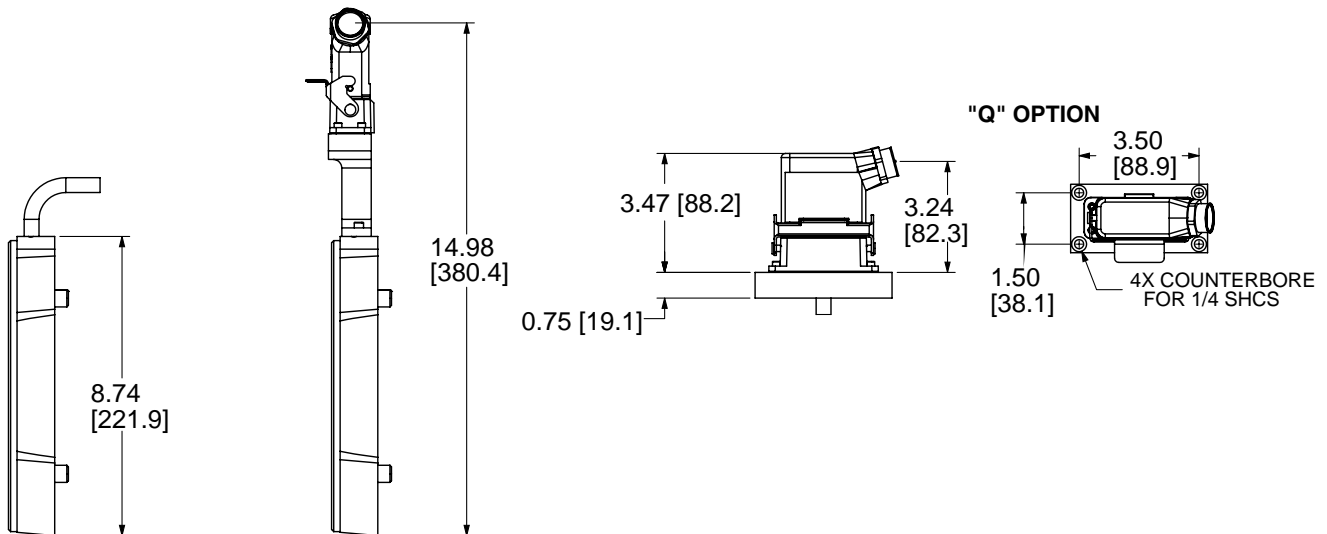
DIMENSIONS [inch [mm]]   DUAL OUTPUT HOUSING

4.37 [111.0]   4.37 [111.0]

PLEASE REFER TO NORTHSTAR
PULSE WHEEL PAGE
("J" SERIES WHEEL IS SHOWN)

4.37 [111.0]

2.08 [52.9]

2.08 [52.9]

4.36 [110.9]

45°

E DECODE:
DOUBLE C-FACE
3" EXTENDED HEIGHT
INDUSTRIAL
LATCHING CONNECTOR

1/3-13 UNC ON
Ø7.25 BOLT CIRCLE

PLEASE REFER TO
NORTHSTAR
COVER PAGE

10.61 [269.5]   10.61 [269.5]

0.19 [4.8]

2.10 [53.3]

1.10 [27.9]

D DECODE:
DOUBLE C-FACE
1" EXTENDED HEIGHT
INDUSTRIAL
LATCHING CONNECTOR

8.58 [218.1]   8.58 [218.1]

P DECODE:
DOUBLE C-FACE
18" PIGTAIL
SEE "Q" OPTION
AT RIGHT

4.37 [111.0]   4.37 [111.0]

"Q" OPTION

3.50 [88.9]

4X COUNTERBORE
FOR 1/4 SHCS

1.50 [38.1]

3.47 [88.2]

0.75 [19.1]