ACCESSORIES

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### INDUSTRY **APPLICATIONS**

### Oil & Gas

(Ex)

CE

NEW SERIES

NorthStar products are a prominent brand name in the oil and gas industry with our rugged line of NorthStar Harsh Duty Optical encoders. Our DWD38 encoder is ideal for DrawWorks applications and corrosive environments that demand heavy duty wash down protection. Extremely robust, the DWD38 eliminated the use of a FRAGILE glass disc in favor of a Mylar and or stainless steel disc. This encoder is perfect for your tough application in the Oil and Gas Industry.

### Optical sensing technology Nickel-plated or stainless steel housing

Intrinsically-safe ATEX certification models available ■ NEMA 4x, IP67

- Type: Draw Works

- Resolution: 15 to 5000 PPR; 125 KHz data and index
- Bore/Shaft Size: 1" <u>- 14 UNS x 5/8" 18 UNF</u>
- nonconvertible bores available - Power/Output: 5-26 VDC; 5 VDC or 7-26 VDC (ATEX)
- Sensing Technology: Optical Unbreakable Code Disk
- Operating Temperature: -40 to 100 C (-40 to +80 C w/ATEX)
- Enclosure Rating/Protection: NEMA 4X , IP67



### The HSD44 Heavy Duty Rail

The heavy duty rail proven NorthStar HSD44 optical encoder is designed to be a survivor. This anodized aluminum encoder can survive high levels of shock and vibration, wide temperature extremes and operating environment contaminants. The HSD44 can withstand the harshest outdoor environments and the toughest industrial applications.



Optical sensing technology Nickel-plated or stainless steel housing Intrinsically-safe ATEX pending certification models available ■ NEMA 4x, IP67

- Resolution: 15 to 5000 PPR; 125 KHz data and index - Bore/Shaft Size: 1-1/4 UNS x 5/8" – 18 UNS nonconvertible bores available
- Power/Output: 5-26 VDC; 5 VDC or 7-26 VDC (ATEX)
- Sensing Technology: Optical Unbreakable Code Disk
- Operating Temperature: -40 to 100 C (-40 to +80 C w/ATEX) - Enclosure Rating/Protection: NEMA 4X , IP67







The NorthStar signal splitter routes one encoder signal to multiple isolated locations.



CPL Series couplings provide maximum mechanical, thermal, and electrical protection for encoder shaft connections.



Dynapar offers a wide variety of military-style connectors for use with different style encoders. Dynapar offers NEMA C-face, 5PY and custom adapters to allow you to mount a variety of flange mounted encoders to 4-1/2" NEMA and DC accessory flanges.



For additional information on NorthStar or a full-line catalog, contact your Dynapar representative at 1.800.873.8731 or visit our web site at: www.dynapar.com Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA Phone: 1.847.662.2666 Fax: 1.847.662.6633 Email: custserv@dynapar.com or northstar.techsupport@dynapar.com

Satellite Locations:

North America: North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands Europe: United Kingdom, Italy, France, Germany, Spain, Slovakia Latin America: Brazil Asia: China, Japan, Korea, Singapore



 $\langle \xi_{\chi} \rangle$  Meets intrinsically safe use, EEx ia IIB T4



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The NorthStar signal switcher enables the use of one drive with two separate encoders.

The FV3 converter converts the frequency output of the encoder to an analog signal for operating chart recorders, or for supplying velocity feedback in closed loop speed control systems.





The NorthStar brand encoder tester is an instrument used to evaluate signal presence and quality produced by any manufacturers digital encode



NorthStar brand offers shielded cable with MS or M12 connector and cable clamps at one end and tinned leads at the other end.



Provide a low resistance, and electrical contact to the motor shaft to reduce or eliminate induced shaft currents in AC and DC motors



## NorthStar **HEAVY-DUTY**

1 800.873.8731 www.dynapar.com

**RELIABLE HARSH-DUTY OPTICAL & MAGNETO-RESISTIVE INCREMENTAL ENCODERS** 

1.800.873.8731 • www.dynapar.com



NorthStar

# NorthStor<sup>™</sup>

### HARSH-DUTY OPTICAL INCREMENTAL ENCODERS with Washdown Resistance & ATEX Certification

This new series unites sophisticated ASIC technology with the rugged performance you expect from NorthStar Choose from a growing line designed to provide reliable and intrinsically safe operation in such applications as oil &gas, transportation, wind power, and severe-duty packaging. These exceptional encoders will not corrode and will withstand temperature extremes from -40 C to +100 C. In addition, they offer:

#### HARSH-DUTY OPTICAL

### WHEN RELIABILITY **COUNTS!**

Long a recognized brand and international leader in magnetoresistive technology and millduty industrial applications, NorthStar, a Dynapar brand, continues to produce innovative and highly dependable products for measuring speed and position in tough manufacturing environments.

For more than 30 years. NorthStar has specialized in meeting the needs of the

a proven and time tested line of heavy-duty, mill-duty magneto-resistive incremental encoders and pulse tachs. More recently, NorthStar expanded the line to include a new line of compact and washdown resistant, harsh-duty optical incremental encoders. All NorthStar encoders are designed to provide rugged. high performance signals in extreme application environments...when reliability counts (guaranteed)



- Optical sensing
- Hard anodized aluminum, nickel plated or stainless steel housing
- Intrinsically-safe ATEX certification models available

Optical unbreakable code disk ■ Exceeds NEMA 4x and NEMA 60 and IP66/67

-Resolution: 1 to 3600 PPR; 125 KHz data and index -Bore/Shaft Size: 3/8" DIA or 10mm DIA with flat -Power/Output: 5-26 VDC; 5VDC or 7-26 VDC (ATEX) -Sensing Technology: Optical Unbreakable Code Disk -Operating Temperature: -40°C to +100°C (up to 80 C w/ATEX)

-Enclosure Rating/Protection: NEMA 4X, 6P and IP 66/67



■ Cast housing aluminum; EPIC style connector

For industrial motor and machine applications at

Choice of stamped metal or swivel rod tether

Protection from overvoltage, reverse voltage and

-Resolution: 1 to 2500 PPR, quadrature, optional index

-Bore/Shaft Size: 1/4" to 1 1/4"; 6mm to 28mm bore"

-Power/Output: 5-15 VDC, 5VDC or 5-26 VDC; line driver

-Sensing Technology: Optical Unbreakable Code Disk

-Operating Temperature: -40 to 100 C

-Enclosure Rating/Protection: NEMA 4X/IP66

Optical sensing

available

Replaces Magcoder HS35M

for easy termination

resolutions to 2500 PPR

output short circuits

-Type: Hollowshaft

(512 and above)



available

CE

(Ex)

Optical sensing available

**SP**\*

Type: Hollowshaft and index available



- Extreme shock and vibration resistance
  Bearings which are shielded not sealed
- Special double-labyrinth sealing on select models
- Discs made of either 303 stainless or 100 degree Mylar for rigidity, unlike many encoders which use fragile and expensive glass as the disc material
- for less running friction and heat build up as well as not using adhesive allowing them to be mechanically kept in place
- Extreme Corrosion and wash down resistant stainless and nickel plated models

### MAGNETO-RESISTIVE INCREMENTAL ENCODERS & PULSE TACHS

Time-Tested & Proven Legacy of Rugged Performance

With magneto-resistive technology, NorthStar Bearingless encoders SLIM Tach and RIM Tach Series are unaffected by dirt, dust or dampness. making these your best choice for highhorsepower, large-shaft motors and extreme environments.

### MAGNETO-RESISTIVE

### SLIM TACH BEARINGLESS



CE

CE

(Ex)

CE

Magneto-resistive sensing Hard Anodized Aluminum Housing Bearing-less, rugged Mounts directly to C-face motors ■ Only 0.75" thick—ideal for tight machine configurations in harsh environments -Size/Mounting: 4 5" 56 NFMA C-face Resolution: 64 to 2048 PPR, guadrature, optional index (512 and above)

-Bore/Shaft Size: 5/8" to 2.5" shaft diameter; up to 3.75" available Power/Output: 5-15VDC or 5-26VDC; line driver -Sensing Technology: Magnetic Resonance (MR) -Operating Temperature: -40 to 90 C (+120 C Optional) closure Rating/Protection: NEMA MG1

Types: Large Motor, C-Face Mount and Hollowshaft

- High performance velocity and position feedback in extreme environments
- Easy to install hollowshaft designs in sizes nearly twice as big as competitive models
- Highest-grade Industrial bearings in the industry
- Industry-leading resolution up to 2048 PPR

SL125

### **NEW SERIES** 25 Optical sensing ■ Hard anodized aluminum, nickel plated or stainless steel housing

Intrinsically-safe ATEX certification models

Optical unbreakable code disk ■ Exceeds NEMA 4x and NEMA 6P and IP66/67

-Resolution: 1 to 5000 PPR: 125 KHz data and index -Bore/Shaft Size: 3/8" DIA or 10mm DIA with flat -Power/Output: 5-26 VDC; 5VDC or 7-26 VDC (ATEX) -Sensing Technology: Optical Unbreakable Code Disk -Operating Temperature: -40 to 100 C (-40 to +80 C w/ATEX) -Enclosure Rating/Protection: NEMA 4X, 6P and IP 66/67



Nickel plated or stainless steel housing ■ Enclosure rating NEMA 4x, NEMA 6, IP66/IP67 Intrinsically-Safe ATEX certification models

-Resolution: 15 to 5000 PPR; 125 KHz data

-Bore/Shaft Size: 1/2", 5/8", 3/4", 7/8", 1inch, 10mm, 12mm, 14mm, 15mm, 16mm, 18mm, 19mm, 20mm bores

-Power/Output: 5-26 VDC; 5 VDC or 5-26 VDC -Sensing Technology: Optical Unbreakable Code Disk Operating Temperature: -40 to 100 C -Enclosure Rating/Protection: NEMA 4/IP66



**IEW SERIES** 

Hard anodized aluminum, nickel plated or

Intrinsically-safe ATEX certification models

Exceeds NEMA 4x and NEMA 6P and IP66/67

-Resolution: 1 to 3600 PPR: 125 KHz data and index

-Power/Output: 5-26 VDC; 5VDC or 5-26 VDC (ATEX)

-Sensing Technology: Optical Unbreakable Code Disk

-Bore/Shaft Size: 3/8", 1/2", 5/8", 3/4" or 10mm bore available

-Operating Temperature: -40 to 100 C (-40 to +80 C w/ATEX)

-Enclosure Rating/Protection: NEMA 4X, 6P and IP 66/67

ISD

stainless steel housing

Optical unbreakable code disk

Optical sensing

available

-Type: Hollowshaft

CE

Optical sensing **CE** Nickel plated or stainless steel housing ■ Enclosure rating NEMA 4x, NEMA 6, IP66/IP67

### Type: Hollowshaft

(Ex)

-Resolution: 15 to 5000 PPR: 125 KHz data and index -Bore/Shaft Size: 1/2", 5/8", 3/4", 7/8", 1inch, 10mm, 12mm, 14mm, 15mm, 16mm, 18mm, 19mm, 20mm bores available

-Power/Output: 5-26 VDC; 5 VDC or 5-26 VDC -Sensing Technology: Optical Unbreakable Code Disk -Operating Temperature: -40 to 100 C -Enclosure Rating/Protection: NEMA 4X/IP66



Magneto-resistive sensing Hard anodized aluminum housing ■ Fits 6.75" machined recess on RPM AC or DC motors made by Reliance Electric. Low profile "pancake" design adds only 1.5" to motor length

-Size/Mounting: 4.5" dia, hollowshaft mount Resolution: 64 to 2048 PPR, quadrature, optional index (512 & above) Bore/Shaft Size: 5/8" to 2-7/8"; up to 3.75" available

ower/Output: 5-15VDC or 5-26VDC; differential line driver -Sensing Technology: Magnetic Resonance (MR) -Operating Temperature: -40 to 90 C (+120 C Optional) Enclosure Rating/Protection: NEMA MG1

### BEARINGED UNITS



CE

Magneto-resistive sensing Stainless steel and cast-iron industrial tachometer Ideal for close-coupled, belt or wheel-driven setups in process environments

ize/Mounting: Foot Mounted Shafted Unit esolution: 60 to 2048 PPR, quadrature, optional index (480 and above) Bore/Shaft Size: 0.625"shaft diameter; single or double ended (standard) Power/Output: 5-15VDC or 5-26VDC: line driver -Sensing Technology: Magnetic Resonance (MR) perating Temperature: -40 to 70 C

Enclosure Rating/Protection: NEMA MG



Magneto-resistive sensing Hard anodized aluminum housing Bearing-less for AC vector motors Provides higher resolution than traditional gear tooth ring kits Only 1.125" (35mm) thick Hardened encapsulated electronics

-Size/Mounting: 8.5" 180 NEMA C-face, thru-shaft, end-of-shaft and double C-face esolution: 64 to 2048 PPR, quadrature, optional index (512 and above) -Bore /Shaft Size: 5/8" to 2-7/8" up to 3.75" shaft diameter

Power/Output: 5-15VDC or 5-26VDC; line driver -Sensing Technology: Magnetic Resonance (MR) -Operating Temperature: -40 to 90 C (+120 C Optional) Enclosure Rating/Protection: NEMA MG1

### RIM TACH BEARINGLESS



CE

Magneto-resistive sensing For AC and DC drive control systems Cast iron and stainless steel construction Thin, pancake style mounts directly on the motor Bearing-less design increases reliability Dual sensors provide redundant signal in case of sensor failure Field replaceable sensor eliminates need to replace entire unit Innovative design requires no calibration

-Size/Mounting: Up to 8.5" face mount, thru-shaft CE or end-of-shaft Resolution: 60 to 1200 PPR

-Bore/Shaft Size: 5/8" to 2-7/8" and up to 3.75" shaft diameter available -Power/Output: 5-15VDC or 5-26VDC; line driver -Sensing Technology: Magnetic Resonance (MR -Operating Temperature: -40°C to +80°C -Enclosure Rating/Protection: NEMA MG1

Power/Output: 5-15VDC or 5-26VDC; differential line driver -Operating Temperature: -20 to 80 C



available -Power/Outputs: 5-15VDC or 5-26VDC; line driver CE nsing Technology: Magnetic Resonance (MR) Operating Temperature: -20°C to +70°C Enclosure Rating/Protection: NEMA MG

(480 and above)

industry

Magneto-resistive sensing Hollow-shaft mount with anti-rotation tether -Size/Mounting: Hollowshaft moun Resolution: 64 to 2048 PPR -Bore/Shaft Size: 5/8" to 1-1/8" -Sensing Technology: Magnetic Resonance (MR)

Enclosure Rating/Protection: NEMA MG1



nclosure Rating/Protection: NEMA MG1

(512 and above)

12.5" C face motors

Magneto-resistive sensing Ideal for crane and hoist applications acid wash down

251

index (480 and above) -Bore/Shaft Size: 5/8" to 2-7/8" up to 8" shaft diamete available ower/Output: 5-15VDC or 5-26VDC; line drive -Sensing Technology: Magnetic Resonance (MR) -Operating Temperature: -40 to 80 C nclosure Rating/Protection: NEMA MG1



Magneto-resistive sensing Economical bearing-less design for

Occupies only 1.4" of motor shaft High power line driver for long cable lengths Size/Mounting: 12.5" C face motors, hollowshaft mount Resolution: Up to 1024 PPR quadrature, optional index Bore/Shaft Size: 5/8" to 2-7/8"; up to 3.75" available

Power/Output: 5-15VDC or 5-26VDC -Sensing Technology: Magnetic Resonance (MR) -Operating Temperature: -40 to 90 C (+120 C Optional)

Ductile cast-iron enclosure protects against

-Size/Mounting: 12.5" NEMA C-face, thru-shaft -Resolution: 60 to 2048 PPR, guadrature, optional

Magneto-resistive sensing Heavy cast-iron and stainless steel construction Most rugged hollowshaft encoder in the

Heavy-duty double-sealed bearings for long life Interchangeable sensors for fast maintenance -Size/Mounting: hollowshaft mount

-Resolution: 60 to 2048 PPR, quadrature, optional index

Sore/Shaft Size: 5/8" to 2-7/8" up to 4.5" diameter