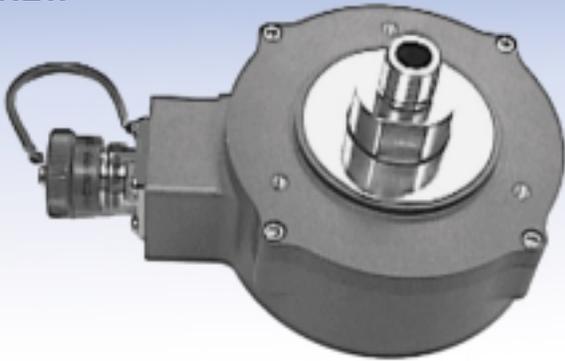


NEW



Series DWD38

- Single or Dual output - NAMUR available
- Well suited for DrawWorks/oil field application
- ATEX Certification available for Intrinsically Safe application
- High Resolution Unbreakable Disk
- Industrial Duty Connector
- NEMA 4X / IP67 Rated
- Nickel or Stainless Steel Housing available
- Two Year Warranty

Harsh-Duty Optical Encoder - DrawWorks

DESCRIPTION

The DWD38 Harsh-Duty Optical Encoder is an Industrial Hollow Shaft design that operates reliably from -40 to +100°C. Its Hard Anodized finish exceeds IP66/IP67 and NEMA 6 enclosure requirements.

The DWD38 is a preferred choice as a DrawWorks encoder by the Oil Field industry and is also commonly used in high shock and vibration environments such as Food Processing, Material Handling and Packaging Equipment applications.

Extremely robust, the DWD38 encoder is also available in Stainless Steel to meet NEMA 4x and 6P requirements. A unique labyrinth double-sealed housing allows operation when regulatory washdown and high pressure steam or caustic chemicals are required.

It is also available in an Intrinsically Safe version, certified to ATEX EEx ia IIB T4, when used with the appropriate IS Barrier.

APPLICATIONS:

The DWD38 Harsh-Duty Optical Encoder is ideal for DrawWorks application and corrosive environments that demand heavy washdown protection. This compact, special-duty encoder is designed to exceed IP66/IP67 and NEMA 6 enclosure requirements with a PPR range through 5000. ATEX certification is also available for intrinsically safe applications.

- DrawWorks and other Oilfield
- Converting Machinery
- Material Handling
- Packaging Equipment
- Pickling Equipment
- Processing Equipment

INDUSTRIES

Chemical, Food & Beverage, Oil & Gas, Paper, Steel and any other where a precise encoder is needed to operate in very harsh environments.

FEATURES/BENEFITS

Mechanical and Environmental

- Unbreakable code disk
- Flexible mounting
- Heavy duty shaft seals
- Sealed connector

Electrical

- Cast housing maximizes noise immunity and durability
- NAMUR outputs and ATEX certification available



Harsh-Duty Optical Encoder - DrawWorks

Series DWD38

Harsh-Duty Optical Encoder... Ideal for DrawWorks Application

SPECIFICATIONS*

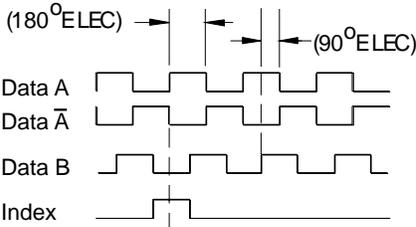
STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: 1 to 5000 PPR (pulses/revolution)
Format: Two channel quadrature (AB) with optional Index (Z), and complementary outputs
Phase Sense: A leads B for CCW shaft rotation viewing the shaft clamp end of the encoder
Quadrature Phasing: 90° ± 15° electrical
Symmetry: 50% ± 5%
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power: 5-26VDC; 50 mA max., not including output loads. ATEX: 5VDC, 5-26VDC
Outputs: 2N2222, ET7272, ET7273
Frequency Response: 125 kHz (data & index)
Termination: 6, 7, or 10 pin MS Connector; 18" cable exit w/seal
Mating Connector:
 6 pin, style MS3106A-14S-6S (MCN-N4);
 7 pin, style MS3106A-16S-1S (MCN-N5);
 10 pin, style MS3106A-18-1S (MCN-N6)

DATA AND INDEX
 Not all complements shown.
 A shown for reference



A Leads B CCW

MECHANICAL

Shaft Material: 300 series stainless steel
Bore loading: Up to 20 lbs axial and radial
Bore runout: 0.0005 TIR at midpoint
Starting/Running torque: 4.5/4.0 in-oz. maximum (at 25°C)
Bearings: 61806-ZZ
Bearing life: 5 x 10⁸ revs at rated shaft Loading, 5 x 10¹¹ revs at 10% of rated shaft loading (manufacturers' specs)
Housing and cover: Hard Anodized Aluminum. Also available in Electroless Nickel finish and Stainless Steel.
Disc material: Metal or mylar
Weight: 35 ounces, typical

ENVIRONMENTAL

Operating Temperature: -40 to 100°C
Operating Temperature ATEX: -40 to 80°C
Storage temperature: -40 to 100°C
Shock: 50G's for 11msec duration
Vibration: 5 to 2000Hz @ 20 G's
Humidity: 100%
Enclosure Rating: NEMA 4X, NEMA 6, IP66, IP67. NEMA 6P upon request

* Specifications are for base models with standard features only unless otherwise noted. Specifications subject to change without notice in accordance with our DBS policy of continuous improvement. All product and brand names are trademarks of their respective owners. All rights reserved.

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NorthStar Brand DWD38 Data Sheet (1/06)

ELECTRICAL CONNECTIONS

6, 7 & 10 Pin MS Connectors and Cables

Connector & mate/accessory cable assembly pin numbers and wire color information is provided here for reference. Models with direct cable exit carry the color coding as shown in the right hand column.

| Encoder Function | Cable # 108594-6 Pin Single Ended | | Cable # 108595-7 Pin Single Ended | | Cable # 108596-7 Pin Dif Line Drv w/o Idx | | Cable # 1400635-10 Pin Dif Line Drv w/ Idx | | Cable Exit with Seal |
|------------------|-----------------------------------|------------|-----------------------------------|------------|---|------------|--|------------|----------------------|
| | Pin | Wire Color | Pin | Wire Color | Pin | Wire Color | Pin | Wire Color | |
| Sig. A | E | BRN | A | BRN | A | BRN | A | BRN | GREEN |
| Sig. B | D | ORG | B | ORG | B | ORG | B | ORG | BLUE |
| Sig. Z | C | YEL | C | YEL | — | — | C | YEL | ORANGE |
| Power +V | B | RED | D | RED | D | RED | D | RED | RED |
| Com | A | BLK | F | BLK | F | BLK | F | BLK | BLACK |
| Case | — | — | G | GRN | G | GRN | G | GRN | WHITE |
| N/C | F | — | E | — | — | — | E | — | — |
| SigA | — | — | — | — | C | BRN/WHT | H | BRN/WHT | VIOLET |
| SigB | — | — | — | — | E | ORG/WHT | I | ORG/WHT | BROWN |
| SigZ | — | — | — | — | — | — | J | YEL/WHT | YELLOW |

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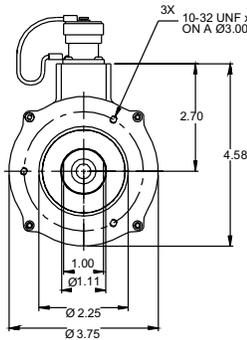
Technical Support
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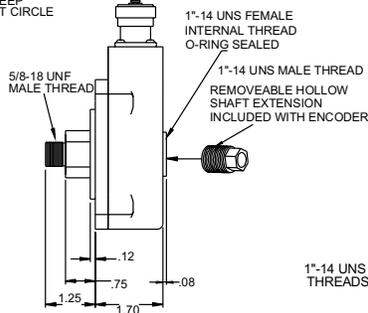
www.feedbackdevices.com • www.danaherindustrialcontrols.com

Harsh-Duty Optical Encoder... Ideal for DrawWorks Application

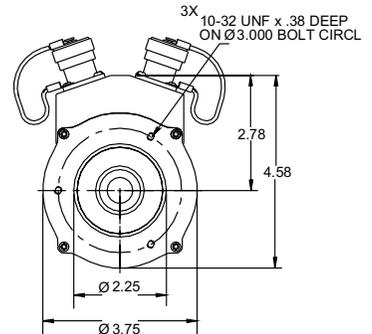
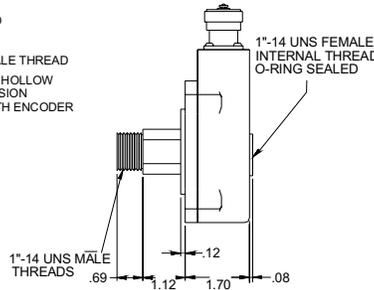
DIMENSIONS inches [mm]



With Convertable Shaft



With Non-Convertible Shaft



Redundant Version

ORDERING INFORMATION

| Code 1: Model | Code 2: PPR | Code 3: Shaft | Code 4: Electrical | Code 5: Termination | Code 6: Options |
|---|--|--|---|--|---|
| DWD38 <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Ordering Information | | | | | |
| Size 38 Harsh-Duty Optical Encoder - DrawWorks | 0015 0032 0100 0200 0240 0250 0500 0512 0600 1000 1024 1200 2000 2048 4000 5000 | 0 1"-14 UNS x 5/8" - 18 UNF Threaded Shaft 1 1"-14 UNS Threaded Shaft | 0 5-26V in, 5-26V Open Collector out (7273) 2 5-26V in, 5-26V Push-Pull out F 5-26V in, 5-26V Open Collector out (2222) G 5-26V in, 5-26V Open Collector out with 2.2 kΩ Pullups (2222) N NAMUR 15 mA Maximum available when: Code 1 is 1,2,4,5,7,8,A or B and Code 5 is 3 through D, or Code 1 is 3,6,9 or C and Code 5 is 5 or D: 3 5-26V in, 5-26V Differential Line Driver out (7272) 4 5-26V in, 5V Differential Line Driver out (7272) | 1 6 Pin Connector 3 7 Pin Connector 5 10 Pin Connector D 18" Sealed Cable | 0 No Options 1 Nickel Finish Housing 2 Stainless Steel Housing 3 Redundant Outputs (Dual Connector Housing) 4 Nickel Finish Housing with Redundant Outputs 5 Stainless Steel Housing with Redundant Outputs |
| available when: Code 4 is 0 - 3, F or G | | | | | |
| With ATEX Type 1* Option | | | | | |
| 4 Unidirectional 5 Bidirectional 6 Bidirectional with Index | | | | | |
| available when: Code 4 is 4 | | | | | |
| With ATEX Type 2* Option | | | | | |
| 7 Unidirectional 8 Bidirectional 9 Bidirectional with Index | | | | | |
| available when: Code 4 is 4 | | | | | |
| With ATEX Type 3* Option | | | | | |
| A Unidirectional B Bidirectional C Bidirectional with Index | | | | | |

*Note: Available ATEX Certified Options

ATEX Type 1: ATEX Certified; 5V in, 5V out only

ATEX Type 2: ATEX Certified; 5-26V in, 5-26V out

ATEX Type 3: ATEX Certified; 5-26V in, 5V out

Worldwide Brands:

Dynapar™

Eagle Signal™

Harowe™

Hengstler™

NorthStar™

Veeder-Root™



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Danaher, a
Fortune 500
company with
offices in 30
countries around
the world.**

More Available. With factories around the world, global sales and applications support, and an expansive network of distributors, we stay close to our customers - shortening lead times and fostering responsiveness. Three-day lead time is standard, with same-day shipments available on many of our products.

More Selection. We have a broad selection of controllers to meet application requirements in a variety of industries. User-configurable, accurate and flexible, with low, mid, or high level performance ranges, our controller products meet your system and budgetary requirements.

More Reliable. Our experience with more than 25,000 customers has taught us to design controllers that are reliable and durable, with quality standards that meet six sigma requirements.

For additional information or a full-line catalog, contact DICG Customer Service or visit our web site.

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NorthStar brand DWD38 Data Sheet (1/06)

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