

SERIES DWD38

NorthStar™ brand

Harsh Duty Optical Encoder

Key Features

- Draw Works Threaded Shaft with Field Replaceable Adapters for Reduced Downtime
- Dual Isolated Outputs Available for Redundancy
- Anodized Aluminum or Stainless Steel Housing



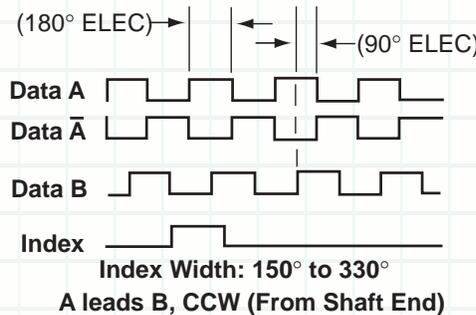
SPECIFICATIONS

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: For resolutions to 1200 PPR: 90° ± 15° electrical; For resolutions over 1250 PPR: 90° ± 30° electrical
Symmetry:
 For resolutions to 1024PPR: 180° ± 18° electrical
 For resolutions over 1024PPR: 180° ± 25° electrical
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

DATA AND INDEX

Not all complements shown
 A̅ shown for reference



ELECTRICAL

Input Power: 7-26VDC; 50 mA max., not including output loads.
Outputs: 2N2222, ET7272, ET7273
Frequency Response: 125 kHz (data & index)
Termination: 6, 7, or 10 pin MS Connector; 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);
 10 pin, NEMA 4 style (MCN-N6N4)

MECHANICAL

Shaft Sizes:
 1"-14 UNS x 5/8" - 18 UNF Threaded Shaft;
 1"-14 UNS Threaded Shaft;
 1"-14 UNS x 5/8" - 18 UNF Field Replaceable Threaded Shaft
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 plastic
Weight: 35 ounces, typical

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- or 109209-(NEMA4) 10 Pin Dif Line Drv w/Idx		Cable Exit with Seal
	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Wire Color
Sig. A	E	BRN	A	BRN	A	BRN	A	BRN	GRN
Sig. B	D	ORG	B	ORG	B	ORG	B	ORG	BLU
Sig. Z	C	YEL	C	YEL	—	—	C	YEL	ORG
Power +V	B	RED	D	RED	D	RED	D	RED	RED
Com	A	BLK	F	BLK	F	BLK	F	BLK	BLK
Case	—	—	G	GRN	G	GRN	G	GRN	WHT
N/C	F	—	E	—	—	—	E	—	—
Sig. A	—	—	—	—	C	BRN/WHT	H	BRN/WHT	VIO
Sig. B	—	—	—	—	E	ORG/WHT	I	ORG/WHT	BRN
Sig. Z	—	—	—	—	—	—	J	YEL/WHT	YEL

Note: "MS" type mating connectors and prebuilt cables are rated NEMA 12.
 For watertight applications, use NEMA4 10 pin cable & connector 109209-XXXX.

ENVIRONMENTAL

Operating Temperature: -40 to 100°C
Operating Temperature ATEX: -40 to 80°C
Storage temperature: -40 to 100°C
Shock: 400g for 6msec duration
Vibration: 5 to 3000Hz @ 20g
Humidity: 100%
Enclosure Rating: IP67

Ordering Information

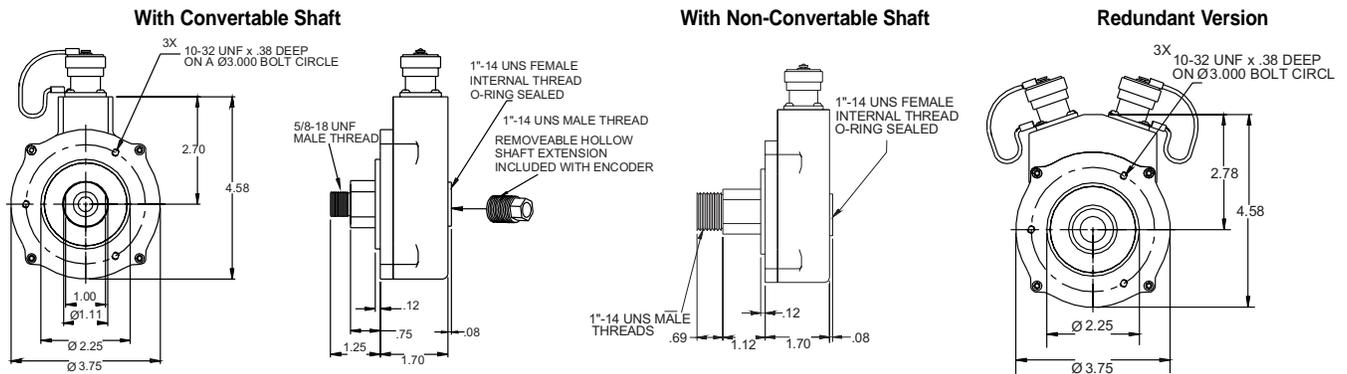
To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Shaft	Code 4: Output Format	Code 5: Termination	Code 6: Options
DWD38	□□□□	□	□	□	□

Ordering Information						
DWD38 Draw Works Encoder	0015	0600	0 1"-14 UNS	0 Single Ended ABZ, 7-26VDC push-pull	0 6 pin connector	0 Aluminum housing
	0032	1000	1 1"-14 UNS x 5/8" - 18 UNF Threaded Shaft	1 Single Ended ABZ, 7-26VDC open collector (7273)	1 7 pin connector	1 Nickel finish housing
	0050	1024	2 1"-14 UNS x 5/8" - 18 UNF Field Replaceable Threaded Shaft	2 Single Ended ABZ, 7-26VDC open collector (2222)	2 10 pin connector	2 Stainless Steel housing
	0060	1200	3 1"-14 UNS x 5/8" - 18 UNF Field Replaceable Threaded Shaft	3 Single Ended ABZ, 7-26VDC open collector w/1k0hm (2222)	5 6 pin+mating connector	3 Dual Isolated Outputs, Aluminum Housing
	0100	2000		<i>Options 4 & 5 not available when Code 5 is H</i>	6 7 pin+mating connector	4 Dual Isolated Outputs, Nickel Housing
	0200	2048		4 Differential AB only, 7-26, 7-26 out (7272)	7 10 pin+mating connector	5 Dual Isolated Outputs, Stainless Steel Housing
	0240	4000		5 Differential AB only, 7-26 in, 5V out (7272)	8 12 CW pin+mating connector	
	0250	4096		<i>Options 6 & 7 not available when Code 5 is 0, 1, 5, 6, H</i>	A .5m (18") cable	
	0500	5000		6 Differential ABZ, 7-26 in, 5V out (7272)	C 1m (36") cable	
	0512			7 Differential ABZ, 7-26 in, 7-26 out (7272)	D 2m (72") cable	
					H 5 pin M12 connector	
					J 8 pin M12 connector	
					K 1.5 ft (18") cable w/ in line 10pin connector	
					M 5 ft (60") cable	
					N 10 ft (120") cable	

Note:
10 foot Cable Assemblies with MS Connector
108594-0010 6 Pin MS, Cable Assy. For Use with Single Ended Outputs
108595-0010 7 Pin MS, Cable Assy. For Use with Single Ended Outputs
108596-0010 7 Pin MS, Cable Assy. For Use with Differential Line Driver w/o Index Outputs
1400635-0010 10 Pin MS, Cable Assy. For Use with Differential Line Driver with Index Outputs
109209-0010 NEMA4 10 pin MS, Cable Assy. For use with differential line driver with index outputs
Mating Connectors (no cable)
 6 pin, style MS3106A-14S-6S (MCN-N4)
 7 pin, style MS3106A-16S-1S (MCN-N5)
 10 pin, style MS3106A-18-1S (MCN-N6)
 10 pin, NEMA 4 style (MCN-N6N4)

DIMENSIONS inches [mm]



Worldwide Brands: NorthStar™ • Acuro™ • Dynapar™ • Hengstler™ • Harowe™

WWW.DYNAPAR.COM

Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA

Customer Service:
 Tel.: +1.800.873.8731
 Fax: +1.847.662.4150
 custserv@dynapar.com

Technical Support
 Tel.: +1.800.234.8731
 Fax: +1.847.662.4150
 northstar.techsupport@dynapar.com

European Sales Representative
 Hengstler GmbH
 Uhlandstrasse 49, 78554 Aldingen
 Germany
www.hengstler.com