

SERIES HDP18

NorthStar™ brand

Shaft-Less Encoder

Key Features

- No Shaft, Bearings, or Seals to Wear Out
- Eliminates Shaft Coupling Issues
- Completely Sealed & Encapsulated Electronics
- Wide Sensing Envelope is Tolerant to Misalignment
- Incremental or Absolute Output
- Incredibly Small Package
- LED Indicators Make Installation and Troubleshooting a Breeze



SPECIFICATIONS

MECHANICAL

Enclosure Diameter: 18mm

Enclosure Height: 47mm

Mounting: 18mm thread (standard prox thread)

Weight: 3.0 oz with mounting nuts and 6" flying lead cable

Speed: 3000 RPM max

ELECTRICAL

Input Power: 6vdc min to 30vdc max at 60mA max, not including output loads

Outputs: 7272 Push-Pull : 40mA sink or source

Electrical Protection: Overvoltage, Reverse Voltage, Output short Circuit protected

PWM Output: 10 bit Pulse Width Modulation output signal proportional to absolute position. 0 degrees = 1 usec of 1025 usec period, 359.65 degrees = 1024 usec of 1025 usec period.

LED Indicators: Power, A, B, Z

ENVIRONMENTAL

Operating Temperature: -25 to +80 degrees C (-13 to 176 degrees F)

Storage Temperature: -40 to +90 degrees C

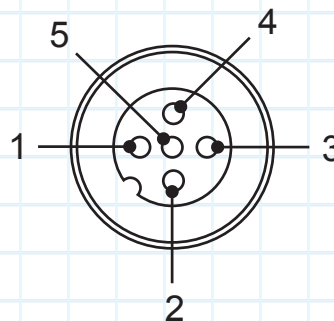
Enclosure Rating: Connector dependent

– M12 on pigtail – IP68

– Cable with flying leads – IP68

CONNECTIONS

Function	5 Pin M12 On Cable	5 Conductor Cable	5 Conductor Cable
	Pin	Wire Color	Wire Color
+Vdc	1	BRN	BRN
Common	3	BLU	BLU
Data A	4	BLK	BLK
Data B	2	WHT	WHT
Data Z	5	GRY	GRY
PWM Absolute Posirion			PNK



Male 5-pin M12

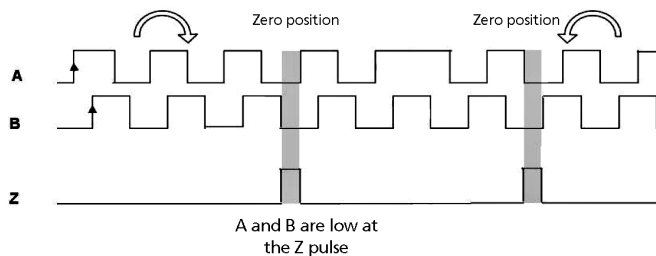
Ordering Information

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

Code 1: Model	Code 2: Resolution	Code 3: Output	Code 4: Connections	Code 5: Target Magnet
HDP18T	□□□□	□	□	□
Ordering Information				
HDP18T	0256	0 Single Ended A,B,Z Push-pull (7272) Code 4 must = 7 P PWM 10-bit absolute output w/ Single ended A,B,Z Push-pull (7272)	1 5 pin M12 on pigtail 2 5 conductor cable 7 6 conductor cable	0 No magnet, customer supplied 3 Dual magnet nylon collar, 1/2" bore 4 Dual magnet nylon collar, 3/4" bore 5 Dual magnet nylon collar, 1" bore 6 Dual magnet nylon collar, 1-1/2" bore 8 Dual magnet nylon collar, 5/8" bore R Ring magnet w/knurled aluminum bolt, 1/4-20

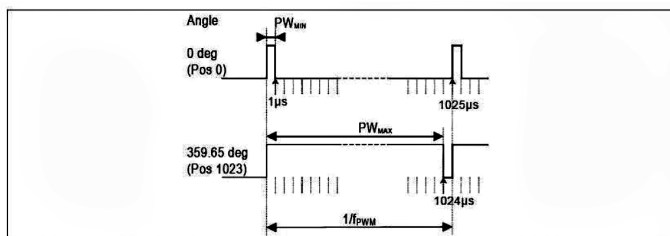
HDP18 OUTPUT FORMAT

18MM: QUADRATURE INCREMENTAL OUTPUT



PULSE WIDTH MODULATION (PWM) OUTPUT

$$\text{Position} = \frac{t_{on} \cdot 1025}{(t_{on} + t_{off})} - 1$$

**HDP18 TARGET MAGNETS**

- Neodymium
- Distance from user magnet to face of encoder: 0.01 to 0.5 inches
- Center alignment: 0 to 0.10 inches
- Planar tilt: 30 degrees



Dual magnet, Nylon collar



1/4 Bolt Magnet with Knurl