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## HEDG-9000 Series

Codewheel for use with Avago Technologies  
Ultra-precision 17-Bit Absolute Single Turn Encoder  
Encoder Modules AEAT-9000 series



## Data Sheet



### Description

Avago Technologies offers a codewheel designed specifically for use with the AEAT-9000 series encoder modules. The HEDG-9000 Series codewheel is suitable for many environments, applications, and budgets. Made from glass the HEDG-9000 codewheel has a resolution of 2048 CPR and an optical radius of 17.5 mm.

**Note:** Avago Technologies encoders are not recommended for use in safety critical applications, e.g., ABS braking systems, power steering, life support systems and critical care medical equipment. Avago's products and software are not specifically designed, manufactured or authorized for sale as parts, components or assemblies for the planning, construction, maintenance or direct operation of a nuclear facility or for use in medical devices or applications. Customer is solely responsible, and waives all rights to make claims against Avago or its suppliers, for all loss, damage, expense or liability in connection with such use. Please contact sales representative if more clarification is needed.

### Features

- Codewheel in Glass.
- Cost Effective
- Resolutions of 2048 CPR
- For Use with AEAT-9000 Series Encoders
- Lead Free

### Applications

Typical applications include

- Rotary applications up to 17 bits/360° absolute position
- Integration into servo motors
- Industrial and maritime valve control
- High precision test and measurement machines
- Industrial and factory automation equipments
- Textile, woodworking & packaging machineries
- Nacelle & blades control in wind turbine

### Absolute Maximum Ratings

| Parameter   | Symbol         | Min.  | Typical | Max.  | Units  |
|---|----------------|-------|---------|-------|--------|
| Storage Temperature                               | T <sub>S</sub> | -40   |         | 115   | °C     |
| Operating Temperature                             | T <sub>A</sub> | -40   |         | 115   | °C     |
| Velocity  |                |       |         | 15000 | RPM    |
| Shaft Axial Play                                  |                | -0.05 |         | 0.05  | mm     |
| Shaft Eccentricity( inclusive module radial play) |                |       |         | 0.05  | mm TIR |

### Recommended Operating Conditions

| Description                                       | Min.  | Typical | Max. | Units  |
|---|-------|---------|------|--------|
| Maximum Count Frequency                           |       |         | 500  | kHz    |
| Shaft Axial Play                                  | -0.05 |         | 0.05 | mm     |
| Shaft Eccentricity( inclusive module radial play) |       |         | 0.05 | mm TIR |

## Codewheel installation instructions

1. Place codewheel on shaft
2. Set codewheel height using Set Height Tool
  - a) Place the set height tool on the Module mounting surface, where the 2 guide pins being inserted into the 2 mounting holes;
  - b) Push the codewheel toward the set height tool until touching the tool. The codewheel is now at the proper height;
  - c) Tighten both codewheel set screws.
3. Remove the set height tool
4. Install encoder module.

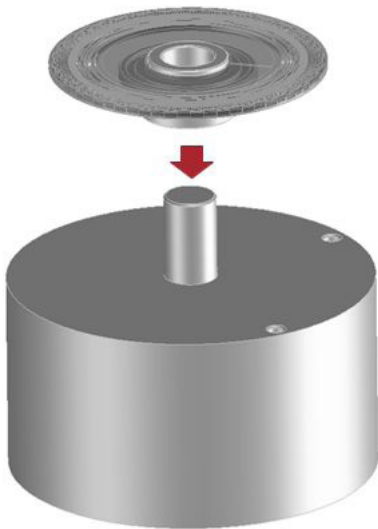


Figure 1a. Mount the CW with hub to shaft

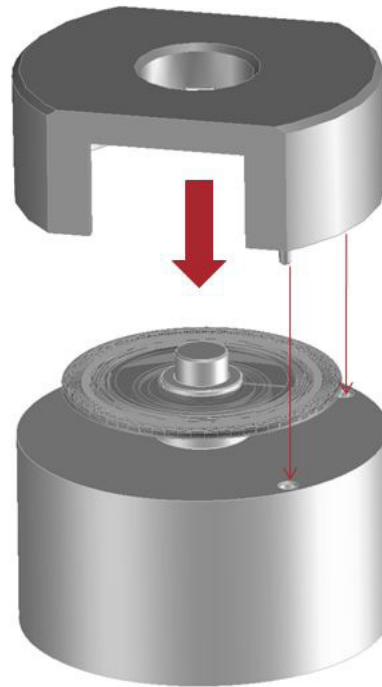


Figure 1b. Place the set height tool

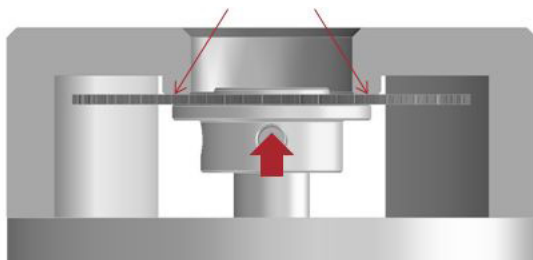


Figure 1c. Push the CW until touching the set height tool



Figure 1d. Tighten the set screws

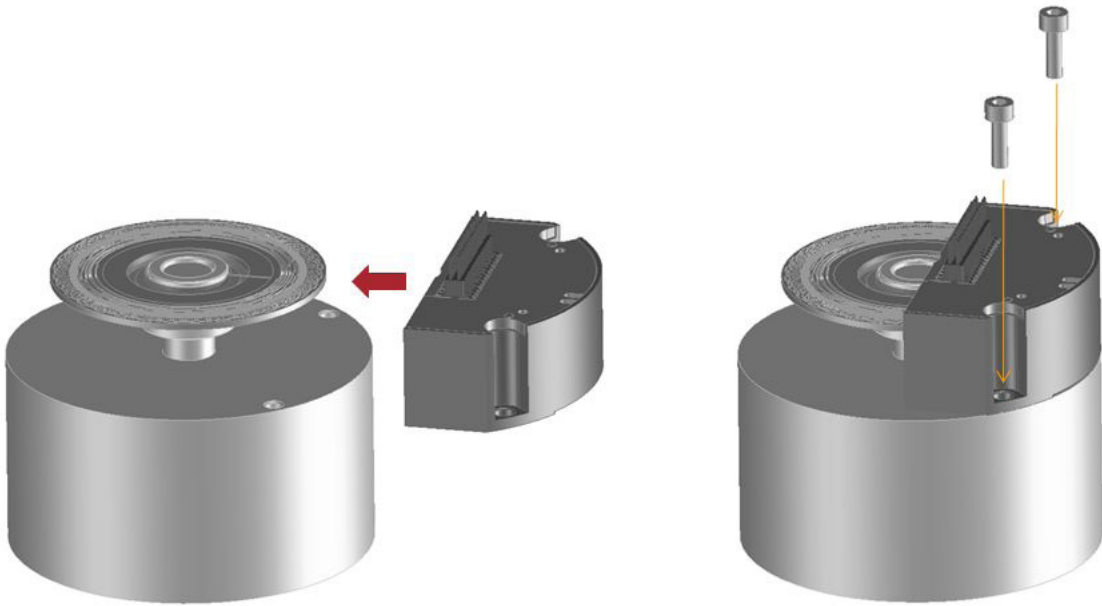
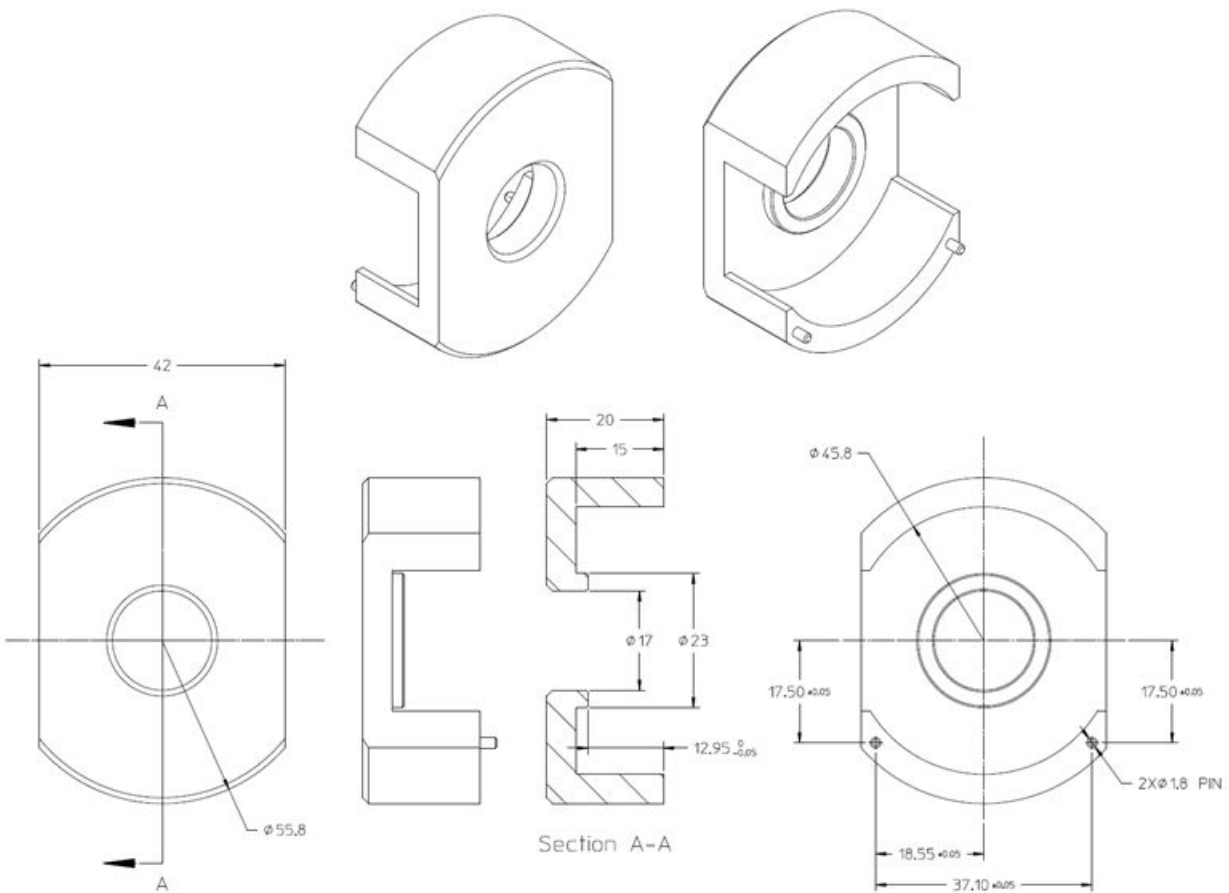


Figure 1e. Remove the set height tool and install encoder module

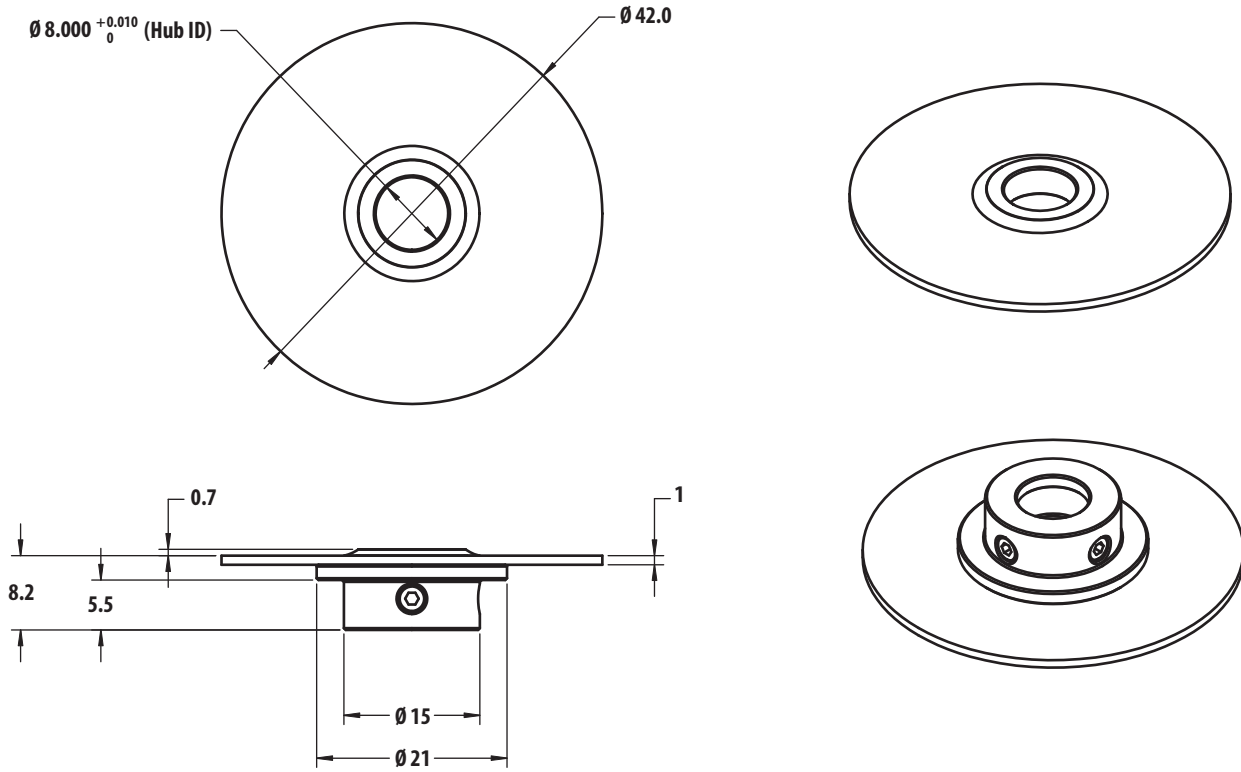
### Recommended set height tool design



- Notes:
1. All dimensions are in millimeter.
  2. Tolerance:  $X.X \pm 0.20$  mm.

Figure 2. Recommended Set Height Tool Design and Dimension

### Codewheel Dimension

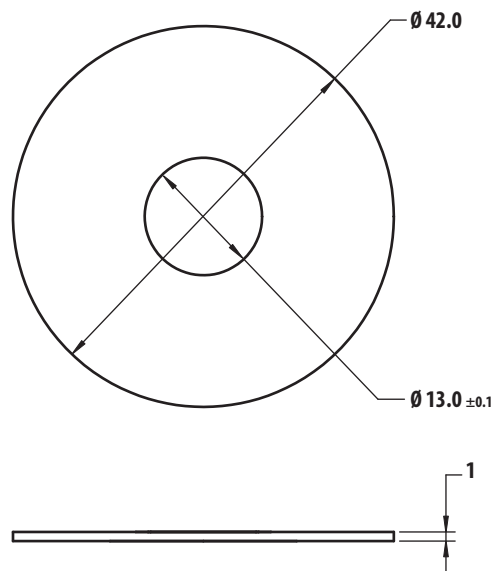


Notes:

1. All dimensions are in millimeter.
2. Tolerance:  $X.X \pm 0.20$  mm.

**Figure 3a. Dimension for codewheel with hub**

### HEDG-9000-H14



Notes:

1. All dimensions are in millimeter.
2. Tolerance:  $X.X \pm 0.20$  mm.

**Figure 3b. Bare Codewheel Dimension**

## Ordering Information

HEDG - 9000 - H 1

3 – Codewheel with hub  
4 – Bare Codewheel

For product information and a complete list of distributors, please go to our web site: [www.avagotech.com](http://www.avagotech.com)

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