

# SERIES AI25 BiSS

# ACURO

## Absolute Encoder

### Key Features

- Up to 22 Bit True Singleturn Positioning
- Onboard Diagnostics
- BiSS Interface



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Single-turn Resolution:** 10, 12, 13, 14, 17 Bit  
**Multi-turn Resolution:** 12 bit (only available with 12, 13, 14 or 17 bit ST resolution)  
**Linearity:** +/- 1/2 LSB  
**Absolute Accuracy:** ± 0.01° mechanical (36 arc-sec.)  
**Repeatability:** ± 0.002° mechanical (7.2 arc-sec.)  
**Code format:** Binary, Gray, Gray Excess, parameterization through *AcuroSoft*  
**Parameterization:** Resolution code type, sense of rotation, warning, alarm  
 Electrical  
**Connection:** Cable, M23 - 12 pole Conin connector, M12 - 8-pole connector  
**Supply voltage:** 5 VDC -5%/+10% or 10-30 VDC  
**Intrinsic current consumption:** 50 mA (ST), 100 mA (MT) not including output current  
**Output current:** 60 mA per bit, short circuit protected  
**Frequency response:** 500 kHz  
**Maximum cable length:** 400 m  
**Control Inputs:** Direction  
**Alarm output:** Warning and Alarm bits  
**Status LED:** Green = OK, Red = Alarm (IP64 only)  
**Preset Switch:** Sets encoder to zero output at present mechanical position (IP64 only)

### MECHANICAL

**Shaft diameter:**  
 Shaft: 6 mm (Servo Mount), 10 mm (Clamping Mount), 3/8" (Square Flange Mount)  
 Hubshaft: 10mm, 12 mm, 3/8", 1/2"  
**Maximum shaft load:**  
 6 mm shaft: 13 lb axial, 24 lb radial  
 10 mm shaft: 24 lb axial, 35 lb radial  
**Maximum shaft speed:** 10,000 RPM (continuous), 12,000 RPM (peak)  
**Starting torque:** < 1.4 in-oz  
**Weight (approx.):** 350 g ST, 400 g MT  
**Shaft tolerance (hubshaft only):** +/- 1.5 mm axial, +/- 0.2 mm radial  
**Flange configurations:** Square, Clamp, Servo, Hubshaft with flexible tether  
**Bearing life:**  
 1 x 10<sup>10</sup> revolutions at 35% full rated shaft load  
 1 x 10<sup>9</sup> revolutions at 75% full rated shaft load  
 1 x 10<sup>8</sup> revolutions at 100% full rated shaft load

### ENVIRONMENTAL

**Operating Temperature:** -40 to 100° C  
**Storage Temperature:** -40 to 100° C  
**Enclosure Rating:** IP64 or IP67  
**Shock:** 1,000 m/s<sup>2</sup> (6 ms)  
**Vibration:** 100 m/s<sup>2</sup> (10 to 2,000 Hz)



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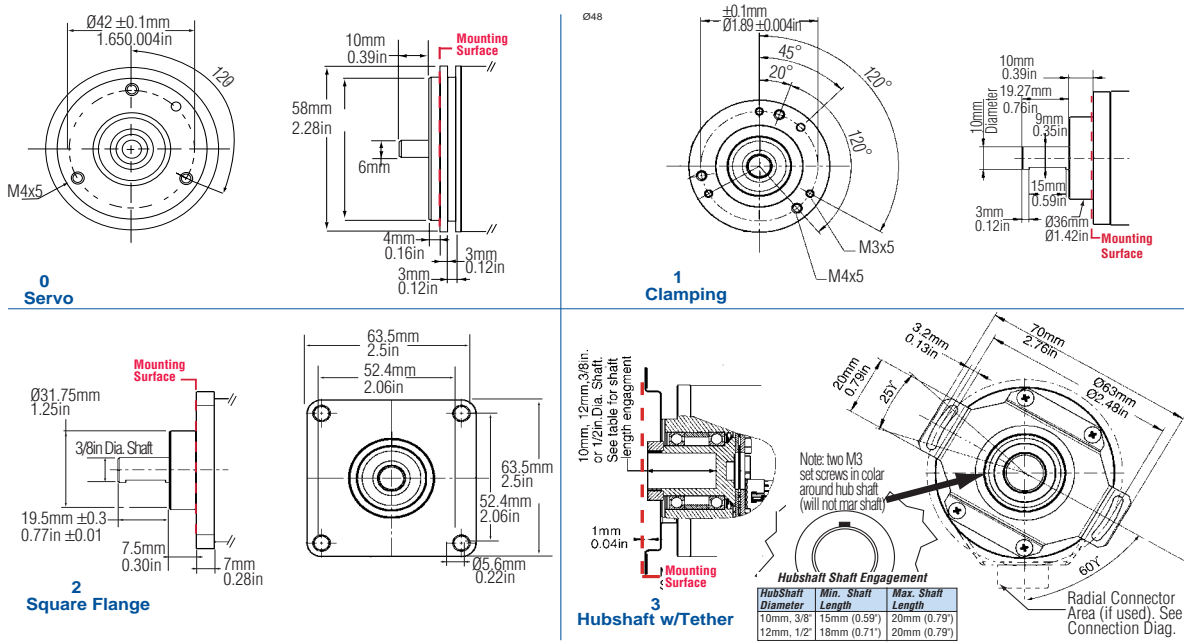
**Ordering Information**

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

| Code 1: Model   | Code 2: Bits  | Code 3: Mounting   | Code 4: Shaft Size  | Code 5: Protocol         | Code 6: Electrical                   | Code 7: Connector   |
|---|---|--|---|--------------------------|--------------------------------------|---|
| <b>AI25</b>   | <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"/>  |
| <b>AI25</b><br>Size25<br>Acuro<br>Absolute<br>Encoder | <b>Single-Turn</b><br><b>0010</b> 10 Bit<br><b>0012</b> 12 Bit<br><b>0013</b> 13 Bit<br><b>0014</b> 14 Bit<br><b>0017</b> 17 Bit<br><br><b>Multi-Turn</b><br><b>1212</b> 12 Bit Multi-Turn, 12 Bit Single-Turn<br><b>1213</b> 12 Bit Multi-Turn, 13 Bit Single-Turn<br><b>1214</b> 12 Bit Multi-Turn, 14 Bit Single-Turn<br><b>1217</b> 12 Bit Multi-Turn, 17 Bit Single-Turn | Available when Code 4 is 0 or A<br><b>0</b> Servo*<br><br>Available when Code 4 is 2 or C<br><b>1</b> Clamping*<br><br>Available when Code 4 is 1 or B<br><b>2</b> Square flange**<br><br>Available when Code 4 is 3, 4, 5 or 6<br><b>3</b> Hubshaft w/tether†<br>* 58mm Dia.<br>** 2.5" Square<br>† 63mm BC | <b>w/o shaft seal (IP64)</b><br><b>0</b> 6 mm<br><b>1</b> 3/8"<br><b>2</b> 10 mm<br><b>3</b> 3/8" Hub Shaft<br><b>4</b> 12 mm Hubshaft<br><b>5</b> 1/2" Hubshaft<br><b>6</b> 10 mm Hub Shaft<br><br><b>w/ shaft seal (IP67)</b><br><b>A</b> 6 mm<br><b>B</b> 3/8"<br><b>C</b> 10 mm | <b>A</b> BiSS            | <b>0</b> 5 VDC<br><b>2</b> 10-30 VDC | <b>0</b> 1.5m axial cable<br><b>1</b> 1.5m radial cable<br><b>2</b> M23 Conin 12 pin axial CW<br><b>3</b> M23 Conin 12 pin radial CW<br><b>C</b> M12, 8-pole connector axial<br><b>D</b> M12, 8-pole connector radial |

**DIMENSIONS**

Code 3: Mounting



Code 7: Connector

