

# Series AI25 Interbus Interface

- Up to 12 Bit single-turn resolution
- 4096 revolutions of multi-turn resolution
- Short installation depth
- Safety through self-diagnostics
- Solid shaft and hollow shaft versions
- -40°C to +85°C Operating temperature



**ACURO**



## APPLICATION/INDUSTRY

The Dynapar brand ACURO Absolute Encoder offers a modern full-feature design equipped with Interbus interface.

## DESCRIPTION

The **Acuro AI25** optical absolute industrial encoder is available in a single-turn or multi-turn version. The multi-turn design is based on a reliable high-speed gear with optical scanning and the latest generation of OptoASIC technology.

The mechanical concept is based on a double ball bearing design, which is available as a solid-shaft or hollow-shaft version in common shaft diameters.

## FEATURES AND BENEFITS

- Compact design to save valuable space
- Low power consumption
- Fast delivery of any model variant
- Additional field-bus and point-to-point interfaces available

## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Single-turn Resolution:** 10, 12 Bit  
**Multi-turn Resolution:** 12 bit (only available with 12 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:** 32 Bit Binary

### ELECTRICAL

**Connection:** Bus Cover with spring terminal clamps; cable with connector  
**Supply voltage:** 10-30 VDC  
**Intrinsic current consumption:** 220 mA (ST), 250 mA (MT)  
**Baud Rate:** 500 kbaud according to ENCOM  
**Interface:** Interbus, ENCOM Profile K3 (parameterizable)  
**Programmable:** Direction, scaling factor, preset, offset

### 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

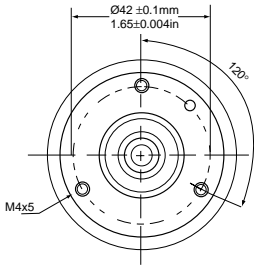
### ENVIRONMENTAL

**Operating Temperature:** -40 to 85° 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)

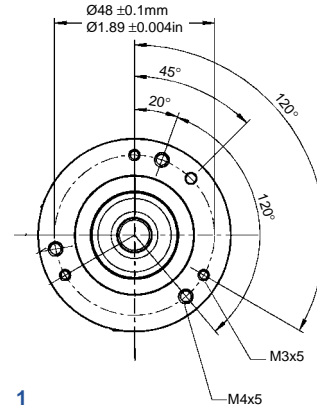
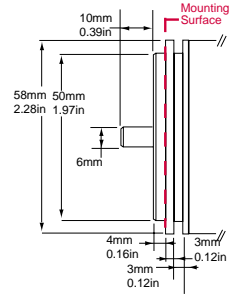
Code 1: Model	Code 2: Bits	Code 3 :Mounting	Code 4: Shaft Size	Code 5: Protocol	Code 6: Electrical	Code 7: Connector
<b>AI25</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>AI25</b> Size25 Acuro Absolute Encoder	<b>Single-Turn</b>	Available when Code 4 is 0 or A	<b>w/o shaft seal (IP64)</b> 0 6 mm 1 3/8" 2 10 mm 3 3/8" Hub Shaft 4 12 mm Hubshaft 5 1/2" Hubshaft 6 10 mm Hub Shaft	5 Interbus K3	2 10-30 VDC	<b>E</b> Bus Cover 3 Strain Relief Exits. Internal T-coupler included
	0010 10 Bit	0 Servo*				
	0012 12 Bit	Available when Code 4 is 2 or C				
	<b>Multi-Turn</b>	1 Clamping*				
1212 12 Bit Multi-Turn, 12 Bit Single-Turn	Available when Code 4 is 1 or B	2 Square flange**	<b>w/ shaft seal (IP67)</b> A 6 mm B 3/8" C 10 mm			
Available when Code 4 is 3, 4, 5 or 6	3 Hubshaft w/tether†					
		* 58mm Dia. ** 2.5" Square † 63mm BC				<b>G</b> Bus Cover 2 Strain Relief Exits and 1 M12, 5-Pole Connector (for Tico display). Internal T-coupler included
						<b>H</b> Double Conin. Internal T-coupler included

# Series AI25 Interbus Interface

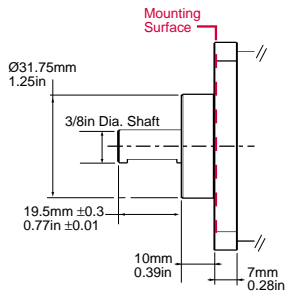
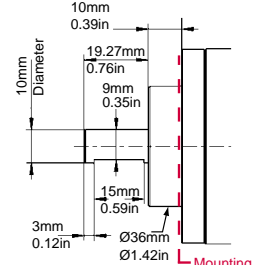
## Code 3: Mounting



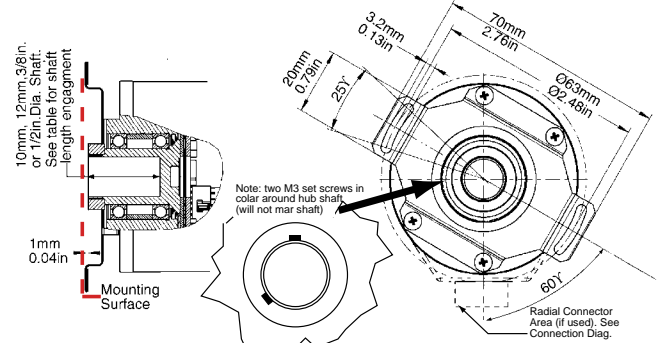
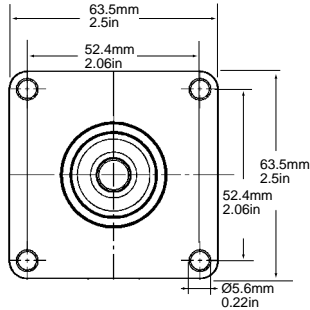
**0**  
Servo



**1**  
Clamping



**2**  
Square Flange

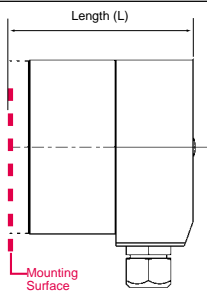


**3**  
Hubshaft w/Tether

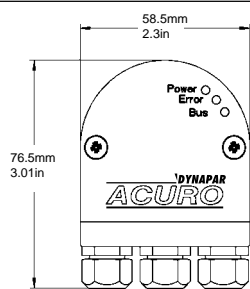
**Hubshaft Shaft Engagement**

HubShaft Diameter	Min. Shaft Length	Max. Shaft Length
10mm, 3/8"	15mm (0.59")	20mm (0.79")
12mm, 1/2"	18mm (0.71")	20mm (0.79")

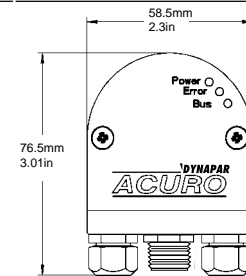
## Code 7: Connector



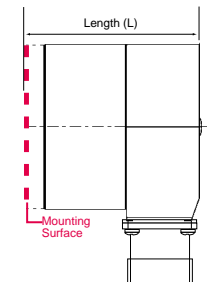
**E**  
3 Strain Relief Exits



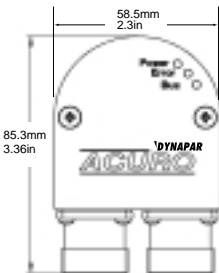
**G**  
2 Strain Relief Exits  
1 M12, 5-pole Connector\*



\*M12, 5-pole Connector used to interface Hengstler Tico 731 LCD display



**H**  
Double Conin



Length (L) Mounting Surface to Rear  
For connector types E, and H

Mount (Code 3)	Single-Turn	Multi-Turn
(0) Servo	63.3/2.49	72.3/2.85
(1) Clamping	62.3/2.45	71.3/2.81
(2) Square Flng	64.8/2.55	73.8/2.91
(3) Hubshaft	72.2/2.84	81.2/3.2