



ACURO with Profibus Interface

DESCRIPTION

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

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.

Series AI25™
Absolute Encoder
With Profibus Interface

APPLICATIONS:

Ideal for applications requiring digital feedback to be sent over an industrial bus network

- Elevators
- Machine Tool
- Assembly
- Positioning

INDUSTRIES

Manufacturing, Assembly, Material Handling and any other where precise, repeatable bidirectional position measurement is required.

FEATURES/BENEFITS

- Compact design to save valuable space
- Up to 14 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
- Low power consumption
- Fast delivery of any model variant
- Additional field-bus and point-to-point interfaces available



ACURO with Profibus Interface

Series AI25

Absolute Encoder With Profibus Interface

SPECIFICATIONS*

STANDARD OPERATING CHARACTERISTICS
 Single-turn Resolution: 10, 12, 13, 14 Bit
 Multi-turn Resolution: 12 bit
 Linearity: +/- 1/2 LSB
 Absolute Accuracy: ±0.01° mechanical (36 arc-sec.)
 Repeatability: ±0.002° mechanical (7.2 arc-sec.)
 Code format: Binary

ENVIRONMENTAL
 Operating Temperature: -40 to 85° C
 Storage Temperature: -40 to 100° C
 Enclosure Rating: IP64 or IP67
 Shock: 1,000 m/s² (6 ms)
 Vibration: 100 m/s² (10 to 2,000 Hz)

ELECTRICAL
 Connection: Bus Cover with spring terminal clamps
 Supply voltage: 10-30 VDC
 Intrinsic current consumption: 200 mA (ST), 220 mA (MT)
 Baud Rate: 12 Mbaud
 Interface: Profibus-DP, Encoder Profile
 Programmable: According to Class 2
 Special Functions: Speed, Acceleration

MECHANICAL
All Types
 Maximum shaft speed: 10,000 RPM (continuous), 12,000 RPM (peak)
 Starting torque: < 1.4 in-oz
Bearing life:
 1 x 10¹⁰ revolutions at 35% full rated shaft load
 1 x 10⁹ revolutions at 75% full rated shaft load
 1 x 10⁸ revolutions at 100% full rated shaft load
Weight (approx.): 350 g ST, 400 g MT
Shafted Types
Flange configurations: Square, Clamp, Servo
Shaft diameter: 6 mm (Servo Mount), 10 mm (Clamping Mount), 3/8" (Square Flange Mount)
Maximum shaft load:
 6 mm shaft: 13 lb axial, 24 lb radial
 10 mm shaft: 24 lb axial, 35 lb radial
 3/8" Shaft: 24 lb axial, 35 lb radial
Hubshaft Types
Flange configuration: Hubshaft with flexible tether
Accepted Mating Shaft Diameter (min./max.):
 6mm (5.984/5.996); 10mm (9.980/9.995);
 12 mm (11.976/11.994); 3/8" (.3742/.3748);
 1/2" (.4991/.4997)
Allowable Mating Shaft Movement (hubshaft only): +/- 1.5 mm axial, +/- 0.2 mm radial

* Specifications are for base models with standard features only unless otherwise noted. Specifications subject to change without notice in accordance with our DBS policy of continuous improvement. All product and brand names are trademarks of their respective owners. All rights reserved.
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 Dynapar Brand AI25 PB Data Sheet (8/05)

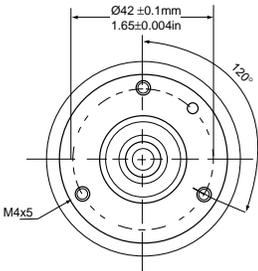
Code 1: Mode	Code 2: Bits	Code 3 :Mounting	Code 4: Shaft Size	Code 5: Protocol	Code 6: Electrical	Code 7: Connector
AI25	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI25 Size25 Acuro Absolute Encoder	Single-Turn 0010 10 Bit 0012 12 Bit 0013 13 Bit 0014 14 Bit	Available when Code 4 is 0 or A 0 Servo* Available when Code 4 is 2 or C 1 Clamping*	w/o shaft seal (IP64) 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	6 Profibus	2 10-30 VDC	E Bus Cover 3 Strain Relief Exits. Internal T-coupler included G Bus Cover 2 Strain Relief Exits and 1 M12, 5-Pole Connector (for Tico display). Internal T-coupler included H Bus Cover Double Conin. Internal T-coupler included
	Multi-Turn 1212 12 Bit Multi-Turn, 12 Bit Single-Turn 1213 12 Bit Multi-Turn, 13 Bit Single-Turn 1214 12 Bit Multi-Turn, 14 Bit Single-Turn	Available when Code 4 is 1 or B 2 Square flange** Available when Code 4 is 3, 4, 5 or 6 3 Hubshaft w/tether† * 58mm Dia. ** 2.5" Square † 63mm BC	w/ shaft seal (IP67) A 6 mm B 3/8" C 10 mm			



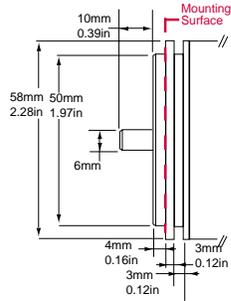
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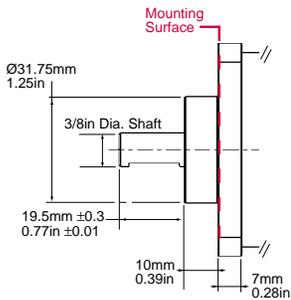
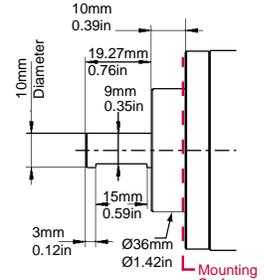
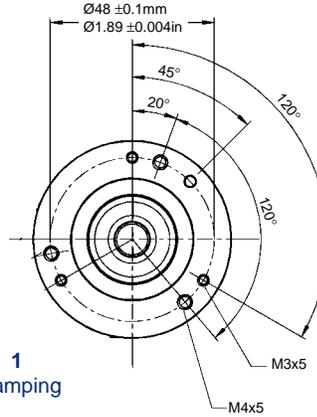
Code 3: Mounting



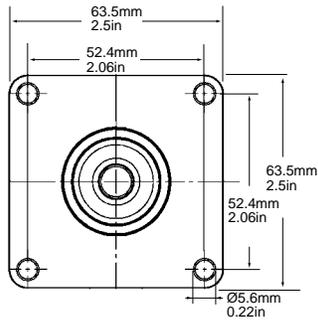
0
Servo



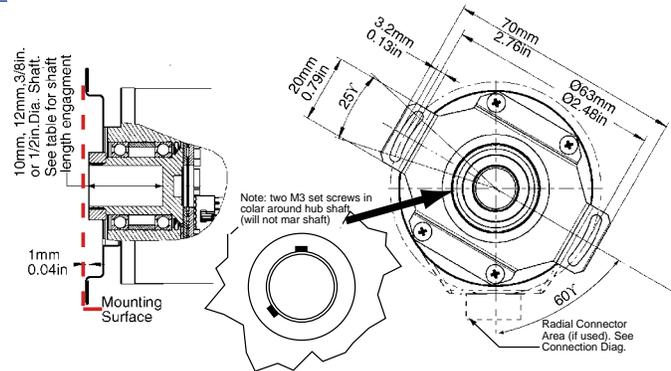
1
Clamping



2
Square Flange

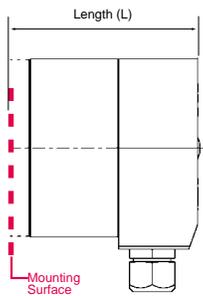


3
Hubshaft w/Tether

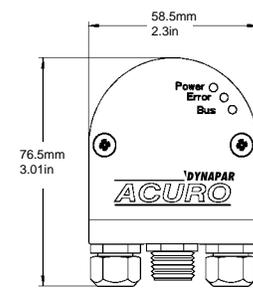
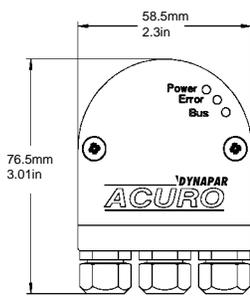


HubShaft Diameter	Min. Shaft Length	Max. Shaft Length
10mm, 3/8"	15mm (0.59")	20mm (0.79")
12mm, 1/2"	18mm (0.71")	20mm (0.79")

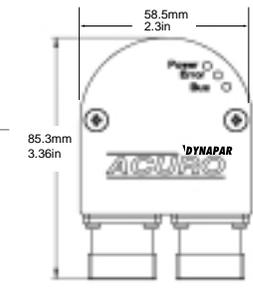
Code 7: Connector



E
3 Strain Relief Exits



H
Double Conin



G
2 Strain Relief Exits
1 M12, 5-pole Connector*
*M12, 5-pole Connector used to interface Hengstler Tico 731 LCD display

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

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

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