Series AI25 Profibus Interface

- *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*

CE

ACURO

APPLICATION/INDUSTRY

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

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

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^{10} revolutions at 35% full rated shaft load
1 x 10^{9} revolutions at 75% full rated shaft load
1 x 10^{8} revolutions at 100% full rated shaft load

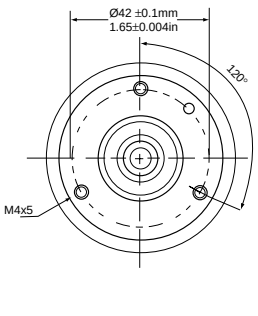
ENVIRONMENTAL

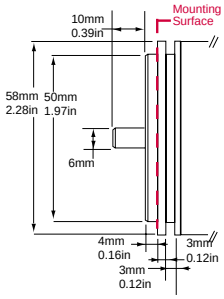
Operating Temperature: -40 to 85° C
Storage Temperature: -40 to 100° C
Enclosure Rating: IP64 or IP67
Shock: 1,000 m/s² (6 ms)
Vibration: 100 m/s² (10 to 2,000 Hz)

Code 1: Model	Code 2: Bits	Code 3 :Mounting	Code 4: Shaft Size	Code 5: Protocol	Code 6: Electrical	Code 7: Connector
AI25	☐☐☐☐	☐	☐	☐	☐	☐
AI25 Size25 Acuro Absolute Encoder	**Single-Turn** **0010** 10 Bit **0012** 12 Bit **0013** 13 Bit **0014** 14 Bit **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 0 or A **0** Servo* Available when Code 4 is 2 or C **1** Clamping* 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/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 **w/ shaft seal (IP67)** **A** 6 mm **B** 3/8" **C** 10 mm	**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

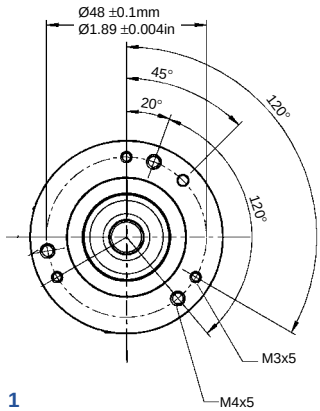
Series AI25 Profibus Interface

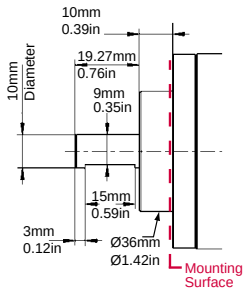
Code 3: Mounting



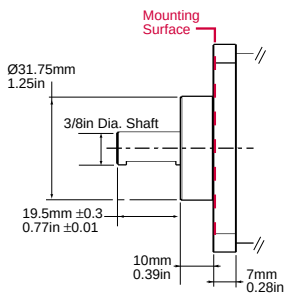


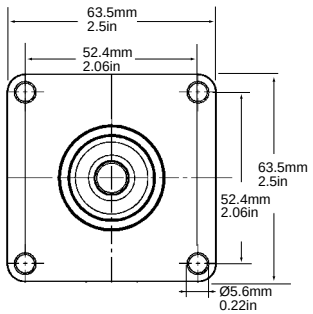
0
Servo



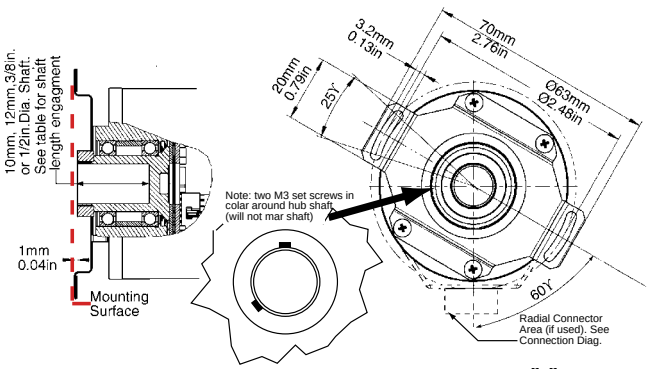


1
Clamping





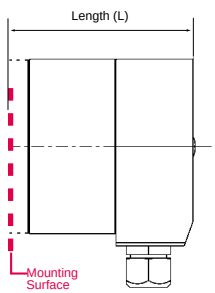
2
Square Flange

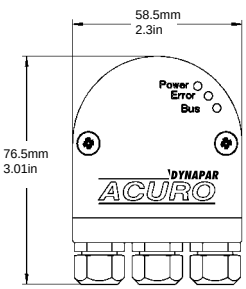


3
Hubshaft w/Tether

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

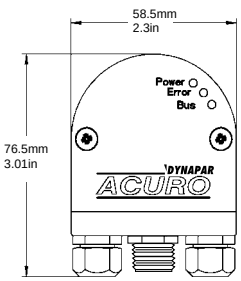




E
3 Strain Relief Exits

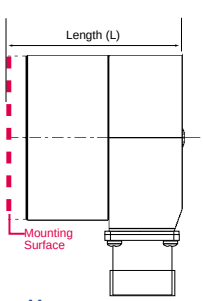
Length (L) Mounting Surface to Rear
For connector types E, G, H & L

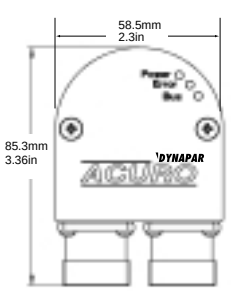
Mount (Code 3)	Single-Turn	Multi-Turn
(**0**) Servo	63.3/2.49	72.3/2.85
(**1**) Clamping	62.3/2.45	71.3/2.81
(**2**) Square Flng	64.8/2.55	73.8/2.91
(**3**) Hubshaft	72.2/2.84	81.2/3.2



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