

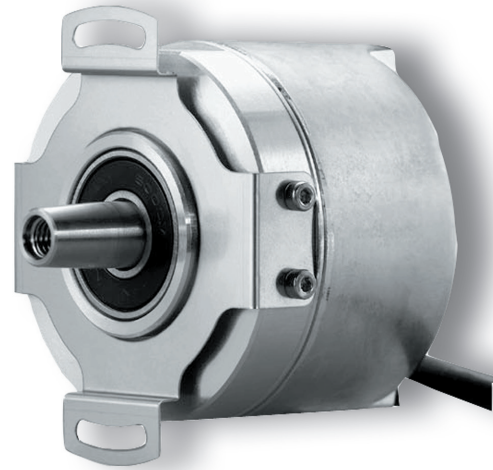
# SERIES AD25

# HENGSTLER

## Single- / Multi- Turn Absolute Encoder

### Key Features

- **Special Conical Shaft for Concentric Motor Mounting**
- **Up to 22 Bits of Singleturn Absolute Positioning for Smooth Low Speed Motor Performance**
- **Integrated On-Board Diagnostics to Monitor Encoder Health**



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS:

**Code:** Absolute, Optical  
**Resolution Single-turn:** 13 and 22 Bit  
**Resolution Multi-turn:** 12 Bit  
**Absolute Accuracy:**  $\pm 0.01^\circ$  mechanical (36 arc-sec.)  
**Repeatability:**  $\pm 0.002^\circ$  mechanical (7.2 arc-sec.)

### ELECTRICAL:

**Interface:** BiSS, SSI  
**Input Power:** 5 VDC, +10% / -5%  
**Current Consumption w/o Load:** 100 mA (ST), 150 mA (MT)  
**Output Code:** Gray, Binary

### SSI Interface:

Resolution: 2048  
 Format: A, B Quadrature, 1 Vpp Sine wave  
 Number of lines: 4 unidirectional (2 for clock; 2 for data)  
 Electrical Interface: RS 422  
 Transmission Speed: 70 kHz to 2 MHz per SSI definition

### ELECTRICAL (Cont.):

**BiSS Interface:**  
**Signals:** Clock unidirectional (from master to encoder); Data unidirectional (from encoder to master)  
**Electrical Interface:** RS 422  
**Number of lines:** 4 unidirectional (2 for clock and 2 for data)  
**Transmission Speed:** 70 kHz – 10 MHz  
**Transmission Security:** 1 start bit, 1 stop bit, 6 Bit CRC  
**Diagnostic Functions:** possible failure modes are constantly checked with the following functions:  
 LED Current Sensing: Pollution, condensation, over temperature  
 Single-Step Check: Disk pollution or damage, condensation, mechanical overload  
 Temperature Monitoring: Warning message if the user defined limits have been reached/exceeded  
**Noise Immunity:** Tested to EN61326-1  
**Electrical Immunity:** Tested to EN61326-1

### MECHANICAL:

**Diameter:** 2.28", Length: 1.85"  
**Shaft Size:**  
**Tapered Solid Shaft:** 10 mm diameter; Cone 1:10  
**Tapered Hub Shaft:** 10 mm diameter; Cone 1:10  
**Shaft Loading:** 5 lb. axial, 20 lb. radial  
**Shaft Speed:** 10,000 RPM (continuous), 12,000 RPM (peak-ST only)  
**Starting Torque:** < 1.4 in-oz.  
**Housing Material:** Stainless Steel  
**Shaft Material:** Stainless Steel  
**Disc Material:** Glass  
**Weight:** 6.2 oz.

### ENVIRONMENTAL:

**Operating Temperature:** -15 °C ...+120°C  
**Storage Temperature:** -25 °C ...+85 °C  
**Shock:** 100 G for 6 msec duration  
**Vibration:** 10 G (10 to 2000 Hz)  
**Humidity:** Up to 75%, (no condensation allowed)  
**Enclosure Rating:** IP40

## CONNECTIONS

PIN	1b	2b	3b	4b	5b	6b
Name	Power Supply ( $U_p$ )	Clock	B -	0 V ( $U_n$ )	A -	Data
Color	Gray/Pink	White	Red	White/Green	Yellow	Black
PIN	1a	2a	3a	4a	5a	6a
Name	$\overline{\text{Data}}$	A +	0 V -Sen	B +	$\overline{\text{Clock}}$	$U_p$ Sensor
Color	Violet	Green	Brown/Green	Blue	Brown	Blue/Red

$U_p$  = power Supply  
 Sensor is connected to Power Supply and 0 V ( $U_n$ )  
 Shield connected to case

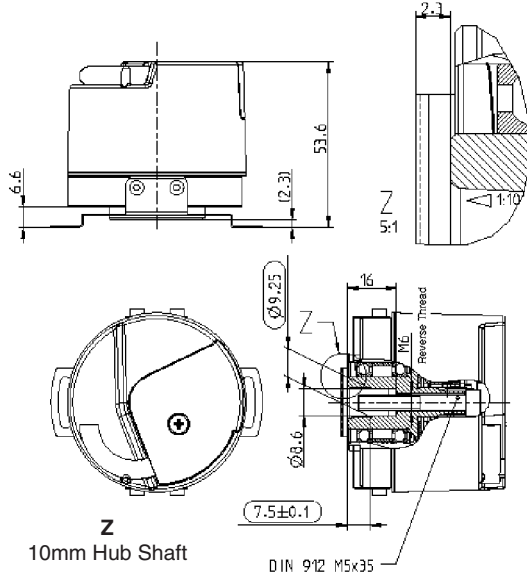
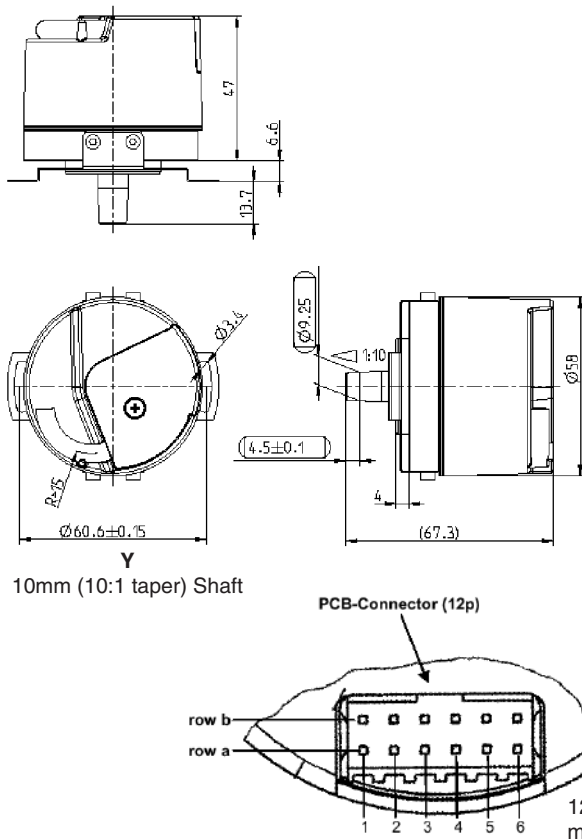
### Ordering Information

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>AD25</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>AD25</b> Size25 Acuro Absolute Encoder	<b>Single-Turn</b> <b>0013</b> 13 Bit <b>0022</b> 22 Bit  <b>Multi-Turn</b> <b>1213</b> 12 Bit Multi-Turn, 13 Bit Single-Turn  <b>1222</b> 12 Bit Multi-Turn, 22 Bit Single-Turn	<b>4</b> Spring Tether	<b>Y</b> 10mm Shaft (10:1 Taper)  <b>Z</b> 10mm Hub Shaft (10:1 Taper)	Available when Code 2 is 0022 or 1222 <b>A</b> BiSS-B ( <b>BI</b> ) <b>L</b> BiSS-B (+SinCos 1Vpp) ( <b>BC</b> ) <b>M</b> BiSS-C ( <b>BE</b> ) <b>N</b> BiSS-C (+SinCos 1Vpp) ( <b>BV</b> )  Available when Code 2 is 0013 or 1213 <b>F</b> SSI Gray (+SinCos 1Vpp) ( <b>SC</b> )	<b>0</b> 5 VDC	<b>M</b> Drive cable, 1 foot (30 cm)

### Dimensions (mm)

#### Code 4: Shaft Size



12 pin PCB connector manufacture Berg, type Minitek



WWW.DYNAPAR.COM

Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA

**Customer Service:**  
 Tel.: +1.800.873.8731  
 Fax: +1.847.662.4150  
 custserv@dynapar.com

**Technical Support**  
 Tel.: +1.800.234.8731  
 Fax: +1.847.662.4150  
 dynapar.techsupport@dynapar.com

**European Sales Representative**  
 Hengstler GmbH  
 Uhlandstrasse 49, 78554 Aldingen  
 Germany  
 www.hengstler.de