

SERIES AI25 EtherCAT® HENGSTLER

Absolute Encoder

Key Features

- **Best Shock and Vibration Resistance In Its Class** (400G shock, 30G vibration)
- **High Speed 10,000 RPM Continuous Operation** (12,000 RPM Short Term)
- **Extremely Fast Cycle Times** (62.5 μ s)
- **Extended Temperature Range** (-40°C... +85°C)
- **Customizable Resolution and Mounting Style**
- **Device Data: Position, Speed, Temperature, Diagnostic Data, Alarms**
- **Device Configuration: Resolution, Total Measuring Range, Preset, Offset, Direction, Position, Limits, Scaling, Residual Value Function, Speed Limits, Temperature Limits**



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS:

Code: Absolute, Optical

Resolution Single-turn: 10 - 22 Bit

Resolution Multi-turn: 12 Bit

Linearity: $\pm 1/2$ LSB up to 14 Bit

Absolute Accuracy (typ.): $\pm 35''$

Repeatability (typ.): $\pm 10''$

ELECTRICAL:

Interface: EtherCAT CoE, FoE

Output Code: Binary

Input Power: 7 - 30 VDC

Current w/o load: (typ.) 24V: 85 mA (ST) max; 200 mA (MT)

Device Data: position, speed, temperature, diagnostic data, alarms

Device Configuration: resolution, total measuring range, preset, offset, direction, position limits, scaling, residual value function, speed limits, temperature limits

Updating of values / Cycle Time: 62.5 μ s min.

Noise Immunity: Tested to EN61326-1

Electrical Immunity: Tested to EN61326-1

Termination: Bus cover with 3x M12 connectors

MECHANICAL

Shaft Diameter: 6-12mm (solid shafts), 9.52mm – 14mm (hub shafts)

Mounting Flanges: Synchro Flange, Clamping Flange, Tether Flange, Square Flange

Shaft Load (axial / radial): 40 N / 80 N

Axial/Radial Endplay of Mating Shaft (Hub Shaft only): ± 1.5 mm, ± 0.2 mm

Maximum Speed: 10.000 U/min (continuous duty), max. 12.000 U/min (short term)

Starting Torque (at 20 °C): typ. $\leq 0,05$ Nm (lower values available upon request)

Moment of Inertia: ca. 3.8×10^{-6} kgm²

Housing Material: Aluminum

Shaft Material: Stainless Steel

Disc Material: Glass

Weight: 4.8 oz. (420 g) ST/ 15.9 oz. (450 g) MT

ELECTRICAL CONNECTIONS

Bus cover with 3x M12 connectors

Pin	BusPort IN	Supply voltage	Bus Port OUT
1	TxD+	UB in	TxD+
2	RxD+	N.C.	RxD+
3	TxD-	0 V in	TxD-
4	RxD-	N.C.	RxD
Shield	Shield ¹	Shield ¹	Shield ¹

¹Shield connected to encoder housing

ENVIRONMENTAL

Operating Temperature: -40 °C ... +85 °C

Storage Temperature: -40 °C ... +85 °C

Shock: 400g, 4000 m/s² (2 ms) (half-sine)

Vibration: 30g, 300 m/s² (5 - 500 Hz)

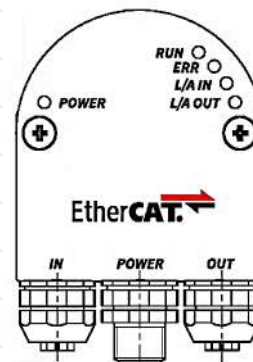
Humidity: Up to 75%, (no condensation allowed)

Enclosure Rating:

Housing: IP65 and IP67

Shaft: IP64 or IP67

General Design: As per DIN EN 61010-1, protection class III, contamination level 2, overvoltage class II



HENGSTLER SERIES AI25 EtherCAT®

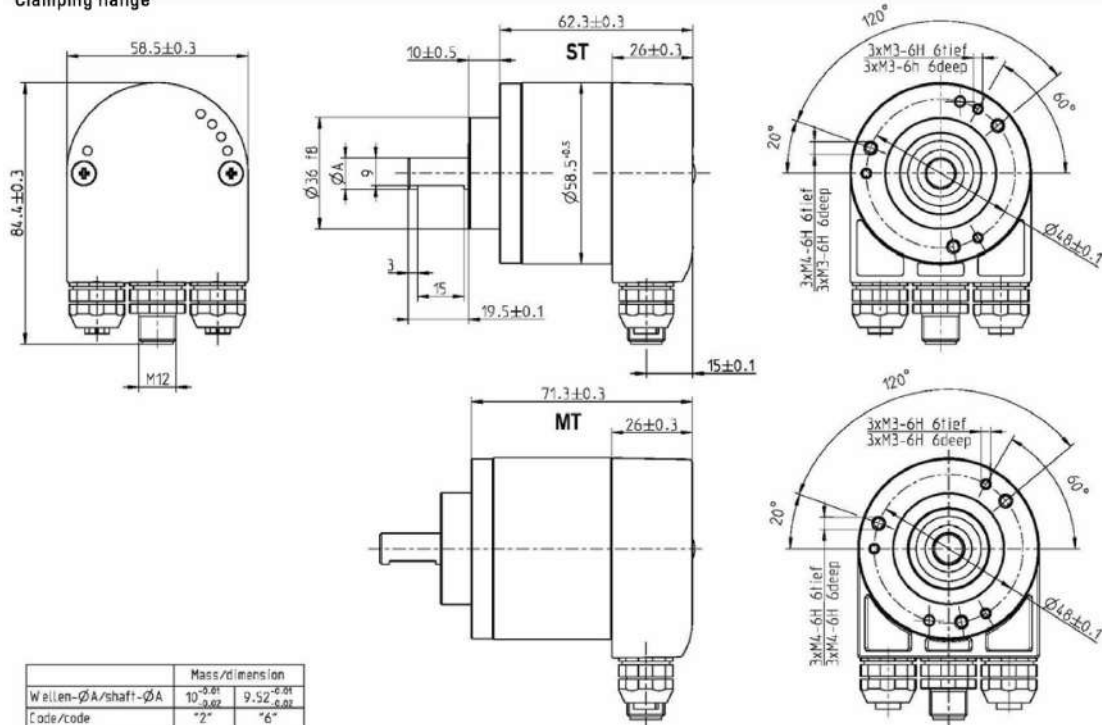
Ordering Information

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

Code 1: Model	Code 2: Resolution	Code 3 :Mounting	Code 4: Shaft Size	Code 5: Protocol	Code 6: Electrical	Code 7: Connector
AI25	□ □ □ □	□	□	T	3	R
AI25 Size25 Absolute Encoder	0010	10 Bit ST	w/o Shaft Seal (IP64) 0 6 mm 1 3/8" 2 10 mm 3 3/8" Hubshaft 4 12 mm Hubshaft 5 1/2" Hubshaft 6 10 mm Hubshaft 7 14 mm Hubshaft 8 12 mm 9 8 mm	T EtherCAT (EC)	3 7-30 VDC	R Bus Cover with 3 M12 Connectors
	0012	12 Bit ST				
	0013	13 Bit ST				
	0014	14 Bit ST				
	0016	16 Bit ST	Available when Code 4 is 1, 2 or B, C			
	0017	17 Bit ST				
	0018	18 Bit ST	1 Clamping*			
	0019	19 Bit ST	2 Square Flange**			
	0020	20 Bit ST				
	0022	22 Bit ST	Available when Code 4 is 3, 4, 5 or 6			
	1212	12 Bit MT, 12 Bit ST	3 Hubshaft w/ Tether† * 58mm Dia. ** 2.5" Square † 63mm BC			
	1213	12 Bit MT, 13 Bit ST				
	1214	12 Bit MT, 14 Bit ST				
	1216	12 Bit MT, 16 Bit ST				
	1217	12 Bit MT, 17 Bit ST				
	1218	12 Bit MT, 18 Bit ST				
	1219	12 Bit MT, 19 Bit ST				
	1220	12 Bit MT 20 Bit ST				

DIMENSIONS

Clamping flange



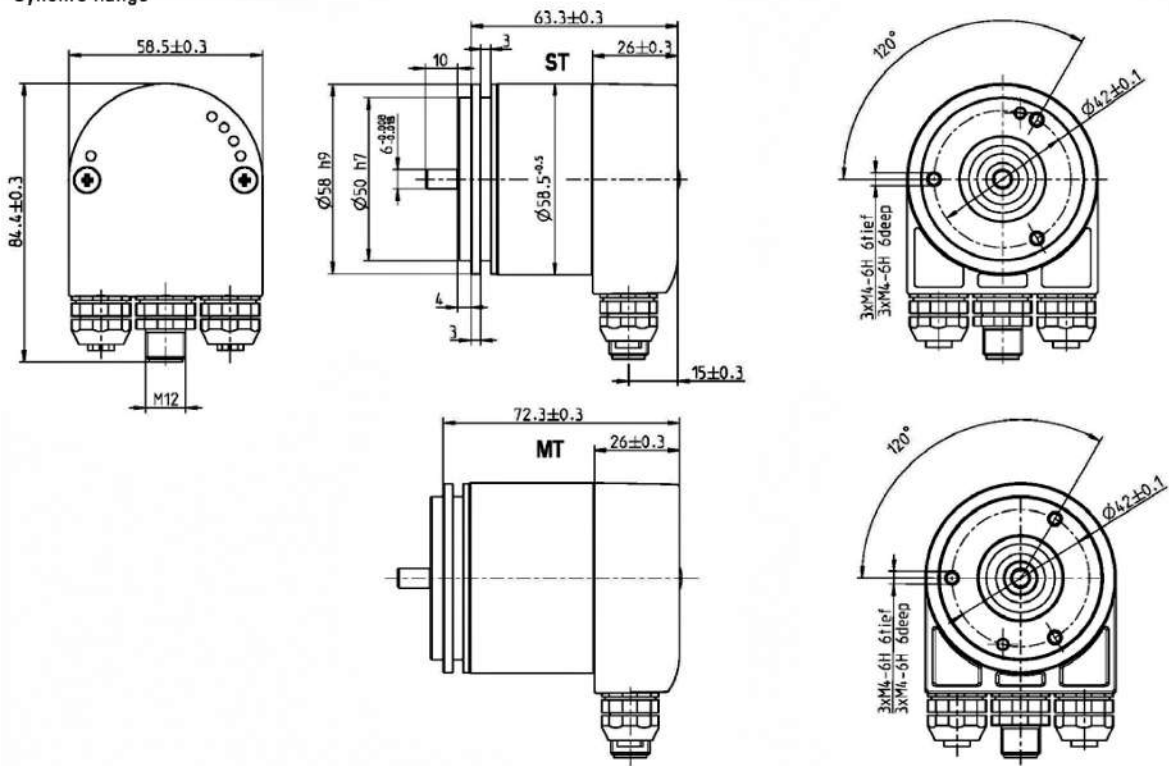
Dimensions in mm

SERIES AI25 EtherCAT®



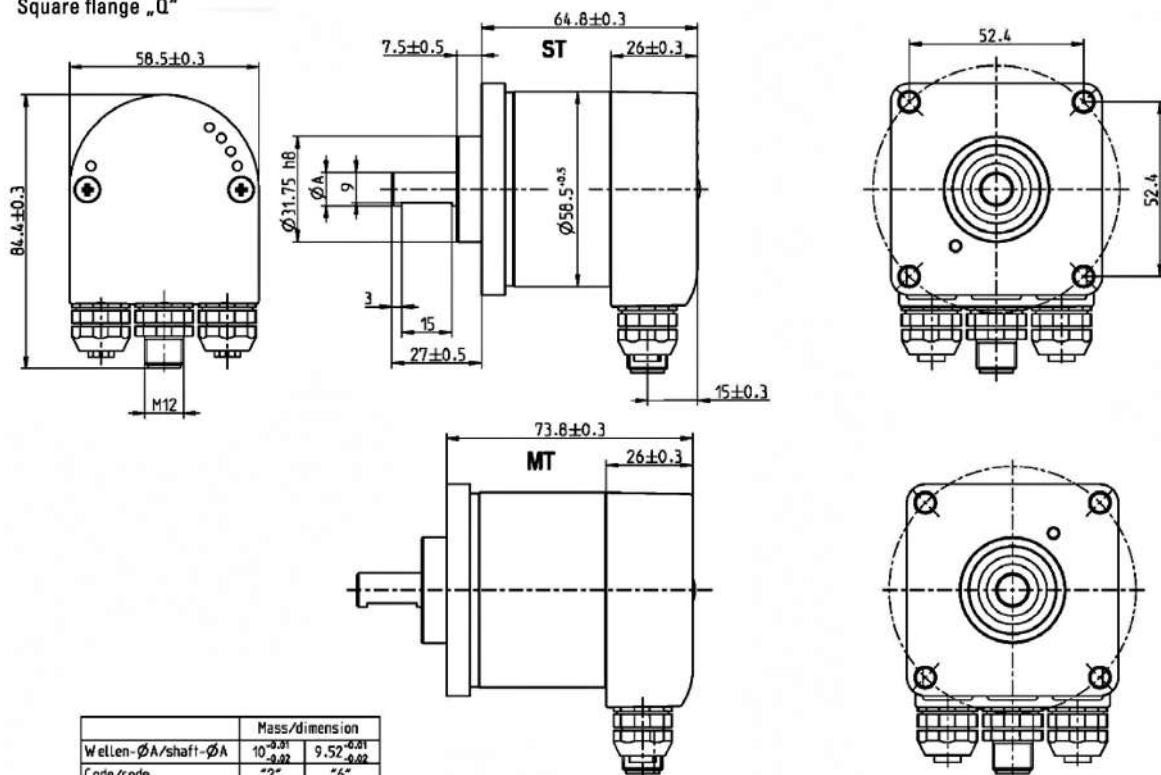
DIMENSIONS

Synchro flange



Dimensions in mm

Square flange „Q“



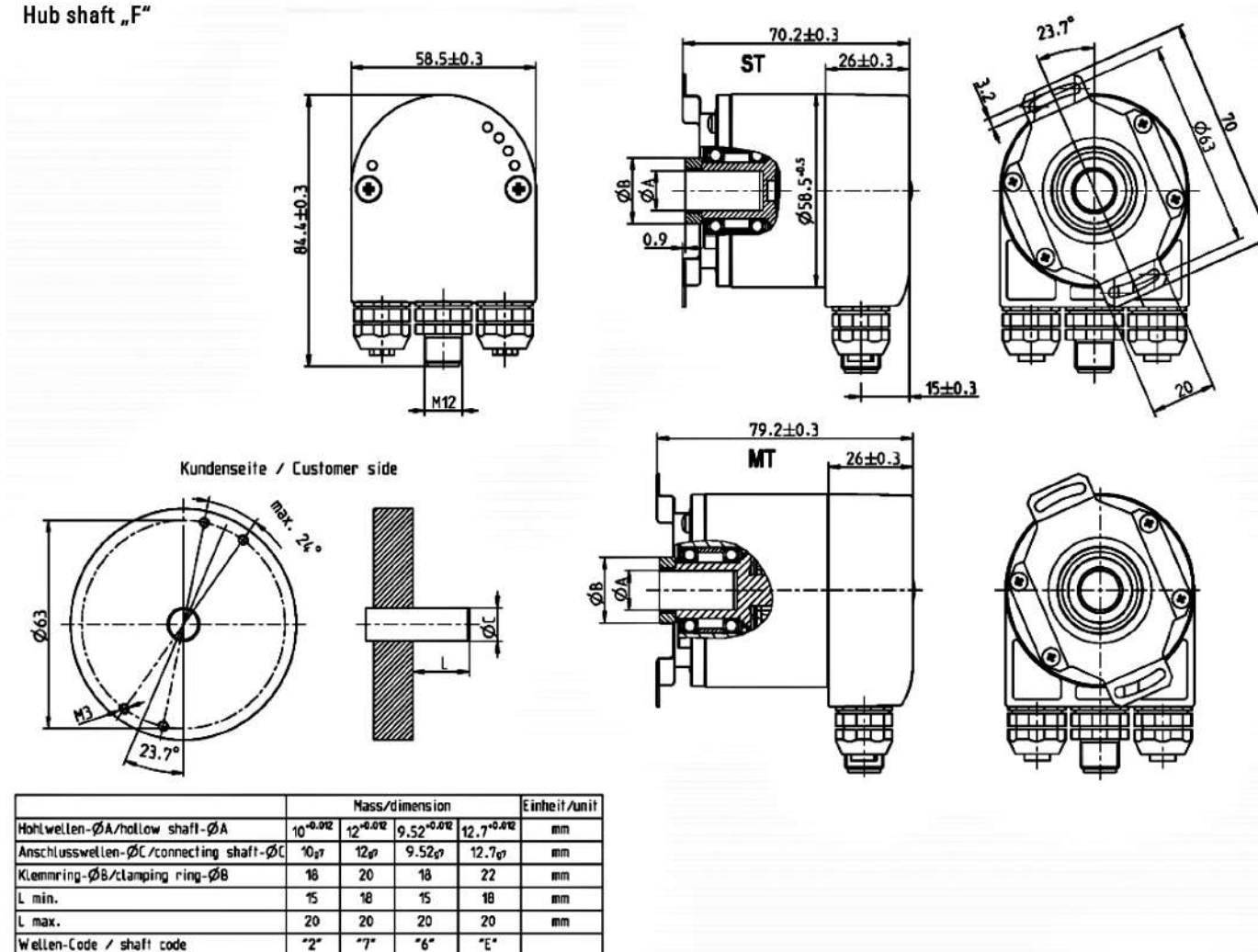
Dimensions in mm

	Mass/dimension	
Wellen-Ø A/shaft-Ø A	10 ^{+0.01} _{-0.02}	9.52 ^{+0.01} _{-0.02}
Code/code	"2"	"6"

HENGSTLER

DIMENSIONS

Hub shaft „F“



L = Eintauchtiefe der Anschlusswelle in den Geber
L = Length of customers shaft inside of encoder

Dimensions in mm



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