SERIES AR62/AR63 HENGSTLER

Magnetic Absolute Encoder

Key Features

- **12 Bit Single-Turn Resolution, up to 16 Bit Multi-Turn**

- **Oversized Bearings for up to 3x Life of Standard Absolute Encoders**

- **Wide –40° to 100°C Temperature Range**

- **Submersible — IP69k Sealing Available**

- **Rated to 200g Shock, 20g Vibration for Harsh Environments**

- **Stainless Steel or Aluminum Housing**

E1 10R-036823   c UL us LISTED   CE EN 61326-1   RoHS   TYPE APPROVED PRODUCT DNV·GL MARITIME

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS:
Code: Absolute, Magnetic
Absolute Accuracy: ±1°
Repeatability: ±0.2°

ELECTRICAL:
Noise Immunity: Tested to EN61326-1
Parametrization: Preset
Termination: Cable radial, PVC; M12 connector, radial; Cable radial for maritime approval

Interface: CANopen & SSI
Input Power: 10-30VDC (+10%)
Resolution: Single-turn: 12 Bit
Resolution: Multi-turn: 12, 16 Bit

Interface: Analog
Input Power: 17-30VDC (+10%)
Resolution Analog:
AV: 0…10V (Voltage)
A4: 4…20mA (Current)
Measuring Range in Degrees: 90°, 180°, 360°, others on request
Measuring Range in Resolutions: 4, 8, 16 revolutions, others on request
Control Inputs: Preset, Direction

MECHANICAL:
Shaft Diameter: 3/8", 10 mm
Shaft Speed (maximum): 5000 rpm
Shaft Load (axial/radial): 300 N max.
Mounting Depth: 32 mm
Maximum Speed: max. 5,000 rpm;
Maximum Speed Analog: max. 1,500 ron (continuous), Max 5,000 rpm (short term)
Starting Torque typ.: ≤ 4.5 Nm

MECHANICAL (Cont.):
Moment of inertia: 25 gcm²
Housing Material: Stainless Steel
Shaft Material: Stainless Steel
Weight:
AR62 w/ 1.5m cable: approx. 480g
AR62 w/ connector M12: approx. 250g
AR63 w/ 1.5m cable: approx. 700g
AR63 w/ connector M12: approx. 470g

ENVIRONMENTAL:
Standard Operating Temperature:
SSI: -40 °C ...+100 °C
With Maritime Approval (DNV GL): -40 °C ...+85 °C
Canopen, Analog: -40 °C ...+85 °C
Storage Temperature: -15 °C ...+85 °C
Shock: 1000 m/s² (6 ms)
Vibration: 100 m/s² (10 ... 2000 Hz)
Humidity: 75%, without condensation
Enclosure Rating: IP67 or IP69K

ELECTRICAL CONNECTIONS – SSI

Cable Color	PIN	Signal
Yellow	6	Clock
Pink	5	Data
Green	4	$\overline{Clock}$
Grey	8	$\overline{Data}$
Blue	7	Signal Direction [1]
White	1	UB
Brown	2	0V
Red	3	Preset (set to 0) [1]
Screen	Screen	Screen

Note:

[1] Preset and Direction high active :
Signal level high: ≥ 66% Ub; low: ≤ 15% Ub or unconnected
Bounce time preset: >2s
Bounce time direction: < 1 ms (dynamic)

ELECTRICAL CONNECTIONS – CANopen

Color Cable	Signal	M12, 5 Pole	M12, 8 Pole
Yellow	CAN in+	4	6
Green	CAN in-	5	4
Pink	CAN out+	-	5
Grey	CAN out-	-	8
Blue	CAN GND in	1	7
Black*	CAN GND out	-	3
White	UB	2	1
Brown	0 V	3	2
Screen	Screen	Screen	Screen

* Cable color is Red for extension cable

ELECTRICAL CONNECTIONS – Analog

Cable Color	PIN	Signal
Pink	5	0 ... 10 V (Voltage), or 4 … 20 mA (Current)
Blue [2]	7	Direction (change value counting)
Grey	8	AGND (Analog ground)
Red [2]	3	Preset (set to 0)
White	1	UB
Brown	2	0 V (connected with AGND)
Yellow [1]	6	Diagnostic 1
Green [1]	4	Diagnostic 2
Screen	Screen	Screen

[1] Diagnostic signals only for service purposes. The cable wires have to be isolated.

[2] Preset and Direction low active: Signal level high ≤ DC 2 V

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

SSI, CANopen

Code 1: Model	Code 2: Resolution [1]	Code 3: Output	Code 4: Flange [2]/Protection/Shaft	Code 5: Interface [3,4]	Code 6: Termination [5,6,7,8]	Code 7: Cable Length
AR62/63	☐☐☐☐	☐	☐.☐☐	☐	☐	☐
			Ordering Information			
AR62 Aluminum **AR63** Stainless Steel	**0012** 12 Bit ST **1212** 12 Bit MT + 12 Bit ST **1312** 13 Bit MT + 12 Bit ST **1612** 16 Bit MT + 12 Bit ST	**E** DC 10-30 V	**L.72** Synchro-Clamping, IP67 10 mm **L.92** Synchro-Clamping, IP69K, 10 mm **Q.76** Square flange, IP67, 9.52 mm **Q.96** Square flange, IP69K, 9.52 mm	**OL** CAN Open [9] **SB** SSI-Binary **SG** SSI-Gray	**B** Radial Cable **F** Radial Cable for Maritime (DNV GL) **8** M12 radial connector, 8-pin **5** M12 radial connector, 5-pin	Available only when Code 8 is B or F **Blank** 1.5m **D0** 3m **F0** 5m **K0** 10m **P0** 15m **U0** 20m **V0** 25m **W0** 30m **X0** 40m **Y0** 50m

[1] Other resolution on request

[2] Square flange with stainless housing (AR63) on request

[3] Standard setting CANopen: Bus termination not activated. External bus terminal resistor required.

[4] E1 approval only with interface "OL" CANopen available.

[5] M12 Connector not available in stainless steel. IP67 and IP69k only guaranteed if mating plug connected correctly.

[6] DNV GL approval only with connection "5", "8" or "F" available.

[7] Maximum operating temperature with connection "F": -40°C ... +85°C.

[8] Connection "5" M12-connector 5-pole only available with interface "OL" CANopen.

[9] E1 approval (only available with interface "OL" CANopen)

ANALOG

Code 1: Model	Code 2: Resolution [1,2]	Code 3: Output	Code 4: Flange [3]/Protection/Shaft	Code 5: Interface [3,4]	Code 6: Termination [4,5]	Code 7: Cable Length
AR62/63	☐☐☐☐	☐	☐.☐☐	☐	☐	☐
			Ordering Information			
AR62 Aluminum **AR63** Stainless Steel	Measuring range in degrees: **G090** 90° **G180** 180° **G360** 360° Other on request Measuring range in revolutions: **U004** 4 revolutions **U008** 8 revolutions **U016** 16 revolutions Other on request	**F** DC 17-30 V	**L.72** Synchro-Clamping, IP67 10 mm **L.92** Synchro-Clamping, IP69K, 10 mm **Q.76** Square flange, IP67, 9.52 mm **Q.96** Square flange, IP69K, 9.52 mm	**AV** Analog 0 … 10V **A4** Analog 4 … 20mA	**B** Radial Cable **F** Radial Cable for Maritime (DNV GL) **8** M12 radial connector, 8-pin	Available only when Code 8 is B or F **Blank** 1.5m **D0** 3m **F0** 5m **K0** 10m **P0** 15m **U0** 20m **V0** 25m **W0** 30m **X0** 40m **Y0** 50m

[1] Coding of the measuring range in degree or revolutions.

[2] Measuring Range G360 = 360° similar to former definition 0012 = 12 Bit ST.

[3] Square flange with stainless housing (AR63) on request.

[4] M12 Connector not available in stainless steel. IP67 and IP69k only guaranteed if mating plug connected correctly.
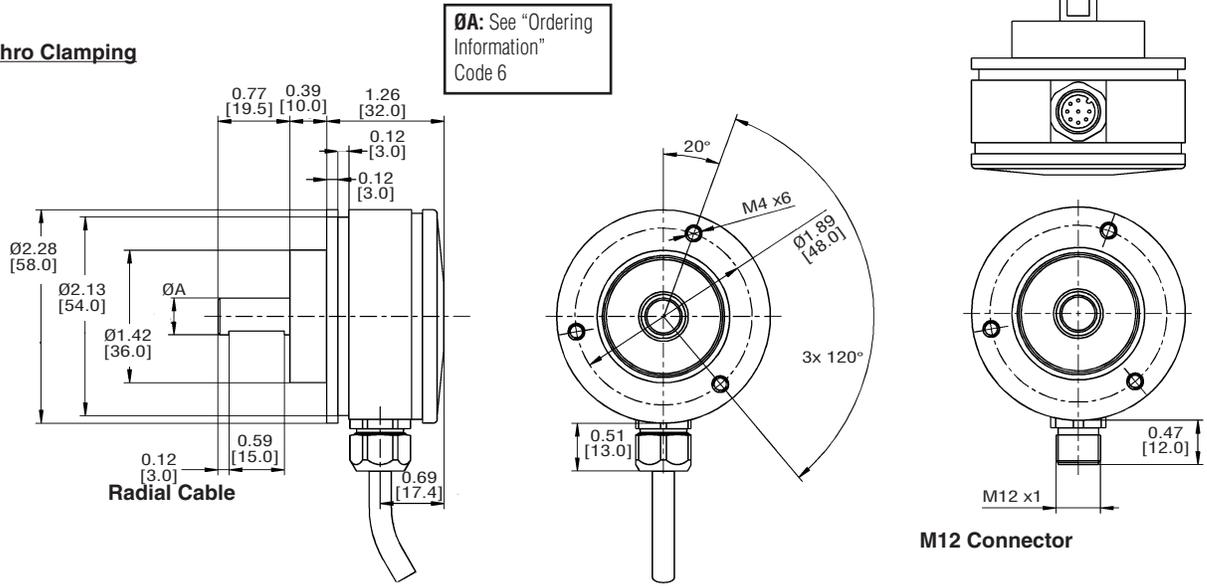
[5] DNV GL approval only with connection "5", "8" or "F" available.

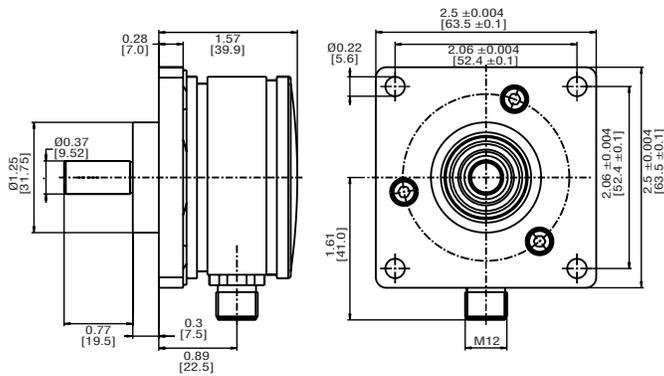[6] Maximum operating temperature with connection "F": -40°C ... +85°C.

DIMENSIONS   inch [mm]

Synchro Clamping

0.77 [19.5]
0.39 [10.0]
1.26 [32.0]

0.12 [3.0]
0.12 [3.0]

ØA: See "Ordering Information" Code 6

Ø2.28 [58.0]
Ø2.13 [54.0]
ØA
Ø1.42 [36.0]

0.12 [3.0]
0.59 [15.0]
0.69 [17.4]

Radial Cable

20°
M4 x6
Ø1.89 [48.0]
3x 120°

0.51 [13.0]

M4 x6

0.47 [12.0]
M12 x1

M12 Connector

Square Flange

0.28 [7.0]
1.57 [39.9]
Ø0.22 [5.6]

Ø0.37 [9.52]
Ø1.25 [31.75]

0.77 [19.5]
0.3 [7.5]
0.89 [22.5]

2.5 ±0.004 [63.5 ±0.1]
2.06 ±0.004 [52.4 ±0.1]
2.06 ±0.004 [52.4 ±0.1]
2.5 ±0.004 [63.5 ±0.1]
1.61 [41.0]

M12