

Absolut No Shaft Encoder CAH 57 S / CAH 57 M SSI

Optical absolute encoder with hollow shaft
Single-turn and multi-turn of high resolution

Resolution

Resolution (Steps/360°):

65536 = 16 bit

8192 = 13 bit

4096 = 12 bit

Measuring range

Measuring range

Single-Turn

1 turn

Multi-Turn

16384 turns = 14 bit

4096 turns = 12 bit

Type explanation

CAH 57-M-30G-30-D-SC12/Ø15

Encoder type	Absolute
Hollow shaft	Yes
Case diameter	Ø 58 mm
Number of bits	12 = 12 bits x 1 turn 13 = 13 bits x 1 turn 16 = 16 bits x 1 turn 24 = 12 bits x 4096 turns 25 = 13 bits x 4096 turns 28 = 16 bits x 4096 turns 26 = 12 bits x 16384 turns 27 = 13 bits x 16384 turns 30 = 16 bits x 16384 turns
Single-turn	Yes
Multi-turn	Yes
Electronic adjustment	Yes
Supply voltage	30 = 10 ... 30 VDC
Output driver	D-SSI DI
Position of connection	R S
Shaft diameter	Ø 15 mm

Technical data

Mechanical data

Rotational speed	≤ 12000 min ⁻¹ (Single-turn) ≤ 6000 min ⁻¹ (Multi-turn)
Torque	≤ 3 Ncm
Moment of inertia	30 g cm ²
Loading of bearings	110 N radial 40 N axial
Operational life of ball bearings	> 1 x 10 ⁵ h (1000 min ⁻¹)
Weight	≤ 0,5 kg

Environmental conditions

Vibration	100 m/s ² (10 ... 1000 Hz)
Shock	300 m/s ² (11 ms)
Operating temperature	-40 ... +85°C
Storage temperature	-40 ... +85°C
Atmospheric humidity	≤ 98% r.h.
Protection class	IP 65 (DIN 40050/IEC 144) IP 66 (optional)

Electrical data

Scanning type	Optical, without contact
Transmitter, infrared	LED
Receiver	Photo-Array
Scanning frequency LSB	800 kHz
Measurement accuracy	±½ LSB (12 bit) ± 1 LSB (13 bit) ± 2 LSB (16 bit)
Supply voltage	V _{cc} = 10...30 VDC
Power consumption	≤ 90 mA (V _{cc} = 24 V)

Electrical connections

SSI

Interface	RS485
Clock	Optocoupler

Incremental outputs

1024 pulses per revolution	AA+BB/90° RS422 (optional)
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Inputs

Rotational direction	CW/CCW
Electronic adjustment	RESET (optional)

Connector 12 pins M23

Connection	Signal
Pin 1	+Vcc
Pin 2	0 V GND
Pin 3	Clock+
Pin 4	Data+
Pin 5	RESET ¹⁾
Pin 6	Data-
Pin 7	Clock-
Pin 8	A+ ²⁾
Pin 9	CW/CCW
Pin 10	B+ ²⁾
Pin 11	B- ²⁾
Pin 12	A- ²⁾

1) optional

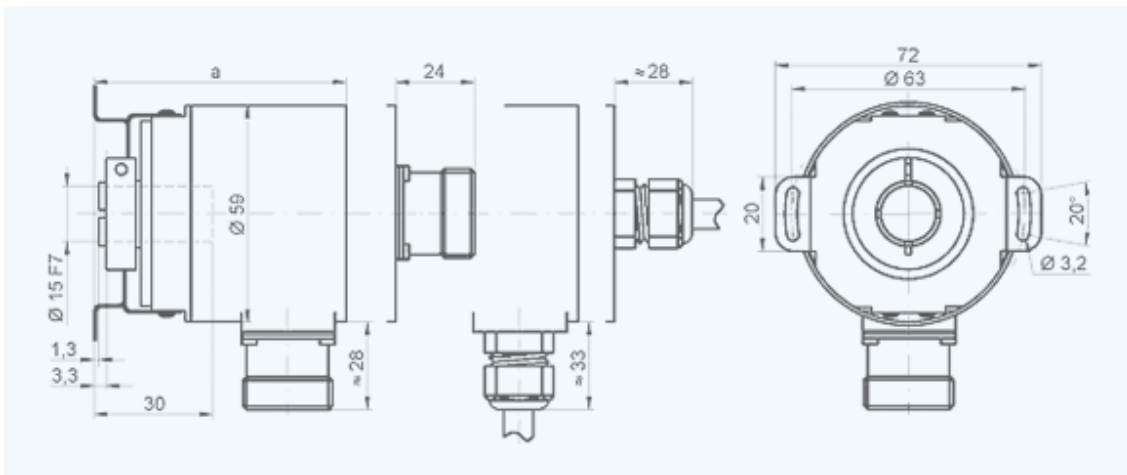
2) nur bei Ausgangstreiber "DI"

Cable

Wire colour	Signal
White	0 V GND
Brown	+Vcc
Green	Clock+
Yellow	Clock-
Grey	Data-
Pink	Data-
Red	CW/CCW
Black	RESET ¹⁾

1) optional

Outline drawing



Version AE 672-411 · Subject to change

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