HENGSTLER

TECHNICAL DATASHEET

Motor Feedback Absolute Encoder AD58S DRIVE-CLiQ



AD58 DRIVE-CLiQ

- Singleturn and Multiturn Encoder for high performance motion control
- Encoder for Functional Safety applications (SIL2 PLd, category 3)
- Resolution: up to 24 Bit ST + 12 Bit MT
- DRIVE-CLiQ interface
- Wide operating temperature range
- Up to 10,000 rpm continuous operation
- Motor Temperature Logging and Temperature Monitoring of Encoder
- Optical encoder with a true geared multiturn

ACURO® drive | DRIVE-CLiQ | CE | cULus LISTED | RoHS

TECHNICAL DATA
mechanical

Housing Diameter	58 mm		
Shaft Diameter	9.25 mm tapered Solid Shaft; Taper 1:10		
Flange (Mounting of Housing)	Spring Tether		
Protection Class Shaft Input (EN 60529)	IP50		
Protection Class Housing (EN 60529)	IP50		
Axial End Play of Mating Shaft (static)	± 0.5 mm		
Radial Runout of Mating Shaft (static)	± 0.05 mm		
Speed max.	10,000 rpm		
Starting Torque typ.	≤ 1.5 Ncm		
Moment of Inertia	3.1 x 10^{-6} kgm^2		
Vibration Resistance (EN 60068-2-6)	100 m/s^2 (50 … 2000 Hz)		
Shock Resistance (EN 60068-2-27)	1000 m/s^2 (6 ms)		
Operating Temperature [1]	-25 °C ... +110 °C		
Storage Temperature [2]	-20 °C ... +80 °C		
Relative Humidity (EN 60068-2-78)	≤ 90 % ; without condensation		
Measurement Point External Temperature Sensor	Type	KTY84-130	PT1000
	Temp. Measurement Range[3]	-40 °C ... +200 °C	
	Resolution	0,2 K	0,2 K
Material Shaft	Stainless Steel		
Material Housing	Aluminum		
Weight	approx. 260 g (Singleturn) / 310 g (Multiturn)		
Connection	Data Connector Encoder axial 8-pole Motor winding temperature sensor input axial 2-pole		

[1] measured at TM, see dimensional drawing
[2] due to packaging
[3] calibration temperature 100 °C

Specifications subject to change without notice.

TECHNICAL DATASHEET

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TECHNICAL DATA electrical

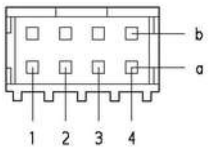
General design	as per EN IEC 61010-1, protection class III, contamination level 2, overvoltage class II
Supply Voltage	10-36 VDC
Power Consumption max.	2.5 W (at 24 V)
Current Consumption typ.	40 mA (at 24 V Singleturn) 60 mA (at 24 V Multiturn)
Interface / Protocol	DRIVE-CLiQ
Siemens-Software (Version: 12.2.2014)	Sinamics Simotion: ≥ V4.4 HF4 Sinumerik with safety: : ≥ V4.4 SP2
Resolution Singleturn	20 Bit 24 Bit
Resolution Multiturn	12 Bit
Absolute Accuracy	± 35'' (at 20 Bit) ± 25'' (at 24 Bit)
Cable Length	≤ 95 m

TECHNICAL DATA safety

Design Functional Safety	SIL2 according to EN IEC 61508, 62061, 61800-5-2, 61800-5-3 PLd according to EN ISO 13849-1
Resolution for save position	9 Bit Singleturn
PFH-value	5.26 x 10^{-8} per hour (85°C)
MTTFd	169 years
DCavg	90%
Safe Position [1]	Encoder: 2° (Safety relevant measuring step: SM = 0,7°)
Realizable safety function according to EN 61800-5-2	SS1 (Safe Stop 1) [2] SS2 (Safe Stop 2) [2] SOS (Safe Operating Stop) SDI (Safe direction) SLS (Safe limited speed) SLI (Safe limited increment) SLA (Safe limited acceleration) SSR (Safe speed range) SAR (Safe acceleration range) SLP (Safe limited position) [3] SCA (Safe cam) [3]

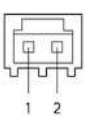
[1] Further tolerances may occur in subsequent electronics after position value comparison (contact manufacturer of subsequent electronics)
[2] deceleration controlled (-d) or ramp monitored (-r)
[3] For SLP and SCA functions a safe reference run must be performed after „Power ON“ (see integration manual 0 580 935, chapter 8.1.2, S. 22)

ELECTRICAL CONNECTIONS PCB Connector, 8-pole



PIN	Signals
1a	RX-N
2a	RX-P
3a	TX-P
4a	TX-N
1b	Screen
2b	N.C.
3b	UB -
4b	UB +

ELECTRICAL CONNECTIONS PCB Connector, 2-pole Temperature Sensor



PIN	Signals
1	T +
2	T -

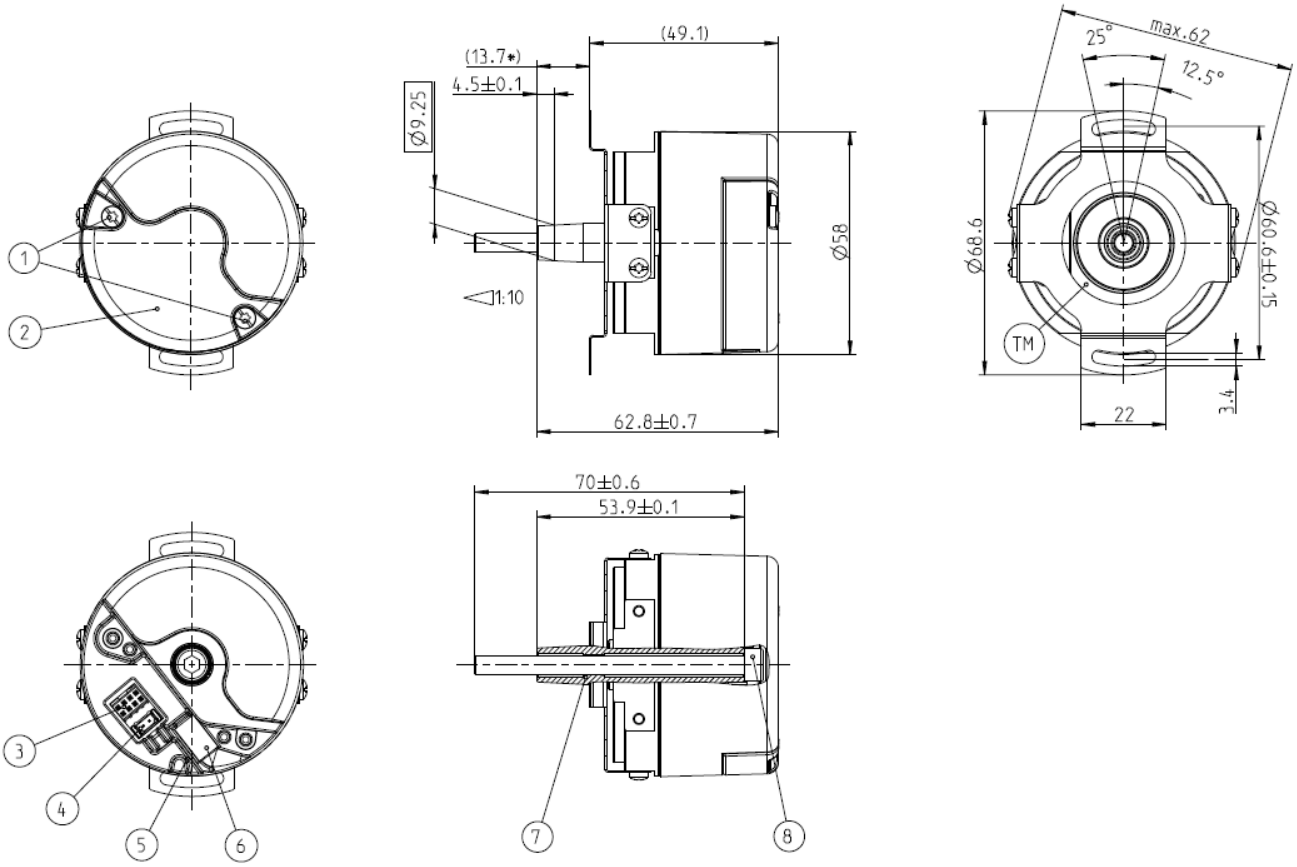
Specifications subject to change without notice.

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DIMENSIONAL DRAWING



TM: Measuring point temperature
1: Mounting screw for cover. Torx TX10, tightening torque 0.8±0.1Nm
2: Cover
3: PCB connector 8 pole
4: KTY connector 2 pole
5: Cable outlet KTY
6: Cable outlet PCB connector
7: Back-off thread M6 / screw min. M6x60
8: Mounting screw DIN912 M5x70 - A2-70, tightening torque 3.5+0.5Nm
Connection is to be used as a materially bonding anti-rotation lock

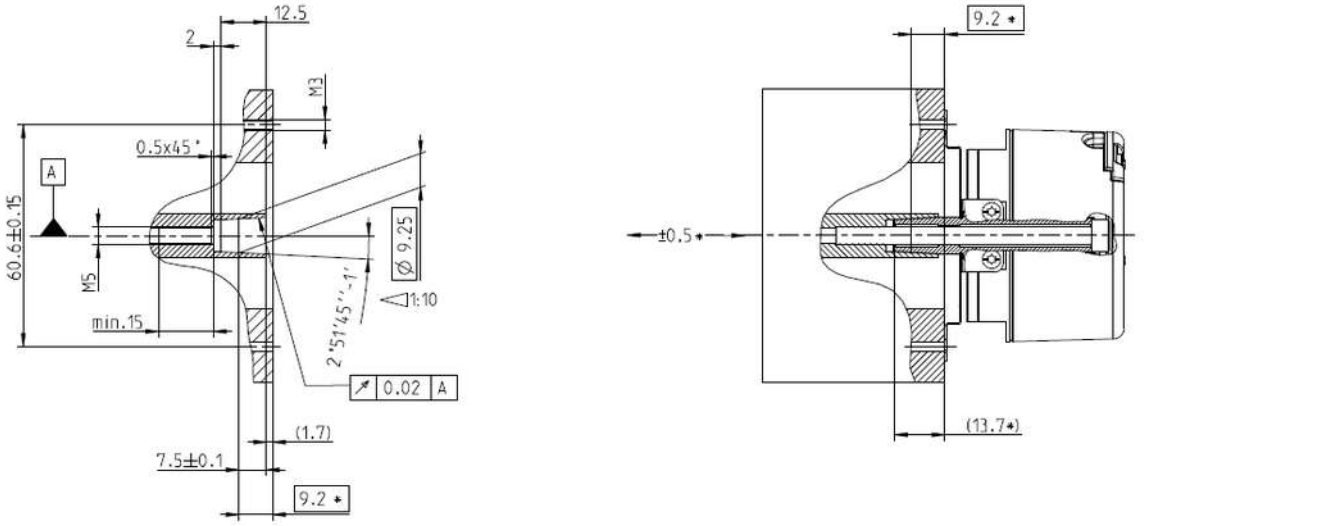
Dimensions in mm

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EXAMPLE OF INSTALLATION



* Drehmomentstützen-Ausgleichsmaß von Montage/- und Betriebstoleranzen und thermischen Ausdehnungen. Max. zulässige Wellenbewegung / Vorspannung Drehmomentstütze. Statisch ±0.5mm

* Tether dimension compensation of mounting/- and operating-tolerances and thermal expansions. max. permissible shaft movement / pretensioning tether. Static ±0.5mm.

Dimensions in mm

ORDERING INFORMATION AD58 DRIVE-CLiQ

Type	Resolution	Supply voltage	Flange, Protection, Shaft	Interface	Connection
☐	☐	☐	☐	☐	☐
AD58S	**0020** 20 Bit ST **0024** 24 Bit ST **1220** 12 Bit MT + 20 Bit ST **1224** 12 Bit MT + 24 Bit ST	**E** DC 10 - 30 V	**2.1K** Spring Tether, IP50, Taper 1:10	**DQ** DRIVE-CLiQ	**3** PCB Connector, axial

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Accessories

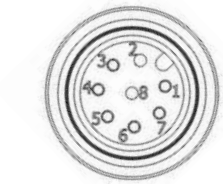
CONNECTING CABLES



Connecting cable with plug (socket) on both end matching to supply voltage / communication	Ordering Code
M12 Connector, 8-pole, Flange Socket, FEP-Cable, 0,15 m	1 580 022
M12 Connector, 8-pole, Flange Socket, FEP-Cable, 0,20 m	1 580 023
M12 Connector, 8-pole, Flange Socket, FEP-Cable, 0,30 m	1 580 024

ELECTRICAL CONNECTIONS
M12 Connector, 8-pole, Flange Socket

PIN	Signale
1	UB +
2	N.C.
3	RX-P
4	RX-N
5	UB -
6	TX-N
7	TX-P
8	N.C.



Connecting cable with plug (socket) on one end matching to temperature sensor	Ordering Code
2-pole, Cable 0,23 m	1 580 021

ELECTRICAL CONNECTIONS
Temperature Sensor

Colour	Signals
Green	T +
Brown	T -

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