Baumer
Passion for Sensors

Absolute encoders

ATD2AH00

Through hollow shaft ø10 to ø14 mm

Optical singleturn encoders with analog output

Overview

- Analog signals
- 14 bit singleturn
- Internal self-diagnostic
- Voltage output or current output
- Factory-set adjustable angle (0° - 360°)
- Detachable cable – tangential outlet
- Easy signal processing



Technical data

Technical data - electrical ratings	
Voltage supply	+UB= 12...30 VDC (IS-/US-version)
Reverse polarity protection	Yes
Consumption w/o load	≤50 mA (24 VDC)
Interface	Analog (4...20 mA or 0...10 V)
Load resistor	≥1 kΩ (recommended 10 kΩ) / voltage output ≤500 Ω (recommended 470 Ω) / current output
Function	Singleturn
Measuring range	90°, 180°, 360°
Steps per revolution	16384 / 14 bit
Sensing method	Optical
Updating values	≤130 µs
Code sequence	CW: ascending values with clockwise sense of rotation; looking at mounting surface
Output stages	Voltage output (short-circuit proof) Current output (short-circuit proof)
Interference immunity	DIN EN 61000-6-2

Technical data - electrical ratings	
Emitted interference	DIN EN 61000-6-3
Technical data - mechanical design	
Size (flange)	ø58 mm
Shaft type	ø10 mm (through hollow shaft) ø12 mm (through hollow shaft) ø14 mm (through hollow shaft)
Protection DIN EN 60529	IP 65
Operating speed	≤6000 rpm (mechanical) ≤6000 rpm (electric)
Starting torque	≤0,01 Nm (+20 °C)
Material	Housing: aluminium Shaft: stainless steel
Operating temperature	-20...+85 °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 30 g, 11 ms
Weight approx.	150 g
Connection	Board connector, 8-pin

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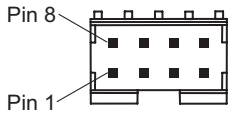
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Terminal assignment

Connector	Assignment
Pin 1	+UB
Pin 2	GND
Pin 3	U_{OUT} resp. I_{OUT}
Pin 4	GND_{OUT}
Pin 5	NC
Pin 6	V/$\overline{R}$
Pin 7	$\overline{error}$
Pin 8	reset



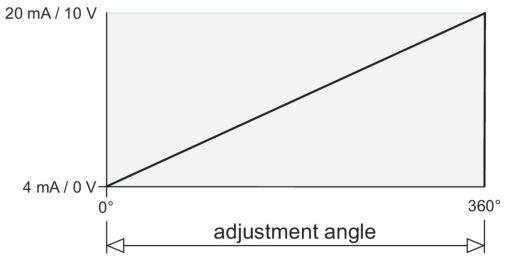
Terminal significance

+UB	Encoder supply voltage.
GND	Encoder ground connection relating to UB.
U_{OUT}	Voltage output increasing at clockwise rotation when looking at the mounting side.
I_{OUT}	Current output increasing at clockwise rotation when looking at the mounting side.
GND_{OUT}	Reference voltage for analogue output.
Reset	Reset input for setting zero position value at any desired point within the entire resolution. The resetting process is triggered by apply of UB.
V/$\overline{R}$	V/$\overline{R}$ counting direction input. This input is standard on High. V/$\overline{R}$ means increasing values with clockwise shaft rotation when looking at the mounting side. V/$\overline{R}$-Low means decreasing values with clockwise shaft rotation when looking at the mounting side.
$\overline{Error}$	Diagnostic output (Open Collector with internal 10 kΩ pullup-resistor). The output is low-active, that means if no fault submitted, the output is +UB.

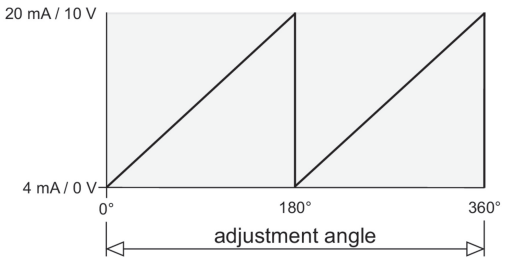
Output signals

Unipolar Output (IS-/US-version)

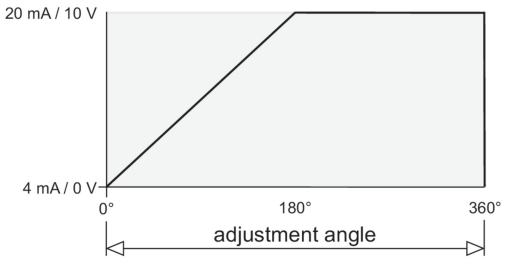
360° mech. adjustment angle, alternating (**360A**)



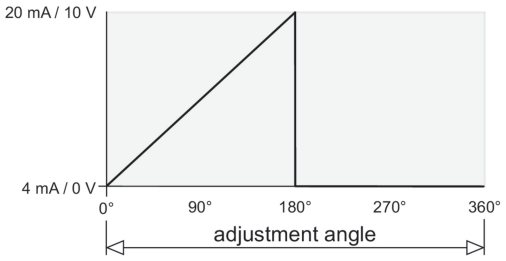
180° mech. adjustment angle, alternating (**180A**)



180° mech. adjustment angle, High (**180H**)



180° mech. adjustment angle, Low (**180L**)



Trigger level

Control input	**Input circuit**
Input level High	≥0,7 UB
Input level Low	≤0,3 UB
Input resistance	10 kΩ

Diagnostic outputs	**Output circuit**
Output level	Open Collector with internal 10 kΩ PullUp-resistance

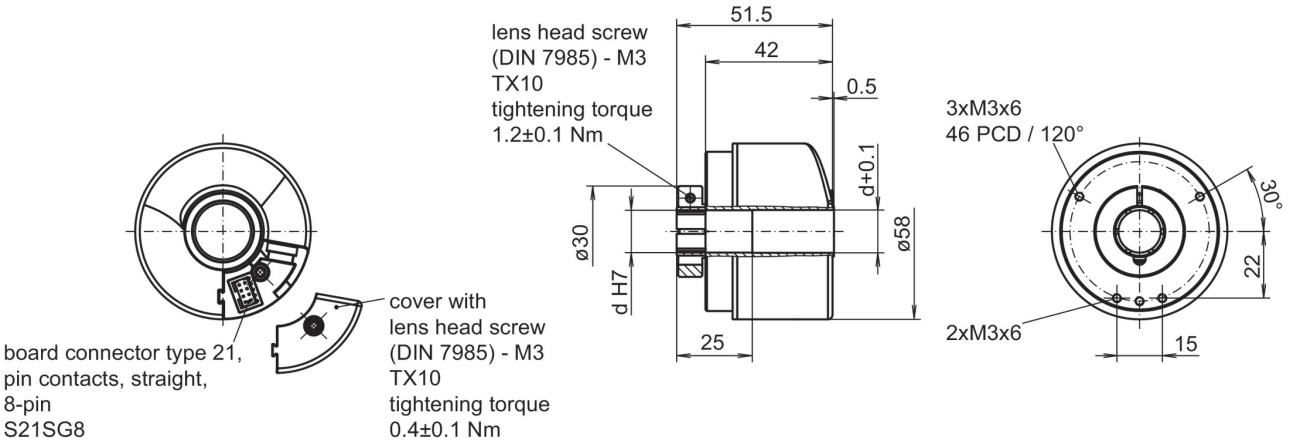
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Dimensions



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Ordering reference

	ATD2AH00	####	##	S21SG8	S	##	IP65
Product							
	ATD2AH00						
Resolution							
360° mech. adjustment angle, alternating (singleturn)		360A					
180° mech. adjustment angle, alternating (singleturn)		180A					
180° mech. adjustment angle, High (singleturn)		180H					
180° mech. adjustment angle, Low (singleturn)		180L					
Interface							
Current output, standard, 4...20 mA, Vin = 12...30 VDC			IS				
Voltage output, standard, 0...+10 VDC, Vin = 12...30 VDC			US				
Connection							
Board connector type 21, pin contacts, straight, 8-pin				S21SG8			
Operating temperature							
-20...+85 °C					S		
Through hollow shaft							
ø10 mm						10	
ø12 mm						12	
ø14 mm						14	
Protection							
IP 65							IP65

Other adjustment on request.

Accessories

Mounting accessories

11066080	Torque arm, 1-arm, bolt circle ø76…80 mm, mounting M4 (mounting kit 002)
11066083	Torque arm, 1-arm, bolt circle ø74…94 mm, mounting M4/M5 (mounting kit 006)
11073114	Torque arm, 3-armed, bolt circle ø76 mm, mounting M3 (mounting kit 019)
11073119	Torque arm, 1-arm, bolt circle ø65.5...281 mm, mounting M4, can be cut to length (mounting kit 021)
11069239	Torque arm, 1-arm, bolt circle ø110…130 mm, mounting M5 (mounting kit 092)
11116921	Insulating sleeve ø10 mm/ø12 mm/25 mm long
11116923	Insulating sleeve ø12 mm/ø14 mm/25 mm long

Connectors and cables

11072169	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 1 m
11093848	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 2 m
11092928	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 3 m
11077007	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 5 m
11080879	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 10 m
11079089	Connection cable with rear mount socket M23, 12-pin, 1 m
11106562	Connection cable with FCI, 8-pin / D-SUB, 9-pin, 0.3 m
11079111	Connection cable with FCI, 8-pin / D-SUB, 9-pin, 1 m
11079113	Connection cable with coupling M12, 8-pin, 1 m

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