

Code <b>ST05</b>	Project <b>E06-A</b>	Release <b>C</b>	<b>TECHNICAL DATASHEET</b>
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## ABSOLUTE OPTICAL ENCODER AEN500 (Serial)

### GENERAL FEATURES

- Absolute optical encoder (singleturn or multiturn).
- Output protocol: **SSI-BISS**.
- Aluminium flange and housing.
- Radial or axial output with connector M23 12 Pin or M12 8 Pin.



### MECHANICAL AND ELECTRICAL CHARACTERISTICS

<b>MECHANICAL</b> <ul style="list-style-type: none"> <li>• Round flange, with centering <math>\varnothing</math> 50 mm.</li> <li>• Aluminium housing.</li> <li>• Stainless steel shaft.</li> <li>• Ball bearings with special high-sealed screens.</li> <li>• High protection even in harsh environmental conditions.</li> </ul> <b>ELECTRICAL</b> <ul style="list-style-type: none"> <li>• Input (direction).</li> <li>• Option: 1 Vpp analog signal.</li> </ul>	<b>Cod. AEN500</b>		
	<b>Resolution</b> 360 / 720 cpr      10-17 Bit Singleturn 12 Bit Multiturn		
	<b>Max. rotating speed</b> momentary      12000 rpm continuous      10000 rpm		
	<b>Centering (mm)</b> $\varnothing$ 50		
	<b>Max. shaft load</b> 40 N (axial) - 60 N (radial)		
	<b>Shaft diameter (mm)</b> $\varnothing$ 6    others on request		
	<b>Operating temperature</b> $0^{\circ}\text{C} \div 70^{\circ}\text{C}$ others on request		
	<b>Storage temperature</b> $-25^{\circ}\text{C} \div 85^{\circ}\text{C}$		
	<b>Vibration resistance (EN 60068-2-6)</b> $100 \text{ m/s}^2 (10 \div 2000 \text{ Hz})$		
	<b>Shock resistance (EN 60068-2-27)</b> $1000 \text{ m/s}^2 (6 \text{ ms})$		
	<b>Protection class (EN 60529)</b> IP 64 standard    IP 67 optional		
	<b>Torque</b> $\leq 0.01 \text{ Nm}$		
	<b>Moment of inertia</b> $3.8 \times 10^{-6} \text{ kgm}^2$		
	<b>Power supply</b> $10 \div 30 \text{ V}$ or $5 \text{ V} \pm 10\%$		
	<b>Current consumption</b> 100 mA (ST), 150 mA (MT), 250 mA (SP)		
	<b>Protocol</b> BiSS, SSI (with or without SinCos 1 Vpp)		
	<b>Output code</b> Binary, Gray		
	<b>Electrical connections</b> see related table		
	<b>Weight</b> 260 g (ST), 310 g (MT)		

### ORDERING CODE

MODEL	TYPE / OUTPUT	RESOL. Bit (MT)	RESOL. Bit (ST)	POWER SUPPLY	$\varnothing$ SHAFT	CONNECTOR	SIGNAL	CONNECTION	OPTIONS
<b>AEN500</b>	<b>M R</b>	<b>12</b>	<b>12</b>	<b>1030</b>	<b>D06</b>	<b>CG</b>	<b>SG</b>	<b>11</b>	<b>V2</b>

<b>S</b> = singleturn <b>M</b> = multiturn <b>R</b> = radial <b>A</b> = axial	<b>00</b> = if ST <b>12</b> = 12 Bit	<b>10</b> = 10 Bit * <b>12</b> = 12 Bit <b>13</b> = 13 Bit <b>14</b> = 14 Bit <b>17</b> = 17 Bit  <b>0360</b> = 360 increment ST * <b>0720</b> = 720 increment ST *	<b>1030</b> = 10÷30 V <b>05V</b> = 5 V **	<b>D06</b> = $\varnothing$ 6 mm	<b>CG</b> = M23 12 Pin <b>CT</b> = M12 8 Pin **	<b>BE</b> = BiSS <b>BV</b> = BiSS+1Vpp <b>SB</b> = SSI Binary <b>SG</b> = SSI Gray <b>SC</b> = SSI Gray+1Vpp <b>SP</b> = SSI program. <b>SR</b> = SSI Binary+ Preset active high <b>SH</b> = SSI Gray+ Preset active high	<b>n</b> = connection number <b>No cod.</b> = standard <b>V2</b> = IP 67
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\* Only singleturn version  
 \*\* Not available for SP version

**Example**  **ABSOLUTE OPTICAL ENCODER AEN500 MR 1212 1030 D06 CG SG 11 V2**

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## ELECTRICAL CONNECTIONS

Encoder supplied with M23 (12 Pin) connector

CONNECTION				
N. Pin	Signals (BE, SB, SG)	Signals (SC, BV)	Signals (SP)	Signals (SR, SH)
1	0 V (supply voltage)	0 V (supply voltage)	Clock	0 V (supply voltage)
2	Data	Data	Clock	Data
3	Clock	Clock	Data	Clock
4	n.c.	A	Data	n.c.
5	Direction *	Direction *	RS 232 TxD	Direction **
6	n.c.	B	RS 232 RxD	n.c.
7	n.c.	A	0 V (signal output)	n.c.
8	+ V	+ V	Direction	+ V
9	n.c.	B	Preset 1	n.c.
10	Data	Data	Preset 2	Data
11	Clock	Clock	+ V	Clock
12	0 V (signal output)	0 V (signal output)	0 V (supply voltage)	Preset **

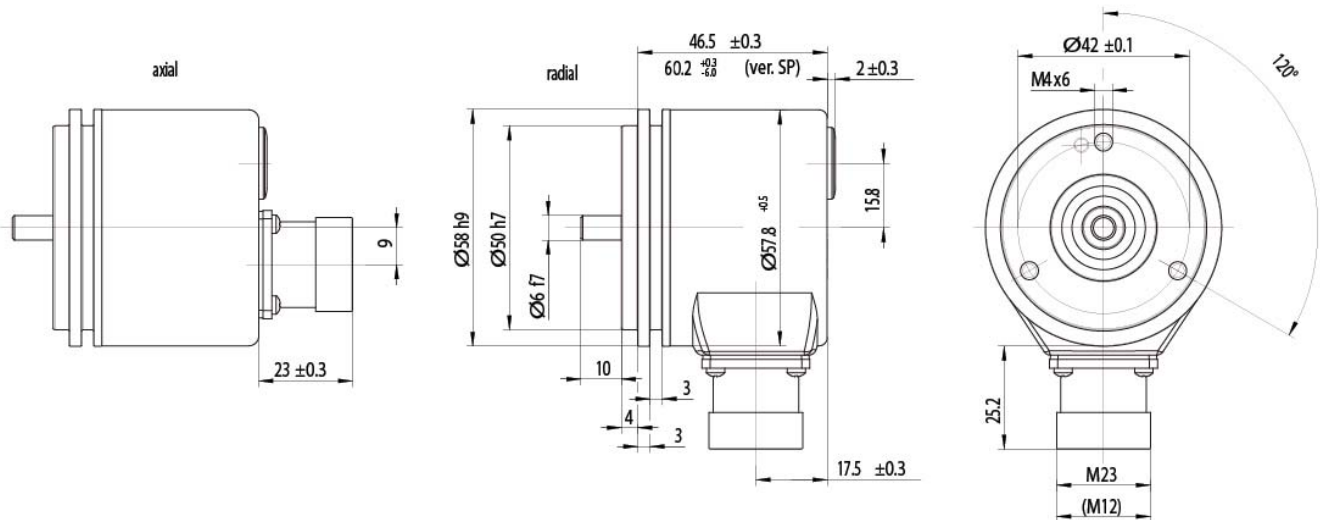
Encoder supplied with M12 (8 Pin) connector

CONNECTION	
N. Pin	Signals (BE, SB, SG)
1	+ V
2	0 V
3	n.c.
4	Clock
5	Data
6	Clock
7	Direction *
8	Data

\* Not connected = ascending code values with clockwise rotation  
 Connected to 0 V = descending code values with clockwise rotation

\*\* Preset and Direction active with signal high

## DIMENSIONS



## WHAT TO AVOID

- Any mechanical working (cutting, drilling, milling, etc.).
- Any modification of the encoder body or shaft.
- Any improper use, not complying with the technical instructions provided by the Manufacturer.
- External shocks or stresses.

