

TECHNICAL DATASHEET

Ex - Absolute Encoder AX 73 BiSS / SSI



- ATEX and IECEx certification for Gas and Dust explosion proof
- High precision standard as ACURO Industry
- Resolution up to 22 Bit singleturn + 12 Bit multiturn
- Optical encoder with a true geared multiturn
- BiSS/SSI Interface
- Easy and fast field installation
 - Free choice of cable in the field (terminal box with cage clamp technology)
 - In case of emergency service, encoder and cable can be removed separately
- Robust design
- Extreme corrosion resistance: high grade stainless steel housing (1.4404 / AISI 316L)
- Protection class IP66/IP67
- Applications: Drilling equipment, Winches, Cranes, DrawWorks, Topdrive, Pipe Handling, Enamelling Production Line, Petro Chemistry, Bottling Machines, Mixers, Silo Works, Mills, Oil and Gas Application



EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure under AX73.

It has been assured with the **EC-TYPE-Examination Certificate ITS14ATEX17991X** that the AX73 meets the requirements of safety and health according to EN 60079-0:2012; EN 60079-1:2007 and EN60079-31:2009.

Additionally the encoder is certified according the IECEx standards IEC 60079-0:2011; IEC 60079-1:2007-04 and IEC 60079-31:2008. Assured according **IECEx ITS 14.0062X** certification.

It is approved in explosive areas:

Gas:  II 2 G Ex d IIC T4 Gb

Dust:  II 2 D Ex tb IIIC T130 Db

The AX73 comes with a stainless steel housing (1.4404). Its suitable for offshore applications, applications under tough environmental conditions and food industry.

TECHNICAL DATA
mechanical

Housing diameter	73,5 mm / 76 mm
Shaft diameter	10 mm
Flange (Mounting of housing)	Clamping flange, bores 3xM6
Protection class (EN 60529/ A1:2000-02)	housing IP66/IP67, bearing IP67 ¹⁾
Shaft load radial / axial	max. 100 N / 40 N
Max. speed	3000 rpm
Nominal speed	1500 rpm
Starting torque typ.	≤ 4 Ncm
Moment of inertia	approx. 30 gcm ²

¹⁾ no standing water allowed at the shaft inlet or cable routing or at the bearing.

Specifications subject to change without notice.

Doc No: AE0033 Rev: 001	Impulse Automation Limited United Kingdom Company Registration 665193	Page
Edition: 3 241016TK		1/4

Art.No.: 2 539 214

TECHNICAL DATASHEET

Ex - Absolute Encoder AX 73 BiSS / SSI

TECHNICAL DATA mechanical (continued)

Vibration resistance (DIN EN 60068-2-6:2008)	100m/s ² (60 ... 2000Hz ²⁾)
Shock resistance (DIN EN 60068-2-27:2010)	1000m/s ² (6ms)
Ambient temperature	-40°C ... +70°C
Storage temperature	-20°C ... +80°C
Material shaft	Stainless Steel 1.4104 / AISI 430F
Material housing	Stainless Steel 1.4404 / AISI 316L
Weight	approx. 2200g
Connection ²⁾	Terminal box with 2 x M20x1,5 screw thread, radial

²⁾ without cable gland

TECHNICAL DATA electrical

General design	as per EN 61010 - 1, protection class III contamination level 2, overvoltage class II
Supply voltage	DC 10 - 30V with pole protection
Current w/o load max.	200 mA
Recommended external fuse	T 0,25 A
Power consumption	approx.. 1,5W to 2W
Resolution singleturn	10 - 22 Bit
Resolution multiturn	12 Bit
EMC ³⁾	Noise emission as per EN 61326-1 Group 1, Class B; Noise immunity as per EN 61326 - 1 Class A
Output code	Gray or Binary
Lines/ Drivers	Clock and Data / RS422
Control input	$\overline{\text{Direction}}$

³⁾ with compliance with screening indications

RECOMMENDED CLOCK FREQUENCY WITH SSI

Cable length	Clock frequency
< 25 m	< 1000 kHz
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

The maximum clock frequency depends on cable length and cable quality. Please use a screened cable with twisted cable pairs for clock and clock\; data and data\ as well as U_b and GND.

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Doc No: AE0033 Rev: 001	Impulse Automation Limited United Kingdom Company Registration 665193	Page
Edition: 3 241016TK		2/4

Art.No.: 2 539 214

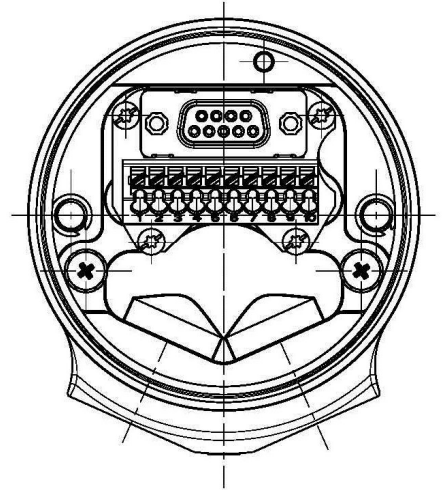
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TECHNICAL DATASHEET

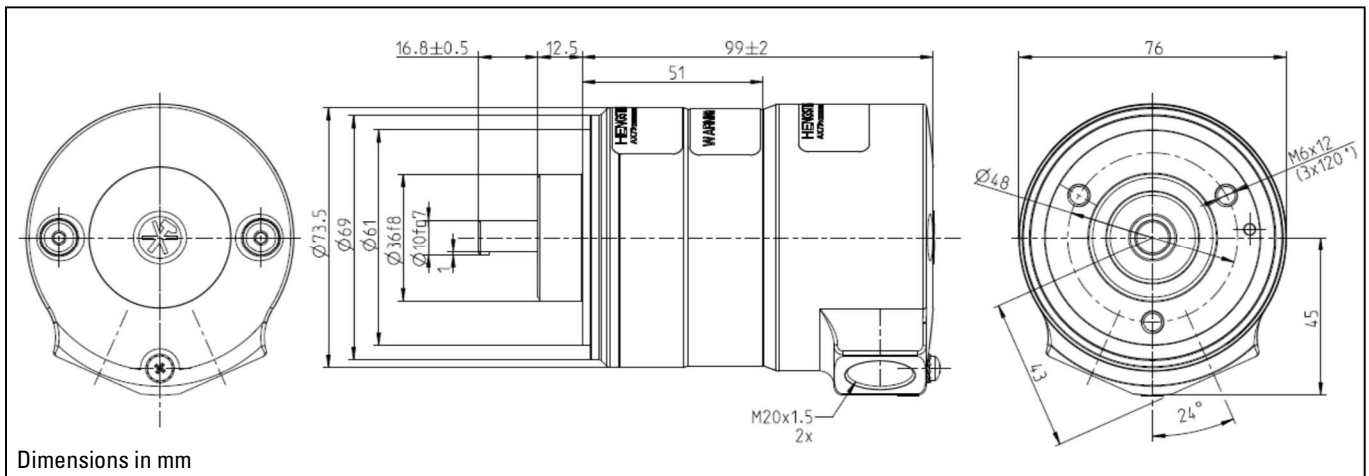
Ex - Absolute Encoder AX 73 BiSS / SSI

ELECTRICAL CONNECTIONS

Terminal block	Signal
1	U_b 10 ... 30V DC
2	0V (GND supply voltage)
3	$\overline{\text{Clock}}$
4	Clock
5	$\overline{\text{Data}}$
6	Data
7	$\overline{\text{Direction}}$
8	0V (signals)
9	Not connected
10	Functional earth
Grounding-screw (2x inside, 1x outside)	Functional earth



DIMENSIONED DRAWINGS



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Doc No: AE0033 Rev: 001	Impulse Automation Limited United Kingdom Company Registration 665193	Page
Edition: 3 241016TK		3/4

Art.No.: 2 539 214

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Ex - Absolute Encoder AX 73 BiSS / SSI

ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft	Interface	Connection
<input type="checkbox"/> / <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AX73	0010 10 Bit ST 0012 12 Bit ST 0013 13 Bit ST 0014 14 Bit ST 0017 17 Bit ST 0019 19 Bit ST 0022 22 Bit ST 0360 360 Increments ST ¹⁾ 0720 720 Increments ST ²⁾ 1212 12 Bit MT+12 Bit ST 1213 12 Bit MT+13 Bit ST 1214 12 Bit MT+14 Bit ST 1217 12 Bit MT+17 Bit ST 1219 12 Bit MT+19 Bit ST 1222 12 Bit MT+22 Bit ST	E DC 10 - 30 V	K.72 Clamping flange, IP67, 10 mm	SB SSI Binary SG SSI Gray BI BiSS-B BE BiSS-C	2 2 x M20x1,5 screw thread, radial

¹⁾ with Offset 76 (value range 76...435)

²⁾ with Offset 152 (value range 152...871)

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Doc No: AE0033 Rev: 001	Impulse Automation Limited United Kingdom Company Registration 665193	Page
Edition: 3 241016TK		4/4

Art.No.: 2 539 214

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