

MAIN FEATURES

Miniaturized multiturn absolute encoder for limited size applications.

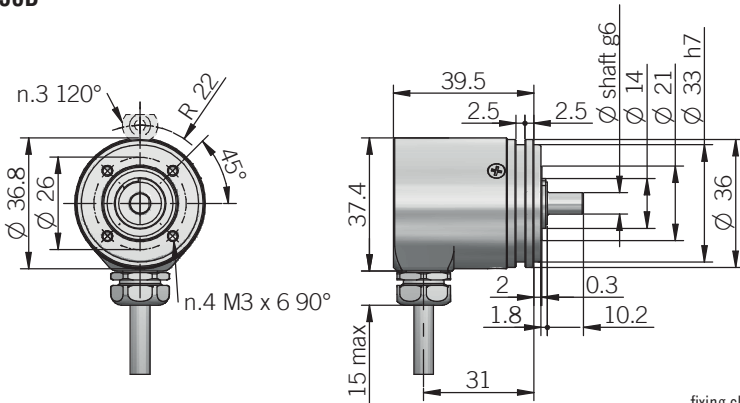
- Magnetic sensor technology without contact (Magnetic ASIC + Patented Energy Harvesting)
- Up to 55 bit as total resolution (15 bit single turn + 40 bit multiturn)
- Power supply up to +30 V DC with SSI as electrical interface
- Code reset for easy setup
- Cable or M12 output, other connectors available on cable end
- 6 mm diameter solid shaft
- Mounting by synchronous flange



ORDERING CODE **EAM** **36B** **12 / 13** **G** **8/30** **S** **P** **X** **6** **X** **8** **M12R** **.162** **+XXX**

SERIES magnetic multiturn absolute encoder EAM	MODEL synchronous flange ø 33 mm 36B	MULTITURN RESOLUTION turns from 1 to 17 bit	SINGLETURN RESOLUTION from 1 to 15 bit	CODE TYPE binary B gray G	POWER SUPPLY 5 V DC 5 8 ... 30 V DC 8/30	ELECTRICAL INTERFACE Serial Synchronous Interface - SSI S	LOGIC positive P	OPTIONS to be reported if not used X reset with external input ZE	SHAFT DIAMETER mm 6	ENCLOSURE RATING IP 67 cover side / IP 65 shaft side X	MAX ROTATION SPEED 8000 rpm 8	OUTPUT TYPE radial cable (standard length 0,5 m) PR preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PR5) 8 pin M12 radial plug connector M12R	SOCKET socket not included .162 to be reported only with connector output (eg. M12R.162), for socket see Accessories	VARIANT custom version XXX
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36B



recommended mating shaft tolerance H7
dimensions in mm

fixing clamps not included, please refer to Accessories

ELECTRICAL SPECIFICATIONS

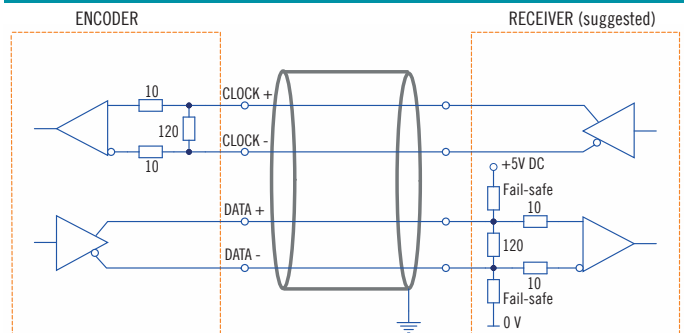
Multiturn resolution	1 to 17 bit for multiturn resolution > 17 bit please contact our offices
Singleturn resolution	1 to 15 bit
Power supply¹	5 = 4,75 ... 5,25 V DC 8/30 = 7,6 ... 30 V DC (reverse polarity protection)
Power draw without load	< 400 mW
Electrical interface²	RS-422 (THVD1451 or similar)
Auxiliary inputs (U/D - RESET)	active high (+V DC) connect to 0 V if not used / RESET t_{min} 150 ms
Clock frequency	100 kHz ... 1 MHz
Code type	binary or gray
SSI monostable time (Tm)	20 μ s
SSI pause time (Tp)	> 35 μ s
SSI frame	tree format MSB ... LSB up to 12 bit multiturn = length 25 bit (12MT + 13ST) 13 to 14 bit multiturn = length 27 bit (14MT + 13ST) 15 to 17 bit multiturn = length 32 bit (17MT + 15ST)
SSI status and parity bit	on request
Counting direction	decreasing clockwise (shaft view)
Start-up time	150 ms
Accuracy	$\pm 0,35^\circ$ max
Mean time to dangerous failure (MTTF)³ according to EN ISO 13849-1	271 years
Mission time (Tm)³	20 years
Diagnostic coverage (DC)³	0%
Cable type	shielded - fixed installation conductors section 0,14 mm ² / AWG 26 bending radius min 60 mm
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	file n. E212495

MECHANICAL SPECIFICATIONS

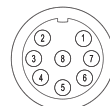
Shaft diameter	ϕ 6 mm
Enclosure rating	IP 67 cover side / IP 65 shaft side (IEC 60529)
Rotation speed	8000 rpm continuous / 10000 rpm max
Max shaft load⁴	20 N (4,5 lbs) axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	0,001 x 10 ⁻⁶ kgm ² (0,02 x 10 ⁻⁶ lbfm ²)
Starting torque (at +20°C / +68°F)	< 0,01 Nm (1,42 Ozin)
Bearing stage material	aluminum
Shaft material	stainless steel
Housing material	chrome plated steel
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{5, 6}	-30° ... +100°C (-22° ... +212°F) -25° ... +85°C (-13° ... +185°F) with M12 connector
Storage temperature⁶	-25° ... +85°C (-13° ... +185°F)
Weight	150 g (5,29 oz)

¹ as measured at the transducer without cable influences
² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section
³ this product is not a safety component, for further details refer to TECHNICAL BASICS section
⁴ maximum load for static usage
⁵ measured on the transducer flange
⁶ condensation not allowed

SSI SCHEMATICS



M12 connector (8 pin)
M12 A coded
front view



CONNECTIONS

Function	Cable	8 pin M12
+ V DC	red	8
0 V	black	5
DATA +	green	3
DATA -	brown or grey	2
CLOCK +	yellow	4
CLOCK -	orange	6
U / D	red / blue	7
RESET	white	1
⏏	shield	housing