

MAIN FEATURES

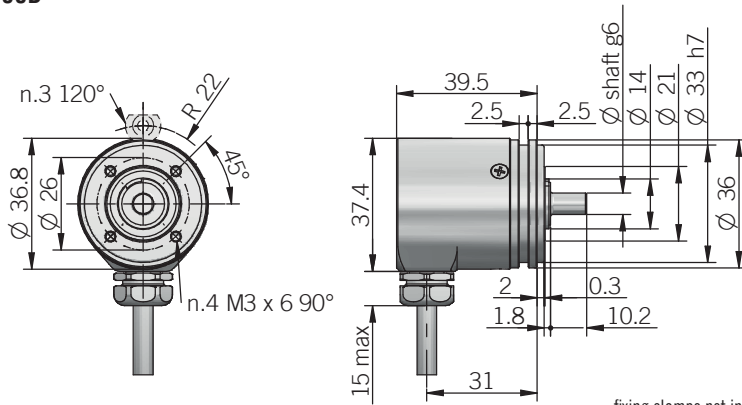
Miniaturised singleturn absolute encoder for applications with limited space.

- Contactless magnetic sensing technology (magnetic ASIC)
- Up to 18 bit as singleturn resolution
- Power supply up to +30 V DC with SSI as electrical interface
- Code reset for easy setup
- Cable or M12 output, other connectors available at cable end
- 6 mm diameter solid shaft
- Mounting by synchronous flange



ORDERING CODE	EMA	36B	13	G	8/30	S	P	X	6	X	8	M12R	.162	+XXX
<p>SERIES magnetic singleturn absolute encoder EMA</p> <p>MODEL synchronous flange ø 33 mm 36B</p> <p>RESOLUTION from 1 to 18 bit please directly contact our offices for other pulses</p> <p>CODE TYPE binary B gray G</p> <p>POWER SUPPLY 5 V DC 5 8 ... 30 V DC 8/30</p> <p>ELECTRICAL INTERFACE Serial Synchronous Interface - SSI S</p> <p>LOGIC positive P</p> <p>OPTIONS to be reported if not used X reset with external input ZE</p> <p>SHAFT DIAMETER mm 6</p> <p>ENCLOSURE RATING IP 67 cover side / IP 65 shaft side X</p> <p>MAX ROTATION SPEED 8000 rpm 8</p> <p>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</p> <p>SOCKET socket not included .162 to be reported only with connector output (eg. M12R.162), for socket see Accessories</p> <p>VARIANT custom version XXX</p>														

36B



recommended mating shaft tolerance H7
dimensions in mm

fixing clamps not included, please refer to Accessories

ELECTRICAL SPECIFICATIONS

Resolution	from 1 to 18 bit
Power supply ¹	5 = 4,75 ... 5,25 V DC 8/30 = 7,6 ... 30 V DC (reverse polarity protection)
Power draw without load	< 0,4 W
Electrical interface ²	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	left aligned format MSB ... LSB up to 13 bit = length 13 bit 14 to 18 bit = length 18 bit
SSI status and parity bit	on request
Counting direction	decreasing clockwise (shaft view)
Start-up time	150 ms
Accuracy (at +20°C / +68°F)	$\pm 0,20^\circ$
Mean time to dangerous failure (MTTF)_p ³ according to EN ISO 13849-1	230 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

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

MECHANICAL SPECIFICATIONS

Shaft diameter	$\varnothing 6$ mm
Enclosure rating	IP 67 cover side / IP 65 shaft side (IEC 60529)
Rotation speed	8000 rpm continuous / 10000 rpm max
Max shaft load ⁴	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	$0,001 \times 10^{-6} \text{ kgm}^2$ ($0,02 \times 10^{-6} \text{ lbft}^2$)
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 temperature ⁶	-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

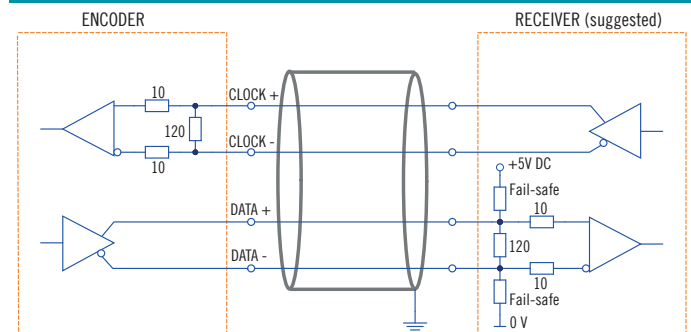
³ this product is not a safety component, for further details refer to TECHNICAL BASICS section

⁴ maximum load for static usage

⁵ measured on the transducer flange

⁶ condensation not allowed

SSI ELECTRICAL INTERFACE



M12 connector (8 pin)
M12 A coded
front view

