

MAIN FEATURES

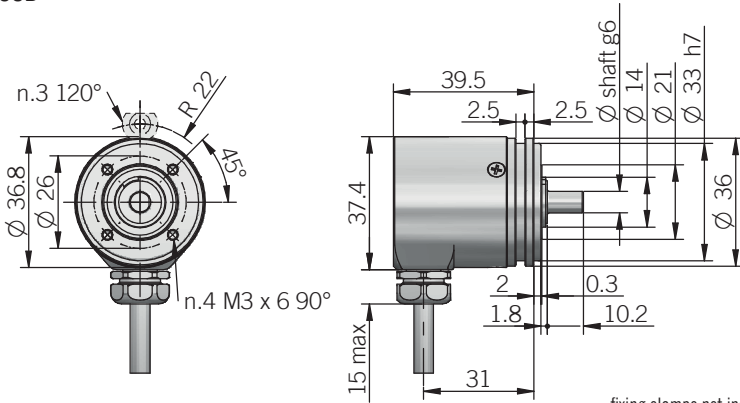
Miniaturized singleturn absolute encoder for limited size applications.

- Magnetic sensor technology without contact (Magnetic ASIC)
- Up to 15 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 on 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
SERIES magnetic singleturn absolute encoder	EMA													
MODEL synchronous flange ø 33 mm		36B												
RESOLUTION from 1 to 15 bit please directly contact our offices for other pulses			13											
CODE TYPE binary gray				G										
POWER SUPPLY 5 V DC 8 ... 30 V DC					8/30									
ELECTRICAL INTERFACE Serial Synchronous Interface - SSI						S								
LOGIC positive							P							
OPTIONS to be reported if not used reset with external input								X ZE						
SHAFT DIAMETER mm									6					
ENCLOSURE RATING IP 67 cover side / IP 65 shaft side										X				
MAX ROTATION SPEED rpm											8			
OUTPUT TYPE radial cable (standard length 0,5 m) 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 to be reported only with connector output (eg. M12R.162), for socket see Accessories													.162	
VARIANT custom version														XXX

36B



recommended mating shaft tolerance H7
dimensions in mm

fixing clamps not included, please refer to Accessories

ELECTRICAL SPECIFICATIONS	
Resolution	from 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	MSB ... LSB up to 13 bit = length 13 bit 14 to 15 bit = length 15 bit
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_d)³ according to EN ISO 13849-1	317 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

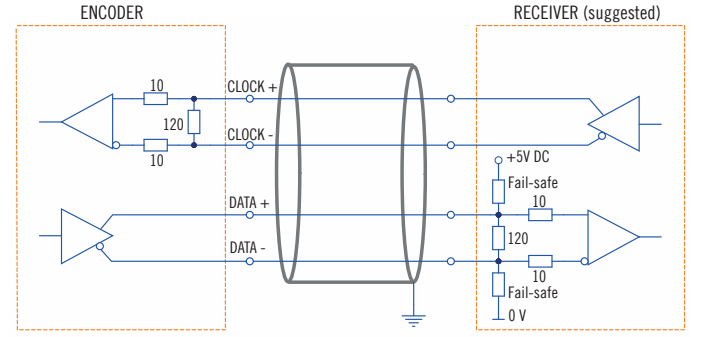
Function	Cable	8 pin M12
+ V DC	red	8
0 V	black	5
DATA +	green	3
DATA -	brown or grey	2
CLOCK +	yellow	4
CLOCK -	orange	6
U / D	red / blue	7
RESET	white	1
\equiv	shield	housing

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 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 lbf 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

