

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
- Blind hollow shaft up to 10 mm diameter
- Mounting by stator coupling or torque pin

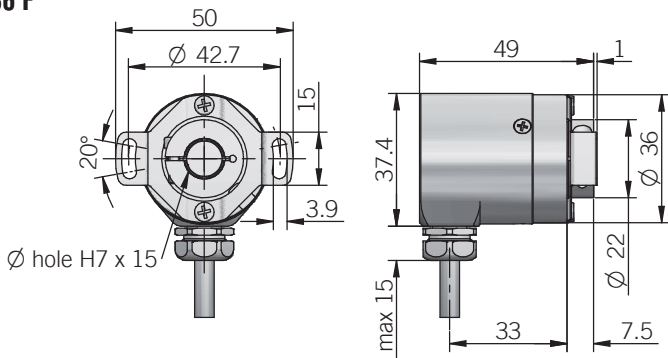


ORDERING CODE

EMA	36F	13	G	8/30	S	P	X	6	X	8	PR	.XXX
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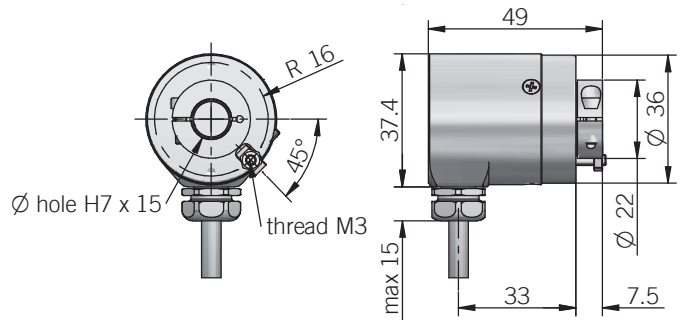
SERIES magnetic singleturn absolute encoder EMA												
MODEL blind hollow shaft with stator coupling 36F blind hollow shaft with torque pin 36G												
RESOLUTION from 1 to 15 bit 360 / 720 ppr please directly contact our offices for other pulses												
CODE TYPE binary B gray G												
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 ZE												
BORE DIAMETER mm 6 (1/4") mm 6,35 mm 8 (3/8") mm 9,52 mm 10												
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 8 pin M12 radial connector M12R female connector included, without female please add 162 as variant code												
VARIANT custom version XXX												

36 F



dimensions in mm

36 G



torque pin is included, for mounting instruction please refer to product installation notes

ELECTRICAL SPECIFICATIONS	
Resolution	from 1 to 15 bit 360 / 720 ppr
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 (SN65LBC179Q or equivalent)
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
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2015/863/EU directive
UL / CSA	certificate n. E121495

¹ as measured at the transducer without cable influences

² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

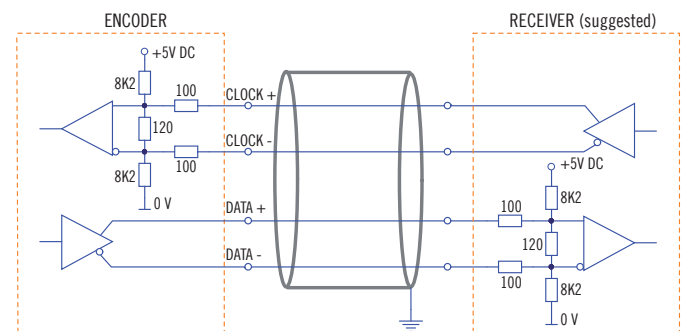
³ maximum load for static usage

⁴ measured on the transducer flange

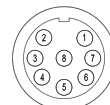
⁵ condensation not allowed

MECHANICAL SPECIFICATIONS	
Bore diameter	ϕ 6* / 6,35 (1/4")* / 8* / 9,52 (3/8") / 10 mm * with supplied shaft adapter
Enclosure rating	IP 67 cover side / IP 65 shaft side (IEC 60529)
Rotation speed	8000 rpm continuous / 10000 rpm max
Max shaft load³	20 N axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	$0,001 \times 10^{-6} \text{ kgm}^2$ ($0,02 \times 10^{-6} \text{ lbf}^2$)
Starting torque (at +20°C / +68°F)	< 0,01 Nm (1,42 Ozin)
Bearing stage material	EN-AW 2011 aluminium
Shaft material	1.4305 / AISI 303 stainless steel
Housing material	1.0503 / AISI 1045 chrome plated steel
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature^{4, 5}	-30° ... +100°C (-22° ... +212°F) -25° ... +85°C (-13° ... +185°F) with M12 connector
Storage temperature⁵	-25° ... +85°C (-13° ... +185°F)
Fixing torque for collar clamping	0,6 Nm (85 Ozin) recommended
Weight	150 g (5,29 oz)

SSI SCHEMATICS



M12 connector (8 pin)
M12 A coded
solder side view FV



CONNECTIONS

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