

### MAIN FEATURES

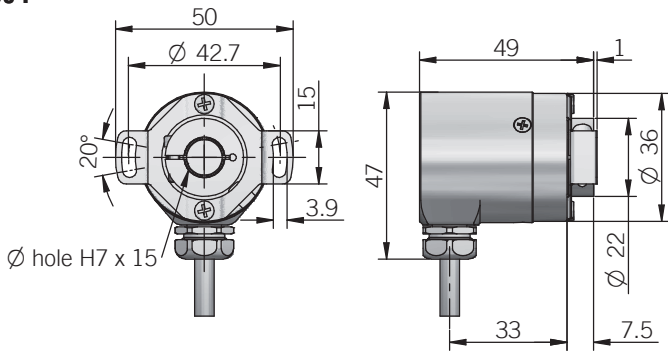
Miniaturized singleturn absolute encoder for limited size applications.

- 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



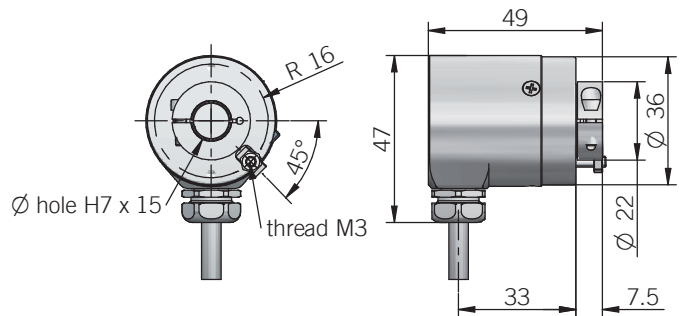
ORDERING CODE	EMA	36F	13	G	8/30	S	P	X	6	X	8	PR	.XXX
<b>SERIES</b> magnetic singleturn absolute encoder	EMA												
<b>MODEL</b> blind hollow shaft with stator coupling blind hollow shaft with torque pin		36F 36G											
<b>RESOLUTION</b> from 1 to 15 bit 360 / 720 ppr please directly contact our offices for other pulses													
<b>CODE TYPE</b> binary gray				B G									
<b>POWER SUPPLY</b> 5 V DC 8 ... 30 V DC					5 8/30								
<b>ELECTRICAL INTERFACE</b> Serial Synchronous Interface - SSI						S							
<b>LOGIC</b> positive							P						
<b>OPTIONS</b> to be reported if not used reset								X ZE					
<b>BORE DIAMETER</b> mm (1/4") mm mm (3/8") mm mm									6 6,35 8 9,52 10				
<b>ENCLOSURE RATING</b> IP 67 cover side / IP 65 shaft side										X			
<b>MAX ROTATION SPEED</b> 8000 rpm											8		
<b>OUTPUT TYPE</b> radial cable (standard length 0,5 m) 8 poles M12 radial connector female connector included, without female please add 162 as variant code												PR M12R	
<b>VARIANT</b> 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

<b>Resolution</b>	from 1 to 15 bit 360 / 720 ppr
<b>Power supply<sup>1</sup></b>	5 = 4,75 ... 5,25 V DC 8/30 = 7,6 ... 30 V DC (reverse polarity protection)
<b>Power draw without load</b>	< 400 mW
<b>Electrical interface<sup>2</sup></b>	RS-422 (SN65LBC179Q or equivalent)
<b>Auxiliary inputs (U/D - RESET)</b>	active high (+V DC) connect to 0 V if not used / RESET $t_{min}$ 150 ms
<b>Clock frequency</b>	100 kHz ... 1 MHz
<b>Code type</b>	binary or gray
<b>SSI monostable time (Tm)</b>	20 µs
<b>SSI pause time (Tp)</b>	> 35 µs
<b>SSI frame</b>	(MSB ... LSB) up to 13 bit = length 13 bit 14 to 15 bit = length 15 bit
<b>SSI status and parity bit</b>	on request
<b>Counting direction</b>	decreasing clockwise (shaft view)
<b>Start-up time</b>	150 ms
<b>Accuracy</b>	± 0,35° max
<b>Electromagnetic compatibility</b>	according to 2014/30/EU directive
<b>RoHS</b>	according to 2015/863/EU directive
<b>UL / CSA</b>	certificate n. E212495

MECHANICAL SPECIFICATIONS

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

<sup>1</sup> as measured at the transducer without cable influences

<sup>2</sup> for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

<sup>3</sup> maximum load for static usage

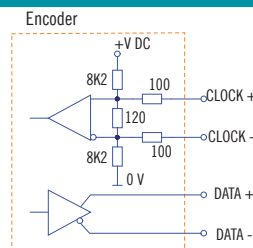
<sup>4</sup> measured on the transducer flange

<sup>5</sup> condensation not allowed

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
⊥	shield	housing

SSI SCHEMATICS



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

