# EA 90 A - 115 A PROFIBUS

## SOLID SHAFT SINGLETURN ABSOLUTE ENCODER

### MAIN FEATURES

Industry standard singleturn absolute encoder for factory automation applications.

- Optical sensor technology (OptoASIC)
- Resolution up to 13 bit (8192 ppr)
- Power supply up to +28 V DC with Profibus DP as electrical interface
- Cable gland or M12 connector output
- Solid shaft diameter up to 11 mm
- Mounting by synchronous or REO-444 flange

| ORDERING CODE | EA | 90A | 4096 | B | 12/28 | FXX | 10 | X | 6 | P3R | . XXX |
|---|---|---|---|---|---|---|---|---|---|---|---|

**SERIES**
singleturn absolute encoder EA

**MODEL**
synchronous flange ø 40 mm 90A
REO-444 flange 115A

**RESOLUTION**
ppr 4096 / 8192

**CODE TYPE**
binary B

**POWER SUPPLY**
12 ... 28 V DC 12/28

**ELECTRICAL INTERFACE**
PROFIBUS DP V0 CLASS 2 FXX

**SHAFT DIAMETER**
(mod. 90) (3/8") 9,52 mm 9
mm 10
(mod. 115) mm 11

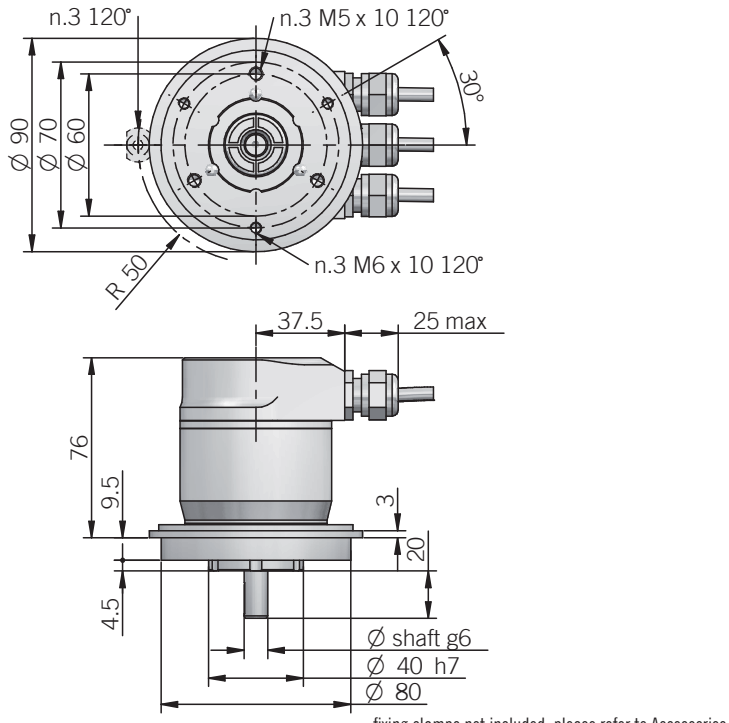
**ENCLOSURE RATING**
IP 54 X
(mod. 90) IP 66 S

**MAX ROTATION SPEED**
(IP 66) 3000 rpm 3
(IP 54) 6000 rpm 6

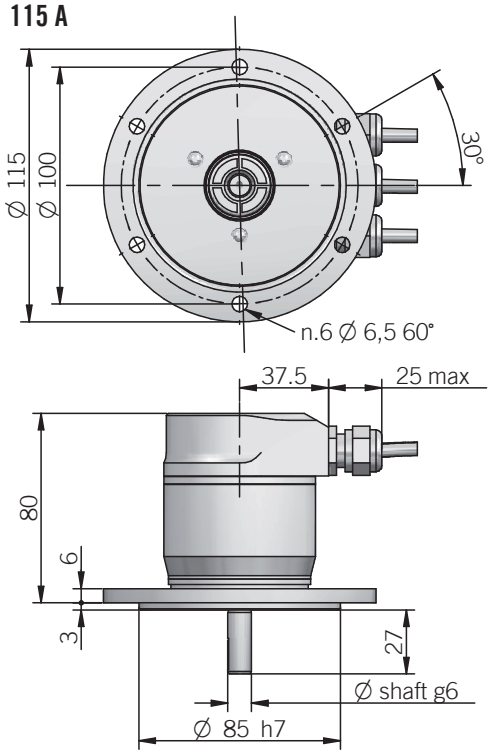
**OUTPUT TYPE**
terminal box - radial cable glands P3R
radial M12 connectors M12R
mating connectors included, without mating connectors please add 162 as variant code

**VARIANT**
custom version XXX

## 90 A




## 115 A




fixing clamps not included, please refer to Accessories

dimensions in mm

## ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| **Resolution** | 2 ... 4096 / 2 ... 8192 ppr<br>programmable during commissioning |
| **Power supply**[1] | 11,4 ... 29,4 V DC (reverse polarity protection) |
| **Current consumption without load** | 300 mA |
| **Electrical interface**[2] | RS 485 galvanically isolated |
| **Max bus frequency** | 12 Mbaud |
| **Diagnostic features** | frequency warning<br>position warning / alarm<br>please refer to installation manual for more informations |
| **Max frequency** | max 25 kHz LSB |
| **Code type** | binary |
| **Counting direction** | programmable during commissioning |
| **Start-up time** | 500 ms |
| **Accuracy** | ± 1/2 LSB |
| **Electromagnetic compatibility** | according to 2014/30/EU directive |
| **RoHS** | according to 2015/863/EU directive |
| **UL / CSA** | certificate n. E212495 |

## CONNECTIONS

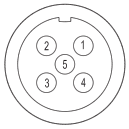
| Function | POWER | LINE OUT | LINE IN |
|---|---|---|---|
| + V DC | 2 | | |
| 0 V | 4 | | |
| A | | 2 | |
| B | | 4 | |
| A | | | 2 |
| B | | | 4 |

## MECHANICAL SPECIFICATIONS

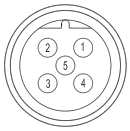
| | |
|---|---|
| **Shaft diameter** | ø 9,52 (3/8") / 10 / 11 mm |
| **Enclosure rating** | X = IP 54 (IEC 60529)<br>S = IP 66 (IEC 60529) |
| **Max rotation speed** | IP 54 - 6000 rpm<br>IP 66 - 3000 rpm |
| **Max shaft load**[3] | 100 N axial / radial |
| **Shock** | 50 G, 11 ms (IEC 60068-2-27) |
| **Vibration** | 10 G, 10 ... 2000 Hz (IEC 60068-2-6) |
| **Moment of inertia** | 1,5 x $10^{-6}$ kgm$^2$ (36 x $10^{-6}$ lbft$^2$) |
| **Starting torque (at +20°C / +68°F)** | < 0,02 Nm (2,83 Ozin) IP 54<br>< 0,06 Nm (8,50 Ozin) IP 66 |
| **Bearing stage material** | EN-AW 2011 aluminum |
| **Shaft material** | 1.4305 / AISI 303 stainless steel |
| **Housing material** | painted aluminium |
| **Bearings** | n.2 ball bearings |
| **Bearings life** | $10^9$ revolutions |
| **Operating temperature**[4,5] | 0° ... +60°C (+32° ... +140°F) |
| **Storage temperature**[5] | -15° ... +70°C (+5° ... +158°F) |
| **Weight** | 750 g (26,46 oz) |

[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

POWER connector (5 pin)
M12 A coded
view solder side FV




LINE OUT - female (5 pin)
M12 B coded
solder side view FV




LINE IN - male (5 pin)
M12 B coded
solder side view MV