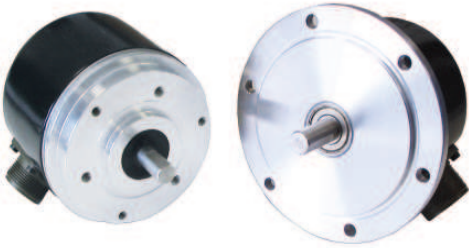




# EH 90 A - EH 115 A / R

## SOLID SHAFT INCREMENTAL ENCODER



### Specifications

Encoder series for harsh environments with high mechanical resistance requirements. Model 90 can be mounted by flanges or fixing clamps; model 115 has a tachometer generator REO-444 type compatible plug with optional centrifugal relay.

- 3 channel encoder (A / B / Z) up to 2048 ppr
- Redundancy with double electronics and / or double resolutions
- Power supply up to +24 VDC with several electronic interfaces available
- Up to 100 kHz output frequency
- Solid shaft diameter up to 11 mm
- Mounting by synchronous or REO-444 flange
- Model 115R available with centrifugal relay

ORDERING CODE	EH	90A	500	S	8/24	N	1000	Z	8/24	N	8	X	6	P	R	.XXX + 2000
<b>SERIES</b> incremental encoder series																
<b>MODEL</b> synchronous flange ø 40 mm flange REO-444 flange REO-444 with centrifugal relay																
<b>RESOLUTION</b> ppr from see table for pulses availability																
<b>ZERO PULSE</b> without zero pulse with zero pulse																
<b>POWER SUPPLY</b> (with L electronic interface) 5 V DC 8 ... 24 V DC																
<b>ELECTRONIC INTERFACE</b> NPN NPN open collector PUSH PULL protected push-pull (AEIC-7272) line driver																
<b>RESOLUTION</b>																
<b>ZERO PULSE</b>																
<b>POWER SUPPLY</b>																
<b>ELECTRONIC INTERFACE</b>																
<b>SHAFT DIAMETER</b> (mod. 90) mm (mod. 90) 9,52 (3/8") mm mm (mod. 115) mm																
<b>ENCLOSURE RATING</b> IP 54 (mod. 90) IP 66																
<b>MAX ROTATION SPEED</b> (IP 66) 3000 rpm (IP 54) 6000 rpm																
<b>OUTPUT TYPE</b> cable (standard length 1,5 m) MIL connector JIS-C-5432 connector female connector included, without female please add 162 as variant code																
<b>DIRECTION TYPE</b> axial radial																

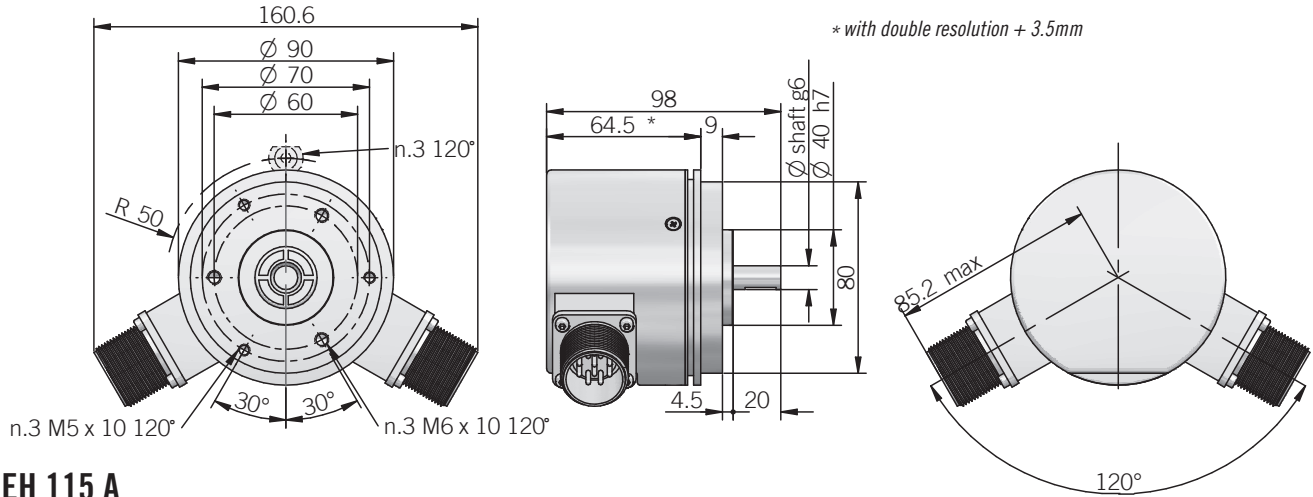
To be indicated only in the models "A" for double electronics and double resolution.  
See examples:

Double resolution and double electronics: **EH90A1024Z5L-2048Z8/24L10X...**  
Double resolution and same electronics: **EH90A1024-2048Z5L10X...**  
Same resolution and double electronics: **EH90A1024Z5L-Z8/24L10X...**

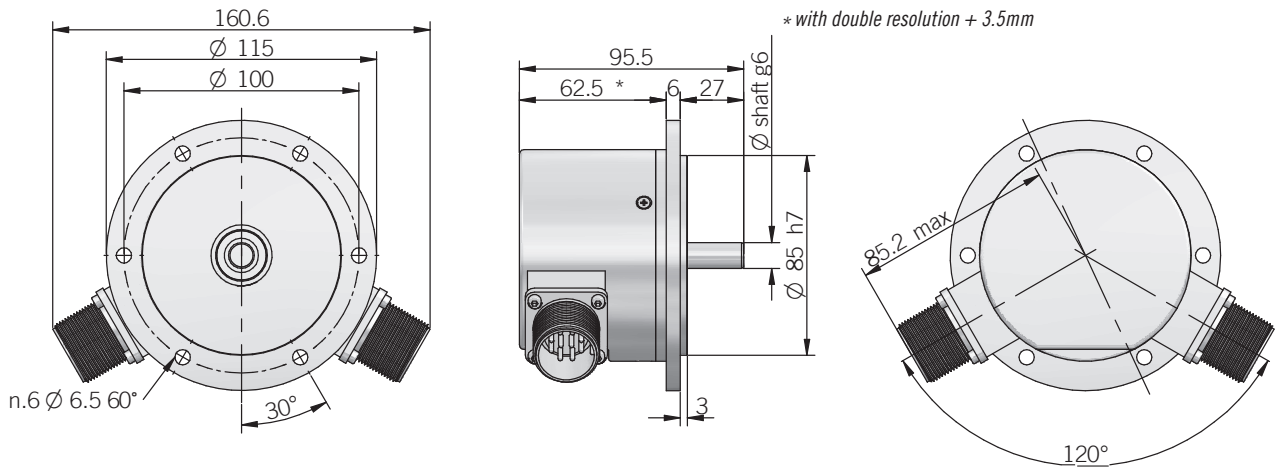
**VARIANT**  
custom version XXX  
**RELAY INTERVENTION SPEED**  
from 600 to 4300  
for other speeds please contact our offices directly

## EH 90 A with double electronics / resolutions

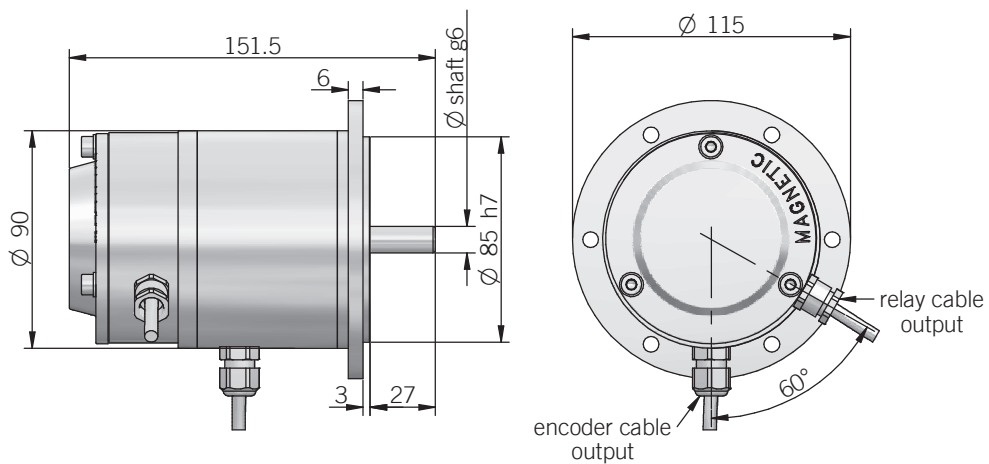
fixing clamps not included



## EH 115 A with double electronics / resolutions



## EH 115 R with centrifugal relay



## ELECTRICAL SPECIFICATIONS

<b>Resolution</b>	from 200 to 2048 ppr
<b>Power supply</b>	5 = 4,5 ... 5,5 V DC 8/24 = 7,6 ... 25,2 V DC (reverse polarity protection)
<b>Current consumption without load</b>	100 mA max
<b>Max load current</b>	N / C / P / PC = 50 mA / channel L = 20 mA / channel
<b>Output type*</b>	NPN / NPN open collector / push-pull / line driver
<b>Max output frequency</b>	100 kHz
<b>Counting direction</b>	A leads B clockwise (shaft view)
<b>Electromagnetic compatibility</b>	IEC 61000-6-1 IEC 61000-6-3

\*output levels according to power supply, for further details please see under Technical basics section

## RESOLUTIONS

200 - 250 - 500 - 512 - **1000** - **1024** - **2000** - **2048**

please directly contact our offices for other pulses, preferred resolutions in bold

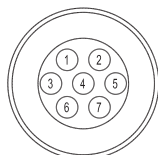
## RELAY CHARACTERISTICS

<b>Intervention speed</b>	from 600 to 4300 rpm
<b>Accuracy</b>	± 3 %
<b>Contact capacity</b>	2 A / 250 V AC 3,3 A / 125 V AC

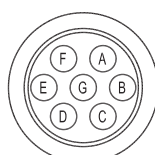
## CONNECTIONS

Function	Cable output	Cable output	7 pin J output	7 pin J output	7 pin M output	7 pin M output	10 pin J output	10 pin M output
	N / C / P / PC	Line driver	N / C / P / PC	Line Driver no Zero	N / C / P / PC	Line Driver no Zero	Line Driver with Zero	Line Driver with Zero
+V DC	red	red	6	4	F	D	4 - 5	D - E
0 V	black	black	1	6	A	F	6	F
Ch. A	green	green	3	1	C	A	1	A
Ch. A-	/	brown	/	3	/	C	7	G
Ch. B	yellow	yellow	5	2	E	B	2	B
Ch. B-	/	orange	/	5	/	E	8	H
Ch. Z	blue	blue	4	/	D	/	3	C
Ch. Z-	/	white	/	/	/	/	9	I
⊥	shield	shield	7	7	G	G	10	J

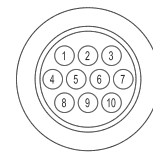
J connector (7 pin)  
JIS-C-5432 Size 16  
solder side view FV



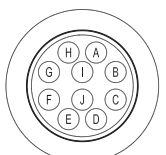
M connector (7 pin)  
Amphenol MS3102-E-16-S  
solder side view FV



J connector (10 pin)  
JIS-C-5432 Size 16  
solder side view FV



M connector (10 pin)  
Amphenol MS3102-E-18-1  
solder side view FV



## MECHANICAL SPECIFICATIONS

<b>Shaft diameter</b>	∅ 8 / 9,52 (3/8") / 10 / 11 mm
<b>Enclosure rating</b>	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
<b>Max rotation speed</b>	X = 6000 rpm S = 3000 rpm
<b>Max shaft load</b>	200 N axial / radial
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibration</b>	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Moment of inertia</b>	$3,5 \times 10^{-6} \text{ kgm}^2$ $< 0,02 \text{ Nm}^2$ (IP 54)
<b>Starting torque</b>	$< 0,06 \text{ Nm}$ (IP 66)
<b>Body material</b>	EN-AW 2011 aluminum
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Housing material</b>	painted aluminum
<b>Bearings</b>	2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Operating temperature</b>	-10° ... +60°C (+14° ... +140°F)
<b>Storage temperature</b>	-25° ... +70°C (-13° ... +158°F)
<b>Weight</b>	750 g (26,46 oz) 1050 g (37,04 oz) with relay

## ACCESSORIES

set n.3 fixing clamps for model 90 A  
P/N 94080001

