

MAIN FEATURES

Encoder series designed for use in harsh environments with high mechanical resistance requirements. The model 90A can be mounted by flanges or fixing clamps, while the model 115A has a tachometer generator REO-444 type compatible flange with optional centrifugal relay.

- 3 channel encoder (A / B / Z) up to 2048 ppr
- Redundancy encoder with double output and / or double resolutions
- Power supply up to +30 V DC with various electrical interfaces available
- Output frequency up to 105 kHz
- Solid shaft diameter up to 11 mm
- Mounting by synchronous or REO-444 flange
- Model 115R available with centrifugal relay

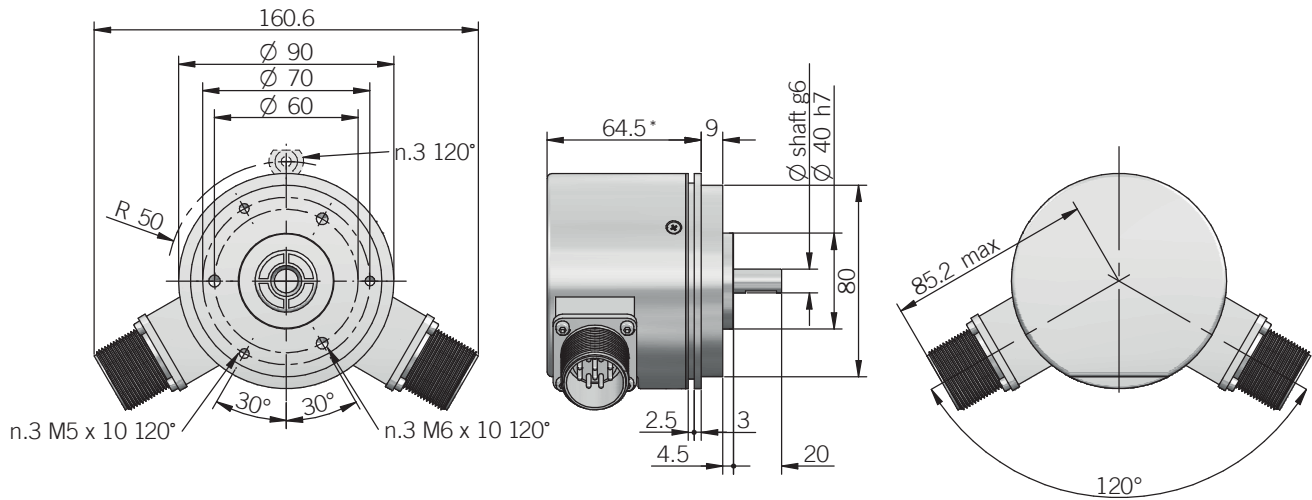


ORDERING CODE EH 90A 500 S 5/30 P 1000 Z 5/30 P 8 X 6 M R .162 +XXX +2000															
SERIES incremental encoder series EH															
MODEL synchronous flange ø 40 mm 90A flange REO-444 115A flange REO-444 with centrifugal relay 115R															
RESOLUTION ppr from 200 to 2048 refer to the available pulses list															
ZERO PULSE without zero pulse S with zero pulse Z															
POWER SUPPLY (with L electrical interface) 5 V DC 5 5 ... 30 V DC 5/30															
ELECTRICAL INTERFACE NPN open collector C push-pull P line driver L power supply 5/30 V DC - output RS-422 RS															
RESOLUTION															
ZERO PULSE															
POWER SUPPLY															
ELECTRICAL INTERFACE															
SHAFT DIAMETER (mod. 90A) mm 8 (mod. 90A) (3/8") mm 9,52 mm 10 (mod. 115A - 115R) 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 cable (standard length 1,5 m) P preferred cable lengths 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5) MIL plug connector M JIS-C-5432 IP40 plug connector J															
DIRECTION TYPE axial A radial R															
SOCKET socket not included .162 to be reported only with connector output (eg. MR.162), for socket see Accessories															
VARIANT custom version XXX															
RELAY INTERVENTION SPEED (mod. 115R) from 600 to 4300 for other speeds please contact our offices directly															

To be indicated in the models 90A - 115A for double electronics and double resolution.
With different double resolution please add 250 as variant, see examples:

Double different resolution and double electronics: **EH90A1024Z5L-2048Z5/30L10X**
... **.250**
Double different resolution and same electronics: **EH90A1024-2048Z5L10X** ... **.250**
Same resolution and double electronics: **EH90A1024Z5L-Z5/30L10X** ...

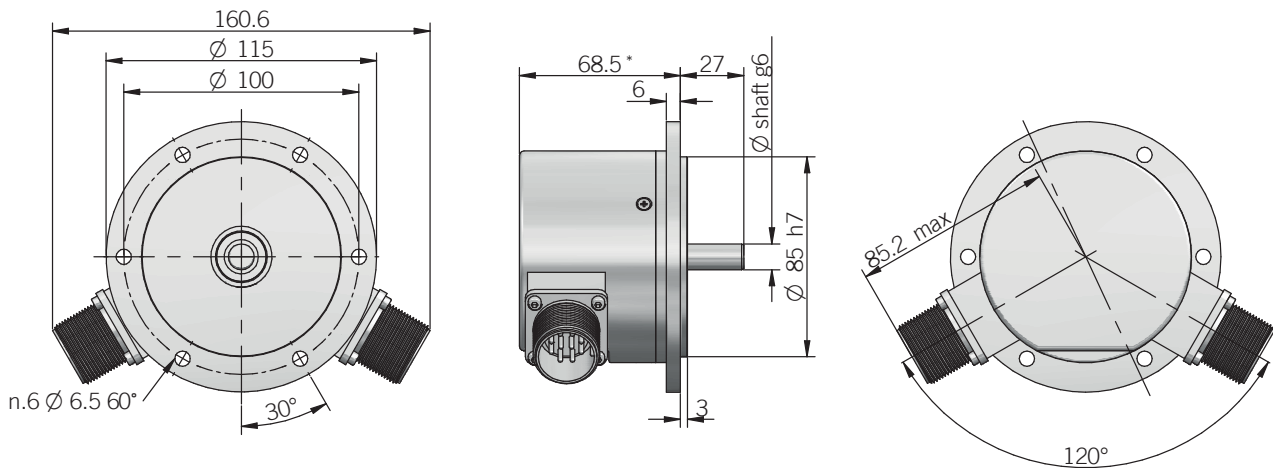
90A WITH DOUBLE OUTPUT / RESOLUTION



fixing clamps not included, please refer to the Accessories

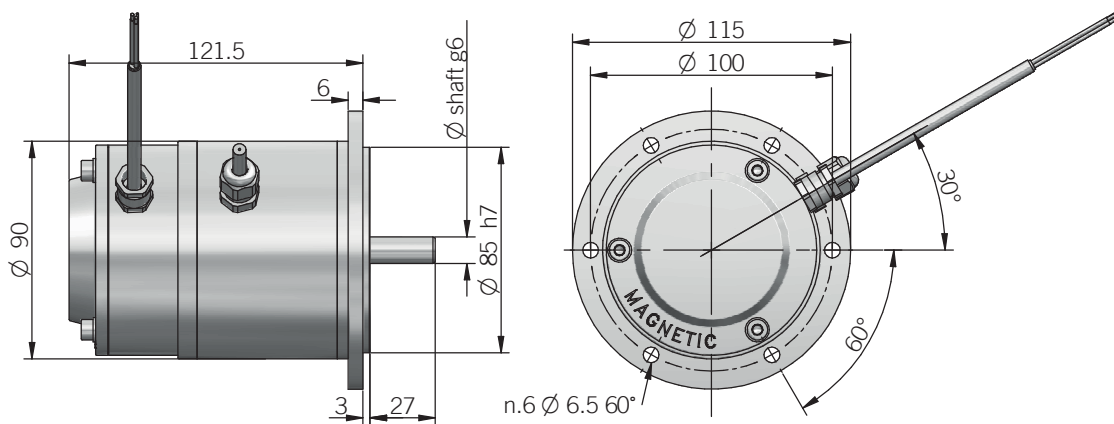
* with double resolution + 3.5mm

115A WITH DOUBLE OUTPUT / RESOLUTION



* with double resolution + 3.5mm

115R



recommended mating shaft tolerance H7
dimensions in mm

ELECTRICAL SPECIFICATIONS

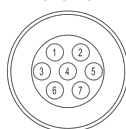
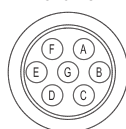
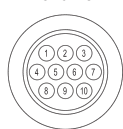
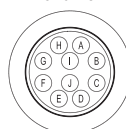
Resolution	from 200 to 2048 ppr
Power supply¹	5 = 4,5 ... 5,5 V DC 5/30 = 4,5 ... 30 V DC (reverse polarity protection)
Current consumption without load	100 mA max
Max load current	C / P = 50 mA / channel L = 20 mA / channel
Electrical interface²	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272 or similar) line driver RS-422 (AELT-5000 or similar)
Max output frequency	105 kHz
Counting direction	A leads B clockwise (shaft view)
Index signal	90°e (gated A&B)
Mean time to dangerous failure (MTTF)³ according to EN ISO 13849-1	244 years / encoder
Mission time (Tm)³	20 years
Diagnostic coverage (DC)³	0%
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	file n. E212495

RELAY CHARACTERISTICS

Intervention speed	from 600 to 4300 rpm
Accuracy	± 3 %
Contact capacity	2 A / 250 V AC 3,3 A / 125 V AC
Type of contact	Normally Closed (NC)

CONNECTIONS

Function	Cable C / P	Cable L	7 pin J C / P	7 pin J L no Zero	7 pin M C / P	7 pin M L / RS no Zero	10 pin J L with Zero	10 pin M L with Zero
+V DC	red	red	6	4	F	D	4 - 5	D - E
0 V	black	black	1	6	A	F	6	F
A+	green	green	3	1	C	A	1	A
A-	/	brown or grey	/	3	/	C	7	G
B+	yellow	yellow	5	2	E	B	2	B
B-	/	orange	/	5	/	E	8	H
Z+	blue	blue	4	/	D	/	3	C
Z-	/	white	/	/	/	/	9	I
⏏	shield	shield	7	7	G	G	10	J

J connector (7 pin)
JIS-C-5432 IP40 Size 16
front viewM connector (7 pin)
Amphenol MS3102-E-16-S
front viewJ connector (10 pin)
JIS-C-5432 IP40 Size 16
front viewM connector (10 pin)
Amphenol MS3102-E-18-1
front view

MECHANICAL SPECIFICATIONS

Shaft diameter	ø 8 / 9,52 (3/8") / 10 / 11 mm
Enclosure rating IEC 60529	X = IP 54 S = IP 66
Max rotation speed	6000 rpm with X enclosure rating 3000 rpm with S enclosure rating
Max shaft load⁴	200 N (45 lbs) axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	3,5 x 10 ⁻⁶ kgm ² (83 x 10 ⁻⁶ lbft ²)
Starting torque (at +20°C / +68°F)	< 0,02 Nm (2,8 Ozin) with X enclosure rating < 0,06 Nm (8,5 Ozin) with S enclosure rating
Bearing stage material	aluminum
Shaft material	stainless steel
Housing material	painted aluminum
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{5,6}	-10° ... +60°C (+14° ... +140°F)
Storage temperature⁶	-25° ... +70°C (-13° ... +158°F)
Weight	750 g (26,46 oz) 1050 g (37,04 oz) with relay

¹ as measured at the transducer without cable influences² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section³ this product is not a safety component, for further details refer to TECHNICAL BASICS section⁴ maximum load for static usage⁵ measured on the transducer flange⁶ condensation not allowed

RESOLUTIONS

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

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