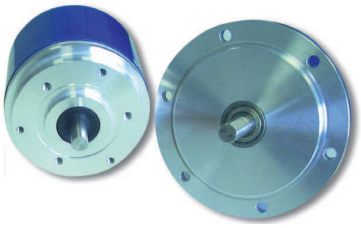
EA 90 A - 115 A
BIT PARALLEL - SSI
SOLID SHAFT SINGLETURN ABSOLUTE ENCODER

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 Bit Parallel or SSI as electrical interface
- Code reset for easy setup
- Cable or connector output
- Solid shaft diameter up to 11 mm
- Mounting by synchronous or REO-444 flange



ORDERING CODE BIT PARALLEL

EA	90A	256	G	8/28	P	P	X	10	X	6	PD	R	. XXX

SERIES
singleturn absolute encoder EA

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

RESOLUTION
(powers of 2) ppr from 2 to 8192
(multiples and submultiples of 360) ppr from 90 to 3600

CODE TYPE
binary B
gray G
(no powers of 2) binary offset code (0-XXX) BC
(no powers of 2) gray offset code (0-XXX) GC

POWER SUPPLY
8 ... 28 V DC 8/28

ELECTRICAL INTERFACE
push pull P

LOGIC
negative N
positive P

OPTIONS
latch L
(binary code) strobe S
to be reported if not used X

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
cable (standard length 1,5 m) PD
(with option "latch") cable (standard length 1,5 m) PE
19 pin MIL connector MA
female connector included, without female please add 162 as variant code

DIRECTION TYPE
axial A
radial R

VARIANT
custom version XXX

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eltra@eltra.it | www.eltra.it

ORDERING CODE SSI	EA	90A	4096	G	8/28	S	X	X	10	X	6	PC	R	. XXX

SERIES
singleturn absolute encoder EA

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

RESOLUTION
ppr 360 / 720 / 1440 / 2880 / 3600 / 4096 / 8192
please directly contact our offices for other pulses

CODE TYPE
binary B
gray G
(no powers of 2) binary offset code (0-XXX) BC
(no powers of 2) gray offset code (0-XXX) GC

POWER SUPPLY
8 ... 28 V DC 8/28

ELECTRICAL INTERFACE
Serial Synchronous Interface - SSI S

LOGIC
to be reported X

OPTIONS
to be reported if not used X
reset ZE

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
cable (standard length 1,5 m) PC
7 pin MIL connector MC
(with option "reset") 10 pin MIL connector MD
12 pin M23 connector HA
8 pin M12 connector M12
female connector included, without female please add 162 as variant code

DIRECTION TYPE
axial A
radial R

VARIANT
custom version XXX

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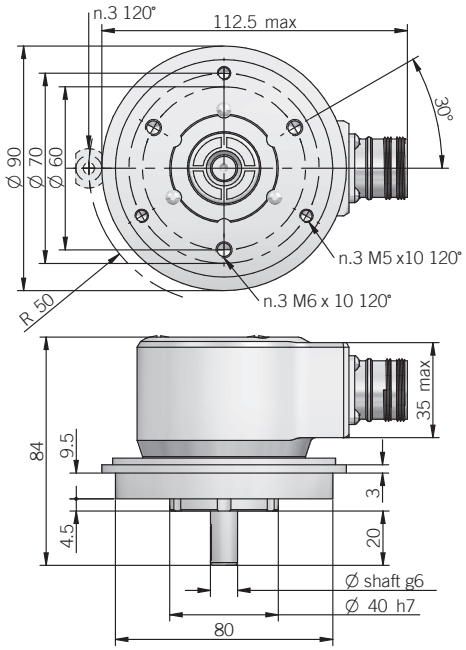
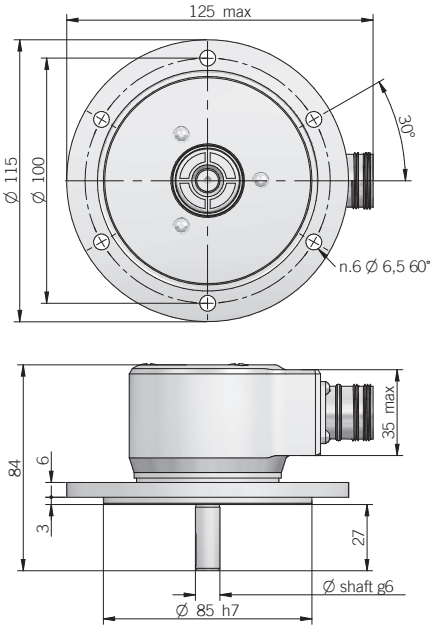
90 A

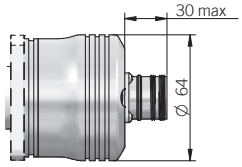


fixing clamps not included, please refer to Accessories section

115 A



Dimensions with axial output



dimensions in mm

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ELECTRICAL SPECIFICATIONS

Resolution	from 2 to 8192 ppr
Power supply	7,6 ... 29,4 V DC
Current consumption without load	100 mA
Max load current	20 mA / channel
Output type*	P = push-pull (iC-HD2) S = RS-422 (LTC1690 or equivalent)
Auxiliary inputs (U/D - Latch - Reset)	active high (+V DC) connect to 0 V if not used / Reset - Latch tmin 150 ms
Max frequency	output: 25 kHz LSB (Bit Parallel) clock input: 100 kHz ... 1 MHz (SSI)
SSI monostable time (Tm)	18 µs
SSI pause time (Tp)	> 35 µs
SSI frame	(MSB ... LSB) 13 bit data length
Accuracy	± 1/2 LSB
Counting direction	decreasing clockwise (shaft view)
Start-up time	150 ms
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	certificate n. E212495

* for further details please see OUTPUT LEVELS under TECHNICAL BASICS section

BIT PARALLEL CONNECTIONS

Function	Binary / Gray	Cable PD	Cable PE	19 pin MA
bit 1 (LSB)	B^0 / G^0	green	green	A
bit 2	B^1 / G^1	yellow	yellow	B
bit 3	B^2 / G^2	blue	blue	C
bit 4	B^3 / G^3	brown	brown	D
bit 5	B^4 / G^4	orange or pink	orange or pink	E
bit 6	B^5 / G^5	white	white	F
bit 7	B^6 / G^6	grey	grey	G
bit 8	B^7 / G^7	purple	purple	H
bit 9	B^8 / G^8	gray / pink	gray / pink	J
bit 10	B^9 / G^9	white / green	white / green	K
bit 11	B^{10} / G^{10}	brown / green	brown / green	L
bit 12	B^{11} / G^{11}	white / yellow	white / yellow	M
bit 13	B^{12} / G^{12}	yellow / brown	yellow / brown	N
STROBE	/	/	green / blue	P
LATCH	/	/	yellow / grey	R
0 V	/	black	black	T
U / D	/	red / blue	red / blue	U
+ V DC	/	red	red	V
⏚	/	shield	shield	S

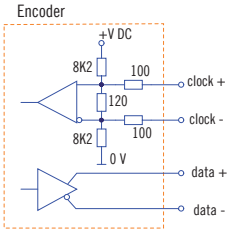
MECHANICAL SPECIFICATIONS

Shaft diameter	ø 9,52 (3/8") / 10 / 11 mm
Enclosure rating	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
Max rotation speed	IP 54 - 6000 rpm IP 66 - 3000 rpm
Max shaft load	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 < 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 aluminum
Bearings	2 ball bearings
Bearings life	10^9 revolutions
Operating temperature	0° ... +60°C (+32° ... +140°F)
Storage temperature	-15° ... +70°C (+5° ... +158°F)
Weight	650 g (22,93 oz)

SSI CONNECTIONS

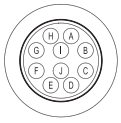
Function	Cable PC	7 pin MC	10 pin MD	12 pin HA	8 pin M12
+ V DC	red	G	G	8	8
0 V	black	F	F	1	5
data +	green	C	C	2	3
data -	brown	D	D	10	2
clock +	yellow	A	A	3	4
clock -	orange or pink	B	B	11	6
RESET	white	/	H	4	1
U / D	red / blue	E	E	5	7
⏚	shield	housing	J	9	housing

SSI SCHEMATICS



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

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



HA connector (12 pin) - M23 CCW
Hummel 7.410.000000 -
7.002.912.603
solder side view FV

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

MA connector (19 pin)
Amphenol 62IN 12E 14-19 P
solder side view FV