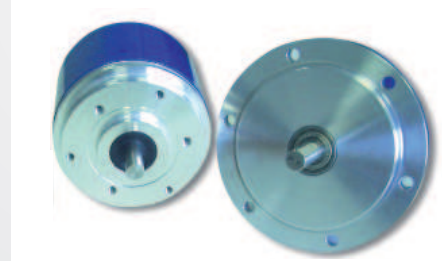


MAIN FEATURES

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

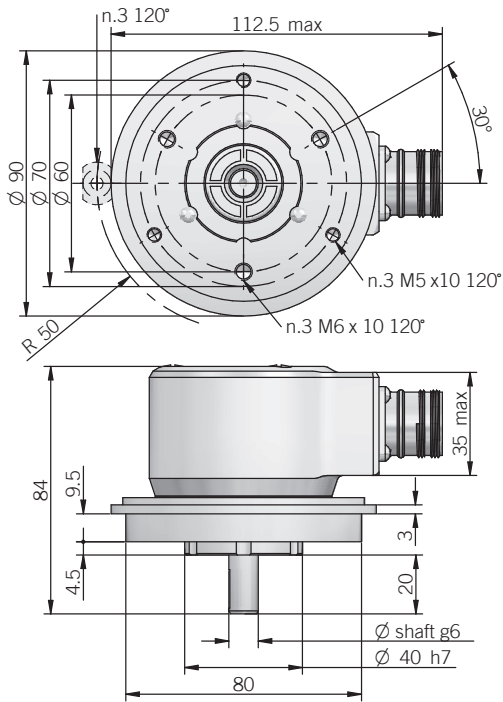


ORDERING CODE BIT PARALLEL	EA	90A	256	G	8/28	P	P	X	10	X	6	PD	R	.XXX
SERIES singleturn absolute encoder EA														
MODEL synchronous flange ø 40 mm 90A REO-444 flange 115A														
RESOLUTION (powers of 2) ppr from 2 to 8192 (multiples and submultiples of 360) ppr from 90 to 3600 (multiples and submultiples of 1000) ppr from 250 to 4000														
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														
ELECTRONIC 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) (9,52mm 3/8") 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 <i>female connector included, without female please add 162 as variant code</i>														
DIRECTION TYPE axial A radial R														
VARIANT custom version XXX														

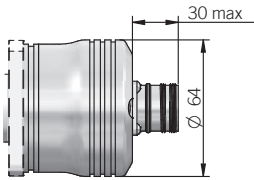
ORDERING CODE	EA	90A	256	G	8/28	S	X	X	10	X	6	PC	R	.XXX
SSI														
SERIES singleturn absolute encoder	EA													
MODEL synchronous flange ø 40 mm REO-444 flange	90A	115A												
RESOLUTION (powers of 2) ppr from (multiples and submultiples of 360) ppr from (multiples and submultiples of 1000) ppr from	2 to 8192	90 to 3600	250 to 4000											
CODE TYPE binary gray (no powers of 2) binary offset code (no powers of 2) gray offset code	B	G	BC	GC										
POWER SUPPLY 8 ... 28 V DC	8/28													
ELECTRONIC INTERFACE Serial Synchronous Interface - SSI	S													
LOGIC to be reported	X													
OPTIONS to be reported if not used reset	X	ZE												
SHAFT DIAMETER (mod. 90) (9,52mm 3/8") mm (mod. 115) mm	9	10	11											
ENCLOSURE RATING IP 54 (mod. 90) IP 66	X	S												
MAX ROTATION SPEED (IP 66) 3000 rpm (IP 54) 6000 rpm	3	6												
OUTPUT TYPE cable (standard length 1,5 m) 7 pin MIL connector (with option "reset") 10 pin MIL connector 12 pin M23 connector 8 pin M12 connector <i>female connector included, without female please add 162 as variant code</i>	PC	MC	MD	HA	M12									
DIRECTION TYPE axial radial	A	R												
VARIANT custom version	XXX													

EA 90 A

fixing clamps not included

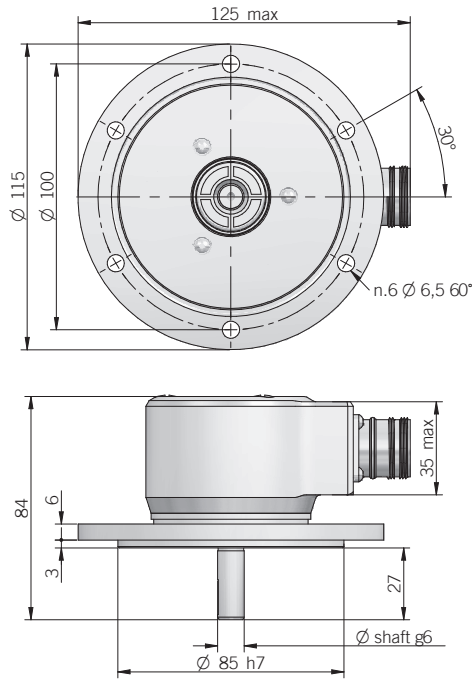


Dimensions with axial output



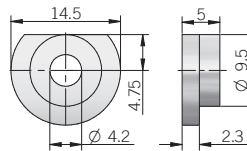
dimensions in mm

EA 115 A



ACCESSORIES

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



ELECTRICAL SPECIFICATIONS

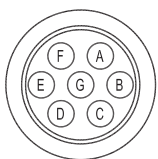
Resolution	from 2 to 8192 ppr
Power supply	8/28 = 7,6 ... 29,4 V DC
Current consumption without load	100 mA
Max load current	20 mA / channel
Output type	P = push-pull (active short circuit protection)* S = RS-422
Auxiliary inputs (U/D - Latch - Reset)	active high (+Vdc) <i>connect to 0V if not used / Reset tmin 150 ms</i>
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	IEC 61000-6-2 IEC 61000-6-4

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

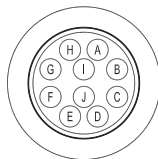
BIT PARALLEL CONNECTIONS

Function	Binay / Gray	Cable output PD	Cable output PE	MA 19 pin
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 Volt	/	black	black	T
U / D	/	red / blue	red / blue	U
+ Vdc	/	red	red	V
⊥	/	shield	shield	S

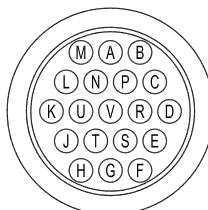
MC connector (7 pin)
Amphenol MS3102-E-16-S
solder side view FV



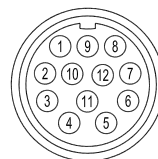
MD connector (10 pin)
Amphenol MS3102-E-18-1
solder side view FV



MA connector (19 pin)
Amphenol 62IN 12E 14-19 P
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



MECHANICAL SPECIFICATIONS

Shaft diameter	∅ 9,52 (3/8") / 10 / 11 mm
Enclosure rating	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
Max rotation speed	3000 rpm (IP 66) 6000 rpm (IP 54)
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
Starting torque (at +20°C / +68°F)	< 0,02 Nm (IP 54) < 0,06 Nm (IP 66)
Body 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 output PC	7 pin MC	10 pin MD	12 pin HA	8 pin M12
+ Vdc	red	G	G	8	8
0 Volt	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