



EA
PARALLEL-SSI
METAL housing
SINGLETURN ABSOLUTE
ENCODER



Absolute singleturn PARALLEL encoder description

Resolutions are available up to 13 bit and 8.192 ppr. Wide application range thanks to several models and different flange types. This series assures high reliability even in the most tough industrial applications. It is available with cable connector output and protection class up to IP66. Both Gray and binary code outputs are available with several electronic types: NPN, NPN OPEN COLLECTOR, PNP and PUSH PULL.

Absolute singleturn SSI encoder description

This series is designed to satisfy the new serial transmission philosophy of data output. A 13 bit word data is the standard output for these encoders. Meaningful bits are proportionally to the chosen encoder resolution. This type of transmission reduces wiring issues in order to maintain outstanding device performances. Only a four wire connection is needed: a pair for the position code and the other one for the clock signal. Both signals are transmitted by differential logic. In order to satisfy all dimensional requirements, a wide and complete range of mechanical combinations are available.

PARALLEL encoder ordering code

Full stop to separate special versions

EA 63 A M 512 G 8/28 N N L 10 X 6 MA R . XXX

Absolute encoder singleturn **EA**

Body dimension **58**
 Body dimension **63**
 Body dimension **90**
 Body dimension **115**

Type of flange

mod. EA63 **A**
 mod. EA58 **B**
 mod. EA58 **C**
 mod. EA63 **D**
 mod. EA63 **E**
 mod. EA58 / EA63 **F**
 mod. EA63 **G**

Metal housing **M**

Resolution

2/4/8/16/32/64/128/256/512
1024/2048/4096/8192
90/180/360/720/1440/2880/225/
450/900/1800/3600
250/500/1000/2000/4000

Please directly contact our offices for pulses availability

Code type

Binary **B**
 Gray (Standard) **G**

Please directly contact our offices for binary offset code (0-XXX).

Input voltage

5
8 ÷ 28

Output types

NPN (negative logic standard) **N**
 NPN OPEN COLLECTOR (negative logic standard) **C**
 PNP (positive logic standard) **R**
 PNP OPEN COLLECTOR (positive logic standard) **U**
 PUSH PULL with short circuit protection (positive logic standard) **P**

For optional about output types please refer to the absolute output section

Special version code numbered from 001 to 999

R Radial
A Axial

PD 16 poles with 1,5 m standard output cable
PE 32 poles with 1,5 m standard output cable
MA 19 poles MS type connection

R.P.M.

3 3000 with IP66
6 6000

Enclosure rating

X IP54
S Optional IP66 with the exception of EA63G/EA115

Shaft diameter

6 ø 6g6 mm - 58B
8 ø 8g6 mm - 58B - 63A/D/E -90A
9 ø 9,52g6 mm - 63A/D/E - 90A
10 ø 10g6 mm - 58B/C - 63A/D/E -90A -115A
11 ø 11g6 mm -115A

Bore diameter only for mod. 58F - 63F/G

8 ø 8H7 mm
9 ø 9,52H7 mm
10 ø 10H7mm
12 ø 12H7 mm
14 ø 14H7 mm
15 ø 15H7 mm

Options

L Latch
S Strobe (only for binary code)
X To be reported if not used
ZE Automatic zeroing
ZP Push-button zeroing

Logic

N Negative
P Positive

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Output connections for absolute singleturn PARALLEL encoder

FUNCTION	B / G	16 WIRE CABLE COLOURS	32 WIRE CABLE COLOURS	PN M19MP
bit 1 (LSB)	B ¹ G ¹	green	green	A
bit 2	B ² G ²	yellow	yellow	B
bit 3	B ³ G ³	blue	blue	C
bit 4	B ⁴ G ⁴	brown	brown	D
bit 5	B ⁵ G ⁵	pink	pink	E
bit 6	B ⁶ G ⁶	white	white	F
bit 7	B ⁷ G ⁷	gray	gray	G
bit 8	B ⁸ G ⁸	violet	violet	H
bit 9	B ⁹ G ⁹	gray/pink	gray/pink	J
bit 10	B ¹⁰ G ¹⁰	white/green	white/green	K
bit 11	B ¹¹ G ¹¹	brown/green	brown/green	L
bit 12	B ¹² G ¹²	white/yellow	white/yellow	M
bit 13	B ¹³ G ¹³	yellow/brown	yellow/brown	N
/	/	/	/	P
LATCH	/	/	yellow/gray	R
/	/	/	/	S
0 Volt	/	black	black	T
U / b	/	red/blue	red/blue	U
+ Vdc	/	red	red	V
ZE	/	/	/	/

EA PARALLEL-SSI





SSI encoder ordering code

Full stop to separate special versions

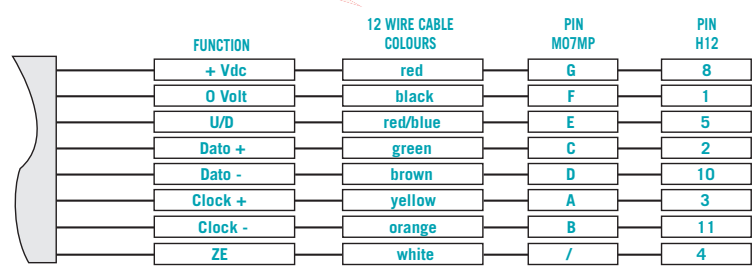
EA 63 A M 512 G 8/28 S X X 10 X 6 MC R . XXX

<p>Absolute encoder singleturn EA</p> <p>Body dimension 58 Body dimension 63 Body dimension 90 Body dimension 115</p> <p>Type of flange</p> <p>mod. EA63 A mod. EA58 B mod. EA58 C mod. EA63 D mod. EA63 E mod. EA58 / EA63 F mod. EA63 G</p> <p>Metal housing M</p> <p>Resolution</p> <p>2/4/8/16/32/64/128/256/512 1024/2048/4096/8192 90/180/360/720/1440/2880/225/ 450/900/1800/3600 250/500/1000/2000/4000</p> <p><i>Please directly contact our offices for pulses availability</i></p> <p>Code type</p> <p>Binary B Gray (Standard) G</p> <p><i>Please directly contact our offices for binary offset code (0-XXX).</i></p> <p>Input voltage</p> <p>5 8 ÷ 28</p> <p>Output types</p> <p>SSI (Serial Synchronous Interface) S</p> <p><i>For optional about output types please refer to the absolute output section</i></p>	<p>R Radial A Axial</p> <p>PC 12 poles with 1,5 m standard output cable MC Connector MS type 7 poles HA Connector H type 12 poles</p> <p>R.P.M.</p> <p>3 3000 with IP66 6 6000</p> <p>Enclosure rating</p> <p>X IP54 S Optional IP66 with the exception of EA63G/EA115</p> <p>Shaft diameter</p> <p>6 ø 6g6 mm - 58B 8 ø 8g6 mm - 58B - 63A/D/E - 90A 9 ø 9,52g6 mm - 63A/D/E - 90A 10 ø 10g6 mm - 58B/C - 63A/D/E - 90A - 115A 11 ø 11g6 mm - 115A</p> <p>Bore diameter only for mod. 58F - 63F/G</p> <p>8 ø 8H7 mm 9 ø 9,52H7 mm 10 ø 10H7mm 12 ø 12H7 mm 14 ø 14H7 mm 15 ø 15H7 mm</p> <p>Options</p> <p>X To be reported if not used ZE Automatic zeroing ZP Push-button zeroing</p> <p>Logic</p> <p>X To be reported if not used</p>	<p>Special version code numbered from 001 to 999</p>
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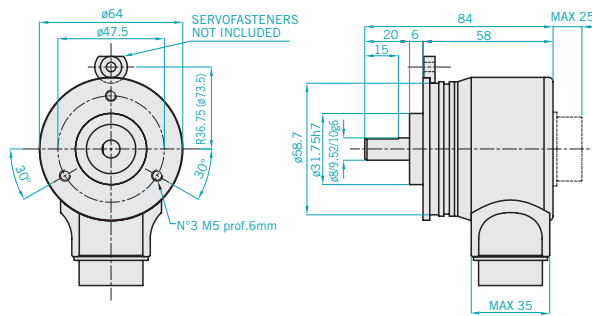
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EA PARALLEL-SSI

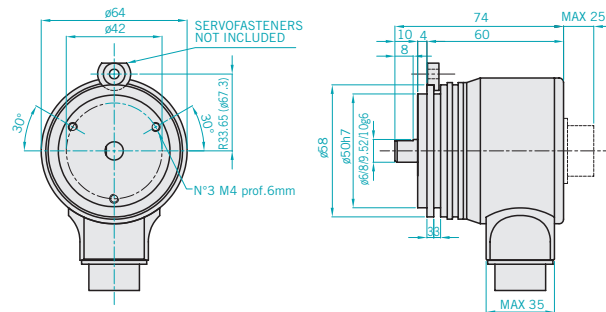
Output connections for SSI



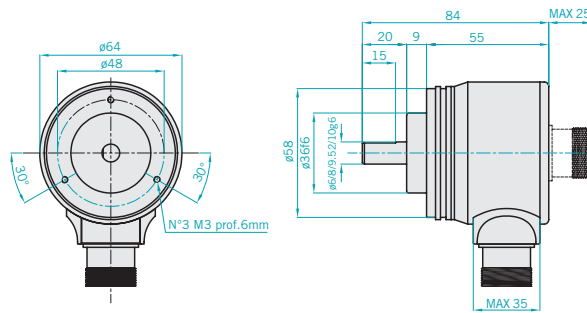
EA63 AM



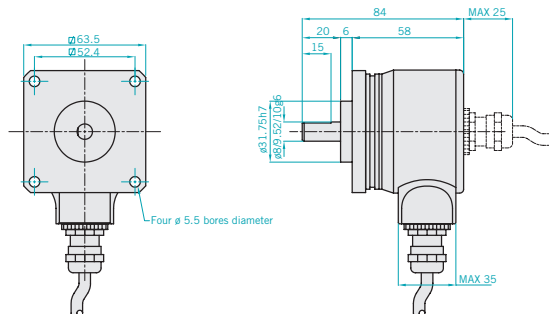
EA58 BM



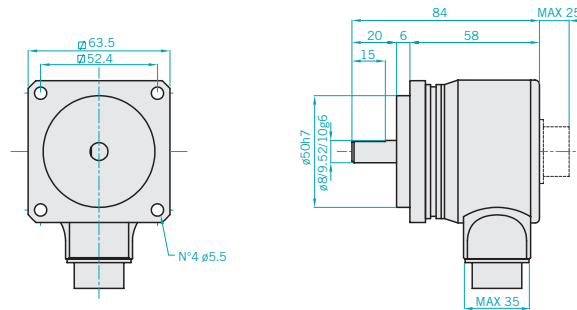
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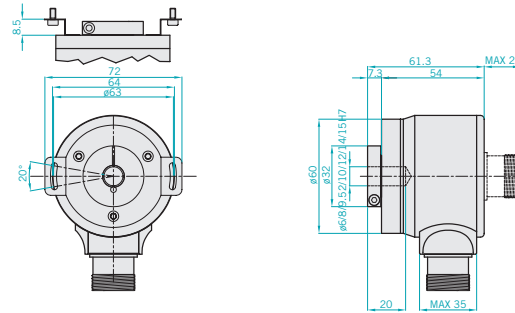
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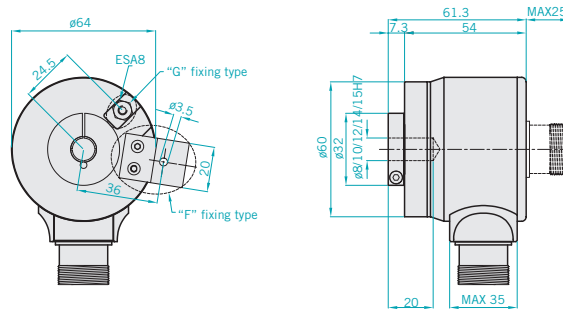
EA63 EM



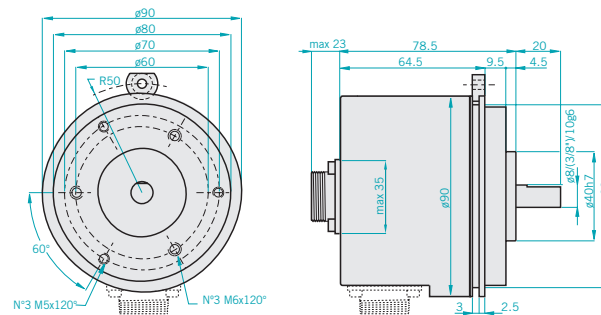
EA58 FM



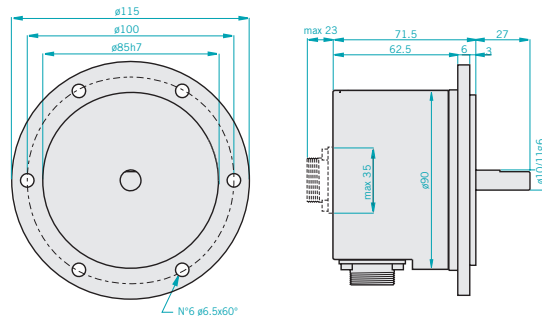
EA58 FM-GM



EA90 AM



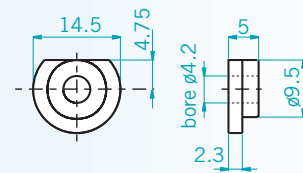
EA115 AM



PARALLEL electrical specifications	
Resolution	2 / 4 / 8 / 16 / 32 / 64 / 128 / 256 512 / 1024 / 2048 / 4096 / 8192 90 / 180 / 360 / 720 / 1440 / 2880 225 / 450 / 900 / 1800 / 3600 250 / 500 / 1000 / 2000 / 4000
Input voltage	5Vdc / 8 ÷ 28 Vdc
Input current with no output load	200 mA
Source and sink current	40 mA for channel
Output types	NPN (Negative logic) NPN Open Collector (Negative logic) PNP (Positive logic) PNP Open Collector (Positive logic) PUSH PULL (Positive logic)
Output frequency	200 KHz codice d'uscita $F = \frac{\text{RPM} \times \text{Resolution}}{60}$

SSI electrical specifications	
Resolution	2 / 4 / 8 / 16 / 32 / 64 / 128 / 256 512 / 1024 / 2048 / 4096 / 8192 90 / 180 / 360 / 720 / 1440 / 2880 225 / 450 / 900 / 1800 / 3600 250 / 500 / 1000 / 2000 / 4000
Input voltage	5Vdc / 8 ÷ 28 Vdc
Input current with no output load	200 mA
Output types	SSI (Serial Synchronous Interface)
Monostable time	10 - 25 us
Time between two clock sequences	> 35 us
Frequency range	100 KHz - 1 MHz

Mechanical specifications	
Shaft diameter (mm)	ø6 g6 - 58B ø8 g6 - 58B - 63A/D/E - 90A ø9,52(3/8") g6 - 63A/D/E - 90A ø10 g6 - 58B - 63A/D/E - 90A - 115A ø11 g6 - 115A
Hole diameter (mm)	ø8/ø9/ø10/ø12/ø14/ø15 H7 - 58F - 63F/G
R.P.M. Max	6000 continuous 3000 continuous for 63G 3000 with IP66
MAX shaft load	10 N (1 Kp) axial with ø6 shaft 20 N (2 Kp) radial with ø6 shaft 100 N (10 Kp) axial 100 N (10 Kp) radial
Shock	50 G for 11 msec
Vibrations	10G 10 ÷ 2000 Hz
Bearings life	10 ⁹ revolutions
Bearings	n° 2 ball bearings
Shaft material	Stainless steel AISI303
Body material	Aluminium UNI 9002/5
Housing material	Aluminium UNI 9002/5
Enclosure rating	IP54 IP66 optional - 58B/C - 63A/D/E - 90A
Operating temperature	0° ÷ +60°C
Storage temperature	-15° ÷ +70°C
Weight	350 g - 58B/C - 63A/D/E/G 750 g - 90A - 115A
Accessories	set N° 3 fasteners for models -63A/B/C - 90A Ord.Cod.: 94080001



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AS00710705A

EA PARALLEL-SSI

