



## EL - ER 63 A / D / E

### SOLID SHAFT INCREMENTAL ENCODER

#### MAIN FEATURES

Standard  $\varnothing$  63 mm encoder series for industrial applications with high mechanical resistance requirements. These encoders are designed to support high radial and axial shaft load and they can be mounted by means of flanges or fixing clamps.

- 3 channel encoder (A / B / Z) up to 24000 ppr
- Power supply up to +28 VDC with several electronic interfaces available
- Up to 500 kHz output frequency
- Cable or connector output
- Available with metal cover for heavy duty applications
- Solid shaft diameter up to 10 mm
- Mounting by synchronous or centering 2,5" square flange



#### ORDERING CODE

ER	63A	M*	500	S	5/28	N	8	X	6	P	R	.XXX
<b>SERIES</b> incremental encoder series <b>EL</b> incremental encoder series <b>ER</b>												
<b>MODEL</b> synchronous flange $\varnothing$ 31,75 mm <b>63A</b> centering square flange $\varnothing$ 31,75 mm <b>63D</b> centering square flange $\varnothing$ 50 mm <b>63E</b>												
<b>METAL COVER</b> * add for the metal cover <b>M</b>												
<b>RESOLUTION</b> ppr from 1 to 24000 see table for pulses availability												
<b>ZERO PULSE</b> without zero pulse <b>S</b> with zero pulse <b>Z</b>												
<b>POWER SUPPLY</b> (with L electronic interface) 5 V DC <b>5</b> (with L or PC electronic interface) 8 ... 24 V DC <b>8/24</b> 5 ... 28 V DC <b>5/28</b>												
<b>ELECTRONIC INTERFACE</b> NPN <b>N</b> NPN open collector <b>C</b> push-pull <b>P</b> push-pull protected (AEIC-7272) <b>PC</b> line driver <b>L</b> power supply 5/28V - output RS-422 <b>RS</b>												
<b>SHAFT DIAMETER</b> mm <b>8</b> 9,52 (3/8") mm <b>9</b> mm <b>10</b>												
<b>ENCLOSURE RATING</b> IP 54 <b>X</b> IP 66 <b>S</b>												
<b>MAX ROTATION SPEED</b> (IP 66) 3000 rpm <b>3</b> (IP 54) 6000 rpm <b>6</b>												
<b>OUTPUT TYPE</b> cable (standard length 1,5 m) <b>P</b> MIL connector <b>M</b> JIS-C-5432 connector <b>J</b> M12 connector <b>M12</b> M23 connector <b>H</b> IP40 IEC 60130-9 connector <b>C</b> <i>female connector included, without female please add 162 as variant code</i>												
<b>DIRECTION TYPE</b> axial <b>A</b> radial <b>R</b>												
<b>VARIANT</b> custom version <b>XXX</b>												

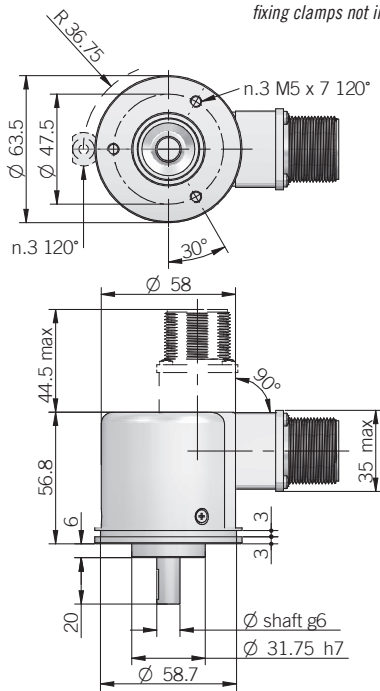


© Copyright 2016 Eltra S.p.a. Unipersonale. All rights reserved. All informations in this catalog are subject to change without notice. Eltra takes no responsibility for typographic errors. For the terms of sales please check the website. REV. 160607

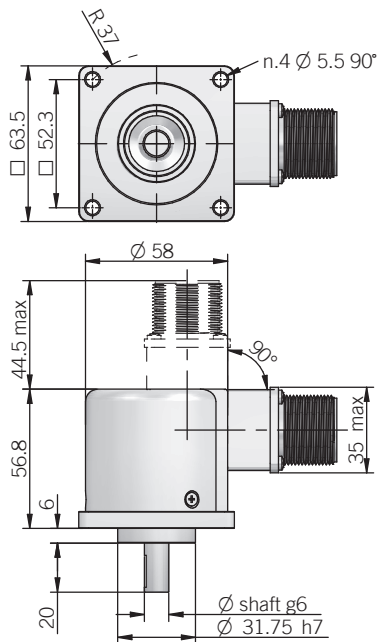
OPTICAL SOLID SHAFT INCREMENTAL ENCODERS | EL - ER 63 A / D / E

EL - ER 63 A

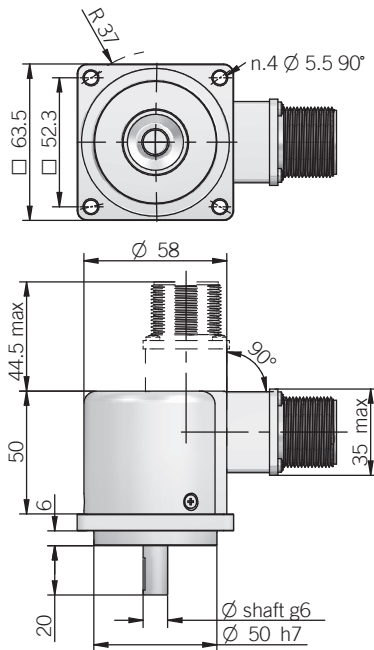
fixing clamps not included



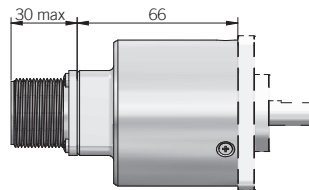
EL - ER 63 D



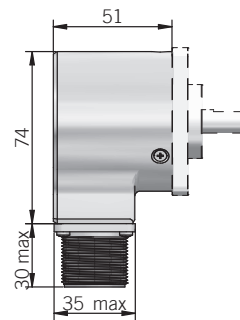
EL - ER 63 E



Dimension with metal cover axial output



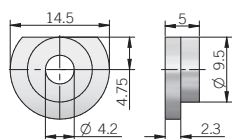
Dimension with metal cover radial output



dimensions in mm

ACCESSORIES

set n.3 fixing clamps for model 63 A  
P/N 94080001



© Copyright 2016 Eltra S.p.a. Unipersonale. All rights reserved. All informations in this catalog are subject to change without notice. Eltra takes no responsibility for typographic errors. For the terms of sales please check the website. REV. 160607

## OPTICAL SOLID SHAFT INCREMENTAL ENCODERS | EL - ER 63 A / D / E

## ELECTRICAL SPECIFICATIONS

<b>Resolution</b>	from 1 to 24000 ppr
<b>Power supply</b>	5 = 4,5 ... 5,5 V DC 5/28 = 4,75 ... 29,4 V DC 8/24 = 7,6 ... 25,2 V DC (reverse polarity protection)
<b>Power draw without load</b>	800 mW
<b>Max load current</b>	N / C / P / PC = 50 mA / channel L / RS = 20 mA / channel
<b>Output type*</b>	NPN / NPN open collector / push-pull / line driver
<b>Max output frequency</b>	250 kHz up to 6000 ppr 500 kHz from 7200 ppr
<b>Counting direction</b>	A leads B clockwise (shaft view)
<b>Electromagnetic compatibility</b>	IEC 61000-6-2 IEC 61000-6-4

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

## EL SERIES RESOLUTIONS

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 25 - 30 - 32 - 40 - 50 - 60 - 70 - 80 - 90 - 160 - 180 - 350 - 450 - 660 - 700

## ER SERIES RESOLUTIONS

100 - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - **360** - 400 - 480 - **500** - 512 - 600 - 625 - **720** - 750 - 800 - 900 - **1000** - **1024** - 1200 - 1250 - 1440 - 1500 - 1600 - 1800 - **2000** - **2048** - **2500** - 3000 - **3600** - 4000 - 4096 - **5000** - 6000 - **7200** - 8000 - 8192 - 9000 - **10000** - 10240 - 12000 - **14400** - 16000 - 16384 - 18000 - **20000** - 20480 - 24000

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

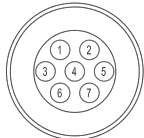
## MECHANICAL SPECIFICATIONS

<b>Shaft diameter</b>	ø 8 / 9,52 (3/8") / 10 mm
<b>Enclosure rating</b>	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
<b>Max rotation speed</b>	X = 6000 rpm S = EL 3000 rpm / 60° C ER 3000 rpm / 70° C - 2000 rpm / 85° C
<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>	1,5 x 10 <sup>-6</sup> kgm <sup>2</sup>
<b>Starting torque (at +20°C / +68°F)</b>	< 0,02 Nm (IP 54) < 0,06 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>	PA66 glass fiber reinforced / 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) EL series -25° ... +85°C (-13° ... +185°F) ER series
<b>Storage temperature</b>	-25° ... +70°C (-13° ... +158°F)
<b>Weight</b>	350 g (12,35 oz) 450 g (15,87 oz) with metal cover

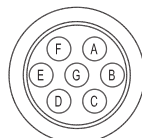
## CONNECTIONS

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	5 pin M12 output	8 pin M12 output	12 pin H output	5 pin C output	8 pin C 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	N / C / P / PC	Line Driver	CCW	N / C / P / PC	Line Driver
+V DC	red	red	6	4	F	D	4 - 5	D - E	2	7	12	5	7
0 V	black	black	1	6	A	F	6	F	4	1	10	1	8
Ch. A	green	green	3	1	C	A	1	A	3	6	5	2	1
Ch. A-	/	brown	/	3	/	C	7	G	/	5	6	/	2
Ch. B	yellow	yellow	5	2	E	B	2	B	1	4	8	4	3
Ch. B-	/	orange	/	5	/	E	8	H	/	3	1	/	4
Ch. Z	blue	blue	4	/	D	/	3	C	5	2	3	3	5
Ch. Z-	/	white	/	/	/	/	9	I	/	8	4	/	6
⊥	shield	shield	7	7	G	G	10	J	housing	housing	9	/	/

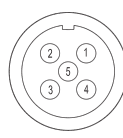
J connector (7 pin)  
JIS-C-5432 Size 16  
solder side view FV



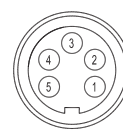
M connector (7 pin)  
Amphenol MS3102-E-16-S  
solder side view FV



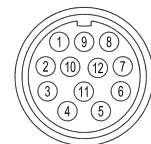
M12 connector (5 pin)  
M12 A coded  
solder side view FV



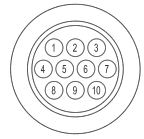
C connector (5 pin)  
IEC 60130-9  
solder side view FV



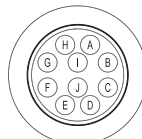
H connector (12 pin) - M23 CCW  
Hummel 7.410.000000 -  
7.002.912.603  
solder side view FV



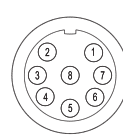
J connector (10 pin)  
JIS-C-5432 Size 16  
solder side view FV



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



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



C connector (8 pin)  
IEC 60130-9  
solder side view FV



Headquarter Switzerland:  
Pewatron AG  
Thurgauerstrasse 66  
CH-8050 Zurich  
Phone +41 44 877 35 00  
info@pewatron.com

Office Germany:  
Pewatron Deutschland GmbH  
Edisonstraße 16  
D-85716 Unterschleißheim  
Phone +49 89 374 288 87-0  
info.de@pewatron.com



**PEWATRON**  
SENSORS · POWER SOLUTIONS

## We are here for you. Addresses and Contacts.

---

### Sales Germany & Austria

Postcode 00000 – 31999  
Postcode 38000 – 39999  
Postcode 80000 – 99999  
Austria

Kurt Stritzelberger

Phone +49 89 260 52 80  
Mobile +49 171 803 41 35

kurt.stritzelberger@pewatron.com

Postcode 32000 – 37999  
Postcode 40000 – 79999

Gerhard Vetter

Phone +49 674 394 75 75  
Mobile +49 163 762 74 30

gerhard.vetter@pewatron.com

**Geometrical sensors**  
**Sensor elements**

Thorsten Ravagni

Phone +49 60 479 53 627

thorsten.ravagni@pewatron.com

---

### Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei

Phone +41 44 877 35 18  
Mobile +41 76 279 37 26

basil.frei@pewatron.com

Postcode 1000 – 2999

Christian Mohrenstecher

Mobile +41 76 444 57 93

christian.mohrenstecher@pewatron.com

### Sales International Key Accounts

Peter Felder

Phone +41 44 877 35 05  
Mobile +41 79 406 49 83

peter.felder@pewatron.com

---

### Sales Other Countries / Product Management

#### Pressure Sensors

Philipp Kistler  
Phone +41 44 877 35 03  
philipp.kistler@pewatron.com

#### Accelerometers / Level Flow sensor elements

Thorsten Ravagni  
Phone +49 60 479 53 627  
thorsten.ravagni@pewatron.com

#### Drive technology CH Postcode 5000 – 9999 / DE

Roman Homa  
Mobile +41 76 444 00 86  
roman.homa@pewatron.com

#### Gas sensors / Gas sensor modules Load cells

Dr. Thomas Clausen  
Phone +41 44 877 35 13  
thomas.clausen@pewatron.com

#### Power supplies

Sebastiano Leggio  
Phone +41 44 877 35 06  
sebastiano.leggio@pewatron.com

#### Drive technology CH Postcode 1000 – 4999 / AT / IT / FR

Christian Mohrenstecher  
Mobile +41 76 444 57 93  
christian.mohrenstecher@pewatron.com

#### Flow / Level / Medical products

Dr. Adriano Pittarelli  
Phone +49 8245 774 95 44  
adriano.pittarelli@pewatron.com

#### Linear position sensors Angle sensors

Eric Letsch  
Phone +41 44 877 35 14  
eric.letsch@pewatron.com

#### Current sensors Power solutions

Osman Coban  
Phone +49 71 635 363 898  
osman.coban@pewatron.com