



# EL - ER 63 A / D / E

## SOLID SHAFT INCREMENTAL ENCODER



### Specifications

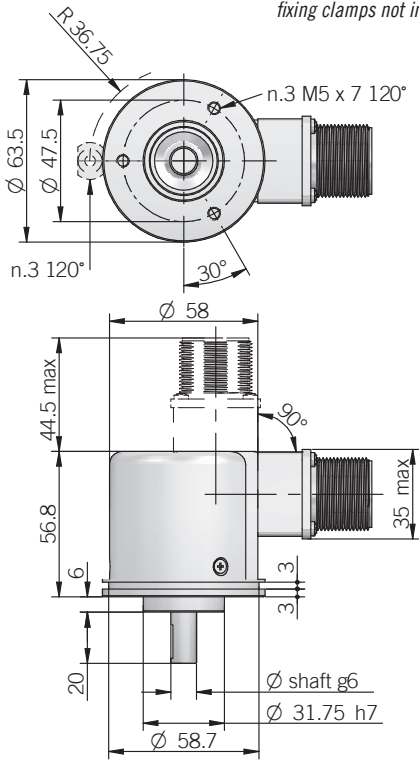
Standard  $\varnothing$  63 mm encoder series for industrial applications with high mechanical resistance requirements. These encoders are designed to support high radial and axial shaft load and they can be mounted by means of flanges or fixing clamps.

- 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

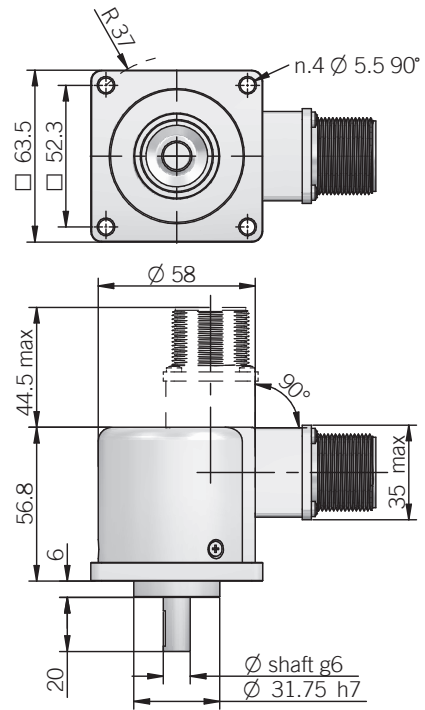
ORDERING CODE	ER	63A	M*	500	S	5/28	N	8	X	6	P	R	.XXX
<p><b>SERIES</b>            incremental encoder series <a href="#">EL</a>            incremental encoder series <a href="#">ER</a></p> <p><b>MODEL</b>            synchronous flange <math>\varnothing</math> 31,75 mm <a href="#">63A</a>            centering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

### EL - ER 63 A

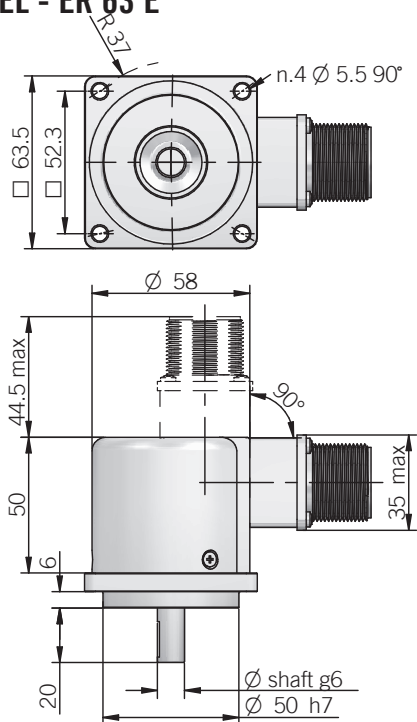
fixing clamps not included



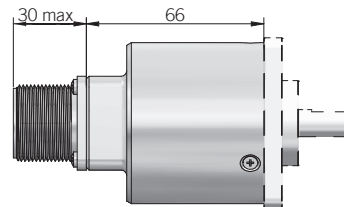
### EL - ER 63 D



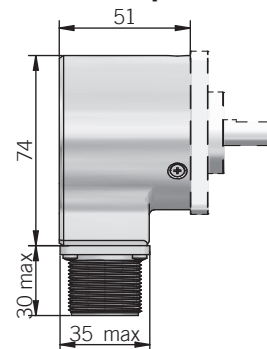
### EL - ER 63 E



### Dimension with metal cover axial output



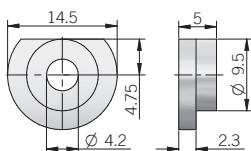
### Dimension with metal cover radial output



dimensions in mm

### ACCESSORIES

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



## 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</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

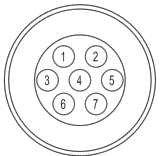
## MECHANICAL SPECIFICATIONS

<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

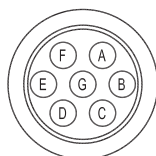
## CONNECTIONS

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	/	/

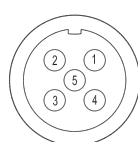
J connector (7 pin)  
JIS-C-5432 Size 16  
solder side view FV



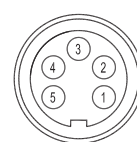
M connector (7 pin)  
Amphenol MS3102-E-16-S  
solder side view FV



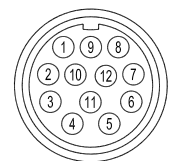
M12 connector (5 pin)  
M12 A coded  
solder side view FV



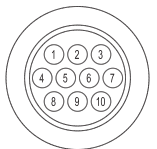
C connector (5 pin)  
IEC 60130-9  
solder side view FV



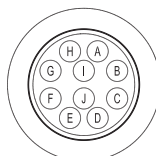
H connector (12 pin) - M23 CCW  
Hummel 7.410.000000 -  
7.002.912.603  
solder side view FV



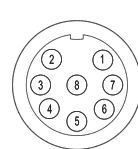
J connector (10 pin)  
JIS-C-5432 Size 16  
solder side view FV



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

