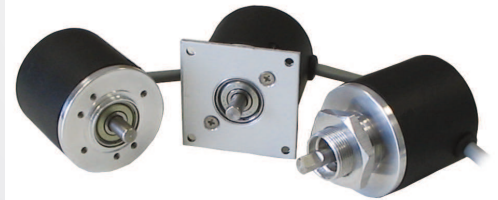


#### MAIN FEATURES

Miniaturized  $\varnothing$  42 mm encoder series for general factory automation applications.

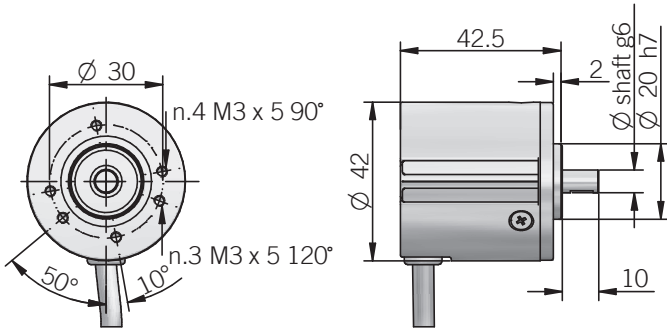
- 3 channel encoder (A / B / Z) up to 14400 ppr
- Power supply up to +28 VDC with several electronic interfaces available
- Up to 220 kHz output frequency
- Cable output, connectors available on cable end
- Solid shaft diameter up to 8 mm
- Mounting by clamping, threaded or synchronous flange



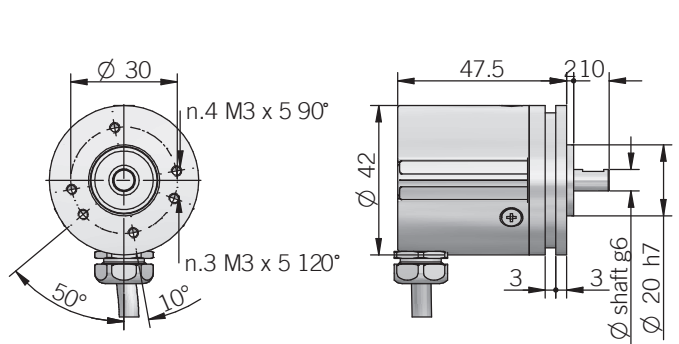
#### ORDERING CODE

ER	40A	100	S	5/28	N	6	X	6	P	R	.XXX
<p><b>SERIES</b>            incremental encoder series <b>EL</b>            incremental encoder series <b>ER</b></p> <p><b>MODEL</b>            clamping flange <math>\varnothing</math> 20 mm <b>40A</b>            square flange <math>\square</math> 36,5 mm <b>40B</b>            clamping flange <math>\varnothing</math> 17,46 mm <b>40C</b>            M18 threaded flange <b>40H</b>            M21 threaded flange <b>40I</b>            synchronous flange <math>\varnothing</math> 21 mm <b>40N</b>            synchronous flange <math>\varnothing</math> 30 mm <b>40X</b></p> <p><b>RESOLUTION</b>            (mod. A / B) ppr 1 ... 14400            (mod. C / H / I / N / X) ppr 1 ... 2500  <i>see table for pulses availability</i></p> <p><b>ZERO PULSE</b>            without zero pulse <b>S</b>            with zero pulse <b>Z</b></p> <p><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></p> <p><b>ELECTRONIC INTERFACE</b>            (max 2.500 ppr) NPN <b>N</b>            (max 2.500 ppr) 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></p> <p><b>SHAFT DIAMETER</b>            (mod. C) mm <b>4</b>            (mod. A / B / C / H / I / N) mm <b>6</b>            (mod. X) mm <b>8</b></p> <p><b>ENCLOSURE RATING</b>            IP 54 <b>X</b>            (mod. A / B) IP 66 <b>S</b></p> <p><b>MAX ROTATION SPEED</b>            (IP 66) 3000 rpm <b>3</b>            (IP 54) 6000 rpm <b>6</b></p> <p><b>OUTPUT TYPE</b>            cable (standard length 0,5 m) <b>P</b></p> <p><b>DIRECTION TYPE</b>            (mod. A / B / C / H / I / N) axial <b>A</b>            radial <b>R</b></p> <p><b>VARIANT</b>            custom version <b>XXX</b></p>											

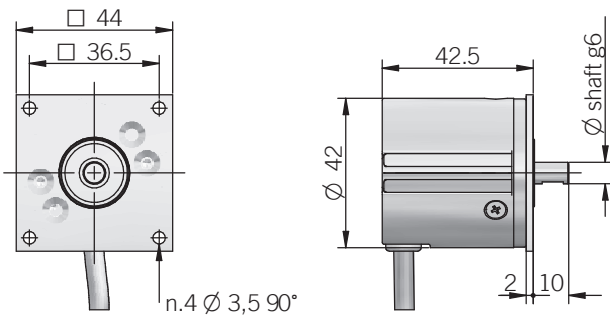
EL - ER 40 A



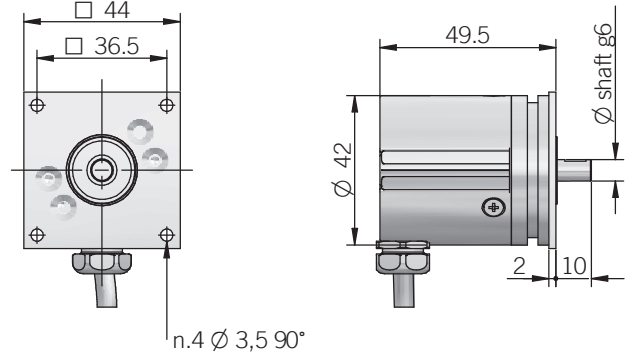
EL - ER 40 A (IP 66)



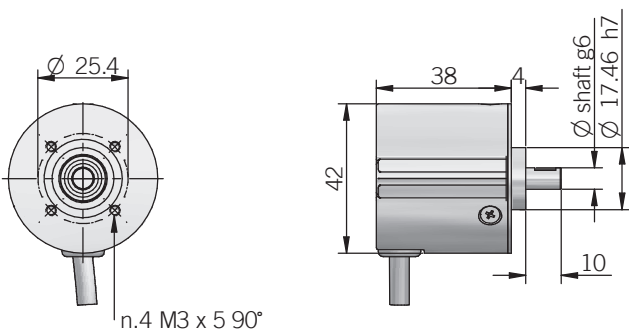
EL - ER 40 B



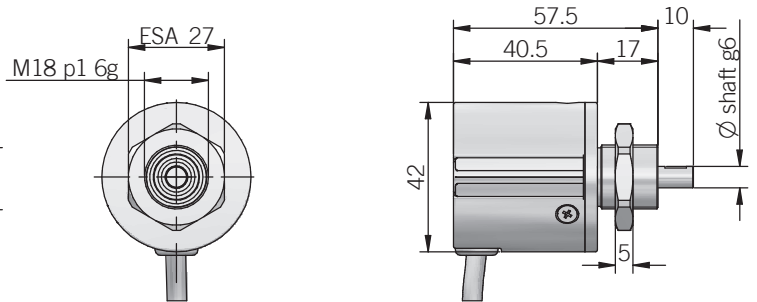
EL - ER 40 B (IP 66)



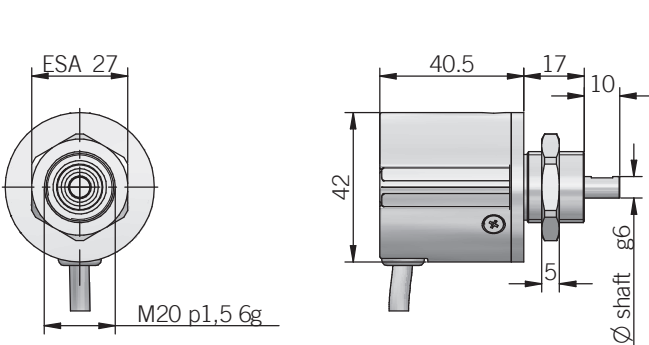
EL - ER 40 C



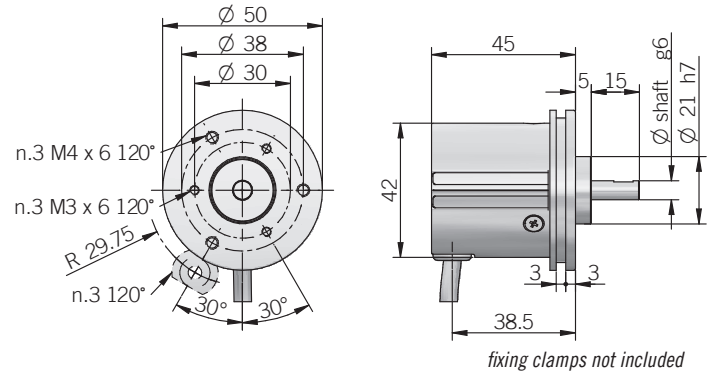
EL - ER 40 H



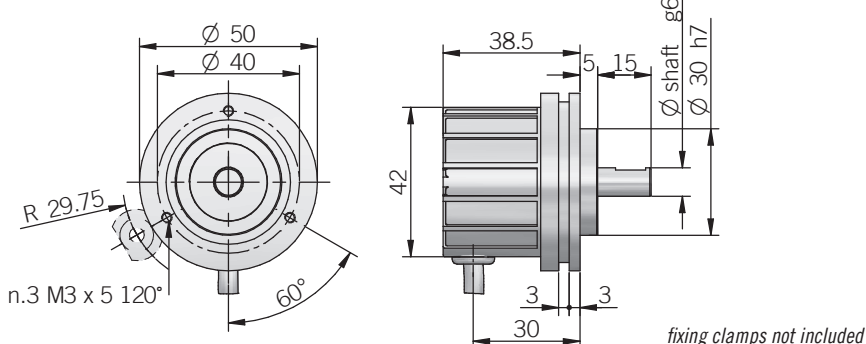
EL - ER 40 I



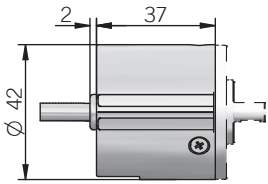
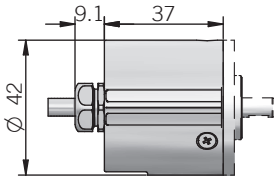
EL - ER 40 N



EL - ER 40 X



dimensions in mm

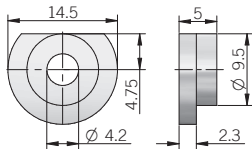
**EL - ER 40 (axial output)**

**EL - ER 40 (IP 66 axial output)**

**ELECTRICAL SPECIFICATIONS**

<b>Resolution</b>	from 1 to 14400 ppr (mod. A/B) from 1 to 2500 ppr (mod. C/H/I/N/X)
<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>	150 kHz EL series 220 kHz ER series
<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

**ACCESSORIES**

set n.3 fixing clamps for model 40 X / 40 N  
P/N 94080001


**MECHANICAL SPECIFICATIONS**

<b>Shaft diameter</b>	ø 4 / 6 / 8 mm
<b>Enclosure rating</b>	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
<b>Max rotation speed</b>	3000 rpm (IP 66) 6000 rpm (IP 54)
<b>Max shaft load</b>	5 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>	0,1 x 10 <sup>-6</sup> kgm <sup>2</sup>
<b>Starting torque (at +20°C / +68°F)</b>	< 0,01 Nm (IP 54) < 0,05 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
<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>	100 g (3,52 oz)

**CONNECTIONS**

Function	Cable output N / C / P / PC	Cable output Line driver
+V DC	red	red
0 V	black	black
Ch. A	green	green
Ch. A-	/	brown
Ch. B	yellow	yellow
Ch. B-	/	orange
Ch. Z	blue	blue
Ch. Z-	/	white
⊥	shield	shield

**EL SERIES RESOLUTIONS**

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 30 - 32 - 40 - 50 - 70 - 80 - 90 - 3000 - 3600  
- 4000 - 4096 - 5000 - 6000 - 7200 - 8000 - 8192 - 10000 - 12000 - 14400

**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

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