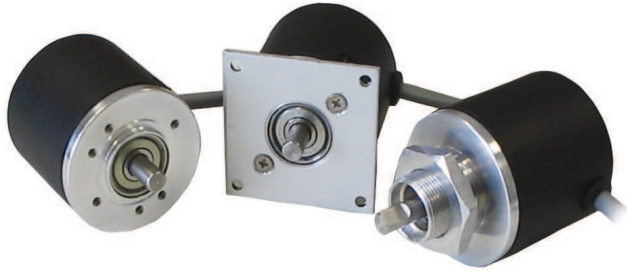


## EL - ER 40 A / B / C / H / I / N / X

### SOLID SHAFT INCREMENTAL ENCODER

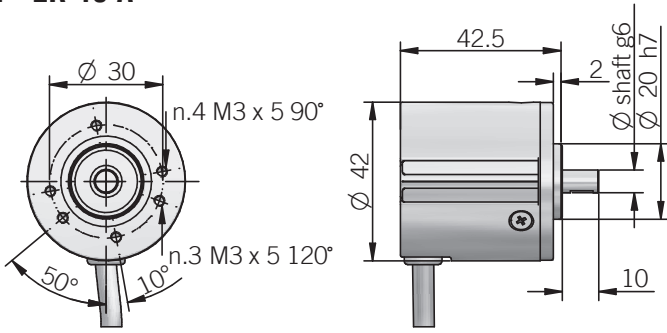
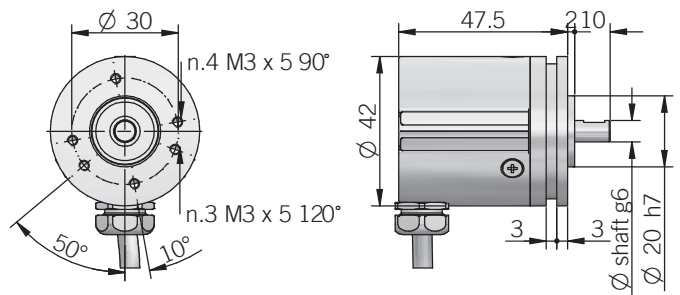
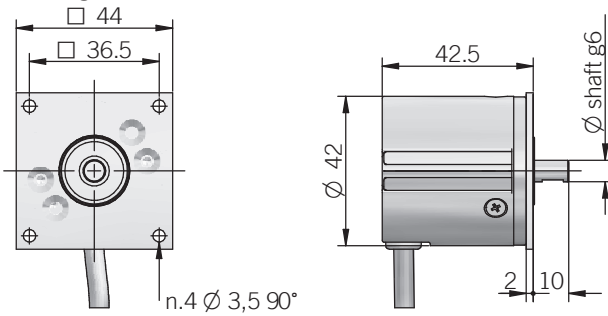
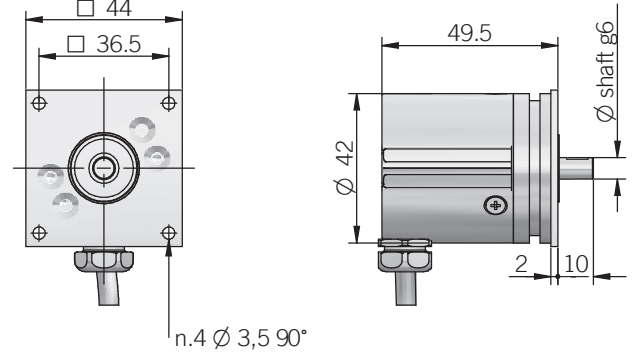
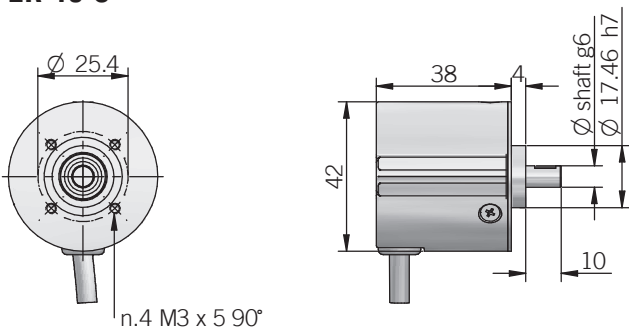
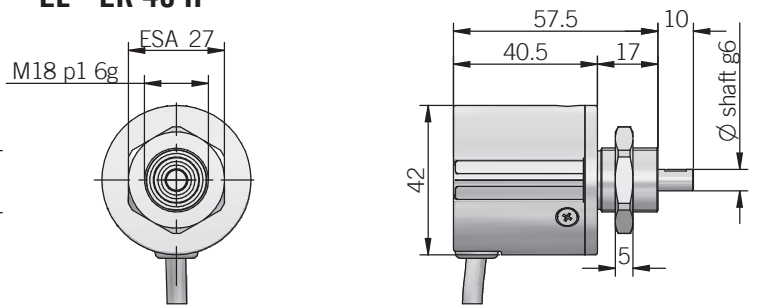
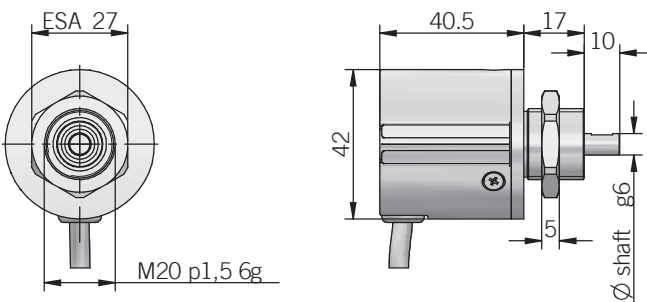
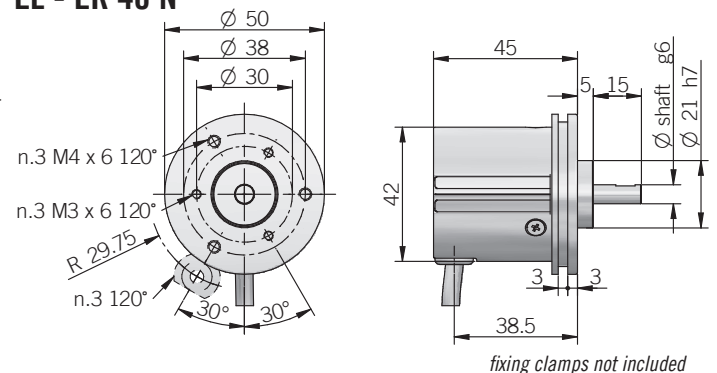
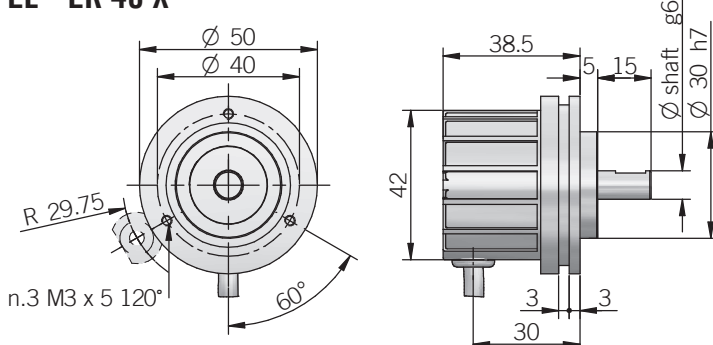


### Specifications

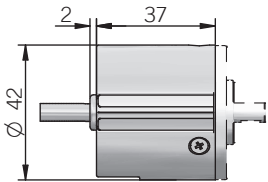
Miniaturized ø 42 mm encoder series for general factory automation applications.

- 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

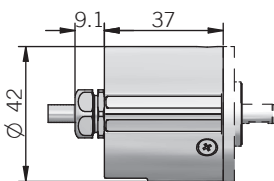
ORDERING CODE	ER	40A	100	S	5/28	N	6	X	6	P	R	.XXX
<b>SERIES</b> incremental encoder series <b>EL</b> incremental encoder series <b>ER</b>												
<b>MODEL</b> clamping flange ø 20 mm <b>40A</b> square flange □ 36,5 mm <b>40B</b> clamping flange ø 17,46 mm <b>40C</b> M18 threaded flange <b>40H</b> M21 threaded flange <b>40I</b> synchronous flange ø 21 mm <b>40N</b> synchronous flange ø 30 mm <b>40X</b>												
<b>RESOLUTION</b> (mod. A / B) ppr <b>1 ... 14400</b> (mod. C / H / I / N / X) ppr <b>1 ... 2500</b> <i>see table for pulses availability</i>												
<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> (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>												
<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>												
<b>ENCLOSURE RATING</b> IP 54 <b>X</b> (mod. A / 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 0,5 m) <b>P</b>												
<b>DIRECTION TYPE</b> (mod. A / B / C / H / I / N) axial <b>A</b> radial <b>R</b>												
<b>VARIANT</b> custom version <b>XXX</b>												

**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**

*fixing clamps not included*

### EL - ER 40 (axial output)

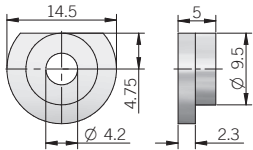


### EL - ER 40 (IP 66 axial output)



### ACCESSORIES

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



### MECHANICAL SPECIFICATIONS

<b>Shaft diameter</b>	∅ 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)

### 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

### 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