

# EL - ER 40

## A / B / C / E / H / I / N / X

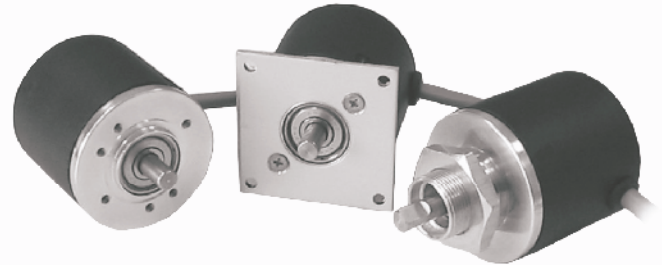
### INCREMENTAL ENCODER



### MAIN FEATURES

Miniaturized  $\varnothing 42$  encoder series for general applications.

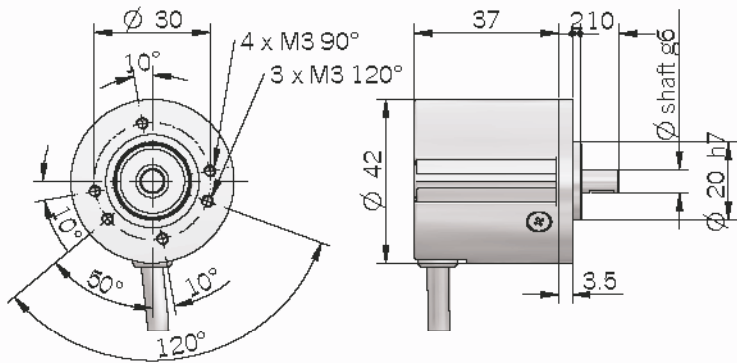
- Up to 25000 ppr with zero signal
- Several output types available
- Up to 28 V DC power supply
- Up to 220 kHz output frequency
- Cable output
- Up to 6000 RPM rotation speed
- Up to IP 66 sealing



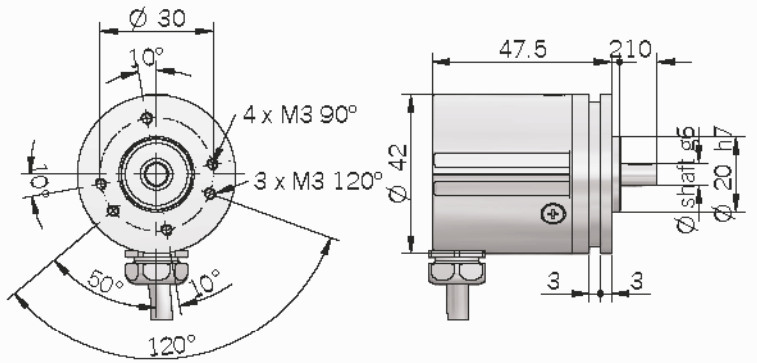
### ORDERING CODE

EL	40	A	500	Z	5/28	N	6	X	3	P	R	.	XXX
<b>SERIES</b>	incremental encoder series EL												<b>VARIANT</b>
	incremental encoder series ER												XXX custom version
<b>SIZE</b>	mm 40												<b>DIRECTION TYPE</b>
<b>TYPE</b>	fixing flange $\varnothing 20$ mm A												A axial (excluded EL - ER 40 X)
	square flange $\square 36,5$ mm B												R radial
	fixing flange $\varnothing 17,46$ mm C												<b>OUTPUT TYPE</b>
	fixing flange $\varnothing 15$ mm E												P cable output (standard length 0.5 m)
	threaded flange M18 H												<b>MAX ROTATION SPEED</b>
	threaded flange M21 I												3 3000 rpm
	synchronous flange $\varnothing 21$ mm N												6 6000 rpm
	synchronous flange $\varnothing 30$ mm X												<i>N.B.: 3000 RPM max with S enclosure rating</i>
<b>RESOLUTION</b>	(EL - ER 40 A / B) max ppr 25000												<b>ENCLOSURE RATING</b>
	(EL - ER 40 C / E / H / I / N / X) max ppr 2500												X IP 54
	<i>N.B.: please see resolution table or directly contact our offices for pulses availability</i>												S IP 66 (optional for EL - ER 40 A / B)
<b>ZERO PULSE</b>	without zero pulse S												<b>SHAFT DIAMETER</b>
	with zero pulse Z												4 mm (EL - ER 40 A / B / C / E)
<b>POWER SUPPLY</b>	(available only with L electronic output) 5 V DC 5												6 mm (EL - ER 40 A / B / C / H / I / N)
	(available only with L or PC electronic output) 8 ... 24 V DC 8/24												8 mm (EL - ER 40 X)
	5 ... 28 V DC 5/28												<b>ELECTRONIC INTERFACE</b>
													N NPN
													C NPN open collector
													P push-pull
													PC protected push-pull (AEIC-7272)
													L line driver
													<i>N.B.: with N / C interface max 2500 ppr</i>

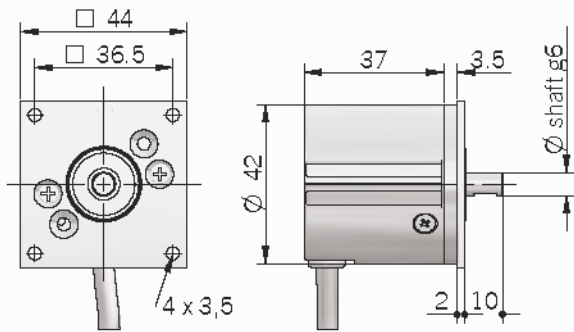
### EL - ER 40 A



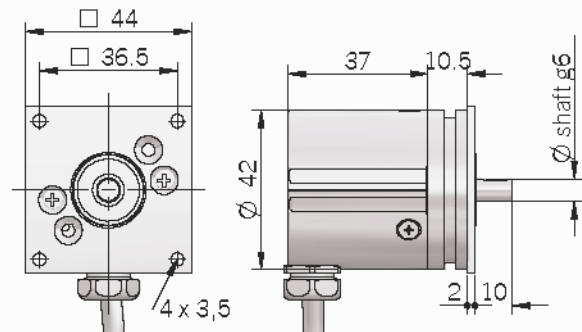
### EL - ER 40 A IP 66 version



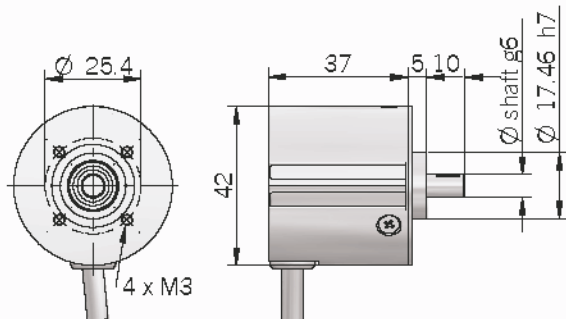
### EL - ER 40 B



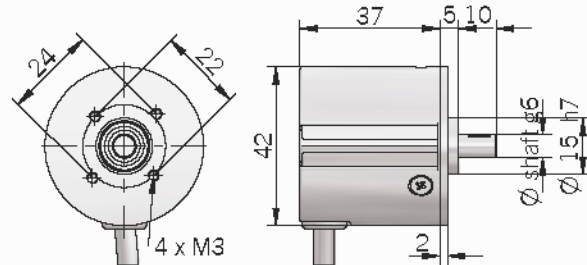
### EL - ER 40 B IP 66 version



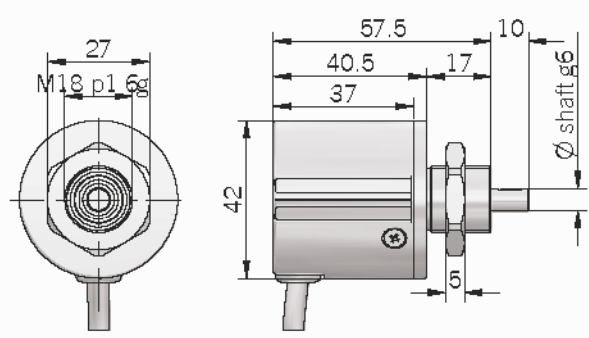
### EL - ER 40 C



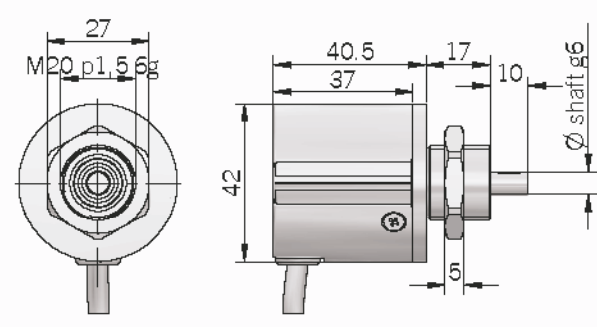
### EL - ER 40 E



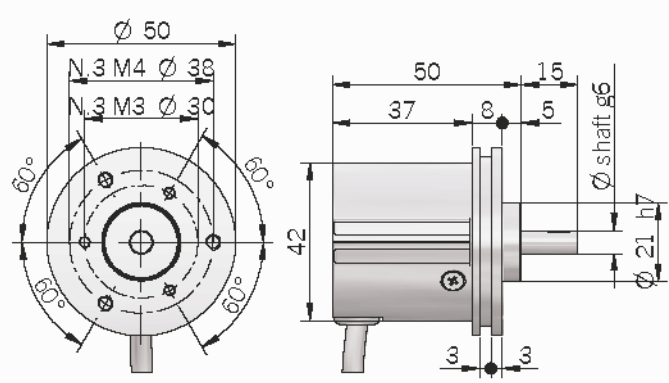
EL - ER 40 H



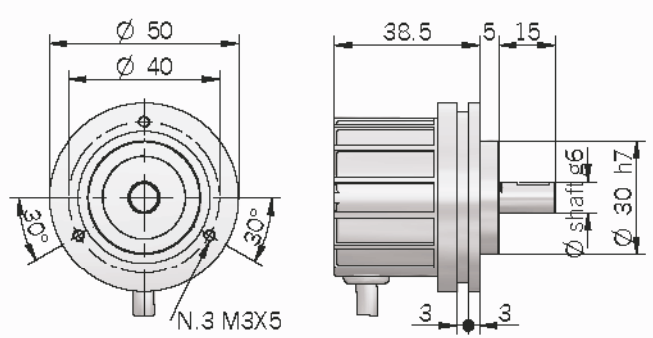
EL - ER 40 I



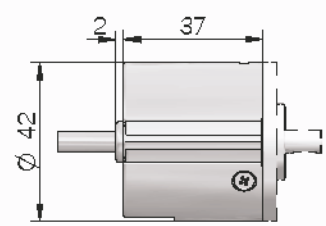
EL - ER 40 N



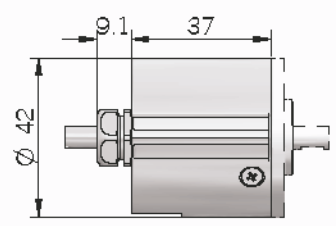
EL - ER 40 X



EL - ER 40 dimension with axial output



EL - ER 40 dimension with IP 66 axial output



## Electrical specifications

<b>Resolution</b>	from 1 to 25000 ppr (EL - ER 40 A/B) from 1 to 2500 ppr (EL - ER 40 C/E/H/I/N/X)
<b>Power supply</b>	5 V DC $\pm$ 10% 5 ... 28 V DC $\pm$ 5% 8 ... 24 V DC $\pm$ 5% (reverse polarity protection)
<b>Current consumption without load</b>	100 mA max
<b>Max load current</b>	50 mA for channel 20 mA for channel (line driver)
<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

## Mechanical specifications

<b>Shaft diameter</b>	$\phi$ 4 mm (EL - ER 40 A/B/C/E) $\phi$ 6 mm (EL - ER 40 A/B/C/H/I/N) $\phi$ 8 mm (EL - ER 40 X)
<b>Enclosure rating</b>	IP 54 (IEC 60529) IP 66 (optional for EL - ER 40 A/B) (IEC 60529)
<b>Max rotation speed</b>	3000 rpm 6000 rpm (only IP 54)
<b>Max shaft load</b>	5 N (0.5 kgf) axial 5 N (0.5 kgf) 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>Body material</b>	EN-AW 2011 aluminum
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Housing material</b>	PA 66 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 EL series -20° ... +70°C ER series
<b>Storage temperature</b>	-25° ... +70°C
<b>Weight</b>	100 g

## Connections and standard colours

Function	Push pull / Npn / Npn open collector	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
$\text{—}$	shield	shield

## Resolutions ER series

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

## Resolutions EL series

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 30 - 32 - 40 - 50 - 70 - 80 - 90 - 160 - 180  
- 350 - 450 - 660 - 700 - 2880 - 3000 - 3600 - 4000 - 4096 - 5000 - 6000  
- 7200 - 7500 - 8000 - 8192 - 10000 - 10240 - 12000 - 15000 - 16000  
- 16384 - 20000 - 20480 - 25000