

MAIN FEATURES

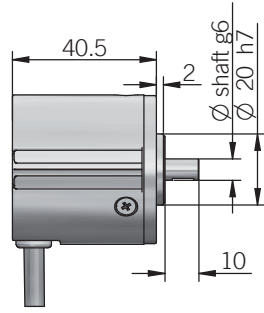
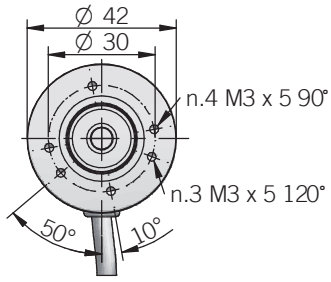
Miniaturized \varnothing 42 mm encoder series for general factory automation applications.

- 3 channel encoder (A / B / Z) up to 14400 ppr
- Power supply up to +28 V DC with several electrical interfaces available
- Up to 500 kHz output frequency
- Cable output, connector available on cable end
- Solid shaft diameter up to 8 mm
- Mounting by clamping, threaded or synchronous flange

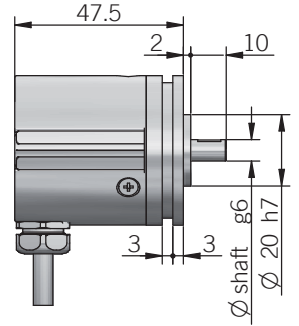
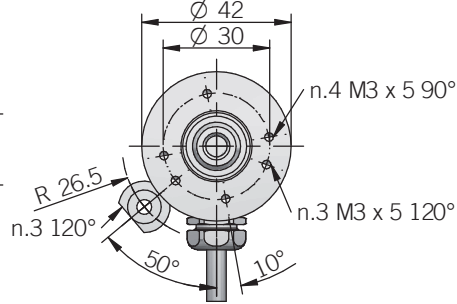


ORDERING CODE	ER	40A	100	S	5/28	P	6	X	6	P	R	.XXX
SERIES	incremental encoder series EL											
	incremental encoder series ER											
MODEL	clamping flange \varnothing 20 mm 40A											
	square flange \square 36,5 mm 40B											
	clamping flange \varnothing 17,46 mm 40C											
	M18 threaded flange 40H											
	M20 threaded flange 40I											
	synchronous flange \varnothing 21 mm 40N											
	synchronous flange \varnothing 30 mm 40X											
RESOLUTION	(mod. A / B) ppr from 1 to 14400											
	(mod. C / H / I / N / X) ppr from 1 to 2500											
	refer to the available pulses list											
ZERO PULSE	without zero pulse S											
	with zero pulse Z											
POWER SUPPLY	(with L electrical interface) 5 V DC 5											
	5 ... 28 V DC 5/28											
ELECTRICAL INTERFACE	NPN open collector C											
	push-pull P											
	line driver L											
	power supply 5/28V - output RS-422 RS											
SHAFT DIAMETER	(mod. C) mm 4											
	(mod. A / B / C / H / I / N) mm 6											
	(mod. X) mm 8											
ENCLOSURE RATING	IP 54 X											
	(mod. A / B / H) IP 66 S											
MAX ROTATION SPEED	(IP 66) 3000 rpm 3											
	(IP 54) 6000 rpm 6											
OUTPUT TYPE	cable (standard length 0,5 m) P											
	preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5)											
DIRECTION TYPE	(mod. A / B / C / H / I / N) axial A											
	radial R											
VARIANT	custom version XXX											

40 A (IP54)

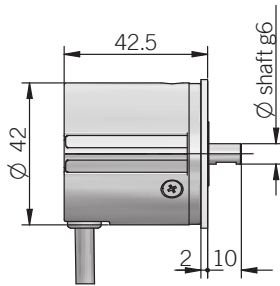
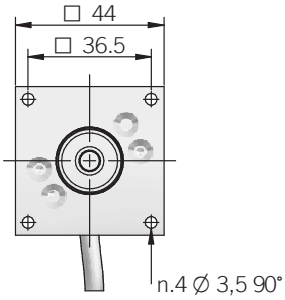


40 A (IP 66)

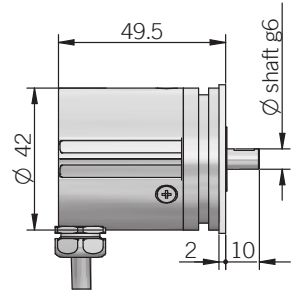
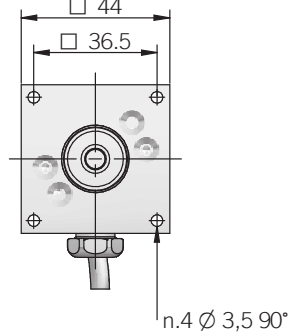


for fixing clamps please refer to Accessories

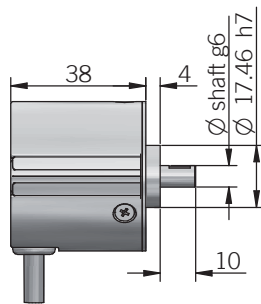
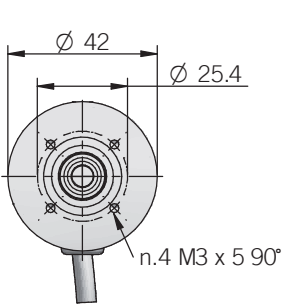
40 B (IP54)



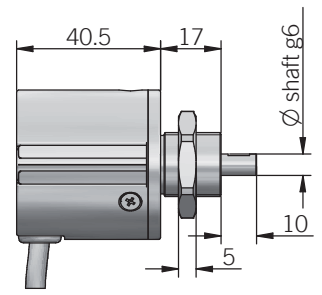
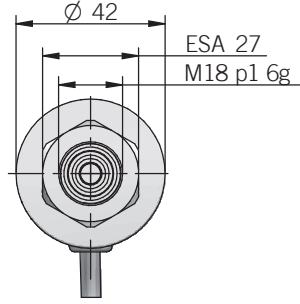
40 B (IP 66)



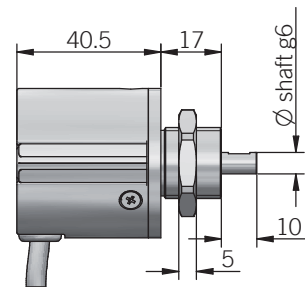
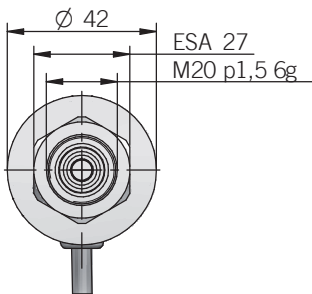
40 C



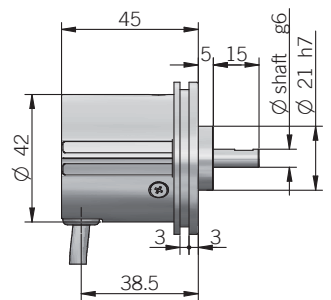
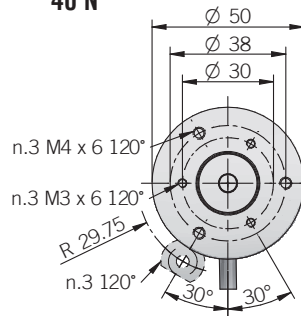
40 H



40 I

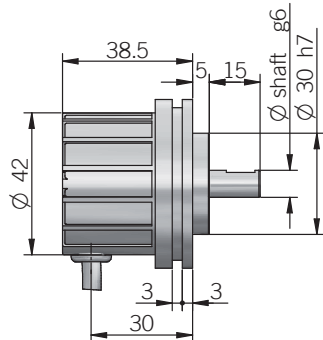
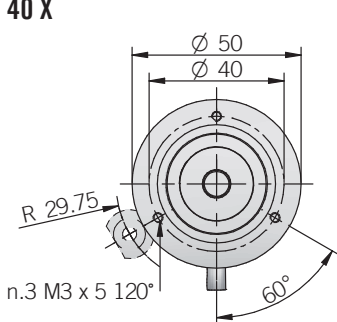


40 N



fixing clamps not included, please refer to the Accessories

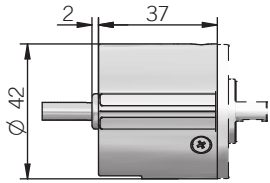
40 X



fixing clamps not included, please refer to the Accessories

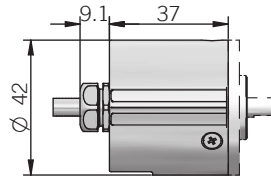
dimensions in mm

40 (axial output)



dimensions in mm

40 (IP 66 axial output)



ELECTRICAL SPECIFICATIONS	
Resolution	from 1 to 14400 ppr (mod. A / B) from 1 to 2500 ppr (mod. C / H / I / N / X)
Power supply¹	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Power draw without load	800 mW max
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface²	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272) line driver RS-422 (AELT-5000 or equivalent)
Max output frequency	EL series 150 kHz ER series 250 kHz up to 3600 ppr 500 kHz from 4000 ppr
Counting direction	A leads B clockwise (shaft view)
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2015/863/EU directive
UL / CSA	certificate n. E212495

CONNECTIONS		
Function	Cable C / P	Cable L / RS
+V DC	red	red
0 V	black	black
A+	green	green
A-	/	brown or grey
B+	yellow	yellow
B-	/	orange
Z+	blue	blue
Z-	/	white
⊕	shield	shield

MECHANICAL SPECIFICATIONS	
Shaft diameter	∅ 4 / 6 / 8 mm
Enclosure rating	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
Max rotation speed	IP 54 - 6000 rpm IP 66 - 3000 rpm
Max shaft load³	5 N axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	0,1 x 10 ⁻⁶ kgm ² (2,4 x 10 ⁻⁶ lbf ²)
Starting torque (at +20°C / +68°F)	< 0,01 Nm (1,42 Ozin) IP 54 < 0,05 Nm (7,10 Ozin) IP 66
Bearing stage material	EN-AW 2011 aluminum
Shaft material	1.4305 / AISI 303 stainless steel
Housing material	PA66 glass fiber reinforced
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{4, 5}	-10° ... +60°C (+14° ... +140°F) EL series -25° ... +85°C (-13° ... +185°F) ER series
Storage temperature⁵	-25° ... +70°C (-13° ... +158°F)
Weight	100 g (3,52 oz)

¹ as measured at the transducer without cable influences
² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section
³ maximum load for static usage
⁴ measured on the transducer flange
⁵ condensation not allowed

EL SERIES RESOLUTIONS
1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 30 - 32 - 40 - 50 - 70 - 80 - 90 - 750 - 1500

ER SERIES RESOLUTIONS
100 - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - 360 - 400 - 480 - 500 - 512 - 600 - 625 - 720 - 800 - 900 - 1000 - 1024 - 1200 - 1250 - 1440 - 1600 - 1800 - 2000 - 2048 - 2500 - 3000 - 3600 - 4000 - 4096 - 5000 - 6000 - 7200 - 8000 - 8192 - 10000 - 12000 - 14400

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