

### MAIN FEATURES

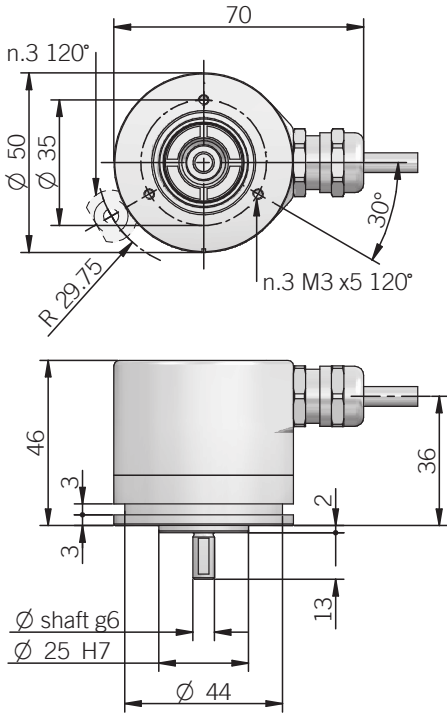
Singleturn absolute magnetic encoder size 50 mm with solid shaft

- Resolution 12 bit
- Power supply up to +28 V DC with analogue (voltage or current) electrical interface
- Code reset for easy setup
- Cable or M12 output, other connectors available on cable end
- Sturdy construction
- Solid shaft diameter up to 10 mm
- IP 67 enclosure rating
- Mounting by synchronous flange



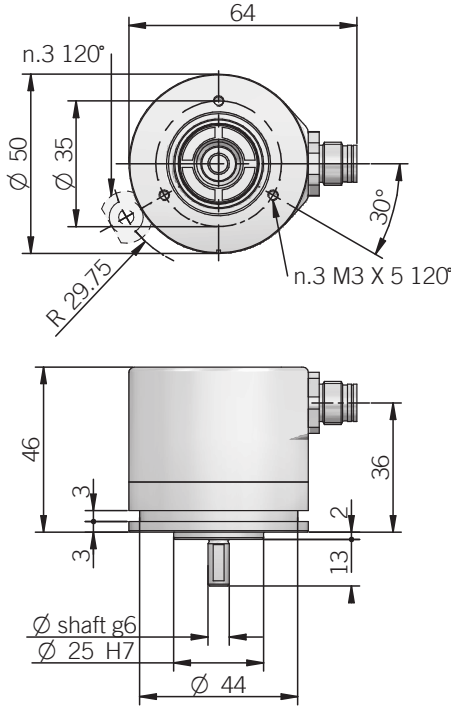
ORDERING CODE	EML	50A	360	X	12/28	V	05	X	6	X	3	M12	R	.162	+XXX
<b>SERIES</b> magnetic singleturn absolute encoder <b>EML</b>															
<b>MODEL</b> synchronous flange ø 25 mm <b>50A</b> synchronous flange ø 30 mm <b>50B</b> for anodized version please directly contact our offices															
<b>ACTIVE ANGLE</b> degrees <b>360</b> degrees <b>270</b> degrees <b>180</b> degrees <b>90</b>															
<b>OPTION</b> to be reported if not used <b>X</b> reset with external input <b>ZE</b>															
<b>POWER SUPPLY</b> 12 ... 28 V DC <b>12/28</b>															
<b>ELECTRICAL INTERFACE</b> voltage <b>V</b> current <b>I</b>															
<b>OUTPUT RANGE</b> 0 ... 5 V <b>05</b> 0 ... 10 V <b>010</b> 0 ... 20 mA <b>020</b> 4 ... 20 mA <b>420</b>															
<b>OPTIONS</b> to be reported with voltage output / 3 wires current output <b>X</b> 4 wires current output <b>Q</b>															
<b>SHAFT DIAMETER</b> (mod. 50A) mm <b>6</b> (mod. 50B) mm <b>8</b> (mod. 50B) mm <b>10</b>															
<b>ENCLOSURE RATING</b> IP 65 <b>X</b> IP 67 <b>S</b>															
<b>MAX ROTATION SPEED</b> 3000 rpm <b>3</b>															
<b>OUTPUT TYPE</b> cable (standard length 0,5 m) <b>P</b> preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5) M12 plug connector <b>M12</b>															
<b>DIRECTION TYPE</b> axial <b>A</b> radial <b>R</b>															
<b>SOCKET</b> socket not included <b>.162</b> to be reported only with connector output (eg. M12R.162), for socket see Accessories															
<b>VARIANT</b> custom version <b>XXX</b>															

**50A WITH RADIAL CABLE OUTPUT**



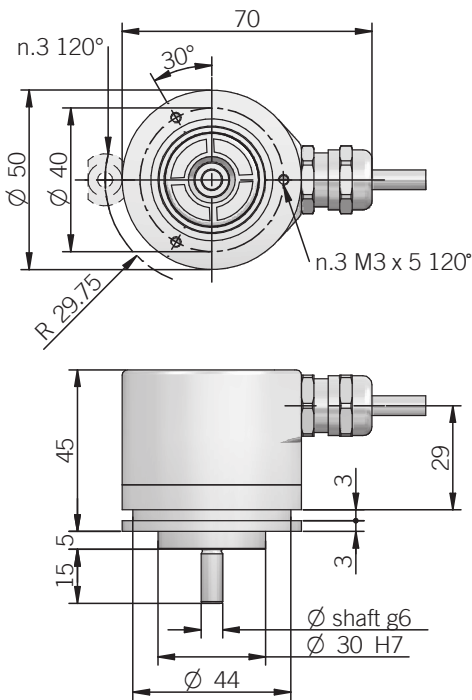
fixing clamps not included, please refer to Accessories

**50A WITH RADIAL M12 OUTPUT**



fixing clamps not included, please refer to Accessories

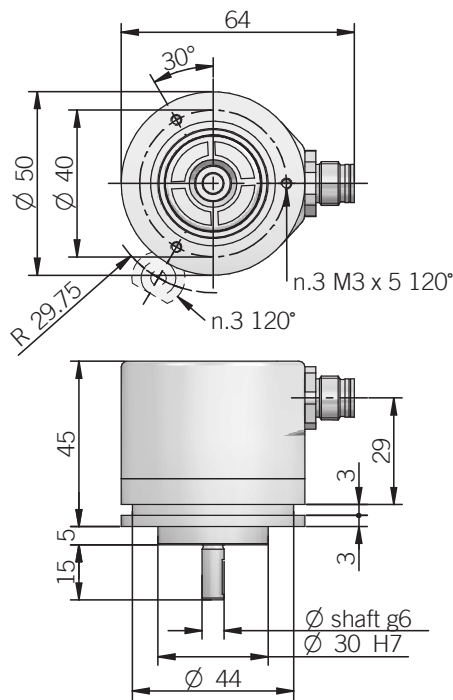
**50B WITH RADIAL CABLE OUTPUT**



fixing clamps not included, please refer to Accessories

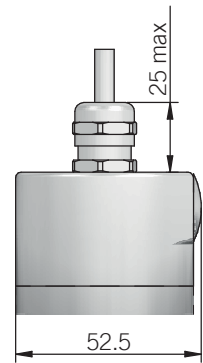
recommended mating shaft tolerance H7  
dimensions in mm

**50B WITH RADIAL M12 OUTPUT**



fixing clamps not included, please refer to Accessories

**DIMENSIONS WITH AXIAL OUTPUT**

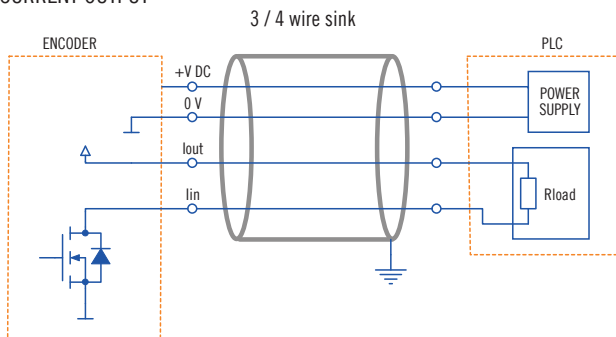


ELECTRICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS	
<b>Resolution</b>	12 bit	<b>Shaft diameter</b>	∅ 6 / 8 / 10 mm
<b>Output DAC resolution</b>	12 bit	<b>Enclosure rating</b>	X = IP 65 S = IP 67
<b>Active angle</b>	90 ... 360 mechanical degrees	<b>IEC 60529</b>	
<b>Power supply<sup>1</sup></b>	11,4 ... 29,4 V DC (reverse polarity protection)	<b>Max rotation speed</b>	3000 rpm continuous / 5000 rpm instantaneous
<b>Current consumption without load</b>	40 mA max	<b>Max shaft load<sup>4</sup></b>	30 N (6,74 lbs) axial / 50 N (11,24 lbs) radial
<b>Electrical interface<sup>2</sup></b>	voltage (0 ... 5 V / 0 ... 10 V) current (0 ... 20 mA / 4 ... 20 mA)	<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Auxiliary inputs (U/D - RESET)</b>	active high (+V DC) connect to 0 V if not used / RESET tmin 150 ms	<b>Vibration</b>	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Load</b>	$R_{min} = 1 \text{ k}\Omega$ (voltage output) $R_{max} = (V_{DC} - 2) / 0,02$ (current output)	<b>Moment of inertia</b>	$0,5 \times 10^{-6} \text{ kgm}^2$ ( $12 \times 10^{-6} \text{ lbf}^2$ )
<b>Output update frequency</b>	100 kHz	<b>Starting torque (at +20°C / +68°F)</b>	< 0,03 Nm (4,25 Ozin)
<b>Signal pattern</b>	decreasing clockwise (shaft view)	<b>Bearing stage material</b>	aluminum
<b>Start-up time</b>	150 ms	<b>Shaft material</b>	stainless steel
<b>Linearity error</b>	< 1 %	<b>Housing material</b>	painted aluminum
<b>Mean time to dangerous failure (MTTF)<sup>3</sup> according to EN ISO 13849-1</b>	153 years	<b>Bearings</b>	n.2 ball bearings
<b>Mission time (Tm)<sup>3</sup></b>	20 years	<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Diagnostic coverage (DC)<sup>3</sup></b>	0%	<b>Operating temperature<sup>5, 6</sup></b>	-25° ... +85°C (-13° ... +185°F)
<b>Cable type</b>	shielded - fixed installation conductors section 0,22 mm <sup>2</sup> / AWG 24 bending radius min 60 mm	<b>Storage temperature<sup>6</sup></b>	-25° ... +85°C (-13° ... +185°F)
<b>Electromagnetic compatibility</b>	according to 2014/30/EU directive	<b>Weight</b>	200 g (7,05 oz)
<b>RoHS</b>	according to 2011/65/EU directive		
<b>UL / CSA</b>	file n. E212495		

<sup>1</sup> as measured at the transducer without cable influences  
<sup>2</sup> for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section  
<sup>3</sup> this product is not a safety component, for further details refer to TECHNICAL BASICS section  
<sup>4</sup> maximum load for static usage  
<sup>5</sup> measured on the transducer flange  
<sup>6</sup> condensation not allowed

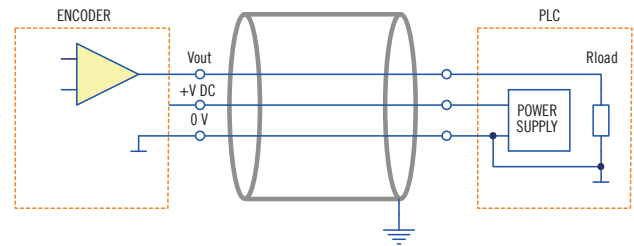
**ELECTRICAL INTERFACE**

**CURRENT OUTPUT**



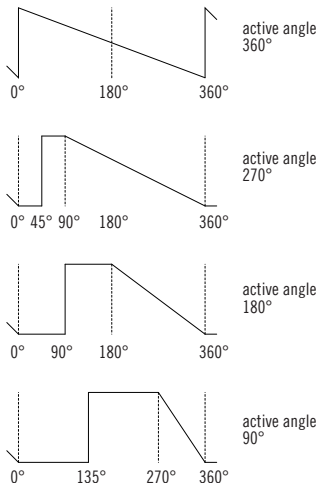
with 3 wires interface I<sub>out</sub> is internally connected to +V DC  
 where  $R_{LOADmax} = (V_{DC} - 2) / 0,02$

**VOLTAGE OUTPUT**



where  $R_{LOADmin} = 1 \text{ k}\Omega$

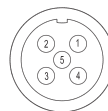
**SIGNAL PATTERN (decreasing CW)**



**CONNECTIONS**

Function	Cable (voltage)	Cable (current)	5 pin M12	8 pin M12*
+ V DC	red	red	2	8
0 V	black	black	4	5
V <sub>out</sub>	green	/	3	/
I <sub>in</sub>	/	yellow	3	3
I <sub>out</sub>	/	green	/	2
U / D	blue	blue	5	7
RESET	white	white	1	1
≡	shield	shield	housing	housing

\* with Q current output  
 M12 connector (5 pin)  
 M12 A coded front view



M12 connector (8 pin)  
 M12 A coded front view

