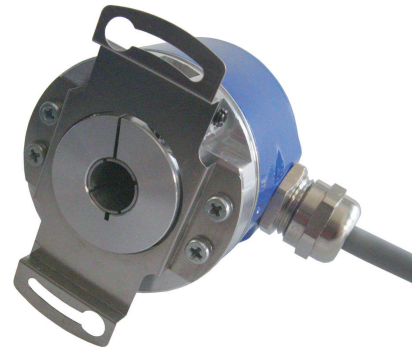


### MAIN FEATURES

The EML 50 is a magnetic rotary encoder. Its sturdiness, compact size and easy mounting system make the EML 50 suitable for heavy duty applications such as marble and glass working machinery, marine and industrial applications.

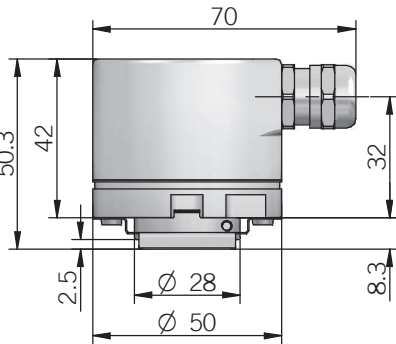
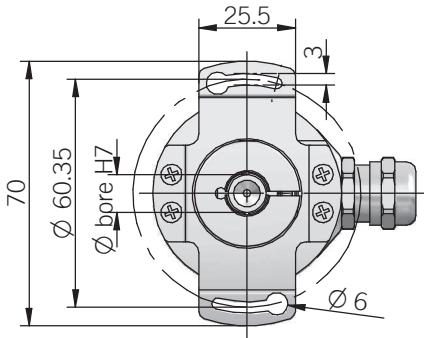
- Analogue linear voltage or current output
- IP 67 protection class
- Wide temperature range (-25° ... +85 °C)



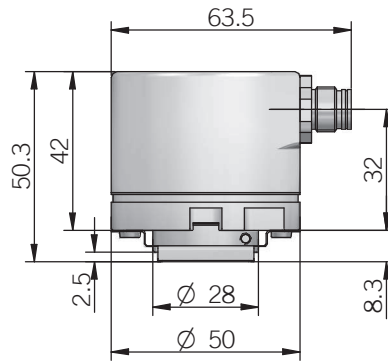
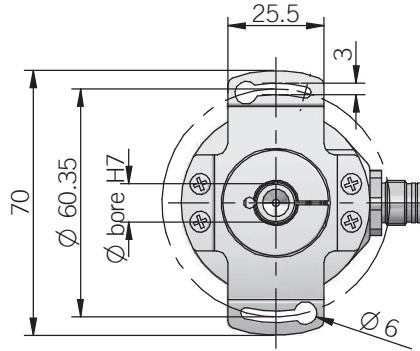
### ORDERING CODE

<b>EML</b>	<b>50</b>	<b>F</b>	<b>360</b>	<b>X</b>	<b>5</b>	<b>V</b>	<b>05</b>	<b>X</b>	<b>6</b>	<b>X</b>	<b>3</b>	<b>P</b>	<b>R</b>	<b>.</b>	<b>XXX</b>
<b>SERIES</b>													<b>VARIANT</b>		
singleturn absolute magnetic linear encoder <b>EML</b>													<b>XXX</b> custom version		
<b>SIZE</b>													<b>OUTPUT DIRECTION</b>		
mm <b>50</b>													<b>R</b> radial		
<b>BODY TYPE</b>													<b>A</b> axial		
flange type F aluminum <b>F</b>													<b>OUTPUT TYPE</b>		
flange type F anodized aluminum <b>FY</b>													<b>P</b> cable output (standard length 0.5 m)		
flange type G aluminum <b>G</b>													<b>M12</b> M12 connector output (5-pin)		
flange type G anodized aluminum <b>GY</b>													<b>MAX ROTATION SPEED</b>		
<b>ACTIVE ANGLE</b>													<b>3</b> 3000 rpm continuous (5000 rpm peak)		
degrees <b>360</b>													<b>ENCLOSURE RATING</b>		
degrees <b>270</b>													<b>X</b> IP 65 (standard)		
degrees <b>180</b>													<b>S</b> IP 67 (optional)		
degrees <b>90</b>													<b>SHAFT DIAMETER</b>		
<b>OPTION</b>													<b>6</b> mm		
unused option <b>X</b>													<b>8</b> mm		
code reset <b>ZE</b>													<b>9</b> 9.52 mm (3/8")		
<b>POWER SUPPLY</b>													<b>10</b> mm		
5 V DC <b>5</b>													<b>12</b> mm		
12 ... 28 V DC <b>12/28</b>													<b>14</b> mm		
<b>ELECTRONIC INTERFACE</b>													<b>15</b> mm		
analogue linear voltage output <b>V</b>													<b>OPTION</b>		
analogue linear current output <b>I</b>													<b>X</b> unused option		
<b>OUTPUT RANGE</b>													<b>05</b> 0 ... 5 V		
<b>010</b> 0 ... 10 V (only with 12/28 power supply)													<b>020</b> 0 ... 20 mA (only with 12/28 power supply)		
<b>020</b> 0 ... 20 mA (only with 12/28 power supply)													<b>420</b> 4 ... 20 mA (only with 12/28 power supply)		

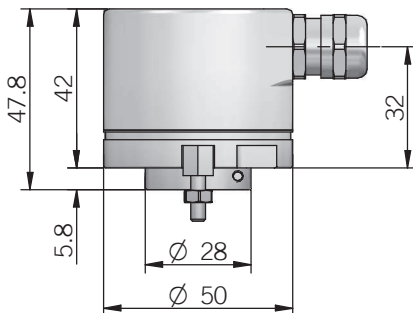
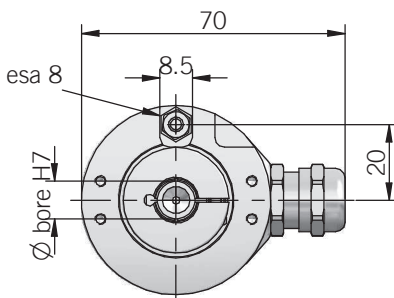
**EML 50 F / FY**  
radial cable output



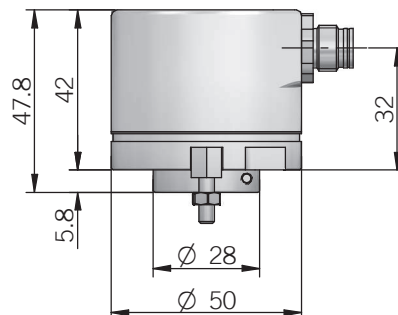
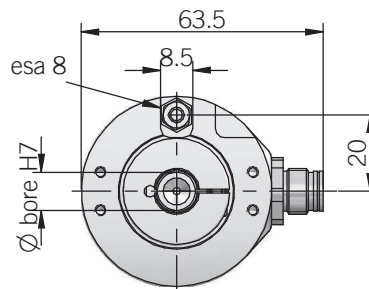
**EML 50 F / FY**  
radial M12 output



**EML 50 G / GY**  
radial cable output

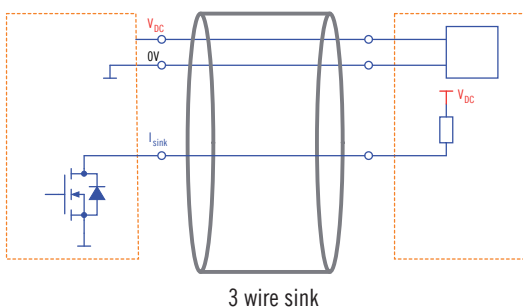


**EML 50 G / GY**  
radial M12 output

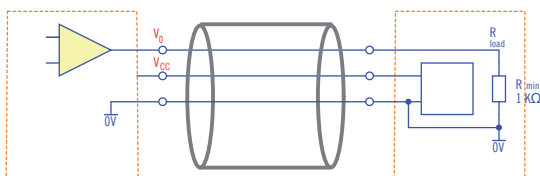


## ELECTRONIC INTERFACE

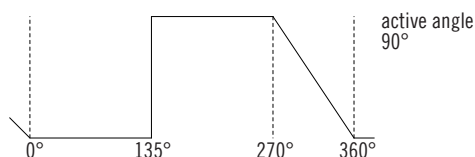
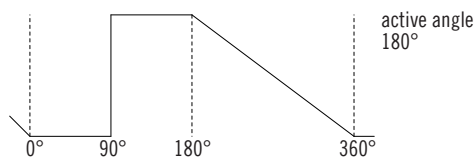
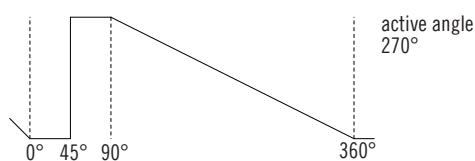
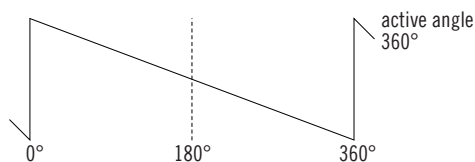
### Current output



### Voltage output



## Signal pattern



## Electrical specifications

<b>Resolution</b>	12 bits per revolution
<b>Accuracy</b>	$\pm 0,35^\circ$ max
<b>Active angle</b>	90 ... 360 mechanical degrees
<b>Power supply</b>	5 V DC $\pm 5\%$ 12 ... 28 V DC $\pm 5\%$ reverse polarity protection
<b>Current consumption without load</b>	40 mA max
<b>Signal pattern</b>	decreasing with clockwise rotation (shaft view)
<b>Auxiliary inputs (U/D - Reset)</b>	active high (+Vdc) connect to 0V if not used / Reset $t_{min}$ 150 ms
<b>Electronic interface</b>	analogue linear voltage output (0 ... 5 V / 0 ... 10 V) analogue linear current output (0 ... 20 mA / 4 ... 20 mA)
<b>Load</b>	$R_{min} = 1 \text{ k}\Omega$ (voltage output) $R_{max} = (V_{DC} - 2) / 0.02$ (current output)
<b>Linearity error</b>	$< 0,1\%$
<b>Start-up time</b>	150 ms
<b>Electromagnetic compatibility</b>	IEC 61000-6-2 IEC 61000-6-3

## Mechanical specifications

<b>Shaft diameter</b>	6 / 8 / 9.52 / 10 / 12 / 14 / 15 mm
<b>Enclosure rating</b>	IP 65 (standard) (IEC 60529) IP 67 (optional) (IEC 60529)
<b>Max rotation speed</b>	3000 rpm continuous 5000 rpm peak
<b>Max shaft load</b>	30N (3 Kgf) axial 50N (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>Bearings</b>	n° 2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Shaft material</b>	stainless steel UNI X10CrNiS1809
<b>Body material</b>	aluminium UNI 9002/5
<b>Housing material</b>	aluminium UNI 9002/5
<b>Operating temperature</b>	-25° ... +85 °C
<b>Storage temperature</b>	-25° ... +85 °C
<b>Weight</b>	200 g

## Electrical connections

Function	Wire colour (voltage output)	Wire colour (current output)	M12 Connector (5-pin)
+V DC	red	red	2
0 V	black	black	4
V <sub>out</sub>	green	/	3
I <sub>in</sub>	/	yellow	3
RESET	white	white	1
U / D	blue	blue	5
⊥	case	case	/

M12 connector (5-pin) (front view)

