

## EAC50A-EU

## ARTICLE PROPERTIES

<b>TYPE</b>	Miniature absolute single-turn encoder
<b>SIZE</b>	Ø 50

## TECHNICAL DATA

<b>SHAFT DIAMETER</b>	Ø 6g6 mm / Ø 8g6 mm	<b>STARTING TORQUE</b>	< 0.01 N·m
<b>SPEED</b>	6000 rpm	<b>BODY MATERIAL</b>	Al-alloy
<b>BEARING LIFE</b>	10 <sup>9</sup> revolution	<b>HOUSING MATERIAL</b>	Al-alloy
<b>MOMENT OF INERTIA</b>	1.8 × 10 <sup>-6</sup> kgm <sup>2</sup>	<b>WEIGHT</b>	330 g

## ENVIRONMENTAL CONDITIONS

<b>PROTECTION CLASS</b>	IP64	<b>OPERATING TEMPERATURE</b>	-20 ... +80 °C
<b>MAX LOAD CAPACITY OF THE SHAFT</b>	40 N axial, 80 N radial	<b>STORAGE TEMPERATURE</b>	-25 ... +85 °C
<b>SHOCK RESISTANCE (EN 60068-2-27)</b>	50 g, 11 ms	<b>RELATIVE HUMIDITY / CONDENSATION</b>	90%, condensation not permitted
<b>VIBRATION RESISTANCE (EN 60068-2-6)</b>	10 g, 10 ... 2000 Hz		

Resolution: 2, 4, 8, 16, 32, 64, 90, 128, 180, 250, 256, 360, 500, 512, 720, 1024.

## STANDARDS AND DIRECTIVES

<b>LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR</b>	EN IEC 61000-6-2 EN IEC 61000-6-4
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## APPROVALS



## EAC50A-EU

## ELECTRICAL PARAMETERS

Output circuit	PNP	PNP open collector	NPN	NPN open collector
<b>Resolution</b>	10 Bits	10 Bits	10 Bits	10 Bits
<b>Supply voltage</b>	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC
<b>Power consumption (no load)</b>	≤ 125 mA	≤ 125 mA	≤ 80 mA	≤ 80 mA
<b>Permissible load (channel)</b>	±80 mA	±80 mA	±50 mA	±50 mA
<b>Pulse frequency</b>	Max. 300 kHz	Max. 300 kHz	Max. 300 kHz	Max. 300 kHz
<b>Signal level high</b>	Min. $U_b - 1.5$ V	Min. $U_b - 1.5$ V	Min. $U_b - 2.5$ V	Min. $U_b * 70\%$
<b>Signal level low</b>	Max. 0.4 V	depends on pull-down resistor	Max. 0.4 V	Max. 0.4 V
<b>Rise time <math>T_r</math></b>	Max. 1 $\mu$ s	Max. 1 $\mu$ s	Max. 1 $\mu$ s	Max. 1 $\mu$ s
<b>Fall time <math>T_f</math></b>	Max. 1 $\mu$ s	Max. 1 $\mu$ s	Max. 1 $\mu$ s	Max. 1 $\mu$ s

\*) : NPN open collector is depending on the pull-up resistor. 4.7 k $\Omega$  is the recommended resistance. 8.2 k $\Omega$  is the recommended resistance for PNP open collector.

\*\*): NPN (PNP) open collector is depending on pull-up (down) resistor and cable length

## TERMINAL ASSIGNMENT

Signal	0 V	+ $U_b$	bit 1 (MSB)	bit 2	bit 3	bit 4	bit 5	bit 6	bit 7	bit 8	bit 9	bit 10 (LSB)	V/R *
Color	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY / PK	RD / BU	YE / BN

Attention: Bite definition of parallel interface for an absolute encoder is: bit1 = MSB, bit2 = MSB-1, bit3 = MSB-2, .....

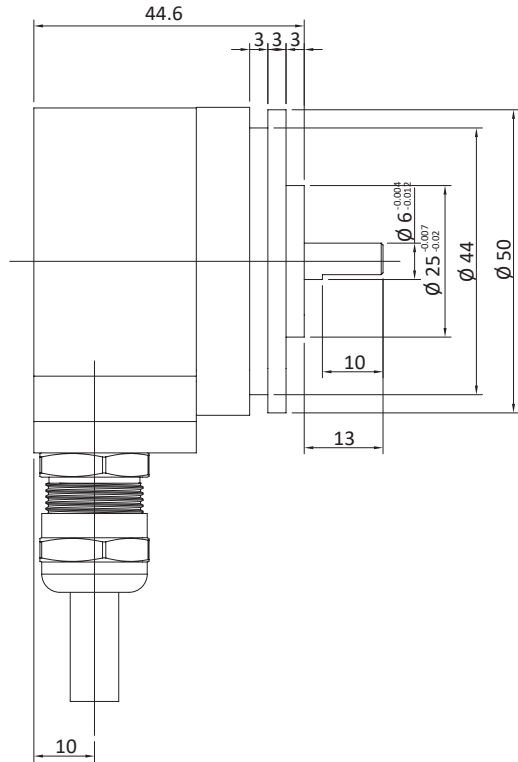
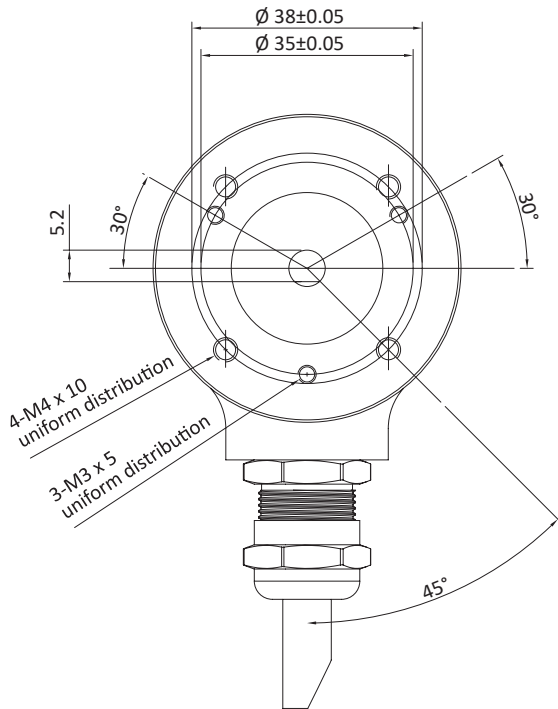
## CABLE OUTPUT

Wire color	Signal	Resolution		
		8 bit (256)	9 bit (512)	10 bit (1024)
WH	0 V	0 V	0 V	0 V
BN	+ $U_b$	+ $U_b$	+ $U_b$	+ $U_b$
GN	bit 1 MSB	$B^7 / G^7$	$B^8 / G^8$	$B^9 / G^9$
YE	bit 2	$B^6 / G^6$	$B^7 / G^7$	$B^8 / G^8$
GY	bit 3	$B^5 / G^5$	$B^6 / G^6$	$B^7 / G^7$
PK	bit 4	$B^4 / G^4$	$B^5 / G^5$	$B^6 / G^6$
BU	bit 5	$B^3 / G^3$	$B^4 / G^4$	$B^5 / G^5$
RD	bit 6	$B^2 / G^2$	$B^3 / G^3$	$B^4 / G^4$
BK	bit 7	$B^1 / G^1$	$B^2 / G^2$	$B^3 / G^3$
VT	bit 8	$B^0 / G^0$	$B^1 / G^1$	$B^2 / G^2$
GY / PK	bit 9	NC	$B^0 / G^0$	$B^1 / G^1$
RD / BU	bit 10 LSB	NC	NC	$B^0 / G^0$
YE / BN	V / R	V / R	V / R	V / R

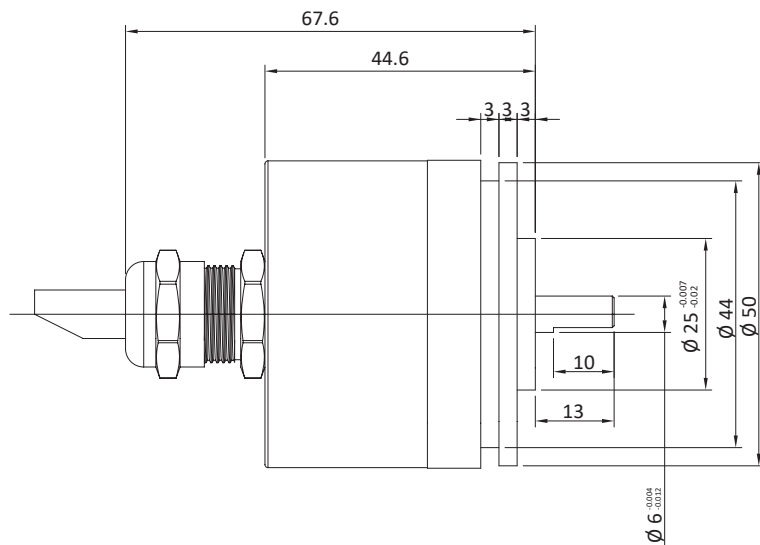
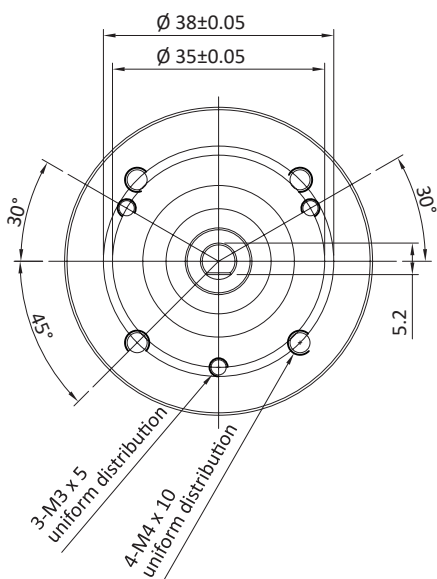
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DIMENSIONS (mm)

EAC50A6 Radial



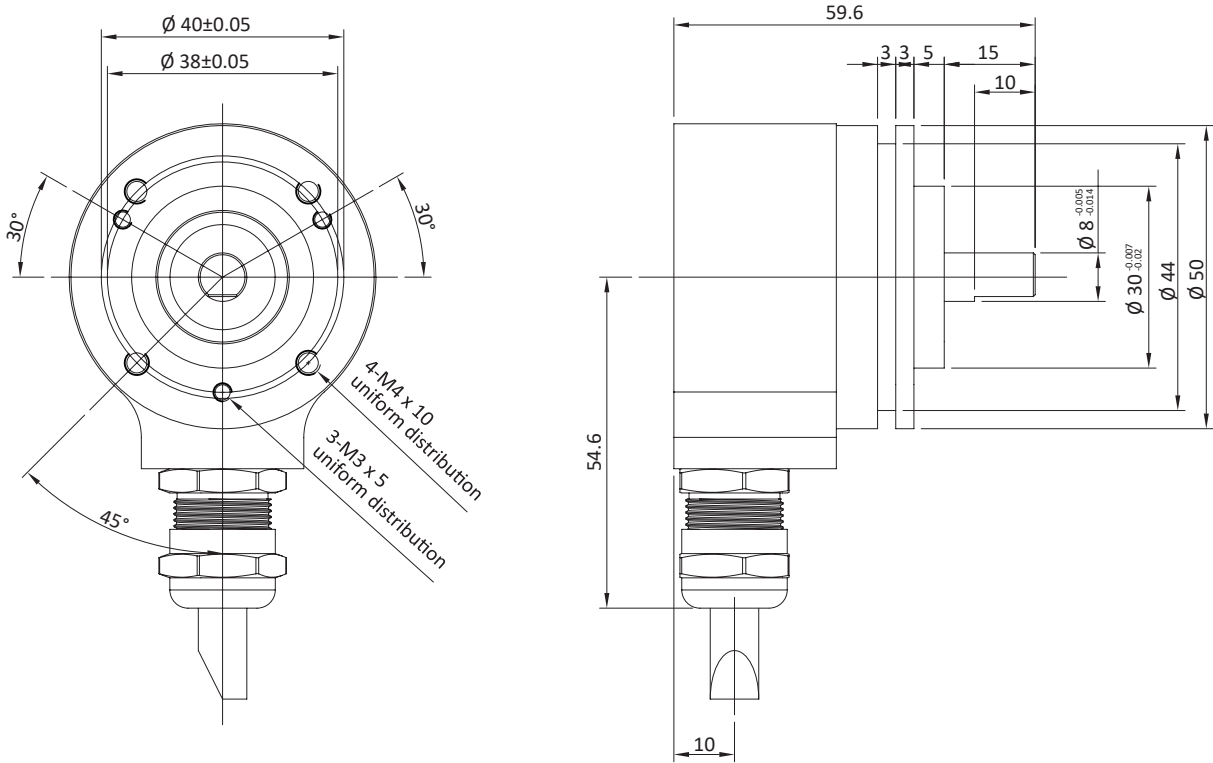
EAC50A6 Axial



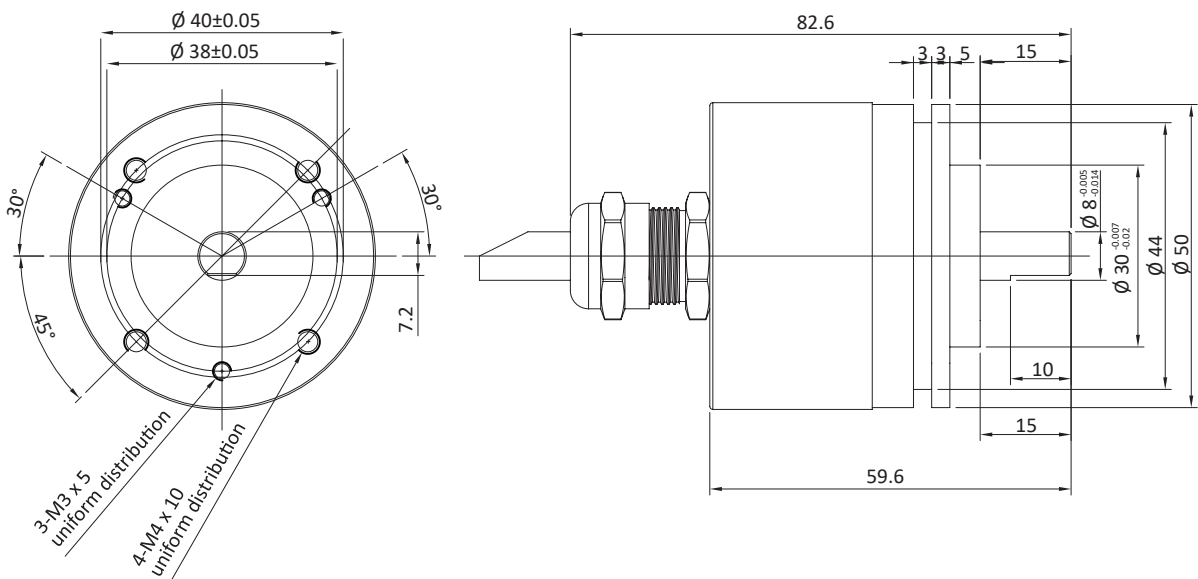
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DIMENSIONS (mm)

EAC50B8 Radial

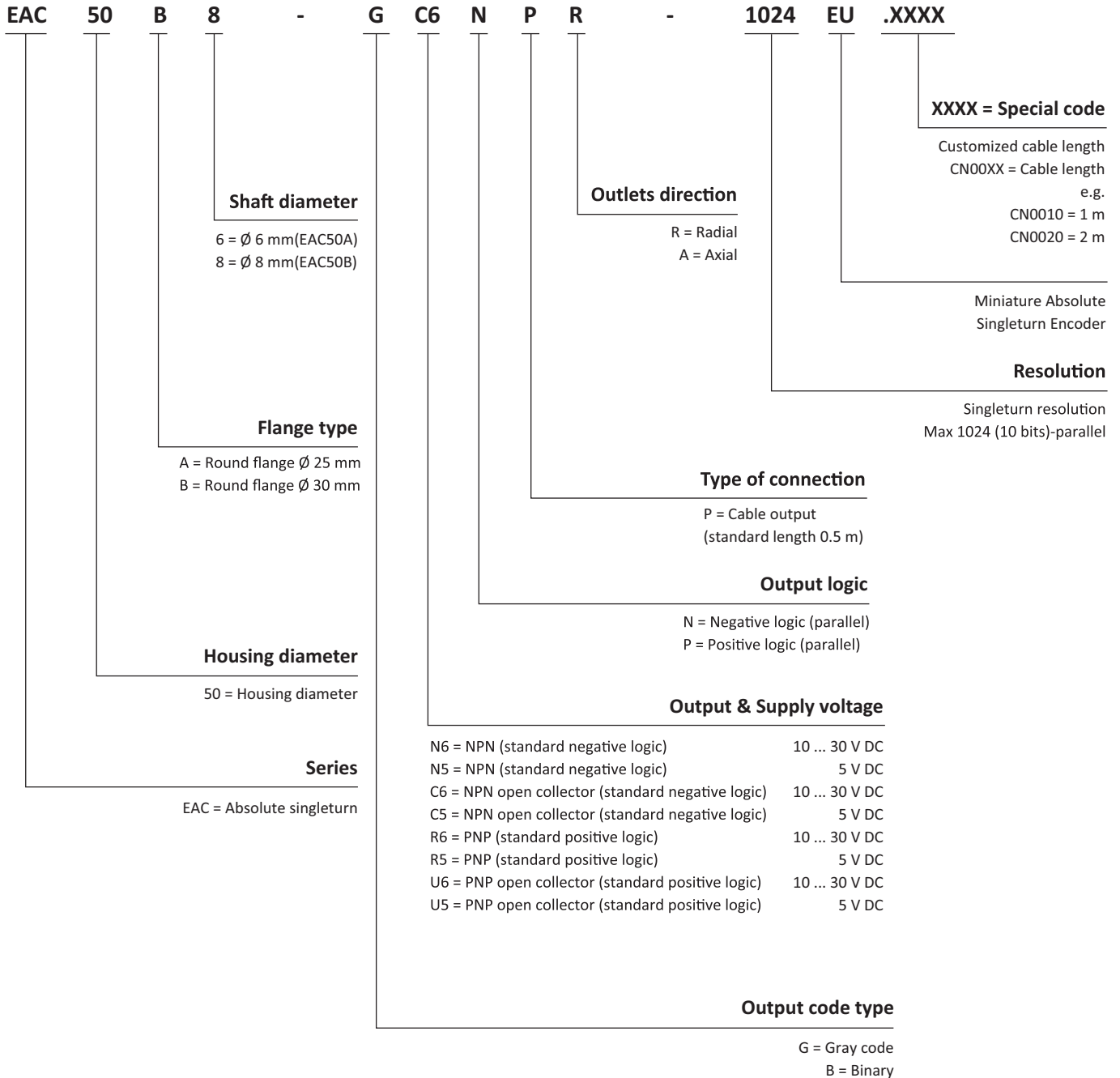


EAC50B8 Axial



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ORDER CODE



1)  
When the voltage supply within the limited range and only one signal channel is connected improperly at certain moment:  
if  $U_b = 5\text{ V}$ , it's permitted to connect to signal channels, 0 V or  $U_b$ ;  
if  $U_b > 5\text{ V}$ , it's permitted to connect to signal channels or 0 V.

**EAC50A-EU**

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