

Series

C50MI • C50MA

- Small size hollow shaft encoder
- Incremental and absolute magnetic sensing
- BiSS-C, SSI, Incremental
- Resolution up to 19 bit (524288 cpr)
- Incremental resolution up to 65536 PPR
- Operating temperature up to +100°C (+212°F)

### Applications:

- Motor feedback
- Factory automation



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#### ENVIRONMENTAL SPECIFICATIONS

Shock:	250 g, 6 ms acc. to CEI EN 60068-2-27
Vibrations:	10 g, 5-2000 Hz acc. to CEI EN 60068-2-6
Protection:	IP65
Operating temperature range:	-25°C +100°C (-13°F +212°F) (-25°C +110°C, -13°F +230°F on request)
Storage temperature range:	-25°C +85°C (-13°F +185°F)

#### MECHANICAL SPECIFICATIONS

Dimensions:	see drawing
Hollow shaft diameter:	∅ 6, 6.35, 8, 9.52, 10 mm
Shaft loading (axial, radial):	20 N max.
Shaft rotational speed:	6000 rpm max.
Starting torque (at 20°C):	≤ 0,25 Ncm (typical)
Bearings life:	10 <sup>9</sup> rev. min.
Electrical connections:	cable type M8, 1 m (3.3 ft)
Weight:	~ 100 g (3,5 oz)
Options:	• additional cable

#### ELECTRICAL SPECIFICATIONS

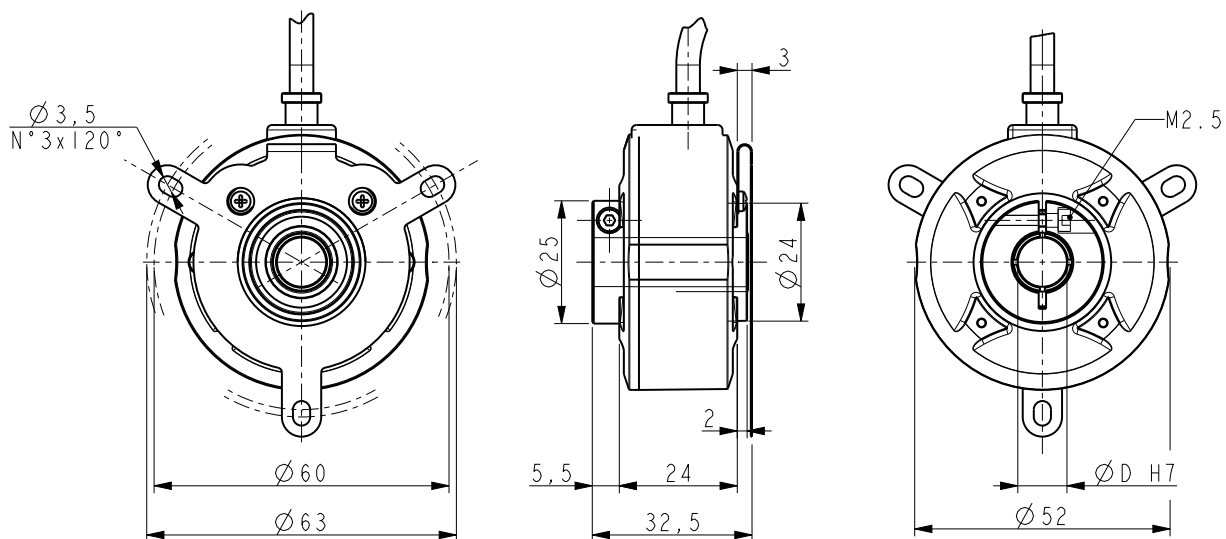
Resolution:	absolute: 19 bit (524288 cpr) max. incremental: 65536 PPR max.
Accuracy:	typ. ±0,05°
Output circuits:	BiSS-C (clock max. 5MHz) SSI (MSB aligned, clock 100 kHz ÷ 2MHz, T <sub>p</sub> = 20µs) Line Driver (RS422), PP/LD Universal circuit
Power supply:	+5Vdc ± 5%, +5V +30V
Power consumption:	typ. 105 mA (max. 150 mA)

#### MATERIALS

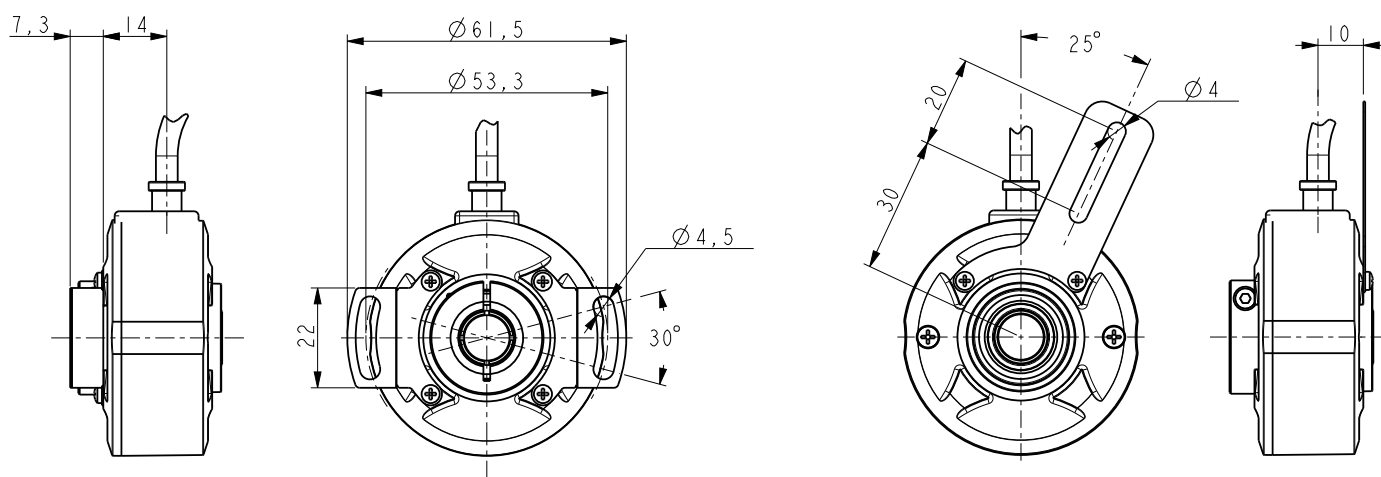
Flange:	zamak 15, UNI EN1774
Housing:	zamak 15, UNI EN1774
Bearings:	ABEC 5
Shaft:	stainless steel, non-magnetic - UNI EN 4305

#### ACCESSORIES

KIT C50:	standard fixing plate and screws
KIT MOL2546:	"B" fixing plates and screws
KIT MOL2433:	"D" fixing plate and screws
KIT C50 SCREWS:	50 screws for fixing plate



C50



Version B (2 x MOL2546)

Version D (1 x MOL2433)

## Order code - absolute version

C50MA	-	XXX	-	XXX	-	XX	-	X	X	X	-	X	XXXX	/SXXX
		(a)		(b)		(c)		(d)	(e)	(f)		(g)	(h)	(i)

<b>(a) RESOLUTION (ABS)</b> 17S = 17 bit (131072 cpr) 18S = 18 bit (262144 cpr) 19S = 19 bit (524288 cpr) 15M(*) = 15 x 16 bit 17M(*) = 17 x 16 bit 18M(*) = 18 x 16 bit 19M(*) = 19 x 16 bit	<b>(c) SHAFT DIAMETER</b> 06 = 6 mm P6 = 6.35 mm - 1/4" 08 = 8 mm P9 = 9.52 mm - 3/8" 10 = 10 mm	<b>(f) FIXING PLATE</b> E = standard fixing plate A = no fixing plate B = Version B fixing plate D = Version D fixing plate	<b>(h) CABLE LENGTH</b> L010 = cable output 1 m (standard) L020 = cable output 2 m Lxx0 = cable output x m (max. length 10 m) M005 = 0,5 m cable + M12 8 pin inline plug M020 = 2 m cable + M12 8 pin inline plug
<b>(b) INTERFACE</b> SC1 = BiSS-C mode BG1 = SSI Binary	<b>(d) PROTECTION</b> P = IP65	<b>(g) CONNECTION POSITION</b> R = radial	
	<b>(e) OPERATING TEMPERATURE</b> U = -25°C +100°C (-13° +212°F)		<b>(i) CUSTOM VERSION</b>

(\*) M = the multiturn counter is 65536 turns (16 bit). Counting is available only with power supply ON.

## Order code - incremental version

C50MI	-	XX	-	XXXXX	-	XXX	-	XX	-	X	X	-	X	-	X	XXXX	/SXXX
		(a)		(b)		(c)		(d)		(e)	(f)		(g)		(h)	(i)	(j)

<b>(a) OUTPUT CIRCUIT</b> L1 = Line Driver RS422 (+5V ± 5%) H4 = PP/LD universal circuit (+5V ÷ +30V)	<b>(d) SHAFT DIAMETER</b> 06 = 6 mm P6 = 6.35 mm - 1/4" 08 = 8 mm P9 = 9.52 mm - 3/8" 10 = 10 mm	<b>(f) OPERATING TEMPERATURE</b> U = -25°C +100°C (-13° +212°F)	<b>(h) CONNECTION POSITION</b> R = radial
<b>(b) RESOLUTION</b> 01024, 01250, 02048 02500, 04096, 05000 (others on request, see complete list) ①	<b>(c) PROTECTION</b> P = IP65	<b>(g) FIXING PLATE</b> E = standard fixing plate A = no fixing plate B = Version B fixing plate D = Version D fixing plate	<b>(i) CABLE LENGTH</b> L010 = cable output 1 m (standard) L020 = cable output 2 m Lxx0 = cable output x m (max. length 10 m) M005 = 0,5 m cable + M12 8 pin inline plug M020 = 2 m cable + M12 8 pin inline plug
<b>(c) OUTPUT SIGNALS</b> ZCU = ABO, /ABO			<b>(j) CUSTOM VERSION</b>

## ① List of Resolution (INC) available:

From 1 to 65536 PPR (4 to 262144 edges) any resolution possible.  
Binary resolutions are preferable and have best performance.

Document release	Date	Description
1.3	November 2023	Order code update
1.2	11.01.2022	Output circuit updating (H4)
1.1	02.02.2021	Materials updating
1.0	14.12.2020	First release