

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



C50MI • C50MA

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:	Ø 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 ⁹ rev. min.
Electrical connections:	cable type M8, 1 m (3.3 ft)
Weight:	~ 100 g (3,5 oz)
Options:	• additional cable

ELECTRICAL SPECIFICATIONS

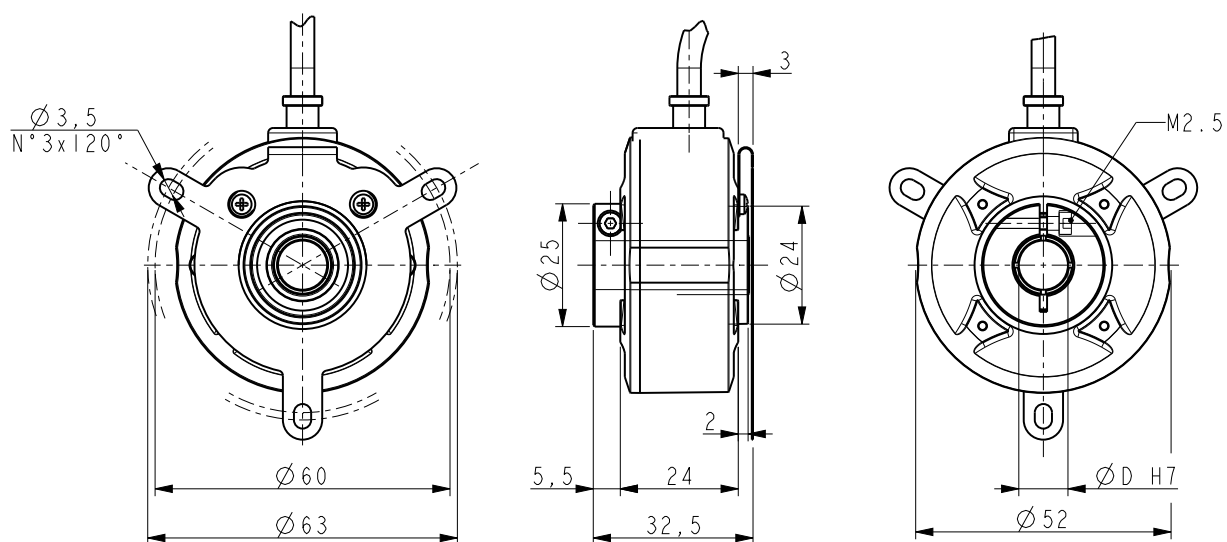
Resolution:	absolute: 19 bit (524288 cpr) max. incremental: 65536 PPR max.
Accuracy:	typ. ±0,05°
Output circuits:	BiSS-C (clock max. 5MHz) SSI (MSB aligned, clock 100 kHz ÷ 2MHz, Tp = 20µs) Line Driver (RS422), PP/LD Universal circuit
Power supply:	+5Vdc ± 5%, +5V +30V
Power consumption:	typ. 105 mA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

MATERIALS

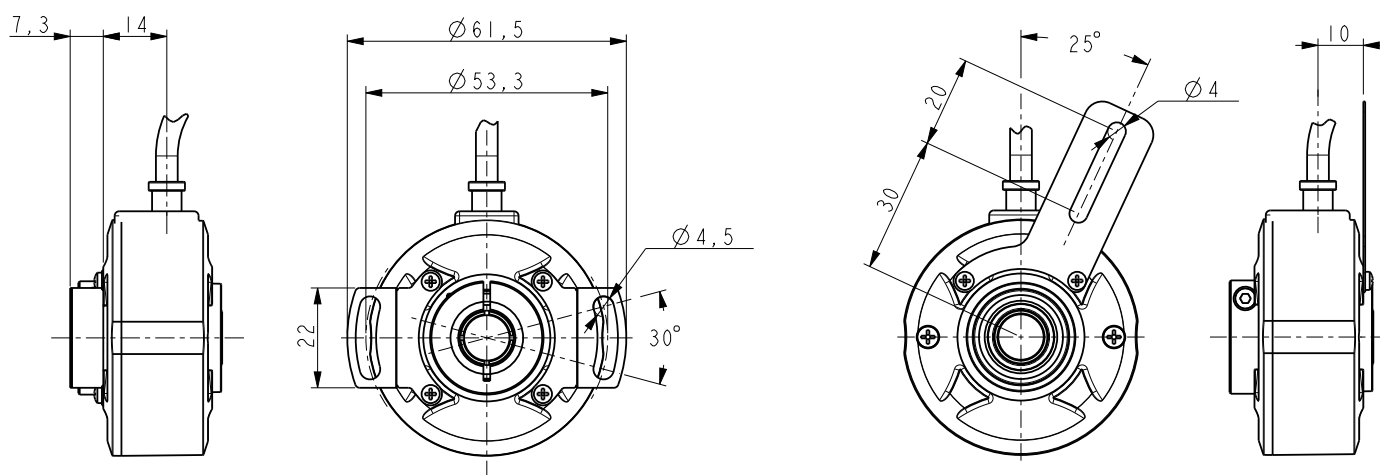
Flange:	zamak 15, UNI EN1774
Housing:	zamak 15, UNI EN1774
Bearings:	ABEC 5
Shaft:	stainless steel, non-magnetic - UNI EN 4305

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

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) INTERFACE

SC1 = BiSS-C mode, +5V ±5%

BG1 = SSI Binary, +5V ±5%

(c) SHAFT DIAMETER

06 = 6 mm

P6 = 6.35 mm - 1/4"

08 = 8 mm

P9 = 9.52 mm - 3/8"

10 = 10 mm

(d) PROTECTION

P = IP65

(e) OPERATING TEMPERATURE

U = -25°C +100°C (-13° +212°F)

(f) FIXING PLATE

E = standard fixing plate

A = no fixing plate

B = Version B fixing plate

D = Version D fixing plate

(g) CONNECTION POSITION

R = radial

(h) CABLE LENGTH

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

(i) CUSTOM VERSION

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

Order code – incremental version

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

L1 = Line Driver RS422, +5V ±5%

H4 = PP/LD universal circuit, +5V ÷ +30V

(b) RESOLUTION

01024, 01250, 02048

02500, 04096, 05000

(others on request, see complete list) ①

(c) OUTPUT SIGNALS

ZCU = ABO, /ABO

(d) SHAFT DIAMETER

06 = 6 mm

P6 = 6.35 mm - 1/4"

08 = 8 mm

P9 = 9.52 mm - 3/8"

10 = 10 mm

(e) PROTECTION

P = IP65

(f) OPERATING TEMPERATURE

U = -25°C +100°C (-13° +212°F)

(g) FIXING PLATE

E = standard fixing plate

A = no fixing plate

B = Version B fixing plate

D = Version D fixing plate

(h) CONNECTION POSITION

R = radial

(i) CABLE LENGTH

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

(j) CUSTOM VERSION

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
1.4	26.06.25	Order code update (C50MA Interface - +5V ±5%)
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