

Incremental encoders

Micro series shaft $\varnothing 5$ mm

Resolution 10...2048 pulses

BDK



BDK with shaft

Features

- Mini encoder with shaft $\varnothing 5$ mm
- Optical sensing
- Resolution max. 2048 ppr
- Housing $\varnothing 30$ mm
- Operation speed max. 12000 rpm
- Synchro flange

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 10...30 VDC
Consumption w/o load (typ.)	60 mA (5 VDC) 30 mA (24 VDC)
Resolution (steps/turn)	10...2048
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 100 kHz
Output signals	A 90° B, N + inverted
Output circuit	Linedriver RS422 Push-pull short-circuit proof
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL approval / E217823

Technical data - mechanical design

Housing	$\varnothing 30$ mm
Shaft	$\varnothing 5$ mm
Admitted shaft load	≤ 10 N axial ≤ 10 N radial
Protection DIN EN 60529	IP 42, IP 65
Operating speed	≤ 12000 rpm IP 42 ≤ 6000 rpm IP 64
Operating torque typ.	0.0014 Nm IP 42 0.0075 Nm IP 64
Materials	Housing: polyamide black Flange: aluminium
Operating temperature	$-20...+85$ °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-200 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Connection	Connector M9, 5-pin Connector M9, 8-pin Cable 1 m
Weight approx.	85 g

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Part number

BDK 16.

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Connection

- 4 Cable 1 m, axial
- 5 Cable 1 m, radial
- 9 Connector radial

Shaft

- 5 ø5 mm, IP 42
- L5 ø5 mm, IP 64

See part number (pulses)

Voltage supply / signals

05A 5 VDC / antivalent (TTL compatible)
24K 10...30 VDC / push-pull short circuit-proof

Accessories

Connectors and cables

10132983	Female connector M9, 8-pin, straight
10123168	Female connector M9, 8-pin, straight, 2 m cable
10123169	Female connector M9, 8-pin, straight, shielded, 5 m cable
10123166	Female connector M9, 5-pin, straight, shielded, 2 m cable
10123167	Female connector M9, 5-pin, straight, shielded, 5 m cable

Mounting accessories

10106004	Clamp set
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Part number (pulses)

10	50	120	360	1024
20	60	200	500	2000
30	100	250	1000	2048

Other pulse numbers upon request.

Trigger level

Outputs 05A Complementary Linedriver RS422

Output level High	>2,4 V (I = -20 mA)
Output level Low	<0,4 V (I = 20 mA)
Load High	<20 mA
Load Low	<20 mA

Outputs 24K (125 Ω) Push-pull short-circuit protection

Output level High	>+Vs - 5,7 V (I = -30 mA)
Output level Low	<5,7 V (I = 30 mA)
Load High	<30 mA
Load Low	<30 mA

Incremental encoders

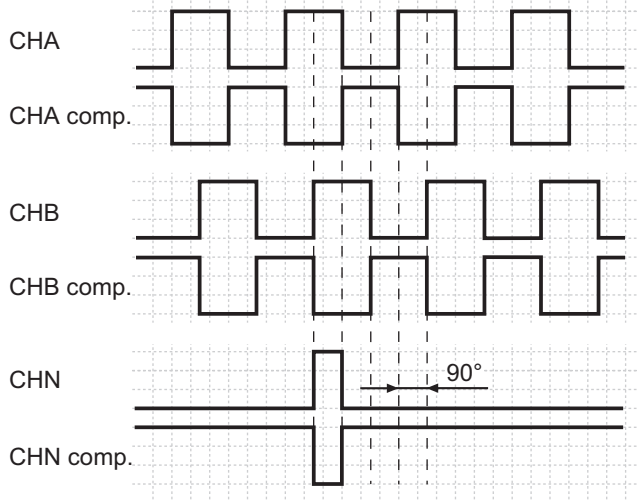
Micro series shaft $\varnothing 5$ mm

Resolution 10...2048 pulses

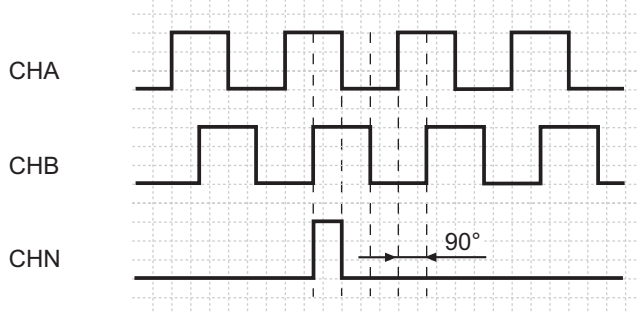
BDK

Output signals

Counter clockwise rotating direction when looking at the flange.
05A



Counter clockwise rotating direction when looking at the flange.
24K



Terminal assignment

Cable

for connection references -4 and -5

05A

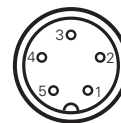
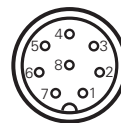
24K

Core colour	Signals	Core colour	Signals
brown	+Vs	brown	+Vs
green	CHA	green	CHA
red	CHA compl.	–	–
yellow	CHB	yellow	CHB
blue	CHB compl.	–	–
pink	CHN	pink	CHN
gray	CHN compl.	–	–
white	0 V	white	0 V
Cable data	8 x 0.14 mm ²	5 x 0.14 mm ²	
Screen	connected to housing		

Connector M9 male

for connection reference -9

	05A	24K
Connector	Signals	Signals
Pin 1	0 V	0 V
Pin 2	+Vs	+Vs
Pin 3	CHA	CHA
Pin 4	CHB	CHB
Pin 5	CHN compl.	CHN
Pin 6	CHN	–
Pin 7	CHB compl.	–
Pin 8	CHA compl.	–



Incremental encoders

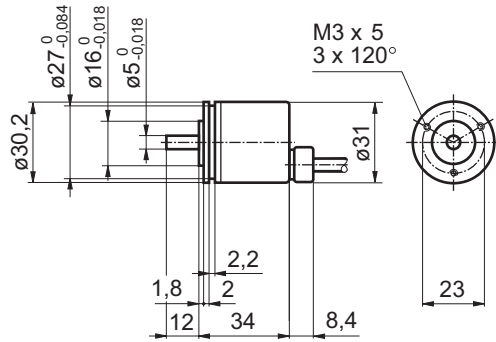
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Resolution 10...2048 pulses

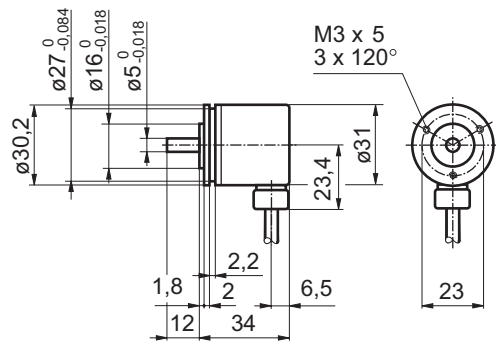
BDK

Dimensions

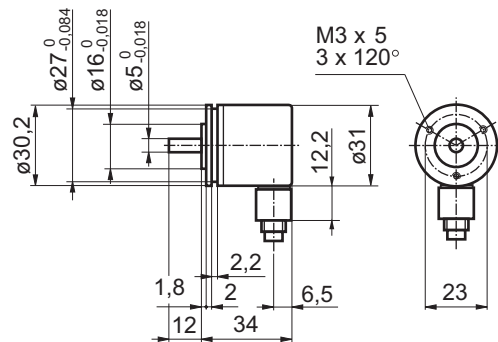
BDK cable axial



BDK cable radial



BDK connector output radial



BDK connector dimensions

