

# 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 $\pm 10$ % 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 $90^\circ$
Sensing method	Optical
Output frequency	$\leq 100$ kHz
Output signals	A $90^\circ$ 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

Dimensions (flange)	$\varnothing 30$ mm
Shaft	$\varnothing 5$ mm
Admitted shaft load	$\leq 10$ N axial $\leq 10$ N radial
Protection DIN EN 60529	IP 42, IP 65
Operating speed	$\leq 12000$ rpm IP 42 $\leq 6000$ rpm IP 64
Operating torque typ.	0.0014 Nm IP 42 0.0075 Nm IP 64
Materials	Housing: polyamide black Flange: aluminium
Operating temperature	$-20 \dots +85$ °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

# Incremental encoders

Micro series shaft  $\varnothing 5$  mm

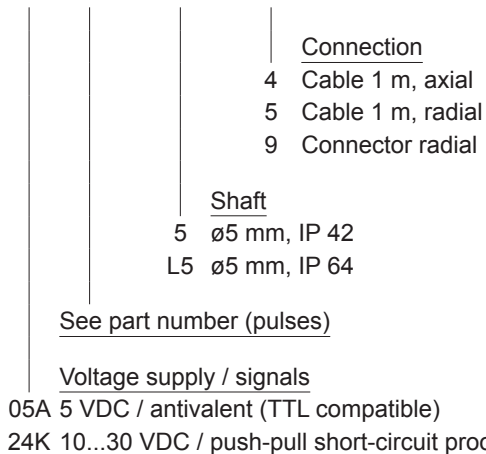
Resolution 10...2048 pulses

BDK

## Part number

BDK 16. 

		-		-	
--	--	---	--	---	--



## 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
----------	-----------

## 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 $\Omega$ )	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

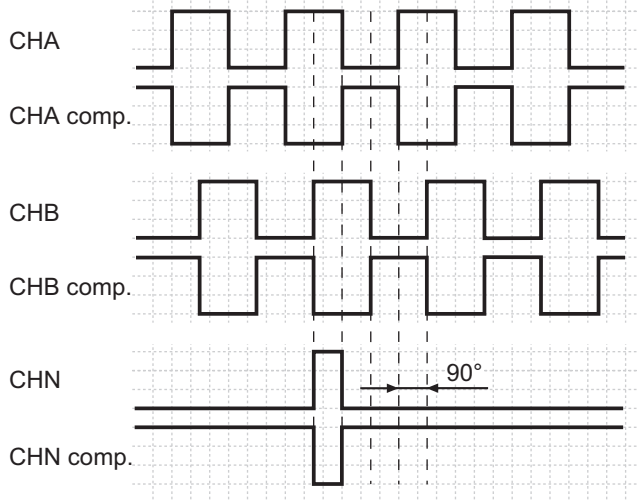
Micro series shaft  $\varnothing 5$  mm

Resolution 10...2048 pulses

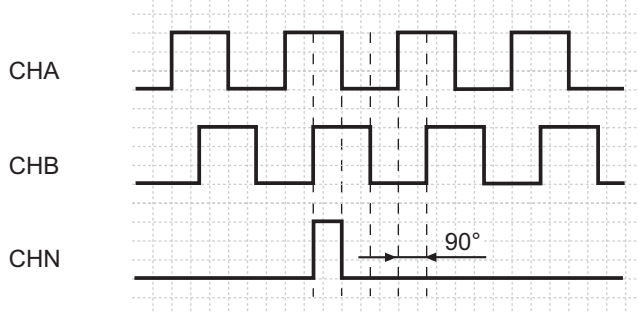
## BDK

### 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

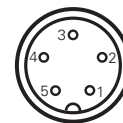
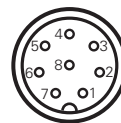
#### 24K

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 <sup>2</sup>	5 x 0.14 mm <sup>2</sup>	
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

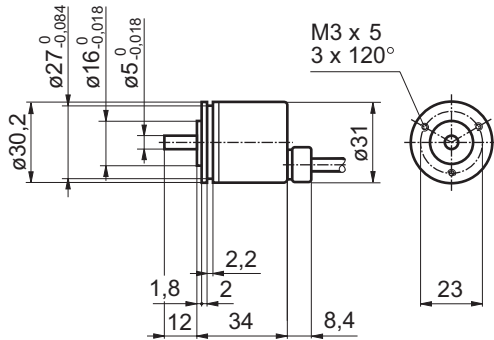
Micro series shaft  $\varnothing 5$  mm

Resolution 10...2048 pulses

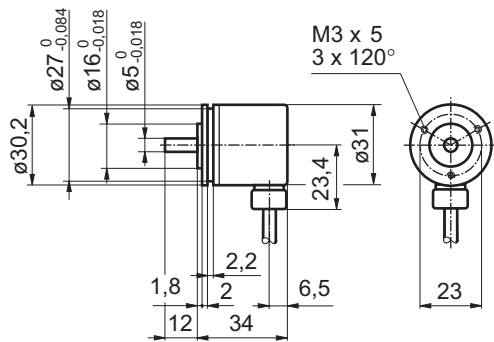
BDK

## Dimensions

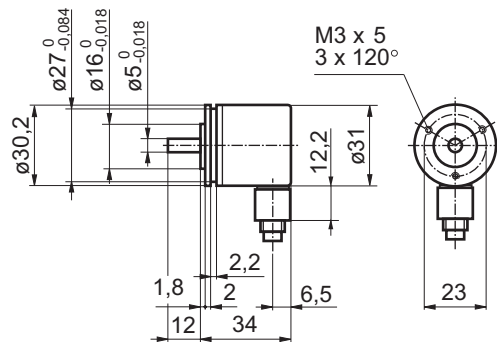
### BDK cable axial



### BDK cable radial



### BDK connector output radial



### BDK connector dimensions

