

# Incremental shaft encoder BDT

## features

- small mounting depth
- radial and axial connector or cable connection
- servo flange



## general data

voltage supply	5 VDC ±10% ( <b>05A</b> ) 10 - 30 VDC ( <b>24K</b> ) 4,5 - 30 VDC ( <b>25W</b> )
max. supply current no load	typ. 80 mA (at 5 VDC) ( <b>05A</b> ) typ. 60 mA (at 24 VDC) ( <b>24K</b> ) typ. 180 mA (at 4,5 VDC) ( <b>25W</b> )
max. measuring steps	40'000 steps at 10'000 ppr ( <b>05A/24K</b> )
pulse range	see order designation
pulse tolerance	±10%
max. switching frequency	200 kHz ( <b>24K</b> ) 300 kHz ( <b>05A/25W</b> ) 750 kHz ( <b>05A</b> > 5000 ppr)

## mechanical data

max. revolutions	12'000 rpm
moment of inertia	typ. $11,8 \times 10^{-7}$ kgm <sup>2</sup>
torque	typ. 0,23 cNm IP 42 typ. 2,6 cNm IP 64 (3'000 rpm / 20 °C)
max. shaft load	axial: 10 N      radial: 20 N
product life	depending on ambient conditions (typ. 10 <sup>9</sup> rev)
max. protection class	shaft: IP 64      housing: IP 65
material	housing: steel, housing:aluminum with connection <b>-A</b> , flange: aluminum
weight	approx. 300 g

## ambient conditions

temperature range	-20...+85 °C
relative humidity	max. 95% non condensing
vibration	IEC 68 section 2-6 (≤ 100 m/s <sup>2</sup> / 10 - 200 Hz)
shock	IEC 68 section 2-27 (≤ 500 m/s <sup>2</sup> / 11 ms)
noise immunity	EN 61000-6-2
emitted interference	EN 61000-6-3

## order designation

BDT 16.     -  -

connection

4 cable 2 m axial  
5 cable 2 m radial  
A connector radial  
B connector axial

shaft

L6 shaft 6 mm IP 64  
6 shaft 6 mm IP 42

standard pulse range

10	100	360	1250	7200 <sup>1)</sup>
20	120	400	2000	8192 <sup>1)</sup>
30	200	500	2500	10000 <sup>1)</sup>
50	250	1000	3600	
60	300	1024	5000	

other pulses on request

voltage range, output range

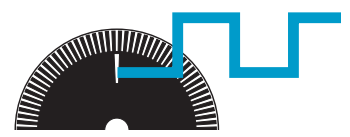
**05A** 5 VDC complementary  
**24K** 10 - 30 VDC push-pull, short-circuit pro.  
**25W** 4,5 - 30 VDC push-pull, complementary, short-circuit protection

<sup>1)</sup> only for **05A** + **24K**

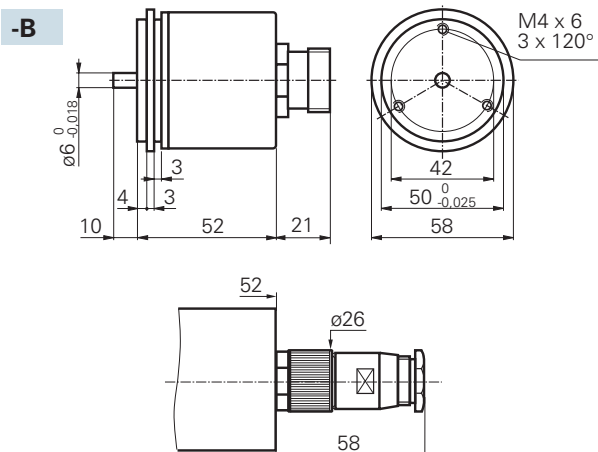
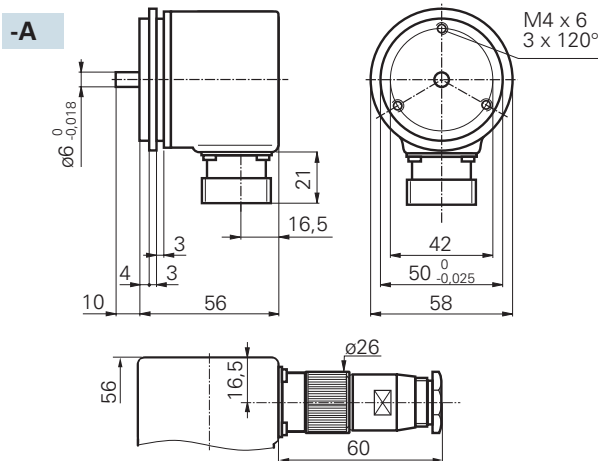
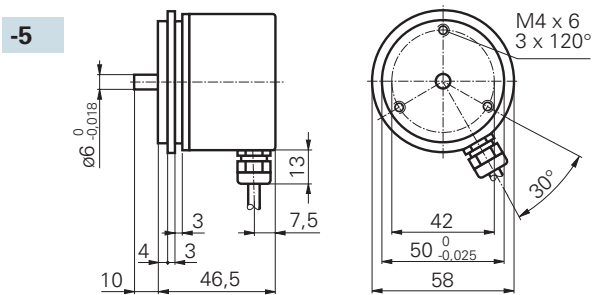
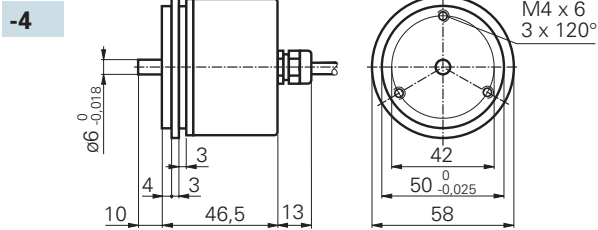
Other versions on request.

## accessories

connector for connection reference <b>-A</b> and <b>-B</b>	
for complementary <b>05A/25W</b> and push-pull <b>24K</b>	part nr. 107687
cable with connector (pre-assembled)	
2 m	part nr. 130367
5 m	part nr. 118532
clamp set	part nr. 252773
mounting adapter	part nr. 117667
fixing screws and servo clamps	part nr. 117668
couplings	see chapter accessories



**dimensions and connection dimensions**



**assignment cable**

for connection reference **-4** and **-5**

**05A** (5 VDC complementary)

cable color	signals
brown	+Vs
green	CHA
red	CHA compl.
yellow	CHB
blue	CHB compl.
pink	CHN
grey	CHN compl.
white	0V
screen	connected to flange
cable data	8x 0,14 mm <sup>2</sup> , max. ext. $\varnothing$ 5,7 mm

**24K** (10 - 30 VDC push-pull, short-circuit protection)

cable color	signals
brown	+Vs
green	CHA
yellow	CHB
pink	CHN
white	0V
screen	connected to flange
cable data	5x 0,14 mm <sup>2</sup> , max. ext. $\varnothing$ 5,4 mm

**assignment connector**

for connection reference **-A** and **-B**



**05A** (5 VDC complementary)

**24K** (10 - 30 VDC push-pull, short-circuit protection)

**25W** (4,5 - 30 VDC push-pull, complementary, short-circuit protection)

pin number	signals
1	CHA compl.
2	+Vs
3	CHN
4	CHN compl.
5	CHB
6	CHB compl.
7	n.c.
8	CHA
9	housing
10	0 V
11	0 V
12	+Vs

push-pull version **24K** without CHx complementary signals