

Incremental encoders

Solid shaft with clamping or synchro flange

7200...320000 pulses per revolution

BDH, BDT - HighRes



BDT - HighRes with synchro flange

Features

- High resolution programmable encoder
- Solid shaft $\varnothing 10$ mm or $\varnothing 6$ mm
- Optical sensing method
- Max. 320000 pulses per revolution
- Clamping or synchro flange
- Industrial standard
- Small profile depth

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 10...30 VDC
Consumption typ.	80 mA (5 VDC, w/o load) 60 mA (24 VDC, w/o load)
Pulses per revolution	7200...320000
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 300 kHz (24K) ≤ 1300 kHz (05A)
Output signals	A 90° B, N + inverted
Output stages	Antivalent Push-pull short-circuit proof Push-pull antiv. 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

Protection DIN EN 60529	IP 42, IP 65
Operating speed	≤ 12000 rpm (IP 42) ≤ 6000 rpm (IP 65)
Materials	Housing: steel Housing: aluminium (connection -A) 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 M23, 12-pin Cable 2 m
Weight approx.	300 g

BDH - HighRes

Size (flange)	$\varnothing 55$ mm
Shaft type	$\varnothing 10$ mm solid shaft (clamping flange)
Admitted shaft load	≤ 40 N axial ≤ 60 N radial
Flange	Clamping flange
Operating torque typ.	0.022 Nm (IP 42) 0.026 Nm (IP 65)

BDT - HighRes

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 6$ mm solid shaft (synchro flange)
Admitted shaft load	≤ 10 N axial ≤ 20 N radial
Flange	Synchro flange
Operating torque typ.	0.0023 Nm (IP 42) 0.026 Nm (IP 65)

Incremental encoders

Solid shaft with clamping or synchro flange

7200...320000 pulses per revolution

BDH, BDT - HighRes

Part number

Clamping flange

BDH 1P. - -

				<u>Connection</u>	
				5	Cable 2 m, radial
				A	Connector radial
				<u>Solid shaft</u>	
			10		ø10 mm, IP 42
			L0		ø10 mm, IP 65
					<u>Pulse number - see table</u>
					<u>Voltage supply / signals</u>
					05A 5 VDC / antivalent (TTL compatible)
					24K 10...30 VDC / push-pull short-circuit proof

Synchro flange

BDT 1P. - -

				<u>Connection</u>	
				5	Cable 2 m, radial
				A	Connector radial
				<u>Solid shaft</u>	
			6		ø6 mm, IP 42
			L6		ø6 mm, IP 65
					<u>Pulse number - see table</u>
					<u>Voltage supply / signals</u>
					05A 5 VDC / antivalent (TTL compatible)
					24K 10...30 VDC / push-pull short-circuit proof

Pulse number

7200	16384	40000	131072
8192	20000	65536	160000
10000	32768	80000	320000

Other pulse numbers on request.

Pulse number

7200	16384	40000	131072
8192	20000	65536	160000
10000	32768	80000	320000

Other pulse numbers on 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 (25 Ω)	Push-pull short-circuit protection
Output level High	>+Vs - 3,7 V (I = -30 mA)
Output level Low	<2,5 V (I = 30 mA)
Load High	<30 mA
Load Low	<30 mA

Accessories

Connectors and cables

10107687	Female connector M23, 12-pin, straight, without cable
10130367	Female connector M23, 12-pin, straight, 2 m cable
10118532	Female connector M23, 12-pin, straight, 5 m cable

Mounting accessories for BDH - HighRes

10125051	Mounting adaptor for encoders with clamping flange (M3) (Z 119.017)
10141255	Adaptor plate for clamping flange for modification into synchro flange (Z 119.013)
11053277	Bellows coupling aluminium/stainless steel 10 mm

Mounting accessories for BDT - HighRes

10252773	Clamp set ø15 mm
10117667	Mounting adaptor for encoders with synchro flange (Z 119.015)

Programming accessories

10161910	Set of programming tools
----------	--------------------------

Incremental encoders

Solid shaft with clamping or synchro flange

7200...320000 pulses per revolution

BDH, BDT - HighRes

Terminal assignment

Cable

for connection references **-4** and **-5**

05A

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
grey	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 flange		

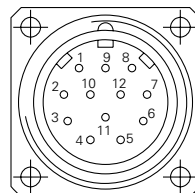
Connector M23 male

for connection references **-A** and **-B**

05A, 24K

Connector	Signals
Pin 1	CHA compl.
Pin 2	+Vs
Pin 3	CHN
Pin 4	CHN compl.
Pin 5	CHB
Pin 6	CHB compl.
Pin 7	n.c.
Pin 8	CHA
Pin 9	Housing
Pin 10	0 V
Pin 11	0 V
Pin 12	+Vs

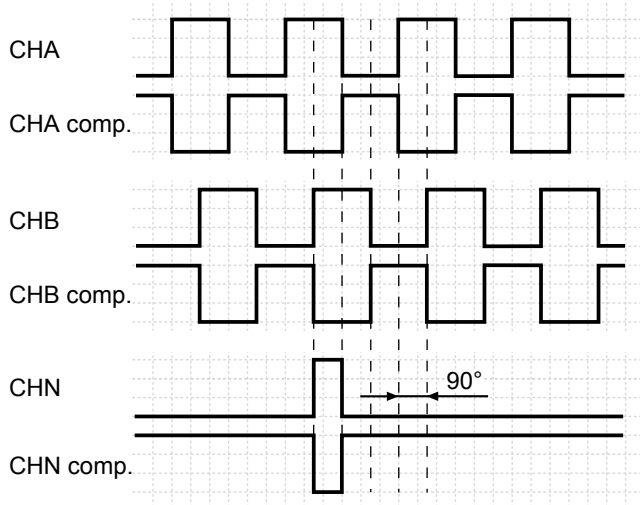
Push-pull version **24K** without CHx complementary signals



Output signals

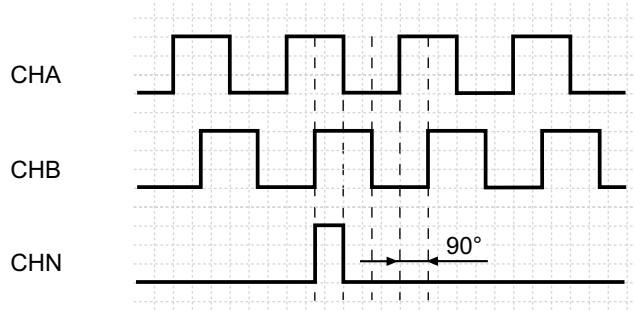
Counter clockwise rotating direction when looking at the flange.

05A



Counter clockwise rotating direction when looking at the flange.

24K



Incremental encoders

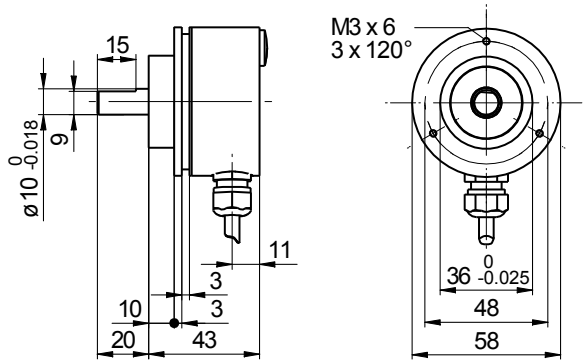
Solid shaft with clamping or synchro flange

7200...320000 pulses per revolution

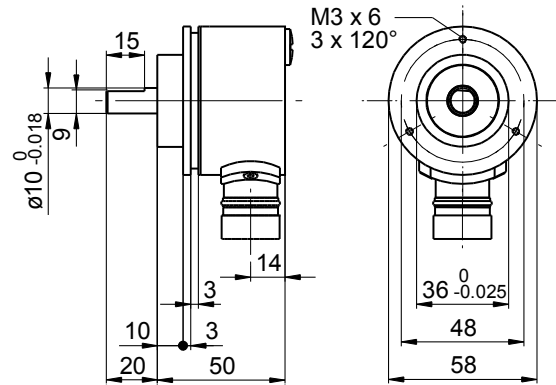
BDH, BDT - HighRes

Dimensions

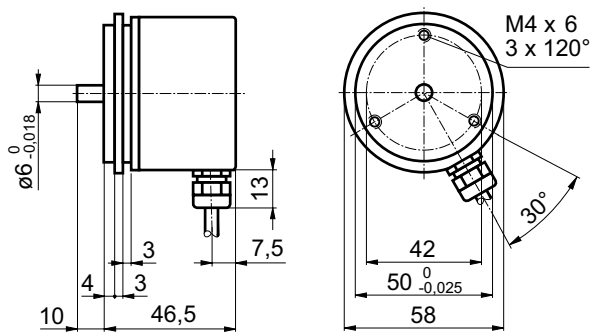
BDH clamping flange, cable radial



BDH clamping flange, connector output radial



BDT synchro flange, cable radial



BDT synchro flange, connector output radial

