



BDG abbcc-ddee-fghhi-jjkk-llmm-nnoo

BDG
Encoders**a Principle**

E = Incremental

bb Version

BK = Cast aluminum powder coated radial (80)

cc Flange size

80 = 80 mm

dd Shaft form, flange

HA = Hollow shaft, trim ring (grub screw)

ee Shaft diameter

10 = 10 mm

12 = 12 mm

14 = 14 mm

15 = 15 mm

16 = 16 mm

18 = 18 mm

20 = 20 mm

25 = 25 mm

27 = 27 mm

f Interface category

A = Incremental analog standard

Q = Incremental digital standard

g Interface

A = Sin/Cos (1 Vss)

C = HTL, /HTL

F = TTL, /TTL

Q = TTL

R = HTL

hh Interface details

AJ = AB 100 kHz

AK = AB 200 kHz

AM = AB 600 kHz

AP = AB 2 MHz

NK = ABN 200 kHz

NM = ABN 600 kHz

NP = ABN 2 MHz

i Supply voltage

U = 5..30 VDC

1 = 10..30 VDC

5 = 5 VDC

jjkk Resolution [pulses per revolution]

0010 = 10 pulses per revolution

(max. 25000 - depending on interface)

ll Shielded cable

00 = no cable

AA = PVC gray, 2x0.34 + 4x0.14 mm²AB = PVC gray, 2x0.34 + 7x0.14 mm²**mm Cable length**

00 = no cable

20 = 2 m

50 = 5 m

A0 = 10 m

nn connector

00 = no connector

S4 = M12 connector 4-pin A coded

S5 = M12 connector 5-pin A coded

S8 = M12 connector 8-pin A coded

SC = M12 connector 12-pin A coded

oo Wire assignments (connector / cable)

C1 = Sin/Cos (1 Vss) for M12 connector and shielded cable

H3 = HTL/TTL inv. M12 connector 8-pin + shielded cable

H5 = HTL/TTL inv. M12 connector 12-pin + shielded cable

T1 = HTL/TTL shielded cable

T2 = HTL/TTL, M12 8-pin

TA = HTL/TTL M12 connector 4-pin

TB = HTL/TTL M12 connector 12-pin

TD = HTL/TTL M12 connector 5-pin

Basic features

Approval/Conformity	CE cULus WEEE UKCA
Measuring principle	incremental measuring system

Electrical connection

Connection	Cable or connector
------------	--------------------

Electrical data

Current consumption max. at 24 V DC	i = U: typ. 70 mA i = 1: typ. 100 mA
Current consumption max. at 5 V DC	i = 5: typ. 100 mA
Mean life expectancy	3x 10 ¹⁰ revs. at 100 % rated shaft load 1x 10 ¹¹ revs. at 40 % rated shaft load 1x 10 ¹² revs. at 20 % rated shaft load
Phase shift	90° ± ≤ 7.5 % of a period
Pulse frequency	g = C/F/Q/R: ≤ 200 kHz g = A: ≤ 100 kHz
Pulse/pause ratio	50 % ± ≤ 7 %
Pulses per revolution	≤ 3840
Speed max.	3500 U/min

Environmental conditions

Ambient temperature	g = A: -10...70 °C g ≠ A: -20...80 °C
IP rating	Housing: IP65 Shaft entrance: IP65
Storage temperature	-20...80 °C

Functional safety

Diagnostic coverage	0 %
MTTF (40 °C)	200 a
Mission Time	25 a

Interface

Channels	AB, ABN
Interface	Digital pulse

Material

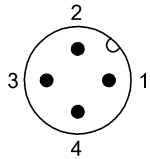
Housing material	Aluminum
Housing material, surface protection	coated
Material flange	Aluminium

Mechanical data

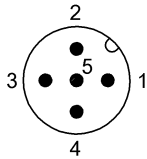
Bearings type	2x precision ball bearings
Flange type	Hollow shaft
Housing diameter	80 mm
Shaft length	46 mm
Shaft load axial max.	100 N
Shaft load radial max.	200 N
Starting torque typ.	ca. 6 Ncm bei Raumtemperatur

Connector Diagramm

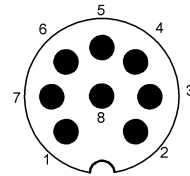
M12x1-male, 4-pin, A-coded



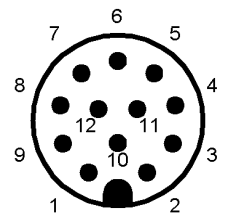
M12x1-male, 5-pin, A-coded



M12x1-male, 8-pin, A-coded



M12x1-male, 12-pin, A-coded



Wiring diagramm

C1 (Sin/Cos 1 Vpp)

Sin/Cos (1 Vpp)	C1	
Signal	Pin	Color
GND	1	WH
UB	2	BN
A	3	GN
B	5	GY
Ainv	4	YE
Binv	6	PK
n.c.	7,8	
Shield	housing	housing

H3 (HTL/TTL inv. connector 8 pin)

HTL/TTL inv.	H3	
Schaltung	Pin	Color
GND	1	WH
UB	2	BN
A	3	GN
B	4	YE
N	5	GY
Ainv	6	RD
Binv	7	PK
Ninv	8	BU
Shield	housing	housing

H5 (HTL/TTL inv. connector 12 pin)

HTL/TTL inv.	H5	
Schaltung	Pin	Color
GND	3	WH
UB	1	BN
A	4	GN
B	6	YE
N	8	GY
Ainv	9	RD
Binv	7	BK
Ninv	10	VT
n.c.	2,5,11,12	
Shield	housing	housing

T1 (HTL/TTL cable)

HTL/TTL	T1	
Schaltung	Pin	Color
GND	3	WH
UB	1	BN
A	2	GN
B	4	YE
N	5	GY
n.c.	6,7,8	
Shield	housing	housing

T2 (HTL/TTL connector 8 pin)

HTL/TTL	T2
Schaltung	Pin
GND	1
UB	2
A	3
B	4
N	5
n.c.	6,7,8
Shield	housing

TA (HTL/TTL connector 4 pin)

HTL/TTL	TA
Schaltung	Pin
GND	3
UB	1
A	2
B	4
Shield	housing

TB (HTL/TTL connector 12 pin)

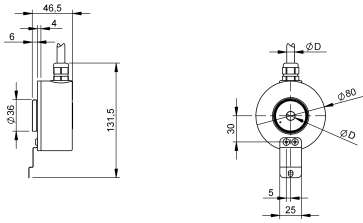
HTL/TTL	TB
Schaltung	Pin
GND	3
UB	1
A	4
B	6
N	8
n.c.	2,5,7,9,10,11,12
Shield	housing

TD (HTL/TTL connector 5 pin)

HTL/TTL	TD
Schaltung	Pin
GND	3
UB	1
A	4
B	2
N	5
Shield	housing

Product View

Cable outlet radial



Connector outlet radial

