



Online Data sheet

Encoder WDG N 58A

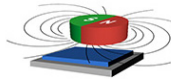
www.wachendorff-automation.com/wdgn58a

Wachendorff Automation

... systems and encoders

- Complete systems
- Industrial rugged encoders to suit your application
- Standard range and customer versions
- Maximum permissible loads
- 48-hour express production
- Made in Germany
- Worldwide distributor network

Encoder WDG 58A configurable via Smartphone (NFC)



Wachendorff Apps WDG N

- Due to high quality electronics any number of pulses up to 16384 configurable via NFC
- HTL/TTL configurable via NFC
- Protection class IP67, at shaft input IP65
- High output frequency up to 1 MHz
- Reverse polarity protection and short-circuit protection at 4.75 VDC to 32 VDC

www.wachendorff-automation.com/wdgn58a

Configurable via NFC

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR

Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	Stainless steel, NFC cover: Thermoplastic polyamide
Housing	Ø 58 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature

Shaft	Ø 6 mm
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level	
MTTF _d	1200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data	
Power supply/Current consumption	4,75 VDC up to 32 VDC: typ. 80 mA
Output circuit	HTL HTL, inv. TTL TTL, RS422 compatible, inv.
Pulse frequency	HTL up to 16384 ppr: max. 600 kHz TTL up to 16384 ppr: max. 1 MHz
Channels	BAS: ABN + inverted signals ADV: CH1, CH2, CH3, CH4; + inverted signals
Load	max. 40 mA / channel
Circuit protection	inverse-polarity and short-circuit protection
Nullimpuls setzen:	Setzen: SET = +UB für 2 s Deaktiviert: SET = GND

Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

Configurable via NFC:	
BASIC: (BAS)	
Channels:	ABN and inverted
HTL / TTL	freely selectable
Pulses / revolution:	1 ppr up to 16384 ppr freely selectable
Advanced (ADV):	
Channels:	4 channels configurable + inv. signals (ABN possible)
HTL / TTL:	freely selectable
Pulses / revolution:	1 ppr up to 16384 ppr freely selectable
Number of pulses for each channel:	individually selectable
Set zero pulse:	yes
Pulse width and position:	Width and position adjustable

Environmental data	
Noise immunity:	
ESD (DIN EN 61000-4-2):	8 kV
EMC: (DIN EN 61000-4-3):	10 V/m
Burst (DIN EN 61000-4-4):	2 kV
High frequency fields (DIN EN 61000-4-6):	10 V

Surge (DIN EN 61000-4-5):	2 kV
Radio interference:	According DIN EN 55011
NFC:	
EMC:	According ETSI EN 301 489
RED:	According ETSI EN 300 330
Electrical safety:	According DIN EN 61010-1, UL 61010-1, CSA C22.0 No. 61010-1-12
Vibration: (DIN EN 60068-2-6)	300 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	According DIN VDE 0160

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

General Data

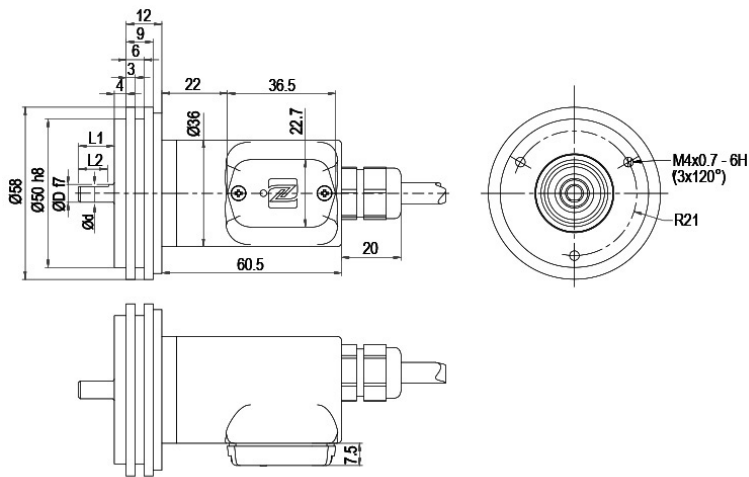
Weight	approx. 240 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C
Storage temperature	Connector: -40 °C up to +100 °C, cable: -30 °C up to +80 °C

More Information

General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>

Options
<http://www.wachendorff-automation.com/acc>

Cable connection L2 axial with 2 m cable (BAS)



D = 6 L1 = 12 d = 5.3 L2 = 10
 D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:
 D = 6 L1 = 10 d = 5.3 L2 = 8

Description

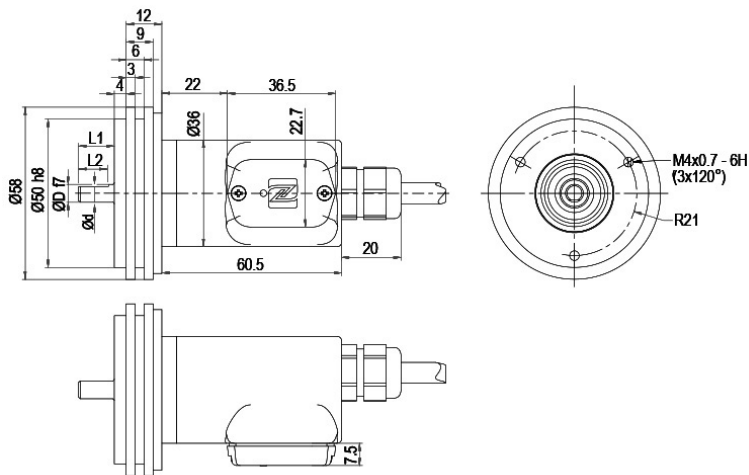
ABN inv. poss.

L2 axial, shield connected to encoder housing

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Assignments	
	L2
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable connection L2 axial with 2 m cable (ADV)



D = 6 L1 = 12 d = 5.3 L2 = 10
 D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:
 D = 6 L1 = 10 d = 5.3 L2 = 8

Description

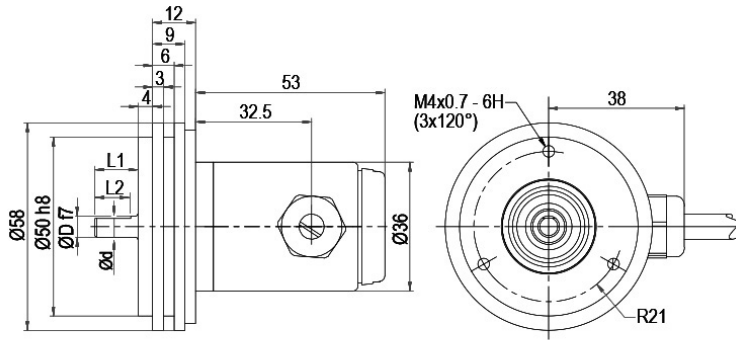
ABN inv. poss.

L2 axial, shield connected to encoder housing

•

Assignments	
	L2
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Cable connection L3 radial with 2 m cabel (BAS)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

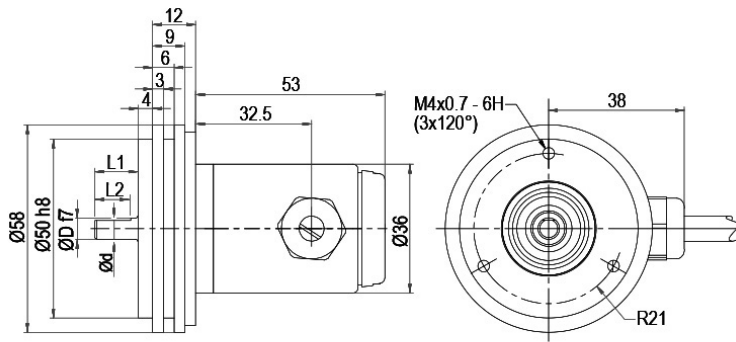
ABN inv. poss.

L3 radial, shield connected to encoder housing

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Assignments	
	L3
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable connection L3 radial with 2 m cabel (ADV)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

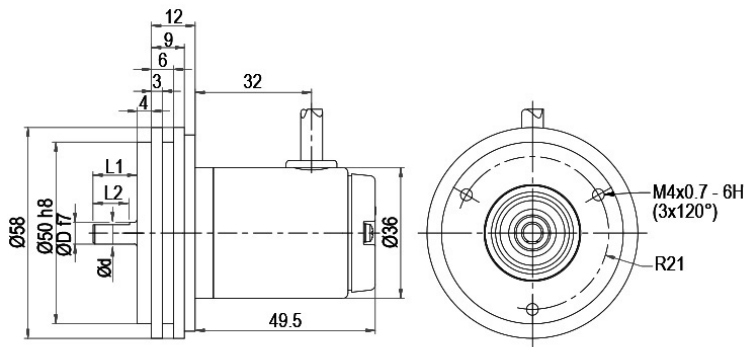
ABN inv. poss.

L3 radial, shield connected to encoder housing

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Assignments	
	L3
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Cable K1 (IP40) radial with 2 m cable (BAS)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

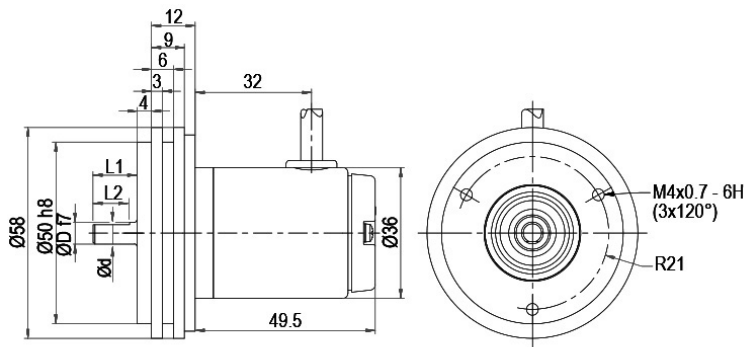
ABN inv. poss.

K1 radial, shield not connected (IP40)

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Assignments	
	K1
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable K1 (IP40) radial with 2 m cable (ADV)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

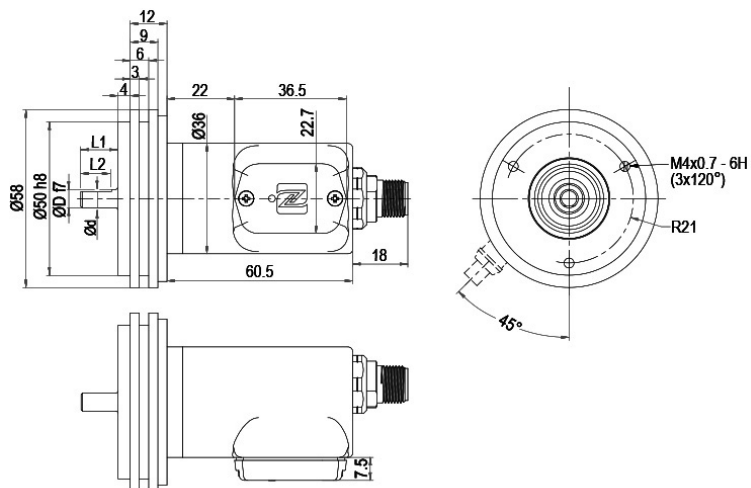
ABN inv. poss.

K1 radial, shield not connected (IP40)

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Assignments	
	K1
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Sensor connector (M12x1) SB axial, 8-pin (BAS)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

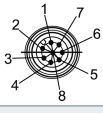
Option AIX:
D = 6 L1 = 10 d = 5.3 L2 = 8

Description

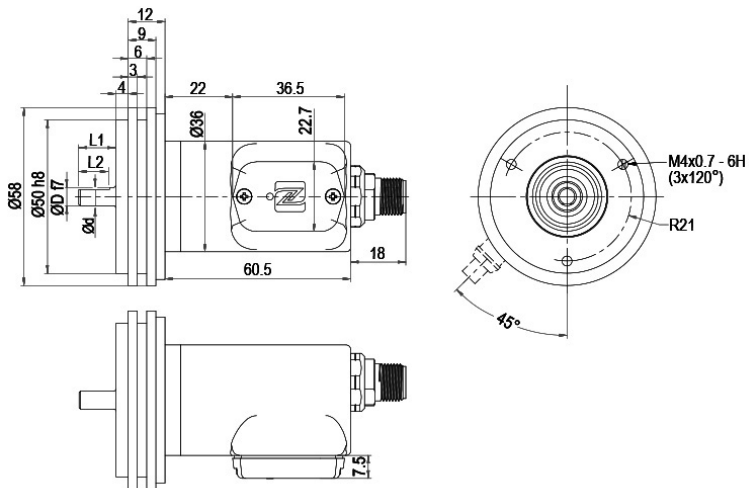
ABN inv. poss.

SB8 axial, 8-pin, Connector connected to encoder housing

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Assignments	
	SB8
	8-pin
	
Circuit	BAS
GND	1
(+) Vcc	2
A	3
B	4
N	5
A inv.	6
B inv.	7
N inv.	8

Sensor connector (M12x1) SB axial, 12-pin (ADV)



D = 6 L1 = 12 d = 5.3 L2 = 10
 D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

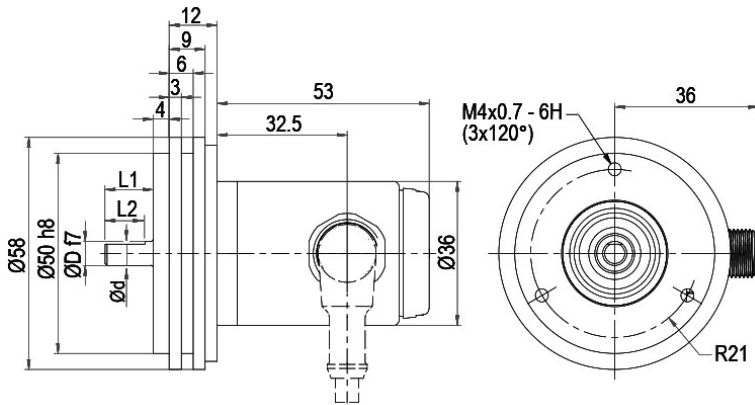
ABN inv. poss.

SB12 axial, 12-pin, Connector connected to encoder housing

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Assignments	
	SB12
	12-pin
Circuit	ADV
GND	3
(+) Vcc	1
CH1	4
CH2	6
CH3	8
CH4	11
SET	5
CH1 inv.	9
CH2 inv.	7
CH3 inv.	10
CH4 inv.	12
n. c.	2

Sensor-connector (M12x1) SC radial, 8-pin (BAS)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:

D = 6 L1 = 10 d = 5.3 L2 = 8

Description

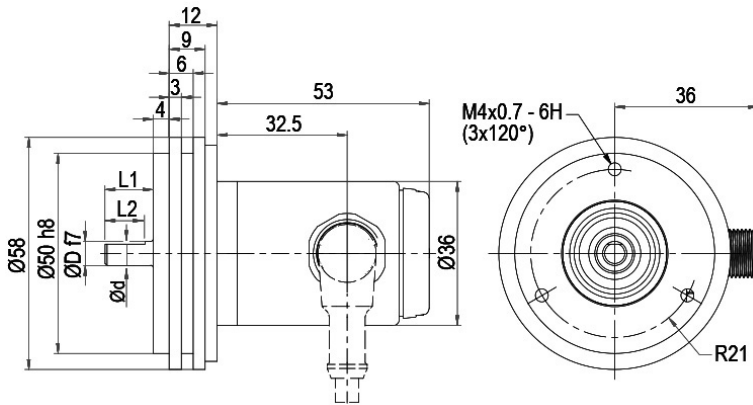
ABN inv. poss.

SC8 radial, 8-pin, Connector connected to encoder housing

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Assignments	
	SC8
	8-pin
Circuit	BAS
GND	1
(+) Vcc	2
A	3
B	4
N	5
A inv.	6
B inv.	7
N inv.	8

Sensor-connector (M12x1) SC radial, 12-pin (ADV)



D = 6 L1 = 12 d = 5.3 L2 = 10
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:
D = 6 L1 = 10 d = 5.3 L2 = 8

Description

ABN inv. poss.

SC12 radial, 12-pin, Connector connected to encoder housing

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Assignments	
	SC12
	12-pin
Circuit	ADV
GND	3
(+) Vcc	1
CH1	4
CH2	6
CH3	8
CH4	11
SET	5
CH1 inv.	9
CH2 inv.	7
CH3 inv.	10
CH4 inv.	12
n. c.	2

Options

Shafts sealed to IP67, only with 10 mm shaft with flat

Order key

The encoder WDG 58A can be supplied in a IP67 version.
(full IP67 only connection SB, SC, L2 or L3 version; not cable connection L1 = IP40).
Max. RPM: 3500 min⁻¹
Permitted Shaft-Loading: axial 100 N; radial 110 N
Starting-torque: approx. 4 Ncm at ambient temperature

AAO

Shaft length 10 mm (Ø 6 mm)

Order key

The encoder WDG 58A shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm.

AIX

Cable length

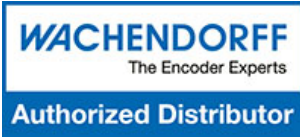
Order key

The encoder WDG 58A can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see www.wachendorff-automation.com/atd
Please extend the standard order code with a three figure number, specifying the cable length in decimetres.
Example: 5 m cable = 050

XXX = Decimeter

Example Order No.	Type					Your encoder
WDGN 58A	WDGN 58A					WDGN 58A
	Shaft					
06	06; 10					
	Pulses per revolution PPR:					
X	configurable 1-16384 Other PPRs on request					
	Channels:					
X	X (BAS=ABN, ADV= CH1,CH2,CH3,CH4)					
	Output circuit					
BAS	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	configurable 1-16384	4.75 - 32 4.75 - 32	configurable HTL, TTL (A,B,N + inv.) configurable HTL, TTL; 4 channels+inv.	- -	BAS ADV	
	Electrical connections					
L2	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K1	
	axial, shield connected to encoder housing			•	L2	
	radial, shield connected to encoder housing			•	L3	
	Connector: (shield connected to encoder housing)					
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 8-pin, radial			•	SC8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
sensor-connector, M12x1, 12-pin, radial			•	SC12		
	Options					
	Description			Order key		
	Shafts sealed to IP67, only with 10 mm shaft with flat			AAO		
	Shaft length 10 mm (Ø 6 mm)			AIX		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No.=	WDGN 58A	06	X	X	BAS	L2		WDGN 58A							Your encoder
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For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
<https://www.wachendorff-automation.com/contact-sales-en/>

WACHENDORFF

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