



# Online Data Sheet

## Encoder WDG 58B

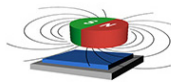
[www.wachendorff-automation.com/wdgn58b](http://www.wachendorff-automation.com/wdgn58b)

### 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 58B configurable via 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/wdgn58b](http://www.wachendorff-automation.com/wdgn58b)

## Configurable via NFC

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Housing	
Flange	clamping 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
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft	Ø 8 mm
Shaft length	L: 19 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft	Ø 9.525 mm, Ø 3/8"
Shaft length	L: 20 mm, L: 0.787 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp
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
Nominale service life	1 x 10 <sup>9</sup> revs. at 100 % rated shaft load 1 x 10 <sup>10</sup> revs. at 40 % rated shaft load 1 x 10 <sup>11</sup> revs. at 20 % rated shaft load

Max. operating speed	8000 rpm
Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	1200 a
Mission time (TM)	25 a
Nominale service life (L10h)	1 x 10 <sup>11</sup> 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	ABN CH4 and 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:	ABN + CH4 and inverted
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 <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Design:	According DIN VDE 0160

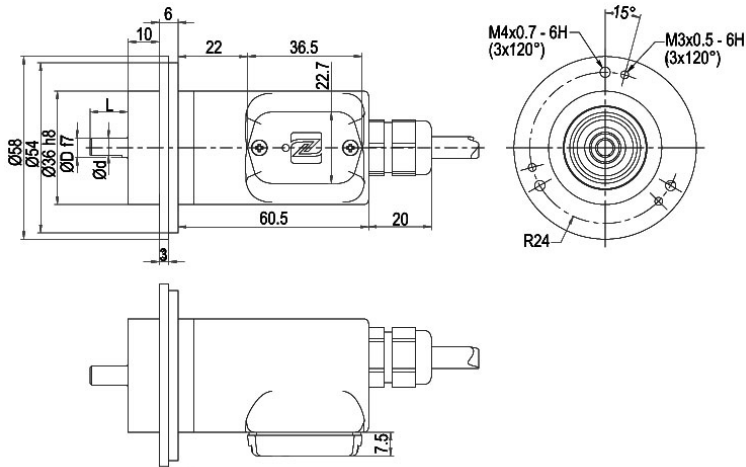
**General Data**

Weight	approx. 220 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; (IP40 for K1)
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**


D = 6	L = 12	d = 5.3	Welle abgeflacht / shaft with flat
D = 8	L = 19	d = 7.5	Welle abgeflacht / shaft with flat
D = 9.525 [3/8"]	L = 20	d = 8.302 [0.327"]	Welle abgeflacht / shaft with flat
D = 10	L = 20	d = 10	Wellen nicht abgeflacht / shaft without flat

## Option AAS:

D = 10	L = 20	d = 9	Welle abgeflacht / shaft with flat
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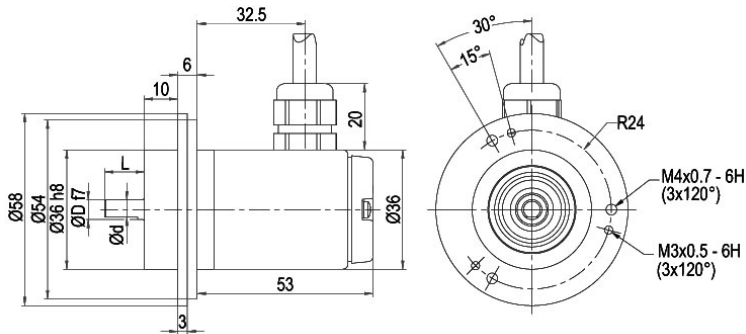
**Description**

ABN inv. poss.

**L2** axial, shield connected to encoder housing

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Assignments		
	L2	L2
<b>Circuit</b>	BAS	ADV
<b>GND</b>	WH	WH
<b>(+) Vcc</b>	BN	BN
<b>A</b>	GN	GN
<b>B</b>	YE	YE
<b>N</b>	GY	GY
<b>CH4</b>	-	GYPK
<b>SET</b>	-	PK
<b>A inv.</b>	RD	RD
<b>B inv.</b>	BK	BK
<b>N inv.</b>	VT	VT
<b>CH4 inv.</b>	-	RDBU
<b>Shield</b>	flex	flex

**Cable connection L3 radial with 2 m cable**


D = 6	L = 12	d = 5.3	Welle abgeflacht / shaft with flat
D = 8	L = 19	d = 7.5	Welle abgeflacht / shaft with flat
D = 9.525 [3/8"]	L = 20	d = 8.302 [0.327"]	Welle abgeflacht / shaft with flat
D = 10	L = 20	d = 10	Wellen nicht abgeflacht / shaft without flat

**Option AAS:**

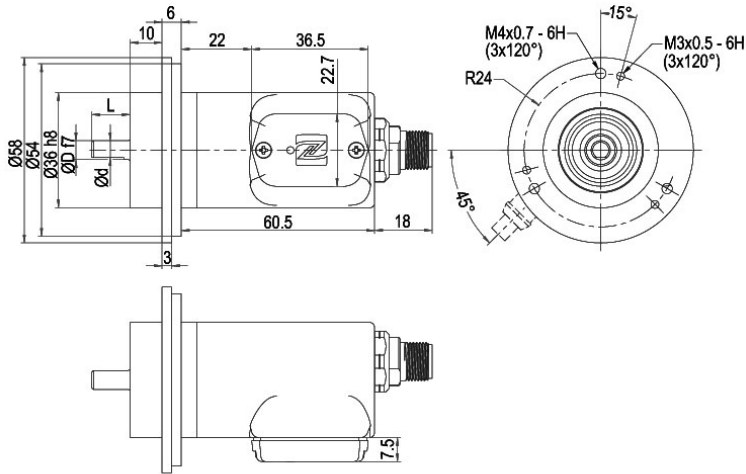
D = 10	L = 20	d = 9	Welle abgeflacht / shaft with flat
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**Description**
**ABN inv. poss.**
**L3** radial, shield connected to encoder housing

•

Assignments		
	L3	L3
<b>Circuit</b>	BAS	ADV
<b>GND</b>	WH	WH
<b>(+) Vcc</b>	BN	BN
<b>A</b>	GN	GN
<b>B</b>	YE	YE
<b>N</b>	GY	GY
<b>CH4</b>	-	GYPK
<b>SET</b>	-	PK
<b>A inv.</b>	RD	RD
<b>B inv.</b>	BK	BK
<b>N inv.</b>	VT	VT
<b>CH4 inv.</b>	-	RDBU
<b>Shield</b>	flex	flex



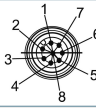
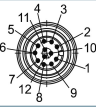
**Sensor connector (M12x1) SB axial, 8-, 12-pin**


D = 6	L = 12	d = 5.3	Welle abgeflacht / shaft with flat
D = 8	L = 19	d = 7.5	Welle abgeflacht / shaft with flat
D = 9.525 [3/8"]	L = 20	d = 8.302 [0.327"]	Welle abgeflacht / shaft with flat
D = 10	L = 20	d = 10	Wellen nicht abgeflacht / shaft without flat
Option AAS:			
D = 10	L = 20	d = 9	Welle abgeflacht / shaft with flat

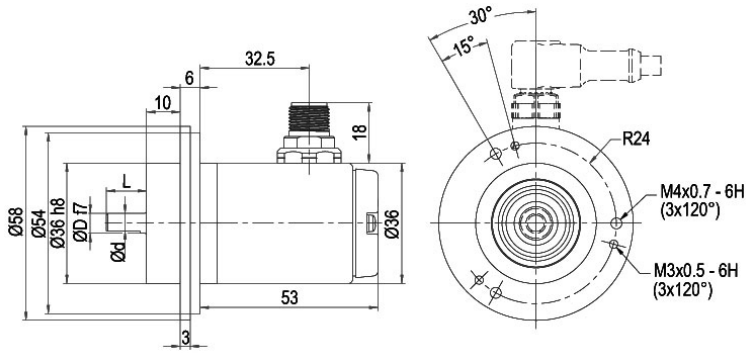
**Description**
**ABN inv. poss.**

<b>SB8</b>	axial, 8-pin, Connector connected to encoder housing	•
<b>SB12</b>	axial, 12-pin, Connector connected to encoder housing	•

**Assignments**

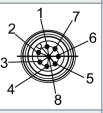
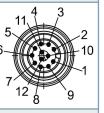
	<b>SB8</b>	<b>SB12</b>
	<b>8-pin</b>	<b>12-pin</b>
		
<b>Circuit</b>	BAS	ADV
<b>GND</b>	1	3
<b>(+) Vcc</b>	2	1
<b>A</b>	3	4
<b>B</b>	4	6
<b>N</b>	5	8
<b>CH4</b>	-	11
<b>SET</b>	-	5
<b>A inv.</b>	6	9
<b>B inv.</b>	7	7
<b>N inv.</b>	8	10
<b>CH4 inv.</b>	-	12
<b>n. c.</b>	-	2
<b>Shield</b>	-	-

**Sensor-connector (M12x1) SC radial, 8-, 12-pin**



D = 6	L = 12	d = 5.3	Welle abgeflacht / shaft with flat
D = 8	L = 19	d = 7.5	Welle abgeflacht / shaft with flat
D = 9.525 [3/8"]	L = 20	d = 8.302 [0.327"]	Welle abgeflacht / shaft with flat
D = 10	L = 20	d = 10	Wellen nicht abgeflacht / shaft without flat
Option AAS:			
D = 10	L = 20	d = 9	Welle abgeflacht / shaft with flat

Description	ABN inv. poss.
<b>SC8</b> radial, 8-pin, Connector connected to encoder housing	•
<b>SC12</b> radial, 12-pin, Connector connected to encoder housing	•

Assignments		
	SC8	SC12
	8-pin	12-pin
		
<b>Circuit</b>	BAS	ADV
<b>GND</b>	1	3
<b>(+) Vcc</b>	2	1
<b>A</b>	3	4
<b>B</b>	4	6
<b>N</b>	5	8
<b>CH4</b>	-	11
<b>SET</b>	-	5
<b>A inv.</b>	6	9
<b>B inv.</b>	7	7
<b>N inv.</b>	8	10
<b>CH4 inv.</b>	-	12
<b>n. c.</b>	-	2
<b>Shield</b>	-	-



## Options

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

### Order key

The encoder WDG 58B can be supplied in a IP67 version.  
(full IP67 only connection CB, CC, L2 or L3 version; cable connection L1 IP40 only shaft sealed IP67).

**AAS**

Max. RPM: 3500 min<sup>-1</sup>

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

### Cable length

### Order key

The encoder WDG 58B can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see Downloads: „General technical Data“.

**XXX = Decimeter**

Please extend the standard order code with a three figure number, specifying the cable length in decimetres.

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDGB 58B	WDGB 58B					WDGB 58B
	<b>Shaft</b>					
10	06; 08; 4Z= Ø 9.525 mm, Ø 3/8"; 10					
	<b>Pulses per revolution PPR:</b>					
X	configurable 1-16384 Other PPRs on request					
	<b>Channels:</b>					
X	ABN, ABN+CH4					
	<b>Output circuit</b>					
BAS	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	<b>Light reserve warning</b>	<b>Order key</b>	
	configurable 1-16384	4.75 - 32 4.75 - 32	configurable HTL, TTL (A,B,N + inv.) configurable HTL, TTL (A,B,N,CH4 + inv.)	- -	BAS ADV	
	<b>Electrical connections</b>					
L2	<b>Description</b>			<b>ABN inv. poss.</b>	<b>Order key</b>	
	<b>Cable: length (2 m standard, WDG 58T: 1 m)</b>					
	radial, shield not connected (IP40)			•	K1	
	axial, shield connected to encoder housing			•	L2	
	radial, shield connected to encoder housing			•	L3	
	<b>Connector: (shield connected to encoder housing)</b>					
	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		
	<b>Options</b>					
	<b>Description</b>			<b>Order key</b>		
	Shafts sealed to IP67, only with 10 mm shaft with flat			AAS		
	Without option			Empty		
	Cable length			XXX = Decimeter		

<b>Example Order No.=</b>	WDGB 58B	10	X	X	BAS	L2		WDGB 58B						<b>Your encoder</b>
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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/>



Wachendorff Automation GmbH & Co. KG  
Industriestrasse 7 • 65366 Geisenheim  
Germany

Phone: +49 67 22 / 99 65 25  
Fax: +49 67 22 / 99 65 70  
E-Mail: [wdg@wachendorff.de](mailto:wdg@wachendorff.de)  
[www.wachendorff-automation.de](http://www.wachendorff-automation.de)

