



## Online Data sheet

### Encoder WDGP 58B

[www.wachendorff-automation.com/wdgp58b](http://www.wachendorff-automation.com/wdgp58b)

#### 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 WDGP 58B



Illustration similar



- Due to high quality electronics any number of pulses up to 16384
- 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/wdgp58b](http://www.wachendorff-automation.com/wdgp58b)

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Flange	clamping flange
Flange material	aluminum
Housing material	stainless steel
Flange diameter	Ø 58 mm [Ø 2.283"]
Cam mounting	pitch 69 mm [2.717 inches] (Accessory SP-3-00)
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm [1.416 in-ozf] at ambient temperature
Shaft	Ø 6 mm [Ø 0.236"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]
Shaft	Ø 8 mm [Ø 0.315"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 19 mm [0.748"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]
Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]
Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

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
Operating principle	magnetic
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 and inverted signals
Load	max. 40 mA / channel
Circuit protection	inverse-polarity and short-circuit protection
Set zero pulse:	Set: SET = +UB for 2 s Deaktiviere: SET = GND
Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %
Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 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)

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Electrical Safety:	DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No 61010-1-12
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**Duty information**

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Customs tariff number:	90318020
Country of origin:	Germany

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**General Data**

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Weight	approx. 220 g [7.76 oz]
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. Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F.
Storage temperature	Connector: -40 °C up to +100 °C, Cable: -30 °C up to +80 °C Connector: -40 °F up to +212 °F, Cable: -22 °F up to +176 °F

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**More Information**

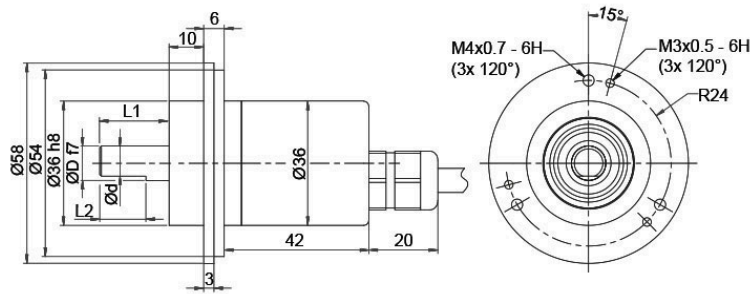
General technical data and safety instructions  
<http://www.wachendorff-automation.com/gtd>

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

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**Cable connection L2 axial with 2 m cable**



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Alle Abmessungen in mm / All dimensions in mm

**Description**

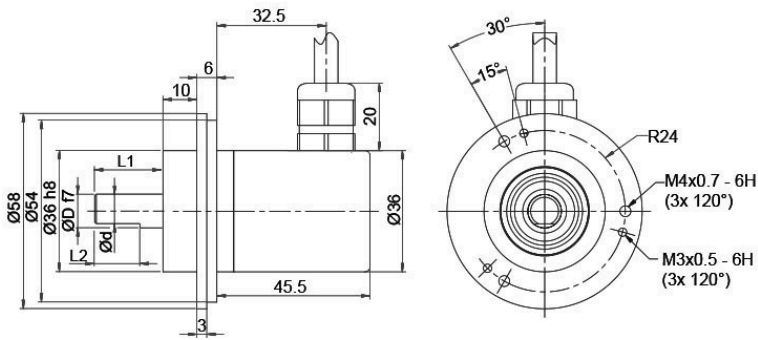
**ABN inv. poss.**

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

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Assignments		
	L2	L2
<b>Circuit</b>	M13, M14	N13, N14
<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>SET</b>	PK	PK
<b>A inv.</b>	RD	-
<b>B inv.</b>	BK	-
<b>N inv.</b>	VT	-
<b>Shield</b>	flex	flex

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



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Alle Abmessungen in mm / All dimensions in mm

**Description**

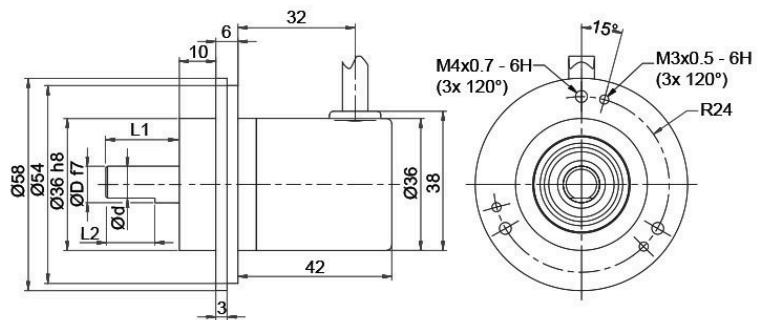
**ABN inv. poss.**

**L3** radial, shield connected to encoder housing

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Assignments		
	L3	L3
<b>Circuit</b>	M13, M14	N13, N14
<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>SET</b>	PK	PK
<b>A inv.</b>	RD	-
<b>B inv.</b>	BK	-
<b>N inv.</b>	VT	-
<b>Shield</b>	flex	flex

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



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Alle Abmessungen in mm / All dimensions in mm

**Description**

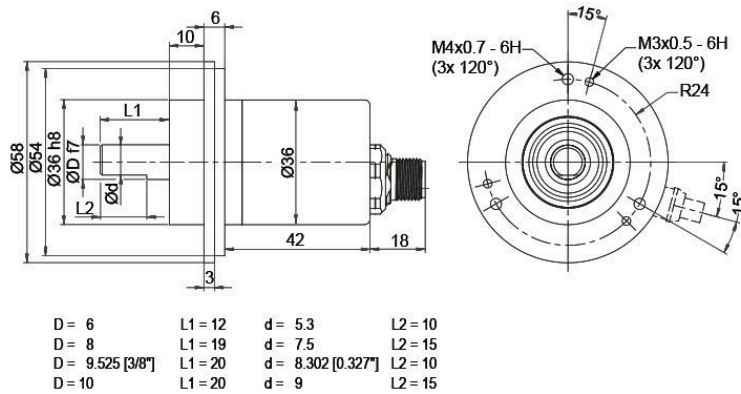
ABN inv. poss.

**K1** radial, shield not connected (IP40)

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Assignments		
	K1	K1
<b>Circuit</b>	M13, M14	N13, N14
<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>SET</b>	PK	PK
<b>A inv.</b>	RD	-
<b>B inv.</b>	BK	-
<b>N inv.</b>	VT	-
<b>Shield</b>	flex	flex

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



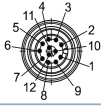
Alle Abmessungen in mm / All dimensions in mm

**Description**

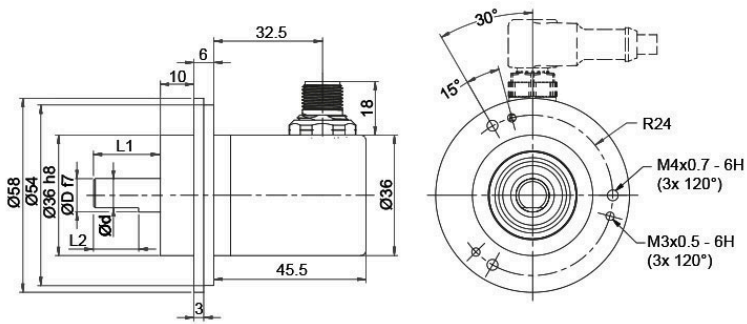
ABN inv. poss.

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

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Assignments	
	<b>SB12</b>
	<b>12-pin</b>
	
<b>Circuit</b>	M13, M14
<b>GND</b>	3
<b>(+) Vcc</b>	1
<b>A</b>	4
<b>B</b>	6
<b>N</b>	8
<b>SET</b>	5
<b>A inv.</b>	9
<b>B inv.</b>	7
<b>N inv.</b>	10
<b>n. c.</b>	2, 11, 12
<b>Shield</b>	-

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



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

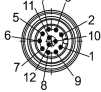
Alle Abmessungen in mm / All dimensions in mm

**Description**

ABN inv. poss.

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

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Assignments	
	<b>SC12</b>
	<b>12-pin</b>
	
<b>Circuit</b>	M13, M14
<b>GND</b>	3
<b>(+) Vcc</b>	1
<b>A</b>	4
<b>B</b>	6
<b>N</b>	8
<b>SET</b>	5
<b>A inv.</b>	9
<b>B inv.</b>	7
<b>N inv.</b>	10
<b>n. c.</b>	2, 11, 12
<b>Shield</b>	-

## Options

### Low-friction bearings

The encoder WDGP 58B is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.

### Order key

**AAC**

### Shafts sealed to IP67, only with 10 mm [0.394"] shaft

The encoder WDGP 58B can be supplied in a IP67 version.  
(full IP67 only connection SB, SC, L2 or L3 version; not cable connection K1 = IP40).  
Max. RPM: 3500 min<sup>-1</sup>  
Permitted Shaft-Loading: axial 100 N [10.197 kp]; radial 110 N [11.216 kp]  
Starting-torque: approx. 4 Ncm [5.664 in-ozf] at ambient temperature

### Order key

**AAO**

### Cable length

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

### Order key

**XXX = Decimeter**

Example Order No.	Type				Your encoder
WDGP 58B	WDGP 58B				WDGP 58B
	<b>Shaft</b>				
10	06; 08; 4Z; 10				
	<b>Pulses per revolution PPR:</b>				
16384	1-16384 Other PPRs on request				
	<b>Channels:</b>				
ABN	ABN				
	<b>Output circuit</b>				
M13	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	-	<b>Order key</b>
	1-16384	4.75 - 32	HTL, inv. set zero pulse	-	M13
		4.75 - 32	TTL, RS422 compatible, inv. set zero pulse	-	M14
		4.75 - 32	HTL set zero pulse	-	N13
	4.75 - 32	TTL set zero pulse	-	N14	
	<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, 12-pin, axial			•	SB12	
sensor-connector, M12x1, 12-pin, radial			•	SC12	
	<b>Options</b>				
	<b>Description</b>			<b>Order key</b>	
	Low-friction bearings			AAC	
	Shafts sealed to IP67, only with 10 mm [0.394"] shaft			AAO	
	Without option			Empty	
	Cable length			XXX = Decimeter	

<b>Example Order No.=</b>	WDGP 58B	10	16384	ABN	M13	L2		WDGP 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/contact-en/wachendorff-world-wide/>

# WACHENDORFF

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