



## Online Data sheet

### Encoder WDGP 58E

[www.wachendorff-automation.com/wdgp58e](http://www.wachendorff-automation.com/wdgp58e)

#### 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 58E



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/wdgp58e](http://www.wachendorff-automation.com/wdgp58e)

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	stainless steel
Torque supports	incl. 1 torque support WDGD10001
- 1. Spring plate compensation	axial: ±0.8 mm [0.0315"], radial: ±0.2 mm [0.0079"]
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGD10005
- Compensation	axial: ±0.5 mm [0.0197"], radial: ±1.5 mm [0.0591"], Max. operating speed: 3000 rpm
Flange diameter	Ø 58 mm [Ø 2.283"]
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm [2.266 in-ozf] at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 6 mm [Ø 0.236"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 6.35 mm [Ø 1/4"] Order No: 2Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 7 mm [Ø 0.276"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]

Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 8 mm [Ø 0.315"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 10 mm [Ø 0.394"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12 mm [Ø 0.472"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12.7 mm [Ø 1/2"] Order No. 3Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]

Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 14 mm [Ø 0.551"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 15 mm [Ø 0.591"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 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	6000 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 6000 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

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

#### Duty information

Customs tariff number:	90318020
Country of origin:	Germany

#### General Data

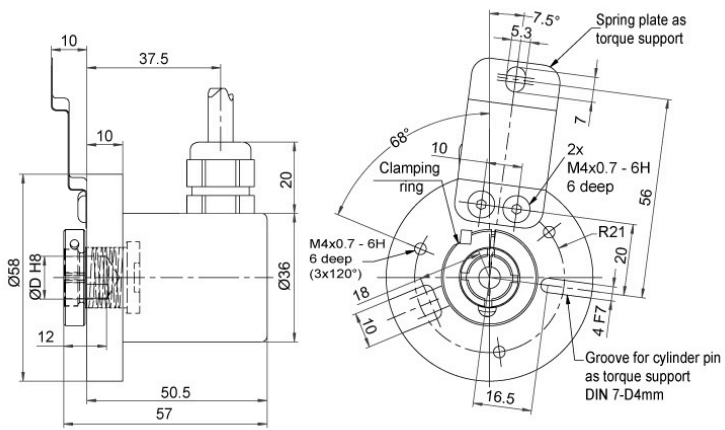
Weight	approx. 200 g [7.055 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C. Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F.
Storage temperature	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

#### More Information

General technical data and safety instructions  
<http://www.wachendorff-automation.com/gt4>

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

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



**Description**

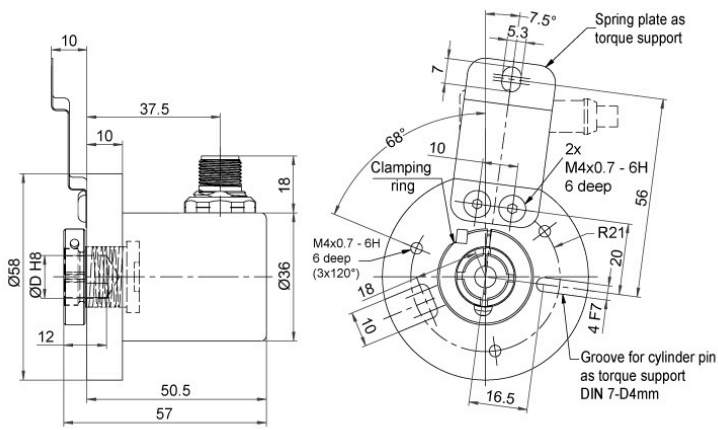
**ABN inv. poss.**

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

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Assignments		
	<b>L3</b>	<b>L3</b>
<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) SC radial, 12-pin**



**Description**

ABN inv. poss.

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

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Assignments	
	SC12
	12-pin
<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****Cable length****Order key**

The encoder WDGP 58E 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/>

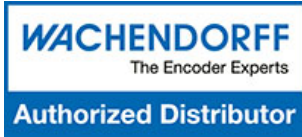
**XXX = Decimeter**

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
WDGP 58E	WDGP 58E				WDGP 58E
	<b>Bore size</b>				
14	06; 2Z; 07; 08; 4Z; 10; 12; 3Z; 14; 15				
	<b>Pulses per revolution PPR:</b>				
1-16384	1-16384				1-16384
	<b>Channels:</b>				
ABN	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>				
L3	<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 connected to encoder housing			•	L3
	<b>Connector: (shield connected to encoder housing)</b> sensor-connector, M12x1, 12-pin, radial			•	SC12
	<b>Options</b>				
	<b>Description</b>			<b>Order key</b>	
	Cable length			Cable length	
	Without option			Empty	

<b>Example Order No.=</b>	WDGP 58E	14	1-16384	ABN	M13	L3		WDGP 58E		1-16384	ABN			<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

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

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

