



# Online Data Sheet

## Encoder WDGA 58A PROFIBUS-DP (cov)

[www.wachendorff-automation.com/wdga58apbb](http://www.wachendorff-automation.com/wdga58apbb)

### 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 WDGA 58A absolute PROFIBUS-DP magnetic, with bus cover and with EnDra®- Technology



**EnDra®**  
Technologie

**PROFI**  
**BUS**

**PIV** CERTIFIED  
PROFIBUS • PROFINET

- EnDra®: maintenance-free and environmentally friendly
- PROFIBUS-DP, Single-turn/Multi-turn
- Compact design with bus cover
- Single-turn/Multi-turn (max. 14 bit/39 bit)
- Forward-looking technology with 32 Bit processor
- 2 colour-duo LED's as indicator for operating condition and bus status
- High shaft load up to 220 N radial, 120 N axial
- Device Profile switchable, Class 1, 2, 3, 4

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## Mechanical Data

### Housing

Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Connection cover	zinc-plated
Housing	Ø 58 mm

### Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature
Shaft	Ø 6 mm
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft	Ø 8 mm
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 19 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
Shaft	Ø 9.525 mm, Ø 3/8"
Advice	Attention: No option AAS = full IP67 version
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

## 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>	300 a
Mission time (TM)	20 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	10 VDC up to 32 VDC: typ. 100 mA (24 VDC)
Power consumption	max. 2.5 W

## Sensor data

Single-turn technology	innovativ hall sensor technology
Single-turn resolution	up to 16,384 steps/360° (14 bit)
Single-turn accuracy	< ±0.35°
Single-turn repeat accuracy	< ±0.20°
Internal cycle time	600 µs
Multi-turn technology	patented EnDra® technology no battery and no gear.
Multi-turn resolution	up to 39 bit

## Environmental data

<b>Environmental data:</b>	
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)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

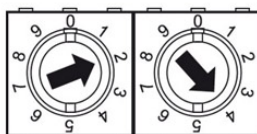
Interface	
<b>Interface:</b>	<b>PROFIBUS-DP</b>
Protocol:	PROFIBUS-DPV0/V2
Device Profile:	Class 1, 2, 3, 4
Line-Driver:	galvanic isolated
Baud rate:	max. 12 Mbaud
Function:	Multiturn
Nodeaddressing:	by switches in buscover
Code:	binary, CW default, programable
Programmable Parameter:	steps per Revolution counts of revolution Preset Scale Counting direction
Diagnostics:	Position and parameter errors EnDra®-diagnosis
Status encoder	DUO-LED in bus cover
Status Bus	DUO-LED in bus cover

**Termination resistors:**



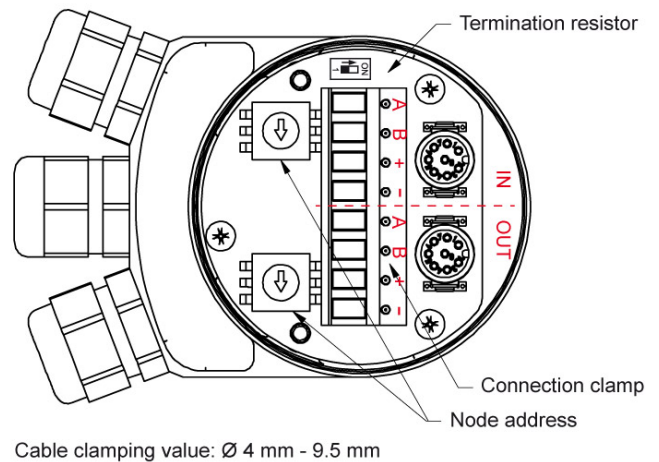
ON = last node  
OFF = node X

**Node address:**



By switches  
EG.: address 24

**View in bus cover:**



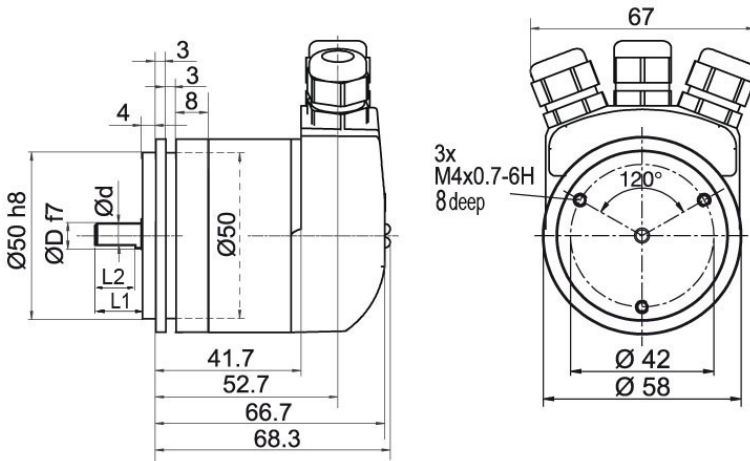
**General Data**

Weight	approx. 700 g, approx. 24.7 oz
Connections	bus cover
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

**More Information**

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

**WDGA 58A PROFIBUS-DP, BP1, bus cover with 3x PG cable glands**

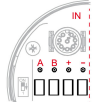


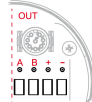
- D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
- D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat
- D = 10, L1 = 20 shaft with out flat\*
- D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

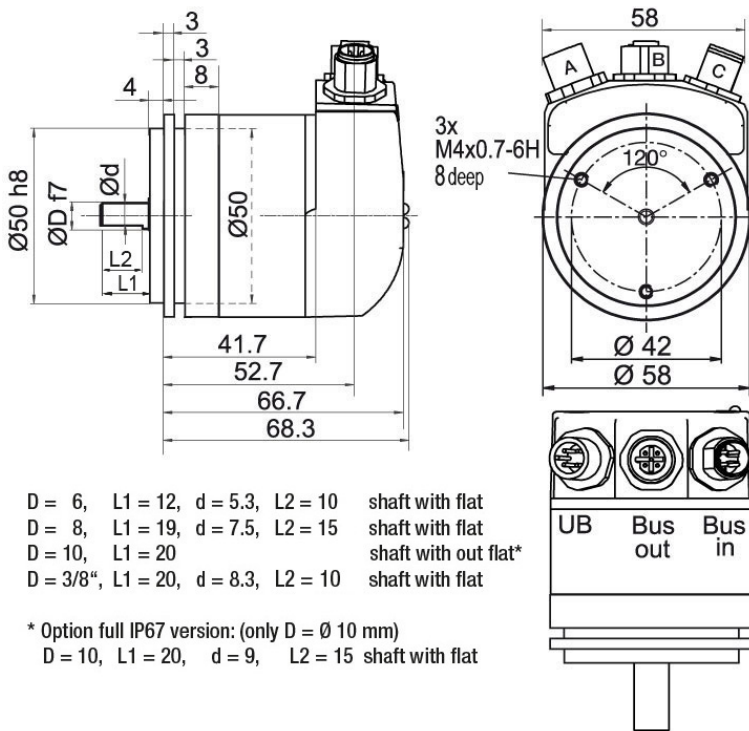
\* Option full IP67 version: (only D = Ø 10 mm)  
 D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat


**Description**


**BP1** Bus cover with connection clamps (PG cable glands)


Assignments	
BP1	
	
<b>A</b>	1
<b>B</b>	2
<b>(+) Vcc</b>	3
<b>GND</b>	4

Assignments	
BP1	
	
<b>A</b>	5
<b>B</b>	6
<b>(+) Vcc</b>	7
<b>GND</b>	8

**WDGA 58A PROFIBUS-DP, BP2, bus cover with 3x M12x1**

**Description**
**BP2** Bus cover with 3x M12x1

Assignments	
BP2	
	
<b>connector (A)</b>	M12x1, 4-pin, A-coded
<b>(+) Vcc</b>	1
<b>n. c.</b>	2
<b>GND</b>	3
<b>n. c.</b>	4

Assignments	
BP2	
	
<b>Female connector (B)</b>	M12x1, 5-pin, B-coded
<b>BUS</b>	OUT
<b>n. c.</b>	1
<b>A</b>	2
<b>n. c.</b>	3
<b>B</b>	4
<b>n. c.</b>	5

Assignments	
BP2	
	
<b>connector (C)</b>	M12x1, 5-pin, B-coded
<b>BUS</b>	IN
<b>n. c.</b>	1
<b>A</b>	2
<b>n. c.</b>	3
<b>B</b>	4
<b>n. c.</b>	5

## Options

### Shafts sealed to IP67 (shaft with flat: Ø 10 mm only)

### Order key

The encoder WDGA 58A PROFIBUS-DP (cov) can be supplied in a full IP67 version.

**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

Example Order No.	Type	Your encoder
WDGA 58A	WDGA 58A	WDGA 58A
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm Attention: No option AAS = full IP67 version	06
	Ø 8 mm Attention: No option AAS = full IP67 version	08
	Ø 10 mm	10
	Ø 9.525 mm Ø 3/8" Attention: No option AAS = full IP67 version	4Z
	<b>Single-turn Resolution</b>	<b>Order key</b>
12	Single-turn resolution 1 up to 14 bit, e. g. 12 bit = 12	12
	<b>Multi-turn Resolution</b>	<b>Order key</b>
18	Multi-turn up to 39 bit, e. G. 18 bit = 18	18
	<b>Data protocol</b>	<b>Order key</b>
DP	PROFIBUS-DP (with bus cover)	DP
	<b>Software</b>	<b>Order key</b>
A	up to date release	A
	<b>Code</b>	<b>Order key</b>
B	binary	B
	<b>Power supply</b>	<b>Order key</b>
0	10 V up to 32 V (standard)	0
	<b>Galvanic isolation</b>	<b>Order key</b>
1	yes	1
	<b>Electrical connections</b>	<b>Order key</b>
BP1	<b>Connection cover:</b>	
	Bus cover with connection clamps (PG cable glands)	BP1
	Bus cover with 3x M12x1	BP2
	<b>Options</b>	<b>Order key</b>
	Without option	Empty
	Shafts sealed to IP67 (shaft with flat: Ø 10 mm only)	AAS

<b>Example Order No.</b>	WDGA 58A	06	12	18	DP	A	B	0	1	BP1	
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WDGA 58A											<b>Example Order No.</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)

