



# Online Data Sheet

## Encoder WDGA 58B PROFIBUS-DP (con)

[www.wachendorff-automation.com/wdga58bpbs](http://www.wachendorff-automation.com/wdga58bpbs)

### 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 58B absolute PROFIBUS-DP magnetic, with EnDra®- Technology



**EnDra®**  
Technologie

**PROFI**  
**BUS**

**PIV** CERTIFIED  
PROFIBUS • PROFINET

- EnDra®: maintenance-free and environmentally friendly
- PROFIBUS-DP, Single-turn/Multi-turn
- 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	
<b>Housing</b>	
Flange	clamping flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
<b>Shaft(s)</b>	
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
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

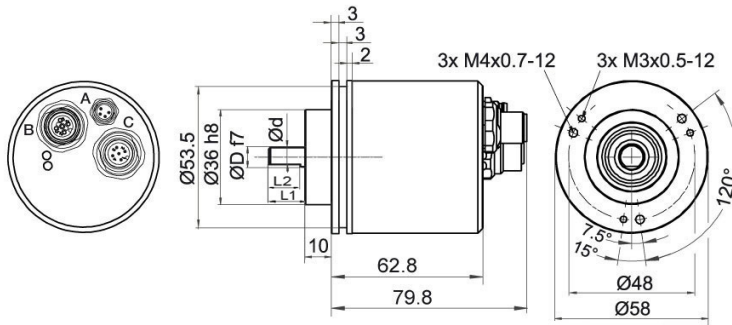
## Environmental data

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)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

<b>Interface</b>	
<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:	adjustable via software
Termination resistor:	non-existent
Code:	binary, CW default, programable
Programmable Parameter:	steps per revolution counts of revolution Preset Scale Counting direction
Diagnostics:	Position and parameter errors EnDra <sup>®</sup> -diagnosis
Status encoder:	DUO-LED
Status bus:	DUO-LED

<b>General Data</b>	
Connections	connector outlet
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

<b>More Information</b>	
General technical data and safety instructions	<a href="http://www.wachendorff-automation.com/gtd">http://www.wachendorff-automation.com/gtd</a>
Options	<a href="http://www.wachendorff-automation.com/acc">http://www.wachendorff-automation.com/acc</a>

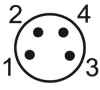
**WDGA 58B PROFIBUS-DP with 1x M8, 2x M12, axial DB4**



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

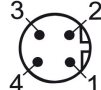
\* Option full IP67 version: (only D = Ø 10 mm)  
 D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

**DB4** axial, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin,

Assignments	
	<b>DB4</b> 
<b>connector (A)</b>	M8x1, 4-pin
<b>(+) Vcc</b>	1
<b>n. c.</b>	2
<b>GND</b>	3
<b>GND</b>	4

Assignments	
	<b>DB4</b> 
<b>Female connector (B)</b>	M12x1, 5-pin, B-coded
<b>BUS</b>	OUT
<b>5 V DP</b>	1
<b>A</b>	2
<b>GND DP</b>	3
<b>B</b>	4
<b>n. c.</b>	5

Assignments	
	<b>DB4</b> 
<b>connector (C)</b>	M12x1, 4-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

## Options

**Shafts sealed to IP67, only with 10 mm shaft with flat, not at D-SUB SD9/SE9****Order key**

The encoder WDGA 58B PROFIBUS-DP (con) 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

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Example Order No.	Type	Your encoder
WDGA 58B	WDGA 58B	WDGA 58B
	<b>Shaft</b>	<b>Order key</b>
10	∅ 6 mm Attention: No option AAS = full IP67 version	06
	∅ 8 mm Attention: No option AAS = full IP67 version	08
	∅ 10 mm	10
	∅ 9.525 mm 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 (without 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>
DB4	<b>Connector:</b>	
	connector, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin, axial	DB4
	<b>Options</b>	<b>Order key</b>
	Without option	Empty
	Shafts sealed to IP67, only with 10 mm shaft with flat, not at D-SUB SD9/SE9	AAS

<b>Example Order No.</b>	WDGA 58B	10	12	18	DP	A	B	0	1	DB4	
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WDGA 58B											<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/>



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