

# 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                       |   |
|---------------------------------------|---|
| <b>Housing</b>                        |   |
| Flange                                | synchro flange  |
| Flange material                       | aluminum  |
| Housing cap                           | steel case chrome-plated, magnetic shielding                                      |
| Connection cover                      | zinc-plated   |
| 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  |
| 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: 20 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"  |
| 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  |
| <b>Bearings</b>                       |   |
| Bearings type                         | 2 precision ball bearings   |

|                       |   |
|-----------------------|---|
| Nominale service life | 1 x 10 <sup>9</sup> revs. at 100 % rated shaft load<br>1 x 10 <sup>10</sup> revs. at 40 % rated shaft load<br>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 262,144 revolutions (18 bit)                 |

| 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<br>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       |                    |
|-----------------|--------------------|
| Interface:      | <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, programmable  |
| Programmable Parameter: | steps per Revolution<br>counts of revolution<br>Preset<br>Scale<br>Counting direction |
| Diagnostics:            | Position and parameter errors<br>EnDra®-diagnosis                                     |
| Status encoder          | DUO-LED in bus cover  |
| Status Bus              | DUO-LED in bus cover  |

|                     |  |
|---------------------|--|
| Storage temperature | -40 °C up to +100 °C, -40 °F up to +212 °F |
|---------------------|--|

#### More Information

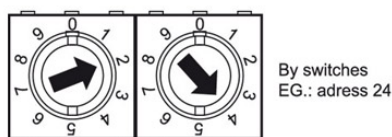
General technical data and safety instructions  
<http://www.wachendorff-automation.com/gtd>

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

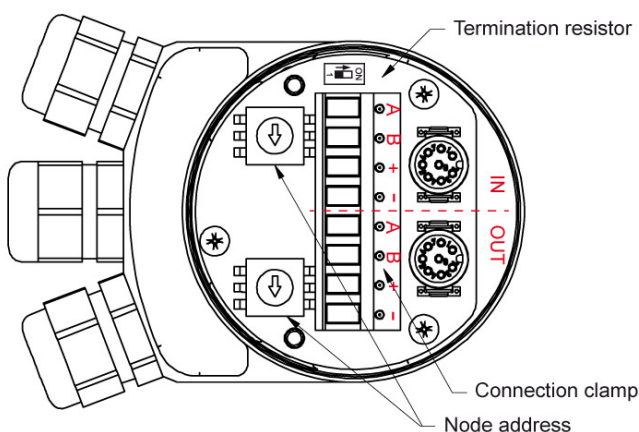


ON = last node  
 OFF = node X

#### Node address:



#### View in bus cover:

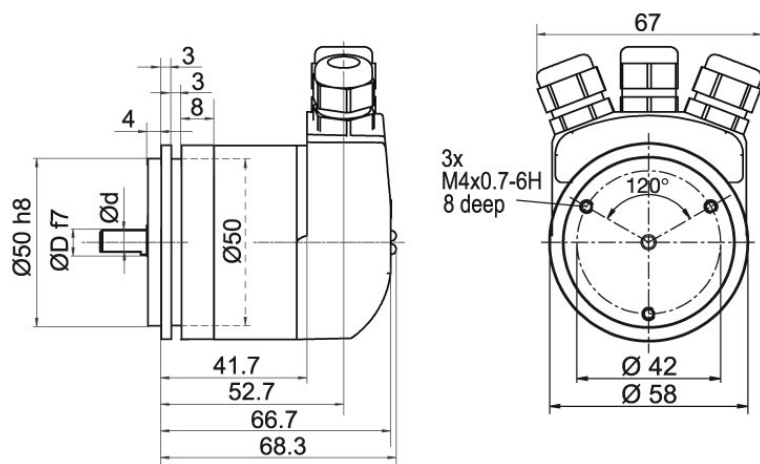


Cable clamping value: Ø 4 mm - 9.5 mm

#### General Data

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

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




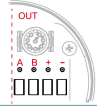
- D = 6, L = 12, d = 5.3 shaft with flat
- D = 8, L = 20, d = 7.5 shaft with flat
- D = 10, L = 20, d = 10 shaft with out flat\*
- D = 3/8", L = 20, d = 8.3 shaft with flat

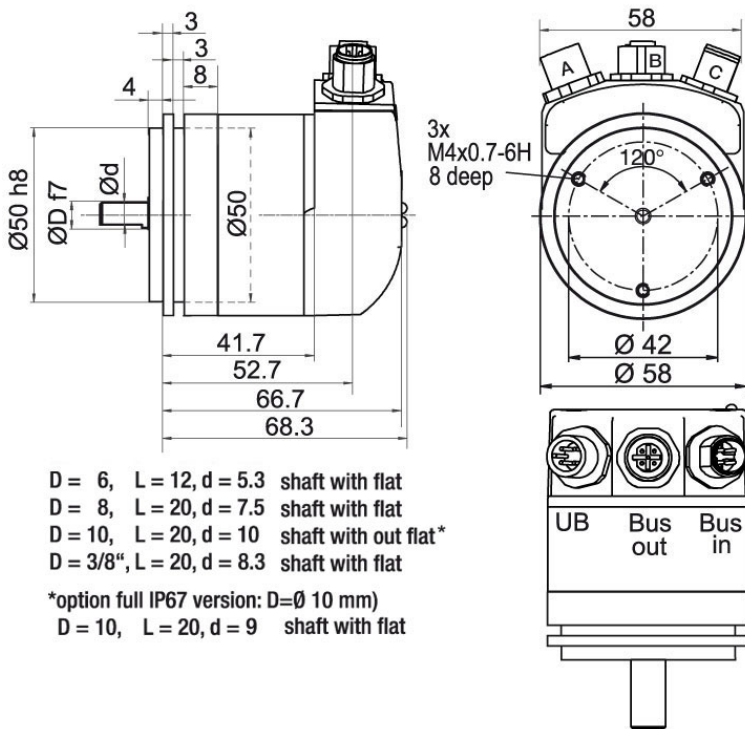
\*option full IP67 version: D=Ø 10 mm  
 D = 10, L = 20, d = 9 shaft with flat


**Description**


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


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

| Assignments    |   |
|----------------|---|
|                | <b>BP1</b>  |
|                |  |
| <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>                  |  |              |
| 06                            | Ø 6 mm   | 06           |
|                               | Ø 8 mm   | 08           |
|                               | Ø 10 mm  | 10           |
|                               | Ø 9.525 mm Ø 3/8"  | 4Z           |
| <b>Single-turn Resolution</b> |  |              |
| 13                            | Single-turn resolution 1 up to 14 bit, e. g. 12 bit = 12     | 12           |
| <b>Multi-turn Resolution</b>  |  |              |
| 12                            | Multi-turn 18 bit:<br>e. G. 18 bit = 18<br>e. G. 39 bit = 39 | 18           |
| <b>Data protocol</b>          |  |              |
| DP                            | PROFIBUS-DP (with bus cover)                                 | DP           |
| <b>Software</b>               |  |              |
| A                             | up to date release   | A            |
| <b>Code</b>                   |  |              |
| B                             | binary   | B            |
| <b>Power supply</b>           |  |              |
| 0                             | 10 V up to 32 V (standard)                                   | 0            |
| <b>Galvanic isolation</b>     |  |              |
| 1                             | yes  | 1            |
| <b>Electrical connections</b> |  |              |
| BP1                           | <b>Connection cover:</b>                                     |              |
|                               | Bus cover with connection clamps (PG cable glands)           | BP1          |
|                               | Bus cover with 3x M12x1                                      | BP2          |
| <b>Options</b>                |  |              |
|                               | Without option   | Empty        |
|                               | Shafts sealed to IP67 (shaft with flat: Ø 10 mm only)        | AAS          |

|                          |          |    |    |    |    |   |   |   |   |     |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| <b>Example Order No.</b> | WDGA 58A | 06 | 13 | 12 | DP | A | B | 0 | 1 | BP1 |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|

|          |  |  |  |  |  |  |  |  |  |  |                          |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|
| WDGA 58A |  |  |  |  |  |  |  |  |  |  | <b>Example Order No.</b> |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|



For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
[http://www.wachendorff-automation.com/distributors\\_worldwide.html](http://www.wachendorff-automation.com/distributors_worldwide.html)



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