



# Online Data Sheet

## Encoder WDGA 58B Universal IE (cov)

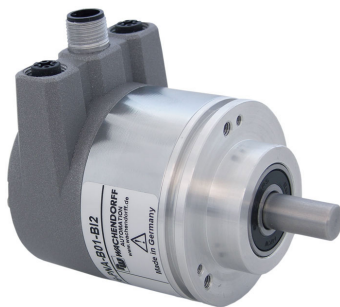
[www.wachendorff-automation.com/wdga58buie](http://www.wachendorff-automation.com/wdga58buie)

### 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 Universal IE magnetic, with bus cover and with EnDra®- Technology



**EnDra®**  
Technologie

**Universal-IE**  
— Industrial Ethernet —

- EnDra®: maintenance-free and environmentally friendly
- Universal IE, Single-turn/Multi-turn
- Compact design with bus cover
- Single-turn/Multi-turn (max. 16 bit/43 bit)
- Forward-looking technology
- 2 colour-duo LED's as indicator for operating condition and bus status and 2 L/A LED's
- High shaft load up to 220 N radial, 120 N axial

[www.wachendorff-automation.com/wdga58buie](http://www.wachendorff-automation.com/wdga58buie)

| Mechanical Data                       |   |
|---------------------------------------|---|
| <b>Housing</b>                        |   |
| Flange                                | clamping flange   |
| Flange material                       | aluminum  |
| Housing cap                           | steel case chrome-plated, magnetic shielding                                      |
| Connection cover                      | die cast aluminum, powder coated  |
| 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, 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  |
| <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. 125 mA |
| Power consumption                | typ. 3 W                         |

| Sensor data                 |  |
|-----------------------------|--|
| Single-turn technology      | innovativ hall sensor technology                   |
| Single-turn resolution      | up to 65,536 steps/360° (16 bit)                   |
| Single-turn accuracy        | ± 0.0878° ( 12 bit)                                |
| Single-turn repeat accuracy | ± 0.0878° ( 12 bit)                                |
| Internal cycle time         | 50 µs  |
| Multi-turn technology       | patented EnDra® technology no battery and no gear. |
| Multi-turn resolution       | 43 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<br>DIN EN 61000-6-3       |
| Vibration: (DIN EN 60068-2-6) | 200 m/s <sup>2</sup> (10 Hz up to 1000 Hz) |
| Shock: (DIN EN 60068-2-27)    | 5000 m/s <sup>2</sup> (6 ms)               |
| Design:                       | according DIN VDE 0160                     |
| Turn on time:                 | <1,5 s                                     |

| Interface  |                                      |
|------------|--------------------------------------|
| Interface: | <b>Universal Industrial Ethernet</b> |
| Protocol:  | selectable (PROFINET-IO, EtherCAT)   |

|                         |   |
|-------------------------|---|
| Data Transfer:          | 100BASE-TX  |
| Function:               | Multiturn   |
| Code:                   | binary, CW default, programable   |
| Programmable Parameter: | steps per revolution<br>counts of revolution<br>preset<br>scale<br>counting direction |
| Diagnostics: (LED)      | Traffic and connection management:<br>L/A1: Port 1<br>L/A2: Port 2                    |
| Status LED:             | STAT, MOD: status of encoder and bus  |

#### General Data

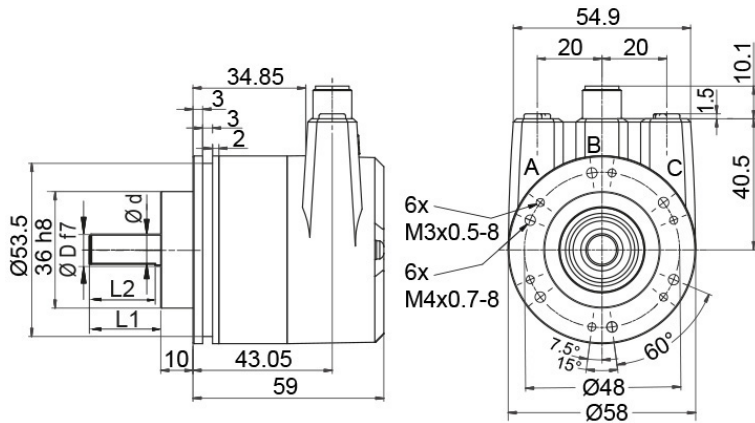
|                              |  |
|------------------------------|--|
| Weight                       | approx. 700 g, approx. 24.7 oz             |
| Connections                  | bus cover                                  |
| Protection rating (EN 60529) | Housing: IP65, IP67;<br>shaft sealed: IP65 |
| Operating temperature        | -40 °C up to +85 °C, -40 °F up to +176 °F  |
| 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 58B, Universal IE, BI2, bus cover with 3x M12x1**




- 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

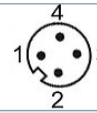
\* Option full IP67 version: (only D = Ø 10 mm)


- D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

**BI2** Bus cover with 3x M12x1

| Assignments                     |   |
|---------------------------------|---|
|                                 | <b>BI2</b><br> |
| <b>Female connector (Port1)</b> | M12x1, 4-pin, D-coded   |
| <b>Tx+</b>                      | 1   |
| <b>Rx+</b>                      | 2   |
| <b>Tx-</b>                      | 3   |
| <b>Rx-</b>                      | 4   |

| Assignments              |   |
|--------------------------|---|
|                          | <b>BI2</b><br> |
| <b>connector (Power)</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                     |   |
|---------------------------------|---|
|                                 | <b>BI2</b><br> |
| <b>Female connector (Port2)</b> | M12x1, 4-pin, D-coded   |
| <b>Tx+</b>                      | 1   |
| <b>Rx+</b>                      | 2   |
| <b>Tx-</b>                      | 3   |
| <b>Rx-</b>                      | 4   |

## Options

### Shafts sealed to IP67, only with 10 mm shaft with flat

### Order key

The encoder WDGA 58B Universal IE (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

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| Example Order No. | Type   | Your encoder     |
|-------------------|--|------------------|
| WDGA 58B          | WDGA 58B   | WDGA 58B         |
|                   | <b>Shaft</b>   | <b>Order key</b> |
| 10                | 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> |
| 16                | Single-turn resolution 16 bit                                  | 16               |
|                   | <b>Multi-turn Resolution</b>                                   | <b>Order key</b> |
| 43                | Multi-turn 43 bit  | 43               |
|                   | <b>Data protocol</b>   | <b>Order key</b> |
| IE                | Universal IE (with bus cover)                                  | IE               |
|                   | <b>Software</b>  | <b>Order key</b> |
| U                 | up to date release   | U                |
|                   | <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> |
| BI2               | <b>Connection cover:</b>                                       |                  |
|                   | Bus cover with 3x M12x1  | BI2              |
|                   | <b>Options</b>   | <b>Order key</b> |
|                   | Without option   | Empty            |
|                   | Shafts sealed to IP67, only with 10 mm shaft with flat         | AAS              |

|                          |          |    |    |    |    |   |   |   |   |     |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| <b>Example Order No.</b> | WDGA 58B | 10 | 16 | 43 | IE | U | B | 0 | 1 | BI2 |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|

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



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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