



# Online Data sheet

## Encoder WDGA 58D Universal IE (cov)

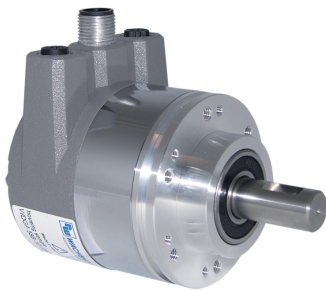
[www.wachendorff-automation.com/wdga58duie](http://www.wachendorff-automation.com/wdga58duie)

### 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 58D absolute Universal IE magnetic, with bus cover and with EnDra®- Technology



**EnDra®**  
Technologie

**Universal-IE**  
Industrial Ethernet

**Heavy duty**

- 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
- 2 colour-duo LED's as indicator for operating condition and bus status and 2 L/A LED's
- High shaft load up to 500 N radial, 500 N axial

[www.wachendorff-automation.com/wdga58duie](http://www.wachendorff-automation.com/wdga58duie)

## Mechanical Data

| Housing          |  |
|------------------|--|
| 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                                      |

## Shaft(s)

|                 |                                      |
|-----------------|--------------------------------------|
| Shaft material  | stainless steel                      |
| Starting torque | approx. 1 Ncm at ambient temperature |

|                                       |          |
|---------------------------------------|----------|
| Shaft                                 | Ø 12 mm  |
| Shaft length                          | L: 25 mm |
| Max. Permissible shaft loading radial | 500 N    |
| Max. Permissible shaft loading axial  | 500 N    |

## Bearings

|                      |  |
|----------------------|--|
| Bearings type        | 3 precision ball bearings  |
| Nominal service life | 2 x 10 <sup>8</sup> revs. at 100 % rated shaft load<br>3.5 x 10 <sup>9</sup> revs. at 40 % rated shaft load<br>2.5 x 10 <sup>10</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   |
| Nominal service life (L10h) | 2.5 x 10 <sup>10</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   |

## Integrated web server:

|              |  |
|--------------|--|
| Configurable | Selectable: PROFINET-IO, EtherNet/IP, EtherCAT<br>IP address<br>Subnet mask<br>Gateway address |
| Readable     | Encoder parameters   |
| Update       | Firmware   |

## 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) | 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                                     |

## Duty information

|                        |          |
|------------------------|----------|
| Customs tariff number: | 90318020 |
| Country of origin:     | Germany  |

## Interface

|   |  |
|---|--|
| <b>Interface:</b>   | <b>Universal Industrial Ethernet</b>   |
| Protocol:   | selectable (PROFINET-IO, EtherCAT, EtherNET/IP)                                |
| Data Transfer:  | 100BASE-TX   |
| Function:   | Multiturn  |
| Code:   | binary, CW default, programmable   |
| Features, physical layer, cycle times, functions, parameters, objects and characteristics | Details can be found at the respective products with the individual interface. |
| Diagnostics: (LED)  | Traffic and connection management:<br>L/A1: Port 1<br>L/A2: Port 2             |

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|             |                                      |
|-------------|--------------------------------------|
| Status LED: | STAT, MOD: status of encoder and bus |
|-------------|--------------------------------------|

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**General Data**

|                              |  |
|------------------------------|--|
| Weight                       | approx. 700 g                              |
| Connections                  | bus cover                                  |
| Protection rating (EN 60529) | Housing: IP65, IP67;<br>shaft sealed: IP65 |
| Operating temperature        | -40 °C up to +85 °C                        |
| Storage temperature          | -40 °C up to +100 °C                       |

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**More Information**

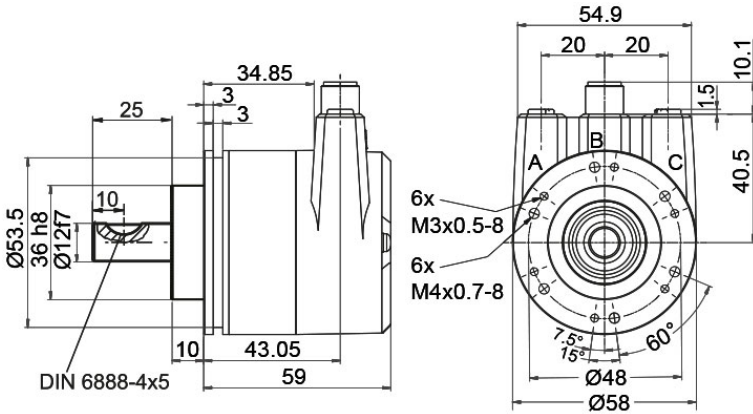
General technical data and safety instructions  
<http://www.wachendorff-automation.com/gtd>

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

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**WDGA 58D, Universal IE, BI2, bus cover with 3x M12x1**



**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                     |

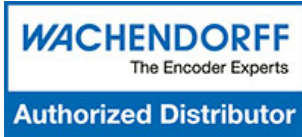
| Assignments              |                       |
|--------------------------|-----------------------|
|                          | <b>BI2</b><br>        |
| <b>connector (Power)</b> | M12x1, 4-pin, A-coded |
| <b>(+) Vcc</b>           | 1                     |
| <b>n. c.</b>             | 2                     |
| <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                     |

| Example Order No.             | Type                          | Your encoder |     |
|-------------------------------|-------------------------------|--------------|-----|
| WDGA 58D                      | WDGA 58D                      | WDGA 58D     |     |
| <b>Shaft</b>                  |                               |              |     |
| 12                            | Ø 12 mm                       | Order key    | 12  |
| <b>Single-turn Resolution</b> |                               |              |     |
| 16                            | Single-turn resolution 16 bit | Order key    | 16  |
| <b>Multi-turn Resolution</b>  |                               |              |     |
| 43                            | Multi-turn 43 bit             | Order key    | 43  |
| <b>Data protocol</b>          |                               |              |     |
| IE                            | Universal IE (with bus cover) | Order key    | IE  |
| <b>Software</b>               |                               |              |     |
| U                             | up to date release            | Order key    | U   |
| <b>Code</b>                   |                               |              |     |
| B                             | binary                        | Order key    | B   |
| <b>Power supply</b>           |                               |              |     |
| 0                             | 10 V up to 32 V (standard)    | Order key    | 0   |
| <b>Galvanic isolation</b>     |                               |              |     |
| 1                             | yes                           | Order key    | 1   |
| <b>Electrical connections</b> |                               |              |     |
| BI2                           | <b>Connection cover:</b>      | Order key    |     |
|                               | Bus cover with 3x M12x1       | Order key    | BI2 |

|                          |          |    |    |    |    |   |   |   |   |     |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|
| <b>Example Order No.</b> | WDGA 58D | 12 | 16 | 43 | IE | U | B | 0 | 1 | BI2 |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|

|          |  |  |  |  |  |  |  |  |  |  |                          |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|
| WDGA 58D |  |  |  |  |  |  |  |  |  |  | <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/contact-sales-en/>

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