



Online Data sheet

Encoder WDGA 58E PROFIBUS-DP (con)

www.wachendorff-automation.com/wdga58epbs

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 58E absolute PROFIBUS-DP, 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 80 N radial, 50 N axial
- Device Profile switchable, Class 3, 4

www.wachendorff-automation.com/wdga58epbs

| Mechanical Data | |
|---------------------------------------|---|
| Housing | |
| Flange | hollow shaft (blind-bored) |
| Flange material | aluminum |
| Housing cap | steel case chrome-plated, magnetic shielding |
| Torque supports | incl. 1 torque support WDGDS10019 |
| - 1. Spring plate compensation | axial: ±1.2 mm, radial: ±0.2 mm |
| - Max. operating speed | 6000 rpm up to max. protection rating +80 °C |
| Housing | Ø 58 mm |
| Shaft(s) | |
| Shaft material | stainless steel |
| Starting torque | approx. 1.6 Ncm at ambient temperature, approx. 2.226 in-ozf at ambient temperature |
| Fixing | permanently attached clamping ring |
| Shaft | Ø 6 mm |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 6.35 mm, Ø 1/4" |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm, L: 0.669 in |
| Insertion depth min. | 10 mm, 0.394 in |
| Insertion depth max. | 19 mm, 0.748 in |
| Max. Permissible shaft loading radial | 80 N, 8.158 kp |
| Max. Permissible shaft loading axial | 50 N, 5.099 kp |
| Shaft | Ø 7 mm |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |

| | |
|---------------------------------------|-----------------------|
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 8 mm |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 9.525 mm, Ø 3/8" |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm, L: 0.669 in |
| Insertion depth min. | 10 mm, 0.394 in |
| Insertion depth max. | 19 mm, 0.748 in |
| Max. Permissible shaft loading radial | 80 N, 8.158 kp |
| Max. Permissible shaft loading axial | 50 N, 5.099 kp |
| Shaft | Ø 10 mm |
| Advice | with adapter sleeve |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 12 mm |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 14 mm |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |

| | |
|---------------------------------------|----------|
| Max. Permissible shaft loading axial | 50 N |
| Shaft | Ø 15 mm |
| Shaft length | L: 17 mm |
| Insertion depth min. | 10 mm |
| Insertion depth max. | 19 mm |
| Max. Permissible shaft loading radial | 80 N |
| Max. Permissible shaft loading axial | 50 N |

Bearings

| | |
|----------------------|---|
| Bearings type | 2 precision ball bearings |
| Nominal service life | 1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load |
| Max. operating speed | 6000 rpm |

Machinery Directive: basic data safety integrity level

| | |
|-----------------------------|--|
| MTTF _d | 300 a |
| Mission time (TM) | 20 a |
| Nominal service life (L10h) | 1 x 10 ¹¹ revs. at 20 % rated shaft load and 6000 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 |
| Operating principle | magnetic |

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

| | |
|----------------------------------|---|
| 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 ² (10 Hz bis 2000 Hz) |
| Shock: (DIN EN 60068-2-27) | 1000 m/s ² (6 ms) |
| Design: | according DIN VDE 0160 |
| Turn on time: | <1,5 s |

Duty information

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

Interface

| | |
|------------|--------------------|
| Interface: | PROFIBUS-DP |
| Protocol: | PROFIBUS-DPV2 |

| | |
|-------------------------|---|
| Device Profile: | Class 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, programmable |
| Programmable Parameter: | steps per revolution counts of revolution Preset Scale Counting direction |
| Diagnostics: | Position and parameter errors EnDra®-diagnosis |
| Status encoder: | DUO-LED |
| Status bus: | DUO-LED |

General Data

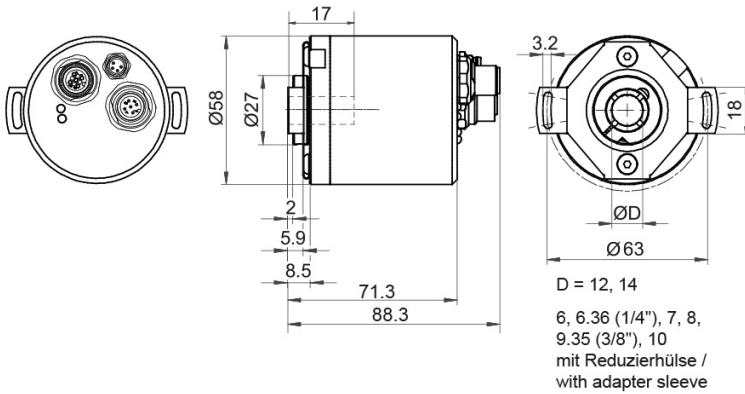
| | |
|------------------------------|--|
| Weight | approx. 410 g, approx. 14.462 oz |
| Connections | connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65 |
| Operating temperature | -40 °C up to +85 °C, -40 °F up to +176 °F |
| Storage temperature | -40 °C up to +100 °C, -40 °F up to +212 °F |

More Information

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

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

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



Description

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

| Assignments | |
|----------------------|-------------|
| | |
| connector (A) | M8x1, 4-pin |
| (+) Vcc | 1 |
| n. c. | 2 |
| GND | 3 |
| GND | 4 |

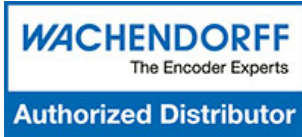
| Assignments | |
|-----------------------------|-----------------------|
| | |
| Female connector (B) | M12x1, 5-pin, B-coded |
| BUS | OUT |
| 5 V DP | 1 |
| A | 2 |
| GND DP | 3 |
| B | 4 |
| n. c. | 5 |

| Assignments | |
|----------------------|-----------------------|
| | |
| connector (C) | M12x1, 4-pin, B-coded |
| BUS | IN |
| n. c. | 1 |
| A | 2 |
| n. c. | 3 |
| B | 4 |

| Example Order No. | Type | Your encoder | |
|-------------------|--|------------------|--|
| WDGA 58E | WDGA 58E | WDGA 58E | |
| | Shaft | Order key | |
| 12 | Ø 6 mm with adapter sleeve | 06 | |
| | Ø 6.35 mm Ø 1/4" with adapter sleeve | 2Z | |
| | Ø 7 mm with adapter sleeve | 07 | |
| | Ø 8 mm with adapter sleeve | 08 | |
| | Ø 9.525 mm Ø 3/8" with adapter sleeve | 4Z | |
| | Ø 10 mm with adapter sleeve | 10 | |
| | Ø 12 mm | 12 | |
| | Ø 14 mm | 14 | |
| | Ø 15 mm | 15 | |
| | Single-turn Resolution | Order key | |
| 12 | Single-turn resolution 1 up to 14 bit, e. g. 12 bit = 12 | 12 | |
| | Multi-turn Resolution | Order key | |
| 18 | Multi-turn up to 39 bit, e. G. 18 bit = 18 | 18 | |
| | Data protocol | Order key | |
| DP | PROFIBUS-DP (without bus cover) | DP | |
| | Software | Order key | |
| A | up to date release | A | |
| | Code | Order key | |
| B | binary | B | |
| | Power supply | Order key | |
| 0 | 10 V up to 32 V (standard) | 0 | |
| | Galvanic isolation | Order key | |
| 1 | yes | 1 | |
| | Electrical connections | Order key | |
| DB4 | Connector: | | |
| | connector, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin, axial | DB4 | |

| | | | | | | | | | | |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|
| Example Order No. | WDGA 58E | 12 | 12 | 18 | DP | A | B | 0 | 1 | DB4 |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|

| | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|
| WDGA 58E | | | | | | | | | | | Example Order No. |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|



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/>

WACHENDORFF

Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • 65366 Geisenheim
Germany

Phone: +49 67 22 / 99 65 25
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de

