



Online Data sheet

Encoder WDGA 58S RS485

www.wachendorff-automation.com/wdga58srs485

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 58S absolute RS485, with EnDra® Technology



Illustration similar

EnDra®
Technologie

RS485

- Resistance to salt mist (IEC 60068-2-11) succeeded
- Protection: IP67 + IP69k (high pressure / steam cleaning)
- EnDra®: maintenance-free and environmentally friendly
- RS485
- Single-turn/Multi-turn (max. 16 bit /32 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition

www.wachendorff-automation.com/wdga58srs485

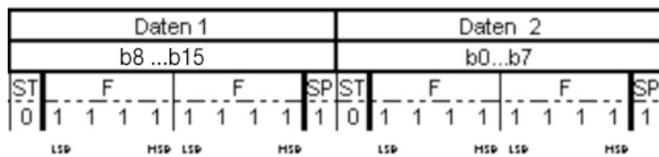
Salt mist IEC 60068-2-11, high pressure / steam cleaning

| Mechanical Data | |
|--|---|
| Flange | clamping flange |
| Flange material | Aluminum, anodized natur |
| Housing material | steel case chrome-plated, magnetic shielding |
| Flange diameter | Ø 58 mm [Ø 2.283"] |
| Shaft(s) | |
| Shaft material | stainless steel |
| Starting torque | approx. 1 Ncm [1.416 in-ozf] at ambient temperature |
| Shaft | Ø 10 mm [Ø 0.394"] |
| Shaft length | L: 18 mm [0.709"] |
| Max. Permissible shaft loading radial | 100 N [10.197 kp] |
| Max. Permissible shaft loading axial | 100 N [10.197 kp] |
| 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 | 3600 rpm |
| Machinery Directive: basic data safety integrity level | |
| MTTF _d | 1000 a |
| Mission time (TM) | 20 a |
| Nominal service life (L10h) | 1 x 10 ¹¹ revs. at 20 % rated shaft load and 3600 rpm |
| Diagnostic coverage (DC) | 0 % |
| Electrical Data | |
| Power supply/Current consumption | 4,75 VDC up to 32 VDC: typ. 50 mA |
| Power consumption | max. 0.5 W |
| Power supply/Current consumption | 4,75 VDC up to 5,5 VDC: typ. 80 mA |
| Power consumption | max. 0.44 W |
| Operating principle | magnetic |

| Sensor data | |
|--|---|
| Single-turn technology | innovative 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 | 600 µs |
| Multi-turn technology | patented EnDra® technology no battery no gear. |
| Multi-turn resolution | up to 32 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 DIN EN 61326-1 |
| Vibration: (DIN EN 60068-2-6) | 300 m/s ² (10 Hz up to 2000 Hz) |
| Shock: (DIN EN 60068-2-27) | 5000 m/s ² (6 ms) |
| Electrical Safety: | according DIN VDE 0160 |
| Turn on time: | <1,5 s |
| Duty information | |
| Customs tariff number: | 90318020 |
| Country of origin: | Germany |
| Interface | |
| Interface: | RS485 |
| Configuration inputs: | |
| Positive direction of counting: (View on shaft) | DIR = GND -> cw DIR = +Ub -> ccw |
| Set to zero: | Preset = apply +Ub for 2 s |
| Baud rate: | Standard: 9600 bit/s Other baud rates on request |
| Polling cycle: | Standard: 20 ms (Tolerances: +/- 2 ms) Other polling cycles on request |

| | |
|---------------------------------|--|
| Telegram length: | 6 byte singleturn, 8 byte multiturn |
| Telegram composition: | 2 Byte Präambel, 2 /4 Byte user data, 2 Byte CRC |
| Bytecomposition: | Startbit (0) and Stopbit (1), Bytes are Big-Endian and LSB first, no Paritybit |
| CRC-Definition: | Code: <ul style="list-style-type: none"> • CRC-CCITT 16 bit ($X^{16}+X^{12}+X^5+1$) • Startvalue 0x1021, • Start/Stopbits aren't included • Präambel (0xABCD) is included, • Byte-wise orientation: per CRC-Refresh there is used 1 Byte |
| Protocol malfunction behaviour: | If encoder recognizes that it's impossible to send a right positionvalue (e.G.: Magnet-loss), there will be send out a telegram with maximum value user Data at normalcycletime and normal Baudrate. |

Protocol RS485



General Data

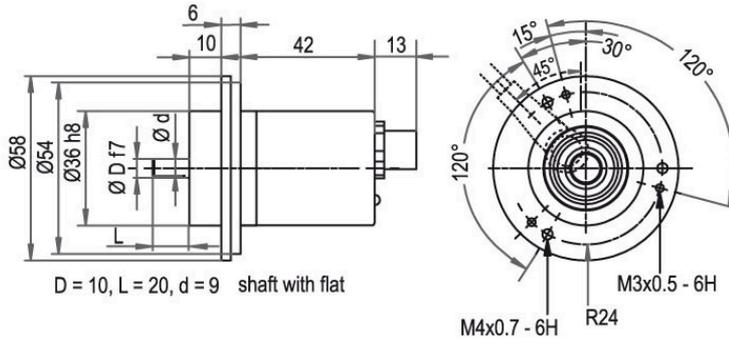
| | |
|------------------------------|---|
| Weight | approx. 200 g [7.055 oz] |
| Connections | connector outlet |
| Protection rating (EN 60529) | IP67+IP69K all around |
| Operating temperature | -40 °C up to +85 °C [-40 °F up to 185 °F] |
| Storage temperature | -40 °C up to +100 °C [-40 °F up to 212 °F] |

More Information

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

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

Connector, M12x1 CB8, axial, 8-pin

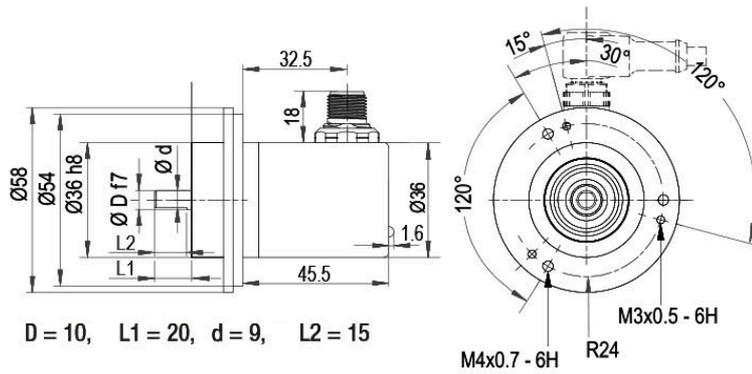


Description

CB8 axial, 8-pin, shield connected to encoder housing

| Assignments | |
|------------------|----------------|
| | CB8 |
| S- (GND) | 1 |
| S+ (DCin) | 2 |
| A (DATA+) | 5 |
| B (DATA-) | 6 |
| PRESET | 7 |
| DIR | 8 |
| Shield | housing |

Connector, M12x1 CC8, 8-pin, radial



Description

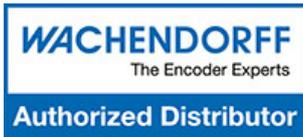
CC8 radial, 8-pin, shield connected to encoder housing

| Assignments | |
|------------------|----------------|
| | CC8 |
| S- (GND) | 1 |
| S+ (DCin) | 2 |
| A (DATA+) | 5 |
| B (DATA-) | 6 |
| PRESET | 7 |
| DIR | 8 |
| Shield | housing |

| Example Order No. | Type | Your encoder | |
|-------------------------------|---|--------------|-------|
| WDGA 58S | WDGA 58S | WDGA 58S | |
| Shaft | | | |
| 10 | Ø 10 mm [Ø 0.394"] | 10 | |
| Single-turn Resolution | | | |
| 14 | Single-turn resolution 1 bit up to 16 bit, recommended min. 6 bit (e. G. 14 bit) | 14 | |
| Multi-turn Resolution | | | |
| 18 | Multi-turn up to 32 bit (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit) No Multi-turn: 00 | 18 | |
| Data protocol | | | |
| EI | RS485 | EI | EI |
| Software | | | |
| A | up to date release | A | A |
| Code | | | |
| B | binary | B | B |
| Power supply | | | |
| 0 | 4.75 V up to 32 V (standard) | 0 | |
| | 4.75 V up to 5.5 V | 1 | |
| Galvanic isolation | | | |
| 0 | no | 0 | 0 |
| Electrical connections | | | |
| CB8 | Connector: | | |
| | sensor-connector, M12x1, 8-pin, axial, shield connected to encoder housing | CB8 | |
| | sensor-connector, M12x1, 8-pin, radial, shield connected to encoder housing | CC8 | |
| Options | | | |
| | Without option | Empty | Empty |

| | | | | | | | | | | | |
|-------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| Example Order No. | WDGA 58S | 10 | 14 | 18 | EI | A | B | 0 | 0 | CB8 | |
|-------------------|----------|----|----|----|----|---|---|---|---|-----|--|

| | | | | | | | | | | | |
|----------|--|--|--|----|---|---|--|---|--|-------|---------------------|
| WDGA 58S | | | | EI | A | B | | 0 | | Empty | Your encoder |
|----------|--|--|--|----|---|---|--|---|--|-------|---------------------|



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
<https://www.wachendorff-automation.com/contact-en/wachendorff-world-wide/>

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

