



Online Data Sheet

Encoder WDGA 58E CANopen galv. isolation

www.wachendorff-automation.com/wdga58ecangalv

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 CANopen, galv. isolation, magnetic, with EnDra®- Technology



EnDra®
Technologie

CANopen®

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single-turn/Multi-turn
- Galvanic isolation
- Communication Profile according to CiA 301
- Device Profile for encoder CiA 406 V3.2 class C2
- Single-turn/Multi-turn (16 bit/43 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition and error message appropriate CiA 303-3

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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 |

Electrical Data

| | |
|----------------------------------|----------------------------------|
| Power supply/Current consumption | 10 VDC up to 32 VDC: typ. 100 mA |
| Power consumption | max. 1 W |

Sensor data

| | |
|-----------------------------|--|
| Single-turn technology | innovative hall sensor technology |
| Single-turn resolution | 65,536 steps/360° (16 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 32 bit with high precision value up to 43 bit. |

Environmental data

| | |
|----------------------------------|--|
| 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) |
| Design: | according DIN VDE 0160 |
| Turn on time: | <1,5 s |

Interface

| | |
|-------------------|--|
| Interface: | CAN |
| Protocol: | CANopen <ul style="list-style-type: none"> • Communication profil CiA 301 • Device Profile for encoder CiA 406 V3.2 class C2 |
| Node number: | 1 up to 127 (default 127) |
| Baud rate: | 50 kBaud up to 1 MBaud with automatic bit rate detection. |
| Advice: | The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e. g. PDOs, Scaling, Heartbeat, Node-ID, Baud rate, etc. |

| | |
|--------------------------------------|---|
| Programmable CAN transmission modes: | Synchronous mode: when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently. Asynchronous mode: a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.) |
|--------------------------------------|---|

General Data

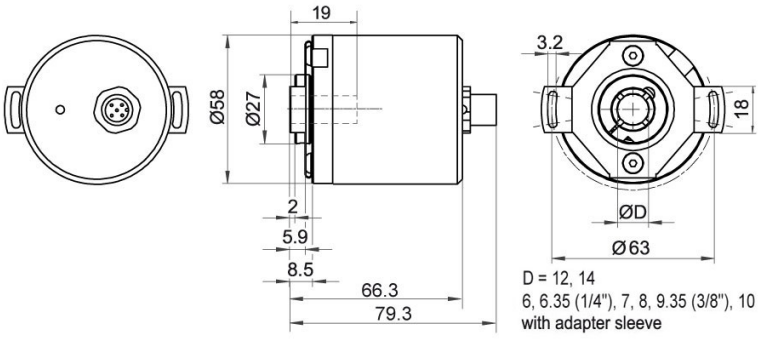
| | |
|------------------------------|--|
| Weight | approx. 410 g |
| Connections | connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65 |
| Operating temperature | -40 °C up to +85 °C, -40 °F up to +176 °F |
| Storage temperature | -40 °C up to +100 °C, -40 °F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

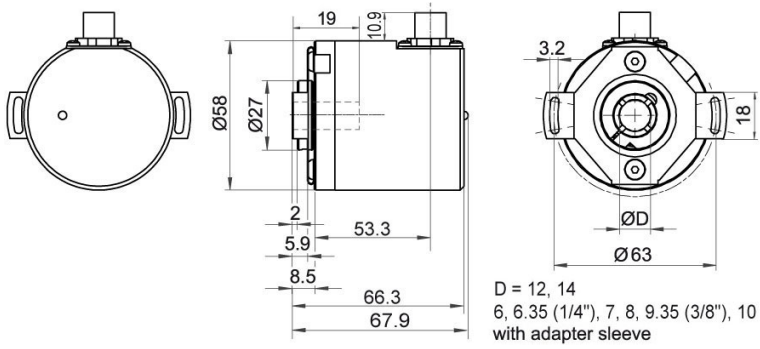
WDGA 58E CANopen galv. isolation with M12x1, axial CB5, 5-pin

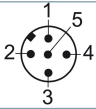


Description

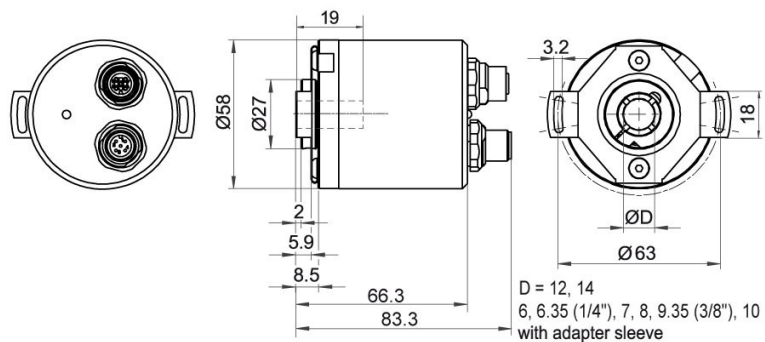
CB5 axial, 5-pin, shield connected to encoder housing

| Assignments | |
|----------------------|-------------------|
| | <p>CB5</p> |
| (+) Vcc | 2 |
| GND | 3 |
| CANHigh | 4 |
| CANLow | 5 |
| CANGND shield | 1 |

WDGA 58E CANopen galv. isolation with M12x1, radial CC5, 5-pin

Description
CC5 radial, 5-pin, shield connected to encoder housing

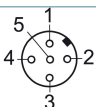
| Assignments | |
|----------------------|--|
| | CC5  |
| (+) Vcc | 2 |
| GND | 3 |
| CANHigh | 4 |
| CANLow | 5 |
| CANGND shield | 1 |

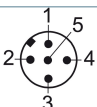
WDGA 58E CANopen galv. isolation with 2x M12x1, axial DB5, 5-pin

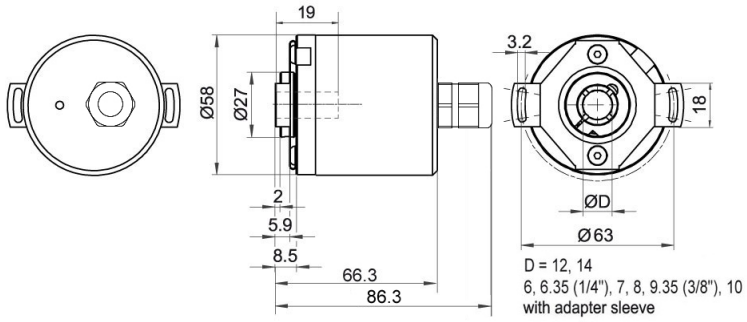


Description

DB5 axial, 5-pin, shield connected to encoder housing

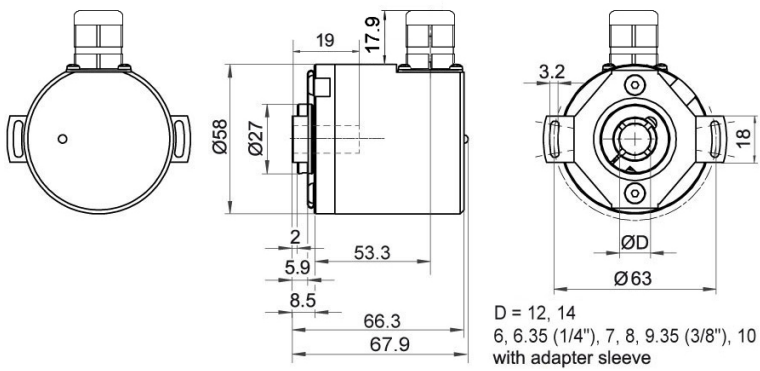
| Assignments | |
|-------------------------|--|
| |  |
| Female connector | M12x1, 5-pin |
| (+) Vcc | 2 |
| GND | 3 |
| CANHigh | 4 |
| CANLow | 5 |
| CANGND shield | 1 |

| Assignments | |
|----------------------|--|
| |  |
| Connector | M12x1, 5-pin |
| (+) Vcc | 2 |
| GND | 3 |
| CANHigh | 4 |
| CANLow | 5 |
| CANGND shield | 1 |

WDGA 58E CANopen, galv. isolation, cable connection, L2 axial with 2 m cable

Description

L2 axial, shield connected to encoder housing

| Assignments | |
|----------------------|-----------|
| | L2 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | shield |

WDGA 58E CANopen, galv. isolation, cable connection, L3 radial with 2 m cable

Description

L3 radial, shield connected to encoder housing

| Assignments | |
|----------------------|-----------|
| | L3 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | shield |

Options

120 Ohm terminating resistor

Order key

The encoder WDGA 58E CANopen galv. is also available with fixed 120 Ohm terminating resistor. **AEO**

| 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 bit up to 16 bit: (e. G. 12 bit) | 12 | |
| | Multi-turn Resolution | Order key | |
| 18 | Multi-turn resolution: (examples) 18 bit = 18 43 bit = 43 no Multiturn = 00 | 18 | |
| | Data protocol | Order key | |
| CO | CANopen (galv. isolation) | CO | CO |
| | Software | Order key | |
| A | up to date release | A | A |
| | Code | Order key | |
| B | binary | B | B |
| | Power supply | Order key | |
| 0 | 10 V up to 32 V (standard) | 0 | 0 |
| | Galvanic isolation | Order key | |
| 1 | yes | 1 | 1 |
| | Electrical connections | Order key | |
| CB5 | Cable: | | |
| | axial, shield connected to encoder housing, with 2 m cable, IP67 | L2 | |
| | radial, shield connected to encoder housing, with 2 m cable, IP67 | L3 | |
| | Connector: | | |
| | sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing | CB5 | |
| | sensor-connector, M12x1, 5-pin, radial, IP67, shield connected to encoder housing | CC5 | |
| sensor-connector/female connector, 2x M12x1, 5-pin, axial, IP67, shield connected to encoder housing | DB5 | | |
| | | | |
| | Options | Order key | |
| | 120 Ohm terminating resistor | AEO | |
| | Without option | Empty | |

| | | | | | | | | | | | |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| Example Order No. | WDGA 58E | 12 | 12 | 18 | CO | A | B | 0 | 1 | CB5 | |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|

| | | | | | | | | | | | |
|----------|--|--|--|----|---|---|---|---|--|--|---------------------|
| WDGA 58E | | | | CO | A | B | 0 | 1 | | | Your encoder |
|----------|--|--|--|----|---|---|---|---|--|--|---------------------|



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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