WACHENDORFF
The Encoder Experts

Online Data sheet

# Encoder WDGA 58A CANopen galv. isolation

**www.wachendorff-automation.com/wdga58acangalv**

**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

IndustrieROBUST

# Encoder WDGA 58A absolute CANopen galv. isolation, with EnDra®- Technology

*Illustration similar*

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single-turn/Multi-turn
- Galvanic isolaltion
- 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
- High shaft load up to 220 N [22.433 kp] radial, 120 N axial [12.236 kp]

**www.wachendorff-automation.com/wdga58acangalv**

| Mechanical Data | |
|---|---|
| Flange | synchro flange |
| Flange material | aluminum |
| 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, approx. 1.416 in-ozf at ambient temperature |
| | |
| Shaft | Ø 6 mm [Ø 0.236"] |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 12 mm [0.472"] |
| Max. Permissible shaft loading radial | 125 N [12.746 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| | |
| Shaft | Ø 8 mm [Ø 0.315"] |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 19 mm [0.748"] |
| Max. Permissible shaft loading radial | 125 N [12.746 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| | |
| Shaft | Ø 10 mm [Ø 0.394"] |
| Shaft length | L: 20 mm [0.787"] |
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| | |
| Shaft | Ø 9.525 mm [Ø 3/8"] Order No: 4Z |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 20 mm [0.787"] |
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |

| Bearings | |
|---|---|
| Bearings type | 2 precision ball bearings |
| Nominale service life | 1 x 10'9 revs. at 100 % rated shaft load<br>1 x 10'10 revs. at 40 % rated shaft load<br>1 x 10'11 revs. at 20 % rated shaft load |
| Max. operating speed | 8000 rpm |

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

| Sensor data | |
|---|---|
| Single-turn technology | innovative hall sensor technology |
| Single-turn resolution | 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 and no gear. |
| Multi-turn resolution | up to 32 bit with high precision value up to 43 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<br>DIN EN 61000-6-3<br>DIN EN 61326-1 |
| Vibration:<br>(DIN EN 60068-2-6) | 50 m/s² (10 Hz up to 2000 Hz) |
| Shock:<br>(DIN EN 60068-2-27) | 5000 m/s² (6 ms) |
| Electrial Safety: | according DIN VDE 0160 |
| Turn on time: | <1,5 s |

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

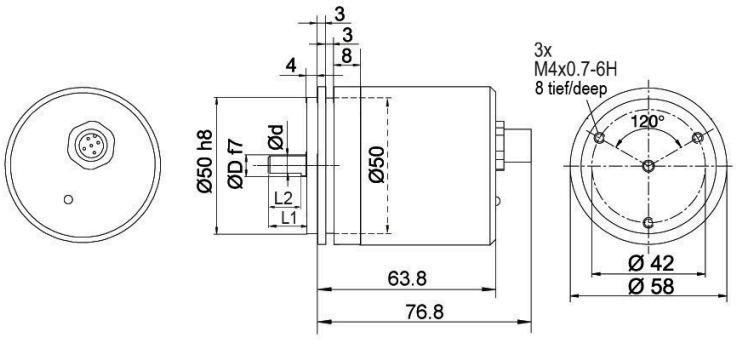
| Interface | |
|---|---|
| **Interface:** | **CAN** |

| | |
|---|---|
| Protocol: | CANopen<br>• Communication profil CiA 301<br>• 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: | **Sychronous mode:** when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.<br>**Asynchronous mode:** a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.) |

| **General Data** | |
|---|---|
| Connections | cable or connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67;<br>shaft sealed: IP65 |
| Operating temperature | -40 °C up to +85 °C<br>[-40 °F up to 185 °F] |
| Storage temperature | -40 °C up to +100 °C<br>[-40 °F up to 212 °F] |

| **More Information** |
|---|
| General technical data and safety instructions<br>**http://www.wachendorff-automation.com/gtd** |
| Options<br>**http://www.wachendorff-automation.com/acc** |

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

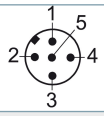



D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8“, L1 = 20, d = 8.3, L2 = 10

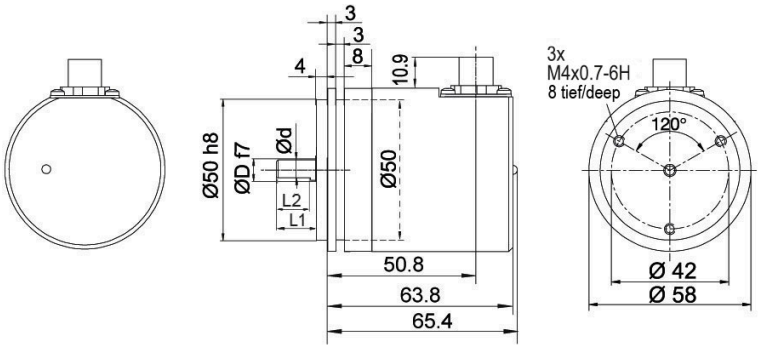
Option AIX:
D = 6, L1 = 10, d = 5.3, L2 = 8

### Description

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

| Assignments | |
|---|---|
| | **CB5** |
| |  |
| **(+) Vcc** | 2 |
| **GND** | 3 |
| **CANHigh** | 4 |
| **CANLow** | 5 |
| **CANGND shield** | 1 |

## WDGA 58A CANopen, galv. isolation, M12x1, CC5, radial, 5-pin

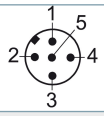



D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8“, L1 = 20, d = 8.3, L2 = 10

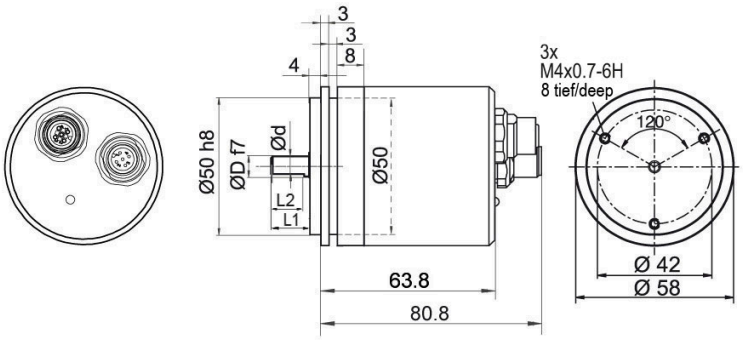
Option AIX:
D = 6, L1 = 10, d = 5.3, L2 = 8

### Description

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

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

## WDGA 58A CANopen, galv. isolation, with 2x M12x1, axial DB5

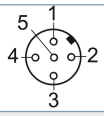



D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8“, L1 = 20, d = 8.3, L2 = 10

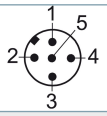
Option AIX:
D = 6, L1 = 10, d = 5.3, L2 = 8

### Description

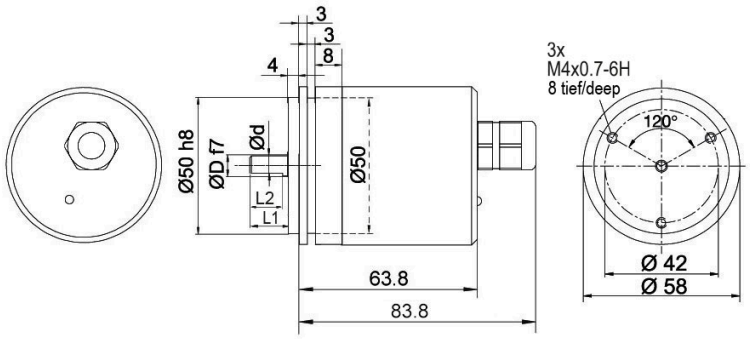
**DB5** axial, 5-pin, shield connected to encoder housing

| Assignments | |
|---|---|
| | **DB5** |
| |  |
| **Female connector** | M12x1, 5-pin |
| **(+) Vcc** | 2 |
| **GND** | 3 |
| **CANHigh** | 4 |
| **CANLow** | 5 |
| **CANGND shield** | 1 |



| Assignments | |
|---|---|
| | **DB5** |
| |  |
| **Connector** | M12x1, 5-pin |
| **(+) Vcc** | 2 |
| **GND** | 3 |
| **CANHigh** | 4 |
| **CANLow** | 5 |
| **CANGND shield** | 1 |

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




D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8“, L1 = 20, d = 8.3, L2 = 10

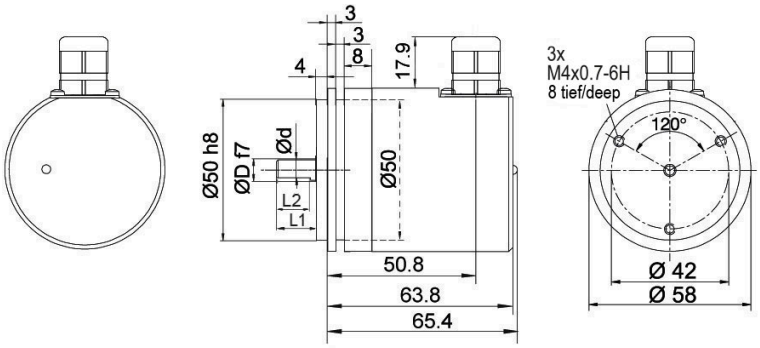
Option AIX:
D = 6, L1 = 10, d = 5.3, L2 = 8

### Description

**L2** axial, shield connected to encoder housing

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

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




D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8“, L1 = 20, d = 8.3, L2 = 10

Option AIX:
D = 6, L1 = 10, d = 5.3, L2 = 8

### Description

**L3** radial, shield connected to encoder housing

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

## Options

| Low-friction bearings | Order key |
|---|---|
| The encoder WDGA 58A CANopen galv. isolation is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50. | **AAC** |

| Shafts sealed to IP67, only with shaft Ø 10 mm | Order key |
|---|---|
| The encoder WDG 58A CANopen galv. isolation can be supplied in a full IP67 version.<br>Max. RPM: 3500 min'-1<br>Permitted Shaft-Loading: axial 100 N; radial 110 N<br>Starting-torque: approx. 4 Ncm at ambient temperature | **AAO** |

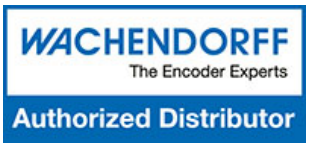
| 120 Ohm terminating resistor | Order key |
|---|---|
| The encoder WDGA 58A CANopen galv. is also available with fixed 120 Ohm terminating resistor. | **AEO** |

| Shaft length 10 mm (Ø 6 mm) | Order key |
|---|---|
| The encoder WDGA 58A CANopen galv. shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm. | **AIX** |

| Example Order No. | Type | | Your encoder |
|---|---|---|---|
| WDGA 58A | WDGA 58A | | WDGA 58A |
| | | | |
| | **Shaft** | **Order key** | |
| 06 | Ø 6 mm [Ø 0.236"] Attention: No option AAO = full IP67 version | 06 | |
| | Ø 8 mm [Ø 0.315"] Attention: No option AAO = full IP67 version | 08 | |
| | Ø 10 mm [Ø 0.394"] | 10 | |
| | Ø 9.525 mm [Ø 3/8"] Order No: 4Z Attention: No option AAO = full IP67 version | 4Z | |
| | | | |
| | **Single-turn Resolution** | **Order key** | |
| 12 | Single-turn resolution 1 bit up to 16 bit, recommended min. 6 bit (e. G. 12 bit) | 12 | |
| | | | |
| | **Multi-turn Resolution** | **Order key** | |
| 18 | Multi-turn resolution: (examples)<br>18 bit = 18<br>43 bit = 43<br>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 | L2 | |
| | radial, shield connected to encoder housing, with 2 m cable | L3 | |
| | | | |
| | **Connector:** | | |
| | sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing | CB5 | |
| | sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing | CC5 | |
| | sensor-connector/female connector, 2x M12x1, 5-pin, axial, shield connected to encoder housing | DB5 | |
| | | | |
| | | | |
| | **Options** | **Order key** | |
| | Low-friction bearings | AAC | |
| | Shafts sealed to IP67, only with shaft Ø 10 mm | AAO | |
| | 120 Ohm terminating resistor | AEO | |
| | Shaft length 10 mm (Ø 6 mm) | AIX | |
| | Without option | Empty | |

| Example Order No. | WDGA 58A | 06 | 12 | 18 | CO | A | B | 0 | 1 | CB5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|

| | WDGA 58A | | | | 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/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