

# Online Data Sheet

## Encoder WDGA 58A CANopen LIFT galv. isolation

[www.wachendorff-automation.com/wdga58acanliftgalv](http://www.wachendorff-automation.com/wdga58acanliftgalv)

### 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 58A absolute CANopen LIFT galv. isolation, magnetic, with EnDra®- Technology


**EnDra®**  
Technologie

**CANopen LIFT**

- EnDra®: maintenance-free and environmentally friendly
- CANopen LIFT, Single-turn and Multi-turn
- Galvanic isolation
- Communication Profile according to CiA 301
- Application Profile CANopen LIFT CiA 417
- Single-turn/Multi-turn (14 bit/39 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 radial, 120 N axial

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| Mechanical Data                       |                                                                                   |
|---------------------------------------|-----------------------------------------------------------------------------------|
| <b>Housing</b>                        |                                                                                   |
| Flange                                | synchro flange                                                                    |
| Flange material                       | aluminum                                                                          |
| Housing cap                           | steel case chrome-plated, magnetic shielding                                      |
| Housing                               | Ø 58 mm                                                                           |
| <b>Shaft(s)</b>                       |                                                                                   |
| Shaft material                        | stainless steel                                                                   |
| Starting torque                       | approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature |
| <b>Shaft Ø 6 mm</b>                   |                                                                                   |
| Shaft                                 | Ø 6 mm                                                                            |
| Advice                                | Attention: No option AAS = full IP67 version                                      |
| Shaft length                          | L: 12 mm                                                                          |
| Max. Permissible shaft loading radial | 125 N                                                                             |
| Max. Permissible shaft loading axial  | 120 N                                                                             |
| <b>Shaft Ø 8 mm</b>                   |                                                                                   |
| Shaft                                 | Ø 8 mm                                                                            |
| Advice                                | Attention: No option AAS = full IP67 version                                      |
| Shaft length                          | L: 19 mm                                                                          |
| Max. Permissible shaft loading radial | 125 N                                                                             |
| Max. Permissible shaft loading axial  | 120 N                                                                             |
| <b>Shaft Ø 10 mm</b>                  |                                                                                   |
| Shaft                                 | Ø 10 mm                                                                           |
| Shaft length                          | L: 20 mm                                                                          |
| Max. Permissible shaft loading radial | 220 N                                                                             |
| Max. Permissible shaft loading axial  | 120 N                                                                             |
| <b>Shaft Ø 9.525 mm, Ø 3/8"</b>       |                                                                                   |
| Shaft                                 | Ø 9.525 mm, Ø 3/8"                                                                |
| Advice                                | Attention: No option AAS = full IP67 version                                      |
| Shaft length                          | L: 20 mm, L: 0.787 in                                                             |
| Max. Permissible shaft loading radial | 220 N, 22.434 kp                                                                  |
| Max. Permissible shaft loading axial  | 120 N, 12.237 kp                                                                  |
| <b>Bearings</b>                       |                                                                                   |
| Bearings type                         | 2 precision ball bearings                                                         |

|                      |                                                                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal service life | 1 x 10 <sup>9</sup> revs. at 100 % rated shaft load<br>1 x 10 <sup>10</sup> revs. at 40 % rated shaft load<br>1 x 10 <sup>11</sup> 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                         |

| Sensor data                 |                                                                           |
|-----------------------------|---------------------------------------------------------------------------|
| Single-turn technology      | innovative hall sensor technology                                         |
| Single-turn resolution      | 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 262,144 revolution (18 bit) with high precision value 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<br>DIN EN 61000-6-3      |
| Vibration: (DIN EN 60068-2-6) | 50 m/s <sup>2</sup> (10 Hz up to 2000 Hz) |
| Shock: (DIN EN 60068-2-27)    | 1000 m/s <sup>2</sup> (6 ms)              |
| Design:                       | according DIN VDE 0160                    |
| Turn on time:                 | <1,5 s                                    |

| Interface         |                                                                                                                                                                                                                                  |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interface:</b> | <b>CAN</b>                                                                                                                                                                                                                       |
| Protocol:         | CANopen <ul style="list-style-type: none"> <li>• Communication profil CiA 301</li> <li>• Application Profile CANopen LIFT CiA 417 V2.0</li> <li>• Up to three virtual devices <i>car position unit (configurable)</i></li> </ul> |
| Node number:      | 1 up to 127 (default 4)                                                                                                                                                                                                          |
| 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: | <b>Synchronous mode:</b><br>when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.<br><b>Asynchronous mode:</b><br>a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.) |

#### General Data

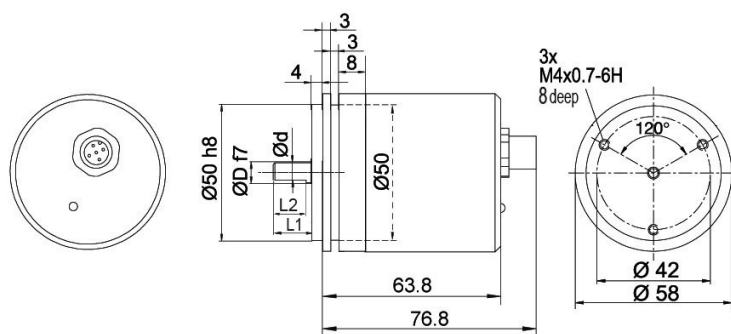
|                              |                                            |
|------------------------------|--------------------------------------------|
| Connections                  | connector outlet                           |
| Protection rating (EN 60529) | IP67, shaft sealed to IP65                 |
| 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 58A CANopen LIFT, galv. isolation, with M12x1, axial CB5, 5-pin**



D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
D = 10, L1 = 20 shaft with out flat\*  
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

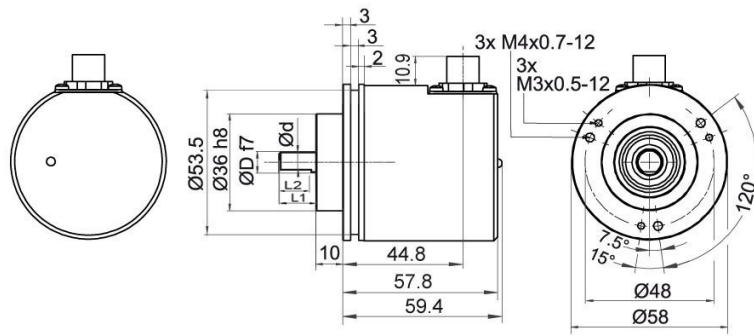
\* Option full IP67 version: (only D = Ø 10 mm)  
D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

**WDGA 58A CANopen LIFT, galv. isolation, with M12x1, CC5, radial, 5-pin**



D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
D = 10, L1 = 20 shaft with out flat\*  
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

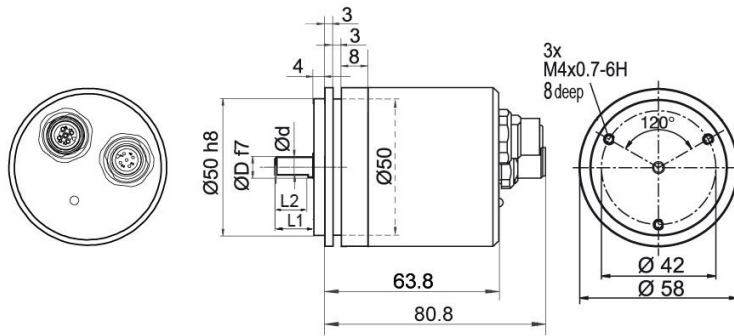
\* Option full IP67 version: (only D = Ø 10 mm)  
D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

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



|           |          |          |         |                      |
|-----------|----------|----------|---------|----------------------|
| D = 6,    | L1 = 12, | d = 5.3, | L2 = 10 | shaft with flat      |
| D = 8,    | L1 = 19, | d = 7.5, | L2 = 15 | shaft with flat      |
| D = 10,   | L1 = 20  |          |         | shaft with out flat* |
| D = 3/8", | L1 = 20, | d = 8.3, | L2 = 10 | shaft with flat      |

\* Option full IP67 version: (only D = Ø 10 mm)

D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

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

## Options

### Shafts sealed to IP67, only with 10 mm shaft with flat

### Order key

The encoder WDG 58A CANopen LIFT galv. isolation can be supplied in a full IP67 version. **AAS**

Max. RPM: 3500 min<sup>-1</sup>

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

### 120 Ohm terminating resistor

### Order key

The encoder WDGA 58A CANopen LIFT galv. is also available with fixed 120 Ohm terminating resistor.

**AEO**

| Example Order No. | Type                                                                                                 | Your encoder     |  |
|-------------------|------------------------------------------------------------------------------------------------------|------------------|--|
| WDGA 58A          | WDGA 58A                                                                                             | WDGA 58A         |  |
|                   | <b>Shaft</b>                                                                                         | <b>Order key</b> |  |
| 06                | Ø 6 mm Attention: No option AAS = full IP67 version                                                  | 06               |  |
|                   | Ø 8 mm Attention: No option AAS = full IP67 version                                                  | 08               |  |
|                   | Ø 10 mm                                                                                              | 10               |  |
|                   | Ø 9.525 mm Ø 3/8" Attention: No option AAS = full IP67 version                                       | 4Z               |  |
|                   | <b>Single-turn Resolution</b>                                                                        | <b>Order key</b> |  |
| 12                | Single-turn resolution 1 bit up to 14 bit: (e. G. 12 bit)                                            | 12               |  |
|                   | <b>Multi-turn Resolution</b>                                                                         | <b>Order key</b> |  |
| 18                | Multi-turn resolution 18 bit                                                                         | 18               |  |
|                   | <b>Data protocol</b>                                                                                 | <b>Order key</b> |  |
| CL                | CANopen LIFT (galv. isolation)                                                                       | CL               |  |
|                   | <b>Software</b>                                                                                      | <b>Order key</b> |  |
| A                 | up to date release                                                                                   | A                |  |
|                   | <b>Code</b>                                                                                          | <b>Order key</b> |  |
| B                 | binary                                                                                               | B                |  |
|                   | <b>Power supply</b>                                                                                  | <b>Order key</b> |  |
| 0                 | 10 V up to 32 V (standard)                                                                           | 0                |  |
|                   | <b>Galvanic isolation</b>                                                                            | <b>Order key</b> |  |
| 1                 | yes                                                                                                  | 1                |  |
|                   | <b>Electrical connections</b>                                                                        | <b>Order key</b> |  |
| CB5               | <b>Connector:</b>                                                                                    |                  |  |
|                   | 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              |  |
|                   | <b>Options</b>                                                                                       | <b>Order key</b> |  |
|                   | Without option                                                                                       | Empty            |  |
|                   | Shafts sealed to IP67, only with 10 mm shaft with flat                                               | AAS              |  |
|                   | 120 Ohm terminating resistor                                                                         | AEO              |  |

|                          |          |    |    |    |    |   |   |   |   |     |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| <b>Example Order No.</b> | WDGA 58A | 06 | 12 | 18 | CL | A | B | 0 | 1 | CB5 |  |
|--------------------------|----------|----|----|----|----|---|---|---|---|-----|--|

|          |  |  |  |  |  |  |  |  |  |  |                          |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|
| WDGA 58A |  |  |  |  |  |  |  |  |  |  | <b>Example Order No.</b> |
|----------|--|--|--|--|--|--|--|--|--|--|--------------------------|



For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
[http://www.wachendorff-automation.com/distributors\\_worldwide.html](http://www.wachendorff-automation.com/distributors_worldwide.html)



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