



# Online Data Sheet

## Encoder WDGA 58A CANopen galv. isolation

[www.wachendorff-automation.com/wdga58acangalv](http://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

# Encoder WDGA 58A 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
- 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

Nominale service life	1 x 10 <sup>9</sup> revs. at 100 % rated shaft load 1 x 10 <sup>10</sup> revs. at 40 % rated shaft load 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	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	
<b>Environmental data:</b>	
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 <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>• Device Profile for encoder CiA 406 V3.2 class C2</li> </ul>
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.
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Programmable CAN transmission modes:	<p><b>Synchronous mode:</b> when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.</p> <p><b>Asynchronous mode:</b> a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)</p>
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#### General Data

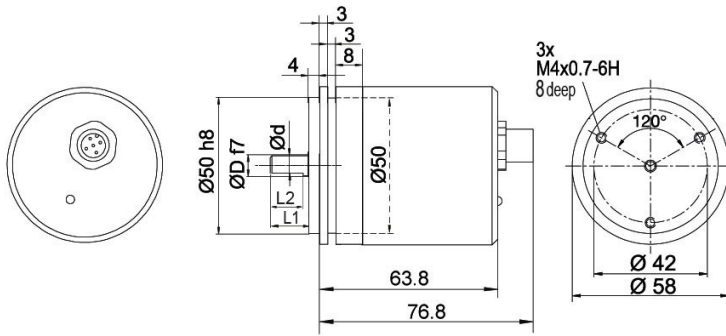
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

#### More Information

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

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

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

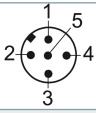


- D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
- D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat
- D = 10, L1 = 20 shaft with out flat\*
- D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

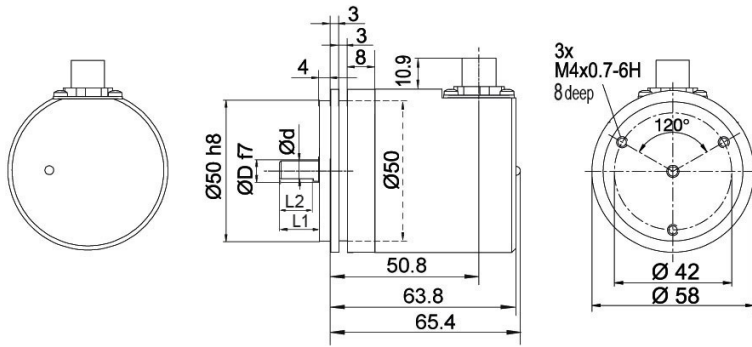
\* Option full IP67 version: (only D = Ø 10 mm)  
 D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

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

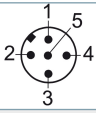


D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
 D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
 D = 10, L1 = 20 shaft with out flat\*  
 D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

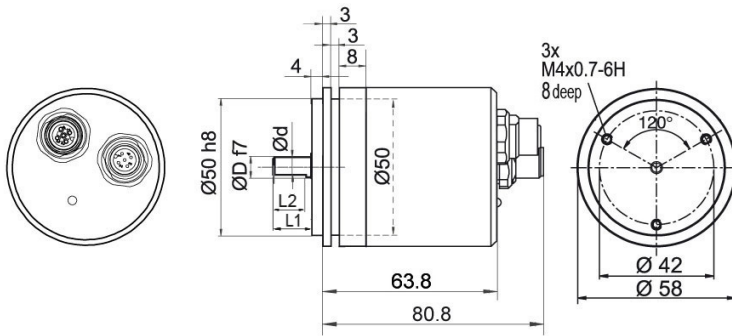
\* Option full IP67 version: (only D = Ø 10 mm)  
 D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

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

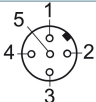


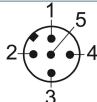
- D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
- D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat
- D = 10, L1 = 20 shaft with out flat\*
- D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

\* 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 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 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 16 bit: (e. G. 12 bit)	12
	<b>Multi-turn Resolution</b>	<b>Order key</b>
18	Multi-turn resolution: (examples) 18 bit = 18 43 bit = 43 no Multiturn = 00	18
	<b>Data protocol</b>	<b>Order key</b>
CO	CANopen (galv. isolation)	CO
	<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	CO	A	B	0	1	CB5	
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WDGA 58A											<b>Example Order No.</b>
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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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