

# Online Data Sheet

## Encoder WDGA 58A CANopen

[www.wachendorff-automation.com/wdga58acan](http://www.wachendorff-automation.com/wdga58acan)

### 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 magnetic, with EnDra®-Technology



**EnDra®**  
Technologie

**CANopen®**

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single- and Multiturn
- Communication Profile according to CiA 301
- Device Profile for encoder CiA 406 V3.2 class C2
- Single-/Multiturn (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

Housing	
Flange	synchro flange
Flange material	aluminium
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
Cam mounting	pitch 65 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N

Bearings	
Bearings type	2 precision ball bearings
Nominal 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

## Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	1000 a
Mission time (TM)	20 a
Nominal service life (L10h)	1 x 10 <sup>11</sup> revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

## Electrical Data

Power supply/Current consumption	10 VDC up to 32 VDC: max. 50 mA
Power consumption	max. 0.5 W

## Sensor data

Singleturn technology	innovative hall sensor technology
Singleturn resolution	16,384 steps/360° (14 bit)
Singleturn accuracy	< ±0.35°
Singleturn repeat accuracy	< ±0.20°
Intern cycle time	600 µs
Multiturn technology	patented EnDra® technology no battery and no gear.
Multiturn resolution	up to 262,144 revolutions (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 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

Interface:	CAN
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:	10 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:

**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.)

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#### General Data

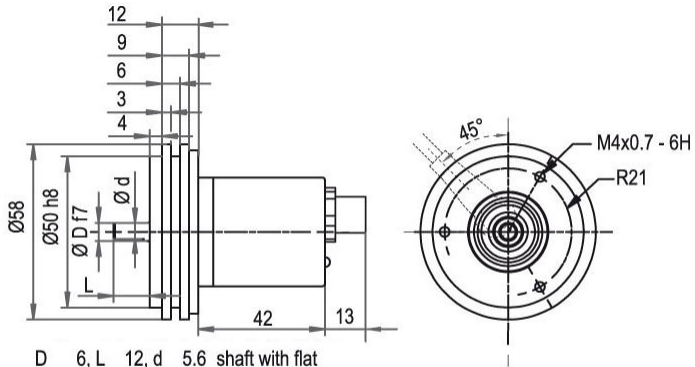
Weight	approx. 224 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

#### More Information

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

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

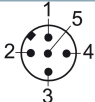
## Connector, M12x1 CB5, 5-pin



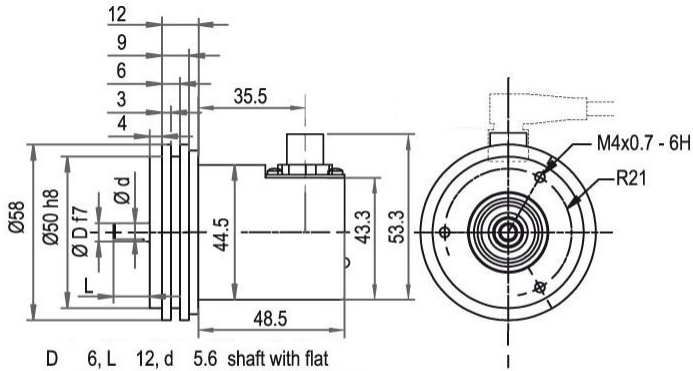
D = 6, L = 12, d = 5.6 shaft with flat  
 D = 10, L = 20, d = 10 shaft without flat \*  
 \*option full IP67 version: D=Ø 10 mm)  
 D = 10, L = 20, d = 9 shaft with flat

### 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

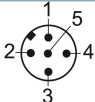
**Connector, M12x1 CC5, 5-pin**



D = 6, L = 12, d = 5.6 shaft with flat  
 D = 10, L = 20, d = 10 shaft without flat \*  
 \*option full IP67 version: D=Ø 10 mm)  
 D = 10, L = 20, d = 9 shaft with flat

**Description**

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

Assignments	
	<b>CC5</b> 
<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 (shaft with flat: Ø 10 mm only)

### Order key

The encoder WDG 58A CANopen 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

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Example Order No.	Type	Your encoder
WDGA 58A	WDGA 58A	WDGA 58A
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm	06
	Ø 10 mm	10
	<b>Singleturn Resolution</b>	<b>Order key</b>
12	Singleturn resolution 1 Bit up to 14 Bit: (e. G. 12 Bit)	12
	<b>Multiturn Resolution</b>	<b>Order key</b>
18	Multiturn-resolution: (examples) 18 bit = 18 39 bit = 39 no Multiturn = 00	18
	<b>Data protocol</b>	<b>Order key</b>
CO	CANopen	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>
0	no	0
	<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
	<b>Options</b>	<b>Order key</b>
	Without option	Empty
	Shafts sealed to IP67 (shaft with flat: Ø 10 mm only)	AAS

<b>Example Order No.</b>	WDGA 58A	06	12	18	CO	A	B	0	0	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.  
[http://www.wachendorff-automation.com/distributors\\_worldwide.html](http://www.wachendorff-automation.com/distributors_worldwide.html)



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