



# Online Data Sheet

## Encoder WDGA 58E CANopen

[www.wachendorff-automation.com/wdga58ecan](http://www.wachendorff-automation.com/wdga58ecan)

### 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 magnetic, with EnDra®-Technology


**EnDra®**  
 Technologie

**CANopen®**

- EnDra® multiturn technology: maintenance-free and environmentally friendly
- CANopen, Single-turn/Multi-turn
- 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

[www.wachendorff-automation.com/wdga58ecan](http://www.wachendorff-automation.com/wdga58ecan)

## Mechanical Data

Housing	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	Aluminum die cast, powder coated; Integrated magnetic shielding
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ±0.8 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGDS10005
- Compensation	axial: ±0.5 mm, radial: ±1.5 mm, Max. operating speed: 3000 rpm
Housing	Ø 58 mm

## Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 12 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

## Bearings

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	6000 rpm

## Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	1000 a
Mission time (TM)	20 a
Nominale service life (L10h)	1 x 10 <sup>11</sup> revs. at 20 % rated shaft load and 6000 rpm
Diagnostic coverage (DC)	0 %

## Electrical Data

Power supply/Current consumption	10 VDC up to 32 VDC: typ. 50 mA
Power consumption	max. 0.5 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
Vibration: (DIN EN 60068-2-6)	300 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.

---

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

---

#### More Information

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

---

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

---



Example Order No.	Type	Your encoder	
WDGA 58E	WDGA 58E	WDGA 58E	
<b>Shaft</b>			
12	Ø 12 mm	12	12
<b>Single-turn Resolution</b>			
12	Single-turn resolution 1 bit up to 16 bit: (e. G. 12 bit)	12	12
<b>Multi-turn Resolution</b>			
13	Multi-turn resolution: (examples) 18 bit = 18 43 bit = 43 no Multiturn = 00	13	13
<b>Data protocol</b>			
CO	CANopen	CO	CO
<b>Software</b>			
A	up to date release	A	A
<b>Code</b>			
B	binary	B	B
<b>Power supply</b>			
0	10 V up to 32 V (standard)	0	0
<b>Galvanic isolation</b>			
0	no	0	0
<b>Electrical connections</b>			
CC5	<b>Connector:</b>	CC5	CC5
	sensor-connector, M12x1, 5-pin, radial, IP67, shield connected to encoder housing		

<b>Example Order No.</b>	WDGA 58E	12	12	13	CO	A	B	0	0	CC5	
--------------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58E	12	12	13	CO	A	B	0	0	CC5		<b>Your encoder</b>
----------	----	----	----	----	---	---	---	---	-----	--	---------------------



For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
<https://www.wachendorff-automation.com/>



Wachendorff Automation GmbH & Co. KG  
Industriestrasse 7 • 65366 Geisenheim  
Germany

Phone: +49 67 22 / 99 65 25  
Fax: +49 67 22 / 99 65 70  
E-Mail: [wdg@wachendorff.de](mailto:wdg@wachendorff.de)  
[www.wachendorff-automation.de](http://www.wachendorff-automation.de)

