

# 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 (14 bit / 39 bit)
- Forward-looking technology with 32 Bit processor

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Mechanical Data	
<b>Housing</b>	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, 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
<b>Shaft(s)</b>	
Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 6 mm
Advice	with adapter sleeve
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
Shaft	Ø 6.35 mm
Advice	with adapter sleeve
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
Shaft	Ø 7 mm
Advice	with adapter sleeve
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
Shaft	Ø 8 mm
Advice	with adapter sleeve
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
Shaft	Ø 9.525 mm, Ø 3/8"
Advice	with adapter sleeve
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
Shaft	Ø 10 mm
Advice	with adapter sleeve
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
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
Shaft	Ø 14 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
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#### 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	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 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

<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:	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

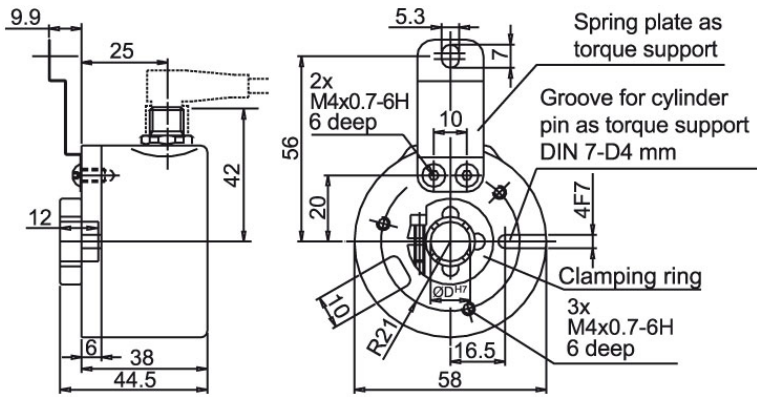
Weight	approx. 220 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

#### More Information

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

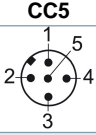
Options  
<http://www.wachendorff-automation.com/acc>

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



**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

Example Order No.	Type	Your encoder
WDGA 58E	WDGA 58E	WDGA 58E
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm with adapter sleeve	06
	Ø 6.35 mm with adapter sleeve	2Z
	Ø 7 mm with adapter sleeve	07
	Ø 8 mm with adapter sleeve	08
	Ø 9.525 mm Ø 3/8" with adapter sleeve	4Z
	Ø 10 mm with adapter sleeve	10
	Ø 12 mm	12
	Ø 14 mm	14
	<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: (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>
CC5	<b>Connector:</b> sensor-connector, M12x1, 5-pin, radial, IP67, shield connected to encoder housing	CC5

<b>Example Order No.</b>	WDGA 58E	06	12	18	CO	A	B	0	0	CC5
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WDGA 58E										<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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