



# Online Data sheet

## Encoder WDGA 58E CANopen galv. isolation

[www.wachendorff-automation.com/wdga58ecangalv](http://www.wachendorff-automation.com/wdga58ecangalv)

### 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, galv. isolation, 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

[www.wachendorff-automation.com/wdga58ecangalv](http://www.wachendorff-automation.com/wdga58ecangalv)

Illustration similar

Mechanical Data	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	steel case chrome-plated, magnetic shielding
Torque supports	incl. 1 torque support WDGDS10019
- 1. Spring plate compensation	axial: ±1.2 mm [0.0472"], radial: ±0.2 mm [0.0079"]
- Max. operating speed	6000 rpm up to max. protection rating +80 °C
Flange diameter	Ø 58 mm [Ø 2.283"]
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm [2.266 in-ozf] at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 6 mm [Ø 0.236"]
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 6.35 mm [Ø 1/4"] Order No: 2Z
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 7 mm [Ø 0.276"]
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 8 mm [Ø 0.315"]
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 10 mm [Ø 0.394"]
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12 mm [Ø 0.472"]
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12.7 mm [Ø 1/2"] Order No. 3Z
Advice	with adapter sleeve
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 14 mm [Ø 0.551"]
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 15 mm [Ø 0.591"]
Shaft length	L: 17 mm [0.669"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	19 mm [0.748"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

#### 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	6000 rpm

#### Electrical Data

Power supply/Current consumption	10 VDC up to 32 VDC: typ. 100 mA
Power consumption	max. 1 W
Operating principle	magnetic

#### Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	65,536 steps/360° (16 bit)
Single-turn accuracy	± 0.0878° ( 12 bit)
Single-turn repeat accuracy	± 0.0878° ( 12 bit)
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

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 DIN EN 61326-1
Vibration: (DIN EN 60068-2-6)	50 m/s <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s <sup>2</sup> (6 ms)
Electrical Safety:	according DIN VDE 0160
Turn on time:	<1,5 s

#### Duty information

Customs tariff number:	90318020
Country of origin:	Germany

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.
Programmable CAN transmission modes:	<b>Synchronous mode:</b> when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently. <b>Asynchronous mode:</b> a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)

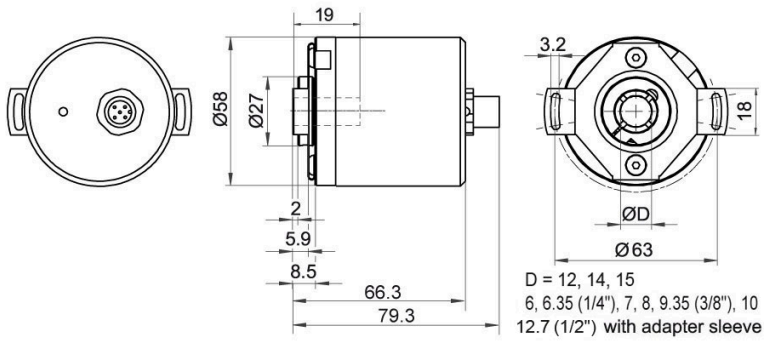
#### General Data

Weight	approx. 410 g [14.462 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C [-40 °F up to 185 °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 58E CANopen galv. isolation with M12x1, axial CB5, 5-pin**

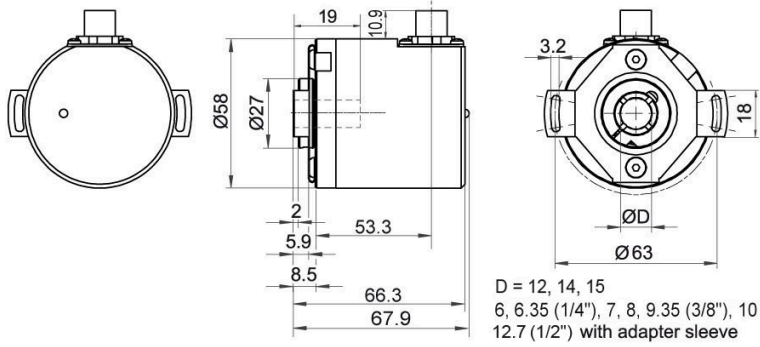


**Description**

**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 58E CANopen galv. isolation with M12x1, radial CC5, 5-pin**

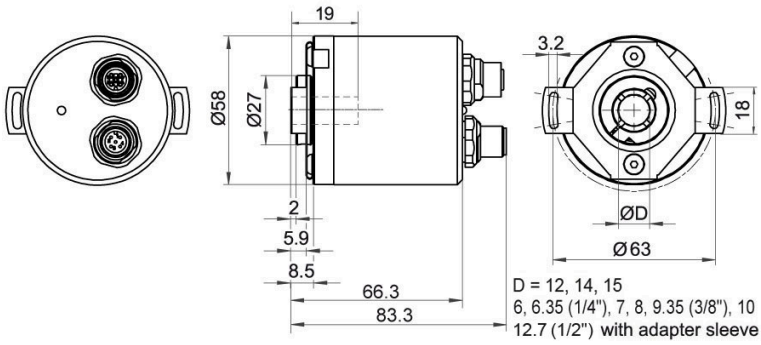


**Description**

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

Assignments	
	<p><b>CC5</b></p>
<b>(+) Vcc</b>	2
<b>GND</b>	3
<b>CANHigh</b>	4
<b>CANLow</b>	5
<b>CANGND shield</b>	1

**WDGA 58E CANopen galv. isolation with 2x M12x1, axial DB5, 5-pin**



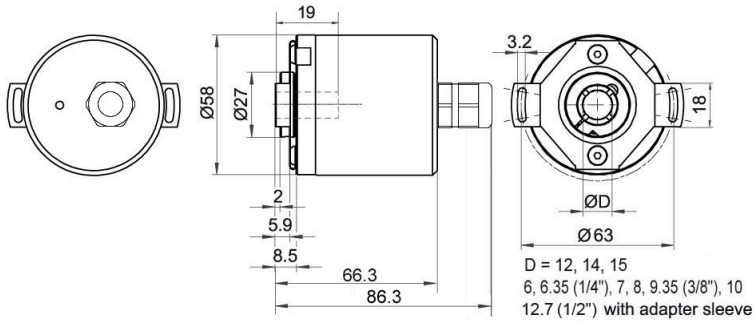
**Description**

**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

**WDGA 58E CANopen, galv. isolation, cable connection, L2 axial with 2 m cable**

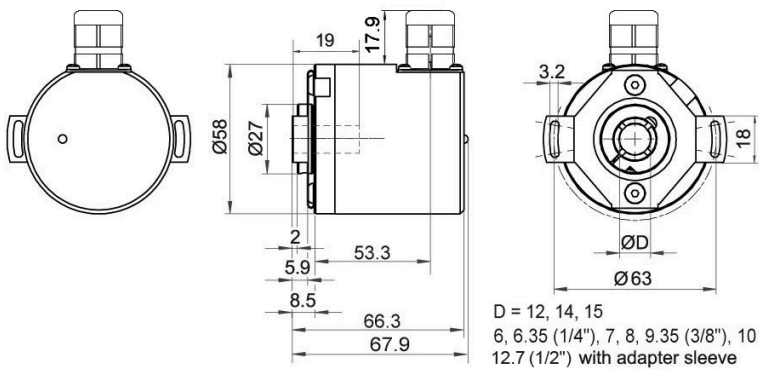


**Description**

**L2** axial, shield connected to encoder housing

Assignments	
	<b>L2</b>
<b>(+) Vcc</b>	BN
<b>GND</b>	WH
<b>CANHigh</b>	GN
<b>CANLow</b>	YE
<b>CANGND</b>	shield
<b>shield</b>	

**WDGA 58E CANopen, galv. isolation, cable connection, L3 radial with 2 m cable**



**Description**

**L3** radial, shield connected to encoder housing

Assignments	
	<b>L3</b>
<b>(+) Vcc</b>	BN
<b>GND</b>	WH
<b>CANHigh</b>	GN
<b>CANLow</b>	YE
<b>CANGND shield</b>	shield

**Options****Low-friction bearings****Order key**

The encoder WDGA 58E CANopen galv. isolation is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to approx. 0.6 Ncm [0.85 in-ozf] at ambient temperature and the protection class at the shaft input to IP50.

**AAC****120 Ohm terminating resistor****Order key**

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

**AEO**

Example Order No.	Type	Your encoder	
WDGA 58E	WDGA 58E	WDGA 58E	
	<b>Shaft</b>	<b>Order key</b>	
12	Ø 6 mm [Ø 0.236"] with adapter sleeve	06	
	Ø 6.35 mm [Ø 1/4"] Order No: 2Z with adapter sleeve	2Z	
	Ø 7 mm [Ø 0.276"] with adapter sleeve	07	
	Ø 8 mm [Ø 0.315"] with adapter sleeve	08	
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z with adapter sleeve	4Z	
	Ø 10 mm [Ø 0.394"] with adapter sleeve	10	
	Ø 12 mm [Ø 0.472"]	12	
	Ø 12.7 mm [Ø 1/2"] Order No. 3Z with adapter sleeve	3Z	
	Ø 14 mm [Ø 0.551"]	14	
	Ø 15 mm [Ø 0.591"]	15	
	<b>Single-turn Resolution</b>	<b>Order key</b>	
12	Single-turn resolution 1 bit up to 16 bit, recommended min. 6 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>Cable:</b>		
	axial, shield connected to encoder housing, with 2 m cable	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
	<b>Connector:</b>		
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	CB5	
	sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	CC5	
sensor-connector/female connector, 2x M12x1, 5-pin, axial, shield connected to encoder housing	DB5		
	<b>Options</b>	<b>Order key</b>	
	Without option	Empty	
	Low-friction bearings	AAC	
	120 Ohm terminating resistor	AEO	

<b>Example Order No.</b>	WDGA 58E	12	12	18	CO	A	B	0	1	CB5	
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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.  
<https://www.wachendorff-automation.com/contact-en/wachendorff-world-wide/>

# WACHENDORFF

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