



# Online Data Sheet

## Encoder WDGA 58E EtherCAT (cov)

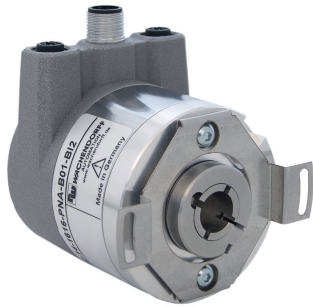
[www.wachendorff-automation.com/wdga58eeeb](http://www.wachendorff-automation.com/wdga58eeeb)

### 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 EtherCAT magnetic, with EnDra®- Technology



**EnDra®**  
Technologie

**EtherCAT®**  
Conformance tested

- EnDra®: maintenance-free and environmentally friendly
- EtherCAT, Single-turn/Multi-turn
- Compact design with buscover
- Single-turn/Multi-turn (max. 16 bit/43 bit)
- Forward-looking technology
- 2 colour-duo LED's as indicator for operating condition and bus status and 2 L/A LED's
- High shaft load up to 80 N radial, 50 N axial
- CoE, FoE, EoE

[www.wachendorff-automation.com/wdga58eech](http://www.wachendorff-automation.com/wdga58eech)

Mechanical Data	
<b>Housing</b>	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Connection cover	die cast aluminum, powder coated
Torque supports	incl. 1 torque support WDGDS10019
- 1. Spring plate compensation	axial: ±1.2 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +80 °C
Housing	Ø 58 mm
<b>Shaft(s)</b>	
Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature, approx. 2.226 in-ozf at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 6.35 mm, Ø 1/4"
Advice	with adapter sleeve
Shaft length	L: 17 mm, L: 0.669 in
Insertion depth min.	10 mm, 0.394 in
Insertion depth max.	19 mm, 0.748 in
Max. Permissible shaft loading radial	80 N, 8.158 kp
Max. Permissible shaft loading axial	50 N, 5.099 kp
Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 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: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 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: 17 mm, L: 0.669 in
Insertion depth min.	10 mm, 0.394 in
Insertion depth max.	19 mm, 0.748 in
Max. Permissible shaft loading radial	80 N, 8.158 kp
Max. Permissible shaft loading axial	50 N, 5.099 kp
Shaft	Ø 10 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 12 mm
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 14 mm
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N
Shaft	Ø 15 mm
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 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	6000 rpm

#### Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	300 a
Mission time (TM)	20 a
Nominal 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. 125 mA
Power consumption	typ. 3 W

#### Sensor data

Single-turn technology	innovativ hall sensor technology
Single-turn resolution	up to 65,536 steps/360° (16 bit)
Single-turn accuracy	± 0.0878° ( 12 bit)
Single-turn repeat accuracy	± 0.0878° ( 12 bit)
Internal cycle time	50 µs
Multi-turn technology	patented EnDra® technology no battery and no gear.
Multi-turn resolution	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)	200 m/s <sup>2</sup> (10 Hz up to 1000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s <sup>2</sup> (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

#### Interface

<b>Interface:</b>	<b>Industrial Ethernet</b>
Protocol:	EtherCAT
Device Profile:	CiA DS-406 V4.0.2, Class 3
Data Transfer:	100BASE-TX
Cycle time:	up to 50 µs

Function:	Multiturn
Code:	binary, CW default, programable
Programmable Parameter:	steps per revolution counts of revolution preset scale counting direction 2x 8 cam switches DC-Mode
Diagnostics: (LED)	Traffic and connection management: L/A1: Port 1 (IN) L/A2: Port 2 (OUT)
Status LED:	STAT, MOD: status of encoder and bus

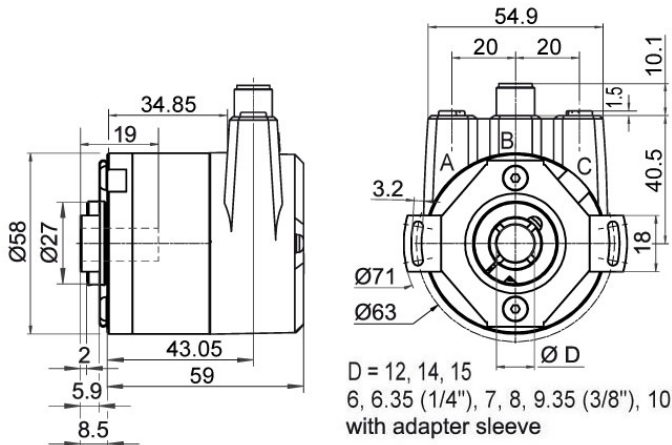
#### General Data

Weight	approx. 410 g, approx. 14.462 oz
Connections	bus cover
Protection rating (EN 60529)	IP65 all around
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>

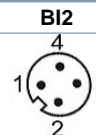
**WDGA 58E, EtherCAT, BI2, bus cover with 3x M12x1**




**Description**

**BI2** Bus cover with 3x M12x1

Assignments	
	
<b>Female connector (Port1) IN</b>	M12x1, 4-pin, D-coded
<b>Tx+</b>	1
<b>Rx+</b>	2
<b>Tx-</b>	3
<b>Rx-</b>	4

Assignments	
	
<b>connector (Power)</b>	M12x1, 4-pin, A-coded
<b>(+) Vcc</b>	1
<b>n. c.</b>	2
<b>GND</b>	3
<b>n. c.</b>	4

Assignments	
	
<b>Female connector (Port2) OUT</b>	M12x1, 4-pin, D-coded
<b>Tx+</b>	1
<b>Rx+</b>	2
<b>Tx-</b>	3
<b>Rx-</b>	4

Example Order No.	Type	Your encoder
WDGA 58E	WDGA 58E	WDGA 58E
	<b>Shaft</b>	<b>Order key</b>
12	Ø 6 mm with adapter sleeve	06
	Ø 6.35 mm Ø 1/4" 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
	Ø 15 mm	15
	<b>Single-turn Resolution</b>	<b>Order key</b>
13	Single-turn resolution 1 up to 16 bit, e. g. 12 bit = 12	12
	<b>Multi-turn Resolution</b>	<b>Order key</b>
12	Multi-turn 18 bit: e. G. 18 bit = 18 e. G. 39 bit = 39	18
	<b>Data protocol</b>	<b>Order key</b>
EC	EtherCAT (with bus cover)	EC
	<b>Software</b>	<b>Order key</b>
U	up to date release	U
	<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>
BI2	<b>Connection cover:</b>	
	Bus cover with 3x M12x1	BI2

<b>Example Order No.</b>	WDGA 58E	12	13	12	EC	U	B	0	1	BI2
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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/>



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