



# Online Data Sheet

## Encoder WDGA 58A EtherCAT (cov)

[www.wachendorff-automation.com/wdga58aecn](http://www.wachendorff-automation.com/wdga58aecn)

### 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 EtherCAT magnetic, with bus cover and with EnDra®- Technologie



**EtherCAT®**  
Conformance tested

**EnDra®**  
Technologie

- EnDra®: maintenance-free and environmentally friendly
- EtherCAT, Single-/Multiturn
- Compact design with bus cover
- 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 220 N radial, 120 N axial
- CoE, FoE, EoE

[www.wachendorff-automation.com/wdga58aecb](http://www.wachendorff-automation.com/wdga58aecb)

Mechanical Data	
<b>Housing</b>	
Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Connection cover	die cast aluminum, powder coated
Housing	Ø 58 mm
<b>Shaft(s)</b>	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature
Shaft	Ø 6 mm
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft	Ø 8 mm
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 19 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
Shaft	Ø 9.525 mm, Ø 3/8"
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 20 mm, L: 0.787 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp
<b>Bearings</b>	

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	8000 rpm

Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	300 a
Mission time (TM)	20 a
Nominale 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: 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

Integrated web server:	
Configurable	IP address Subnet mask Gateway address
Readable	Encoder parameters
Update	Firmware

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

#### Duty information

Customs tariff number:	90318020
Country of origin:	Germany

#### 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

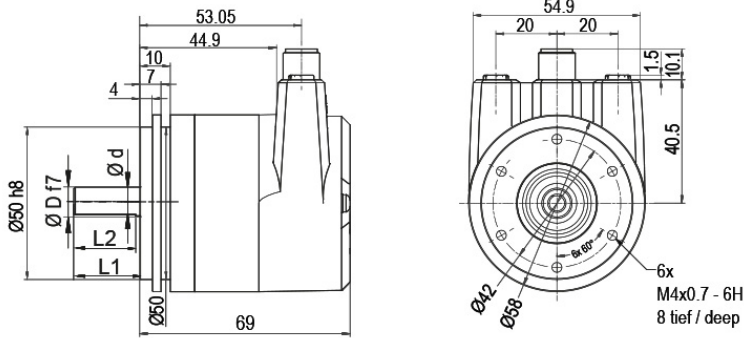
Weight	approx. 700 g, approx. 24.7 oz
Connections	bus cover
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

#### More Information

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

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

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




D = 6, L1 = 12, d = 5.3, L2 = 10  
 D = 8, L1 = 19, d = 7.5, L2 = 15  
 D = 10, L1 = 20, d = 9, L2 = 15  
 D = 3/8", L1 = 20, d = 8.3, L2 = 10


**Option AIX:**


D = 6, L1 = 10, d = 5.3, L2 = 8

**Description**

**BI2** Bus cover with 3x M12x1

Assignments	
	<b>BI2</b> 
<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>BI2</b> 
<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>BI2</b> 
<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

## Options

### Shafts sealed to IP67, only with shaft Ø 10 mm

### Order key

The encoder WDGA 58A EtherCAT (con) can be supplied in a full IP67 version.

**AAO**

Max. RPM: 3500 min<sup>-1</sup>

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

### Shaft length 10 mm (Ø 6 mm)

### Order key

The encoder WDGA 58A EtherCAT shaft: Ø 6 mm is also available with a shortened shaft L **AIX**  
= 10 mm.

Example Order No.	Type	Your encoder
WDGA 58A	WDGA 58A	WDGA 58A
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm Attention: No option AAO = full IP67 version	06
	Ø 8 mm Attention: No option AAO = full IP67 version	08
	Ø 10 mm	10
	Ø 9.525 mm Ø 3/8" Attention: No option AAO = full IP67 version	4Z
	<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>Options</b>	<b>Order key</b>
	Without option	Empty
	Shafts sealed to IP67, only with shaft Ø 10 mm	AAO
	Shaft length 10 mm (Ø 6 mm)	AIX

<b>Example Order No.</b>	WDGA 58A	06	13	12	EC	U	B	0	1	BI2	
--------------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58A											<b>Example Order No.</b>
----------	--	--	--	--	--	--	--	--	--	--	--------------------------



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



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

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

