



# Online Data sheet

## Encoder WDGA 58F EtherCAT (cov)

[www.wachendorff-automation.com/wdga58fecb](http://www.wachendorff-automation.com/wdga58fecb)

### 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 58F absolute EtherCAT magnetic, with bus cover and with EnDra®- Technology, 'extremely' compact



**EnDra®**  
Technologie

**EtherCAT®**  
Conformance tested

- EnDra®: maintenance-free and environmentally friendly
- EtherCAT, Single-turn/Multi-turn
- 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 60 N radial, 50 N axial
- CoE, FoE, EoE

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## Mechanical Data

Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Connection cover	die cast aluminum, powder coated
Housing	Ø 58 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	60 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 8 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	60 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	60 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 9.525 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	60 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	8000 rpm
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## 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
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Country of origin:	Germany
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### 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

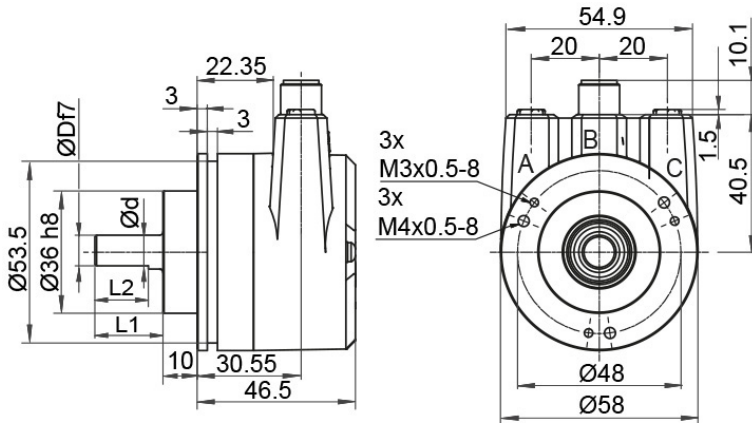
### General Data

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	<a href="http://www.wachendorff-automation.com/gtd">http://www.wachendorff-automation.com/gtd</a>
Options	<a href="http://www.wachendorff-automation.com/acc">http://www.wachendorff-automation.com/acc</a>

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



- D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
- D = 8, L1 = 20, d = 7.5, L2 = 15 shaft with flat
- D = 10, L1 = 20 shaft with out flat
- D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

**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

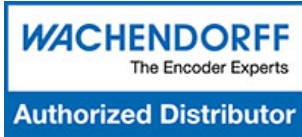
Assignments	
	<b>BI2</b> 
<b>connector (Power)</b>	M12x1, 4-pin, A-coded
<b>(+) Vcc</b>	1
<b>n. c.</b>	2
<b>GND</b>	3
<b>n. c.</b>	4

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

Example Order No.	Type	Your encoder
WDGA 58F	WDGA 58F	WDGA 58F
	<b>Shaft</b>	<b>Order key</b>
10	Ø 6 mm	06
	Ø 8 mm	08
	Ø 10 mm	10
	Ø 9.525 mm	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>Example Order No.</b>	WDGA 58F	10	13	12	EC	U	B	0	1	BI2
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WDGA 58F											<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-sales-en/>

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