



# Online Data sheet

## Encoder WDGA 58E Universal IE (cov)

[www.wachendorff-automation.com/wdga58euie](http://www.wachendorff-automation.com/wdga58euie)

### **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 Universal IE, with EnDra®- Technology

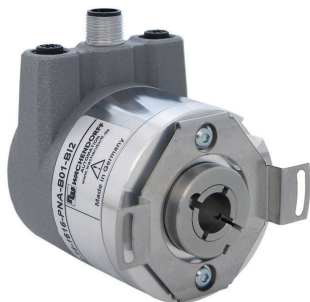


Illustration similar

**EnDra®**  
Technologie

**Universal-IE**  
Industrial Ethernet

- EnDra®: maintenance-free and environmentally friendly
- Universal IE, 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 [8.157 kp] radial, 50 N [5.098 kp] axial

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## Mechanical Data

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	die cast aluminum, powder coated
Intermediate piece	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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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: 12 mm [0.472"]
Insertion depth min.	9.5 mm [0.374"]
Insertion depth max.	14 mm [0.551"]
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

#### 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
Operating principle	magnetic

#### 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	Selectable: PROFINET-IO, EtherNet/IP, EtherCAT 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)
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>Universal Industrial Ethernet</b>
Protocol:	selectable (PROFINET-IO, EtherCAT, EtherNET/IP)
Data Transfer:	100BASE-TX
Function:	Multiturn
Code:	binary, CW default, programmable
Features, physical layer, cycle times, functions, parameters, objects and characteristics	Details can be found at the respective products with the individual interface.
Diagnostics: (LED)	Traffic and connection management: L/A1: Port 1 L/A2: Port 2
Status LED:	STAT, MOD: status of encoder and bus

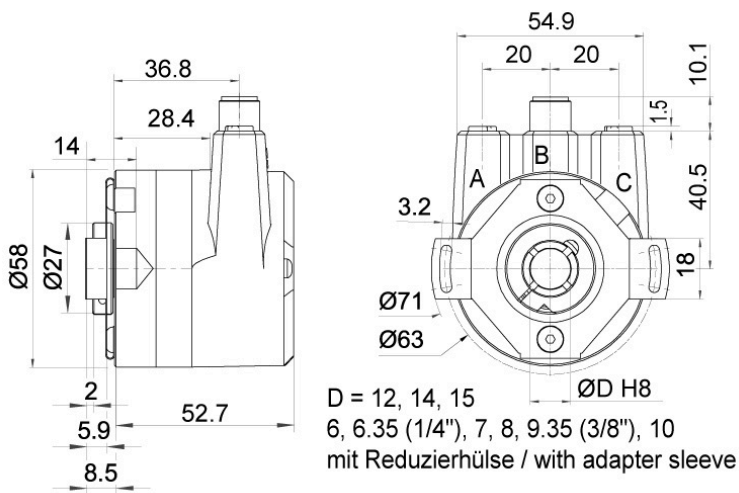
#### General Data

Weight	approx. 410 g [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 185 °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 58E Universal IE, BI2, bus cover with 3x M12x1**



**Description**

**BI2** Bus cover with 3x M12x1

Assignments	
	<b>BI2</b> 
<b>Female connector (Port1)</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)</b>	M12x1, 4-pin, D-coded
<b>Tx+</b>	1
<b>Rx+</b>	2
<b>Tx-</b>	3
<b>Rx-</b>	4

**Options****Low-friction bearings**

The encoder WDGA 58E Universal IE (cov) 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.

**Order key****AAC**

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>	
16	Single-turn resolution 16 bit	16	
	<b>Multi-turn Resolution</b>	<b>Order key</b>	
43	Multi-turn 43 bit	43	
	<b>Data protocol</b>	<b>Order key</b>	
IE	Universal IE (with bus cover)	IE	
	<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	
	Low-friction bearings	AAC	

<b>Example Order No.</b>	WDGA 58E	12	16	43	IE	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/contact-en/wachendorff-world-wide/>

# WACHENDORFF

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