



# Online Data sheet

## Encoder WDGA 58E IO-Link

[www.wachendorff-automation.com/wdga58e-io-link](http://www.wachendorff-automation.com/wdga58e-io-link)

### 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 IO-Link, with EnDra®-Technology



**EnDra®**  
Technologie

**IO-Link**

- EnDra®: maintenance-free and environmentally friendly
- IO-Link, Single-turn and Multi-turn
- Device Profile for encoder Smart Sensor Profile (SSP)
- Single-turn/Multi-turn (16 bit / 43 bit)
- Forward-looking technology with 32 Bit processor
- Monitoring the power supply
- Cam switches for position and velocity with hysteresis

[www.wachendorff-automation.com/wdga58e-io-link](http://www.wachendorff-automation.com/wdga58e-io-link)

## Mechanical Data

### Housing

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	Aluminum die cast, powder coated; Integrated magnetic shielding
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ±0.8 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGDS10005
- Compensation	axial: ±0.5 mm, radial: ±1.5 mm, Max. operating speed: 3000 rpm
Housing	Ø 58 mm

### Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature
Fixing	permanently attached clamping ring

Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N
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Shaft	Ø 8 mm
Advice	with adapter sleeve

Shaft length	L: 12 mm
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Insertion depth min.	11 mm
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Insertion depth max.	15 mm
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Max. Permissible shaft loading radial	80 N
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Max. Permissible shaft loading axial	50 N
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Shaft	Ø 9.525 mm, Ø 3/8"
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Advice	with adapter sleeve
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Shaft length	L: 12 mm
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Insertion depth min.	11 mm
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Insertion depth max.	15 mm
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Max. Permissible shaft loading radial	80 N
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Max. Permissible shaft loading axial	50 N
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Shaft	Ø 10 mm
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Advice	with adapter sleeve
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Shaft length	L: 12 mm
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Insertion depth min.	11 mm
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Insertion depth max.	15 mm
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Max. Permissible shaft loading radial	80 N
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Max. Permissible shaft loading axial	50 N
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Shaft	Ø 12 mm
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Shaft length	L: 12 mm
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Insertion depth min.	11 mm
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Insertion depth max.	15 mm
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Max. Permissible shaft loading radial	80 N
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Max. Permissible shaft loading axial	50 N
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Shaft	Ø 14 mm
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Shaft length	L: 12 mm
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Insertion depth min.	11 mm
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Insertion depth max.	15 mm
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Max. Permissible shaft loading radial	80 N
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Max. Permissible shaft loading axial	50 N
Shaft	Ø 15 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 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>	1300 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	18 VDC up to 30 VDC: typ. 20 mA
Power consumption	max. 0.5 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	250 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):	4 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61326-2-3 DIN EN 61131-9
Vibration: (DIN EN 60068-2-6)	300 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)
Design:	according DIN VDE 0160
Turn on time:	<1 s

### Duty information

Customs tariff number:	90318020
Country of origin:	Germany

Interface	
Interface:	IO-Link
Smart Sensor Profile (SSP):	<ul style="list-style-type: none"> <li>• 2.8 Adjustable Switching Sensor, multi channel</li> <li>• 4.2.1 Measuring and Switching Sensor, high resolution, 1 channel</li> <li>• 4.2.2 Measuring and Switching Sensor, high resolution, 2 channel</li> </ul>
Baud rate:	COM 3 230.4 kBit/s
Advice:	The standard settings and customer-specific adjustments in the parameterisation can be set using ISDUs, e.g. scaling, direction of rotation, etc.

### General Data

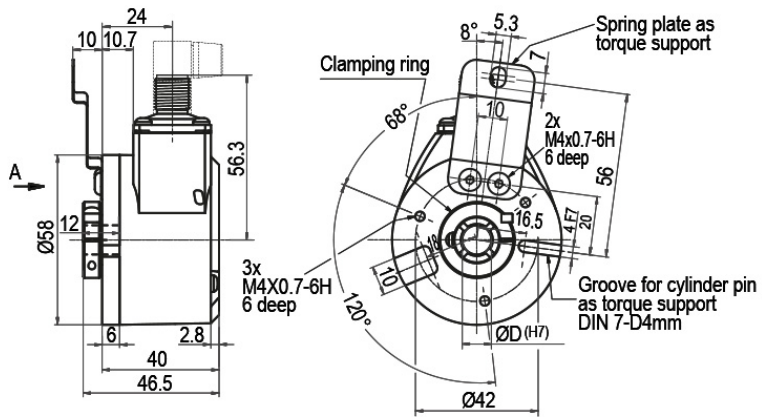
Weight	approx. 220 g
Connections	connector radial
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

### More Information

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

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

**Connector, M12x1 IC5, 5-pin**



**Description**

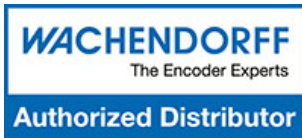
**IC5** radial, 5-pin, shield connected to encoder housing

Assignments	
	<p><b>IC5</b></p>
<b>L+</b>	1
<b>L-</b>	3
<b>C/Q</b>	4
<b>I</b>	2
<b>n. c.</b>	5

Example Order No.	Type	Your encoder
WDGA 58E	WDGA 58E	WDGA 58E
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm with adapter sleeve	06
	Ø 6.35 mm 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>
16	Single-turn resolution 1 bit up to 16 bit: (e. G. 6 bit)	16
	<b>Multi-turn Resolution</b>	<b>Order key</b>
43	Multi-turn resolution: (examples) 6 bit = 6 43 bit = 43 no Multiturn = 00	16
	<b>Data protocol</b>	<b>Order key</b>
IL	IO-Link	IL
	<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>
3	18 V up to 30 V (standard)	3
	<b>Galvanic isolation</b>	<b>Order key</b>
0	no	0
	<b>Electrical connections</b>	<b>Order key</b>
IC5	<b>Connector:</b> sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	IC5

<b>Example Order No.</b>	WDGA 58E	06	16	43	IL	A	B	3	0	IC5
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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-sales-en/>

# WACHENDORFF

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