



# Online Data sheet

## Encoder WDGA 58S IO-Link

[www.wachendorff-automation.com/wdga58s-io-link](http://www.wachendorff-automation.com/wdga58s-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 58S absolute IO-Link, with EnDra®-Technology



**EnDra®**  
Technologie

**IO-Link**

- Resistance to salt mist (IEC 60068-2-11) succeeded
- Protection: IP67 + IP69k (high pressure / steam cleaning)
- 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
- LED as indicator for operating condition and Error message
- Monitoring the power supply
- Cam switches for position and velocity with hysteresis

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**Salt mist IEC 60068-2-11**  
**High pressure / steam cleaning**

Mechanical Data	
<b>Housing</b>	
Flange	clamping flange
Flange material	Aluminum, anodized natur
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
<b>Shaft(s)</b>	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	100 N
Max. Permissible shaft loading axial	100 N
<b>Bearings</b>	
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	3600 rpm
<b>Machinery Directive: basic data safety integrity level</b>	
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 3600 rpm
Diagnostic coverage (DC)	0 %
<b>Electrical Data</b>	
Power supply/Current consumption	18 VDC up to 30 VDC: typ. 20 mA
Power consumption	max. 0.5 W
Operating principle	magnetic
<b>Sensor data</b>	
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	
<b>Interface:</b>	<b>IO-Link</b>
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. 200 g
Connections	connector outlet

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Protection rating (EN 60529)	IP67+IP69K all around
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

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**More Information**

General technical data and safety instructions

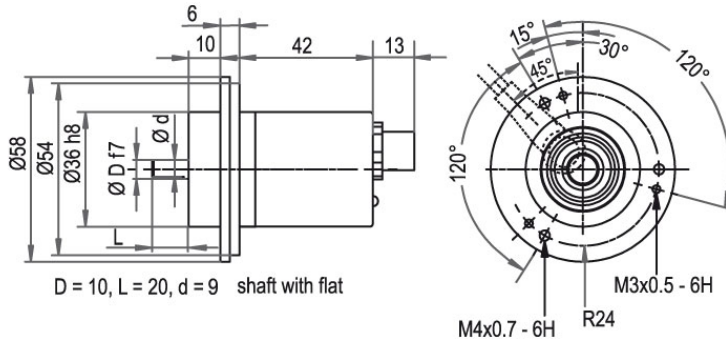
<http://www.wachendorff-automation.com/gtd>

Options

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

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**Connector, M12x1 IB5, 5-pin, axial**

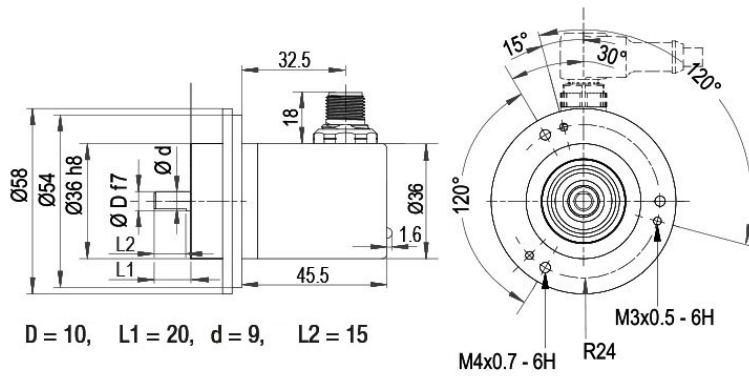


**Description**

**IB5** axial, 5-pin, shield connected to encoder housing

Assignments	
	<b>IB5</b> 
<b>L+</b>	1
<b>L-</b>	3
<b>C/Q</b>	4
<b>I</b>	2
<b>n. c.</b>	5

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



**Description**

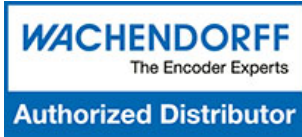
**IC5** radial, 5-pin, shield connected to encoder housing

Assignments	
<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 58S	WDGA 58S	WDGA 58S	
	<b>Shaft</b>	<b>Order key</b>	
10	Ø 10 mm	10	
	<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>	
IB5	<b>Connector:</b>		
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	IB5	
	sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	IC5	

<b>Example Order No.</b>	WDGA 58S	10	16	43	IL	A	B	3	0	IB5
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WDGA 58S											<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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