



## Online Data sheet

HM 2602

### Encoder WDGA 58A IO-Link

[www.wachendorff-automation.com/wdga58a-io-link](http://www.wachendorff-automation.com/wdga58a-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 58A absolute IO-Link, with EnDra®-Technology



Illustration similar

**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
- LED as indicator for operating condition and Error message
- Monitoring the power supply
- Cam switches for position and velocity with hysteresis
- High shaft load up to 220 N radial, 120 N axial

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## Mechanical Data

Flange	synchro flange
Flange material	aluminum
Housing material	stainless steel
Flange diameter	Ø 58 mm [Ø 2.283"]
Cam mounting	pitch 65 mm [2.4016 inches]

## Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm [1.416 in-ozf] at ambient temperature

Shaft	Ø 6 mm [Ø 0.236"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 8 mm [Ø 0.315"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 19 mm [0.748"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

## Bearings

Bearings type	2 precision ball bearings
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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>	1300 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	18 VDC up to 30 VDC: typ. 30 mA
Power consumption	max. 0.6 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)
Electrical Safety:	DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No 61010-1-12
Turn on time:	<1 s

### Duty information

Customs tariff number:	90318020
Country of origin:	Germany

### Interface

<b>Interface:</b>	<b>IO-Link Version: V1.1.4</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.

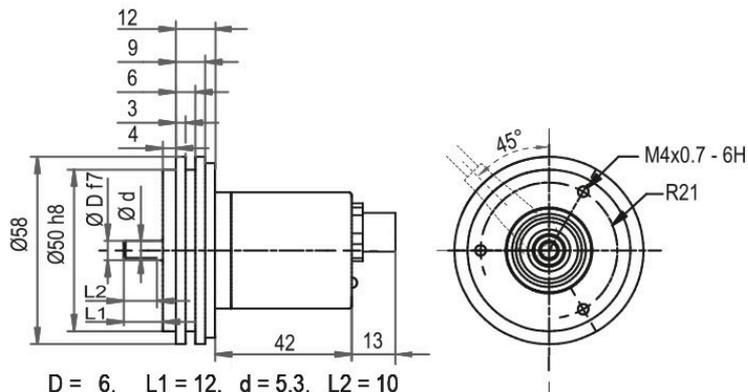
### General Data

Weight	approx. 224 g [7.901 oz]
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
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>

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



- 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:**

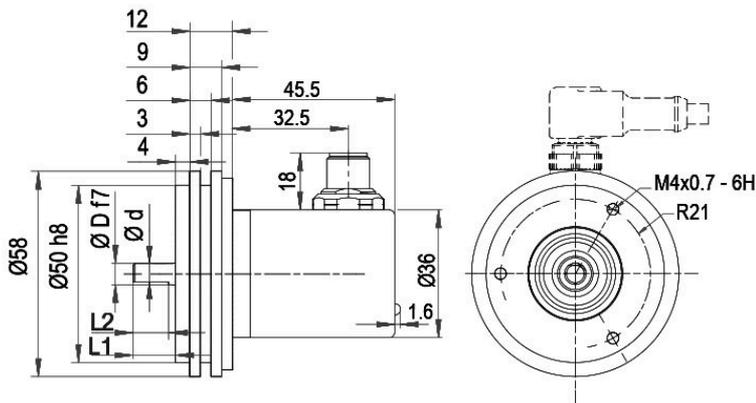
- D = 6, L1 = 10, d = 5.3, L2 = 8

**Description**

**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**



- 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**

**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

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

The encoder WDGA 58A IO-Link is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.

**Order key****AAC****Shafts sealed to IP67, only with Ø 10 mm shaft**

The encoder WDG 58A IO-Link can be supplied in a IP67 version.  
Max. RPM: 3500 min<sup>-1</sup>  
Permitted Shaft-Loading: axial 100 N; radial 110 N  
Starting-torque: approx. 4 Ncm at ambient temperature

**Order key****AAO****Shaft length 10 mm (Ø 6 mm)**

The encoder WDGA 58A IO-Link shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm.

**Order key****AIX**

Example Order No.	Type	Your encoder
WDGA 58A	WDGA 58A	WDGA 58A
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm [Ø 0.236"] Attention: No option AAO = full IP67 version	06
	Ø 8 mm [Ø 0.315"] Attention: No option AAO = full IP67 version	08
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z Attention: No option AAO = full IP67 version	4Z
	Ø 10 mm [Ø 0.394"]	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	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>Options</b>	<b>Order key</b>
	Without option	Empty
	Low-friction bearings	AAC
	Shafts sealed to IP67, only with Ø 10 mm shaft	AAO
	Shaft length 10 mm (Ø 6 mm)	AIX

Example Order No.	WDGA 58A	06	16	43	IL	A	B	3	0	IB5	
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WDGA 58A											Example Order No.
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