

# Online Data Sheet

## Encoder WDGA 58B SSI

[www.wachendorff-automation.com/wdga58bssi](http://www.wachendorff-automation.com/wdga58bssi)

### 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 58B absolute SSI magnetic, with EnDra®-Technology



**EnDra®**  
Technologie

**SSI**  
Synchronous Serial Interface

- EnDra® multiturn technology: maintenance-free and environmentally friendly
- SSI, gray or binary
- Single-/multiturn (14 bit / 39 bit)
- Forward-looking technology with 32 bit processor
- 2-colour-LED as indicator for operating condition
- High shaft load up to 220 N radial, 120 N axial

[www.wachendorff-automation.com/wdga58bssi](http://www.wachendorff-automation.com/wdga58bssi)

## Mechanical Data

Housing	
Flange	clamping flange
Flange material	aluminium
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
Cam mounting	pitch 69 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 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	8000 rpm

## Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	1000 a
Mission time (TM)	20 a
Nominal 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: max. 80 mA 4,75 VDC up to 5,5 VDC: max. 80 mA
Power consumption	max. 0.8 W; max. 0.8 W

## Sensor data

Singleturn technology	innovative hall sensor technology
Singleturn resolution	up to 16,384 steps/360° (14 bit)
Singleturn accuracy	< ±0.35°
Singleturn repeat accuracy	< ±0.20°
Intern cycle time	600 µs
Multiturn technology	patented EnDra® technology no battery, no gear.
Multiturn resolution	up to 39 bit.

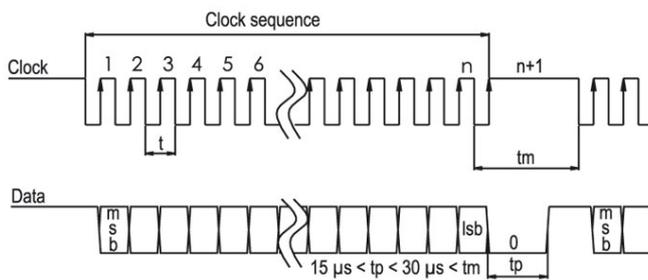
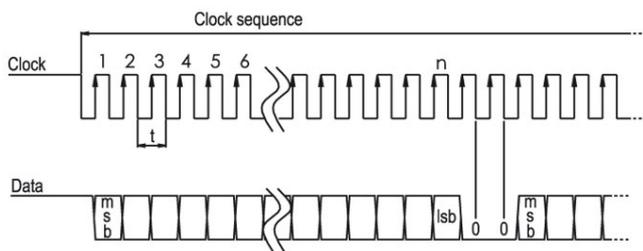
## Environmental data

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)	50 m/s <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Design:	appropriate DIN VDE 0160
Turn on time:	<1,5 s

## Interface

Interface:	SSI
Clock input:	via opto-coupler
Clock frequency:	100 kHz up to 500 kHz, up to 2 MHz on request
Data output:	RS485/RS422 compatible
Output code:	gray or binary
SSI output:	Angular-/position value
Parity bit:	optional (even/odd)
Error bit:	optional
Turn on time:	<1,5 s

Configuration inputs	
Positive direction of counting: (View on shaft)	DIR = GND -> cw DIR = +UB -> ccw
Set to zero:	Set: Preset = +UB for 2 s Deactivate: Preset = GND

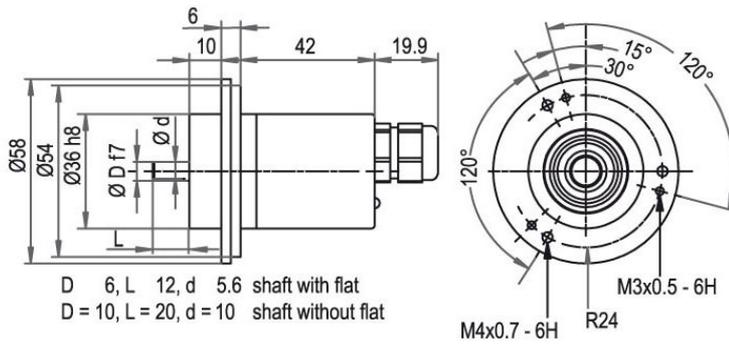
**Transmission protocol SSI Single transmission:**

**Transmission protocol SSI Multipath transmission:**

**General Data**

Weight	approx. 202 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP50 for K1)
Operating temperature	-40 °C up to +80 °C
Storage temperature	-40 °C up to +100 °C

**More Information**

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

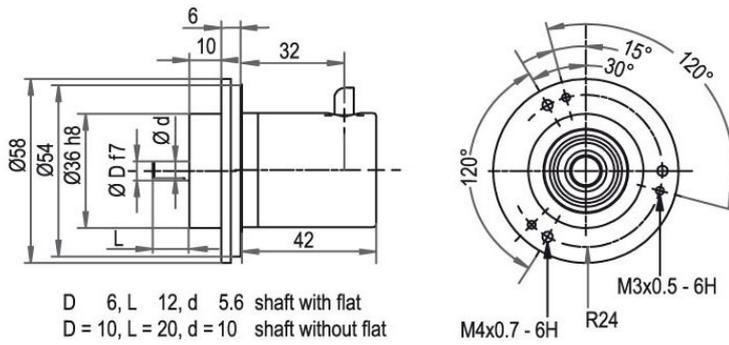
Options  
<http://www.wachendorff-automation.com/acc>

**Cable connection, L2 with 2 m cable**

**Description**

**L2** axial, shield connected to encoder housing

Assignments	
	<b>L2</b>
<b>GND</b>	WH
<b>+UB</b>	BN
<b>SSI CLK+</b>	GN
<b>SSI CLK-</b>	YE
<b>SSI DATA+</b>	GY
<b>SSI DATA-</b>	PK
<b>PRESET</b>	BU
<b>DIR</b>	RD
<b>Shield</b>	housing

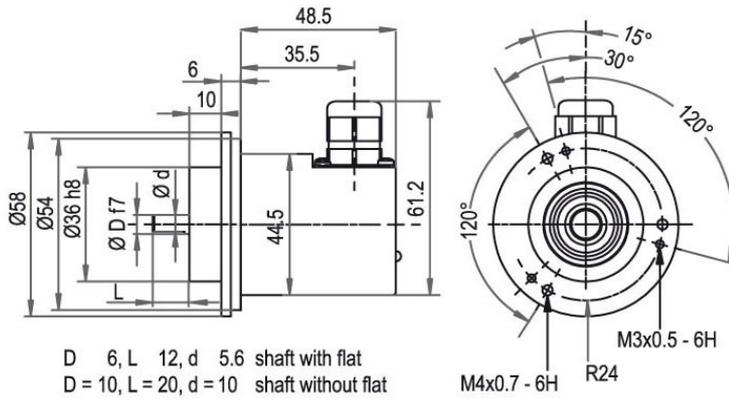
**Cable connection, K1 with 2 m cable (IP40)**



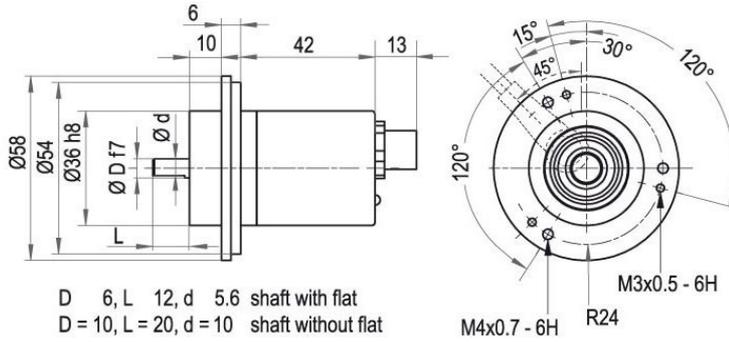
**Description**

**K1** radial, shield not connected

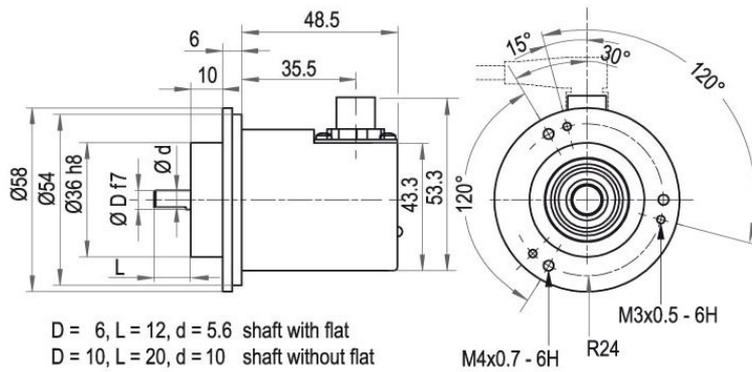
Assignments	
	<b>K1</b>
<b>GND</b>	WH
<b>+UB</b>	BN
<b>SSI CLK+</b>	GN
<b>SSI CLK-</b>	YE
<b>SSI DATA+</b>	GY
<b>SSI DATA-</b>	PK
<b>PRESET</b>	BU
<b>DIR</b>	RD
<b>Shield</b>	housing n. c.

**Cable connection, L3 with 2 m cable**

**Description**
**L3** radial, shield connected to encoder housing

Assignments	
	<b>L3</b>
<b>GND</b>	WH
<b>+UB</b>	BN
<b>SSI CLK+</b>	GN
<b>SSI CLK-</b>	YE
<b>SSI DATA+</b>	GY
<b>SSI DATA-</b>	PK
<b>PRESET</b>	BU
<b>DIR</b>	RD
<b>Shield</b>	housing

**Connector, M12x1, CB8, axial, 8-pin**

**Description**
**CB8** axial, 8-pin, shield connected to encoder housing

Assignments	
	<b>CB8</b> 
<b>GND</b>	1
<b>+UB</b>	2
<b>SSI CLK+</b>	3
<b>SSI CLK-</b>	4
<b>SSI DATA+</b>	5
<b>SSI DATA-</b>	6
<b>PRESET</b>	7
<b>DIR</b>	8
<b>Shield</b>	housing

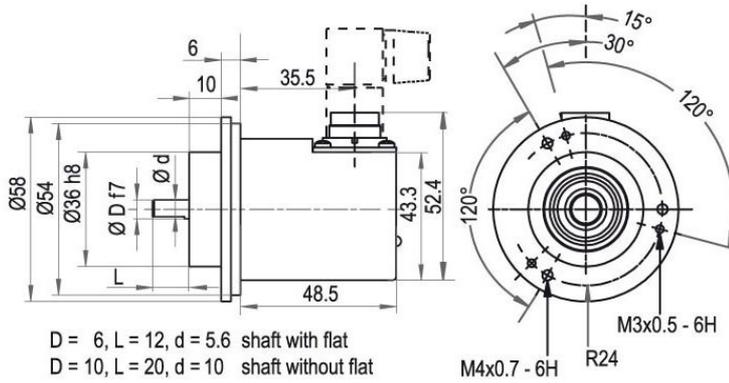
**Connector, M12x1, CC8, radial, 8-pin**

**Description**

**CC8** radial, 8-pin, shield connected to encoder housing

Assignments	
	<b>CC8</b> 
<b>GND</b>	1
<b>+UB</b>	2
<b>SSI CLK+</b>	3
<b>SSI CLK-</b>	4
<b>SSI DATA+</b>	5
<b>SSI DATA-</b>	6
<b>PRESET</b>	7
<b>DIR</b>	8
<b>Shield</b>	housing



**Connector, M16, CH8, 8-pin**

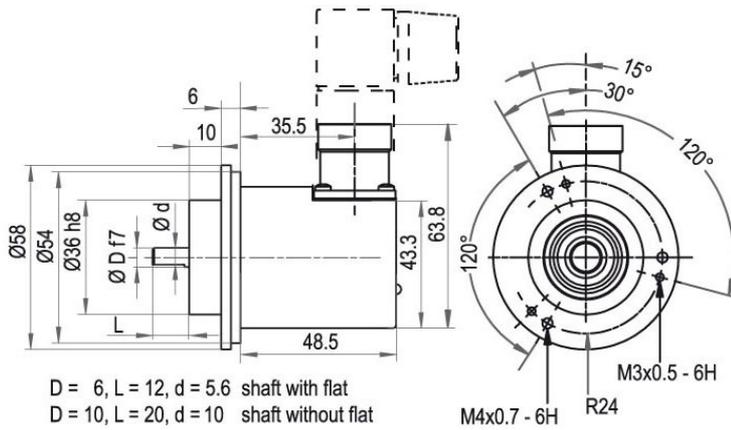


**Description**

**CH8** radial, 8-pin, shield connected to encoder housing

Assignments	
	CH8
	
<b>GND</b>	2
<b>+UB</b>	1
<b>SSI CLK+</b>	6
<b>SSI CLK-</b>	5
<b>SSI DATA+</b>	4
<b>SSI DATA-</b>	3
<b>PRESET</b>	8
<b>DIR</b>	7
<b>Shield</b>	housing

**Connector, M23, C5, 8-pin**



**Description**

**C5** radial, 12-pin, shield connected to encoder housing

Assignments	
	
<b>GND</b>	12
<b>+UB</b>	11
<b>SSI CLK+</b>	2
<b>SSI CLK-</b>	1
<b>SSI DATA+</b>	3
<b>SSI DATA-</b>	4
<b>PRESET</b>	9
<b>DIR</b>	8
<b>Shield</b>	housing

Example Order No.	Type	Your encoder	
WDGA 58B	WDGA 58B	WDGA 58B	
	<b>Shaft</b>	<b>Order key</b>	
10	Ø 6 mm	06	
	Ø 10 mm	10	
	<b>Singleturn Resolution</b>	<b>Order key</b>	
12	Singleturn resolution 8 Bit up to 14 Bit: (e. G. 12 Bit)	12	
	<b>Multiturn Resolution</b>	<b>Order key</b>	
12	Multiturn 1 bit up to 39 bit (e. G. 12 bit) No Multiturn = 00	12	
	<b>Data protocol</b>	<b>Order key</b>	
SI	SSI	SI	
	<b>Software</b>	<b>Order key</b>	
A	up to date release	A	
	<b>Code</b>	<b>Order key</b>	
B	binary	B	
	gray	G	
	<b>Power supply</b>	<b>Order key</b>	
0	10 V up to 32 V (standard)	0	
	4.75 V up to 5.5 V	1	
	<b>Galvanic isolation</b>	<b>Order key</b>	
1	yes	1	
	<b>Electrical connections</b>	<b>Order key</b>	
CB8	<b>Cable:</b>		
	axial, shield connected to encoder housing, with 2 m cable, IP67	L2	
	radial, shield not connected, with 2 m cable, IP50	K1	
	radial, shield connected to encoder housing, with 2 m cable, IP67	L3	
	<b>Connector:</b>		
	sensor-connector, M12x1, 8-pin, axial, IP67, shield connected to encoder housing	CB8	
	sensor-connector, M12x1, 8-pin, radial, IP67, shield connected to encoder housing	CC8	
	sensor-connector, M16x0.75, 8-pin, radial, IP67, shield connected to encoder housing	CH8	
	connector, M23, 12-pin, radial, IP67, shield connected to encoder housing	C5	

<b>Example Order No.</b>	WDGA 58B	10	12	12	SI	A	B	0	1	CB8
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WDGA 58B										<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.  
[http://www.wachendorff-automation.com/distributors\\_worldwide.html](http://www.wachendorff-automation.com/distributors_worldwide.html)



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