



## Online Data sheet

### Encoder WDGP 58A

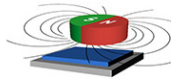
[www.wachendorff-automation.com/wdgp58a](http://www.wachendorff-automation.com/wdgp58a)

#### 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 WDGP 58A (magnetic)



- Due to high quality electronics any number of pulses up to 16384
- Protection class IP67, at shaft input IP65
- High output frequency up to 1 MHz
- Reverse polarity protection and short-circuit protection at 4.75 VDC to 32 VDC

[www.wachendorff-automation.com/wdgp58a](http://www.wachendorff-automation.com/wdgp58a)

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR

Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 58 mm

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

Shaft	Ø 6 mm
Advice	Attention: No option AAO = full IP67 version
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>	1200 a
Mission time (TM)	25 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	4,75 VDC up to 32 VDC: typ. 80 mA
Output circuit	HTL HTL, inv. TTL TTL, RS422 compatible, inv.
Pulse frequency	HTL up to 16384 ppr: max. 600 kHz TTL up to 16384 ppr: max. 1 MHz
Channels	ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	inverse-polarity and short-circuit protection

Set zero pulse:	Set: SET = +UB for 2 s Deactivate: SET = GND
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Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

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:	According DIN VDE 0160

Duty information	
Customs tariff number:	90318020
Country of origin:	Germany

General Data	
Weight	approx. 240 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C
Storage temperature	Connector: -40 °C up to +100 °C, cable: -30 °C up to +80 °C

**More Information**

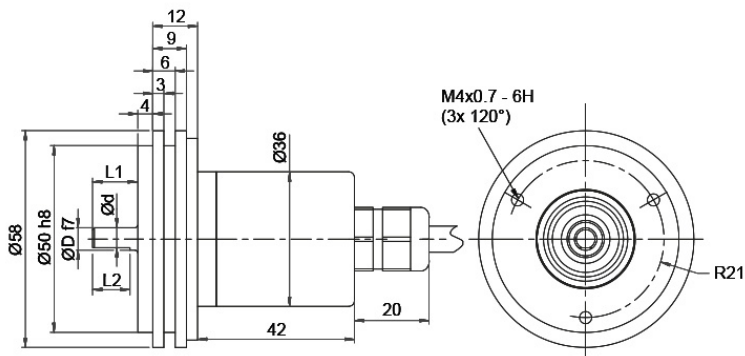
General technical data and safety instructions

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

Options

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

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



D = 6    L1 = 12    d = 5.3    L2 = 10  
D = 10    L1 = 20    d = 9        L2 = 15

Option AIX:

D = 6    L1 = 10    d = 5.3    L2 = 8

**Description**

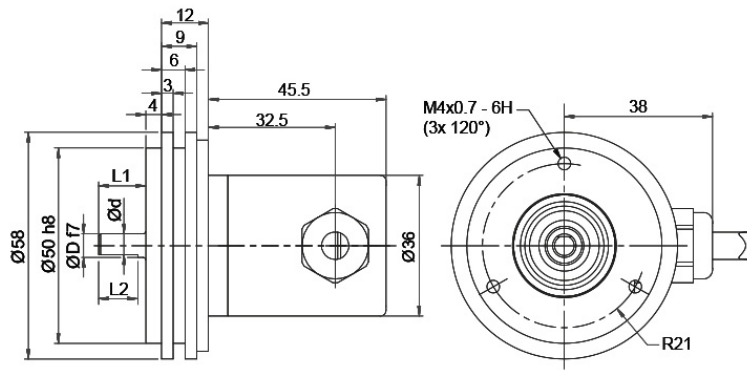
**ABN inv. poss.**

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

•

Assignments				
	L2	L2	L2	L2
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>GND</b>	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.</b>	BK	BK	-	-
<b>N inv.</b>	VT	VT	-	-
<b>Shield</b>	flex	flex	flex	flex

**Cable connection L3 radial with 2 m cabel**



D = 6 L1 = 12 d = 5.3 L2 = 10  
D = 10 L1 = 20 d = 9 L2 = 15

Option AIX:  
D = 6 L1 = 10 d = 5.3 L2 = 8

**Description**

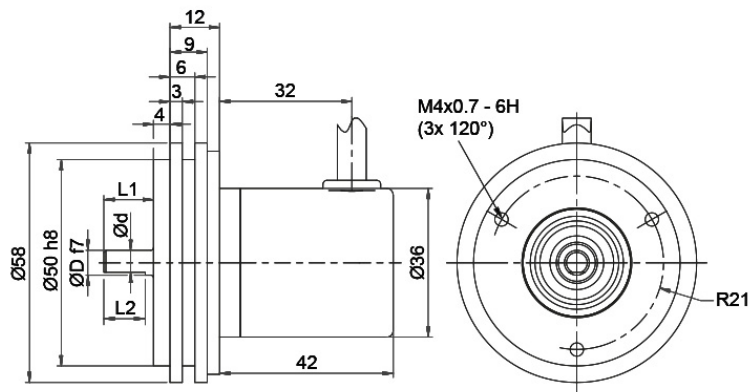
**ABN inv. poss.**

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

•

Assignments				
	L3	L3	L3	L3
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>GND</b>	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.</b>	BK	BK	-	-
<b>N inv.</b>	VT	VT	-	-
<b>Shield</b>	flex	flex	flex	flex

**Cable K1 (IP40) radial with 2 m cable**



D = 6    L1 = 12    d = 5.3    L2 = 10  
D = 10    L1 = 20    d = 9        L2 = 15

Option AIX:

D = 6    L1 = 10    d = 5.3    L2 = 8

**Description**

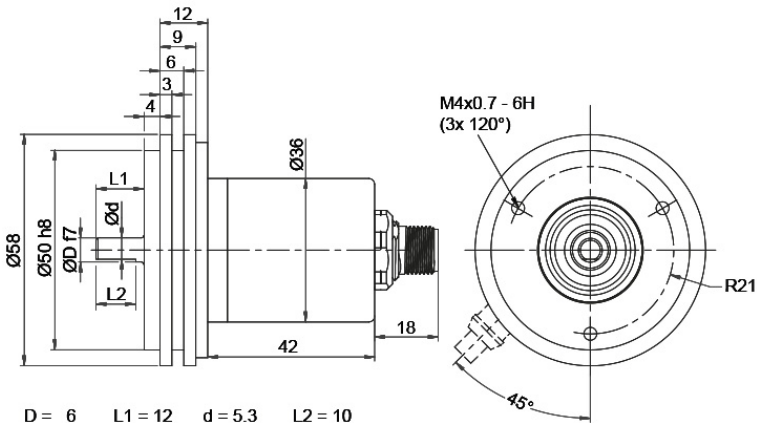
ABN inv. poss.

K1 radial, shield not connected (IP40)

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Assignments				
	K1	K1	K1	K1
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>GND</b>	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.</b>	BK	BK	-	-
<b>N inv.</b>	VT	VT	-	-
<b>Shield</b>	flex	flex	flex	flex

**Sensor connector (M12x1) SB axial, 5-, 8-, 12-pin**

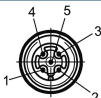
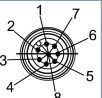
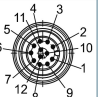


D = 6    L1 = 12    d = 5.3    L2 = 10  
D = 10    L1 = 20    d = 9        L2 = 15

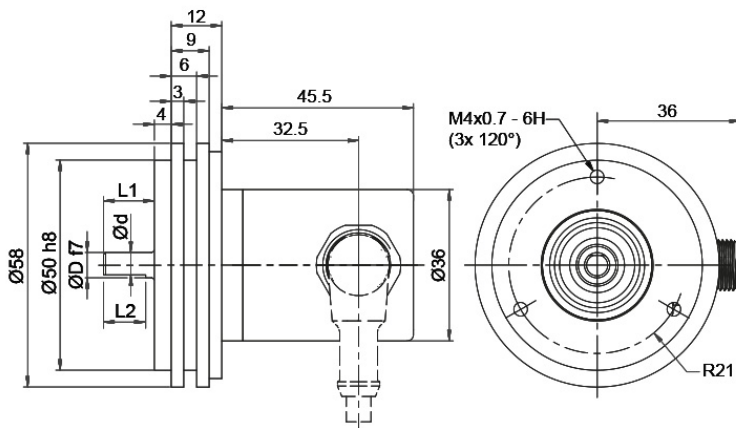
Option AIX:

D = 6    L1 = 10    d = 5.3    L2 = 8

Description	ABN inv. poss.
<b>SB5</b> axial, 5-pin, Connector connected to encoder housing	-
<b>SB8</b> axial, 8-pin, Connector connected to encoder housing	•
<b>SB12</b> axial, 12-pin, Connector connected to encoder housing	•

Assignments			
	SB5	SB8	SB12
	5-pin	8-pin	12-pin
			
<b>Circuit</b>	N11, N12	M11, M12	M13, M14
<b>GND</b>	3	1	3
<b>(+) Vcc</b>	1	2	1
<b>A</b>	4	3	4
<b>B</b>	2	4	6
<b>N</b>	5	5	8
<b>SET</b>	-	-	5
<b>A inv.</b>	-	6	9
<b>B inv.</b>	-	7	7
<b>N inv.</b>	-	8	10
<b>n. c.</b>	-	-	2, 11, 12
<b>Shield</b>	-	-	-

**Sensor-connector (M12x1) SC radial, 5-, 8-, 12-pin**



D = 6    L1 = 12    d = 5.3    L2 = 10  
D = 10    L1 = 20    d = 9        L2 = 15

Option AIX:  
D = 6    L1 = 10    d = 5.3    L2 = 8

**Description**

**ABN inv. poss.**

<b>SC5</b>	radial, 5-pin, Connector connected to encoder housing	-
<b>SC8</b>	radial, 8-pin, Connector connected to encoder housing	•
<b>SC12</b>	radial, 12-pin, Connector connected to encoder housing	•

Assignments			
	<b>SC5</b>	<b>SC8</b>	<b>SC12</b>
	<b>5-pin</b>	<b>8-pin</b>	<b>12-pin</b>
<b>Circuit</b>	N11, N12	M11, M12	M13, M14
<b>GND</b>	3	1	3
<b>(+) Vcc</b>	1	2	1
<b>A</b>	4	3	4
<b>B</b>	2	4	6
<b>N</b>	5	5	8
<b>SET</b>	-	-	5
<b>A inv.</b>	-	6	9
<b>B inv.</b>	-	7	7
<b>N inv.</b>	-	8	10
<b>n. c.</b>	-	-	2, 11, 12
<b>Shield</b>	-	-	-



## Options

### Shafts sealed to IP67, only with shaft 10 mm

### Order key

The encoder WDGP 58A can be supplied in a IP67 version.  
(full IP67 only connection SB, SC, L2 or L3 version; not cable connection K1 = IP40).  
Max. RPM: 3500 min<sup>-1</sup>  
Permitted Shaft-Loading: axial 100 N; radial 110 N  
Starting-torque: approx. 4 Ncm at ambient temperature

**AAO**

### Shaft length 10 mm (Ø 6 mm)

### Order key

The encoder WDGP 58A shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm.

**AIX**

### Cable length

### Order key

The encoder WDGP 58A can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see [www.wachendorff-automation.com/atd](http://www.wachendorff-automation.com/atd)  
Please extend the standard order code with a three figure number, specifying the cable length in decimetres.  
Example: 5 m cable = 050

**XXX = Decimeter**

Example Order No.	Type					Your encoder
WDGP 58A	WDGP 58A					WDGP 58A
	<b>Shaft</b>					
06	06; 10					
	<b>Pulses per revolution PPR:</b>					
16384	1-16384 Other PPRs on request					
	<b>Channels:</b>					
ABN	ABN					
	<b>Output circuit</b>					
M13	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	<b>Light reserve warning</b>	<b>Order key</b>	
	1-16384	4.75 - 32	HTL	-	N11	
		4.75 - 32	TTL	-	N12	
		4.75 - 32	HTL set zero pulse	-	N13	
		4.75 - 32	TTL set zero pulse	-	N14	
		4.75 - 32	HTL inverted	-	M11	
		4.75 - 32	TTL, RS422 comp., inverted	-	M12	
		4.75 - 32	HTL, inv. set zero pulse	-	M13	
4.75 - 32		TTL, RS422 compatible, inv. set zero pulse	-	M14		
	<b>Electrical connections</b>					
L2	<b>Description</b>			<b>ABN inv. poss.</b>	<b>Order key</b>	
	<b>Cable: length (2 m standard, WDG 58T: 1 m)</b>					
	radial, shield not connected (IP40)			•	K1	
	axial, shield connected to encoder housing			•	L2	
	radial, shield connected to encoder housing			•	L3	
	<b>Connector: (shield connected to encoder housing)</b>					
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 5-pin, radial			-	SC5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 8-pin, radial			•	SC8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
sensor-connector, M12x1, 12-pin, radial			•	SC12		
	<b>Options</b>					
	<b>Description</b>			<b>Order key</b>		
	Shafts sealed to IP67, only with shaft 10 mm			AAO		
	Shaft length 10 mm (Ø 6 mm)			AIX		
	Without option			Empty		
	Cable length			XXX = Decimeter		

<b>Example Order No.=</b>	WDGP 58A	06	16384	ABN	M13	L2			WDGP 58A						<b>Your encoder</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/>

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