



Online Data sheet

Encoder WDGP 58B

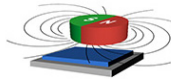
www.wachendorff-automation.com/wdgp58b

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 58B (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/wdgp58b

Resolution

Pulses per revolution PPR 1 PPR up to 16384 PPR

Mechanical Data

Housing

Flange clamping 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 8 mm

Advice Attention: No option AAO = full IP67 version

Shaft length L: 19 mm

Max. Permissible shaft loading radial 125 N

Max. Permissible shaft loading axial 120 N

Shaft Ø 9.525 mm, Ø 3/8"

Advice Attention: No option AAO = full IP67 version

Shaft length L: 20 mm, L: 0.787 in

Max. Permissible shaft loading radial 220 N, 22.434 kp

Max. Permissible shaft loading axial 120 N, 12.237 kp

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

Nominale service life
1 x 10⁹ revs. at 100 % rated shaft load
1 x 10¹⁰ revs. at 40 % rated shaft load
1 x 10¹¹ revs. at 20 % rated shaft load

Max. operating speed 8000 rpm

Machinery Directive: basic data safety integrity level

MTTF_d 1200 a

Mission time (TM) 25 a

Nominale service life (L10h) 1 x 10¹¹ 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

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: 50 m/s² (10 Hz up to 2000 Hz)
(DIN EN 60068-2-6)

Shock: 1000 m/s² (6 ms)
(DIN EN 60068-2-27)

Design:	According to DIN VDE 0160
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Duty information

Customs tariff number:	90318020
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Country of origin:	Germany
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General Data

Weight	approx. 220 g
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Connections	cable or connector outlet
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Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40
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Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C
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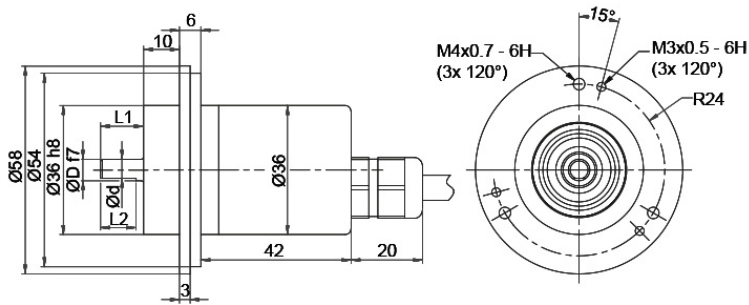
Storage temperature	Connector: -40 °C up to +100 °C, cable: -30 °C up to +80 °C
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More Information

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

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

Cable connection L2 axial with 2 m cable



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Description

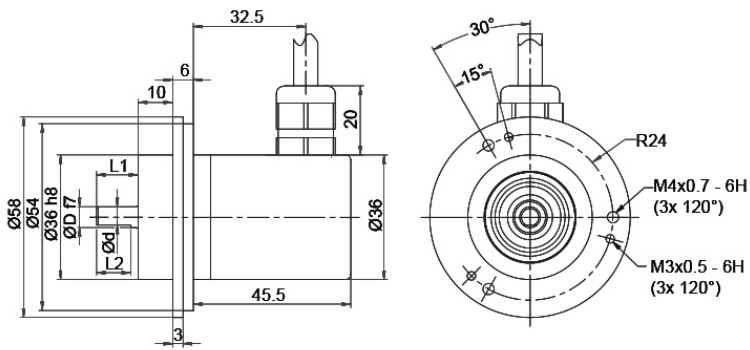
ABN inv. poss.

L2 axial, shield connected to encoder housing

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

Cable connection L3 radial with 2 m cabel



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Description

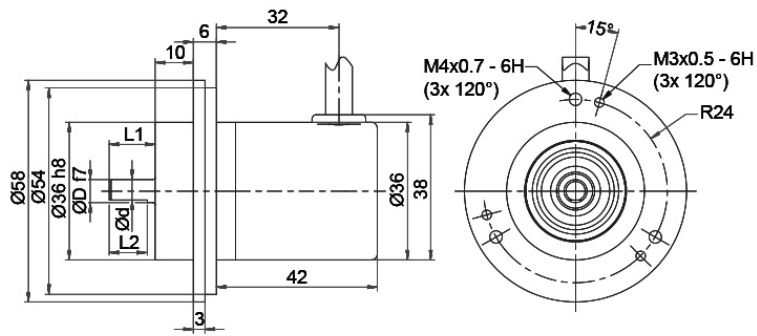
ABN inv. poss.

L3 radial, shield connected to encoder housing

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

Cable K1 (IP40) radial with 2 m cable



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Description

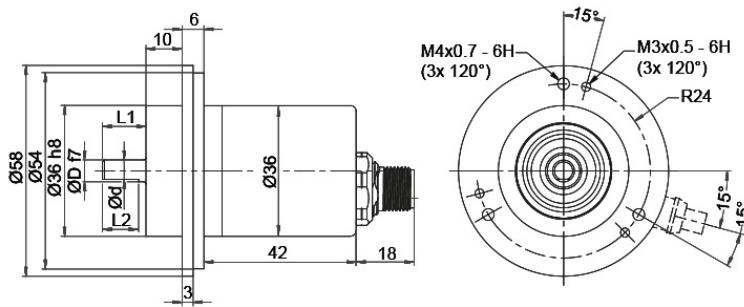
ABN inv. poss.

K1 radial, shield not connected (IP40)

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

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



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

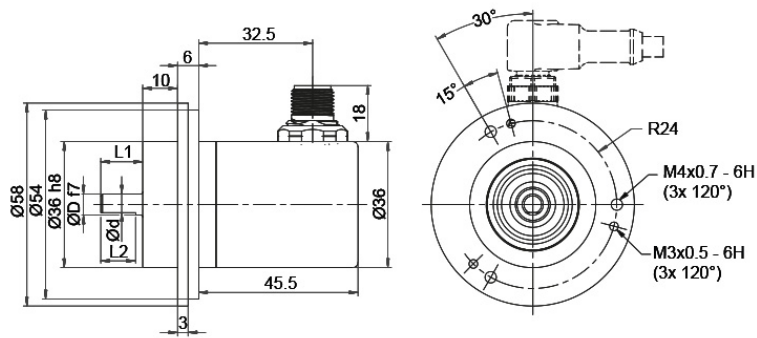
Description

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

Assignments

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

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



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

Description	ABN inv. poss.
SC5 radial, 5-pin, Connector connected to encoder housing	-
SC8 radial, 8-pin, Connector connected to encoder housing	•
SC12 radial, 12-pin, Connector connected to encoder housing	•

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

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

The encoder WDGP 58B 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⁻¹
Permitted Shaft-Loading: axial 100 N; radial 110 N
Starting-torque: approx. 4 Ncm at ambient temperature

AAO**Cable length****Order key**

The encoder WDGP 58B 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
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 58B	WDGP 58B						WDGP 58B
Shaft							
10	06; 08; 4Z= Ø 9.525 mm, Ø 3/8"; 10						
Pulses per revolution PPR:							
16384	1-16384 Other PPRs on request						
Channels:							
ABN	ABN						
Output circuit							
M13	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key		
	1-16384	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		
		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			
Electrical connections							
L2	Description			ABN inv. poss.	Order key		
	Cable: length (2 m standard, WDG 58T: 1 m)						
	radial, shield not connected (IP40)			•	K1		
	axial, shield connected to encoder housing			•	L2		
	radial, shield connected to encoder housing			•	L3		
	Connector: (shield connected to encoder housing)						
	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		
Options							
Description			Order key				
Shafts sealed to IP67, only with shaft 10 mm			AAO				
Without option			Empty				
Cable length			XXX = Decimeter				

Example Order No.=	WDGP 58B	10	16384	ABN	M13	L2		WDGP 58B						Your encoder
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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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