



# Online Data sheet

## Encoder WDGP 36A

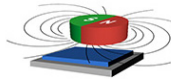
[www.wachendorff-automation.com/wdgp36a](http://www.wachendorff-automation.com/wdgp36a)

### **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 36A (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/wdgp36a](http://www.wachendorff-automation.com/wdgp36a)

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR

Mechanical Data	
Housing	
Flange	servo flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 36 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.3 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 11.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm, Ø 1/4"
Shaft length	L: 11.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 8 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	50 N
Max. Permissible shaft loading axial	50 N

Bearings	
Bearings type	2 precision ball bearings
Nominale service life	1.4 x 10 <sup>8</sup> revs. at 100 % rated shaft load 2 x 10 <sup>9</sup> revs. at 40 % rated shaft load 1.7 x 10 <sup>10</sup> revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	1200 a
Mission time (TM)	25 a

Nominale service life (L10h)	1.7 x 10 <sup>10</sup> revs. at 20 % rated shaft load and 12000 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: (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. 130 g
Connections	cable or connector outlet

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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

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**More Information**

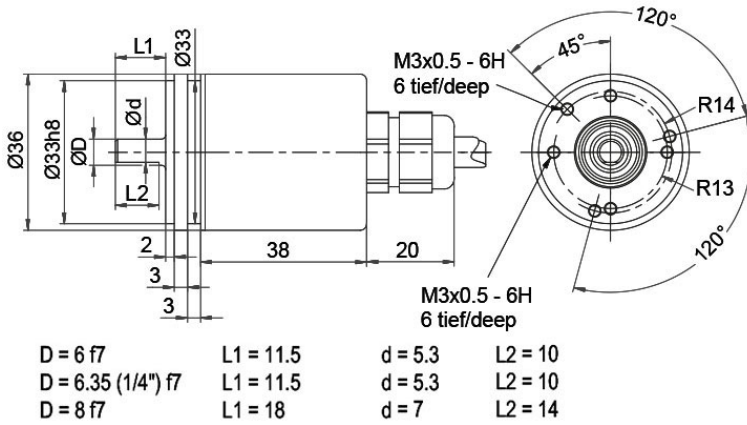
General technical data and safety instructions

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

Options

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

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



**Description**

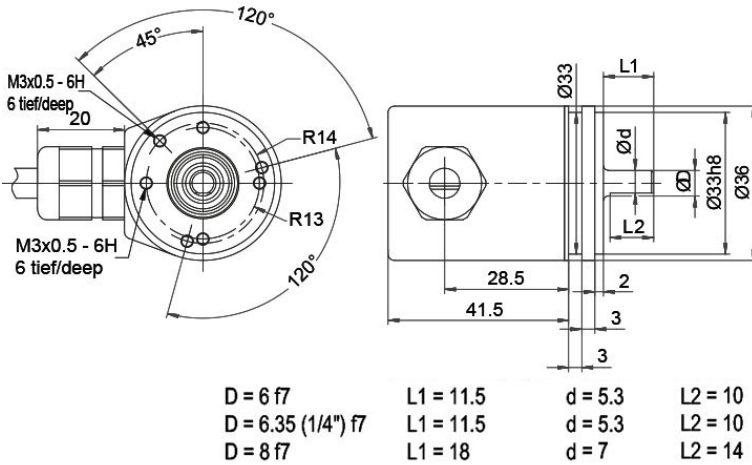
ABN inv. poss.

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

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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**



**Description**

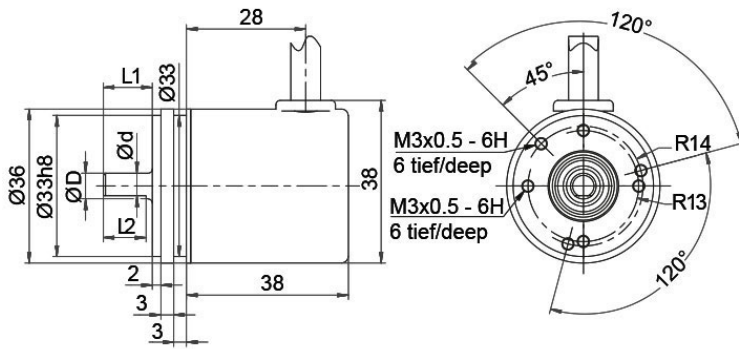
ABN inv. poss.

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

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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 f7	L1 = 11.5	d = 5.3	L2 = 10
D = 6.35 (1/4") f7	L1 = 11.5	d = 5.3	L2 = 10
D = 8 f7	L1 = 18	d = 7	L2 = 14

**Description**

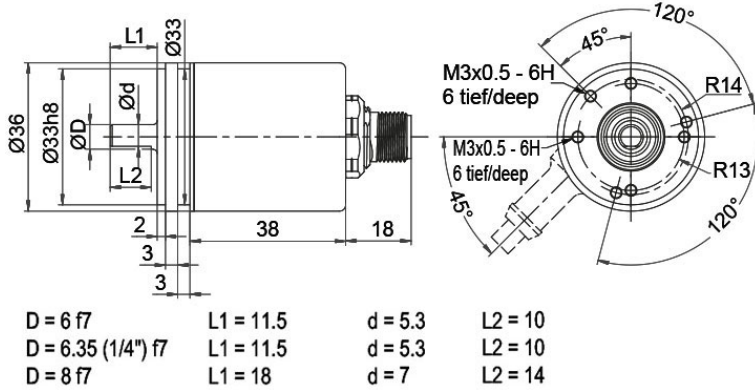
ABN inv. poss.

**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

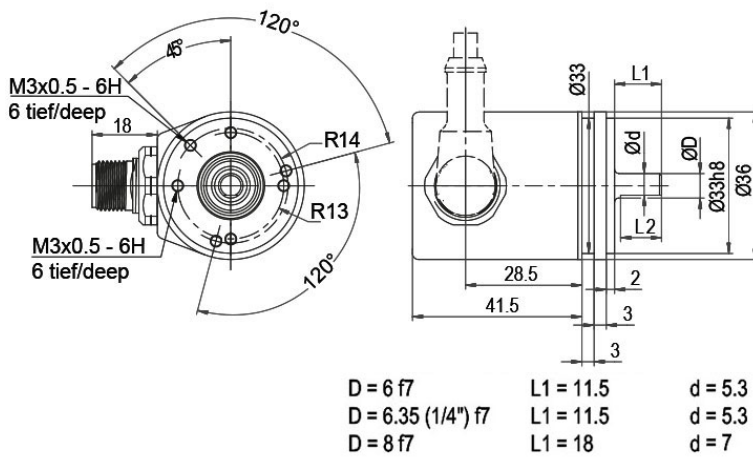
## Sensor connector (M12x1) SB axial, 5-, 8-, 12-pin



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 polig**



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			
	SC5	SC8	SC12
	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>	-	-	-



**Options****Cable length****Order key**

The encoder WDGP 36A 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)

**XXX = Decimeter**

Please extend the standard order code with a three figure number, specifying the cable length in decimetres.

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDGP 36A	WDGP 36A					WDGP 36A
	<b>Shaft</b>					
06	06; 2Z= Ø 6.35 mm, Ø 1/4"; 08					
	<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 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		
	<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>		
	Without option			Empty		
	Cable length			XXX = Decimeter		

<b>Example Order No.=</b>	WDGP 36A	06	16384	ABN	M13	L2			WDGP 36A							<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/>

# WACHENDORFF

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