



# Online Data Sheet

## Encoder WDGP 36A

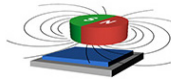
[www.wachendorff-automation.com/wdgp36a](http://www.wachendorff-automation.com/wdgp36a)

### 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	synchro 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 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
Nominal 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
Nominal 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 set zero pulse HTL, inv. HTL, inv. set zero pulse TTL TTL set zero pulse TTL, RS422 compatible, inv. TTL, RS422 compatible, inv. set zero pulse
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
-----------------	---

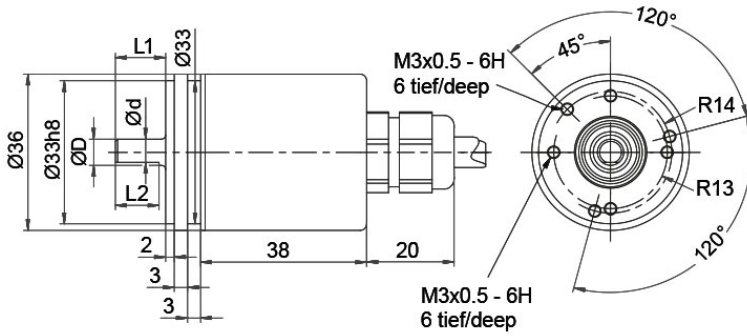
Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

## General Data

Weight	approx. 130 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; (IP40 for K1)
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**


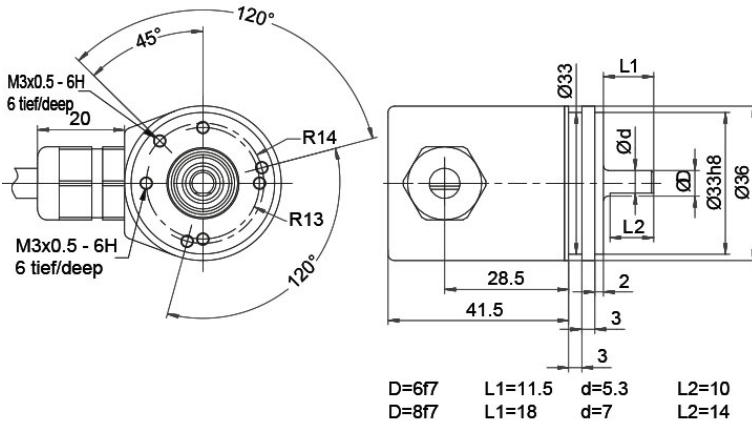
D=6f7    L1=11.5    d=5.3    L2=10  
 D=8f7    L1=18        d=7        L2=14

**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>(+) Vcc</b>	BN	BN	BN	BN
<b>GND</b>	WH	WH	WH	WH
<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**

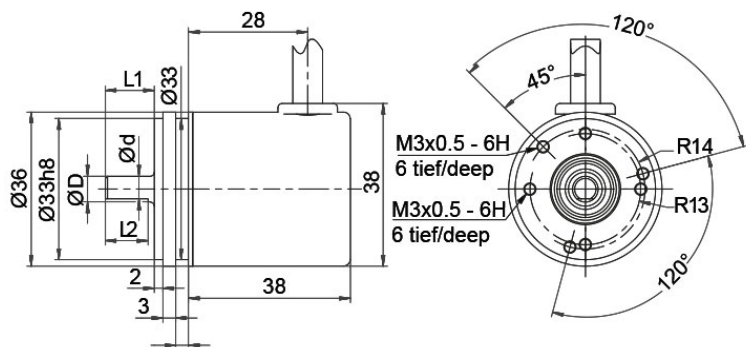
ABN inv. poss.

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

•

Assignments				
	L3	L3	L3	L3
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>GND</b>	WH	WH	WH	WH
<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=6f7    L1=11.5    d=5.3    L2=10  
D=8f7    L1=18        d=7        L2=14

**Description**

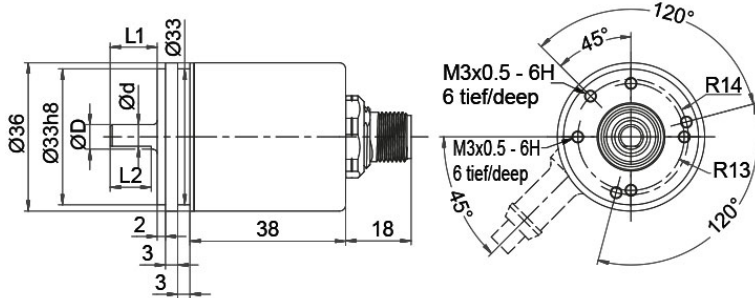
ABN inv. poss.

K1 radial, shield not connected (IP40)

•

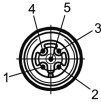
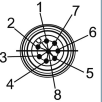
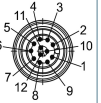
Assignments				
	K1	K1	K1	K1
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>GND</b>	WH	WH	WH	WH
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.</b>	BK	BK	-	-
<b>N inv.</b>	VT	VT	-	-
<b>Shield</b>	flex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

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

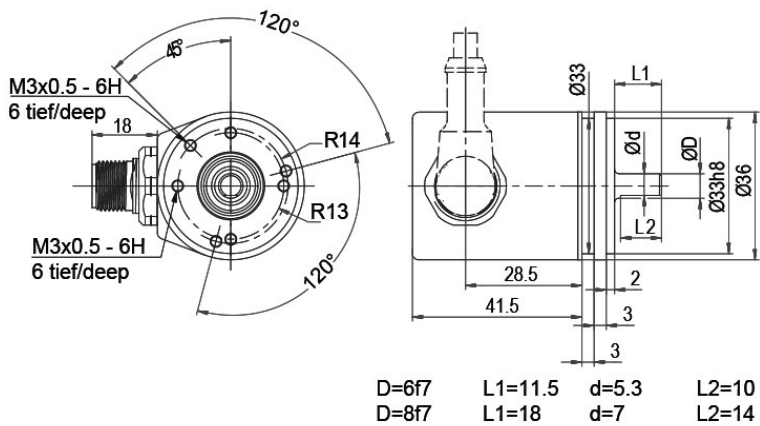


D=6f7    L1=11.5    d=5.3    L2=10  
D=8f7    L1=18        d=7        L2=14

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>	-	-	-

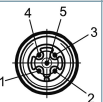
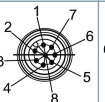
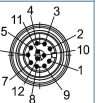
**Sensor-connector (M12x1) SC radial, 5-, 8-, 12 polig**



**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			
	<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

### 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: 08					
<b>Pulses per revolution PPR:</b>						
16384	1-16384 Other PPRs on request					
<b>Channels:</b>						
ABN	ABN					
<b>Output circuit</b>						
M13	1-16384	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	<b>Light reserve warning</b>	<b>Order key</b>
			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>
---------------------------	----------	----	-------	-----	-----	----	--	----------	--	--	--	--	--	--	---------------------



For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
<https://www.wachendorff-automation.com/>



Wachendorff Automation GmbH & Co. KG  
Industriestrasse 7 • 65366 Geisenheim  
Germany

Phone: +49 67 22 / 99 65 25  
Fax: +49 67 22 / 99 65 70  
E-Mail: [wdg@wachendorff.de](mailto:wdg@wachendorff.de)  
[www.wachendorff-automation.de](http://www.wachendorff-automation.de)

