



# Online Data Sheet

## Encoder WDGP 36J

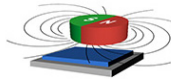
[www.wachendorff-automation.com/wdgp36j](http://www.wachendorff-automation.com/wdgp36j)

### 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 36J (magnetic)



- Protection rating: IP67 + IP69K, (high pressure / steam cleaning)
- Due to high quality electronics any number of pulses up to 16384
- High output frequency up to 1 MHz
- Reverse polarity protection and short-circuit protection at 4.75 VDC to 32 VDC

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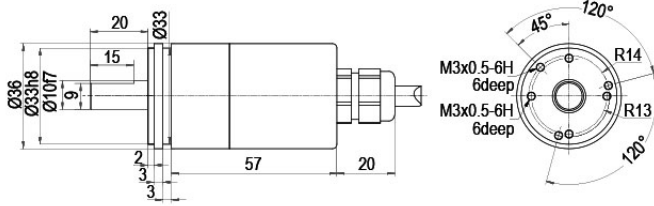
Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Housing	
Flange	servo flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 36 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	300 N
Max. Permissible shaft loading axial	300 N
Bearings	
Bearings type	2 precision ball bearings
Nominal service life	5 x 10 <sup>8</sup> revs. at 100 % rated shaft load 5.44 x 10 <sup>9</sup> revs. at 40 % rated shaft load 3.1 x 10 <sup>10</sup> revs. at 20 % rated shaft load
Max. operating speed	6000 rpm
Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	1200 a
Mission time (TM)	25 a
Nominal service life (L10h)	3.1 x 10 <sup>10</sup> revs. at 20 % rated shaft load and 6000 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 Deaktiviere: SET = GND
Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

Environmental data	
<b>Environmental data:</b>	
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

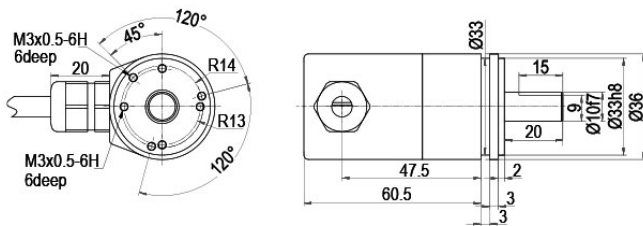
General Data	
Weight	approx. 210 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67 all around and IP69K
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C
Storage temperature	Connector: -40 °C up to +100 °C, cable: -30 °C up to +80 °C

More Information	
General technical data and safety instructions <a href="http://www.wachendorff-automation.com/gt">http://www.wachendorff-automation.com/gt</a>	
Options <a href="http://www.wachendorff-automation.com/acc">http://www.wachendorff-automation.com/acc</a>	

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

**Description**
**ABN inv. poss.**
**L2** axial, shield connected to encoder housing

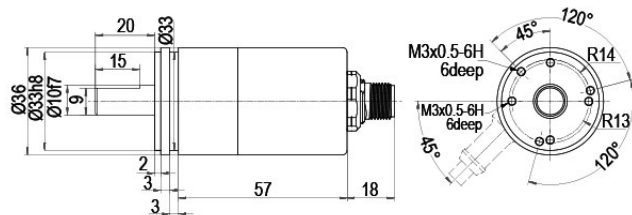
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Assignments				
	L2	L2	L2	L2
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>GND</b>	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.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

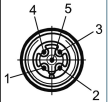
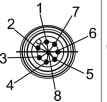
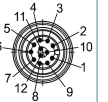
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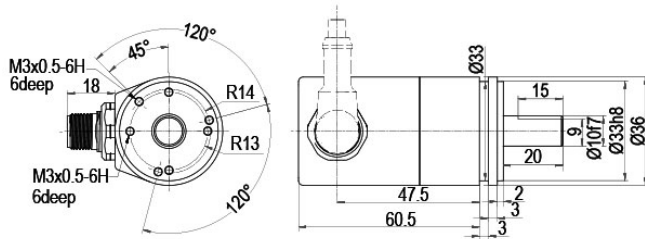
Assignments				
	L3	L3	L3	L3
<b>Circuit</b>	M11, M12	M13, M14	N11, N12	N13, N14
<b>GND</b>	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE
<b>N</b>	GY	GY	GY	GY
<b>SET</b>	-	PK	-	PK
<b>A inv.</b>	RD	RD	-	-
<b>B inv.</b>	BK	BK	-	-
<b>N inv.</b>	VT	VT	-	-
<b>Shield</b>	flex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

**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	•

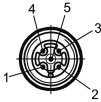
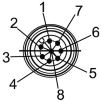
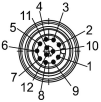
**Assignments**

	<b>SB5</b>	<b>SB8</b>	<b>SB12</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>	-	-	-

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

**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 36J can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see Downloads: „General technical Data“.

**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 36J	WDGP 36J				WDGP 36J
	<b>Shaft</b>				
10	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 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>				
	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 36J	10	16384	ABN	M13	L2		WDGP 36J						<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/>



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