



Online Data Sheet

Encoder WDGP 36E

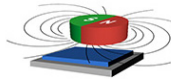
www.wachendorff-automation.com/wdgp36e-k

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 36E (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/wdgp36e-k

Resolution

Pulses per revolution PPR 1 PPR up to 16384 PPR

Mechanical Data

Housing

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	stainless steel
- 1. Spring plate compensation	axial: ± 1.2 mm, radial: ± 0.4 mm
Housing	$\varnothing 36$ mm

Shaft(s)

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

Shaft	$\varnothing 8$ mm
Advice	with adapter sleeve
Insertion depth min.	10 mm
Insertion depth max.	14.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	$\varnothing 10$ mm, $\varnothing 1/4"$
Advice	with adapter sleeve
Insertion depth min.	10 mm
Insertion depth max.	14.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	$\varnothing 12$ mm
Insertion depth min.	10 mm
Insertion depth max.	14.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	$\varnothing 14$ mm
Insertion depth min.	10 mm
Insertion depth max.	14.5 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N
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Shaft	$\varnothing 15$ mm
Insertion depth min.	10 mm
Insertion depth max.	14.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings

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

Machinery Directive: basic data safety integrity level

MTTF _d	1200 a
Mission time (TM)	25 a
Nominale service life (L10h)	1.7 x 10 ¹⁰ 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
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Accuracy

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

Environmental data

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 ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	Accordinging DIN VDE 0160

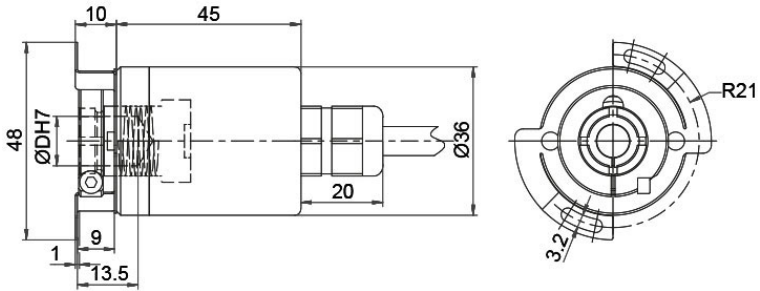
General Data

Weight	approx. 165 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


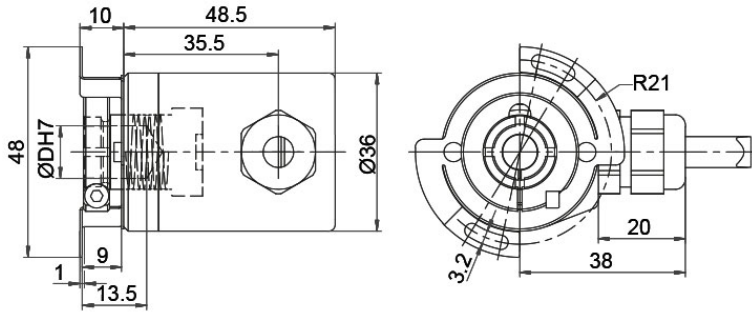
D = Ø 8, 10, 12, 14, 15 mm
 (Ø 8, 10 mm with adapter sleeve)

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

•

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 = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

Description

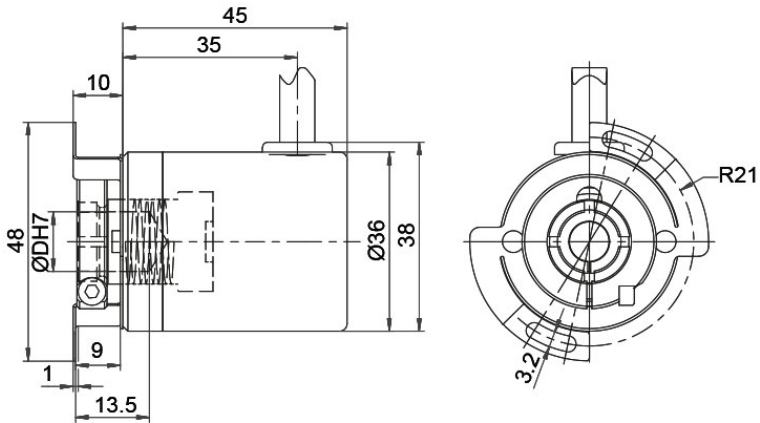
ABN inv. poss.

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 = \varnothing 8, 10, 12, 14, 15 mm
 (\varnothing 8, 10 mm über Reduzierhülse)

Description

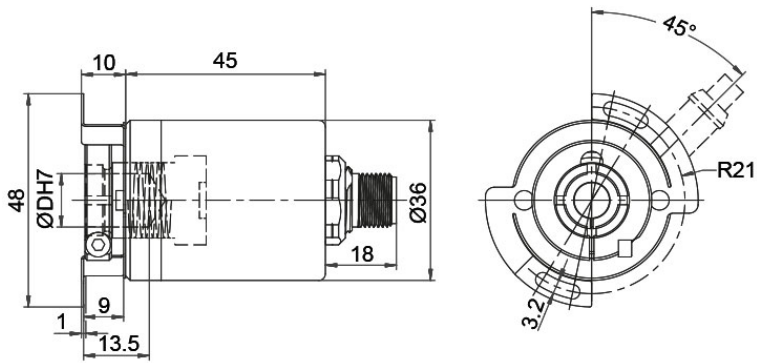
ABN inv. poss.

K1 radial, shield not connected (IP40)

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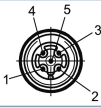
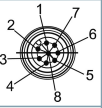
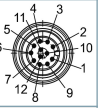
Assignments				
	K1	K1	K1	K1
Circuit	M11, M12	M13, M14	N11, N12	N13, N14
GND	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN
A	GN	GN	GN	GN
B	YE	YE	YE	YE
N	GY	GY	GY	GY
SET	-	PK	-	PK
A inv.	RD	RD	-	-
B inv.	BK	BK	-	-
N inv.	VT	VT	-	-
Shield	flex	flex	flex	flex

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

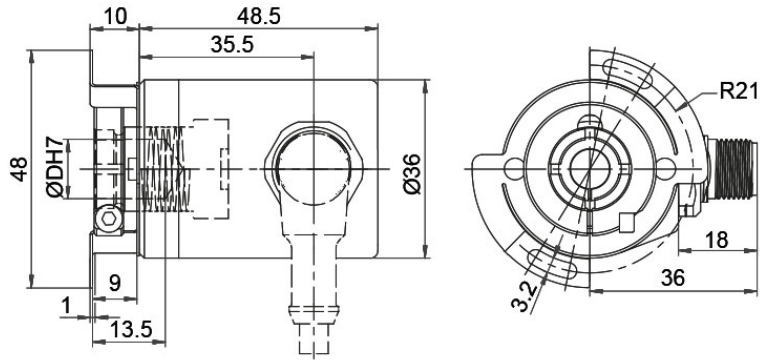


D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

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	•

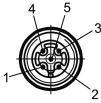
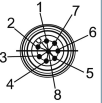
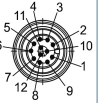
Assignments			
	SB5	SB8	SB12
	5-pin	8-pin	12-pin
			
Circuit	N11, N12	M11, M12	M13, M14
GND	3	1	3
(+) Vcc	1	2	1
A	4	3	4
B	2	4	6
N	5	5	8
SET	-	-	5
A inv.	-	6	9
B inv.	-	7	7
N inv.	-	8	10
n. c.	-	-	2, 11, 12
Shield	-	-	-

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



D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

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

Cable length

Order key

The encoder WDGP 36E 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“.

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 36E	WDGP 36E				WDGP 36E
Bore size					
12	08; 10= Ø 10 mm, Ø 1/4"; 12; 14; 15				
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		
Without option			Empty		
Cable length			XXX = Decimeter		

Example Order No.=	WDGP 36E	12	16384	ABN	M13	L2		WDGP 36E						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/>



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