Encoder WDGP 36E

www.wachendorff-automation.com/wdgp36e-k

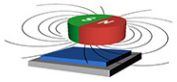
Wachendorff Automation

... 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

IndustrieROBUST

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	Ø 36 mm

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

Shaft	Ø 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	Ø 10 mm, Ø 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	Ø 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	Ø 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

Shaft	Ø 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 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 Deaktivate: SET = GND

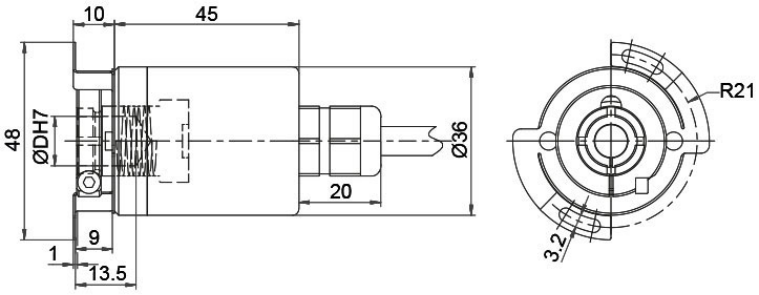
Accuracy	

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

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

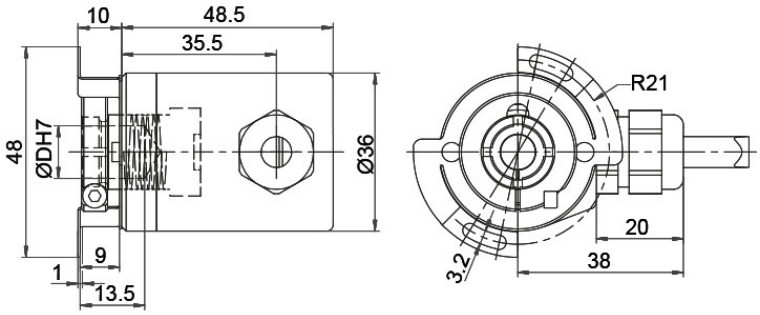


D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

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
(+) Vcc	BN	BN	BN	BN
GND	WH	WH	WH	WH
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

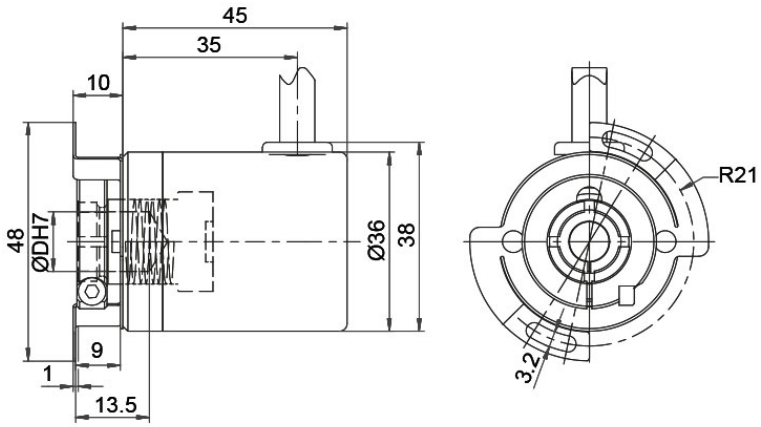


D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

Description		ABN inv. poss.
L3	radial, shield connected to encoder housing	•

Assignments				
	L3	**L3**	**L3**	**L3**
Circuit	M11, M12	M13, M14	N11, N12	N13, N14
(+) Vcc	BN	BN	BN	BN
GND	WH	WH	WH	WH
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

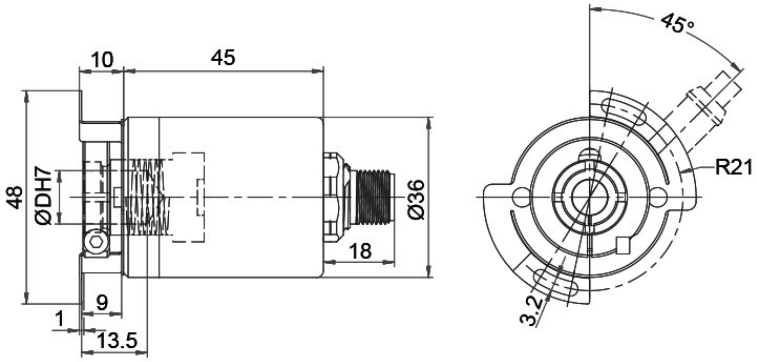


D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm über Reduzierhülse)

Description		ABN inv. poss.
K1	radial, shield not connected (IP40)	•

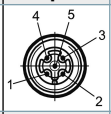
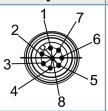
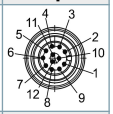
Assignments				
	K1	**K1**	**K1**	**K1**
Circuit	M11, M12	M13, M14	N11, N12	N13, N14
(+) Vcc	BN	BN	BN	BN
GND	WH	WH	WH	WH
A	GN	GN	GN	GN
B	YE	YE	YE	YE
N	GY	GY	GY	GY
SET	-	PK	-	PK
A inv.	RD	RD	-	-
B inv.	BK	BK	-	-
N inv.	VT	VT	-	-
Shield	flex	flex	flex	flex

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

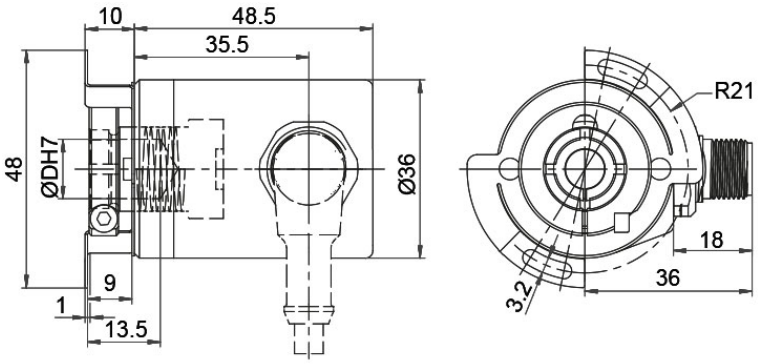


D = Ø 8, 10, 12, 14, 15 mm
(Ø 8, 10 mm with adapter sleeve)

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	•

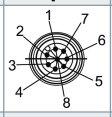
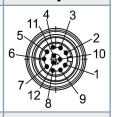
Assignments			
	SB5	**SB8**	**SB12**
	5-pin	**8-pin**	**12-pin**
			
Circuit	N11, N12	M11, M12	M13, M14
GND	3	1	3
(+) Vcc	1	2	1
A	4	3	4
B	2	4	6
N	5	5	8
SET	-	-	5
A inv.	-	6	9
B inv.	-	7	7
N inv.	-	8	10
n. c.	-	-	2, 11, 12
Shield	-	-	-

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 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 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

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
www.wachendorff-automation.de