



Online Data Sheet

Encoder WDGP 36K

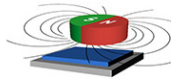
www.wachendorff-automation.com/wdgp36k

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 36K (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

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Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Housing	
Flange	round 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
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

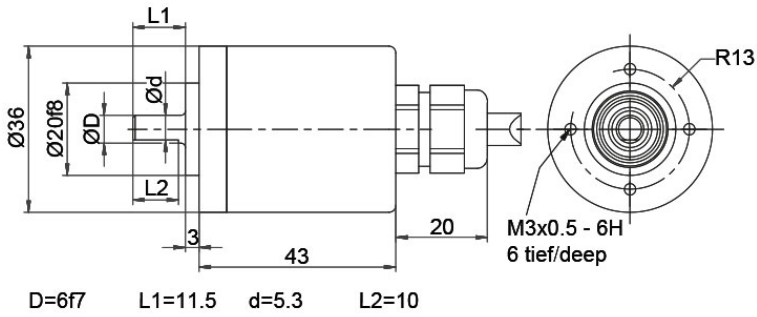
Load	max. 40 mA / channel
Circuit protection	inverse-polarity and short-circuit protection
Set zero pulse:	Set: SET = +UB for 2 s Deaktiviere: SET = GND
Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

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:	According DIN VDE 0160

General Data	
Weight	approx. 125 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/gttd	
Options http://www.wachendorff-automation.com/acc	

Cable connection L2 axial with 2 m cable



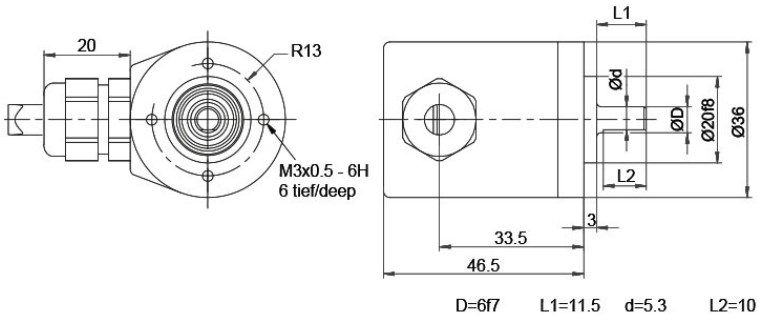
Description

ABN inv. poss.

L2 axial, shield connected to encoder housing

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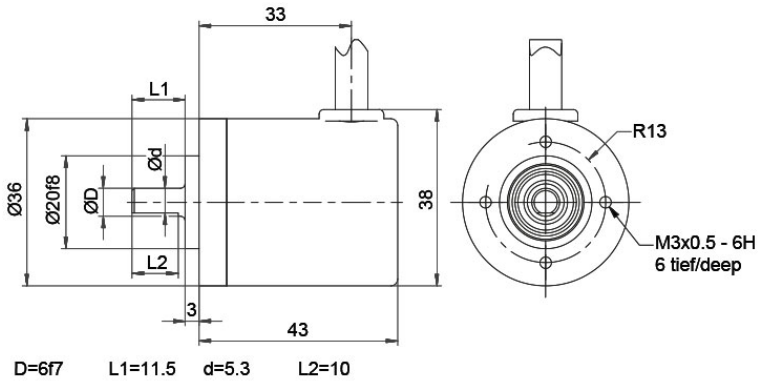
Assignments				
	L2	L2	L2	L2
Circuit	M11, M12	M13, M14	N11, N12	N13, N14
GND	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN
A	GN	GN	GN	GN
B	YE	YE	YE	YE
N	GY	GY	GY	GY
SET	-	PK	-	PK
A inv.	RD	RD	-	-
B inv.	BK	BK	-	-
N inv.	VT	VT	-	-
Shield	flex	flex	flex	flex

Cable connection L3 radial with 2 m cabel

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
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



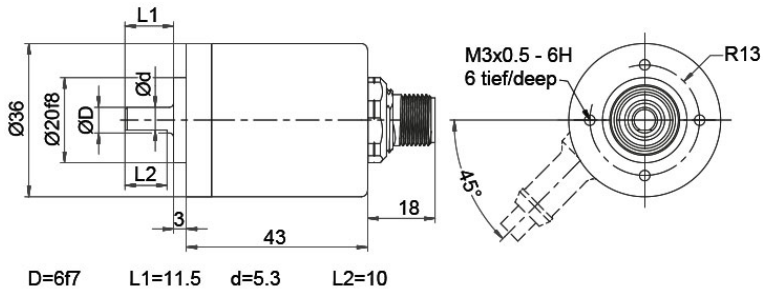
Description

ABN inv. poss.

K1 radial, shield not connected (IP40)

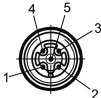
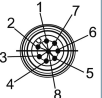

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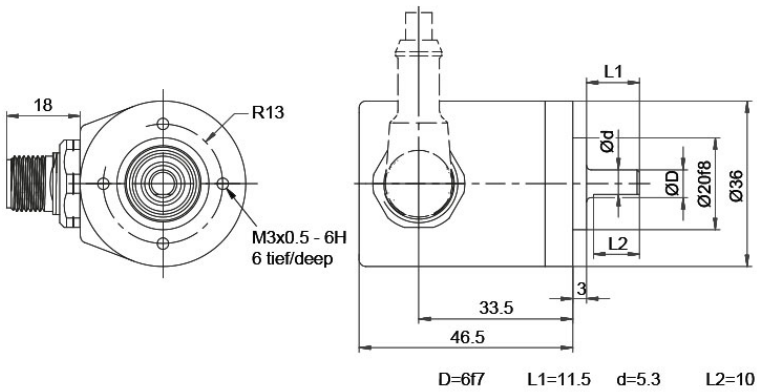
Assignments				
	K1	K1	K1	K1
Circuit	M11, M12	M13, M14	N11, N12	N13, N14
GND	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN
A	GN	GN	GN	GN
B	YE	YE	YE	YE
N	GY	GY	GY	GY
SET	-	PK	-	PK
A inv.	RD	RD	-	-
B inv.	BK	BK	-	-
N inv.	VT	VT	-	-
Shield	flex	flex	flex	flex

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

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	•

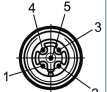
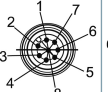

Assignments

	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) SC radial, 5-, 8-, 12-pin

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 36K 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 36K	WDGP 36K					WDGP 36K
Shaft						
06	06					
Pulses per revolution PPR:						
16384	1-16384 Other PPRs on request					
Channels:						
ABN	ABN					
Output circuit						
M13	1-16384	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key
		4.75 - 32	4.75 - 32	HTL inverted	-	M11
		4.75 - 32	4.75 - 32	TTL, RS422 comp., inverted	-	M12
		4.75 - 32	4.75 - 32	HTL, inv. set zero pulse	-	M13
		4.75 - 32	4.75 - 32	TTL, RS422 compatible, inv. set zero pulse	-	M14
		4.75 - 32	4.75 - 32	HTL	-	N11
		4.75 - 32	4.75 - 32	TTL	-	N12
		4.75 - 32	4.75 - 32	HTL set zero pulse	-	N13
4.75 - 32	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 36K	06	16384	ABN	M13	L2		WDGP 36K						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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