



Online Data Sheet

Encoder WDG 24C

www.wachendorff-automation.com/wdg24c

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 WDG 24C



- very compact construction for use in harsh conditions
- permissible bearing loads similar to our "big encoders"
- up to IP67 all around
- Hall effect based signal generation

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Resolution

Max. pulses per revolution 1 PPR up to 128 PPR, 256 PPR, 512 PPR, 1024 PPR

Mechanical Data

Housing

Flange synchro flange
 Flange material aluminum
 Housing cap aluminum
 Housing Ø 24 mm

Shaft(s)

Shaft material stainless steel
 Starting torque approx. 0.2 Ncm at ambient temperature

Shaft Ø 6 mm
 Shaft length L: 12 mm
 Max. Permissible shaft loading radial 80 N
 Max. Permissible shaft loading axial 50 N

Bearings

Bearings type 2 precision ball bearings
 Nominal service life 0.55 x 10⁹ revs. at 100 % rated shaft load
 8.5 x 10¹⁰ revs. at 40 % rated shaft load
 6.8 x 10¹¹ revs. at 20 % rated shaft load
 Max. operating speed 12000 rpm

Machinery Directive: basic data safety integrity level

MTTF_d 200 a
 Mission time (TM) 25 a
 Nominal service life (L10h) 6.8 x 10¹¹ revs. at 20 % rated shaft load and 12000 rpm
 Diagnostic coverage (DC) 0 %

Electrical Data

Power supply/Current consumption 4,75 VDC up to 5,5 VDC: typ. 40 mA
 Power supply/Current consumption 5 VDC up to 30 VDC: typ. 40 mA
 Output circuit TTL, RS422 compatible, inv.
 TTL
 HTL
 HTL, inv.

Pulse frequency 64 ppr: max. 20 kHz
 1024 ppr: max. 200 kHz
 Channels AB
 ABN
 and inverted signals
 Load max. 30 mA / channel
 Circuit protection no

Accuracy

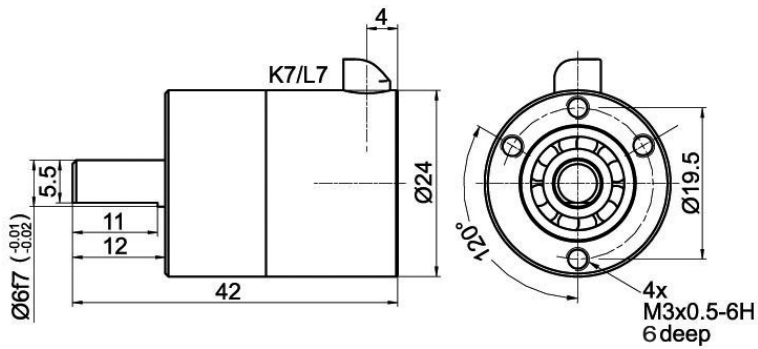
Phase offset 90° ± max. 25% of the period duration
 pulse-/pause-ratio at 1 ppr up to 128 ppr: 50 % ± max. 7 %
 at 256 ppr: 50 % ± max. 9 %
 at 512 ppr: 50 % ± max. 13 %
 at 1024 ppr: 50 % ± max. 18 %

General Data

Weight approx. 50 g
 Connections cable or connector outlet
 Protection rating (EN 60529) IP65 all around with SK6, housing IP40 with K7, L7
 Operating temperature -20 °C up to +80 °C
 Storage temperature -20 °C up to +80 °C

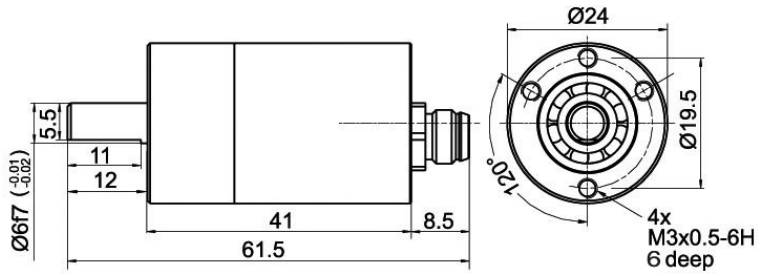
More Information

General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>
 Options
<http://www.wachendorff-automation.com/acc>


Cable connection K7, L7 (IP40) with 2 m cable

Description
ABN inv. poss.

K7	radial, shield not connected (IP40)	•
L7	radial, shield connected to encoder housing (IP40)	•

Assignments		
	K7, L7	K7, L7
Circuit	N05, N30	M05, M30
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	PK, (BK at ACA)
N inv.	-	BU, (VT at ACA)
Shield	flex	flex

Connector SK6, 6-pin

Description
ABN inv. poss.
SK6 axial, 6-pin, Connector connected to encoder housing

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Assignments	
	SK6
	6-pin
	
Circuit	N05, N30
GND	3
(+) Vcc	2
A	4
B	5
N	1
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6
Shield	-

Options

Low-friction bearings

The encoder WDG 24C is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.1 Ncm and the protection class at the shaft input to IP50.

Order key

AAC

IP67 all around (with connector SK6 only)

The encoder WDG 24C can be supplied in a full IP67 version. Resistance to salt mist (IEC 60068-2-11) after 672 hours

Order key

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N

Permitted Shaft-Loading, radial: 45 N

Max. PPR: 1024 ppr

Starting-torque: approx. 1.2 Ncm at ambient temperature

Low temperature

The encoder WDG 24C with the output circuit types M05, N05, M30, N30 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 24C can be supplied with more than 2 m cable. The max. permissible cable length is 10 metres with the output circuit M05 and N05.

With output circuit M30 and N30 max. 25 m. 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

Order key

XXX = Decimeter

Example Order No.	Type				Your encoder
WDG 24C	WDG 24C				WDG 24C
Pulses per revolution PPR:					
64	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 256, 512, 1024 Other PPRs on request				
Channels:					
ABN	AB, ABN				
Output circuit					
M30	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key
	16, 32, 64	4.75 - 5.5	TTL, RS422 comp., inverted	-	M05
		4.75 - 5.5	TTL	-	N05
	1-128, 256, 512, 1024	5 - 30	HTL inverted	-	M30
		5 - 30	HTL	-	N30
Electrical connections					
K7	Description			ABN inv. poss.	Order key
	Cable: length (2 m standard, WDG 58T: 1 m)				
	radial, shield not connected (IP40)			•	K7
	radial, shield connected to encoder housing (IP40)			•	L7
Connector: (shield connected to encoder housing)					
connector, M8x1, 6-pin, axial			-	SK6	
Options					
	Description			Order key	
	Low-friction bearings			AAC	
	IP67			AAO	
	Low temperature			ACA	
	Without option			Empty	
Cable length			XXX = Decimeter		

Example Order No.=	WDG 24C	64	ABN	M30	K7		WDG 24C					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/>



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

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de

