WACHENDORFF
The Encoder Experts



Online Data sheet

Encoder WDG 30A

www.wachendorff-automation.com/wdg30a

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 WDG 30A



Illustration similar

- 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

www.wachendorff-automation.com/wdg30a

Resolution	
Pulses per revolution PPR	up to 1024 PPR

Mechanical Data	
Flange	synchro flange
Flange material	aluminum
Housing material	aluminum
Flange diameter	Ø 30 mm [Ø 1.181"]

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm [0.283 in-ozf] at ambient temperature
Shaft	Ø 6 mm [Ø 0.236"]
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Bearings	
Bearings type	2 precision ball bearings
Nominale service life	0.55 x 10'9 revs. at 100 % rated shaft load 8.5 x 10'10 revs. at 40 % rated shaft load 6.8 x 10'11 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
Nominale service life (L10h)	6.8 x 10'11 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
Operating principle	magnetic
Output circuit	TTL, RS422 compatible, inv. TTL HTL (TTL at 5 VDC) HTL, inv. (TTL/RS422 comp. at 5 VDC)
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 % 129 ppr - 256 ppr: 50 % ± max. 9 % 257 ppr - 512 ppr: 50 % ± max. 13 % 513 ppr - 1024 ppr: 50 % ± max. 18 %

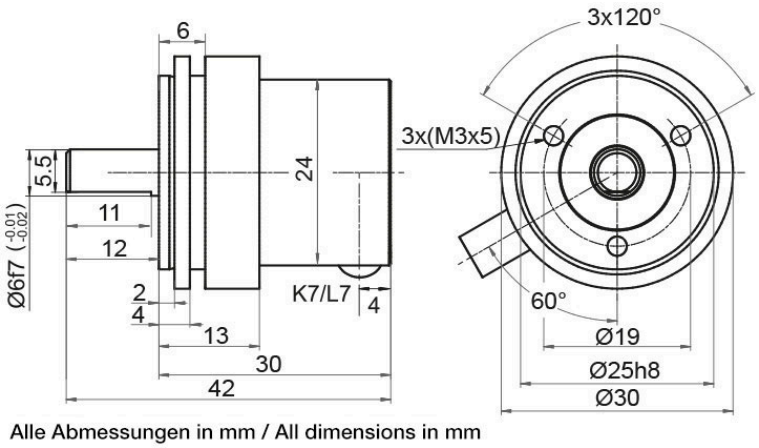
Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 m/s^2 (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s^2 (6 ms)
Electrial Safety:	according DIN VDE 0160

Duty information	
Customs tariff number:	90318020
Country of origin:	Germany

General Data	
Weight	approx. 50 g [1.764 oz]
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 [-4 °F up to +176 °F]
Storage temperature	-20 °C up to +80 °C [-4 °F up to +176 °F]

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

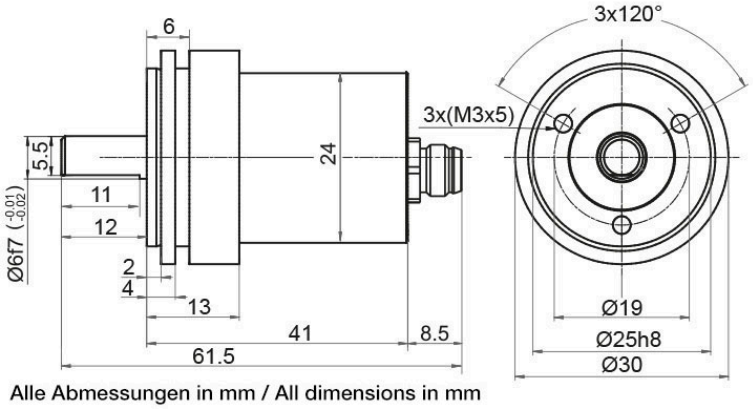


Alle Abmessungen in mm / All dimensions in mm

Description		ABN inv. poss.
K7	radial, shield not connected (IP40)	•
L7	radial, shield connected to encoder housing (IP40)	•

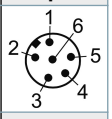
Assignments		
	K7, L7	**K7, L7**
Circuit	N05, N30	M05, M30
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
-	-	-
A inv.	-	RD
B inv.	-	PK, (BK at ACA)
N inv.	-	BU, (VT at ACA)
Shield	flex	flex

Connector (M8x1) SK6, 6-pin

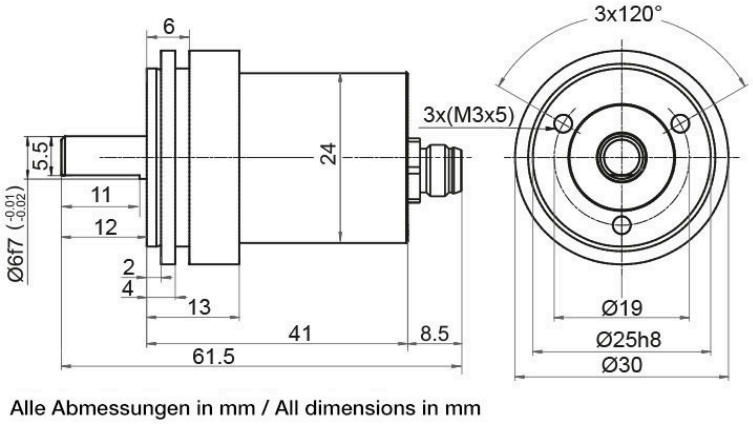


Alle Abmessungen in mm / All dimensions in mm

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

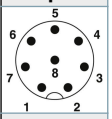
Assignments	
	SK6
	6-pin
	
Circuit	N05, N30
GND	3
(+) Vcc	2
A	4
B	5
N	1
-	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6
Shield	-

Connector (M8x1) SK8, 8-pin



Alle Abmessungen in mm / All dimensions in mm

Description		ABN inv. poss.
SK8	axial, 8-pin, Connector connected to encoder housing	•

Assignments	
	SK8
	8-pin
	
Circuit	M05, M30
GND	1
(+) Vcc	2
A	3
B	4
N	5
-	-
A inv.	6
B inv.	7
N inv.	8
n. c.	-
Shield	-

Options

Low-friction bearings	Order key
The encoder WDG 30A is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm [0.141 in-ozf] and the protection class at the shaft input to IP50.	**AAC**

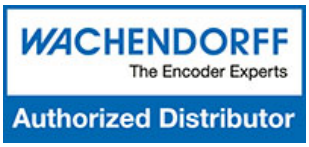
IP67 all around (with connector SK6/SK8 only)	Order key
The encoder WDG 30A with SK6/SK8 can be supplied in a full IP67 version. Max. RPM: 3500 rpm Permitted Shaft-Loading, axial: 30 N [3.059 kp] Permitted Shaft-Loading, radial: 45 N [4.589 kp] Max. PPR: 1024 ppr Starting-torque: approx. 1.2 Ncm [1.699 in-ozf] at ambient temperature	**AAO**

Low temperature	Order key
The encoder WDG 30A with the output circuit types M05, N05, M30, N30 is also available with the extended temperature range -40 °C up to +80 °C [-40 °F up to +176 °F] (measured at the flange).	**ACA**

Cable length	Order key
The encoder WDG 30A can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see https://www.wachendorff-automation.com/download-gtd-incremental-encoders/ 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
WDG 30A	WDG 30A						WDG 30A
	Pulses per revolution PPR:						
64	1-1024, 16, 32, 64 Other PPRs on request						
	Channels:						
ABN	AB, ABN						
	Output circuit						
M30	**Resolution PPR**	**Power supply VDC**	**Output circuit**		**-**	**Order key**	
	16, 32, 64	4.75 - 5.5	TTL, RS422 comp., inverted		-	M05	
		4.75 - 5.5	TTL		-	N05	
	1-1024	5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)		-	M30	
		5 - 30	HTL (TTL at 5 VDC)		-	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	
	connector, M8x1, 8-pin, axial				•	SK8	
	Options						
	Description				**Order key**		
	Low-friction bearings				AAC		
	IP67 all around (with connector SK6/SK8 only)				AAO		
	Low temperature				ACA		
	Without option				Empty		
	Cable length				XXX = Decimeter		

Example Order No.=	WDG 30A	64	ABN	M30	K7		WDG 30A						Your encoder



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
https://www.wachendorff-automation.com/contact-en/wachendorff-world-wide/

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