



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 (magnetic)



- 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/wdg24c

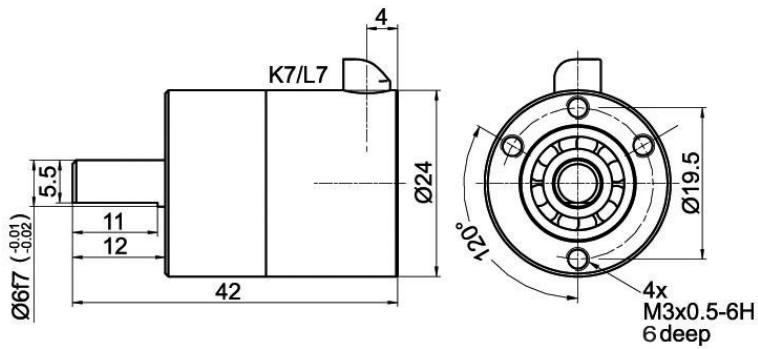
| Resolution | |
|--|--|
| Pulses per revolution PPR | 1 PPR up to 128 PPR, 256 PPR, 512 PPR, 1024 PPR |
| Mechanical Data | |
| Housing | |
| Flange | synchro flange |
| Flange material | aluminum |
| Housing cap | aluminum |
| Housing | Ø 24 mm |
| Shaft(s) | |
| Shaft material | stainless steel |
| 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 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 |
| Nominal 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 |
| 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 % |

| 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. 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 | |

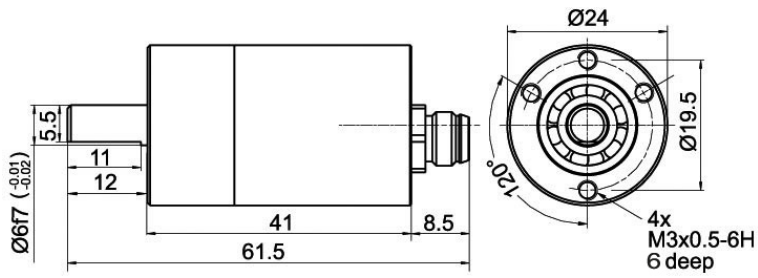
Cable connection K7, L7 (IP40) with 2 m cable

Description

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


ABN inv. poss.

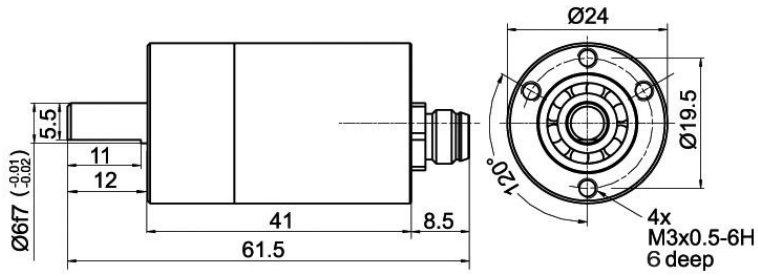
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| Assignments | | |
|------------------------------|----------|-----------------|
| | K7, L7 | K7, L7 |
| Circuit | N05, N30 | M05, M30 |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| Light reserve warning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

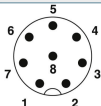
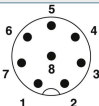
Connector SK6, 6-pin

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

-

| 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 | - |

Connector SK8, 8-pin

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

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| Assignments | | |
|------------------------------|--|--|
| | SK8 | SK8 |
| | 8-pin | 8-pin |
| |  |  |
| Circuit | N05, N30 | M05, M30 |
| GND | 1 | 1 |
| (+) Vcc | 2 | 2 |
| A | 3 | 3 |
| B | 4 | 4 |
| N | 5 | 5 |
| Light reserve warning | - | - |
| A inv. | - | 6 |
| B inv. | - | 7 |
| N inv. | - | 8 |
| n. c. | 6, 7, 8 | - |
| 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/SK8 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 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

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 |
| connector, M8x1, 8-pin, axial | | | • | SK8 | |
| 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 |
|---------------------------|---------|----|-----|-----|----|--|---------|--|--|--|--|---------------------|



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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