



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

www.wachendorff-automation.com/wdg24c

Illustration similar

| Resolution | |
|--|--|
| Pulses per revolution PPR | up to 1024 PPR |
| Mechanical Data | |
| Flange | synchro flange |
| Flange material | aluminum |
| Housing material | aluminum |
| Flange diameter | Ø 24 mm [Ø 0.945"] |
| 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 |
| 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 |
| 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 % |

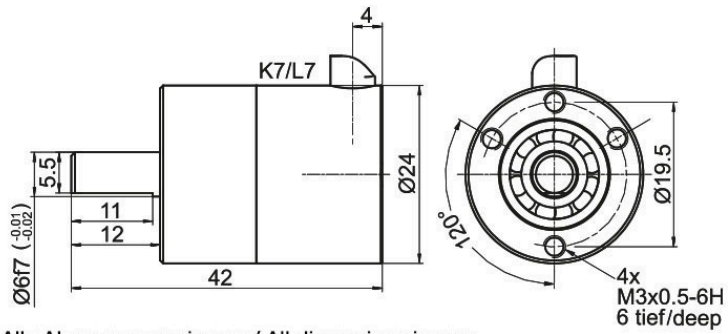
| Environmental data | |
|----------------------------------|---|
| ESD (DIN EN 61000-4-2): | 8 kV |
| Burst (DIN EN 61000-4-4): | 2 kV |
| includes EMC: | DIN EN 61000-6-2 DIN EN 61000-6-3 |
| Vibration: (DIN EN 60068-2-6) | 50 m/s ² (10 Hz up to 2000 Hz) |
| Shock: (DIN EN 60068-2-27) | 1000 m/s ²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

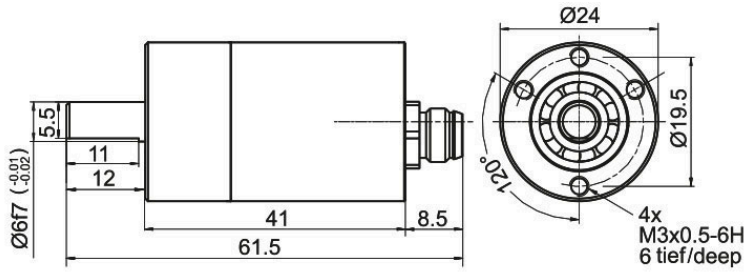


Alle Abmessungen in mm / All dimensions in mm

| 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

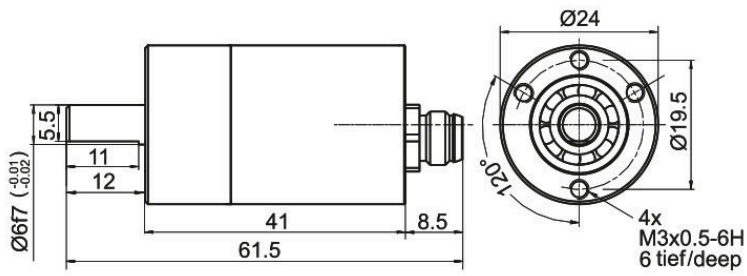
ABN inv. poss.

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

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N [3.059 kp], 3.059 kp

Permitted Shaft-Loading, radial: 45 N [4.589 kp], 4.589 kp

Max. PPR: 1024 ppr

Starting-torque: approx. 1.2 Ncm [1.699 in-ozf] at ambient temperature, approx. 1.699 in-ozf at ambient temperature

Low temperature

Order key

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 [-40 °F up to +176 °F] (measured at the flange).

ACA

Cable length

Order key

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.

XXX = Decimeter

With output circuit M30 and N30 max. 25 m. 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

| Example Order No. | Type | | | | | Your encoder |
|-----------------------------------|---|-------------------------|--------------------------------------|-----------------------|------------------|--------------|
| WDG 24C | WDG 24C | | | | | WDG 24C |
| Pulses per revolution PPR: | | | | | | |
| 1-1024 | 1-1024, 16, 32, 64 | | | | | |
| Channels: | | | | | | |
| AB | AB, ABN | | | | | |
| Output circuit | | | | | | |
| M05 | 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 | | | AAO | | |
| | Low temperature | | | ACA | | |
| | Cable length | | | Cable length | | |
| Without option | | | Empty | | | |

| | | | | | | | | | | | | |
|---------------------------|---------|--------|----|-----|----|--|---------|--|--|--|--|---------------------|
| Example Order No.= | WDG 24C | 1-1024 | AB | M05 | 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/contact-en/wachendorff-world-wide/>

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