



Online Data sheet

Encoder WDGP 58B

www.wachendorff-automation.com/wdgp58b

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 58B



Illustration similar



- 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 | |
| Flange | clamping flange |
| Flange material | aluminum |
| Housing material | stainless steel |
| Flange diameter | Ø 58 mm [Ø 2.283"] |
| Shaft(s) | |
| Shaft material | stainless steel |
| Starting torque | approx. 1 Ncm [1.416 in-ozf] at ambient temperature |
| Shaft | Ø 6 mm [Ø 0.236"] |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 12 mm [0.472"] |
| Max. Permissible shaft loading radial | 125 N [12.746 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| Shaft | Ø 8 mm [Ø 0.315"] |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 19 mm [0.748"] |
| Max. Permissible shaft loading radial | 125 N [12.746 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| Shaft | Ø 9.525 mm [Ø 3/8"] Order No: 4Z |
| Advice | Attention: No option AAO = full IP67 version |
| Shaft length | L: 20 mm [0.787"] |
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| Shaft | Ø 10 mm [Ø 0.394"] |
| Shaft length | L: 20 mm [0.787"] |
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
| Bearings | |
| Bearings type | 2 precision ball bearings |

| | |
|-----------------------|---|
| Nominale service life | 1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load |
| Max. operating speed | 8000 rpm |

| Machinery Directive: basic data safety integrity level | |
|--|--|
| MTTF _d | 1200 a |
| Mission time (TM) | 25 a |
| Nominale service life (L10h) | 1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 rpm |
| Diagnostic coverage (DC) | 0 % |

| Electrical Data | |
|----------------------------------|--|
| Power supply/Current consumption | 4,75 VDC up to 32 VDC: typ. 80 mA |
| Operating principle | magnetic |
| 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 | |
|----------------------------------|---|
| 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: | DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No 61010-1-12 |
|--------------------|--|

Duty information

| | |
|------------------------|----------|
| Customs tariff number: | 90318020 |
| Country of origin: | Germany |

General Data

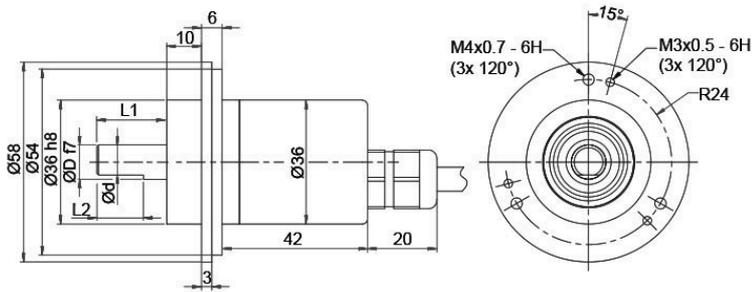
| | |
|------------------------------|---|
| Weight | approx. 220 g [7.76 oz] |
| Connections | cable or connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40 |
| Operating temperature | Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C. Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F. |
| Storage temperature | Connector: -40 °C up to +100 °C, Cable: -30 °C up to +80 °C Connector: -40 °F up to +212 °F, Cable: -22 °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 L2 axial with 2 m cable



| | | | |
|------------------|---------|--------------------|---------|
| D = 6 | L1 = 12 | d = 5.3 | L2 = 10 |
| D = 8 | L1 = 19 | d = 7.5 | L2 = 15 |
| D = 9.525 [3/8"] | L1 = 20 | d = 8.302 [0.327"] | L2 = 10 |
| D = 10 | L1 = 20 | d = 9 | L2 = 15 |

Alle Abmessungen in mm / All dimensions in mm

Description

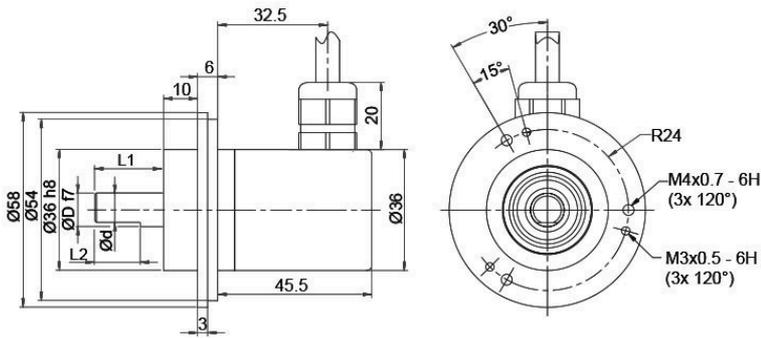
ABN inv. poss.

L2 axial, shield connected to encoder housing

•

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

Cable connection L3 radial with 2 m cable



| | | | |
|------------------|---------|--------------------|---------|
| D = 6 | L1 = 12 | d = 5.3 | L2 = 10 |
| D = 8 | L1 = 19 | d = 7.5 | L2 = 15 |
| D = 9.525 [3/8"] | L1 = 20 | d = 8.302 [0.327"] | L2 = 10 |
| D = 10 | L1 = 20 | d = 9 | L2 = 15 |

Alle Abmessungen in mm / All dimensions in mm

Description

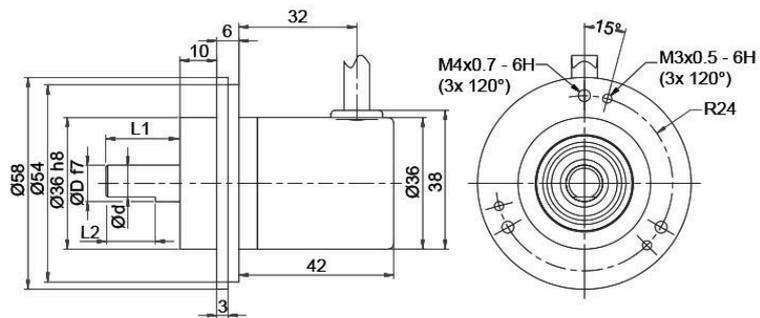
ABN inv. poss.

L3 radial, shield connected to encoder housing

•

| Assignments | | |
|----------------|----------|----------|
| | L3 | L3 |
| Circuit | M13, M14 | N13, N14 |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| SET | PK | PK |
| A inv. | RD | - |
| B inv. | BK | - |
| N inv. | VT | - |
| Shield | flex | flex |

Cable K1 (IP40) radial with 2 m cable



| | | | |
|------------------|---------|--------------------|---------|
| D = 6 | L1 = 12 | d = 5.3 | L2 = 10 |
| D = 8 | L1 = 19 | d = 7.5 | L2 = 15 |
| D = 9.525 [3/8"] | L1 = 20 | d = 8.302 [0.327"] | L2 = 10 |
| D = 10 | L1 = 20 | d = 9 | L2 = 15 |

Alle Abmessungen in mm / All dimensions in mm

Description

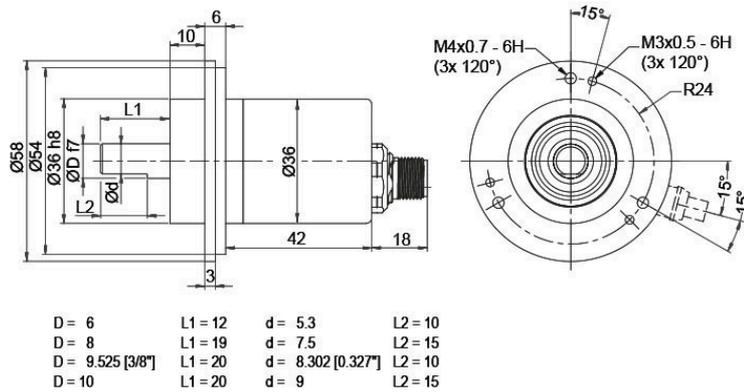
ABN inv. poss.

K1 radial, shield not connected (IP40)

•

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

Sensor connector (M12x1) SB axial, 12-pin



Alle Abmessungen in mm / All dimensions in mm

Description

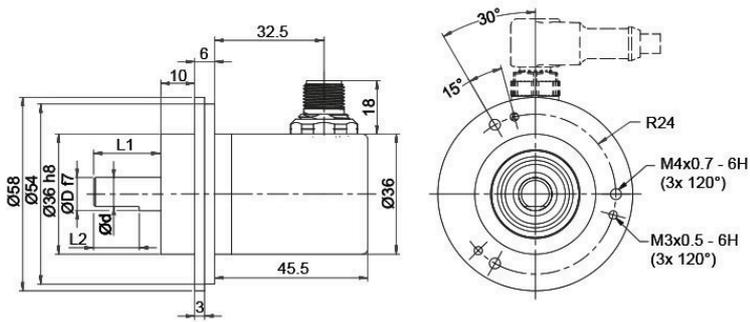
ABN inv. poss.

SB12 axial, 12-pin, Connector connected to encoder housing

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| Assignments | |
|----------------|---|
| | SB12 |
| | 12-pin |
| |  |
| Circuit | M13, M14 |
| GND | 3 |
| (+) Vcc | 1 |
| A | 4 |
| B | 6 |
| N | 8 |
| SET | 5 |
| A inv. | 9 |
| B inv. | 7 |
| N inv. | 10 |
| n. c. | 2, 11, 12 |
| Shield | - |

Sensor-connector (M12x1) SC radial, 12-pin



| | | | |
|------------------|---------|--------------------|---------|
| D = 6 | L1 = 12 | d = 5.3 | L2 = 10 |
| D = 8 | L1 = 19 | d = 7.5 | L2 = 15 |
| D = 9.525 [3/8"] | L1 = 20 | d = 8.302 [0.327"] | L2 = 10 |
| D = 10 | L1 = 20 | d = 9 | L2 = 15 |

Alle Abmessungen in mm / All dimensions in mm

Description

ABN inv. poss.

SC12 radial, 12-pin, Connector connected to encoder housing

•

| Assignments | |
|----------------|---|
| | SC12 |
| | 12-pin |
| |  |
| Circuit | M13, M14 |
| GND | 3 |
| (+) Vcc | 1 |
| A | 4 |
| B | 6 |
| N | 8 |
| SET | 5 |
| A inv. | 9 |
| B inv. | 7 |
| N inv. | 10 |
| n. c. | 2, 11, 12 |
| Shield | - |

Options

Low-friction bearings

The encoder WDGP 58B is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.

Order key

AAC

Shafts sealed to IP67, only with 10 mm [0.394"] shaft

The encoder WDGP 58B can be supplied in a IP67 version.
(full IP67 only connection SB, SC, L2 or L3 version; not cable connection K1 = IP40).
Max. RPM: 3500 min⁻¹
Permitted Shaft-Loading: axial 100 N [10.197 kp]; radial 110 N [11.216 kp]
Starting-torque: approx. 4 Ncm [5.664 in-ozf] at ambient temperature

Order key

AAO

Cable length

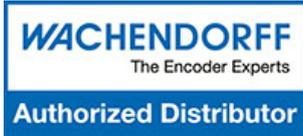
The encoder WDGP 58B can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see <https://www.wachendorff-automation.com/download-gtd-incremental-encoders/>
Please extend the standard order code with a three figure number, specifying the cable length in decimetres.
Example: 5 m cable = 050

Order key

XXX = Decimeter

| Example Order No. | Type | | | | Your encoder |
|---|---|-------------------------|--|-----------------------|------------------|
| WDGP 58B | WDGP 58B | | | | WDGP 58B |
| Shaft | | | | | |
| 10 | 06; 08; 4Z; 10 | | | | |
| Pulses per revolution PPR: | | | | | |
| 16384 | 1-16384 Other PPRs on request | | | | |
| Channels: | | | | | |
| ABN | ABN | | | | |
| Output circuit | | | | | |
| M13 | Resolution PPR | Power supply VDC | Output circuit | - | Order key |
| | 1-16384 | 4.75 - 32 | HTL, inv. set zero pulse | - | M13 |
| | | 4.75 - 32 | TTL, RS422 compatible, inv. set zero pulse | - | M14 |
| | | 4.75 - 32 | HTL set zero pulse | - | N13 |
| 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, 12-pin, axial | | | • | SB12 |
| sensor-connector, M12x1, 12-pin, radial | | | • | SC12 | |
| Options | | | | | |
| Description | | | Order key | | |
| Low-friction bearings | | | AAC | | |
| Shafts sealed to IP67, only with 10 mm [0.394"] shaft | | | AAO | | |
| Without option | | | Empty | | |
| Cable length | | | XXX = Decimeter | | |

| | | | | | | | | | | | | | | |
|---------------------------|----------|----|-------|-----|-----|----|--|----------|--|--|--|--|--|---------------------|
| Example Order No.= | WDGP 58B | 10 | 16384 | ABN | M13 | L2 | | WDGP 58B | | | | | | 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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