



Online Data Sheet

Encoder WDG 58A

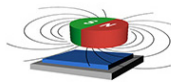
www.wachendorff-automation.com/wdgn58a

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 58A configurable via NFC



Wachendorff Apps WDG N

- Due to high quality electronics any number of pulses up to 16384 configurable via NFC
- HTL/TTL configurable via NFC
- 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

www.wachendorff-automation.com/wdgn58a

Configurable via NFC

| Resolution | |
|--|---|
| Max. pulses per revolution PPR | 1 PPR up to 16384 PPR |
| Mechanical Data | |
| Housing | |
| Flange | synchro flange |
| Flange material | aluminum |
| Housing cap | Stainless steel, NFC cover: Thermoplastic polyamide |
| Housing | Ø 58 mm |
| Shaft(s) | |
| Shaft material | stainless steel |
| Starting torque | approx. 1 Ncm at ambient temperature |
| Shaft | Ø 6 mm |
| Advice | Attention: No option AAS = full IP67 version |
| Shaft length | L: 12 mm |
| Max. Permissible shaft loading radial | 125 N |
| Max. Permissible shaft loading axial | 120 N |
| Shaft | Ø 10 mm |
| Shaft length | L: 20 mm |
| Max. Permissible shaft loading radial | 220 N |
| Max. Permissible shaft loading axial | 120 N |
| Bearings | |
| Bearings type | 2 precision ball bearings |
| Nominal 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 |
| Nominal 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 |
| 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 CH4 and inverted signals |
| Load | max. 40 mA / channel |
| Circuit protection | inverse-polarity and short-circuit protection |
| Nullimpuls setzen: | Setzen: SET = +UB für 2 s Deaktiviert: SET = GND |
| Accuracy | |
| Phase offset | 90° ± max. 8.5 % of the period duration |
| pulse-/pause-ratio | 50 % ± max. 7 % |
| Configurable via NFC: | |
| BASIC: (BAS) | |
| Channels: | ABN and inverted |
| HTL / TTL | freely selectable |
| Pulses / revolution: | 1 ppr up to 16384 ppr freely selectable |
| Advanced (ADV): | |
| Channels: | ABN + CH4 and inverted |
| HTL / TTL: | freely selectable |
| Pulses / revolution: | 1 ppr up to 16384 ppr freely selectable |
| Number of pulses for each channel: | individually selectable |
| Set zero pulse: | yes |
| Pulse width and position: | Width and position adjustable |
| Environmental data | |
| Noise immunity: | |
| ESD (DIN EN 61000-4-2): | 8 kV |
| EMC: (DIN EN 61000-4-3): | 10 V/m |
| Burst (DIN EN 61000-4-4): | 2 kV |
| High frequency fields (DIN EN 61000-4-6): | 10 V |

| | |
|----------------------------------|--|
| Surge (DIN EN 61000-4-5): | 2 kV |
| Radio interference: | According DIN EN 55011 |
| NFC: | |
| EMC: | According ETSI EN 301 489 |
| RED: | According ETSI EN 300 330 |
| Electrical safety: | According DIN EN 61010-1, UL 61010-1, CSA C22.0 No. 61010-1-12 |
| Vibration: (DIN EN 60068-2-6) | 300 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 |

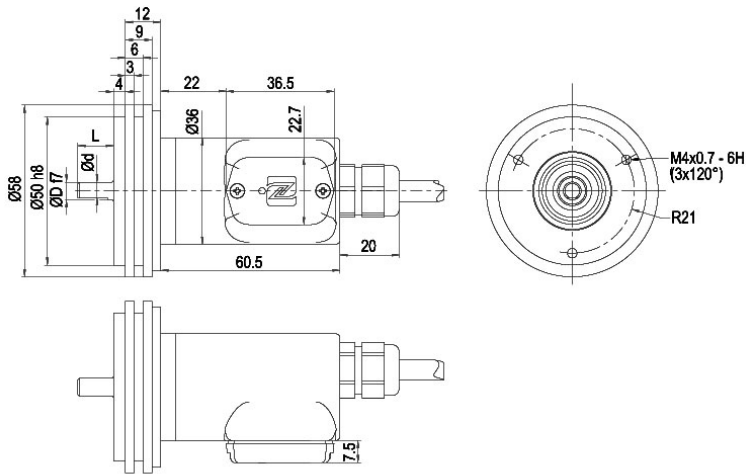
General Data

| | |
|------------------------------|--|
| Weight | approx. 240 g |
| Connections | cable or connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65; (IP40 for K1) |
| Operating temperature | Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C |
| Storage temperature | Connector: -40 °C up to +100 °C, cable: -30 °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 L2 axial with 2 m cable


D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat

Option AIX:
 D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

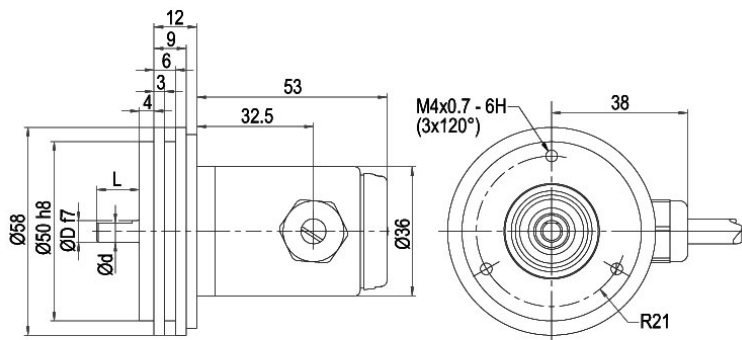
Option AAS:
 D = 10 L = 20 d = 9 Welle abgeflacht / shaft with flat

Description
ABN inv. poss.
L2 axial, shield connected to encoder housing

•

| Assignments | | |
|-----------------|------|------|
| | L2 | L2 |
| Circuit | BAS | ADV |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| CH4 | - | GYPK |
| SET | - | PK |
| A inv. | RD | RD |
| B inv. | BK | BK |
| N inv. | VT | VT |
| CH4 inv. | - | RDBU |
| Shield | flex | flex |

Cable connection L3 radial with 2 m cabel



D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat

Option AIX:
D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

Option AAS:
D = 10 L = 20 d = 9 Welle abgeflacht / shaft with flat

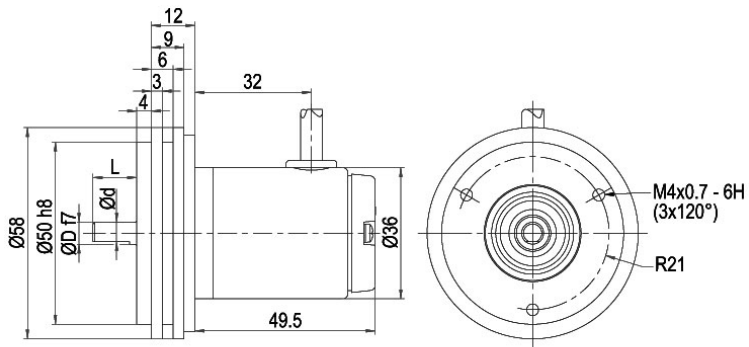
Description

ABN inv. poss.

L3 radial, shield connected to encoder housing

•

| Assignments | | |
|-------------|------|------|
| | L3 | L3 |
| Circuit | BAS | ADV |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| CH4 | - | GYPK |
| SET | - | PK |
| A inv. | RD | RD |
| B inv. | BK | BK |
| N inv. | VT | VT |
| CH4 inv. | - | RDBU |
| Shield | flex | flex |

Cable K1 (IP40) radial with 2 m cable


D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat

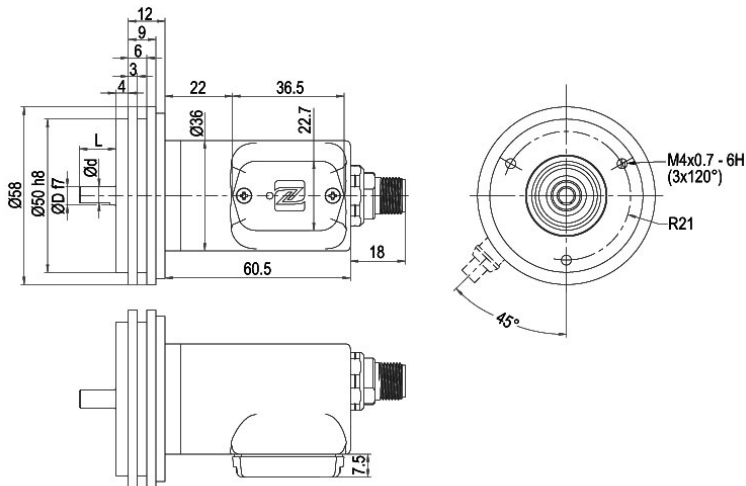
Option AIX:
 D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

Option AAS:
 D = 10 L = 20 d = 9 Welle abgeflacht / shaft with flat

Description
ABN inv. poss.
K1 radial, shield not connected (IP40)

•

| Assignments | | |
|-----------------|------|------|
| | K1 | K1 |
| Circuit | BAS | ADV |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| CH4 | - | GYPK |
| SET | - | PK |
| A inv. | RD | RD |
| B inv. | BK | BK |
| N inv. | VT | VT |
| CH4 inv. | - | RDBU |
| Shield | flex | flex |

Sensor connector (M12x1) SB axial, 8-, 12-pin


D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat

Option AIX:

D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

Option AAS:

D = 10 L = 20 d = 9 Welle abgeflacht / shaft with flat

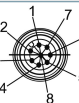
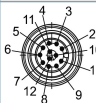
Description
ABN inv. poss.
SB8 axial, 8-pin, Connector connected to encoder housing

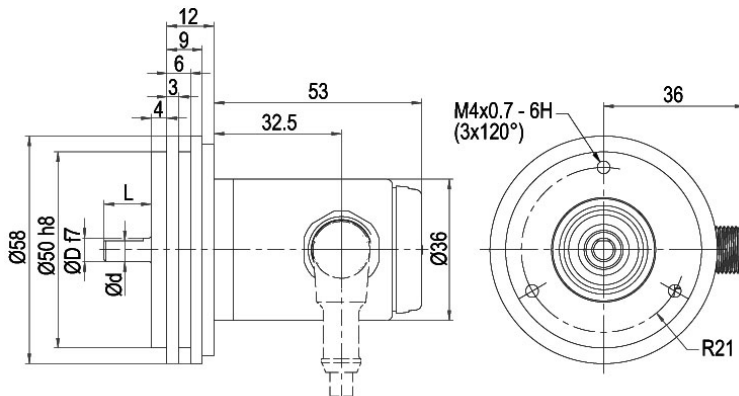
•

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

•

Assignments

| | SB8 | SB12 |
|-----------------|---|---|
| | 8-pin | 12-pin |
| |  |  |
| Circuit | BAS | ADV |
| GND | 1 | 3 |
| (+) Vcc | 2 | 1 |
| A | 3 | 4 |
| B | 4 | 6 |
| N | 5 | 8 |
| CH4 | - | 11 |
| SET | - | 5 |
| A inv. | 6 | 9 |
| B inv. | 7 | 7 |
| N inv. | 8 | 10 |
| CH4 inv. | - | 12 |
| n. c. | - | 2 |
| Shield | - | - |

Sensor-connector (M12x1) SC radial, 8-, 12-pin


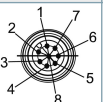
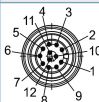
D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat

Option AIX:
 D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

Option AAS:
 D = 10 L = 20 d = 9 Welle abgeflacht / shaft with flat

Description
ABN inv. poss.

| | |
|--|---|
| SC8 radial, 8-pin, Connector connected to encoder housing | • |
| SC12 radial, 12-pin, Connector connected to encoder housing | • |

| Assignments | SC8 | SC12 |
|-----------------|---|---|
| | 8-pin | 12-pin |
| |  |  |
| Circuit | BAS | ADV |
| GND | 1 | 3 |
| (+) Vcc | 2 | 1 |
| A | 3 | 4 |
| B | 4 | 6 |
| N | 5 | 8 |
| CH4 | - | 11 |
| SET | - | 5 |
| A inv. | 6 | 9 |
| B inv. | 7 | 7 |
| N inv. | 8 | 10 |
| CH4 inv. | - | 12 |
| n. c. | - | 2 |
| Shield | - | - |

Options

Shafts sealed to IP67, only with 10 mm shaft with flat

Order key

The encoder WDG 58A can be supplied in a IP67 version.
(full IP67 only connection CB, CC, L2 or L3 version; not cable connection L1 = IP40).
Max. RPM: 3500 min⁻¹
Permitted Shaft-Loading: axial 100 N; radial 110 N
Starting-torque: approx. 4 Ncm at ambient temperature

AAS

Shaft length 10 mm (Ø 6 mm)

Order key

The encoder WDG 58A shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm.

AIX

Cable length

Order key

The encoder WDG 58A can be supplied with more than 2 m cable. 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

XXX = Decimeter

| Example Order No. | Type | | | | | Your encoder |
|---|---|-------------------------|--|------------------------------|------------------|--------------|
| WDGN 58A | WDGN 58A | | | | | WDGN 58A |
| | Shaft | | | | | |
| 06 | 06; 10 | | | | | |
| | Pulses per revolution PPR: | | | | | |
| X | configurable 1-16384 Other PPRs on request | | | | | |
| | Channels: | | | | | |
| X | ABN, ABN+CH4 | | | | | |
| | Output circuit | | | | | |
| BAS | Resolution PPR | Power supply VDC | Output circuit | Light reserve warning | Order key | |
| | configurable 1-16384 | 4.75 - 32 4.75 - 32 | configurable HTL, TTL (A,B,N + inv.) configurable HTL, TTL (A,B,N,CH4 + inv.) | - - | BAS ADV | |
| | 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, 8-pin, axial | | | • | SB8 | |
| | sensor-connector, M12x1, 8-pin, radial | | | • | SC8 | |
| | sensor-connector, M12x1, 12-pin, axial | | | • | SB12 | |
| sensor-connector, M12x1, 12-pin, radial | | | • | SC12 | | |
| | Options | | | | | |
| | Description | | | Order key | | |
| | Shafts sealed to IP67, only with 10 mm shaft with flat | | | AAS | | |
| | Shaft length 10 mm (Ø 6 mm) | | | AIX | | |
| | Without option | | | Empty | | |
| | Cable length | | | XXX = Decimeter | | |

| | | | | | | | | | | | | | | | |
|---------------------------|----------|----|---|---|-----|----|--|----------|--|--|--|--|--|--|---------------------|
| Example Order No.= | WDGN 58A | 06 | X | X | BAS | L2 | | WDGN 58A | | | | | | | Your encoder |
|---------------------------|----------|----|---|---|-----|----|--|----------|--|--|--|--|--|--|---------------------|



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 • 65366 Geisenheim
Germany

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

