



Online Data Sheet

Encoder WDGP 58A

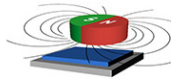
www.wachendorff-automation.com/wdgp58a

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 58A (magnetic)



- 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

www.wachendorff-automation.com/wdgp58a

| Resolution | |
|---------------------------|-----------------------|
| Pulses per revolution PPR | 1 PPR up to 16384 PPR |

Mechanical Data

| Housing | |
|-----------------|-----------------|
| Flange | synchro flange |
| Flange material | aluminum |
| Housing cap | stainless steel |
| Housing | Ø 58 mm |

| Shaft(s) | |
|-----------------|--------------------------------------|
| Shaft material | stainless steel |
| Starting torque | approx. 1 Ncm at ambient temperature |

| | |
|---------------------------------------|----------|
| Shaft | Ø 6 mm |
| 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 set zero pulse HTL, inv. HTL, inv. set zero pulse TTL TTL set zero pulse TTL, RS422 compatible, inv. TTL, RS422 compatible, inv. set zero pulse |
| 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 Deactivate: SET = GND |
|-----------------|---|

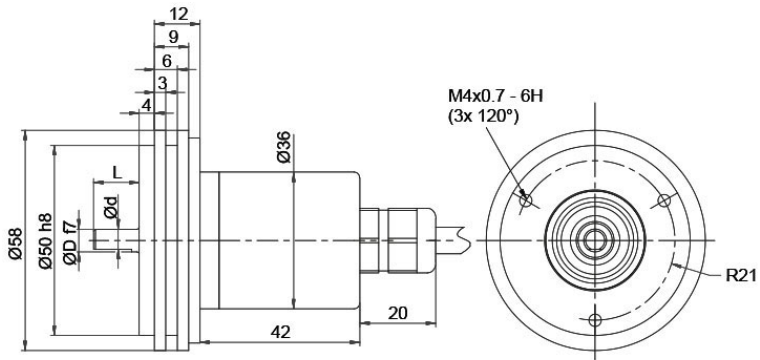
| Accuracy | |
|--------------------|---|
| Phase offset | 90° ± max. 8.5 % of the period duration |
| pulse-/pause-ratio | 50 % ± max. 7 % |

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


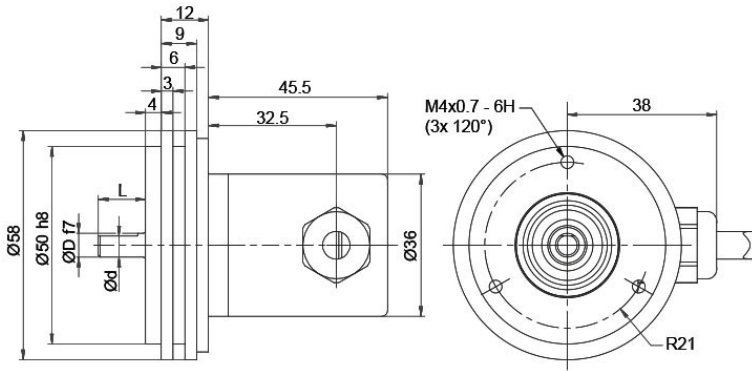
D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat
 Option AIX:
 D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

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

•

| Assignments | | | | |
|----------------|----------|----------|----------|----------|
| | L2 | L2 | L2 | L2 |
| Circuit | M11, M12 | M13, M14 | N11, N12 | N13, N14 |
| (+) Vcc | BN | BN | BN | BN |
| GND | WH | WH | WH | WH |
| A | GN | GN | GN | GN |
| B | YE | YE | YE | YE |
| N | GY | GY | GY | GY |
| SET | - | PK | - | PK |
| A inv. | RD | RD | - | - |
| B inv. | BK | BK | - | - |
| N inv. | VT | VT | - | - |
| Shield | flex | flex | 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

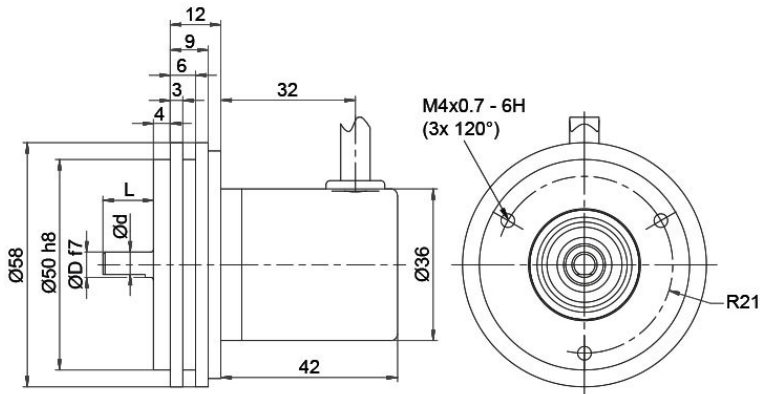
Description

ABN inv. poss.

L3 radial, shield connected to encoder housing

•

| Assignments | | | | |
|----------------|----------|----------|----------|----------|
| | L3 | L3 | L3 | L3 |
| Circuit | M11, M12 | M13, M14 | N11, N12 | N13, N14 |
| (+) Vcc | BN | BN | BN | BN |
| GND | WH | WH | WH | WH |
| A | GN | GN | GN | GN |
| B | YE | YE | YE | YE |
| N | GY | GY | GY | GY |
| SET | - | PK | - | PK |
| A inv. | RD | RD | - | - |
| B inv. | BK | BK | - | - |
| N inv. | VT | VT | - | - |
| Shield | flex | flex | flex | flex |

Cable K1 (IP40) radial with 2 m cable


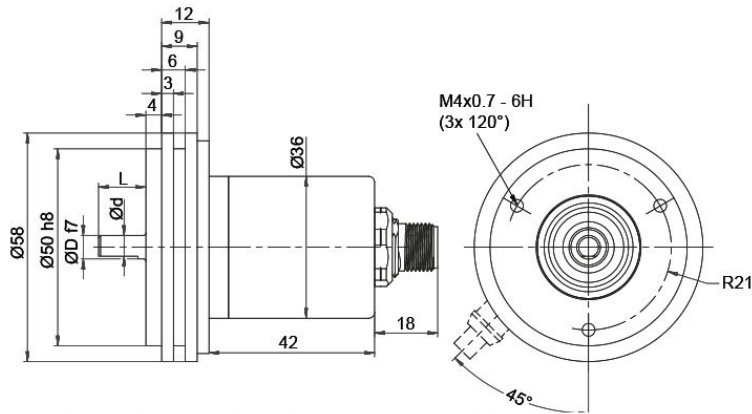
D = 6 L = 12 d = 5.3 Welle abgeflacht / shaft with flat
 D = 10 L = 20 d = 10 Wellen nicht abgeflacht / shaft without flat
 Option AIX:
 D = 6 L = 10 d = 5.3 Welle abgeflacht / shaft with flat

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

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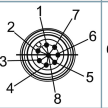
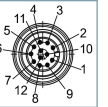
| Assignments | | | | |
|----------------|----------|----------|----------|----------|
| | K1 | K1 | K1 | K1 |
| Circuit | M11, M12 | M13, M14 | N11, N12 | N13, N14 |
| (+) Vcc | BN | BN | BN | BN |
| GND | WH | WH | WH | WH |
| A | GN | GN | GN | GN |
| B | YE | YE | YE | YE |
| N | GY | GY | GY | GY |
| SET | - | PK | - | PK |
| A inv. | RD | RD | - | - |
| B inv. | BK | BK | - | - |
| N inv. | VT | VT | - | - |
| Shield | flex | flex | flex | flex |

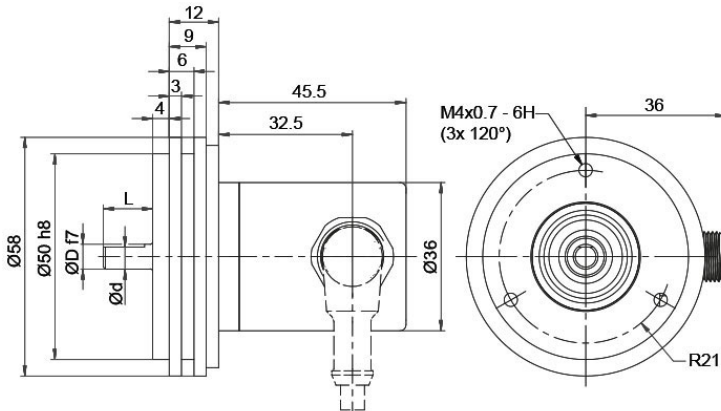
Sensor connector (M12x1) SB axial, 5-, 8-, 12-pin



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

| Description | ABN inv. poss. |
|---|----------------|
| SB5 axial, 5-pin, Connector connected to encoder housing | - |
| SB8 axial, 8-pin, Connector connected to encoder housing | • |
| SB12 axial, 12-pin, Connector connected to encoder housing | • |




| Assignments | | | |
|----------------|---|---|---|
| | SB5 | SB8 | SB12 |
| | 5-pin | 8-pin | 12-pin |
| |  |  |  |
| Circuit | N11, N12 | M11, M12 | M13, M14 |
| GND | 3 | 1 | 3 |
| (+) Vcc | 1 | 2 | 1 |
| A | 4 | 3 | 4 |
| B | 2 | 4 | 6 |
| N | 5 | 5 | 8 |
| SET | - | - | 5 |
| A inv. | - | 6 | 9 |
| B inv. | - | 7 | 7 |
| N inv. | - | 8 | 10 |
| n. c. | - | - | 2, 11, 12 |
| Shield | - | - | - |

Sensor-connector (M12x1) SC radial, 5-, 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

Description
ABN inv. poss.

| | | |
|-------------|--|---|
| SC5 | radial, 5-pin, Connector connected to encoder housing | - |
| SC8 | radial, 8-pin, Connector connected to encoder housing | • |
| SC12 | radial, 12-pin, Connector connected to encoder housing | • |

| Assignments | | | |
|----------------|---|---|---|
| | SC5 | SC8 | SC12 |
| | 5-pin | 8-pin | 12-pin |
| |  |  |  |
| Circuit | N11, N12 | M11, M12 | M13, M14 |
| GND | 3 | 1 | 3 |
| (+) Vcc | 1 | 2 | 1 |
| A | 4 | 3 | 4 |
| B | 2 | 4 | 6 |
| N | 5 | 5 | 8 |
| SET | - | - | 5 |
| A inv. | - | 6 | 9 |
| B inv. | - | 7 | 7 |
| N inv. | - | 8 | 10 |
| n. c. | - | - | 2, 11, 12 |
| Shield | - | - | - |

Options

Shaft length 10 mm (Ø 6 mm)

Order key

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

Cable length

Order key

The encoder WDGP 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

| Example Order No. | Type | | | | | Your encoder |
|---|---|-----------------------|-------------------------|--|------------------------------|------------------|
| WDGP 58A | WDGP 58A | | | | | WDGP 58A |
| Shaft | | | | | | |
| 06 | 06; 10 | | | | | |
| Pulses per revolution PPR: | | | | | | |
| 16384 | 1-16384 Other PPRs on request | | | | | |
| Channels: | | | | | | |
| ABN | ABN | | | | | |
| Output circuit | | | | | | |
| M13 | 1-16384 | Resolution PPR | Power supply VDC | Output circuit | Light reserve warning | Order key |
| | | | 4.75 - 32 | HTL inverted | - | M11 |
| | | | 4.75 - 32 | TTL, RS422 comp., inverted | - | M12 |
| | | | 4.75 - 32 | HTL, inv. set zero pulse | - | M13 |
| | | | 4.75 - 32 | TTL, RS422 compatible, inv. set zero pulse | - | M14 |
| | | | 4.75 - 32 | HTL | - | N11 |
| | | | 4.75 - 32 | TTL | - | N12 |
| | | | 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, 5-pin, axial | | | | - | SB5 |
| | sensor-connector, M12x1, 5-pin, radial | | | | - | SC5 |
| | 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 | | |
| Shaft length 10 mm (Ø 6 mm) | | | | AIX | | |
| Without option | | | | Empty | | |
| Cable length | | | | XXX = Decimeter | | |

| | | | | | | | | | | | | | | |
|---------------------------|----------|----|-------|-----|-----|----|--|----------|--|--|--|--|--|---------------------|
| Example Order No.= | WDGP 58A | 06 | 16384 | ABN | M13 | L2 | | WDGP 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/>



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