



Online Data sheet

Encoder WDGI 36E

www.wachendorff-automation.com/wdgi36e-k

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 WDGI 36E



Illustration similar



- Compact and robust
- All pulse numbers from 1 to 16,384 ppr available
- Robust construction for industrial use
- Protection to IP67, shaft sealed to IP65

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| Resolution | |
|---------------------------------------|---|
| Pulses per revolution PPR | 1 PPR up to 16384 PPR |
| Mechanical Data | |
| Flange | hollow shaft (blind-bored) |
| Flange material | aluminum |
| Housing material | stainless steel |
| - 1. Spring plate compensation | axial: ±1.2 mm [0.0472"], radial: ±0.4 mm [0.0157"] |
| Flange diameter | Ø 36 mm [Ø 1.417"] |
| Shaft(s) | |
| Shaft material | stainless steel |
| Starting torque | approx. 0.3 Ncm [0.425 in-ozf] at ambient temperature |
| Shaft | Ø 7 mm [Ø 0.276"] |
| Advice | with adapter sleeve |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 8 mm [Ø 0.315"] |
| Advice | with adapter sleeve |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 9.525 mm [Ø 3/8"] Order No: 4Z |
| Advice | with adapter sleeve |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 10 mm [Ø 0.394"] |
| Advice | with adapter sleeve |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |

| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
|--|---|
| Shaft | Ø 12 mm [Ø 0.472"] |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 12.7 mm [Ø 1/2"] Order No. 3Z |
| Advice | with adapter sleeve |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 14 mm [Ø 0.551"] |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
| Shaft | Ø 15 mm [Ø 0.591"] |
| Insertion depth min. | 10 mm [0.394"] |
| Insertion depth max. | 14.5 mm [0.571"] |
| 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 |
| 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 | 6000 rpm |
| Machinery Directive: basic data safety integrity level | |
| MTTF _d | 2200 a |
| Mission time (TM) | 25 a |
| Nominale service life (L10h) | 1 x 10 ¹¹ revs. at 20 % rated shaft load and 6000 rpm |

| | |
|--------------------------|-----|
| Diagnostic coverage (DC) | 0 % |
|--------------------------|-----|

Electrical Data

| | |
|----------------------------------|--|
| Power supply/Current consumption | 4,75 VDC up to 5,5 VDC: typ. 40 mA |
| Operating principle | magnetic |
| Output circuit | HTL (TTL at 5 VDC) HTL, inv. (TTL/RS422 comp. at 5 VDC) |
| 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 | yes |

Accuracy

| | |
|--------------------|---|
| Phase offset | 90° ± max. 7.5 % 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: | according DIN VDE 0160 |

Duty information

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

General Data

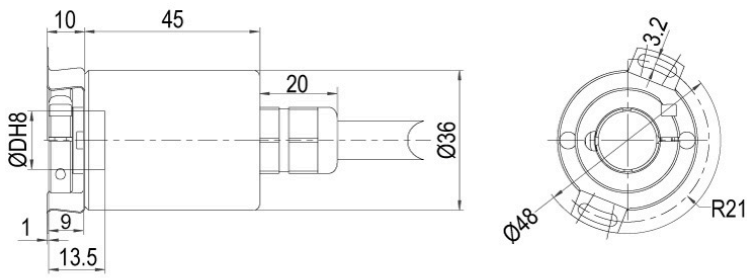
| | |
|------------------------------|--|
| Weight | approx. 165 g [5.82 oz] |
| Connections | cable or connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40 |
| Operating temperature | Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C (Option ACA: -40 °C up to +85 °C). Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F, Option ACA: -40 °F up to +185 °F |
| Storage temperature | Connector: -40 °C up to +85 °C, Cable: -30 °C up to +80 °C (Option ACA: -40 °C up to +85 °C) Connector: -40 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °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 = Ø 12, 14, 15 mm

D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
mit Reduzierhülse / with adapter sleeve

Description

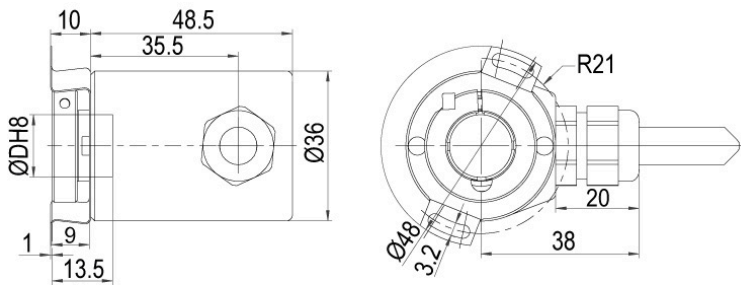
ABN inv. poss.

L2 axial, shield connected to encoder housing

•

| Assignments | | |
|----------------|------|-----------------|
| | L2 | L2 |
| Circuit | N35 | M35 |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| - | - | - |
| A inv. | - | RD |
| B inv. | - | BK, (BU at ACA) |
| N inv. | - | VT |
| Shield | flex | flex |

Cable connection L3 radial with 2 m cable



D = Ø 12, 14, 15 mm

D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
mit Reduzierhülse / with adapter sleeve

Description

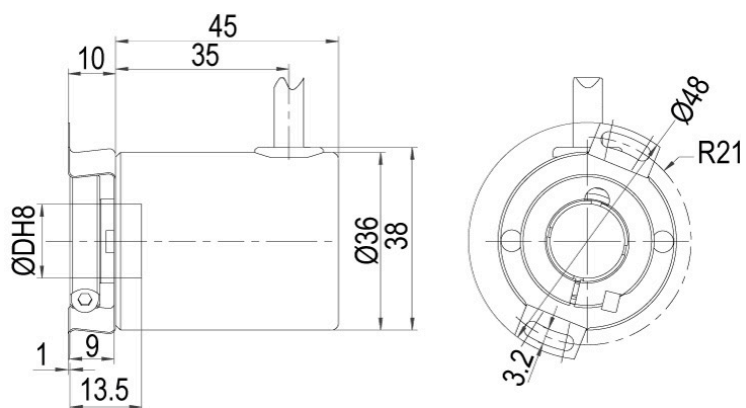
ABN inv. poss.

L3 radial, shield connected to encoder housing

•

| Assignments | | |
|----------------|------|-----------------|
| | L3 | L3 |
| Circuit | N35 | M35 |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| - | - | - |
| A inv. | - | RD |
| B inv. | - | BK, (BU at ACA) |
| N inv. | - | VT |
| Shield | flex | flex |

Cable K1 (IP40) radial with 2 m cable



D = Ø 12, 14, 15 mm

D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")

mit Reduzierhülse / with adapter sleeve

Description

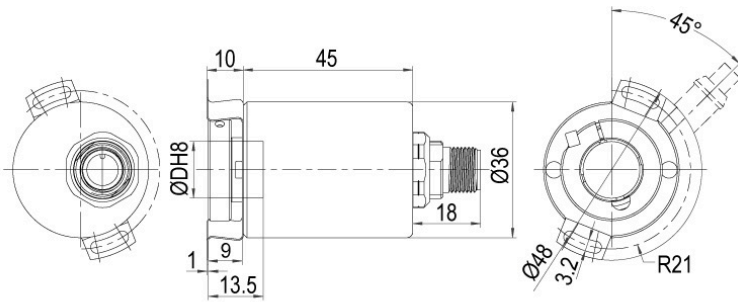
ABN inv. poss.

K1 radial, shield not connected (IP40)

•

| Assignments | | |
|----------------|------|------|
| | K1 | K1 |
| Circuit | N35 | M35 |
| GND | WH | WH |
| (+) Vcc | BN | BN |
| A | GN | GN |
| B | YE | YE |
| N | GY | GY |
| - | - | - |
| A inv. | - | RD |
| B inv. | - | BK |
| N inv. | - | VT |
| Shield | flex | flex |

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



D = Ø 12, 14, 15 mm
 D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
 mit Reduzierhülse / with adapter sleeve

Description

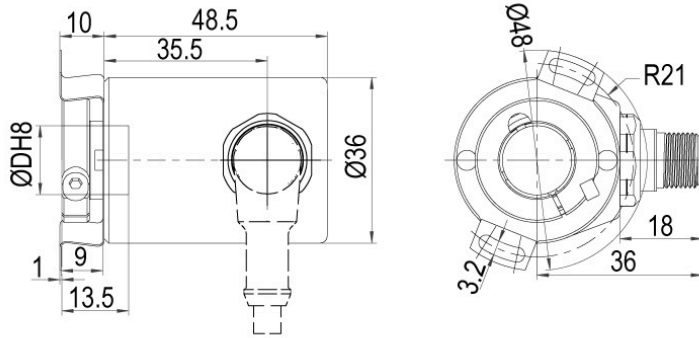
ABN inv. poss.

| | | |
|------------|--|---|
| SB5 | axial, 5-pin, Connector connected to encoder housing | - |
| SB8 | axial, 8-pin, Connector connected to encoder housing | • |

Assignments

| | SB5 | SB8 |
|----------------|--------------|--------------|
| | 5-pin | 8-pin |
| | | |
| Circuit | N35 | M35 |
| GND | 3 | 1 |
| (+) Vcc | 1 | 2 |
| A | 4 | 3 |
| B | 2 | 4 |
| N | 5 | 5 |
| - | - | - |
| A inv. | - | 6 |
| B inv. | - | 7 |
| N inv. | - | 8 |
| n. c. | - | - |
| Shield | - | - |

Sensor-connector (M12x1) SC radial, 5-, 8-pin



D = Ø 12, 14, 15 mm

D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
mit Reduzierhülse / with adapter sleeve

Description

ABN inv. poss.

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

| Assignments | | |
|----------------|--------------|--------------|
| | SC5 5-pin | SC8 8-pin |
| | | |
| Circuit | N35 | M35 |
| GND | 3 | 1 |
| (+) Vcc | 1 | 2 |
| A | 4 | 3 |
| B | 2 | 4 |
| N | 5 | 5 |
| - | - | - |
| A inv. | - | 6 |
| B inv. | - | 7 |
| N inv. | - | 8 |
| n. c. | - | - |
| Shield | - | - |

Options

Low-friction bearings

The encoder WDG1 36E is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.25 Ncm [0.354 in-ozf] and the protection class at the shaft input to IP50.

Order key

AAC

Low temperature

The encoder WDG1 36E with the output circuit types N35, M35 is also available with the extended temperature range -40 °C up to +85 °C [-40 °F up to +185 °F] (measured at the flange).

Order key

ACA

Pressure equalising membrane

The WDG1 36E shaft encoder is also optionally available with a pressure equalising membrane. This prevents water from penetrating into the encoder housing in the case of high air humidity.

The IP67 protection level, temperature range and salt spray resistance are maintained. Resistant to chemicals and solvents in accordance with DIN EN ISO 2812-1.

Order key

ACR

Cable length

The encoder WDG1 36E 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 |
|--|---|-------------------------|--------------------------------------|-----------------------|------------------|--------------|
| WDGI 36E | WDGI 36E | | | | | WDGI 36E |
| | Bore size | | | | | |
| 12 | 07; 08; 4Z; 10; 12; 3Z; 14; 15 | | | | | |
| | Pulses per revolution PPR: | | | | | |
| 16384 | 1-16384 Other PPRs on request | | | | | |
| | Channels: | | | | | |
| ABN | ABN | | | | | |
| | Output circuit | | | | | |
| M35 | Resolution PPR | Power supply VDC | Output circuit | - | Order key | |
| | 1-16384 | 4.75 - 30 | HTL (TTL at 5 VDC) | - | N35 | |
| | | 4.75 - 30 | HTL, inv. (TTL/RS422 comp. at 5 VDC) | - | M35 | |
| | 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 | | |
| | Options | | | | | |
| | Description | | | Order key | | |
| | Low-friction bearings | | | AAC | | |
| | Low temperature | | | ACA | | |
| | Pressure equalising membrane | | | ACR | | |
| | Without option | | | Empty | | |
| | Cable length | | | XXX = Decimeter | | |

| | | | | | | | | | | | | | | | |
|---------------------------|----------|----|-------|-----|-----|----|--|----------|--|--|--|--|--|--|---------------------|
| Example Order No.= | WDGI 36E | 12 | 16384 | ABN | M35 | L2 | | WDGI 36E | | | | | | | 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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