



Online Data sheet

Encoder WDGA 36E CANopen

www.wachendorff-automation.com/wdga36ecan

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 WDGA 36E absolute CANopen, with EnDra®-Technology



Illustration similar

EnDra®
Technologie

CANopen®

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single-turn and Multi-turn
- Communication Profile according to CiA 301
- Device Profile for encoder CiA 406 V3.2 class C2
- Single-turn/Multi-turn (16 bit / 43 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition and error message appropriate CiA 303-3

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Mechanical Data

| | |
|--------------------------------|---|
| Flange | hollow shaft (blind-bored) |
| Flange material | aluminum |
| Housing material | stainless steel |
| - 1. Spring plate compensation | axial: ±0.2 mm [0.0079"], radial: ±0.1 mm [0.0039"] |
| Flange diameter | Ø 36 mm [Ø 1.417"] |

Shaft(s)

| | |
|-----------------|---|
| Starting torque | approx. 0.3 Ncm [0.425 in-ozf] at ambient temperature |
|-----------------|---|

| | |
|---------------------------------------|-------------------|
| Shaft | Ø 6 mm [Ø 0.236"] |
| Insertion depth min. | 8 mm [0.315"] |
| Insertion depth max. | 17 mm [0.669"] |
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |

| | |
|---------------------------------------|---------------------------------|
| Shaft | Ø 6.35 mm [Ø 1/4"] Order No: 2Z |
| Insertion depth min. | 8 mm [0.315"] |
| Insertion depth max. | 17 mm [0.669"] |
| 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 | 1.4 x 10 ⁸ revs. at 100 % rated shaft load 2 x 10 ⁹ revs. at 40 % rated shaft load 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load |
| Max. operating speed | 12000 rpm |

Machinery Directive: basic data safety integrity level

| | |
|-----------------------------|---|
| MTTF _d | 1000 a |
| Mission time (TM) | 20 a |
| Nominal service life (L10h) | 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load and 12000 rpm |
| Diagnostic coverage (DC) | 0 % |

Electrical Data

| | |
|----------------------------------|-----------------------------------|
| Power supply/Current consumption | 4,75 VDC up to 32 VDC: typ. 50 mA |
| Power consumption | max. 0.5 W |

| | |
|---------------------|----------|
| Operating principle | magnetic |
|---------------------|----------|

Sensor data

| | |
|-----------------------------|--|
| Single-turn technology | innovative hall sensor technology |
| Single-turn resolution | 65,536 steps/360° (16 bit) |
| Single-turn accuracy | ± 0.0878° (12 bit) |
| Single-turn repeat accuracy | ± 0.0878° (12 bit) |
| Internal cycle time | 600 µs |
| Multi-turn technology | patented EnDra® technology no battery and no gear. |
| Multi-turn resolution | up to 32 bit with high precision value up to 43 bit. |

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 DIN EN 61326-1 |
| Vibration: (DIN EN 60068-2-6) | 300 m/s ² (10 Hz up to 2000 Hz) |
| Shock: (DIN EN 60068-2-27) | 5000 m/s ² (6 ms) |
| Electrical Safety: | According DIN VDE 0160 |
| Turn on time: | <1,5 s |

Duty information

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

Interface

| | |
|-------------------|--|
| Interface: | CAN |
| Protocol: | CANopen <ul style="list-style-type: none"> • Communication profil CiA 301 • Device Profile for encoder CiA 406 V3.2 class C2 |
| Node number: | 1 up to 127 (default 127) |
| Baud rate: | 10 kBaud up to 1 MBaud with automatic bit rate detection. |
| Advice: | The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e. g. PDOs, Scaling, Heartbeat, Node-ID, Baud rate, etc. |

| | |
|--------------------------------------|---|
| Programmable CAN transmission modes: | Synchronous mode: when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently. Asynchronous mode: a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.) |
|--------------------------------------|---|

General Data

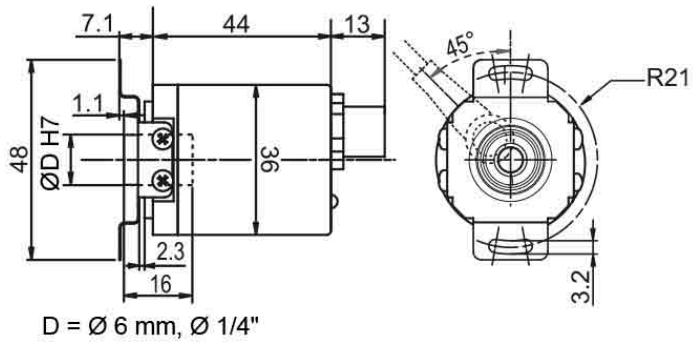
| | |
|------------------------------|--|
| Weight | approx. 110 g [3.88 oz] |
| Connections | cable or connector outlet |
| Protection rating (EN 60529) | Housing: IP65, IP67; shaft sealed: IP65; cable outlet L1: IP40, K6: IP20 |
| Operating temperature | -40 °C up to +85 °C [-40 °F up to 185 °F] |
| Storage temperature | -40 °C up to +100 °C [-40 °F up to 212 °F] |

More Information

General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>

Options
<http://www.wachendorff-automation.com/acc>

Connector, M12x1 CB5 axial, 5-pin

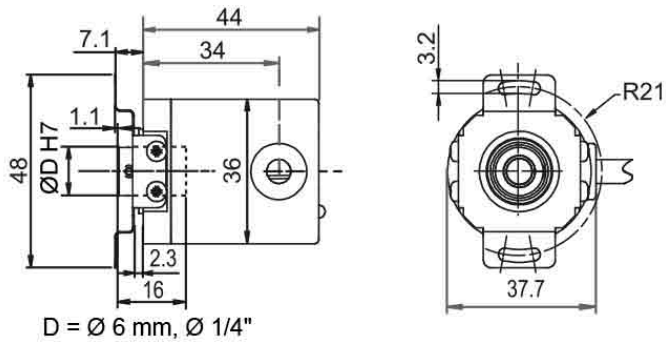


Description

CB5 axial, 5-pin, shield connected to encoder housing

| Assignments | |
|----------------------|----------------|
| | CB5 |
| (+) Vcc | 2 |
| GND | 3 |
| CANHigh | 4 |
| CANLow | 5 |
| CANGND shield | 1 |

Cable connection, L1 radial with 2 m cable (IP40)

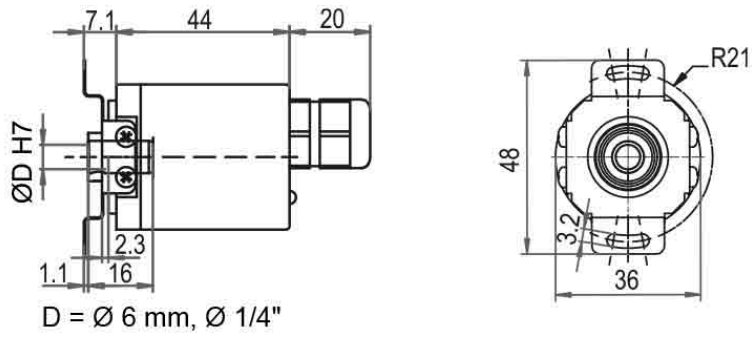


Description

L1 radial, shield connected to encoder housing (IP40)

| Assignments | |
|---------------|--------|
| | L1 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | shield |

Cable connection, L2 axial with 2 m cable

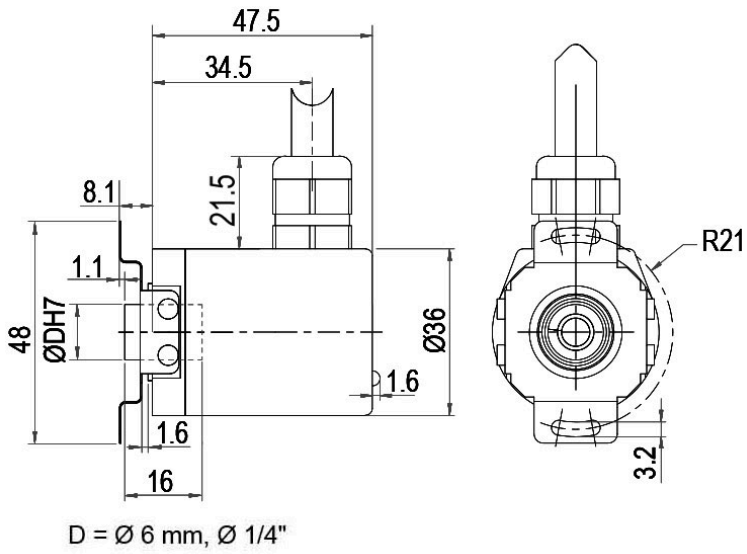


Description

L2 axial, shield connected to encoder housing

| Assignments | |
|----------------------|-----------|
| | L2 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | shield |

Cable connection, L3 radial with 2 m cable

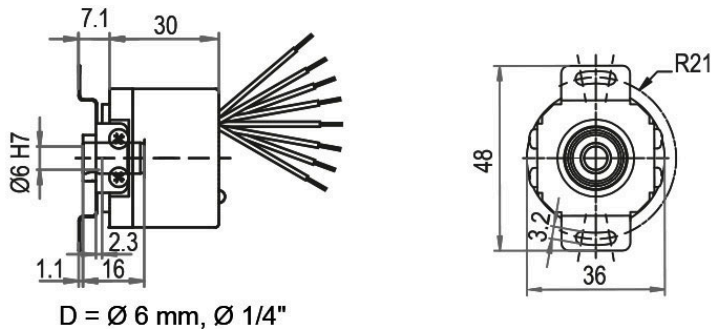


Description

L3 radial, shield connected to encoder housing

| Assignments | |
|----------------------|-----------|
| | L3 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | shield |

Cable connection, K6 (IP20)



Description

K6 axial, shield not connected

| Assignments | |
|----------------------|-----------|
| | K6 |
| (+) Vcc | BN |
| GND | WH |
| CANHigh | GN |
| CANLow | YE |
| CANGND shield | GY |

Options**Low-friction bearings**

The encoder WDGA 36E CANopen 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****120 Ohm terminating resistor**

The encoder WDGA 36E CANopen is also available with fixed 120 Ohm terminating resistor.

Order key**AEO**

| Example Order No. | Type | Your encoder |
|-------------------|--|------------------|
| WDGA 36E | WDGA 36E | WDGA 36E |
| | Shaft | Order key |
| 06 | Ø 6 mm [Ø 0.236"] | 06 |
| | Ø 6.35 mm [Ø 1/4"] Order No: 2Z | 2Z |
| | Single-turn Resolution | Order key |
| 12 | Single-turn resolution 1 bit up to 16 bit, recommended min. 6 bit (e. G. 12 bit) | 12 |
| | Multi-turn Resolution | Order key |
| 18 | Multi-turn resolution: (examples) 18 bit = 18 43 bit = 43 no Multiturn = 00 | 18 |
| | Data protocol | Order key |
| CO | CANopen | CO |
| | Software | Order key |
| A | up to date release | A |
| | Code | Order key |
| B | binary | B |
| | Power supply | Order key |
| 0 | 4.75 V up to 32 V (standard) | 0 |
| | Galvanic isolation | Order key |
| 0 | no | 0 |
| | Electrical connections | Order key |
| CB5 | Cable: | |
| | radial, shield connected to encoder housing (IP40), with 2 m cable | L1 |
| | axial, shield connected to encoder housing, with 2 m cable | L2 |
| | radial, shield connected to encoder housing, with 2 m cable | L3 |
| | axial, shield not connected, IP20, with 8 cm loose wires | K6 |
| | Connector: | |
| | sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing | CB5 |
| | sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing | CC5 |
| | Options | Order key |
| | Without option | Empty |
| | Low-friction bearings | AAC |
| | 120 Ohm terminating resistor | AEO |

| | | | | | | | | | | | |
|-------------------|----------|----|----|----|----|---|---|---|---|-----|--|
| Example Order No. | WDGA 36E | 06 | 12 | 18 | CO | A | B | 0 | 0 | CB5 | |
|-------------------|----------|----|----|----|----|---|---|---|---|-----|--|

| | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|-------------------|
| WDGA 36E | | | | | | | | | | | Example Order No. |
|----------|--|--|--|--|--|--|--|--|--|--|-------------------|



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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