

Encoder WDGA 36E absolute SSI magnetic, with EnDra® - Technology



EnDra®
Technology

SSI
Synchronous Serial Interface

Specifications:

Mechanical Data

| | |
|--|--|
| Housing: | steel case chrome-plated, magnetic shielding |
| Flange type: | hollow bore (blind) |
| Flange material: | Aluminium |
| Shaft material: | stainless steel |
| Shaft Ø: | 6 mm |
| Insertion depth min./max.: | 8 mm/17 mm |
| Permissible shaft loading: | 80 N radial 50 N axial |
| Starting torque: (at ambient temperature) | < 0.3 Ncm |
| Bearings type: | 2 precision ball bearings |
| Service life: | 1.4 x 10 ⁸ revs. at 100 % rated shaft load 2.0 x 10 ⁹ revs. at 40 % rated shaft load 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load |
| Operating speed max.: | 12,000 min ⁻¹ |
| Weight: | 110 g |
| Connection: | connector or cable |

Machinery Directive:

basic data safety integrity level

| | |
|---|---|
| MTTF _d : | 1000 a |
| Mission time (T _M): | 20 a |
| Normal service life (L _{10h}): | 1.7 x 10 ¹⁰ revs. at 12,000 min ⁻¹ and 20 % rated shaft load |
| Diagnostic coverage (DC): | 0 % |

Sensor data

| | |
|-----------------------------|---|
| Singleturn technology: | innovative hall sensor technology up to 16,384 steps/360° (14 bit) |
| Singleturn resolution: | < ± 0.35° |
| Singleturn accuracy: | < ± 0.20° |
| Singleturn-repeat accuracy: | |
| Intern cycle time: | ≤ 600 µs |
| Multiturn technology: | patented based EnDra® technology no battery and no gear |
| Multiturn resolution: | up to 40 bit |

Ambient data

| | |
|------------------------------|--|
| Operating temperature: | - 40 °C up to + 80 °C |
| Storage temperature: | - 40 °C up to + 100 °C |
| Protection class (EN 60529): | IP67, shaft sealed IP65 cable outlet K1: IP40 K6: IP20 |

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) |
| Design: | appropriate DIN VDE 0160 |

- EnDra® multiturn technology:
maintenance-free and environmentally friendly
- SSI, gray or binary
- Single-/multiturn (14 bit/40 bit)
- Forward-looking technology with 32 bit processor
- 2-colour-LED as indicator for operating condition

www.wachendorff-automation.com/wdga36essi

Interface

Clock input:
Clock frequency:

Data output:
Output code:
SSI output:
Parity bit:
Error bit:
Turn on time:
Positive direction
of counting: (View on shaft)
Set to zero:

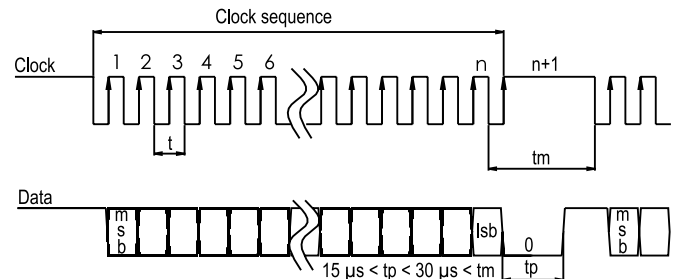
SSI

via opto-coupler
100 kHz up to 500 kHz
up to 2 MHz on request
RS485/RS422 compatible
gray or binary
Angular-/position value
optional (even/odd)
optional
<1.5 s
DIR = GND ⇔ cw
DIR = +Ub ⇔ ccw
Set: Preset = apply +Ub for 2 s
Deactivate: Preset = GND

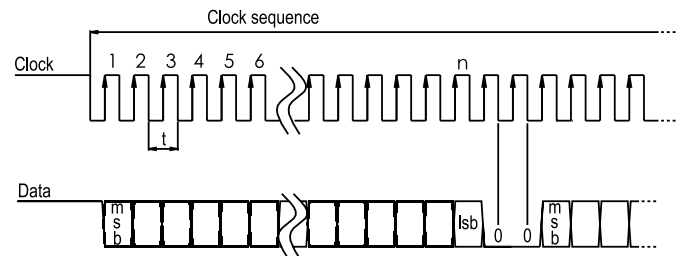
Electrical Data:

Supply voltage: 10 VDC up to 30 VDC;
4.75 VDC up to 5.5 VDC
max. 80 mA
Power consumption: max. 0.8 W

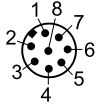
Single transmission



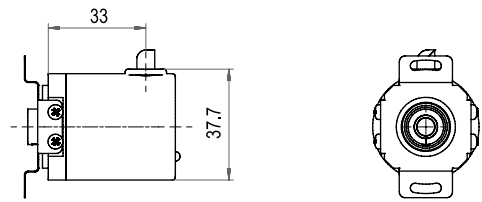
Multipath transmission



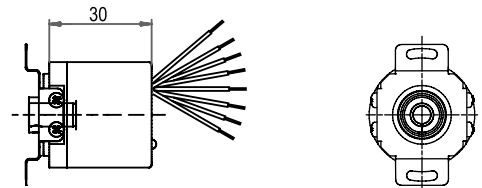
Connection configuration for encoder WDGA SSI:

| | | |
|------------------------|---|--------------------------------------|
| |  | |
| Connector/cable | M12 x1 | cable outlet |
| Description | CB8 axial, 8-pin | K1, radial L2, axial K6, axial |
| GND | 1 | wh |
| Plus U+ | 2 | bn |
| SSI CLK+ | 3 | gn |
| SSI CLK- | 4 | ye |
| SSI DATA+ | 5 | gy |
| SSI DATA- | 6 | pk |
| PRESET | 7 | bu |
| DIR | 8 | rd |
| Shield | housing | housing K1, K6: n. c. |

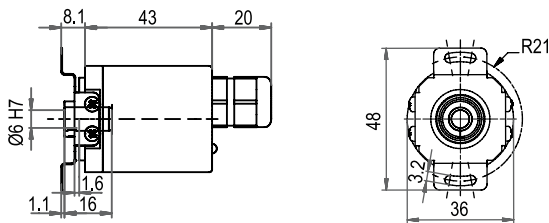
Cable outlet, K1:



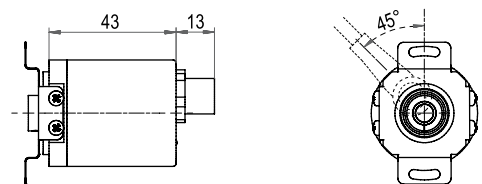
Cable outlet, K6:



Cable outlet, L2:

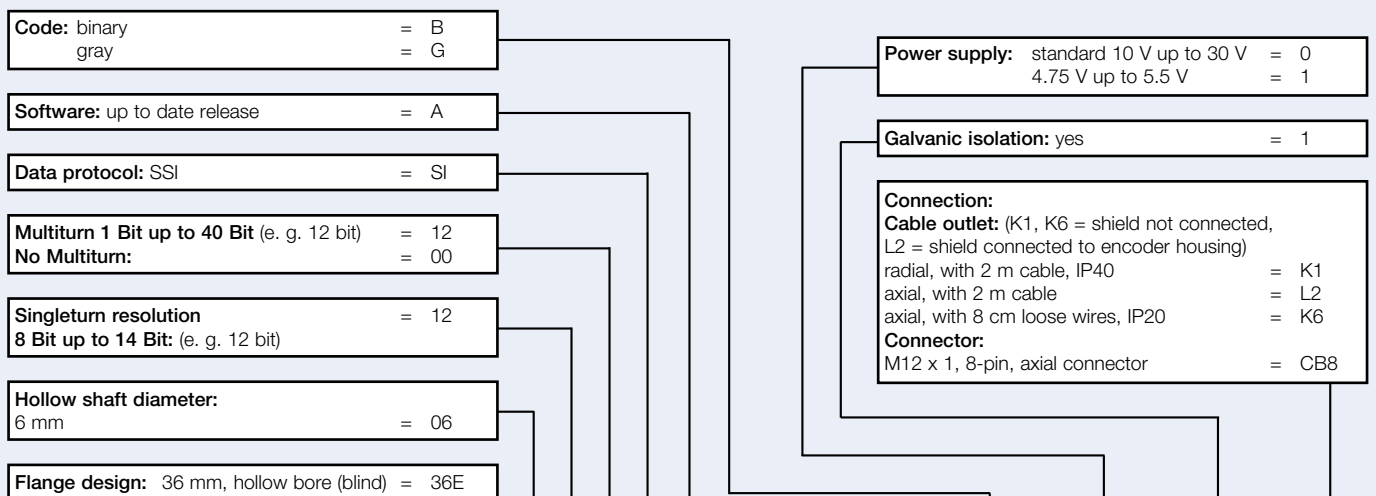


Connector, M12 x 1, 8-pin, CB8:



All dimensional specifications in mm.

Ordering information:



Order-No.:

| | | | | | | | | | | | |
|--------------|------|-----|----|----|----|----|---|---|---|---|-----|
| Example | WDGA | 36E | 06 | 12 | 12 | SI | A | B | 0 | 1 | CB8 |
| Your encoder | WDGA | 36E | 06 | | | SI | A | | | 1 | |