

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



EnDra®
Technology

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

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
Singleturn resolution:	up to 16,384 steps/360° (14 bit)
Singleturn accuracy:	< ± 0.35°
Singleturn-repeat accuracy:	< ± 0.20°
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

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:	50 m/s ² (10 Hz up to 2000 Hz)
(DIN EN 60068-2-6)	
Shock:	1000 m/s ² (6 ms)
(DIN EN 60068-2-27)	
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:

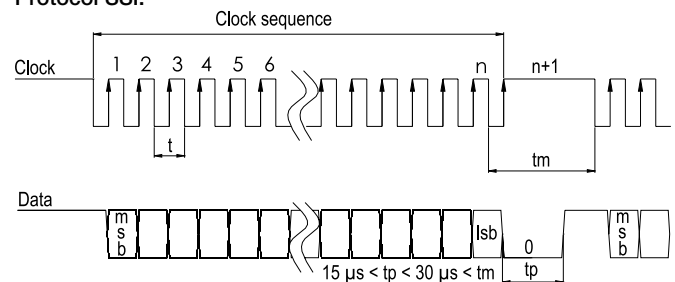
SSI

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
Preset = apply +Ub for 2 s

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

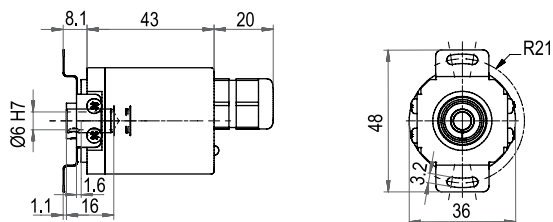
Protocol SSI:



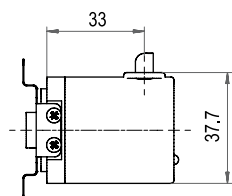
Connection configuration for encoder WDGA SSI:

Connector/ cable	M12 x1	cable outlet
Description	CB8 axial, 8-pin	K1, radial L2, 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: n. c.

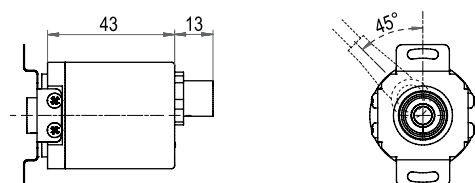
Cable outlet, L2:



Cable outlet, L1:



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



All dimensional specifications in mm.

Ordering information:

Options Table:

Code: binary	= B
gray	= G
Software: up to date release	= A
Data protocol: SSI	= SI
Multiturn 1 Bit up to 40 Bit (e. g. 12 bit)	= 12
No Multiturn:	= 00
Singleturn resolution	= 12
8 Bit up to 14 Bit: (e. g. 12 bit)	
Hollow shaft diameter:	
6 mm	= 06
Flange design: 36 mm, hollow bore (blind)	= 36E

Technical Specifications Table:

Power supply: standard 10 V up to 30 V	= 0
4.75 V up to 5.5 V	= 1
Galvanic isolation: yes	= 1
Connection:	
Kabelabgang: (K1= shield not connected, L2 = shield connected to encoder housing)	
radial, with 2 m cable, IP40	= K1
axial, with 2 m cable	= L2
Connector:	
M12 x 1, 8-pin, axial connector	= CB8

Order-No. Assembly Table:

Order-No.:	WDGA	36E	06	12	12	SI	A	B	0	1	CB8
Example	WDGA	36E	06	12	12	SI	A	B	0	1	CB8
Your encoder	WDGA	36E	06			SI	A			1	