Wachendorff Automation GmbH & Co. KG
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Encoder WDGA 36A absolute SSI magnetic, with EnDra® - Technology

EnDra® Technology

SSI
Synchronous Serial Interface

- 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/wdga36assi

Specifications:

Mechanical Data

Housing:	steel case chrome-plated, magnetic shielding
Flange type:	synchro
Flange material:	Aluminium
Shaft material:	stainless steel
Shaft Ø:	6 mm
Shaft length:	11.5 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:	112 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 ($L_{10}h$):	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® technolgy 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

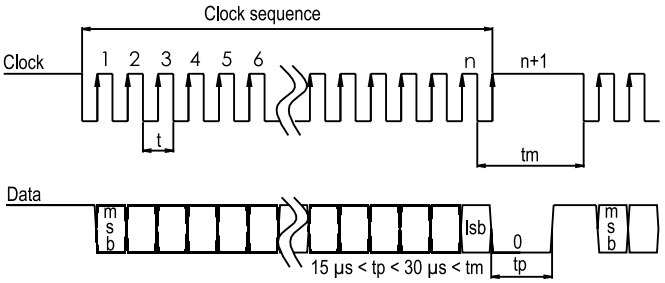
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 m/s^2 (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s^2 (6 ms)
Design:	appropriate DIN VDE 0160

Interface	**SSI**
Clock input:	via opto-coupler
Clock frequency:	100 kHz up to 500 kHz up to 2 MHz on request
Data output:	RS485/RS422 compatible
Output code:	gray or binary
SSI output:	Angular-/position value
Parity bit:	optional (even/odd)
Error bit:	optional
Turn on time:	<1.5 s
Positive direction of counting: (View on shaft)	DIR = GND ⇨ cw DIR = +Ub ⇨ ccw
Set to zero:	Set: Preset = apply +Ub for 2 s Deactivate: Preset = GND

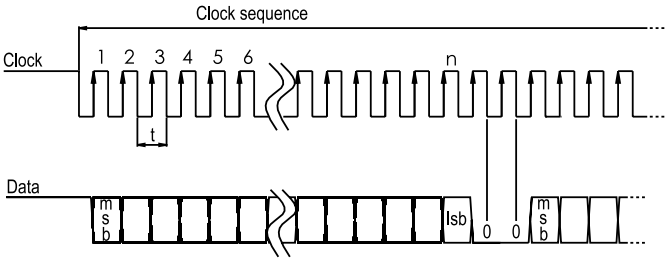
Electrical Data:

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



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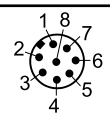
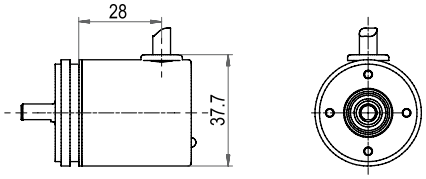
Connection configuration for encoder WDGA SSI:

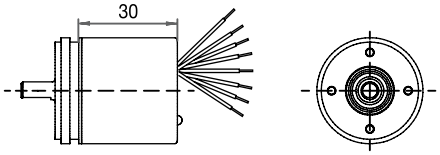


Connector/ cable	M12 x1	cable outlet
Description	CB8 axial, 8-pin	K1, radial L2, axial K6, axial
GND	1	wh
Plus U+	2	bn
SSI CLK+	3	gn
SSI CLK-	4	ye
SSI DATA+	5	gy
SSI DATA-	6	pk
PRESET	7	bu
DIR	8	rd
Shield	housing	housing K1, K6: n. c.

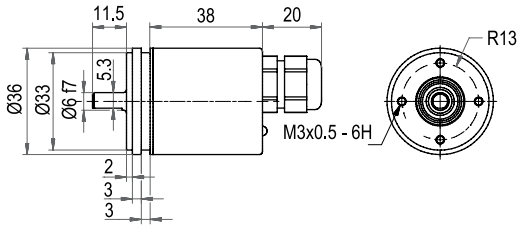
Cable outlet K1:



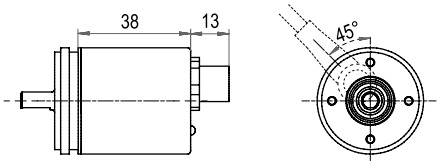
Cable outlet K6:



Cable outlet, L2:



Connector, M12 x 1, 8-pol., CB8:



All dimensional specifications in mm.

Ordering information:

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
8 Bit up to 14 Bit: (e. g. 12 bit) = 12

Shaft diameter:
6 mm = 06

Flange design: 36 mm, synchro flange = 36A

Power supply: standard 10 V up to 30 V = 0
4.75 V up to 5.5 V = 1

Galvanic isolation: yes = 1

Connection:
Cable outlet: (K1, K6 = shield not connected, L2 = shield connected to encoder housing)
radial, with 2 m cable, IP40 = K1
axial, with 2 m cable = L2
axial, with 8 cm loose wires, IP20 = K6
Connector:
M12 x 1, 8-pin, axial connector = CB8

Order-No.:

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