



Online Data Sheet

Encoder WDGA 36J SSI

www.wachendorff-automation.com/wdga36jssi

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 36J absolute SSI magnetic, with EnDra®-Technology



EnDra®
Technologie

SSI
Synchronous Serial Interface

- Protection rating: IP67 + IP69K, (high pressure / steam cleaning)
- EnDra® multiturn technology: maintenance-free and environmentally friendly
- SSI, gray or binary
- Single-turn/Multi-turn (16 bit / 43 bit)
- Forward-looking technology with 32 bit processor
- 2-colour-LED as indicator for operating condition

www.wachendorff-automation.com/wdga36jssi

Mechanical Data

Housing

Flange	servo flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 36 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	300 N
Max. Permissible shaft loading axial	300 N

Bearings

Bearings type	2 precision ball bearings
Nominal service life	5 x 10 ⁸ revs. at 100 % rated shaft load 5.44 x 10 ⁹ revs. at 40 % rated shaft load 3.1 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	6000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	1000 a
Mission time (TM)	20 a
Nominal service life (L10h)	3.1 x 10 ¹⁰ revs. at 20 % rated shaft load and 6000 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
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 80 mA
Power consumption	max. 0.44 W

Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	up to 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, no gear.
-----------------------	---

Multi-turn resolution	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)
----------------------------	------------------------------

Design:	according DIN VDE 0160
---------	------------------------

Turn on time:	<1,5 s
---------------	--------

Duty information

Customs tariff number:	90318020
------------------------	----------

Country of origin:	Germany
--------------------	---------

Interface

Interface:	SSI
-------------------	------------

Clock input:	via opto-coupler; I > 1.6 mA; U > 2.2 V
--------------	--

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
-------------	-------------------------

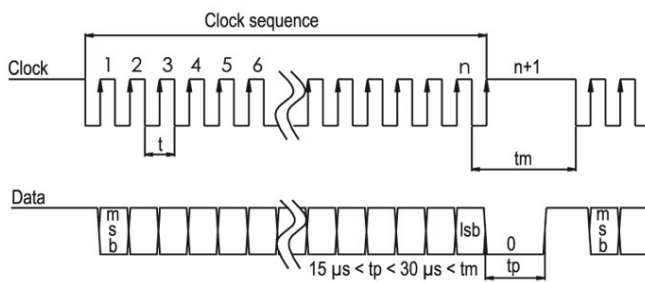
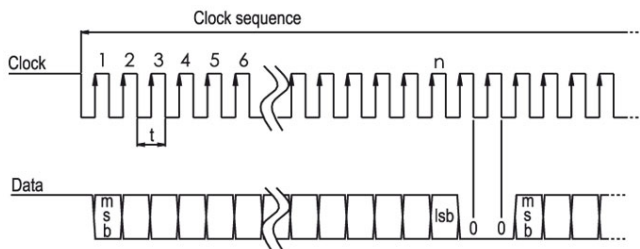
Parity bit:	optional (even/odd)
-------------	---------------------

Error bit:	optional
------------	----------

Turn on time:	<1,5 s
---------------	--------

Configuration inputs	DIR = GND -> cw DIR = +UB -> ccw
Positive direction of counting: (View on shaft)	

Set to zero:	Set: Preset = +UB for 2 s Deactivate: Preset = GND
--------------	---

Transmission protocol SSI Single transmission:

Transmission protocol SSI Multipath transmission:

LED-behaviour:

At Start / while booting:	- red gleam (< 2,3 s)
Malfunction:	- constant red gleam (> 2,3 s)
Normal function:	- constant green gleam
No supply:	- no gleam

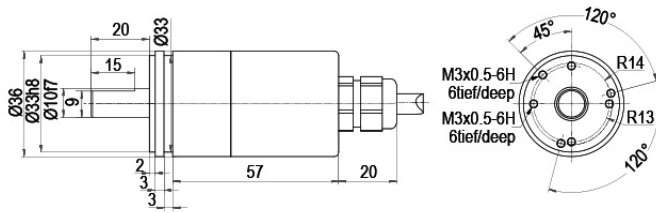
General Data

Weight	approx. 112 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67+IP69K all around
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

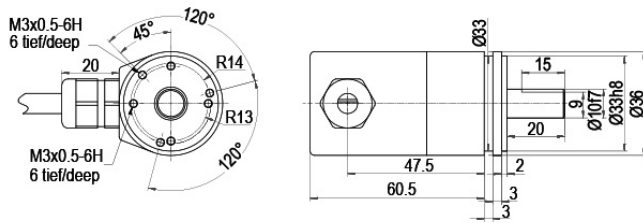
General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>

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

Cable connection, L2 axial with 2 m cable

Description

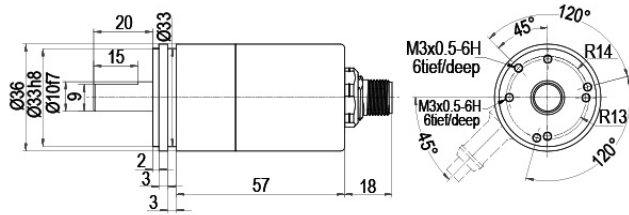
L2 axial, shield connected to encoder housing

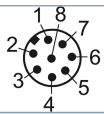
Assignments	
	L2
GND	WH
(+) Vcc	BN
SSI CLK+	GN
SSI CLK-	YE
SSI DATA+	GY
SSI DATA-	PK
PRESET	BU
DIR	RD
Shield	housing

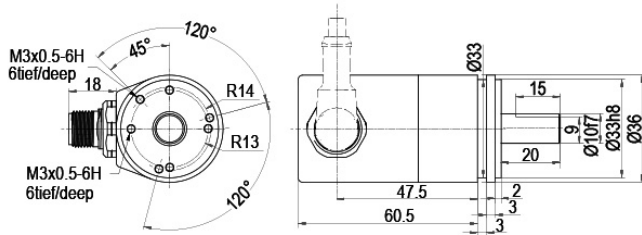
Cable connection, L3 radial with 2 m cable

Description

L3 radial, shield connected to encoder housing

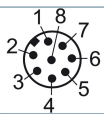
Assignments	
	L3
GND	WH
(+) Vcc	BN
SSI CLK+	GN
SSI CLK-	YE
SSI DATA+	GY
SSI DATA-	PK
PRESET	BU
DIR	RD
Shield	housing

Connector, M12x1, CB8, axial, 8-pin

Description
CB8 axial, 8-pin, shield connected to encoder housing

Assignments	
	CB8 
GND	1
(+) Vcc	2
SSI CLK+	3
SSI CLK-	4
SSI DATA+	5
SSI DATA-	6
PRESET	7
DIR	8
Shield	housing

Connector, M12x1 CC8 radial, 8-pin

Description

CC8 radial, 8-pin, shield connected to encoder housing

Assignments	
	CC8 
GND	1
(+) Vcc	2
SSI CLK+	3
SSI CLK-	4
SSI DATA+	5
SSI DATA-	6
PRESET	7
DIR	8
Shield	housing

Example Order No.	Type	Your encoder	
WDGA 36J	WDGA 36J	WDGA 36J	
	Shaft	Order key	
10	Ø 10 mm	10	
	Single-turn Resolution	Order key	
12	Single-turn resolution 1 bit up to 16 bit: (e. G. 12 bit)	12	
	Multi-turn Resolution	Order key	
12	Multi-turn up to 43 bit (e. G. 12 bit) No Multi-turn = 00	12	
	Data protocol	Order key	
SI	SSI	SI	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	gray	G	
	Power supply	Order key	
0	4.75 V up to 32 V (standard)	0	
	4.75 V up to 5.5 V	1	
	Galvanic isolation	Order key	
1	yes	1	
	Electrical connections	Order key	
CB8	Cable:		
	axial, shield connected to encoder housing, with 2 m cable	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
	Connector:		
	sensor-connector, M12x1, 8-pin, axial, shield connected to encoder housing	CB8	
sensor-connector, M12x1, 8-pin, radial, shield connected to encoder housing	CC8		

Example Order No.	WDGA 36J	10	12	12	SI	A	B	0	1	CB8
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 36J											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-sales-en/>



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • 65366 Geisenheim
Germany

Phone: +49 67 22 / 99 65 25
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de

