



Online Data Sheet

앱솔루트 SSI 통신 마그네틱 로터리 엔코더 WDGA 36E 시리즈 - 6mm, 1/4inch

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 SSI

www.wachendorff-automation.com/wdga36essi

IndustrieROBUST

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



EnDra®
Technologie

SSI
Synchronous Serial Interface

1. SSI 인터페이스 절대형 로터리 엔코더 - 중공축 타입
- 코드 : Binary or Gray
- 프리셋 입력(Preset input)

2. EnDra® 기술을 활용한 멀티턴 분해능
- 최대 39bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. 위치, 속도, 가속도 정밀 측정

4. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 36 mm

Shaft(s)	
Starting torque	approx. 0.3 Ncm at ambient temperature
Shaft	Ø 6 mm
Insertion depth min.	8 mm
Insertion depth max.	17 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm, Ø 1/4"
Insertion depth min.	8 mm
Insertion depth max.	17 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

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	10 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
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Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	up to 16,384 steps/360° (14 bit)
Single-turn accuracy	< ±0.35°
Single-turn repeat accuracy	< ±0.20°
Internal cycle time	≤ 600 µs
Multi-turn technology	patented EnDra® technology no battery, no gear.
Multi-turn resolution	up to 39 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
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:	according DIN VDE 0160
Turn on time:	<1,5 s

Interface

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

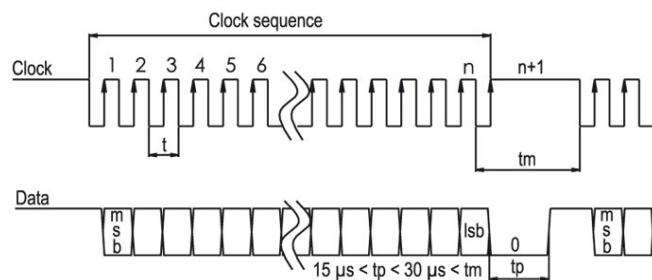
Configuration inputs	DIR = GND -> cw DIR = +UB -> ccw
Positive direction of counting: (View on shaft)	

Set to zero:	Set: Preset = +UB for 2 s Deactivate: Preset = GND
At Start / while booting:	- red gleam (< 2.3 s)
Malfunction:	- constant red gleam (> 2.3 s)

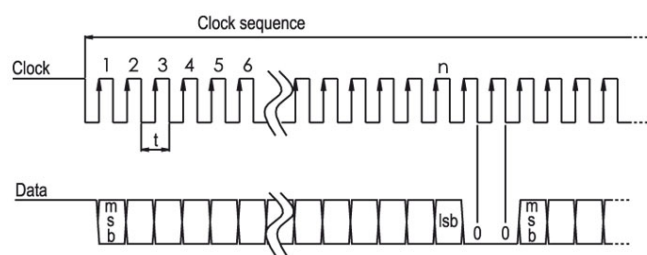
Normal function: - constant green gleam

No supply: - no gleam

Transmission protocol SSI Single transmission:



Transmission protocol SSI Multipath transmission:



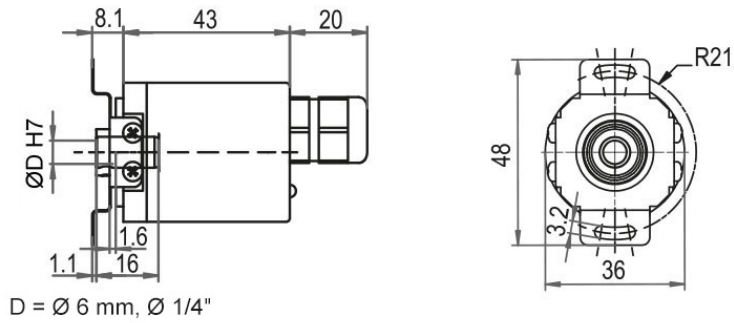
General Data

Weight	approx. 110 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP20 for K6)
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

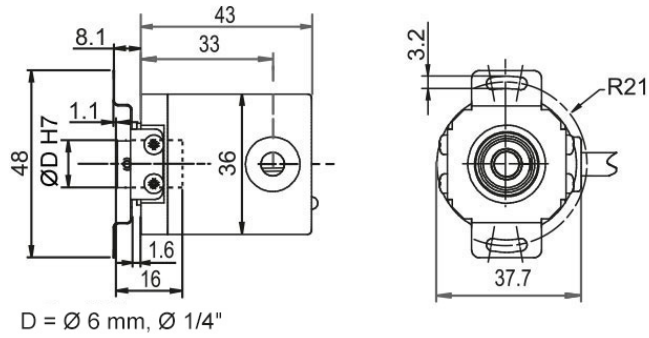
General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>

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

Cable connection, L2 with 2 m cable

Description

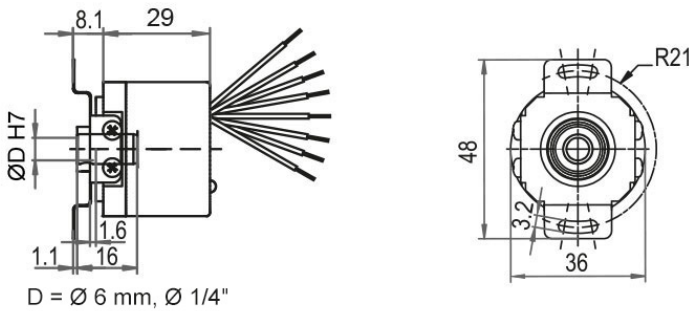
L2 axial, shield connected to encoder housing

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, K1 with 2 m cable (IP40)

Description

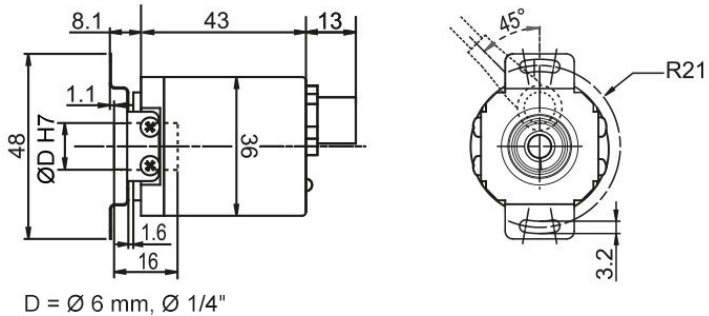
K1 radial, shield not connected

Assignments	
	K1
GND	WH
(+) Vcc	BN
SSI CLK+	GN
SSI CLK-	YE
SSI DATA+	GY
SSI DATA-	PK
PRESET	BU
DIR	RD
Shield	housing n. c.

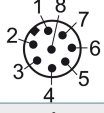
Cable connection, K6 with 8 cm loose wires, IP20**Description**

K6 axial, shield not connected

Assignments	
	K6
GND	WH
(+) Vcc	BN
SSI CLK+	GN
SSI CLK-	YE
SSI DATA+	GY
SSI DATA-	PK
PRESET	BU
DIR	RD
Shield	housing n. c.

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

Example Order No.	Type	Your encoder	
WDGA 36E	WDGA 36E	WDGA 36E	
	Shaft	Order key	
06	Ø 6 mm	06	
	Ø 6.35 mm Ø 1/4"	2Z	
	Single-turn Resolution	Order key	
12	Single-turn resolution 8 bit up to 14 bit: (e. G. 12 bit)	12	
	Multi-turn Resolution	Order key	
12	Multi-turn 1 bit up to 39 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	10 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, IP67	L2	
	radial, shield not connected, with 2 m cable, IP40	K1	
	axial, shield not connected, IP20, with 8 cm loose wires	K6	
	Connector:		
	sensor-connector, M12x1, 8-pin, axial, IP67, shield connected to encoder housing	CB8	

Example Order No.	WDGA 36E	06	12	12	SI	A	B	0	1	CB8
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WDGA 36E										Example Order No.
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For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

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