

Online Data Sheet

Encoder WDGA 58A SSI

www.wachendorff-automation.com/wdga58assi

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 58A absolute SSI magnetic, with EnDra®-Technology


EnDra®
Technologie

SSI
Synchronous Serial Interface

- EnDra® multiturn technology: maintenance-free and environmentally friendly
- SSI, gray or binary
- Single-turn/Multi-turn (14 bit / 39 bit)
- Forward-looking technology with 32 bit processor
- 2-colour-LED as indicator for operating condition
- High shaft load up to 220 N radial, 120 N axial

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Mechanical Data

Housing

Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
Cam mounting	pitch 65 mm

Shaft(s)

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

Shaft	Ø 6 mm
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N

Bearings

Bearings type	2 precision ball bearings
Nominal service life	1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	1000 a
Mission time (TM)	20 a
Nominal service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 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

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

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

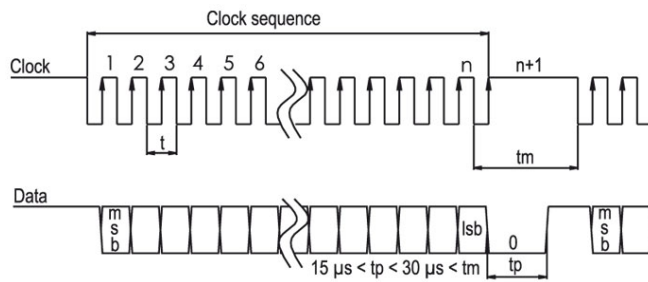
Configuration inputs

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

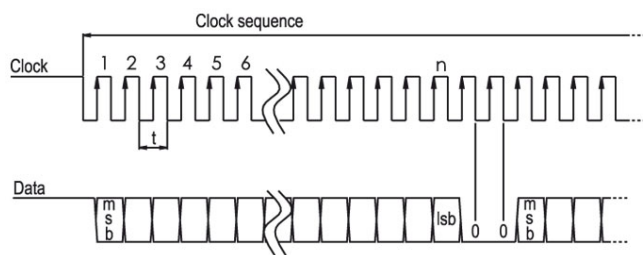
Normal function: - constant green gleam

No supply: - no gleam

Transmission protocol SSI Single transmission:



Transmission protocol SSI Multipath transmission:



General Data

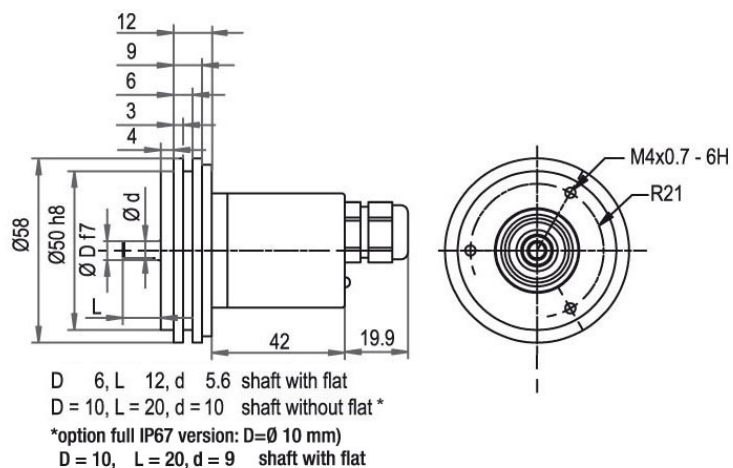
Weight	approx. 224 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP40 for K1)
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

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

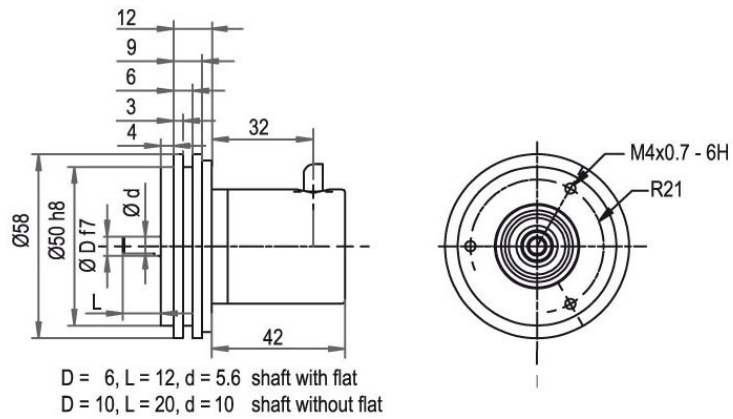


Description

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)

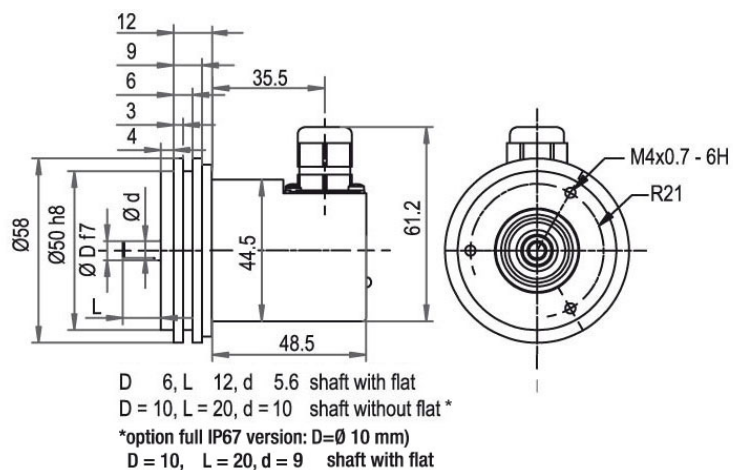


Description

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, L3 with 2 m cable

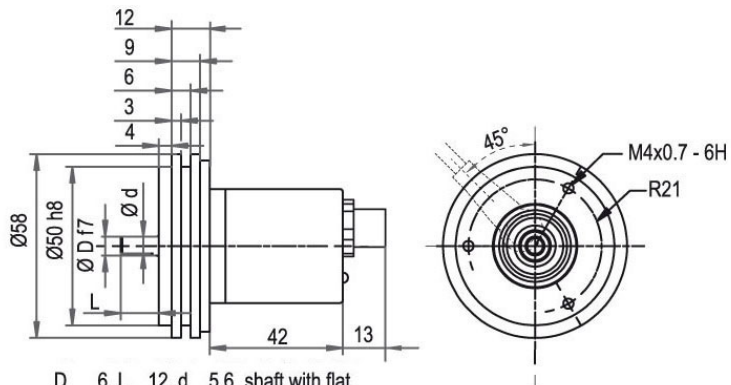


Description

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



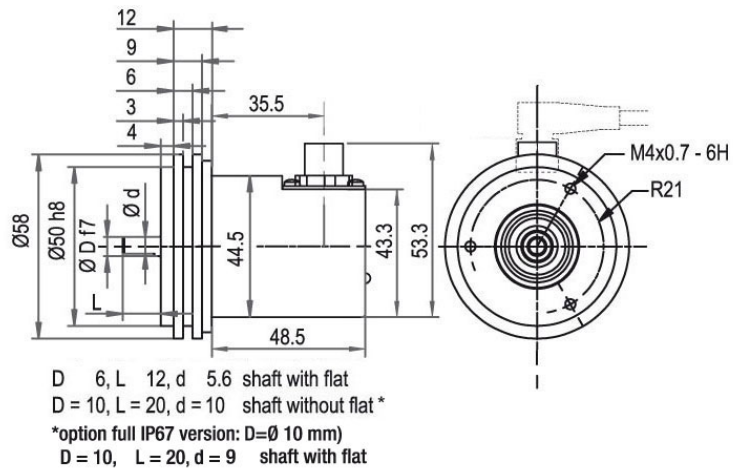
D = 6, L = 12, d = 5.6 shaft with flat
D = 10, L = 20, d = 10 shaft without flat *
*option full IP67 version: D=Ø 10 mm)
D = 10, L = 20, d = 9 shaft with flat

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

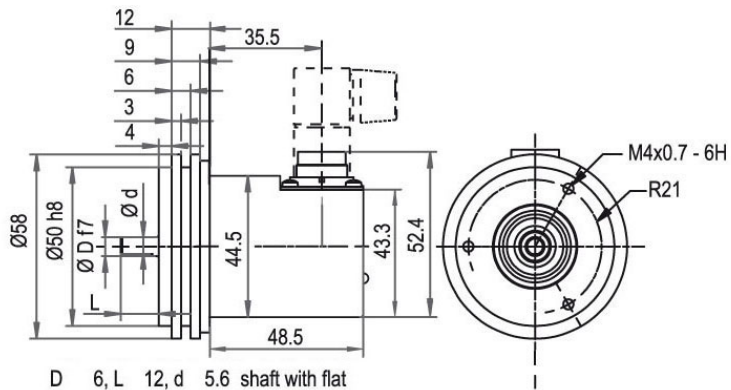


Description

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

Connector, M16, CH8, 8-pin



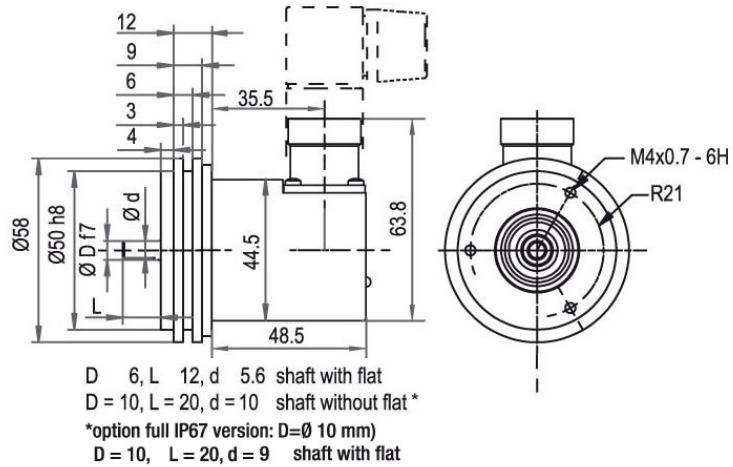
D = 6, L = 12, d = 5.6 shaft with flat
D = 10, L = 20, d = 10 shaft without flat *
*option full IP67 version: D=Ø 10 mm)
D = 10, L = 20, d = 9 shaft with flat

Description

CH8 radial, 8-pin, shield connected to encoder housing

Assignments	
	CH8
	
GND	2
(+) Vcc	1
SSI CLK+	6
SSI CLK-	5
SSI DATA+	4
SSI DATA-	3
PRESET	8
DIR	7
Shield	housing

Connector, M23, C5, 12-pin



Description

C5 radial, 12-pin, shield connected to encoder housing

Assignments	
	C5
GND	12
(+) Vcc	11
SSI CLK+	2
SSI CLK-	1
SSI DATA+	3
SSI DATA-	4
PRESET	9
DIR	8
Shield	housing

Options

Shafts sealed to IP67, only with 10 mm shaft with flat

Order key

The encoder WDG 58A SSI can be supplied in a full IP67 version.

AAS

Max. RPM: 3500 min⁻¹

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

Example Order No.	Type	Your encoder	
WDGA 58A	WDGA 58A	WDGA 58A	
	Shaft	Order key	
10	Ø 6 mm Attention: No option AAS = full IP67 version	06	
	Ø 10 mm	10	
	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	
	radial, shield connected to encoder housing, with 2 m cable, IP67	L3	
	Connector:		
	sensor-connector, M12x1, 8-pin, axial, IP67, shield connected to encoder housing	CB8	
	sensor-connector, M12x1, 8-pin, radial, IP67, shield connected to encoder housing	CC8	
	sensor-connector, M16x0.75, 8-pin, radial, IP67, shield connected to encoder housing	CH8	
	connector, M23, 12-pin, radial, IP67, shield connected to encoder housing	C5	
	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAS	

Example Order No.	WDGA 58A	10	12	12	SI	A	B	0	1	CB8	
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WDGA 58A											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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