



Online Data Sheet

Encoder WDG 58A CANopen

www.wachendorff-automation.com/wdga58acan

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 CANopen magnetic, with EnDra®-Technology



EnDra®
Technologie

CANopen®

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single-turn and Multi-turn
- Communication Profile according to CiA 301
- Device Profile for encoder CiA 406 V3.2 class C2
- Single-turn/Multi-turn (16 bit / 43 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition and error message appropriate CiA 303-3
- 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	4,75 VDC up to 32 VDC: typ. 50 mA
Power consumption	max. 0.5 W

Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	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 and no gear.
Multi-turn resolution	up to 32 bit with high precision value up to 43 bit.

Environmental data

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

Interface

Interface:	CAN
Protocol:	CANopen <ul style="list-style-type: none"> • Communication profil CiA 301 • Device Profile for encoder CiA 406 V3.2 class C2
Node number:	1 up to 127 (default 127)
Baud rate:	10 kBaud up to 1 MBaud with automatic bit rate detection.
Advice:	The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e. g. PDOs, Scaling, Heartbeat, Node-ID, Baud rate, etc.

Programmable CAN transmission modes:

Synchronous mode:
when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.

Asynchronous mode:
a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)

General Data

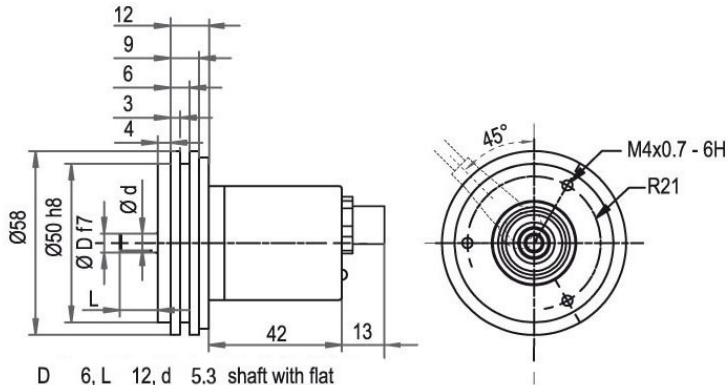
Weight	approx. 224 g
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet L1: IP40
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

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

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

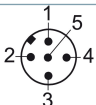
Connector, M12x1 CB5, 5-pin



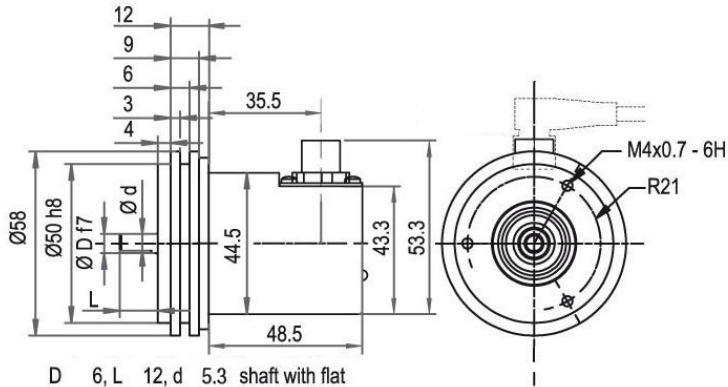
D = 6, L = 12, d = 5.3 shaft with flat
 D = 10, L = 20, d = 10 shaft without flat *
 *option full IP67 version: D=Ø 10 mm)
 D = 10, L = 20, d = 9 shaft with flat

Description

CB5 axial, 5-pin, shield connected to encoder housing

Assignments	
	CB5 
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

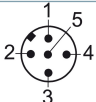
Connector, M12x1 CC5, 5-pin

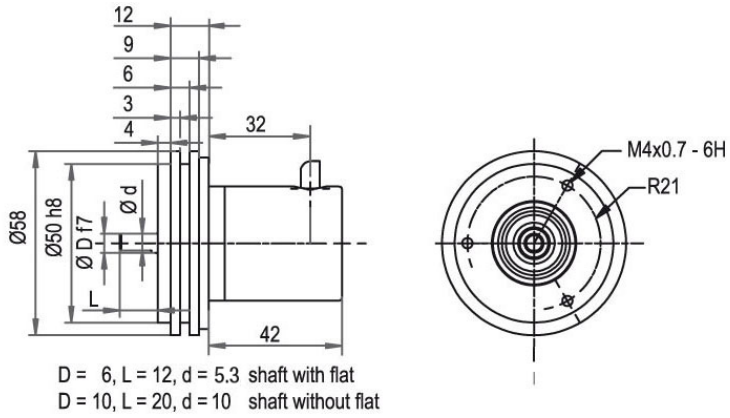


D 6, L 12, d 5.3 shaft with flat
 D = 10, L = 20, d = 10 shaft without flat *
 *option full IP67 version: D=Ø 10 mm)
 D = 10, L = 20, d = 9 shaft with flat

Description

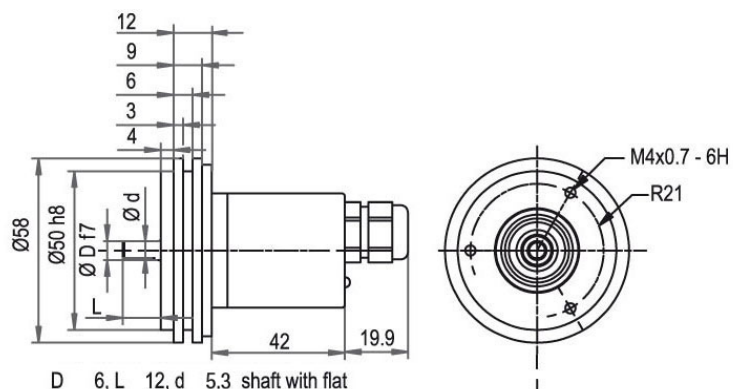
CC5 radial, 5-pin, shield connected to encoder housing

Assignments	
	
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Cable connection, L1 radial with 2 m cable (IP40)

Description

L1 radial, shield connected to encoder housing (IP40)

Assignments	
	L1
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

Cable connection, L2 axial with 2 m cable


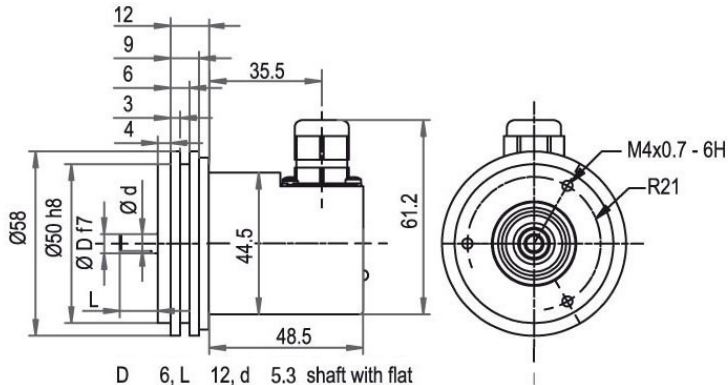
D = 6, L = 12, d = 5.3 shaft with flat
 D = 10, L = 20, d = 10 shaft without flat *
 *option full IP67 version: D=Ø 10 mm)
 D = 10, L = 20, d = 9 shaft with flat

Description

L2 axial, shield connected to encoder housing

Assignments	
	L2
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

Cable connection, L3 radial with 2 m cable



D 6, L 12, d 5.3 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

L3 radial, shield connected to encoder housing

Assignments	
	L3
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

Options

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

Order key

The encoder WDG 58A CANopen 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

120 Ohm terminating resistor

Order key

The encoder WDGA 58A CANopen is also available with fixed 120 Ohm terminating resistor.

AEO

Example Order No.	Type	Your encoder
WDGA 58A	WDGA 58A	WDGA 58A
	Shaft	Order key
06	∅ 6 mm Attention: No option AAS = full IP67 version	06
	∅ 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
18	Multi-turn resolution: (examples) 18 bit = 18 43 bit = 43 no Multiturn = 00	18
	Data protocol	Order key
CO	CANopen	CO
	Software	Order key
A	up to date release	A
	Code	Order key
B	binary	B
	Power supply	Order key
0	4.75 V up to 32 V (standard)	0
	Galvanic isolation	Order key
0	no	0
	Electrical connections	Order key
CB5	Cable:	
	radial, shield connected to encoder housing (IP40), with 2 m cable	L1
	axial, shield connected to encoder housing, with 2 m cable, IP67	L2
	radial, shield connected to encoder housing, with 2 m cable, IP67	L3
	Connector:	
	sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing	CB5
sensor-connector, M12x1, 5-pin, radial, IP67, shield connected to encoder housing	CC5	
	Options	Order key
	Without option	Empty
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAS
	120 Ohm terminating resistor	AEO

Example Order No.	WDGA 58A	06	12	18	CO	A	B	0	0	CB5	
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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.
<https://www.wachendorff-automation.com/>



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