WACHENDORFF
Automation GmbH & Co. KG

# Online Data Sheet

Encoder WDGA 58B CANopen LIFT
www.wachendorff-automation.com/wdga58bcanlift

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

Industrie ROBUST

Encoder WDGA 58B absolute CANopen LIFT magnetic, with EnDra®-Technology
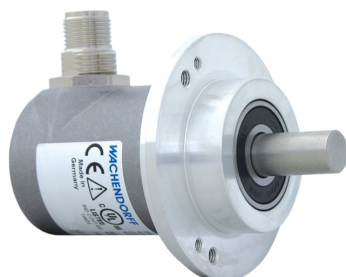
EnDra®
Technologie

CANopen LIFT

- EnDra® maintenance-free and environmentally friendly
- CANopen LIFT, Single-turn and Multi-turn
- Communication Profile according to CiA 301
- Application Profile CANopen Lift CiA 417
- Single-turn/Multi-turn (16 bit / 32 bit)
- Future-oriented 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

www.wachendorff-automation.com/wdga58bcanlift

Mechanical Data

Housing

Flange	clamping flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 58 mm
Cam mounting	pitch 69 mm

Shaft(s)

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

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

Shaft	Ø 8 mm
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 19 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N

Shaft	Ø 9.525 mm, Ø 3/8"
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 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

Nominale 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
Nominale 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

Environmental data

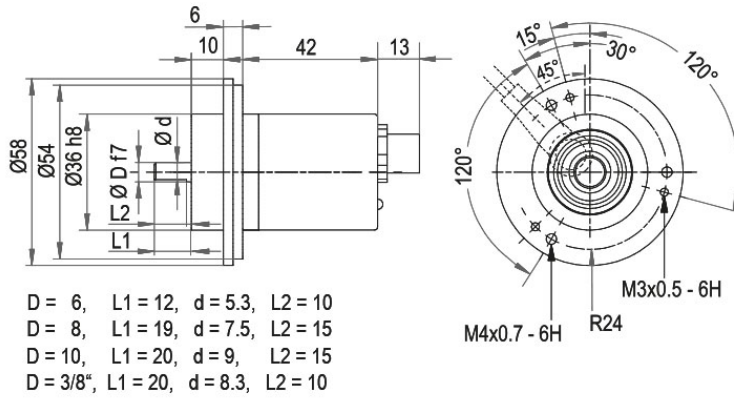|	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
Includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61326-1
Vibration: (DIN EN 60068-2-6)	300 m/s² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s² (6 ms)
Design:	According DIN VDE 0160
Turn on time:	<1,5 s

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

Interface

Interface:	**CAN**
Protocol:	CANopen • Communication profil CiA 301 • Application Profile CANopen LIFT CiA 417 V2.0 • Up to three virtual devices *car position unit (configurable)*
Node number:	1 up to 127 (default 4)
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:	**Sychronous 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. 202 g
Connections	cable or 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

D = 6, L1 = 12, d = 5.3, L2 = 10
D = 8, L1 = 19, d = 7.5, L2 = 15
D = 10, L1 = 20, d = 9, L2 = 15
D = 3/8", L1 = 20, d = 8.3, L2 = 10

M3x0.5 - 6H
M4x0.7 - 6H
R24

Description

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

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

D = 6,   L1 = 12,   d = 5.3,   L2 = 10
D = 8,   L1 = 19,   d = 7.5,   L2 = 15
D = 10,   L1 = 20,   d = 9,   L2 = 15
D = 3/8", L1 = 20,   d = 8.3,   L2 = 10

M3x0.5 - 6H

M4x0.7 - 6H   R24
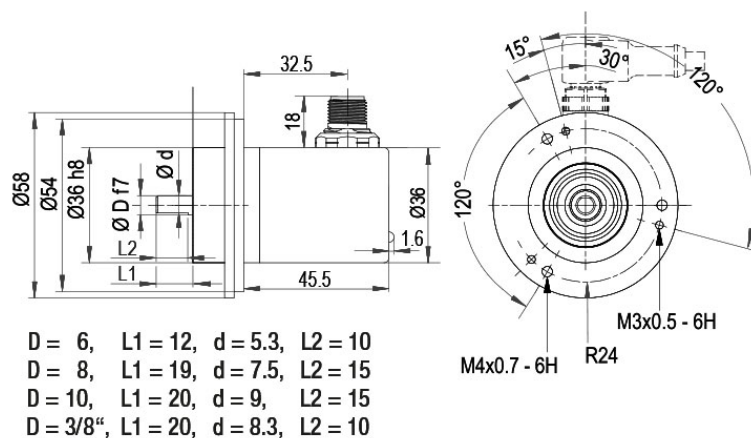
Description

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

Assignments	
	CC5
	(connector diagram: 1, 5, 2, 4, 3)
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Cable connection, L1 radial with 2 m cable (IP40)
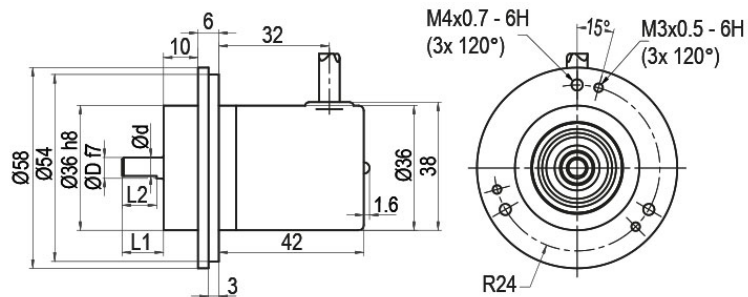
D = 6,   L1 = 12,   d = 5.3,   L2 = 10
D = 8,   L1 = 19,   d = 7.5,   L2 = 15
D = 10,   L1 = 20,   d = 9,   L2 = 15
D = 3/8", L1 = 20,   d = 8.3,   L2 = 10

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,   L1 = 12,   d = 5.3,   L2 = 10
D = 8,   L1 = 19,   d = 7.5,   L2 = 15
D = 10,   L1 = 20,   d = 9,   L2 = 15
D = 3/8", L1 = 20,   d = 8.3,   L2 = 10

M3x0.5 - 6H
M4x0.7 - 6H
R24

Description

L2   axial, shield connected to encoder housing

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

D = 6,   L1 = 12,   d = 5.3,   L2 = 10
D = 8,   L1 = 19,   d = 7.5,   L2 = 15
D = 10,   L1 = 20,   d = 9,   L2 = 15
D = 3/8", L1 = 20,   d = 8.3,   L2 = 10

M3x0.5 - 6H
M4x0.7 - 6H   R24
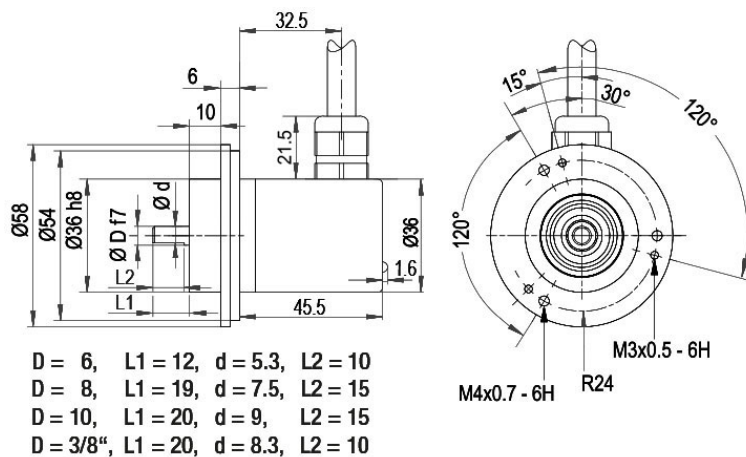
Description

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 58B CANopen LIFT can be supplied in IP67 (full IP67 only connection CB5, CC5, L2 or L3 version; not cable connection L1 = IP40). Max. RPM: 3500 min'-1 Permitted Shaft-Loading: axial 100 N; radial 110 N Starting-torque: approx. 4 Ncm at ambient temperature	**AAO**

120 Ohm terminating resistor	Order key
The encoder WDGA 58B CANopen LIFT is also available with fixed 120 Ohm terminating resistor.	**AEO**

Example Order No.	Type		Your encoder
WDGA 58B	WDGA 58B		WDGA 58B

	Shaft	Order key	
06	Ø 6 mm Attention: No option AAO = full IP67 version	06	
	Ø 8 mm Attention: No option AAO = full IP67 version	08	
	Ø 9.525 mm Ø 3/8" Attention: No option AAO = full IP67 version	4Z	
	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	
18	Multi-turn resolution 1 bit up to 32 bit: (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit)	18	

	Data protocol	Order key	
CL	CANopen LIFT	CL	

	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	
	Cable:		
	radial, shield connected to encoder housing (IP40), with 2 m cable	L1	
	axial, shield connected to encoder housing, with 2 m cable	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
CB5			
	Connector:		
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	CB5	
	sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	CC5	

	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAO	
	120 Ohm terminating resistor	AEO	

Example Order No.	WDGA 58B	06	12	18	CL	A	B	0	0	CB5	
	WDGA 58B										Example Order No.

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