



## Online Data sheet

HM 2602

### Encoder WDGA 58B CANopen LIFT

[www.wachendorff-automation.com/wdga58bcanlift](http://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



Nyckelvägen 7  
142 50 SKOGÅS, Sweden

Tel: +46 (0)8 771 02 20  
[info@hemomatik.se](mailto:info@hemomatik.se)

[www.hemomatik.se](http://www.hemomatik.se)

**IndustrieROBUST**

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



Illustration similar

**EnDra®**  
Technologie

**CANopen LIFT**

- EnDra® maintenance-free and environmentally friendly
- CANopen LIFT, Single-turn/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 [22.433 kp] radial, 120 N [12.236 kp] axial

[www.wachendorff-automation.com/wdga58bcanlift](http://www.wachendorff-automation.com/wdga58bcanlift)

## Mechanical Data

Flange	clamping flange
Flange material	aluminum
Housing material	stainless steel
Flange diameter	Ø 58 mm [Ø 2.283"]
Cam mounting	pitch 69 mm [2.717 inches]

## Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm [1.416 in-ozf] at ambient temperature

Shaft	Ø 6 mm [Ø 0.236"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 8 mm [Ø 0.315"]
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 19 mm [0.748"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	Attention: No option AAO = full IP67 version
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

## Bearings

Bearings type	2 precision ball bearings
---------------	---------------------------

Nominale service life	1 x 10 <sup>9</sup> revs. at 100 % rated shaft load 1 x 10 <sup>10</sup> revs. at 40 % rated shaft load 1 x 10 <sup>11</sup> revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

## Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	1000 a
Mission time (TM)	20 a
Nominale service life (L10h)	1 x 10 <sup>11</sup> 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
Operating principle	magnetic

## 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/s <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s <sup>2</sup> (6 ms)
Electrical Safety:	According DIN VDE 0160
Turn on time:	<1,5 s

## Duty information

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

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

### Interface

<b>Interface:</b>	<b>CAN</b>
Protocol:	CANopen <ul style="list-style-type: none"> <li>• Communication profil CiA 301</li> <li>• Application Profile CANopen LIFT CiA 417 V2.0</li> <li>• Up to three virtual devices <i>car position unit (configurable)</i></li> </ul>
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:	<p><b>Synchronous mode:</b> when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.</p> <p><b>Asynchronous mode:</b> a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)</p>

### General Data

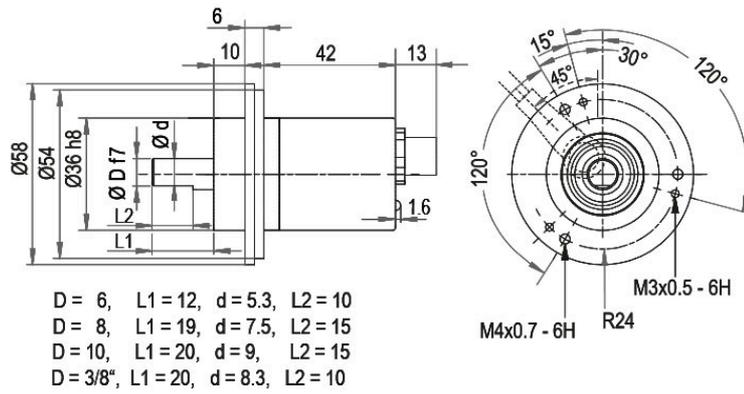
Weight	approx. 202 g [7.125 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet L1: IP40
Operating temperature	-40 °C up to +85 °C [-40 °F up to 185 °F]
Storage temperature	-40 °C up to +100 °C [-40 °F up to 212 °F]

### More Information

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

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

**Connector, M12x1, axial, CB5, 5-pin**

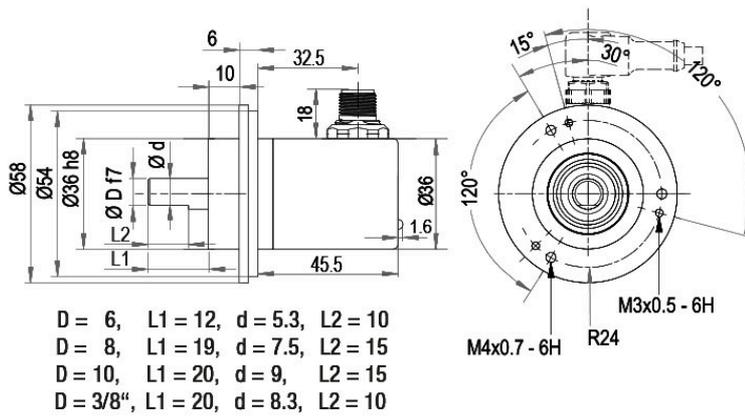


**Description**

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

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

**Connector, M12x1, radial, CC5, 5-pin**

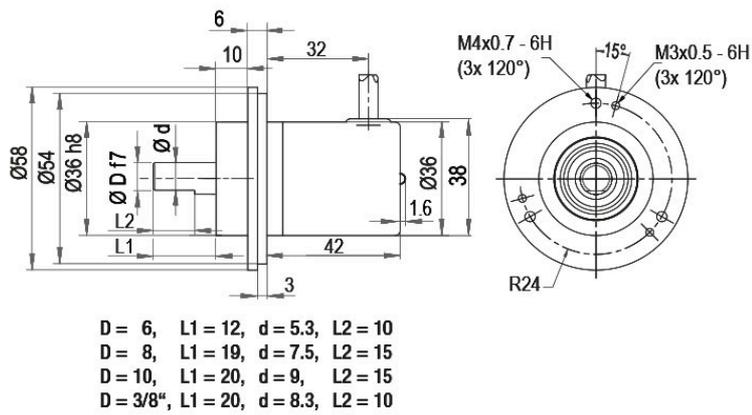


**Description**

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

Assignments	
	<b>CC5</b> 
<b>(+) Vcc</b>	2
<b>GND</b>	3
<b>CANHigh</b>	4
<b>CANLow</b>	5
<b>CANGND shield</b>	1

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

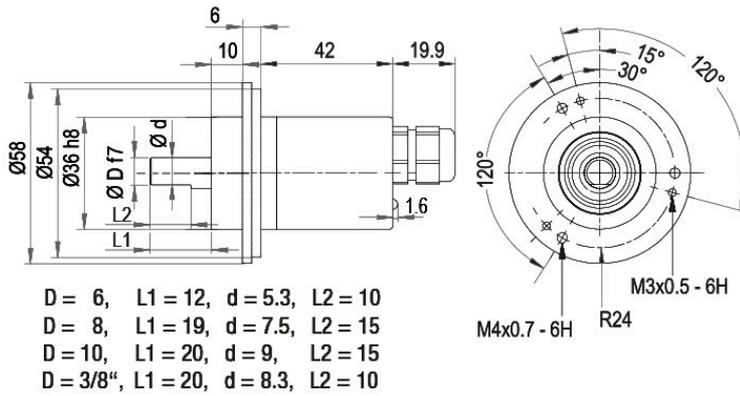


**Description**

**L1** radial, shield connected to encoder housing (IP40)

Assignments	
	<b>L1</b>
<b>(+) Vcc</b>	BN
<b>GND</b>	WH
<b>CANHigh</b>	GN
<b>CANLow</b>	YE
<b>CANGND shield</b>	shield

**Cable connection, L2 axial with 2 m cable**

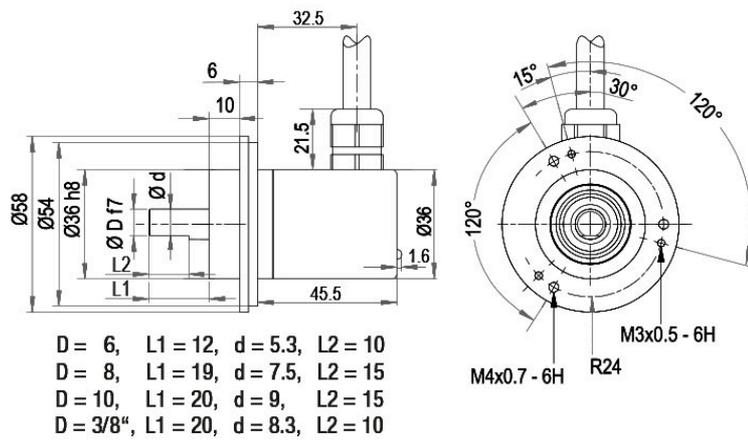


**Description**

**L2** axial, shield connected to encoder housing

Assignments	
	<b>L2</b>
<b>(+) Vcc</b>	BN
<b>GND</b>	WH
<b>CANHigh</b>	GN
<b>CANLow</b>	YE
<b>CANGND shield</b>	shield

**Cable connection, L3 radial with 2 m cable**



**Description**

**L3** radial, shield connected to encoder housing

Assignments	
	<b>L3</b>
<b>(+) Vcc</b>	BN
<b>GND</b>	WH
<b>CANHigh</b>	GN
<b>CANLow</b>	YE
<b>CANGND shield</b>	shield

**Options****Low-friction bearings****Order key**

The encoder WDGA 58B CANopen LIFT is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.

**AAC****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<sup>-1</sup>  
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
	<b>Shaft</b>	<b>Order key</b>
06	Ø 6 mm [Ø 0.236"] Attention: No option AAO = full IP67 version	06
	Ø 8 mm [Ø 0.315"] Attention: No option AAO = full IP67 version	08
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z Attention: No option AAO = full IP67 version	4Z
	Ø 10 mm [Ø 0.394"]	10
	<b>Single-turn Resolution</b>	<b>Order key</b>
12	Single-turn resolution 1 bit up to 16 bit, recommended min. 6 bit (e. G. 12 bit)	12
	<b>Multi-turn Resolution</b>	<b>Order key</b>
18	Multi-turn resolution 1 bit up to 32 bit: (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit)	18
	<b>Data protocol</b>	<b>Order key</b>
CL	CANopen LIFT	CL
	<b>Software</b>	<b>Order key</b>
A	up to date release	A
	<b>Code</b>	<b>Order key</b>
B	binary	B
	<b>Power supply</b>	<b>Order key</b>
0	4.75 V up to 32 V (standard)	0
	<b>Galvanic isolation</b>	<b>Order key</b>
0	no	0
	<b>Electrical connections</b>	<b>Order key</b>
CB5	<b>Cable:</b>	
	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
	<b>Connector:</b>	
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	CB5
sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	CC5	
	<b>Options</b>	<b>Order key</b>
	Without option	Empty
	Low-friction bearings	AAC
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAO
	120 Ohm terminating resistor	AEO

<b>Example Order No.</b>	WDGA 58B	06	12	18	CL	A	B	0	0	CB5	
--------------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58B											<b>Example Order No.</b>
----------	--	--	--	--	--	--	--	--	--	--	--------------------------