



## Online Data Sheet

### Encoder WDGA 58A SAEJ1939 galv. isolation

[www.wachendorff-automation.com/wdga58asaej1939galv](http://www.wachendorff-automation.com/wdga58asaej1939galv)

#### 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 CAN SAE J1939 galv. isolation, magnetic, with EnDra®- Technology


**EnDra®**  
Technologie

**SAE J1939**

- EnDra® Technology:
- CAN SAE J1939 protocol
- Galvanic isolation
- Single-turn/Multi-turn (16 bit / 32 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

[www.wachendorff-automation.com/wdga58asaej1939galv](http://www.wachendorff-automation.com/wdga58asaej1939galv)

## Mechanical Data

### Housing

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

### Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf 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 8 mm
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 19 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

Shaft	Ø 9.525 mm, Ø 3/8"
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 20 mm, L: 0.787 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp

### Bearings

Bearings type	2 precision ball bearings
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Nominal 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

## Electrical Data

Power supply/Current consumption	10 VDC up to 32 VDC: typ. 100 mA
Power consumption	max. 1 W

## Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	65.536 steps/360° (16 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 32 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
Vibration: (DIN EN 60068-2-6)	50 m/s <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

## Interface

<b>Interface:</b>	<b>CAN</b>
CAN physical layer:	ISO 11898 (High Speed CAN)
Protocol:	ISO 11898 (High Speed CAN)
Baud rate:	Auto-Baud-Detection
Standard Preset configuration:	(other configurations on request)
Direction of counting:	(View from shaft end) ccw
ECU-address:	0x 0A
Process data Identifier:	0x18FF000A

PGN:	0xFF00
Process data mapping:	Byte 0-3 32 Bit Position Value Byte 4 8 Bit Error Register PDU timer and Position Preset can be adjusted by PGN configuration 0xEF00 (Prop. A)
PDU - Time:	50 ms (default)
Configuration - PGN:	0x EF 00 (Prop.A)
Byte 0:	0x 01
Byte 1:	0x FF
Byte 2:	PDU time LSB
Byte 3:	PDU time MSB
Byte 4:	Preset LSB
Byte 5, 6:	Preset
Byte 7:	Preset MSB

#### General Data

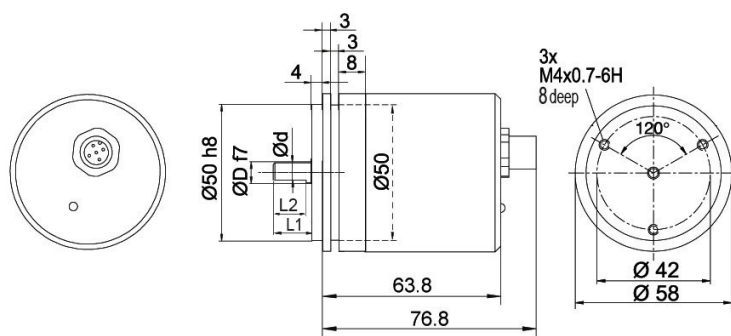
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

#### More Information

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

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

**WDGA 58A CAN SAE J1939, galv. isolation, with M12x1, axial CB5, 5-pin**



D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
D = 10, L1 = 20 shaft with out flat\*  
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

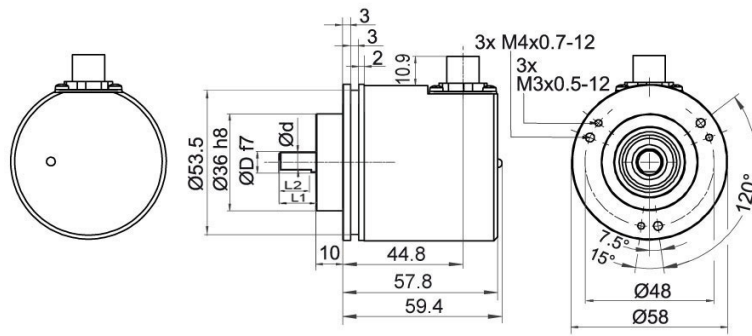
\* Option full IP67 version: (only D = Ø 10 mm)  
D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

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

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

**WDGA 58A CAN SAE J1939, galv. isolation, with M12x1, CC5, radial, 5-pin**



D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
D = 10, L1 = 20 shaft with out flat\*  
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

\* Option full IP67 version: (only D = Ø 10 mm)

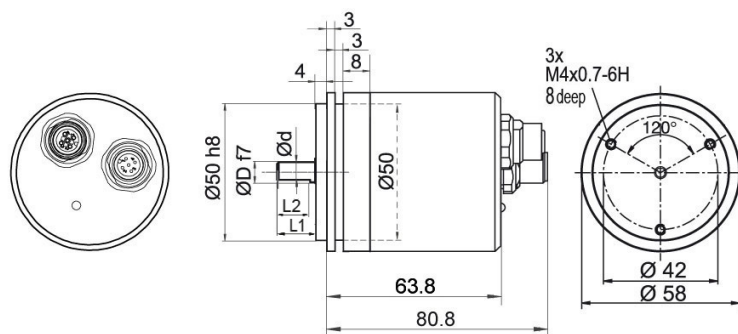
D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**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

**WDGA 58A CAN SAE J1939, galv. isolation, with 2x M12x1, axial DB5**



D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat  
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat  
D = 10, L1 = 20 shaft with out flat\*  
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

\* Option full IP67 version: (only D = Ø 10 mm)  
D = 10, L1 = 20, d = 9, L2 = 15 shaft with flat

**Description**

**DB5** axial, 5-pin, shield connected to encoder housing

Assignments	
Female connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Assignments	
Connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

## Options

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

### Order key

The encoder WDG 58A CAN SAE J1939 galv. isolation can be supplied in a full IP67 version.

**AAS**

Max. RPM: 3500 min<sup>-1</sup>

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 CAN SAE J1939 galv. is also available with fixed 120 Ohm terminating resistor.

**AEO**

Example Order No.	Type	Your encoder	
WDGA 58A	WDGA 58A	WDGA 58A	
	<b>Shaft</b>	<b>Order key</b>	
06	Ø 6 mm Attention: No option AAS = full IP67 version	06	
	Ø 8 mm Attention: No option AAS = full IP67 version	08	
	Ø 10 mm	10	
	Ø 9.525 mm Ø 3/8" Attention: No option AAS = full IP67 version	4Z	
	<b>Single-turn Resolution</b>	<b>Order key</b>	
12	Single-turn resolution 1 bit up to 16 bit: (e. G. 12 bit)	12	
	<b>Multi-turn Resolution</b>	<b>Order key</b>	
18	Multi-turn up to 32 bit (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit) No Multi-turn: 00	18	
	<b>Data protocol</b>	<b>Order key</b>	
CJ	CAN SAE J1939 (galv. isolation)	CJ	
	<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	10 V up to 32 V (standard)	0	
	<b>Galvanic isolation</b>	<b>Order key</b>	
1	yes	1	
	<b>Electrical connections</b>	<b>Order key</b>	
CB5	<b>Connector:</b>		
	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	
	sensor-connector/female connector, 2x M12x1, 5-pin, axial, IP67, shield connected to encoder housing	DB5	
	<b>Options</b>	<b>Order key</b>	
	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	CJ	A	B	0	1	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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