



Online Data Sheet

Encoder WDGA 58A CAN SAE J1939

www.wachendorff-automation.com/wdga58asaej1939

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 magnetic, with EnDra® Technologie



**EnDra®
Technologie**

SAE J1939

- EnDra® Technologie: maintenance-free and environmentally friendly
- CAN SAE J1939 protocol
- 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

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Mechanical Data

Housing

Flange	synchro flange
Flange material	aluminum
Housing cap	stainless steel
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 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, L: 0.787 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp

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
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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, 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 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

Duty information

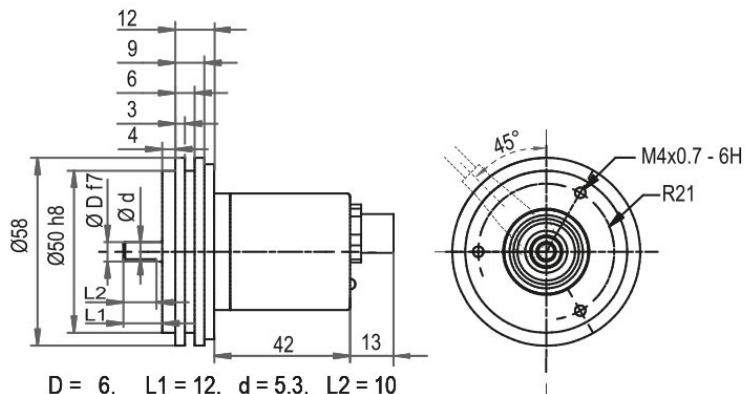
Customs tariff number:	90318020
Country of origin:	Germany

Interface	
Interface:	CAN
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-adress:	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	
Weight	approx. 224 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	

Connector, M12x1, axial, CB5, 5-pin



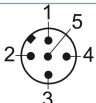
- D = 6, L1 = 12, d = 5.3, L2 = 10
- D = 8, L1 = 19, d = 7.5, L2 = 15
- D = 10, L1 = 20, d = 9, L2 = 15
- D = 3/8", L1 = 20, d = 8.3, L2 = 10

Option AIX:

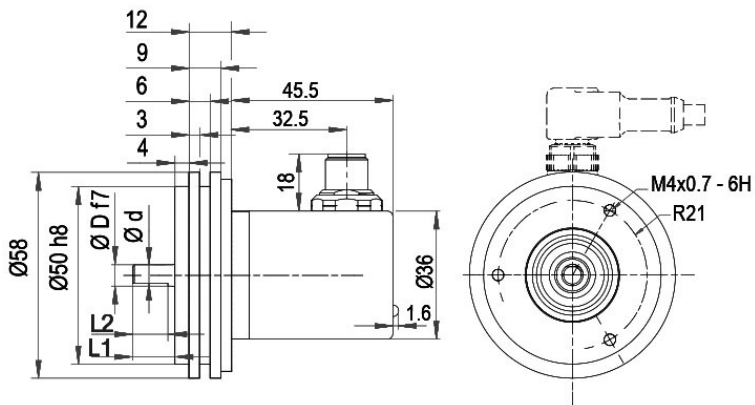
- D = 6, L1 = 10, d = 5.3, L2 = 8

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, radial, CC5, 5-pin



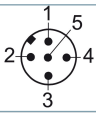
- D = 6, L1 = 12, d = 5.3, L2 = 10
- D = 8, L1 = 19, d = 7.5, L2 = 15
- D = 10, L1 = 20, d = 9, L2 = 15
- D = 3/8", L1 = 20, d = 8.3, L2 = 10

Option AIX:

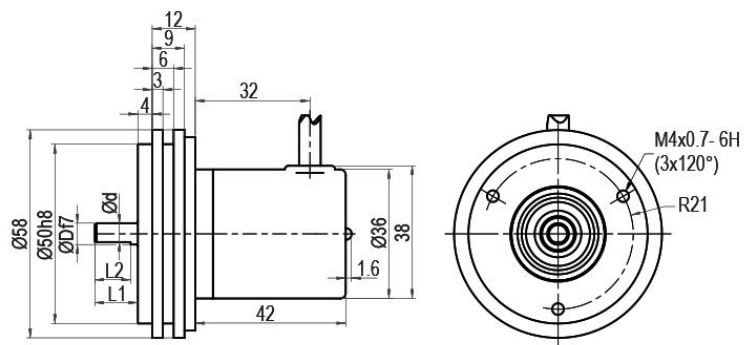
- D = 6, L1 = 10, d = 5.3, L2 = 8

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)



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

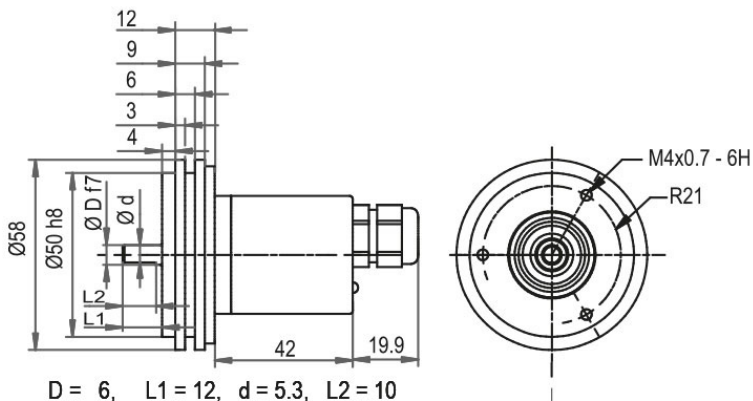
Option AIX:

D = 6, L1 = 10, d = 5.3, L2 = 8

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

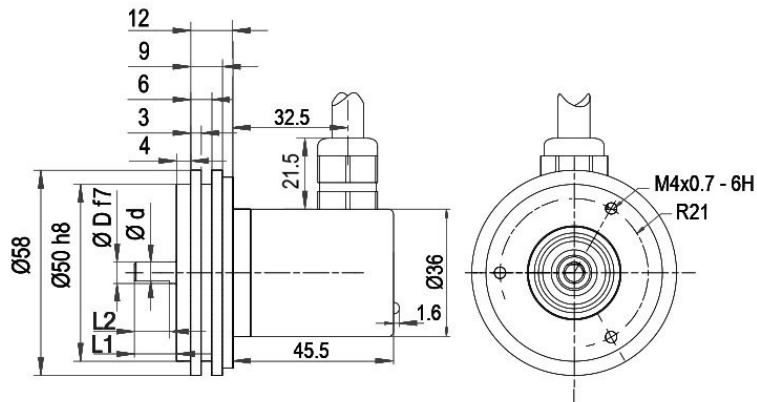
Option AIX:

D = 6, L1 = 10, d = 5.3, L2 = 8

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, 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

Option AIX:

D = 6, L1 = 10, d = 5.3, L2 = 8

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 shaft Ø 10 mm

Order key

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

AAS

120 Ohm terminating resistor

Order key

The encoder WDGA 58A CAN SAE J1939 is also available with fixed 120 Ohm terminating resistor.

AEO

Shaft length 10 mm (Ø 6 mm)

Order key

The encoder WDGA 58A CAN SAE J1939 shaft: Ø 6 mm is also available with a shortened shaft L = 10 mm.

AIX

Example Order No.	Type	Your encoder	
WDGA 58A	WDGA 58A	WDGA 58A	
	Shaft	Order key	
10	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	
14	Single-turn resolution 1 bit up to 16 bit: (e. G. 14 bit)	14	
	Multi-turn Resolution	Order key	
18	Multi-turn up to 32 bit (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit) No Multi-turn: 00	18	
	Data protocol	Order key	
CJ	CAN SAE J1939	CJ	CJ
	Software	Order key	
A	up to date release	A	A
	Code	Order key	
B	binary	B	B
	Power supply	Order key	
0	4.75 V up to 32 V (standard)	0	0
	Galvanic isolation	Order key	
0	no	0	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	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
	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	
	Shafts sealed to IP67, only with shaft Ø 10 mm	AAS	
	120 Ohm terminating resistor	AEO	
	Shaft length 10 mm (Ø 6 mm)	AIX	
	Without option	Empty	

Example Order No.	WDGA 58A	10	14	18	CJ	A	B	0	0	CB5	
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WDGA 58A					CJ	A	B	0	0		Your encoder
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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/contact-sales-en/>



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