



# Online Data sheet

## Encoder WDGA 36J CAN SAE J1939

[www.wachendorff-automation.com/wdga36jsaej1939](http://www.wachendorff-automation.com/wdga36jsaej1939)

### 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 36J absolute CAN SAE J1939 magnetic, with EnDra® Technology



**EnDra®**  
Technologie

**SAE J1939**

- Protection rating: IP67 + IP69K, (high pressure / steam cleaning)
- 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

[www.wachendorff-automation.com/wdga36jsaej1939](http://www.wachendorff-automation.com/wdga36jsaej1939)

## Mechanical Data

Housing	
Flange	servo flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 36 mm

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

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	300 N
Max. Permissible shaft loading axial	300 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	5 x 10 <sup>8</sup> revs. at 100 % rated shaft load 5.44 x 10 <sup>9</sup> revs. at 40 % rated shaft load 3.1 x 10 <sup>10</sup> revs. at 20 % rated shaft load
Max. operating speed	6000 rpm

## Machinery Directive: basic data safety integrity level

MTTF <sub>d</sub>	1000 a
Mission time (TM)	20 a
Nominal service life (L10h)	3.1 x 10 <sup>10</sup> revs. at 20 % rated shaft load and 6000 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
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## 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)
Design:	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>
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

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Byte 7:	Preset MSB
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**General Data**

Weight	approx. 210 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67+IP69K all around
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

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**More Information**

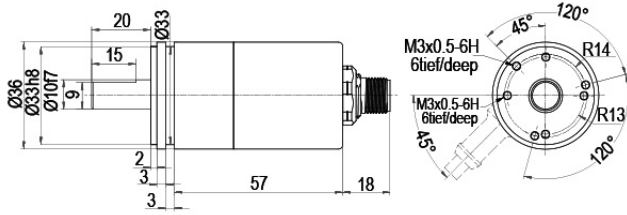
General technical data and safety instructions  
<http://www.wachendorff-automation.com/gtd>

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

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

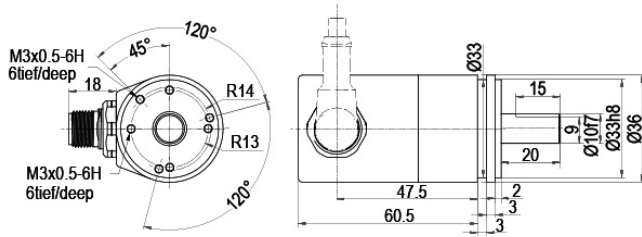


**Description**

**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 CC5 radial, 5-pin**

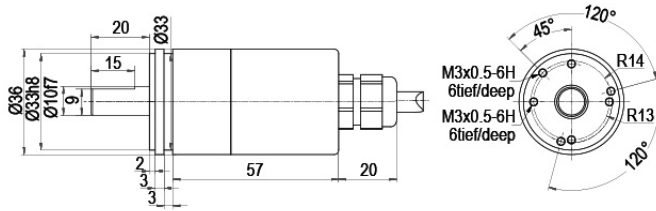


**Description**

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

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

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

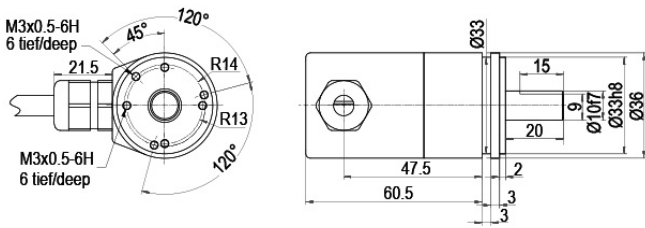


**Description**

**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****120 Ohm terminating resistor****Order key**

The encoder WDGA 36J CAN SAE J1939 galv. is also available with fixed 120 Ohm terminating resistor.

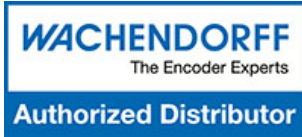
**AEO**



Example Order No.	Type	Your encoder	
WDGA 36J	WDGA 36J	WDGA 36J	
<b>Shaft</b>		<b>Order key</b>	
10	Ø 10 mm	06	
<b>Single-turn Resolution</b>		<b>Order key</b>	
14	Single-turn resolution 1 bit up to 16 bit: (e. G. 14 bit)	14	
<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	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	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>		
	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	
120 Ohm terminating resistor		AEO	

<b>Example Order No.</b>	WDGA 36J	10	14	18	CJ	A	B	0	0	CB5	
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WDGA 36J											<b>Example Order No.</b>
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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/>

# WACHENDORFF

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