



Online Data sheet

Encoder WDGA 36E CAN SAE J1939

www.wachendorff-automation.com/wdga36e-saej1939

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 36E absolute CAN SAE J1939, with EnDra® Technologie



Illustration similar

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

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Mechanical Data	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	stainless steel
- 1. Spring plate compensation	axial: ±1.2 mm [0.0472"], radial: ±0.4 mm [0.0157"]
Flange diameter	Ø 36 mm [Ø 1.417"]

Shaft(s)	
Starting torque	approx. 1.6 Ncm [2.266 in-ozf] at ambient temperature

Shaft	Ø 7 mm [Ø 0.276"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 8 mm [Ø 0.315"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 10 mm [Ø 0.394"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 12 mm [Ø 0.472"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 12.7 mm [Ø 1/2"] Order No. 3Z
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 14 mm [Ø 0.551"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 15 mm [Ø 0.591"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

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	6000 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 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
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, 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)
Electrial Safety:	According DIN VDE 0160
Turn on time:	<1,5 s

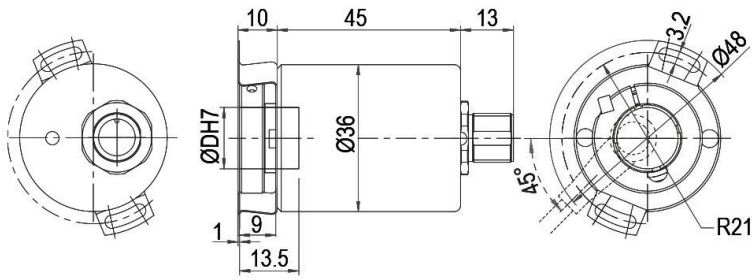
Duty information	
Customs tariff number:	90318020
Country of origin:	Germany

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. 110 g [3.88 oz]
Connections	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



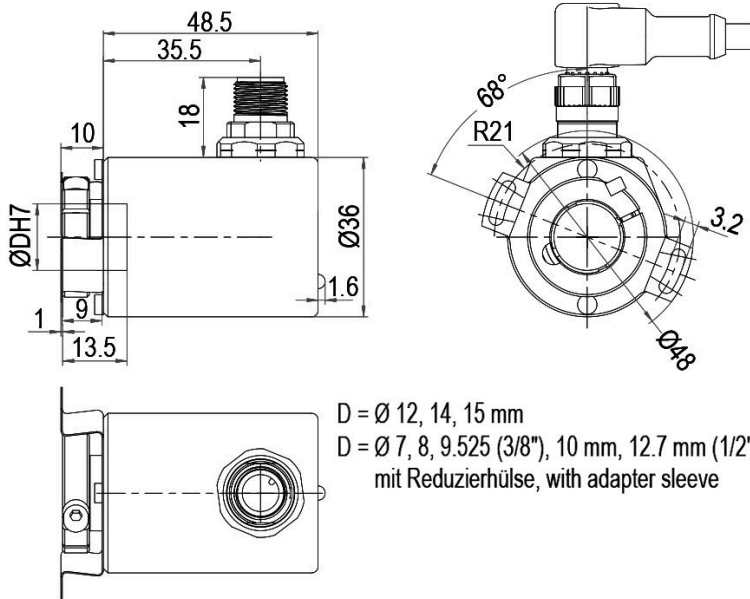
D = Ø 12, 14, 15 mm
 D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
 mit Reduzierhülse, with adapter sleeve

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 CC5 radial, 5-pin

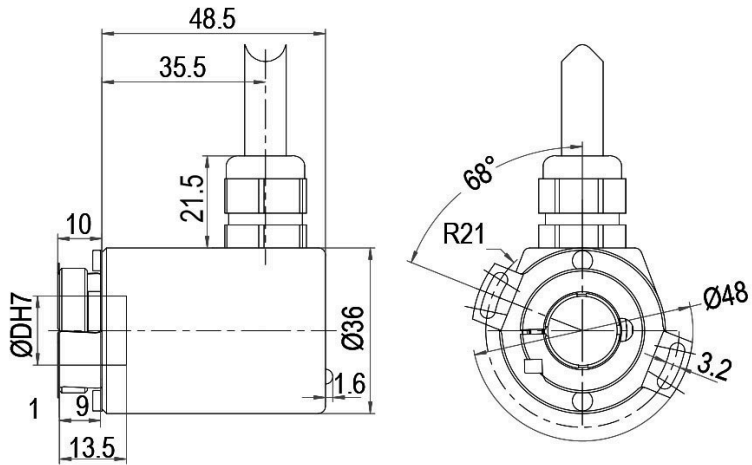


Description

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

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

Cable connection, L3 radial with 2 m cable



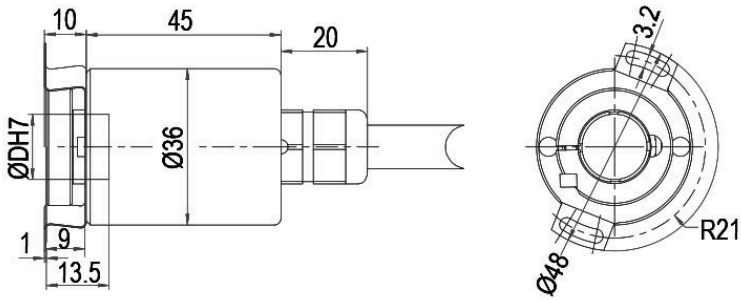
D = Ø 12, 14, 15 mm
 D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
 mit Reduzierhülse, with adapter sleeve

Description

L3 radial, shield connected to encoder housing

Assignments	
	L3
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

Cable connection, L2 axial with 2 m cable



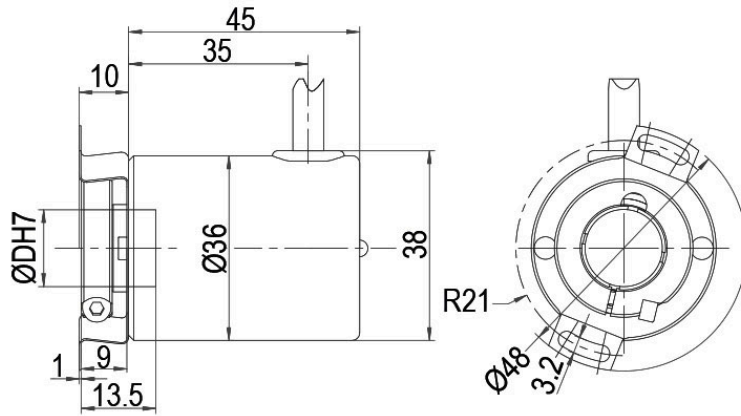
D = Ø 12, 14, 15 mm
 D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
 mit Reduzierhülse, with adapter sleeve

Description

L2 axial, shield connected to encoder housing

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

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



D = Ø 12, 14, 15 mm

D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")

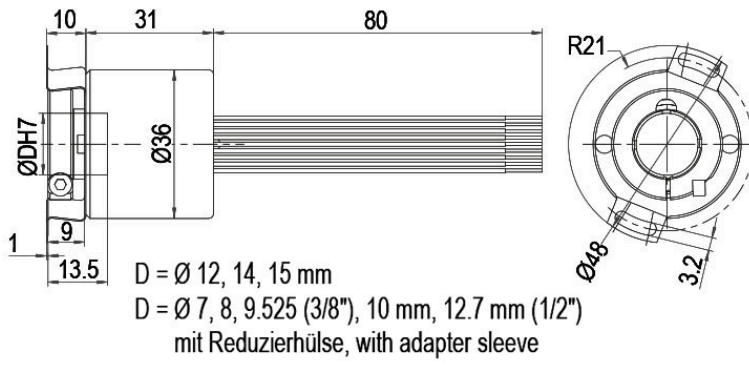
mit Reduzierhülse, with adapter sleeve

Description

L1 radial, shield connected to encoder housing (IP40)

Assignments	
	L1
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

Cable connection, K6 axial with 8 cm loose wires, IP20



Description

K6 axial, shield not connected

Assignments	
	K6
(+) Vcc	BN
GND	WH
CANHigh	GN
CANLow	YE
CANGND shield	shield

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

The encoder WDGA 36E CAN SAE J1939 is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.25 Ncm [0.354 in-ozf] and the protection class at the shaft input to IP50.

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

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

AEO

Example Order No.	Type	Your encoder
WDGA 36E	WDGA 36E	WDGA 36E
	Shaft	Order key
08	Ø 7 mm [Ø 0.276"] with adapter sleeve	07
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z with adapter sleeve	4Z
	Ø 8 mm [Ø 0.315"] with adapter sleeve	08
	Ø 10 mm [Ø 0.394"] with adapter sleeve	10
	Ø 12 mm [Ø 0.472"]	12
	Ø 12.7 mm [Ø 1/2"] Order No. 3Z with adapter sleeve	3Z
	Ø 14 mm [Ø 0.551"]	14
	Ø 15 mm [Ø 0.591"]	15
	Single-turn Resolution	Order key
14	Single-turn resolution 1 bit up to 16 bit, recommended min. 6 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
	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
CB5	Cable:	
	radial, shield connected to encoder housing, with 2 m cable	L3
	axial, shield connected to encoder housing, with 2 m cable	L2
	radial, shield connected to encoder housing (IP40), with 2 m cable	L1
	axial, shield not connected, IP20, with 8 cm loose wires	K6
	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
	Low-friction bearings	AAC
	120 Ohm terminating resistor	AEO

Example Order No.	WDGA 36E	08	14	18	CJ	A	B	0	0	CB5	
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WDGA 36E											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/contact-en/wachendorff-world-wide/>

WACHENDORFF

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