



Online Data Sheet

앱솔루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 36A 시리즈

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 36A CAN SAE J1939
www.wachendorff-automation.com/wdga36asaej1939

Industrie ROBUST

Encoder WDGA 36A absolute CAN SAE J1939 magnetic, with EnDra® Technology



EnDra®
Technologie

SAE J1939

1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
- 최대 32bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. 위치, 속도, 가속도 정밀 측정

4. . IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing

Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 36 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 0.3 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 11.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 8 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	50 N
Max. Permissible shaft loading axial	50 N

Bearings

Bearings type	2 precision ball bearings
Nomiale service life	1.4 x 10 ⁸ revs. at 100 % rated shaft load 2 x 10 ⁹ revs. at 40 % rated shaft load 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	1000 a
Mission time (TM)	20 a
Nomiale service life (L10h)	1.7 x 10 ¹⁰ revs. at 20 % rated shaft load and 12000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

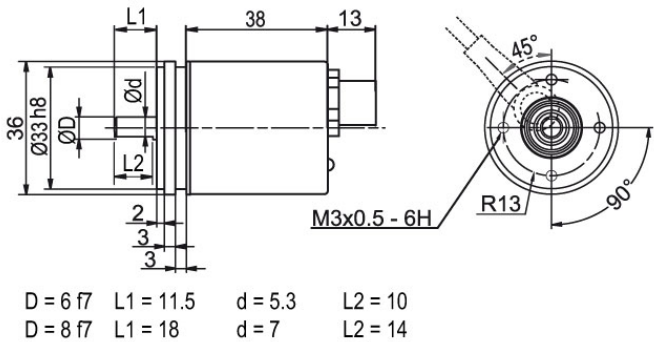
General Data

Weight	approx. 112 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
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**Description****CB5** axial, 5-pin, shield connected to encoder housing

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

Example Order No.	Type	Your encoder	
WDGA 36A	WDGA 36A	WDGA 36A	
	Shaft	Order key	
06	Ø 6 mm	06	
	Ø 8 mm	08	
	Single-turn Resolution	Order key	
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
CB5	Connector:		
	sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing	CB5	

Example Order No.	WDGA 36A	06	14	18	CJ	A	B	0	0	CB5
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 36A										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 36E 시리즈 - 6mm, 1/4inch

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 CAN SAE J1939

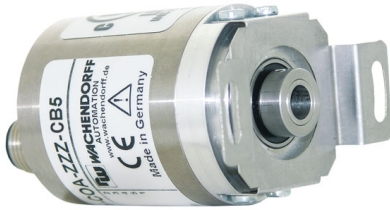
www.wachendorff-automation.com/wdga36esaej1939

IndustrieROBUST

Encoder WDGA 36E absolute CAN SAE J1939 magnetic, with EnDra® Technologie

EnDra®
Technologie

SAE J1939



1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더 - 중공축 타입
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
- 최대 32bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. 위치, 속도, 가속도 정밀 측정

4. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 36 mm

Shaft(s)

Starting torque	approx. 0.3 Ncm at ambient temperature
-----------------	--

Shaft	Ø 6 mm
Insertion depth min.	8 mm
Insertion depth max.	17 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm, Ø 1/4"
Insertion depth min.	8 mm
Insertion depth max.	17 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings

Bearings type	2 precision ball bearings
Nomiale service life	1.4 x 10 ⁸ revs. at 100 % rated shaft load 2 x 10 ⁹ revs. at 40 % rated shaft load 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	1000 a
Mission time (TM)	20 a
Nomiale service life (L10h)	1.7 x 10 ¹⁰ revs. at 20 % rated shaft load and 12000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

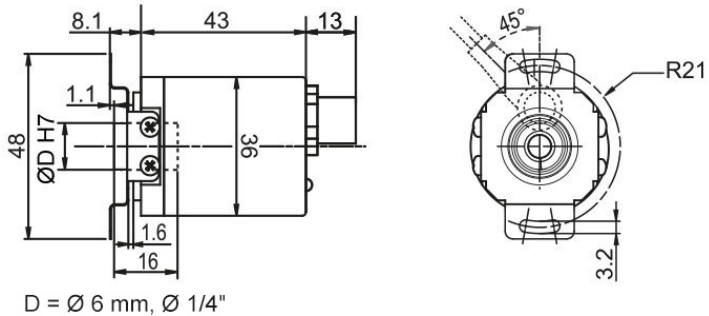
General Data

Weight	approx. 110 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

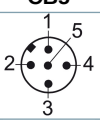
More Information

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**Description**

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

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

Example Order No.	Type	Your encoder	
WDGA 36E	WDGA 36E	WDGA 36E	
	Shaft	Order key	
06	Ø 6 mm	06	
	Ø 6.35 mm Ø 1/4"	2Z	
	Single-turn Resolution	Order key	
12	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
CB5	Connector:		
	sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing	CB5	

Example Order No.	WDGA 36E	06	12	18	CJ	A	B	0	0	CB5
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 36E										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 36E 시리즈 - 8, 10, 12, 14, 15 mm

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 magnetic, with EnDra® Technologie


EnDra®
Technologie

SAE J1939

- CAN SAE J1939 프로토콜 절대형 로터리 엔코더 - 중공축 타입**
 - 프로토콜 : ISO11898(High Speed CAN)
 - 중장비 어플리케이션 전용 통신 프로토콜
- EnDra® 기술을 활용한 멀티턴 분해능**
 - 최대 32bit 대응
 - 위치 기억을 위한 배터리, 기어 불필요
- 위치, 속도, 가속도 정밀 측정**
- .IP67의 보호 기능 - 방수/방진 로터리 엔코더**
 - Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 36 mm

Shaft(s)

Starting torque	approx. 1.6 Ncm at ambient temperature
-----------------	--

Shaft	Ø 8 mm
-------	--------

Insertion depth min.	10 mm
----------------------	-------

Insertion depth max.	14.5 mm
----------------------	---------

Max. Permissible shaft loading radial	80 N
---------------------------------------	------

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Shaft	Ø 10 mm
-------	---------

Insertion depth min.	10 mm
----------------------	-------

Insertion depth max.	14.5 mm
----------------------	---------

Max. Permissible shaft loading radial	80 N
---------------------------------------	------

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Shaft	Ø 12 mm
-------	---------

Insertion depth min.	10 mm
----------------------	-------

Insertion depth max.	14.5 mm
----------------------	---------

Max. Permissible shaft loading radial	80 N
---------------------------------------	------

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Shaft	Ø 14 mm
-------	---------

Insertion depth min.	10 mm
----------------------	-------

Insertion depth max.	14.5 mm
----------------------	---------

Max. Permissible shaft loading radial	80 N
---------------------------------------	------

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Shaft	Ø 15 mm
-------	---------

Insertion depth min.	10 mm
----------------------	-------

Insertion depth max.	14.5 mm
----------------------	---------

Max. Permissible shaft loading radial	80 N
---------------------------------------	------

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

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	10 VDC up to 32 VDC: typ. 50 mA
Power consumption	max. 0.5 W

Sensor data

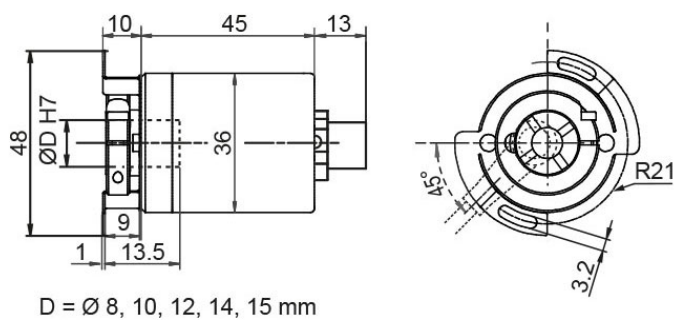
Single-turn technology	innovative hall sensor technology
Single-turn resolution	65.536 steps/360° (16 bit)
Single-turn accuracy	< ±0.35°
Single-turn repeat accuracy	< ±0.20°
Internal cycle time	≤ 600 µs
Multi-turn technology	patented EnDra® technology no battery, no gear.
Multi-turn resolution	up to 32 bit

Environmental data

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)	300 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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-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	
Weight	approx. 110 g
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
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



Description

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

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

Example Order No.	Type	Your encoder	
WDGA 36E	WDGA 36E	WDGA 36E	
	Shaft	Order key	
08	Ø 8 mm	08	
	Ø 10 mm	10	
	Ø 12 mm	12	
	Ø 14 mm	14	
	Ø 15 mm	15	
	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	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	Power supply	Order key	
0	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
CB5	Connector:		
	sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing	CB5	

Example Order No.	WDGA 36E	08	14	18	CJ	A	B	0	0	CB5
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 36E										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

앱솔루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58A 시리즈

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 CAN SAE J1939

www.wachendorff-automation.com/wdga58asaej1939

IndustrieROBUST

Encoder WDGA 58A absolute CAN SAE J1939 magnetic, with EnDra® Technologie



EnDra®
Technologie

SAE J1939

1. **CAN SAE J1939 프로토콜 절대형 로터리 엔코더**
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜

2. **EnDra® 기술을 활용한 멀티턴 분해능**
- 최대 32bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. **높은 축 강도의 견고한 엔코더**
- Radial 220N, Axial 120N

4. **IP67의 보호 기능 - 방수/방진 로터리 엔코더**
- Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
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 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 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
Nomiale 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
Nomiale 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	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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-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

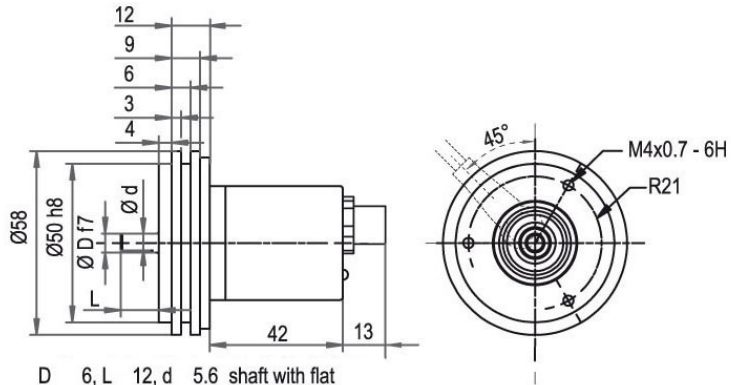
General Data

Weight	approx. 224 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
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>

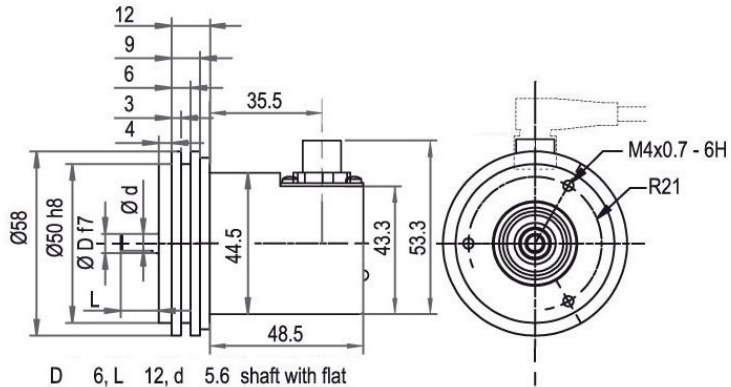
Connector, M12x1, axial, CB5, 5-pin


D 6, L 12, d 5.6 shaft with flat
D = 10, L = 20, d = 10 shaft without flat *
*option full IP67 version: D=Ø 10 mm)
D = 10, L = 20, d = 9 shaft with flat

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, L 12, d 5.6 shaft with flat
D = 10, L = 20, d = 10 shaft without flat *
*option full IP67 version: D=Ø 10 mm)
D = 10, L = 20, d = 9 shaft with flat

Description

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

Assignments	
	CC5
(+) 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 can be supplied in a full IP67 version.

AAS

Max. RPM: 3500 min⁻¹

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

Example Order No.	Type	Your encoder	
WDGA 58A	WDGA 58A	WDGA 58A	
	Shaft	Order key	
10	Ø 6 mm Attention: No option AAS = full IP67 version	06	
	Ø 10 mm	10	
	Single-turn Resolution	Order key	
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAS	

Example Order No.	WDGA 58A	10	14	18	CJ	A	B	0	0	CB5	
-------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58A											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	-------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식 회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58A 시리즈 - 갈바닉 절연 타입 (Galvanic isolation)

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

- 1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더 - 중공축 타입**
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜
- 2. EnDra® 기술을 활용한 멀티턴 분해능**
- 최대 32bit 대응
- 위치 기억을 위한 배터리, 기어 불필요
- 3. 갈바닉 절연 타입(Galvanic isolation)**
- 노이즈내성, 전기적 쇼크내성, 과전류 방지
- 4. IP67의 보호 기능 - 방수/방진 로터리 엔코더**
- Shaft sealing - IP65 **IP67선택 가능

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
---------------	---------------------------

Nominal 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

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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

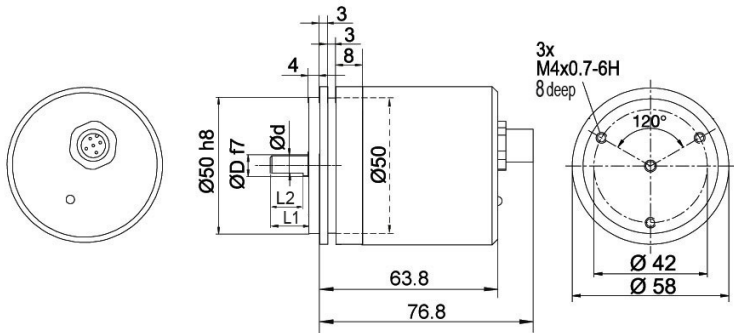
General Data

Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to 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

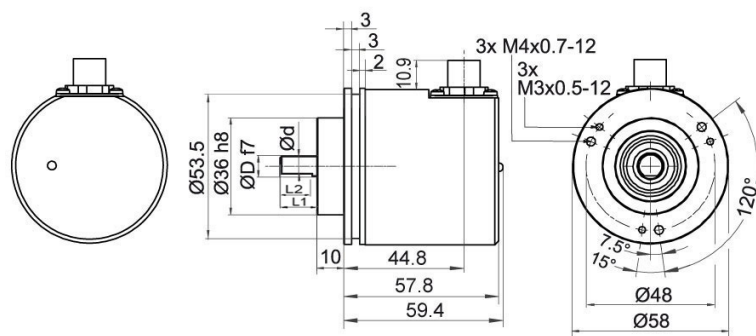
D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat
D = 10, L1 = 20 shaft with out flat*
D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

* 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	
	CB5
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	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

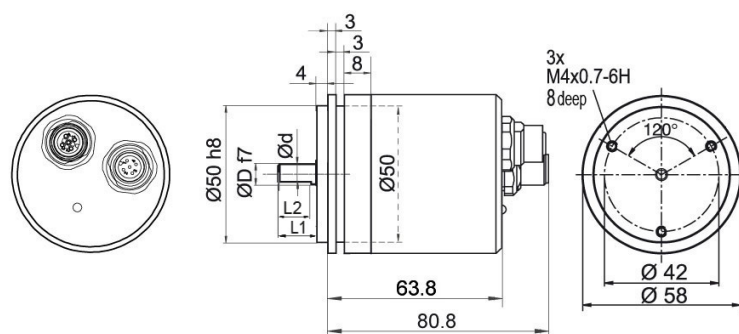
* Option full IP67 version: (only D = Ø 10 mm)

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

Description

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

Assignments	
	CC5
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	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	
	DB5
Female connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Assignments	
	DB5
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⁻¹

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	
	Shaft	Order key	
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	
	Single-turn Resolution	Order key	
12	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible No Multi-turn = 00	18	
	Data protocol	Order key	
CJ	CAN SAE J1939 (galv. isolation)	CJ	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	Power supply	Order key	
0	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
1	yes	1	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	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	
-------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58A											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	-------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

앱솔루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58B 시리즈

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 58B CAN SAE J1939

www.wachendorff-automation.com/wdga58bsaej1939

IndustrieROBUST

Encoder WDGA 58B absolute CAN SAE J1939 magnetic, with EnDra® Technology



EnDra®
Technologie

SAE J1939

- CAN SAE J1939 프로토콜 절대형 로터리 엔코더**
 - 프로토콜 : **ISO11898(High Speed CAN)**
 - 중장비 어플리케이션 전용 통신 프로토콜
- EnDra® 기술을 활용한 멀티턴 분해능**
 - 최대 **32bit** 대응
 - 위치 기억을 위한 배터리, 기어 불필요
- 높은 축 강도의 견고한 엔코더**
 - **Radial 220N, Axial 120N**
- IP67의 보호 기능 - 방수/방진 로터리 엔코더**
 - **Shaft sealing - IP65 **IP67선택 가능**

Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Housing	Ø 58 mm
Cam mounting	pitch 69 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	
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	
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
Nomiale 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
Nomiale 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	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s
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-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

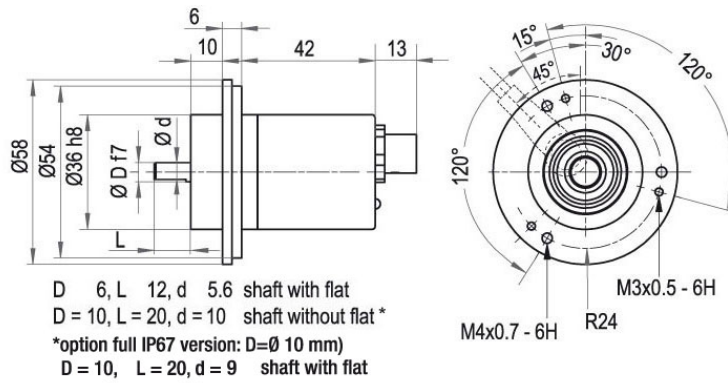
General Data

Weight	approx. 202 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

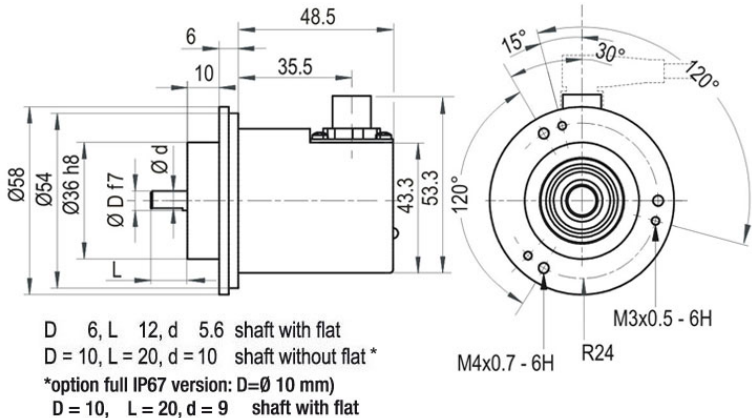
More Information

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

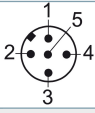
Options
<http://www.wachendorff-automation.com/acc>

Connector, M12x1, axial, CB5, 5-pin

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**Description**

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

Assignments	
	CC5
	
(+) 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 58B CAN SAE J1939 can be supplied in a full IP67 version.

AAS

Max. RPM: 3500 min⁻¹

Permitted Shaft-Loading: axial 100 N; radial 110 N

Starting-torque: approx. 4 Ncm at ambient temperature

Example Order No.	Type	Your encoder	
WDGA 58B	WDGA 58B	WDGA 58B	
	Shaft	Order key	
10	Ø 6 mm Attention: No option AAS = full IP67 version	06	
	Ø 10 mm	10	
	Single-turn Resolution	Order key	
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAS	

Example Order No.	WDGA 58B	10	14	18	CJ	A	B	0	0	CB5	
-------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58B											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	-------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식 회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58B 시리즈 - 갈바닉 절연 타입 (Galvanic isolation)

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 58B absolute CAN SAE J1939 galv. isolation, magnetic, with EnDra®- Technology



EnDra®
Technologie

SAE J1939

www.wachendorff-automation.com/wdga58bsaej1939galv

Mechanical Data

Housing

Flange	clamping 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
---------------	---------------------------

1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더
 - 프로토콜 : ISO11898(High Speed CAN)
 - 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
 - 최대 32bit 대응
 - 위치 기억을 위한 배터리, 기어 불필요

3. 갈바닉 절연 타입(Galvanic isolation)
 - 노이즈내성, 전기적 쇼크내성, 과전류 방지

4. IP67의 보호 기능 - 방수/방진 로터리 엔코더
 - Shaft sealing - IP65 **IP67선택 가능

Nominal 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

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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

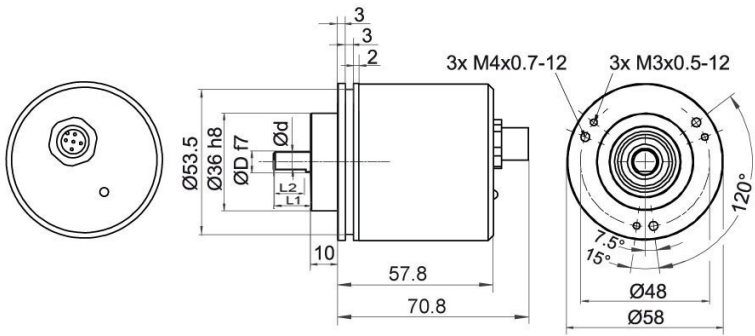
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

More Information

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

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

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



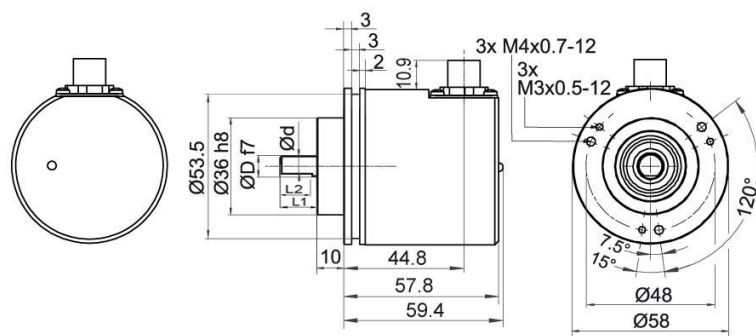
D = 6, L1 = 12, d = 5.3, L2 = 10 shaft with flat
 D = 8, L1 = 19, d = 7.5, L2 = 15 shaft with flat
 D = 10, L1 = 20 shaft with out flat*
 D = 3/8", L1 = 20, d = 8.3, L2 = 10 shaft with flat

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

WDGA 58B 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	
	CC5
(+) 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 58B CAN SAE J1939 galv. isolation can be supplied in a full IP67 version.

AAS

Max. RPM: 3500 min⁻¹

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 58B CAN SAE J1939 galv. is also available with fixed 120 Ohm terminating resistor.

AEO

Example Order No.	Type	Your encoder	
WDGA 58B	WDGA 58B	WDGA 58B	
	Shaft	Order key	
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	
	Single-turn Resolution	Order key	
12	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible No Multi-turn = 00	18	
	Data protocol	Order key	
CJ	CAN SAE J1939 (galv. isolation)	CJ	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	Power supply	Order key	
0	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
1	yes	1	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67, only with 10 mm shaft with flat	AAS	
	120 Ohm terminating resistor	AEO	

Example Order No.	WDGA 58B	06	12	18	CJ	A	B	0	1	CB5	
-------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58B											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	-------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58D 시리즈 - 갈바닉 절연 타입 (Galvanic isolation)

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 58D SAEJ1939 galv. isolation

www.wachendorff-automation.com/wdga58dsaej1939galv

Industrie ROBUST

Encoder WDGA 58D absolute CAN SAE J1939 galv. isolation, magnetic, with EnDra®- Technology



EnDra®
Technologie

SAE J1939

Heavy duty

1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
- 최대 39bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. 갈바닉 절연 타입(Galvanic isolation)
- 노이즈내성, 전기적 쇼크내성, 과전류 방지

4. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65 **IP67선택 가능

www.wachendorff-automation.com/wdga58dsaej1939galv

Mechanical Data

Housing

Flange	clamping flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding

Shaft(s)

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

Shaft	Ø 12 mm
Shaft length	L: 25 mm
Max. Permissible shaft loading radial	400 N
Max. Permissible shaft loading axial	400 N

Bearings

Bearings type	2 precision ball bearings
Nominal 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

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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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-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)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

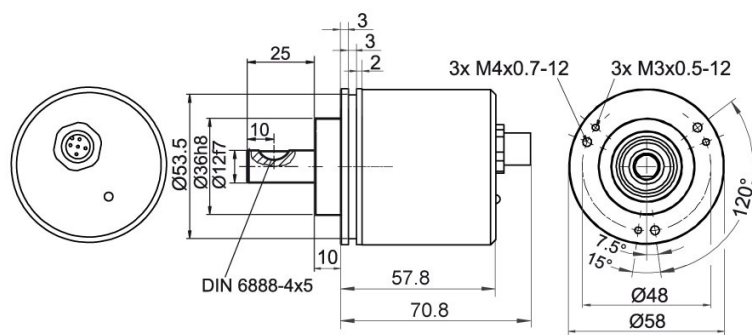
General technical data and safety instructions

<http://www.wachendorff-automation.com/gtd>

Options

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

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

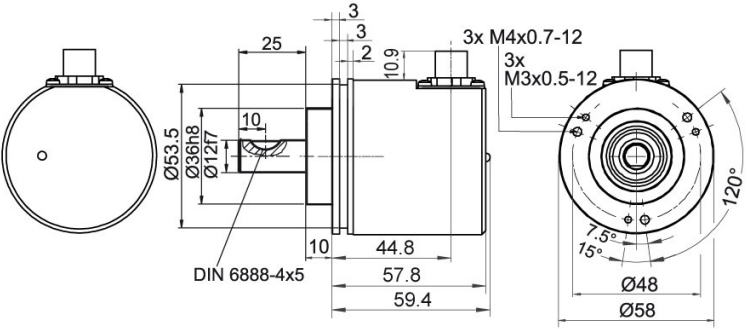


Description

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

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

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

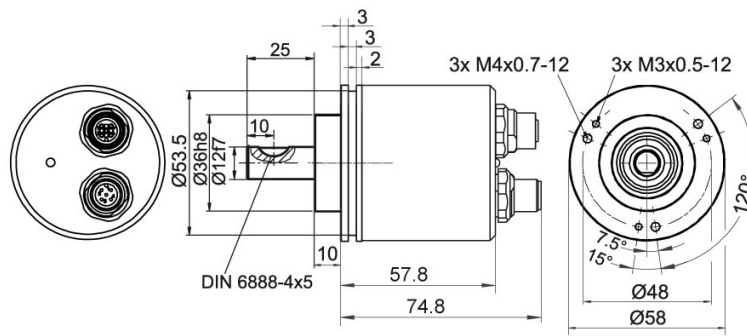


Description

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

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

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



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

120 Ohm terminating resistor

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

Order key

AEO

Example Order No.	Type	Your encoder	
WDGA 58D	WDGA 58D	WDGA 58D	
	Shaft	Order key	
12	Ø 12 mm	12	
	Single-turn Resolution	Order key	
12	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible No Multi-turn = 00	18	
	Data protocol	Order key	
CJ	CAN SAE J1939 (galv. isolation)	CJ	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	Power supply	Order key	
0	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
1	yes	1	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	Without option	Empty	
	120 Ohm terminating resistor	AEO	

Example Order No.	WDGA 58D	12	12	18	CJ	A	B	0	1	CB5	
--------------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58D											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

앱솔루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58E 시리즈

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 58E CAN SAE J1939

www.wachendorff-automation.com/wdga58esaej1939

IndustrieROBUST

Encoder WDGA 58E absolute CAN SAE J1939 magnetic, with EnDra® Technology



EnDra®
Technologie

SAE J1939

1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더- 중공축 타입
 - 프로토콜 : ISO11898(High Speed CAN)
 - 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
 - 최대 32bit 대응
 - 위치 기억을 위한 배터리, 기어 불필요

3. IP67의 보호 기능 - 방수/방진 로터리 엔코더
 - Shaft sealing - IP65 **IP67선택 가능

Mechanical Data

Housing

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	Aluminum die cast, powder coated; Integrated magnetic shielding
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ±0.8 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGDS10005
- Compensation	axial: ±0.5 mm, radial: ±1.5 mm, Max. operating speed: 3000 rpm
Housing	Ø 58 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature
Fixing	permanently attached clamping ring

Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Shaft	Ø 8 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 9.525 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 10 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 12 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 14 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N
--------------------------------------	------

Bearings

Bearings type	2 precision ball bearings
Nominal 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
Nominal 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	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

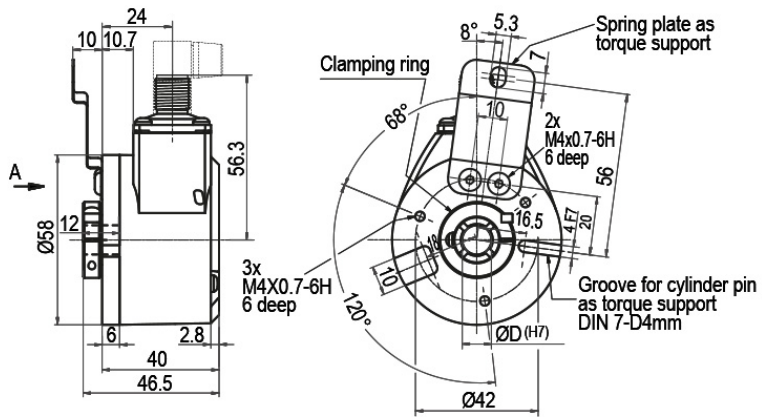
General Data

Weight	approx. 220 g
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
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, radial, CC5, 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

Example Order No.	Type	Your encoder
WDGA 58E	WDGA 58E	WDGA 58E
	Shaft	Order key
06	Ø 6 mm with adapter sleeve	06
	Ø 6.35 mm with adapter sleeve	2Z
	Ø 7 mm with adapter sleeve	07
	Ø 8 mm with adapter sleeve	08
	Ø 9.525 mm with adapter sleeve	4Z
	Ø 10 mm with adapter sleeve	10
	Ø 12 mm	12
	Ø 14 mm	14
	Single-turn Resolution	Order key
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14
	Multi-turn Resolution	Order key
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0
	Galvanic isolation	Order key
0	no	0
	Electrical connections	Order key
CC5	Connector: sensor-connector, M12x1, 5-pin, radial, IP67, shield connected to encoder housing	CC5

Example Order No.	WDGA 58E	06	14	18	CJ	A	B	0	0	CC5
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 58E										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠펙루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58E 시리즈 - 갈바닉 절연 타입 (Galvanic isolation)

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 58E SAE J1939 galv. isolation

www.wachendorff-automation.com/wdga58esaej1939galv

Industrie ROBUST

Encoder WDGA 58E absolute CAN SAE J1939, galv. isolation, magnetic, with EnDra®- Technology



EnDra®
Technologie

SAE J1939

- 1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더 - 중공축 타입**
 - 프로토콜 : ISO11898(High Speed CAN)
 - 중장비 어플리케이션 전용 통신 프로토콜
- 2. EnDra® 기술을 활용한 멀티턴 분해능**
 - 최대 32bit 대응
 - 위치 기억을 위한 배터리, 기어 불필요
- 3. 갈바닉 절연 타입(Galvanic isolation)**
 - 노이즈내성, 전기적 쇼크내성, 과전류 방지
- 4. IP67의 보호 기능 - 방수/방진 로터리 엔코더**
 - Shaft sealing - IP65 **IP67선택 가능

www.wachendorff-automation.com/wdga58esaej1939galv

Mechanical Data

Housing

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Torque supports	incl. 1 torque support WDGDS10019
- 1. Spring plate compensation	axial: ±1.2 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +80 °C
Housing	Ø 58 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature, approx. 2.226 in-ozf at ambient temperature
Fixing	permanently attached clamping ring

Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm, Ø 1/4"
Advice	with adapter sleeve
Shaft length	L: 17 mm, L: 0.669 in
Insertion depth min.	10 mm, 0.394 in
Insertion depth max.	19 mm, 0.748 in
Max. Permissible shaft loading radial	80 N, 8.158 kp
Max. Permissible shaft loading axial	50 N, 5.099 kp

Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 8 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 9.525 mm, Ø 3/8"
Advice	with adapter sleeve
Shaft length	L: 17 mm, L: 0.669 in
Insertion depth min.	10 mm, 0.394 in
Insertion depth max.	19 mm, 0.748 in
Max. Permissible shaft loading radial	80 N, 8.158 kp
Max. Permissible shaft loading axial	50 N, 5.099 kp

Shaft	Ø 10 mm
Advice	with adapter sleeve
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 12 mm
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 14 mm
Shaft length	L: 17 mm
Insertion depth min.	10 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings

Bearings type	2 precision ball bearings
Nominal 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

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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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-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

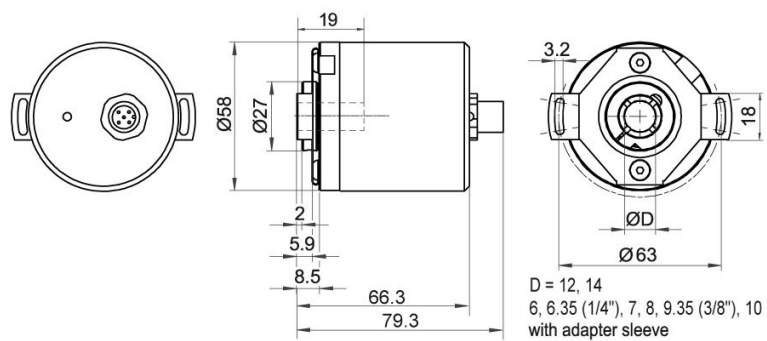
Weight	approx. 410 g, approx. 14.462 oz
Connections	connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

More Information

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

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

WDGA 58E CAN SAE J1939 galv. isolation, with M12x1, axial CB5, 5-polig



Description

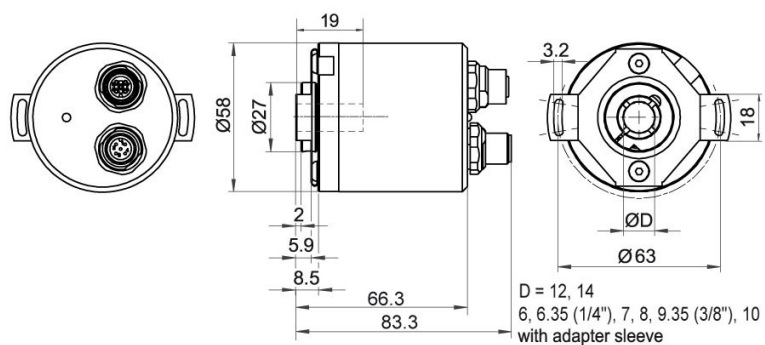
CB5 axial, 5-pin, shield connected to encoder housing

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

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

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

WDGA 58E CAN SAE J1939 galv. getrennt, mit 2x M12x1, axial DB5, 5-polig



Description

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

Assignments	
	DB5
Female connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Assignments	
	DB5
Connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Options

120 Ohm terminating resistor

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

Order key

AEO

Example Order No.	Type	Your encoder	
WDGA 58E	WDGA 58E	WDGA 58E	
	Shaft	Order key	
12	Ø 6 mm with adapter sleeve	06	
	Ø 6.35 mm Ø 1/4" with adapter sleeve	2Z	
	Ø 7 mm with adapter sleeve	07	
	Ø 8 mm with adapter sleeve	08	
	Ø 9.525 mm Ø 3/8" with adapter sleeve	4Z	
	Ø 10 mm with adapter sleeve	10	
	Ø 12 mm	12	
	Ø 14 mm	14	
	Single-turn Resolution	Order key	
12	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible No Multi-turn = 00	18	
	Data protocol	Order key	
CJ	CAN SAE J1939 (galv. isolation)	CJ	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	B	
	Power supply	Order key	
0	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
1	yes	1	
	Electrical connections	Order key	
CB5	Connector:		
	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	
	Options	Order key	
	Without option	Empty	
	120 Ohm terminating resistor	AEO	

Example Order No.	WDGA 58E	12	12	18	CJ	A	B	0	1	CB5	
--------------------------	----------	----	----	----	----	---	---	---	---	-----	--

WDGA 58E											Example Order No.
----------	--	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식 회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

엠플루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58S 시리즈

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 58S CAN SAE J1939
www.wachendorff-automation.com/wdga58ssaej1939

Industrie ROBUST

Encoder WDGA 58S absolute CAN SAE J1939 magnetic, with EnDra® Technology



EnDra®
Technologie

SAE J1939

1. CAN SAE J1939 프로토콜 절대형 로터리 엔코더
- 프로토콜 : ISO11898(High Speed CAN)
- 중장비 어플리케이션 전용 통신 프로토콜

2. EnDra® 기술을 활용한 멀티턴 분해능
- 최대 32bit 대응
- 위치 기억을 위한 배터리, 기어 불필요

3. IEC 60068-2-11 규격의 염수 분무 시험 통과

4. PTFE(테프론) Sealing으로 완전 방수
- IP69K 보호 등급
- 고압 / 스팀 클리닝 대응

**Salt mist IEC 60068-2-11,
high pressure / steam cleaning**

Mechanical Data	
Housing	
Flange	clamping flange
Flange material	Aluminum, anodized natur
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
Shaft	Ø 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	100 N
Max. Permissible shaft loading axial	100 N
Bearings	
Bearings type	2 precision ball bearings
Nomiale 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	3600 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	1000 a
Mission time (TM)	20 a
Nomiale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 3600 rpm
Diagnostic coverage (DC)	0 %
Electrical Data	
Power supply/Current consumption	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 bit)

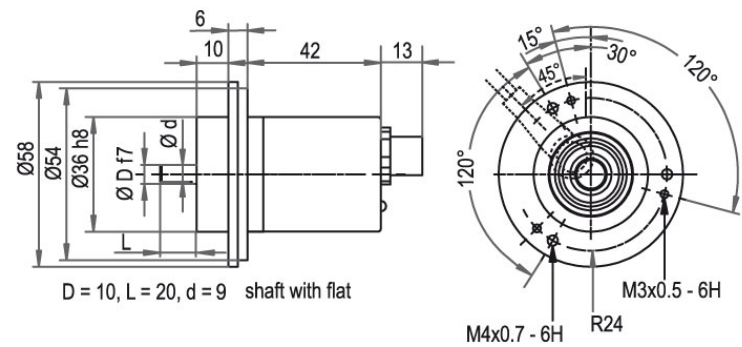
Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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)

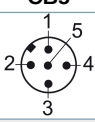
Byte 0:	0x 01
Byte 1:	0x FF
Byte 2:	PDU time LSB
Byte 3:	PDU time MSB
Byte 4:	Preset LSB
Byte 5, 6:	Preset
Byte 7:	Preset MSB

General Data	
Weight	approx. 200 g
Connections	connector outlet
Protection rating (EN 60529)	IP67 all around and IP69K. Resistance to salt mist (IEC 60068-2-11) after 672 hours.
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**Description**

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

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

Example Order No.	Type	Your encoder
WDGA 58S	WDGA 58S	WDGA 58S
	Shaft	Order key
10	Ø 10 mm	10
	Single-turn Resolution	Order key
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14
	Multi-turn Resolution	Order key
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0
	Galvanic isolation	Order key
0	no	0
	Electrical connections	Order key
CB5	Connector:	
	sensor-connector, M12x1, 5-pin, axial, IP67, shield connected to encoder housing	CB5

Example Order No.	WDGA 58S	10	14	18	CJ	A	B	0	0	CB5
--------------------------	----------	----	----	----	----	---	---	---	---	-----

WDGA 58S										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

앱솔루트 CAN SAE J1939 통신 마그네틱 로터리 엔코더 WDGA 58V 시리즈

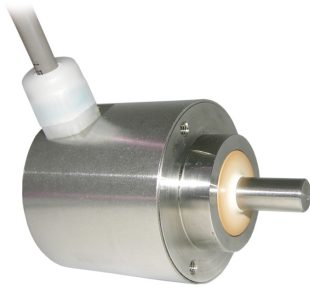
Wachendorff Automation ... systems and encoders

- 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 58V CAN SAE J1939
www.wachendorff-automation.com/wdga58vsaej1939

Industrie ROBUST

Encoder WDGA 58V absolute CAN SAE J1939 magnetic, with EnDra® Technology



EnDra®
Technologie

SAE J1939

**Especially for food and beverage industry,
acid- and alkaline resistance**

1. **CAN SAE J1939** 프로토콜 절대형 로터리 엔코더
 - 프로토콜 : ISO11898(High Speed CAN)
 - 중장비 어플리케이션 전용 통신 프로토콜
2. **EnDra®** 기술을 활용한 멀티턴 분해능
 - 최대 32bit 대응
 - 위치 기억을 위한 배터리, 기어 불필요
3. **EHEDG(European Hygienic Engineering & Design Group)**
 - 유럽 식품 위생 인증 제품
 - 제약 및 식품 공정의 정밀 기계사용
4. **Ecolab**의 세척 및 소독 저항에 대한 인증
 - Acid&alkaline 저항성
5. **IEC 60068-2-11** 규격의 염수 분무 시험 통과
6. **PTFE(테프론) Sealing**으로 완전 방수
 - IP69K 보호 등급
 - 고압 / 스팀 클리닝 대응

Mechanical Data	
Housing	
Flange	clamping flange
Flange material	stainless steel, V4A
Housing cap	stainless steel, V4A
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel, V4A
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	100 N
Max. Permissible shaft loading axial	100 N
Bearings	
Bearings type	2 precision ball bearings
Nominal 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	3600 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	1000 a
Mission time (TM)	20 a
Nominal service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 3600 rpm
Diagnostic coverage (DC)	0 %
Electrical Data	
Power supply/Current consumption	10 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	16.384 steps/360° (14 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 262,144 revolutions (18 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
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s
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-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

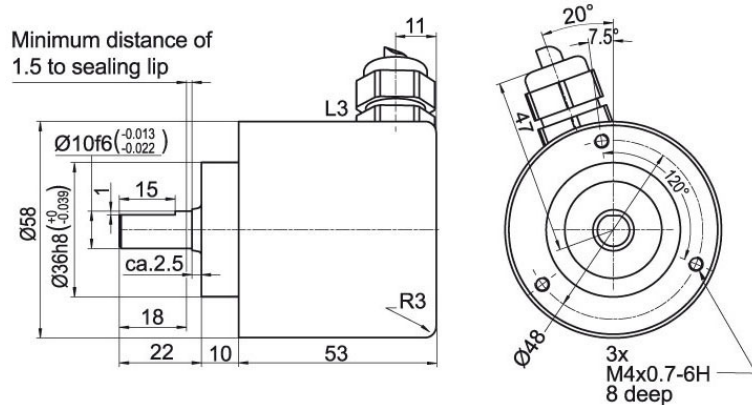
General Data

Weight	approx. 600 g
Connections	cable outlet (TPE)
Protection rating (EN 60529)	IP67 all around and IP69K. Resistance to salt mist (IEC 60068-2-11) after 672 hours.
Operating temperature	-20 °C up to +80 °C
Storage temperature	-20 °C up to +80 °C

More Information

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

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

Cable connection L3 with 2 m cable

Description

L3 radial, shield connected to encoder housing

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

Example Order No.	Type	Your encoder	
WDGA 58V	WDGA 58V	WDGA 58V	
	Shaft	Order key	
10	Ø 10 mm	10	
	Single-turn Resolution	Order key	
14	Single-turn resolution 14 bit: (standard) max. 14 bit possible	14	
	Multi-turn Resolution	Order key	
18	Multi-turn 18 bit (standard) max. 32 bit possible 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	10 V up to 32 V (standard)	0	
	Galvanic isolation	Order key	
0	no	0	
	Electrical connections	Order key	
L3	Cable:		
	radial, shield connected to encoder housing	L3	

Example Order No.	WDGA 58V	10	14	18	CJ	A	B	0	0	L3
--------------------------	----------	----	----	----	----	---	---	---	---	----

WDGA 58V										Example Order No.
----------	--	--	--	--	--	--	--	--	--	--------------------------



For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

주식회사 크레켄

경기도 성남시 중원구 사기막골로 124
SKn테크노파크 메가동 514호 우편번호:13207

Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



Wachendorff Automation GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Phone: +49 67 22 / 99 65 25
Fax: +49 67 22 / 99 65 70
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de

