WACHENDORFF
The Encoder Experts

Online Data sheet

Encoder WDGA 58D SAEJ1939 galv. isolation

www.wachendorff-automation.com/wdga58dsaej1939galv

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

IndustrieROBUST

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

Illustration similar

EnDra® Technologie

SAE J1939 Interface

Heavy duty

- EnDra® Technology: maintenance-free and environmentally friendly
- CAN SAE J1939 protocol
- Galvanic isolaltion
- Single-turn/Multi-turn (16 bit / 32 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition
- High shaft load: radial and axial 500 N [50.984 kp]

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SAE J1939® is a registered trademark of SAE International.
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Mechanical Data	
Flange	clamping flange
Flange material	aluminum
Housing material	steel case chrome-plated, magnetic shielding

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm [1.416 in-ozf] at ambient temperature
Shaft	Ø 12 mm [Ø 0.472"]
Shaft length	L: 25 mm [0.984"]
Max. Permissible shaft loading radial	500 N [50.984 kp]
Max. Permissible shaft loading axial	500 N [50.984 kp]

Bearings	
Bearings type	3 precision ball bearings
Nominale service life	2 x 10'8 revs. at 100 % rated shaft load 3.5 x 10'9 revs. at 40 % rated shaft load 2.5 x 10'10 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
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)	50 m/s² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s² (6 ms)
Electrial Safety:	according DIN VDE 0160
Turn on time:	<1,5 s

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

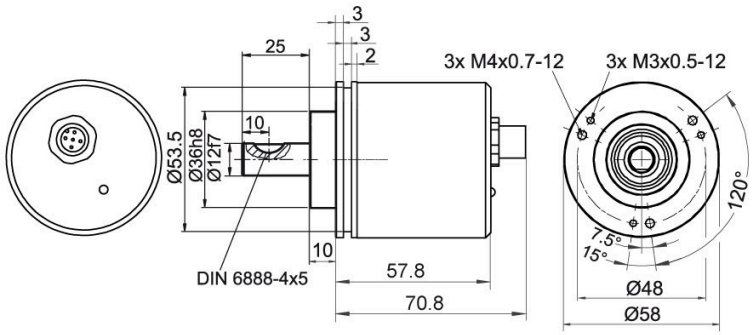
Interface	
Interface:	**CAN**
CAN physical layer:	ISO 11898 (High Speed CAN)
Protocol:	ISO 11898 (High Speed CAN)
Baud rate:	Auto-Baud-Detection
Standard Preset configuration:	(other configurations on request)
Direction of counting:	(View from shaft end) ccw
ECU-adress:	0x 0A
Process data Identifier:	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 configration 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	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
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]

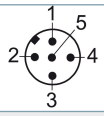
More Information
General technical data and safety instructions **http://www.wachendorff-automation.com/gtd**
Options **http://www.wachendorff-automation.com/acc**

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

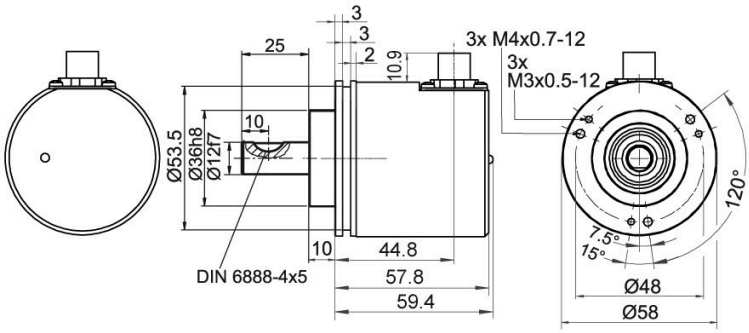


Description

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

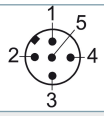
Assignments	
	CB5
	
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

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

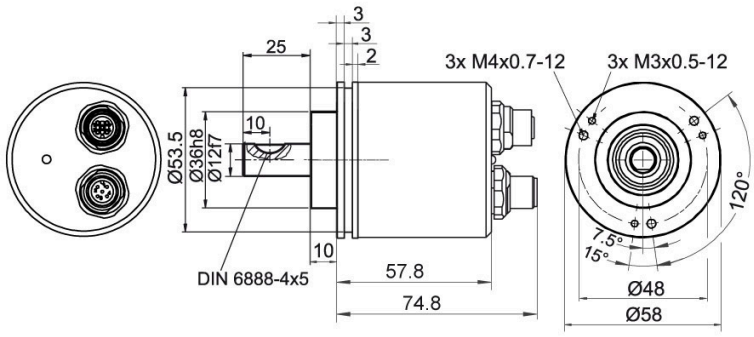


Description

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

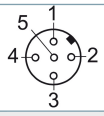
Assignments	
	CC5
	
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

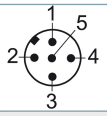
WDGA 58D CAN SAE J1939, galv. isolation, with 2x M12x1, axial DB5



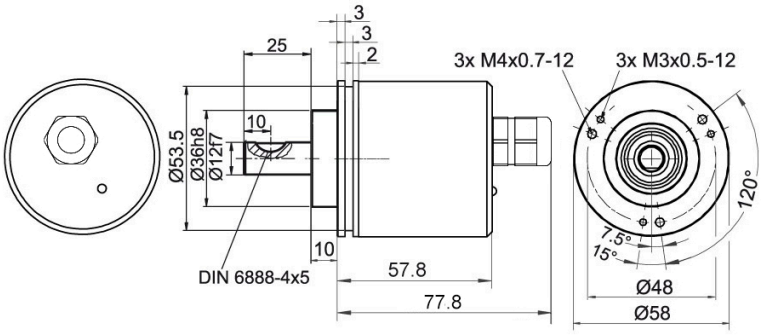
Description

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

Assignments	
	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

WDGA 58D CAN SAE J1939, galv. isolation, cable connection, L2 axial with 2 m cable

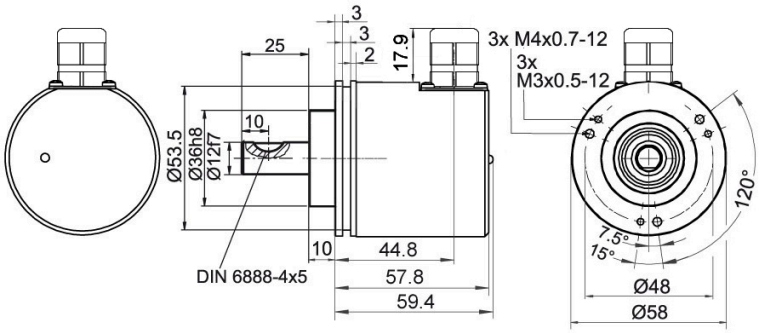


Description

L2 axial, shield connected to encoder housing

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

WDGA 58D CAN SAE J1939, galv. isolation, cable connection, L3 radial with 2 m cable



Description

L3 radial, shield connected to encoder housing

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

Options

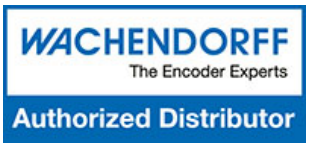
Low-friction bearings	Order key
The encoder WDGA 58D SAEJ1939 galv. isolation is also available as a particularly smooth- running low-friction encoder. The starting torque is thereby changed to ≤ 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.	**AAC**

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

Example Order No.	Type		Your encoder
WDGA 58D	WDGA 58D		WDGA 58D
	Shaft	**Order key**	
12	Ø 12 mm [Ø 0.472"]	12	
	Single-turn Resolution	**Order key**	
12	Single-turn resolution max. 16 bit, recommended min. 6 bit (e. G. 12 bit)	12	
	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 (galv. isolation)	CJ	CJ
	Software	**Order key**	
A	up to date release	A	A
	Code	**Order key**	
B	binary	B	B
	Power supply	**Order key**	
0	10 V up to 32 V (standard)	0	0
	Galvanic isolation	**Order key**	
1	yes	1	1
	Electrical connections	**Order key**	
CB5	**Cable:**		
	axial, shield connected to encoder housing, with 2 m cable	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
	Connector:		
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	CB5	
	sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	CC5	
	sensor-connector/female connector, 2x M12x1, 5-pin, axial, shield connected to encoder housing	DB5	
	Options	**Order key**	
	Low-friction bearings	AAC	
	120 Ohm terminating resistor	AEO	
	Without option	Empty	

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

	WDGA 58D				CJ	A	B	0	1			Your encoder



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/

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