

Online Data Sheet

Encoder WDGA 58A I/O CANopen

www.wachendorff-automation.com/wdga58aiocan

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 I/O absolute CANopen galv. isolation, magnetic, with EnDra®- Technology


EnDra®
Technologie

CANopen®

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single- and Multiturn + 3 multifunction inputs
- Galvanic isolation
- Communication Profile according to CiA 301
- Device Profile CiA 406 + CiA 404
- Single-/Multiturn (14 bit/39 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition and error message appropriate CiA 303-3
- High shaft load up to 220 N radial, 120 N axial

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Preliminary

Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	steel case chrome-plated, magnetic shielding
Connection cover	zinc-plated
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	
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	
Shaft	Ø 8 mm
Advice	Attention: No option AAS = full IP67 version
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft Ø 10 mm	
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"	
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
Nominale service life	1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Electrical Data	
Power supply/Current consumption	10 VDC up to 32 VDC: typ. 300 mA
Power consumption	approx. 3 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 and no gear.
Multi-turn resolution	up to 262,144 revolutions (18 bit) with high precision value up to 39 bit.

Multifunction inputs at 20 Hz sampling rate and 20 °C

Sensor type	Voltage ±10 V
Input	1, 2, 3
Signal (max.)	±10 V
Step size	0,001 V
Accuracy	±0,001 V + max. ±0,01 % EW

Sensor type	Current 4...20 mA
Input	1, 2, 3
Signal (max.)	4...20 mA
Step size	0,001 mA
Accuracy	±0,001 mA + max. ±0,005 % EW

Sensor type	Current 0...20 mA
Input	1, 2, 3
Signal (max.)	0...20 mA
Step size	0,001 mA
Accuracy	±0,001 mA + max. ±0,005 % EW

Sensor type	Type J, K thermocouple
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Input	1, 2, 3
Signal (max.)	±70 mV (-180 °C up to +750 °C)
Step size	0,1 K
Accuracy	±0,1 K + max. ±0,1 % EW
Sensor type	Pt100
Input	1
Signal (max.)	0...250 mV (-200 °C up to +850 °C)
Step size	0,1 K
Accuracy	±0,3 K + max. ±0,5 % EW
Sensor type	Pressure
Input	1, 2*, 3*
	* ext. bridge supply requis
Signal (max.)	±50 mV
Step size	0,001 mV
Accuracy	±0,010 mV + max. ±0,2 EW

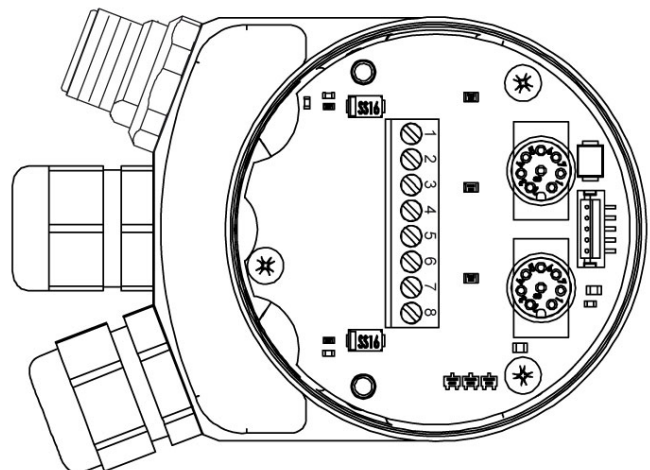
Environmental data

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
Protocol:	CANopen • Communication profil CiA 301 • Device Profile for encoder CiA 406 V3.2 class C2 • Device Profile for sensors and controllers CiA 404
Node number encoder:	1 up to 127 (default 127)
Node number I/O:	1 up to 127 (default 1)
Baud rate:	50 kBaud up to 1 MBaud with automatic bit rate detection.
Advice:	The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e. g. PDOs, Scaling, Heartbeat, Node-ID, Baud rate, etc.
Status indicator:	2x 2-color status LED
Programmable CANtransmission modes:	Synchronous mode: when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently. Asynchronous mode: a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)

View in connection cover:



Range of cable clamping: Ø 4 mm up to 9,5 mm

General Data

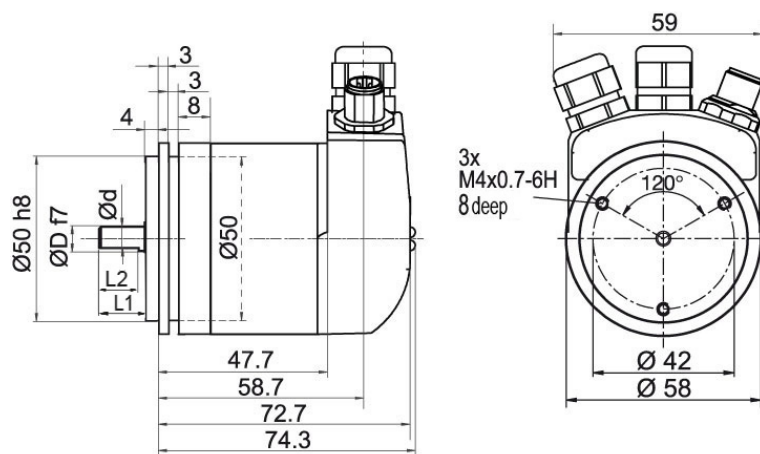
Connections	Connection cover
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

More Information

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

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

WDGA 58A CANopen I/O, connection cover with 2x PG9 and 1x M12x1



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

IO1 2x PG (PG cable glands) with 3 terminal inputs for I/O, 1x M12x1 for CAN

Assignments	
	IO1
Connector	M12x1, 5-pin
(+) Vcc	2
GND	3
CANHigh	4
CANLow	5
CANGND shield	1

Assignments	
	IO1
Clamp	2x PG
P1	1
+1	2
-1	3
G1	4
+2	5
-2	6
+3	7
-3	8

Options

Shafts sealed to IP67, only with 10 mm shaft with flat

Order key

The encoder WDG 58A I/O CANopen 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 I/O CANopen 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 1 bit up to 14 bit: (e. G. 12 bit)	12
	Multi-turn Resolution	Order key
13	Multi-turn resolution: (examples) 13 bit = 18 01 up to 39 bit pos. no Multiturn = 00	13
	Data protocol	Order key
CO	CANopen	CO
	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
IO1	Connection cover:	
	2x PG (PG cable glands) with 3 terminal inputs for I/O, 1x M12x1 for CAN	IO1
	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	13	CO	A	B	0	1	IO1	
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WDGA 58A											Example Order No.
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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



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