

Online Data Sheet

Encoder WDGA 58B PROFIBUS-DP (con)

www.wachendorff-automation.com/wdga58bpbs

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 58B absolute PROFIBUS-DP magnetic, with EnDra® - Technology


EnDra®
Technologie

PROFI
BUS
PIV CERTIFIED
PROFIBUS • PROFINET

- EnDra®: maintenance-free and environmentally friendly
- PROFIBUS-DP, Single-/Multiturn
- Single-/Multiturn (max. 14 bit/39 bit)
- Forward-looking technology with 32 Bit processor
- 2 colour-duo LED's as indicator for operating condition and bus status
- High shaft load up to 220 N radial, 120 N axial
- Device Profile switchable, Class 1, 2, 3, 4

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Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminium
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 1	
Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft 2	
Shaft	Ø 8 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	120 N
Shaft 3	
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N
Shaft 4	
Shaft	Ø 9.525 mm
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
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
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Machinery Directive: basic data safety integrity level	
MTTF _d	300 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: max. 100 mA (24 VDC)
Power consumption	max. 2.5 W

Sensor data	
Singleturn technology	innovativ hall sensor technology
Singleturn resolution	up to 16,384 steps/360° (14 bit)
Singleturn accuracy	< ±0.35°
Singleturn repeat accuracy	< ±0.20°
Intern cycle time	≤ 600 µs
Multiturn technology	patented EnDra® technology no battery and no gear.
Multiturn 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:	PROFIBUS-DP
Protocol:	PROFIBUS-DPV0/V2
Device Profile:	Class 1, 2, 3, 4
Line-Driver:	galvanic isolated
Baud rate:	max. 12 Mbaud
Function:	Multiturn
Nodeaddressing:	adjustable via software

Termination resistor:	non-existent
Code:	binary, CW default, programable
Programmable Parameter:	steps per revolution counts of revolution Preset Scale Counting direction
Diagnostics:	Position and parameter errors EnDra®-diagnosis
Status encoder:	DUO-LED
Status bus:	DUO-LED

General Data

Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +80 °C, -40 °F up to +176 °F
Storage temperature	-40 °C up to +100 °C, -40 °F up to +212 °F

More Information

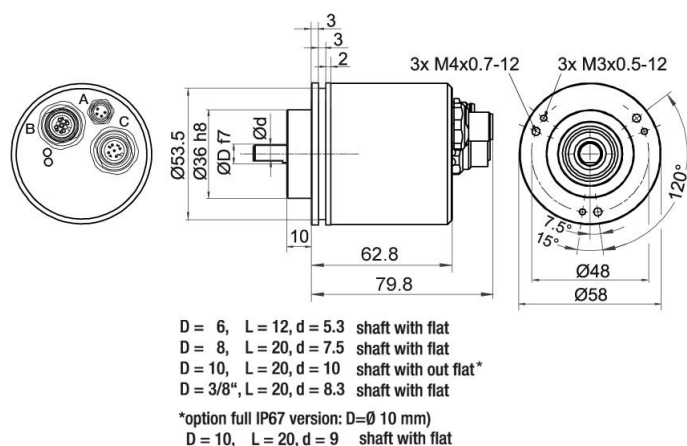
General technical data

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

Options

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

WDGA 58B PROFIBUS-DP with 1x M8, 2x M12, axial DB4



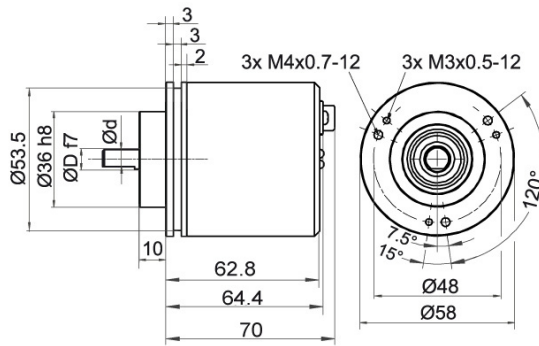
Description

DB4 axial, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin-pin,

Assignments	
	DB4
connector (A)	M8x1, 4-pin
(+) Vcc	1
n. c.	2
GND	3
GND	4

Assignments	
	DB4
Female connector (B)	M12x1, 5-pin, B-coded
BUS	OUT
5 V DP	1
A	2
GND DP	3
B	4
n. c.	5

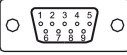
Assignments	
	DB4
connector (C)	M12x1, 4-pin, B-coded
BUS	IN
n. c.	1
A	2
n. c.	3
B	4

WDGA 58B PROFIBUS-DP with female connector D-SUB, 9-pin, SD9 axial


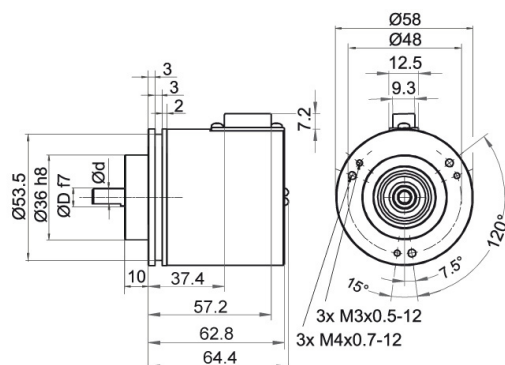
D = 6, L = 12, d = 5.3 shaft with flat
D = 8, L = 20, d = 7.5 shaft with flat
D = 10, L = 20, d = 10 shaft with out flat
D = 3/8", L = 20, d = 8.3 shaft with flat

Description

SD9 axial, 9-pin, shield connected to encoder housing

Assignments	
	SD9
	
Female connector	D-SUB
n. c.	1
GND	2
B	3
n. c.	4
GND DP	5
5 V DP	6
(+) Vcc	7
A	8
n. c.	9
Shield	housing

WDGA 58B PROFIBUS-DP with female connector D-SUB, 9-pin, SE9, radial



D = 6, L = 12, d = 5.3 shaft with flat
D = 8, L = 20, d = 7.5 shaft with flat
D = 10, L = 20, d = 10 shaft with out flat
D = 3/8", L = 20, d = 8.3 shaft with flat

Description

SE9 radial, 9-pin, shield connected to encoder housing

Assignments	
	SE9
Female connector	D-SUB
n. c.	1
GND	2
B	3
n. c.	4
GND DP	5
5 V DP	6
(+) Vcc	7
A	8
n. c.	9
Shield	housing

Options

Shafts sealed to IP67 (shaft with flat: Ø 10 mm only, not at D-SUB SD9/SE9)		Order key
The encoder WDG 58B PROFIBUS-DP (con) 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	06	
	Ø 8 mm	08	
	Ø 10 mm	10	
	Ø 9.525 mm	4Z	
	Singleturn Resolution	Order key	
13	Singleturn resolution 1 up to 14 Bit, e. g. 12 Bit = 12	12	
	Multiturn Resolution	Order key	
12	Multiturn 18 Bit: e. G. 18 Bit = 18 e. G. 39 Bit = 39	18	
	Data protocol	Order key	
DP	PROFIBUS-DP	DP	
	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	
DB4	Connector:		
	connector, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin-pin, axial	DB4	
	female connector, D-SUB, 9-pin, axial, IP40, shield connected to encoder housing	SD9	
	female connector, D-SUB, 9-pin, radial, IP40, shield connected to encoder housing	SE9	
	Options	Order key	
	Without option	Empty	
	Shafts sealed to IP67 (shaft with flat: Ø 10 mm only, not at D-SUB SD9/SE9)	AAS	

Example Order No.	WDGA 58B	10	13	12	DP	A	B	0	1	DB4	
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WDGA 58B											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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