

## Draw-wire system SZG81 - WDGA PROFIBUS-DP



- Exceptionally rugged length sensor
- Measuring range: 0 mm bis 2.500 mm bis 0 mm bis 6.250 mm
- Interface: PROFIBUS-DP
- free configurable
- IP65 absolute encoder WDGA PROFIBUS-DP ready-mounted

[www.wachendorff-automation.com/szg81wdgaprofibus](http://www.wachendorff-automation.com/szg81wdgaprofibus)

The draw-wire encoder SZG81 WDGA PROFIBUS-DP was developed for use in harsh environments. The various methods of installation mean high flexibility. It can be used even where space is tight, thanks to its compact dimensions. The SZG81 WDGA PROFIBUS-DP can be mounted quickly and with its highly precise mechanics provides reliable accurate length measurement, with all advantages, which result from an absolute length measurement. e. g. The position-value is saved, if supply breaks down and is available immediately if supply gets recovered. Doing a reference run isn't necessary. The intelligent spring-suspension and the nylon-coated stainless-steel wire cable guarantee long-service life, even in difficult operating conditions. The encoder is already installed.

### Typical areas of application include:

lift/elevators, lifting platforms, theatre stages, fork lifts and cranes.

### Measurement ranges::

0 mm up to 2.500 mm, 0 mm up to 3.500 mm, 0 mm up to 5.000 mm and 0 mm up to 6.250 mm

### Resolution measurement ranges WDGA58A:

Position per mm	Bit per revolution
1.26	8
2.52	9
5.04	10
10.08	11
20.17	12

**Deviation:** Less than 0.02 % of the final value.

**Measuring wire:** 0.86 mm of thick nylon coated high-grade steel wire.

Wire connection: eye  
 max. wire speed: 7.5 m/sec.  
 Pull out strength: approx. 0.5 kg

**System-unit housing:** anodised aluminum

**Weight:** SZG incl. encoder max. 2.5 kg

**Life expectancy:** At least 10 million cycles

**Operating temperature:** -40 °C up to +80 °C

**Storage temperature:** -40 °C up to +80 °C

**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

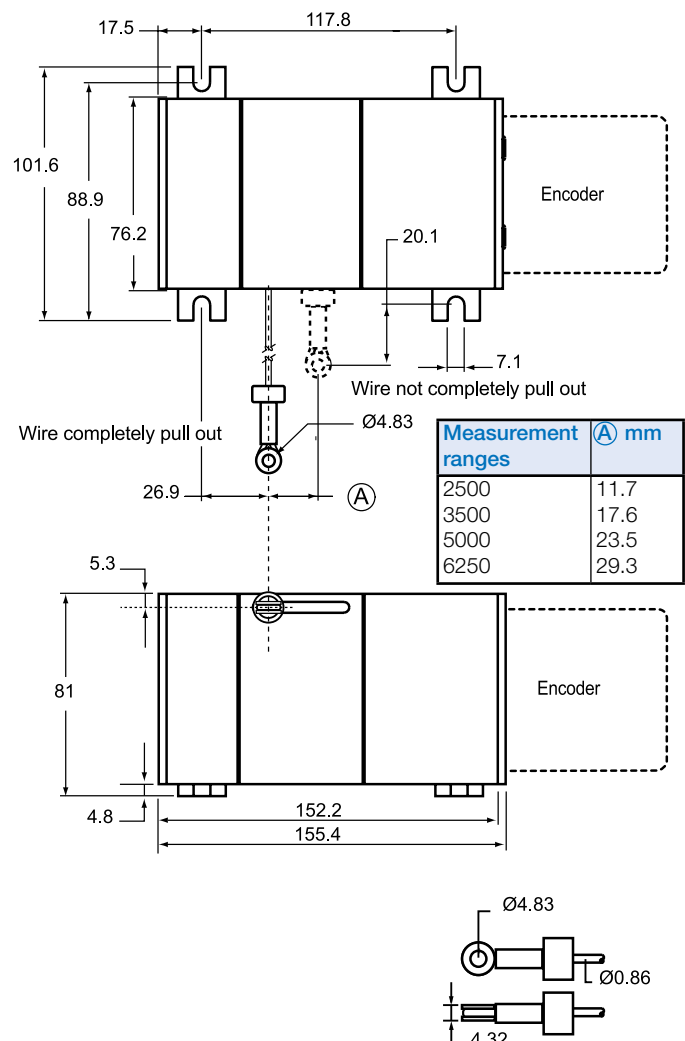
### Electrical Data:

Supply voltage: 10 VDC up to 32 VDC  
max. 100 mA

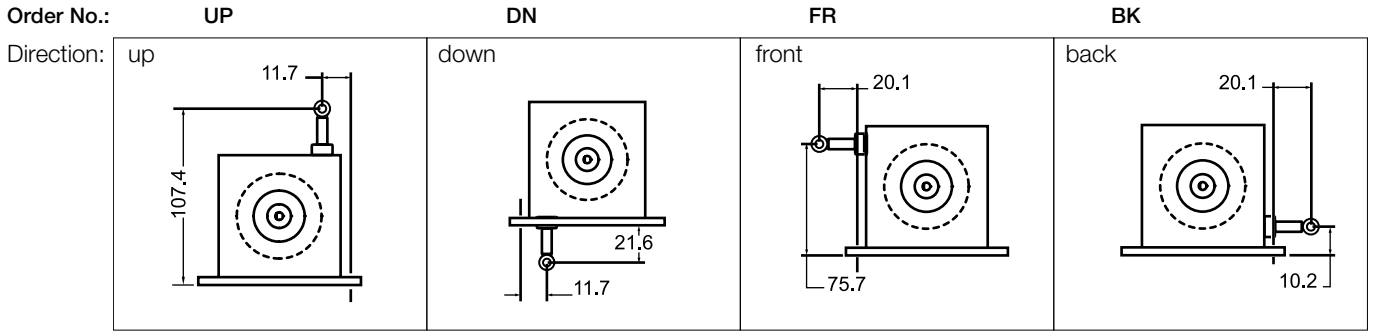
Power consumption: max. 2.5 W

### Connection configuration for encoder WDGA PROFIBUS-DP: axial, 1x M8, 4-pin; 1x M12, 5-pin; 1x M12, 4-pin

connector (A)	M8x1, 4-pin	female connector (B)	M12x1, 5-pin, B-coded	connector (C)	M12x1, 4-pin, B-coded
+UB	1	BUS	OUT	BUS	IN
n. c.	2	5 V DP	1	n. c.	1
GND	3	A	2	A	2
GND	4	GND DP	3	n. c.	3
		B	4	B	4
		n. c.	5		



All details in mm and dependent on the encoder configuration.



**Ordering information:**

**Measurement range:**  
 2500 = 2,500 mm  
 3500 = 3,500 mm  
 5000 = 5,000 mm  
 6250 = 6,250 mm

**Measurement wire:**  
 N = 0.86 mm of thick nylon coated high-grade steel wire

**Mounting direction:**  
 UP = Wire exit up  
 DN = Wire exit down  
 FR = Wire exit front  
 BK = Wire exit back

**Singleturn resolution in bit per revolution**  
 08 => 8 bit (= approx. 1.26 position/mm)  
 09 => 9 bit (= approx. 2.52 position/mm)  
 10 => 10 bit (= approx. 5.04 position/mm)  
 11 => 11 bit (= approx. 10.08 position/mm)  
 12 => 12 bit (= approx. 20.17 position/mm)

**Multiturn resolution**  
 13 = 13 bit

**Interface**  
 DP = PROFIBUS-DP

**Software:**  
 A = up to date release

**Code**  
 B = binary

**Power supply**  
 0 = 10 V up to 32 V

**Galvanic isolation**  
 1 = yes

**Connection**  
 DB4 = 3x connector, axial

Your system

SZG81  N   13 DP A B 0 1 DB4

**Montageanleitung absolute Drehgeber WDGA EnDra®, PROFIBUS DP,**

Assembly instructions for WDGA EnDra®, PROFIBUS DP absolute encoder, Instructions de montage,

capteur angulaire WDGA EnDra®, PROFIBUS DP, Istruzioni per l'uso trasduttore assoluto WDGA

EnDra®, PROFIBUS DP, Instrucciones de montaje codificador absoluto WDGA EnDra®, PROFIBUS DP.

$-40\text{ °C} \dots +80\text{ °C}$   
 $(-40\text{ °F} \dots +176\text{ °F})$

$-40\text{ °C} \dots +100\text{ °C}$   
 $(-40\text{ °F} \dots +212\text{ °F})$

**Montage nur qualifiziertes Personal**  
 Assembly only qualified personnel  
 Montage par qualifié personnel  
 Montaggio solo personale qualificato  
 Montaje solamente personal cualificado

**DIN EN 100015-1**

**Sicherheitsmassnahmen/safety instructions:**  
 Die Produkte dürfen nur in industrieller Umgebung und im NICHT sicherheitsrelevanten Bereich eingesetzt werden. The products are only designed and produced for use in industrial environments and NOT for use in safety related applications.

Standard	F <sub>r</sub> max.	F <sub>a</sub> max.
WDGA58A	125 N	120 N
WDGA58B		
Ø 6 mm		
Ø 8 mm		
Ø 10 mm	220 N	120 N
Ø 3/8"		
WDGA58D	400 N	400 N
Ø 12 mm		
WDGA58E	80 N	50 N

WDGA58A  
 WDGA58B  
 WDGA58D

WDGA58B/D:  
 M3 (8.8)  
 Ma = 1 Nm

WDGA58A/B/D:  
 M4 (8.8)  
 Ma = 2 Nm

WDGA58B  
WDGA58D

M3 (8.8)  
 Ma = 1 Nm

M4 (8.8)  
 Ma = 2 Nm

WDGA58A  
WDGA58B  
WDGA58D

M3 (8.8)  
 Ma = 1 Nm

M4 (8.8)  
 Ma = 2 Nm

WDGA58E Artikelnr., Item number, Numéro d'article, Número de artículo: WDGDS10019

d/mm	Lmin	Lmax
6, 6.35 (1/4"), 7, 8,	10	19
9.525 (3/8"), 10, 12, 14		

M3 (8.8)  
 Ma = 1 Nm

M3 (8.8)  
 Ma = 1 Nm

Baudrate in kbit/s Baud rate in kbit/s Vitesse de transmission en kbit/s Baud rate in kbit/s Velocidad de transmisión en kbit/s	max. Kabellänge, Typ A max. cable length, type A Longueur de câble max., type A max. lunghezza cavo, tipo A Longitud máx. del cable, tipo A	max. Kabellänge, Typ B max. cable length, type B Longueur de câble max., type B max. lunghezza cavo, tipo B Longitud máx. del cable, tipo B
9.6	1200 m	1200 m
19.2	1200 m	1200 m
45.45	1200 m	1200 m
93.75	1200 m	1200 m
187.5	1000 m	600 m
500	400 m	200 m
1500	200 m	70 m
3000	100 m	-
6000	100 m	-
12000	100 m	-

X10 X1

**Teilnehmeradresse, Adress, Adresse, Dirección, Indirizzo**

Über Drehschalter einstellbar. Bsp. Teilnehmeradresse 24  
 By rotary switch. e.g. (for example): adress 24  
 Par le rotary switch. Adresse par exemple 24  
 Por el rotary switch. Por ejemplo dirección 24  
 Impostabile rotary switch. Es. Indirizzo 24

ON = Letzter Teilnehmer, laste node, dernier usager, último usuario, ultimo utente

OFF = Teilnehmer X, node X, usager X, usuario X, utente X

**Bitte beachten Sie das Handbuch zum WDGA PROFIBUS unter [www.wachendorff-automation.de/handbuchwdga](http://www.wachendorff-automation.de/handbuchwdga)**

Please observe the handbook for WDGA PROFIBUS under [www.wachendorff-automation.de/handbuchwdga](http://www.wachendorff-automation.de/handbuchwdga)

Veuillez consulter le manuel WDGA de PROFIBUS sur [www.wachendorff-automation.de/handbuchwdga](http://www.wachendorff-automation.de/handbuchwdga)

Osservare il manuale del WDGA PROFIBUS sotto [www.wachendorff-automation.de/handbuchwdga](http://www.wachendorff-automation.de/handbuchwdga)

Por favor, tengan en cuenta el manual WDGA PROFIBUS en [www.wachendorff-automation.com/manualwdga](http://www.wachendorff-automation.com/manualwdga)


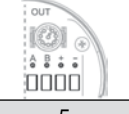
**Die GSD-Datei finden Sie unter [www.wachendorff-automation.de/gsd](http://www.wachendorff-automation.de/gsd)**


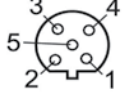

You will find the GSD file under [www.wachendorff-automation.de/gsd](http://www.wachendorff-automation.de/gsd)

Vous trouverez le fichier GSD sur [www.wachendorff-automation.de/gsd](http://www.wachendorff-automation.de/gsd)

Il file GSD può essere trovato sotto [www.wachendorff-automation.de/gsd](http://www.wachendorff-automation.de/gsd)

Encontrará el archivo GSD en [www.wachendorff-automation.com/gsd](http://www.wachendorff-automation.com/gsd)

BP1		BP1	
IN		OUT	
<b>A</b>	1	<b>A</b>	5
<b>B</b>	2	<b>B</b>	6
<b>+UB</b>	3	<b>+UB</b>	7
<b>GND</b>	4	<b>GND</b>	8




BP2		BP2		BP2	
					
<b>Stecker</b> <sup>1</sup>	M12x1, 4-polig, A-codiert	<b>Buchse</b> <sup>2</sup>	M12x1, 5-polig, B-codiert	<b>Stecker</b> <sup>1</sup>	M12x1, 5-polig, B-codiert
<b>+UB</b>	1	<b>BUS</b>	OUT	<b>BUS</b>	IN
<b>n. c.</b>	2	<b>n. c.</b>	1	<b>n. c.</b>	1
<b>GND</b>	3	<b>A</b>	2	<b>A</b>	2
<b>n. c.</b>	4	<b>n. c.</b>	3	<b>n. c.</b>	3
		<b>B</b>	4	<b>B</b>	4
		<b>n. c.</b>	5	<b>n. c.</b>	5

<sup>1</sup> Stecker, connector, connecteur, conector, spina

<sup>2</sup> Buchse, female connector, prise femelle, conector hembra, bussola

<sup>3</sup> M12x1, 4-polig, A-codiert; M12x1, 4-pin, A-coded; M12x1, 4-pôles, codé A; M12x1, 4-pines, codificado A; M12x1, 4-poli, cifrare A

<sup>4</sup> M12x1, 5-polig, B-codiert; M12x1, 5-pin, B-coded; M12x1, 5-pôles, codé B; M12x1, 5-pines, codificado B; M12x1, 5-poli, cifrare B

DB4		DB4		DB4	
					
<b>Stecker</b> <sup>1</sup>	M12x1, 4-polig, B-codiert	<b>Buchse</b> <sup>2</sup>	M12x1, 5-polig, B-codiert	<b>Stecker</b> <sup>1</sup>	M8x1, 4-polig
<b>BUS</b>	IN	<b>BUS</b>	OUT	<b>+UB</b>	1
<b>n. c.</b>	1	<b>5 V DP</b>	1	<b>n. c.</b>	2
<b>A</b>	2	<b>A</b>	2	<b>GND</b>	3
<b>n. c.</b>	3	<b>GND DP</b>	3	<b>GND</b>	4
<b>B</b>	4	<b>B</b>	4		
		<b>n. c.</b>	5		


<sup>1</sup> Stecker, connector, connecteur, conector, spina

<sup>2</sup> Buchse, female connector, prise femelle, conector hembra, bussola

<sup>3</sup> M12x1, 4-polig, B-codiert; M12x1, 4-pin, B-coded; M12x1, 4-pôles, codé B; M12x1, 4-pines, codificado B; M12x1, 4-poli, cifrare B

<sup>4</sup> M12x1, 5-polig, B-codiert; M12x1, 5-pin, B-coded; M12x1, 5-pôles, codé B; M12x1, 5-pines, codificado B; M12x1, 5-poli, cifrare B

<sup>5</sup> M8x1, 4-polig; M8x1, 4-pin; M8x1, 4-pôles; M8x1, 4-pines; M8x1, 4-poli

SD9, SE9	
	
<b>Buchse</b> <sup>1</sup>	D-SUB
<b>n. c.</b>	1
<b>GND</b>	2
<b>B</b>	3
<b>n. c.</b>	4
<b>GND DP</b>	5
<b>5 V DP</b>	6
<b>+UB</b>	7
<b>A</b>	8
<b>n. c.</b>	9
<b>Schirm</b> <sup>2</sup>	Gehäuse <sup>3</sup>

<sup>1</sup> Buchse, female connector, prise femelle, conector hembra, bussola

<sup>2</sup> Schirm, Shield, Blindage, Pantalla, Schermo

<sup>3</sup> Gehäuse, Housing, Boîtier, Caja, Contenitore