

## Draw-wire system SZG140



### Typical areas of application include:

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

### Measurement ranges:

0 - 10,200 mm

### Resolution Measurement ranges:

Various, depending on encoder up to 100 pulses/mm  
4 x edge evaluation

WDGI 58B with 1000 PPR = Resolution: 2,62 pulses/mm  
WDGI 58B with 2000 PPR = Resolution: 5,24 pulses/mm  
WDGI 58B with 5000 PPR = Resolution: 13,11 pulses/mm

### Electrical Output:

2 channels (AB) are shifted by 90°. Pulses 10 Volt up to 30 Volt, push-pull, 40 mA and zero pulse per rotation = G24

2 channels (AB) are shifted by 90°. Pulses 4.75 Volt up to 5.5 Volt, push-pull, 40 mA and zero pulse per rotation + inverted signals = I05

**Deviation:** Less than 0.04 % of the final value.

### Measuring wire:

0.79 mm of thick high-grade steel wire.  
Wire connection: eye  
max. wire speed: 1.5 m/sec.  
Pull out strength: approx. 0.64 kg

**System-unit housing:** Glass fiber reinforced plastic with UV inhibitor

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

**Life expectancy:** At least 1 million cycles

Operating temperature: -40 °C up to +85 °C

Storage temperature: -40 °C up to +85 °C

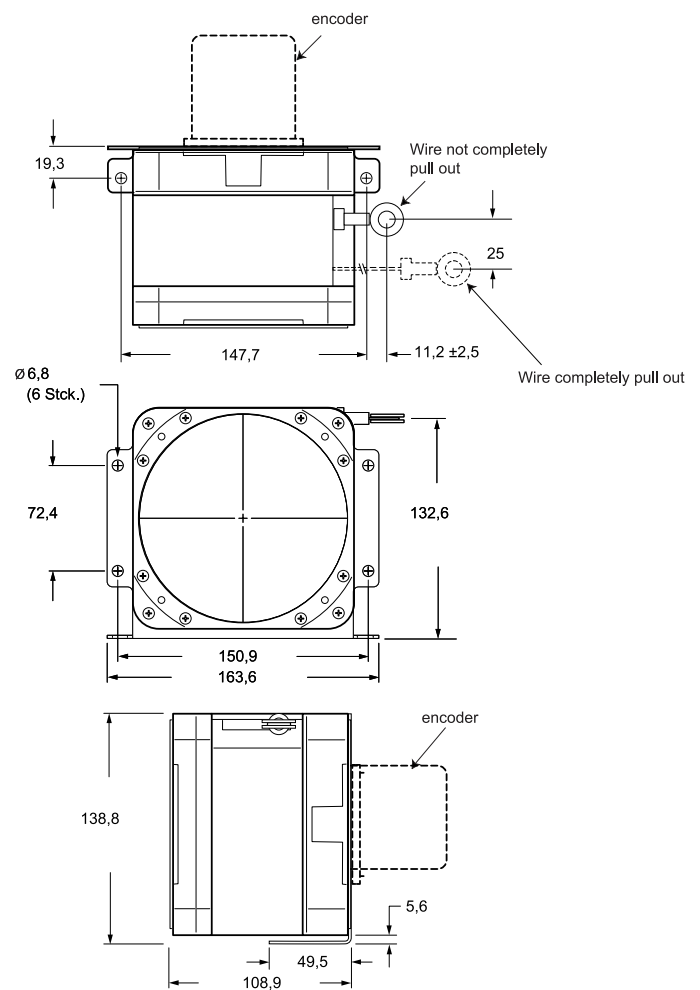
- Exceptionally rugged length sensor
- Measuring range 0 mm up to 10.200 mm
- Output: incremental signals
- IP65 encoder ready-mounted

[www.wachendorff-automation.com/szg140inc](http://www.wachendorff-automation.com/szg140inc)

With the new Cable System SZG140, Wachendorff meets these requirements perfectly. The system is installed quickly and easily. The space required is minimised through the compact design. The position of the cable outlet can be determined individually by the mounting bracket.

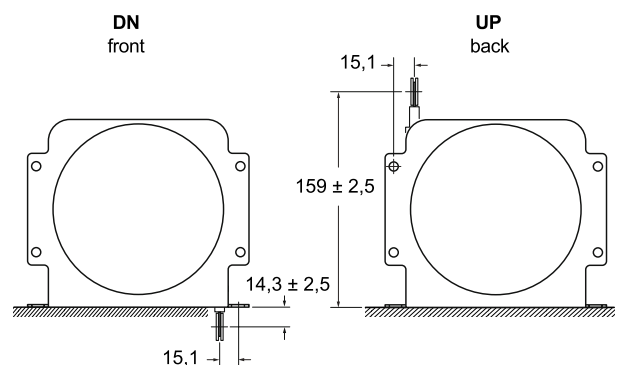
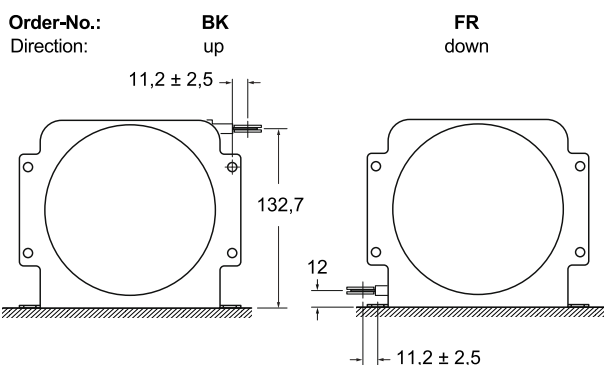
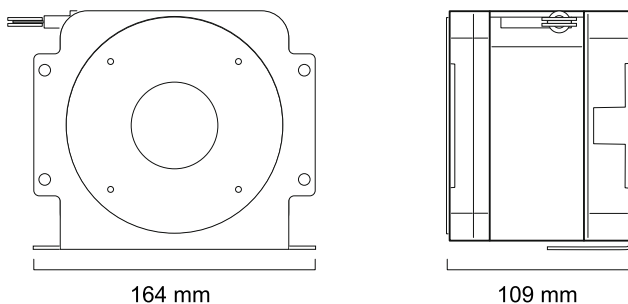
Thanks to the robust design of the cable system in conjunction with the incremental and absolute encoders from Wachendorff, the system can also be used in critical areas. For example, in port cranes or in transport systems in cold storage houses.

With the incremental encoders from the WDGI58B series or an absolute encoder WDGA58B, resolutions and interfaces can be implemented perfectly.



Diameters in mm

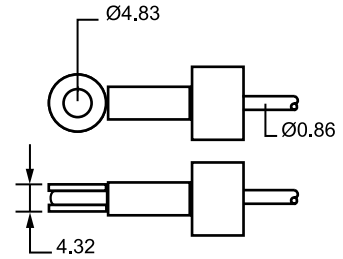
\* tolerance = +0,1 -0,0  
\*\* tolerance = +0,1 -0,1



**Example of the order of a Draw-wire system:**

SZG140 - 5.000 - B - UP - G24 - 13

- 5.000: Draw wire system with 5.000 mm measurement range;
- N: high-grade steel wire
- UP: Wire exit up
- G24: Incl. incremental encoder WDGI 58B with channels ABN, signal output G24
- Connections: Connector 7-pin, radial
- 13: Resolution 13.11 pulses/mm



**Order number:** SZG140 - 5.000 - B - UP - G24 - 13  
**Position:** 1 2 3 x yyy zz

Short description	Position	Part of order number	Description
Type	1	SZG140	Draw wire system
Measurement range (MB)	2	1020	Measurement range 10,200 mm
Measurement wire	3	B	0.769 mm of thick high-grade steel wire
Mounting direction	xx	UP DN FR BK	Wire exit up Wire exit down Wire exit front Wire exit back
Output	yyy	G24 = 10 VDC - 30 VDC, HTL I05 = 4.75 VDC - 5.5 VDC, TTL, RS422 comp.	Channels: ABN, signal output Channels: ABN, ABN, signal output
Solution *1	zz	02 05 13 zz*	2.62 pulses/mm 5.24 pulses/mm 13.11 pulses/mm You specify another encoder, please, use the order number of the WDGI 58 B type This encoder is assembled by us

zz\* mounted Encoder WDGI 58B - 10 - zzzz - ABN - yyy - S3/5 (ppr):

For resolution of 2.62 pulses/mm = 1000, 5.24 pulses/mm = 2000 und 13.11 pulses/mm = 5000, with the following qualities:

- Channels: ABN: 2 channels shifted by 90° plus inverted signals
- Output: G24: 10-30 Volt, 40 mA push-pull. I05: 5 VDC, 40 mA push-pull.
- Connections: Connector 7-pin, radial = S3 (PIN-arrangement: A=3, B=4, N=5, 0V=1, 10-30VDC=2)  
Connector 12-pin, radial = S5 (PIN-arrangement: A=5, B=8, N=3, A inv.=6, B inv.=1, N inv.=4, 0V=10, 5 VDC=12)

If you like to specify your individual encoder, please enter at the order number zz and define from the data sheet WDGI 58B your special encoder.

**Ordering information:**

**Mounting direction**

Wire exit up = UP  
Wire exit down = DN  
Wire exit front = FR  
Wire exit back = BK

**Measuring wire:**

0.86 mm of thick high-grade steel wire = B

**Measurement range:**

10,200 mm = 1020

**Output circuit:**

G24 = 10 VDC up to 30 VDC, HTL  
I05 = 4.75 VDC up to 5.5 VDC, TTL, RS422 comp.

**Resolution:**

02 = 2.62 pulses/mm  
05 = 5.24 pulses/mm  
13 = 13.11 pulses/mm

You specify another encoder, please use the order number of the WDGI 58 B type = zz

Example     

Your system

**Montageanleitung Vollwellengeber,**

Assembly instructions shaft encoder, Notice de montage codeur rotatif à arbre plein, Instrucciones de montaje encoder ad albero pieno, istruzioni di montaggio encoders de eje saliente.

	WDGI ( <b>Stecker</b> , connector, connecteur, conector, spina): -40 °C ... +85 °C (-4 °F ... +176 °F) WDG* + WDGI ( <b>Kabel</b> , cable, Câble, Cable, cavo)**: -20 °C ... +80 °C (-4 °F ... +176 °F) Option: * -40 °C ... +80 °C (-40 °F ... +176 °F) ** -40 °C ... +85 °C (-40 °F ... +185 °F) 1Vss (1Vpp): -10 °C ... +70 °C (14 °F ... +158 °F) 58T: -10 °C ... +70 °C (58T: +14 °F ... +158 °F)		-30 °C...+80 °C (-22 °F...+176 °F)
	<b>Montage nur qualifiziertes Personal</b> , Assembly only qualified personnel, Montage par qualifié personnel, Montaggio solo personale qualificato, Montaje solamente personal cualificado		
<b>Sicherheitsmassnahmen/safety instructions:</b> 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.			
	DIN EN 100015-1		

Kabel ø cable, Câble, Cable, cavo	R1	R2	Temperatur Temperature, Température, Temperatura, Temperatura
≤ 7 mm	31,5 mm	94,5 mm	T > -20 °C (-4 °F)
> 7 mm	41,5 mm	124,5 mm	T > -20 °C (-4 °F)
≤ 7 mm	46,5 mm	139,5 mm	T > -40 °C (-40 °F)
> 7 mm	62,3 mm	186,9 mm	T > -40 °C (-40 °F)

58B  
58D  
58K  
58S  
58T  
58V  
63B  
70B  
90B

40A  
50B  
58A  
58B  
58C  
58D  
58K  
58T  
63B

24A 58V  
24C 63B  
40A 70B  
50B 90B  
58A  
58B  
58C  
58D  
58K  
58S  
58T

40S  
53S  
53V

40A  
58B  
58D  
58K  
58S  
58T  
58V

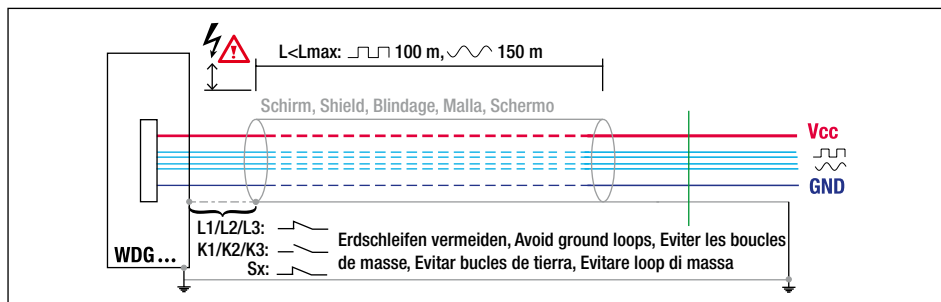
63Q  
67Q  
115T  
115M

58A + MG58A

Standard (no IP67)	F <sub>r</sub> max.	F <sub>a</sub> max.
24A/C, 40A/S, 58K	80 N	50 N
50B	120 N	70 N
53S, 53V	20 N	10 N
58A	125 N	70 N
58B, 58T, 63B/Q	220 N	120 N
WDG58D	400 N	400 N
WDGI58D	500 N	500 N
70B, 90B	200 N	150 N
115T/M, 58C	200 N	120 N
58S, 58V	100 N	100 N

Gewinde (8.8) Screw thread, Filet, Rosca, filetto	Empfohlenes Anzugsdrehmoment Recommended starting torque Moment de rotation recommandé appliqué à l'écrou Par de apriete recomendado coppia di spunto consigliata
M3	1 Nm
M4	2 Nm
M5	3 Nm
M6	6 Nm
<b>Mutter</b> , Screw nut, écrou, Tuerca, dado, M20x1,5	8 Nm

Frühwarnausgang Early-warning output Sortie d'alerte Salida de advertencia prematura uscita di preavvertimento	IRLED	IRLED
<b>Schaltung</b> Circuit Couplage Commutación collegamento	G24, I24, G05, high	low



Schaltung Circuit Couplage Commutación collegamento	Stecker, connector, Fiche, Connector, spina										Kabel, cable, Câble, Cable, cavo							
	S15 axial, SH5 radial, 5-pin	S16 axial, SH6 radial, 6-pin	S2 axial, S3 radial, 7-pin	S8 axial, SH8 radial, 8-pin	S12 axial, SH12 radial, 12-pin	S4 axial, S4R axial, S5 radial, S5R radial, 12-pin	S6 radial, 6-pin	S7 axial, 4-pin	SK6 axial, 6-pin	SB4 axial, SC4 radial, 4-pin	F/H/05 F/H24 H30	SB5 axial, SC5 radial, 5-pin	SB8 axial, SC8 radial, 8-pin	SB12 axial, SC12 radial, 12-pin	K1/K7/L7 K2/L2 axial, K3/L3 radial T3 tangential	ACA: 24C 40A/S 40E	ACA: 58, 63, 67, 70, 115	58SV
F/H/05 F/H24 H30	G/F/H/05 G/F/H24 H30	G/F/H/05 G/F/H24 H30	F/H05 F/H24 H30	P/R05 P/R24 SIN R30	I/P/R05 I/P/R24 SIN, SIF R30	G/F/H05 G/F/H24 H30	G/F/H/05 G/F/H24 H30	F/H/05 F/H24 H30	F05 H05 P24 H24 H30	R05 P24 R24 R30 S	F/H/05 F/H24 H30	F05 H05 P24 H24 H30	G/F05/ I/P/R05 H05 I/P/R24 G/F24/ 245 H24 u 524 H30 s 645 R30	M05 I/R/P05 M30 I/R/P24 H24 245 R24 524 N05 645 R30	M05 I/R/P05 M30 I/R/P24 H24 245 R24 524 N05 645 R30	WH WH BN BN GN GN YE YE GY GY	WH WH BN BN GN GN YE YE GY GY	WH WH BN BN GN GN YE YE GY GY
Minus U-	1	6	1	1	K/L	K/L	A	1	3	3	3	1	1	3	3	3	3	3
Plus U+	2	2	2	2	M/B	M/B	F	2	1	1	1	2	2	1	1	1	1	1
A	3	3	3	3	E	E	C	3	4	3	4	3	3	4	4	4	4	4
B	4	4	4	4	H	H	B	4	4	4	4	4	4	4	4	4	4	4
N	5	5	5	5	C	C	D	-	5	5	5	5	5	5	5	5	5	5
Frühwam- ausgang*1	-	5	6	-	G	G	E	-	-	-	-	-	-	5	5	5	5	5
A inv.	-	-	-	6	F	F	-	-	-	-	-	-	-	6	6	6	6	6
B inv.	-	-	-	7	A	A	-	-	-	-	-	-	-	7	7	7	7	7
N inv.	-	-	-	8	D	D	-	-	-	-	-	-	-	8	8	8	8	8
n. c.	-	6, 7, 8	7	-	J	J	-	-	6, 7, 8	6, 7, 9	2, 7, 9	6, 7, 8	2, 7, 9, 10, 11, 12	6, 7, 8	6, 7, 8	6, 7, 8	6, 7, 8	6, 7, 8
Schirm*2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

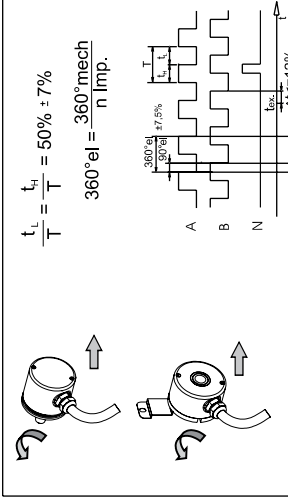
**\*1 Frühwamausgang nur bei**  
Early-warning output only for  
Sortie d'alerte précoce  
Salida de advertencia prematura  
uscita di preavvertimento  
**G24, I24, G05, I05, 524, SIF (80H/100H/G/I/K)**

**Steckergehäuse aus Kunststoff (S7)**  
Plastic connector housing (S7)  
Boîtier de connexion en matière plastique (S7)  
Caja de conector de plástico (S7)  
scatola prese in plastica (S7)

**\*2 Schirm**  
Shield  
Ecran  
Malla  
Schermo

**WH: weiss, white, blanc, bianco, bianco**  
**BN: braun, brown, brun, marron, marrone**  
**GN: grün, green, vert, verde, verde**  
**YE: gelb, yellow, jaune, amarillo, giallo**  
**GY: grau, grey, gris, gris, grigio**  
**PK: rosa, pink, rose, rosa, rosa**  
**RD: rot, red, rouge, rojo, rosso**  
**BK: schwarz, black, noir, negro, nero**  
**BU: blau, blue, bleu, azul, blu**  
**VT: violett, violet, violet, violeta, violetto**  
**Litze: Litze, Flex, Toron, Cordón, Cavetto**

U <sub>B</sub>	I <sub>supply</sub>	Output	I <sub>outmax</sub>
R30, H30, M30	≤ 70 mA	H > U <sub>B</sub> - 10% U <sub>B</sub> L < 2,5VDC	40 mA
G24, H24, F24, I24, R24, N24, M24, P24	N05, N24, N30, M05, M24, M30	H > U <sub>B</sub> - 2,5VDC L < 2,5VDC	N05, N24, N30, M05, M24, M30 = 30 mA
245, 524, 645	≤ 40 mA	H > 2,5VDC L < 1,2VDC	
G05, H05, F05, I05, R05, N05, M05, P05	P05, P24, F05, F24, 645	H > 2,5VDC L < 0,5VDC	Pro Kanal Per channel Par canal Por canal Per canale
Bemerkungen Notas Observaciones osservazioni	Ohne Last Without load resistance Sans charge Sin carga senza carico		



**Steckergehäuse/Schirm mit Gebergehäuse leitend verbunden. (Nicht S7, K1, K2, K3)**  
Connector housing/shield electrically connected to encoder housing (not S7, K1, K2, K3, T3)  
Boîtier de connexion/Ecran avec boîtier d'émetteur liés de manière conductrice (No S7, K1, K2, K3)  
Caja de conector/Malla conectada en conductancia con caja de transmisor (No S7, K1, K2, K3)  
Scatola prese/Schermo con scatola trasmettitore collegata da condurre (No S7, K1, K2, K3)

**www.wachendorff-automation.de**  
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Other countries, please contact your distributor.  
Autres pays, veuillez contacter votre distributeur.  
Otros países, rogamos contactar a su distribuidor.  
Per gli altri paesi si prega di contattare il vostro distributore.

