

# WACHENDORFF

The Encoder Experts



## Draw-wire systems SZG Pure Line

DEVELOPED AND  
MADE IN GERMANY  
5 YEARS WARRANTY

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



Compact design  
Simple, quick and flexible installation  
High operational reliability  
Long service life

The suitable interfaces of the  
WDGA58A absolute encoders:

CANopen  
CAN SAE J1939  
RS485  
SSI  
PROFINET  
EtherCAT  
Ethernet IP  
Universal Industrial Ethernet

The suitable  
incremental encoders:

WDGI58A optical  
WDGP58A magnetic  
WDGN58A configurable



**Industrie ROBUST**




# Draw-wire systems SZG Pure Line

## ... precise length measurement from 2,400 mm up to 7,500 mm

Classic or programmable incremental encoder?  
Industrial Ethernet, SSI, RS485 or CANopen interface?  
Mounting e.g. on the hydraulic cylinder, the screw conveyor or the lifting platform?  
Everything is possible!

The **Pure Line draw-wire systems** in conjunction with our proven and robust encoder series **WDGI, WDGn, WDGP or WDGA** ensure optimum position, speed or length detection with high resolution and high accuracy.  
Thanks to the coupling element and the flexible flange adapter, the encoder can be mounted quickly, easily and in a variety of mounting positions.

The robust glass fibre reinforced plastic housing with its compact design is suitable for small installation spaces and still offers a cable length of up to 7.5 metres.  
Thanks to the optimised cable guide and constant cable tension the Pure Line draw-wire systems achieve precise measurements over the entire measuring distance.

|   |        | SZG50   | SZG78  |   | SZG107  |
|---|--------|---|--|---|---|
|   |        |  |  |  |   |
| Measurement range   | [mm]   | 2400  | 3500   | 5000  | 7500  |
| Extraction force  | [N]    | F <sub>min</sub> 1.0 / F <sub>max</sub> 8.0                                       | F <sub>min</sub> 4.0 / F <sub>max</sub> 9.0  |   | F <sub>min</sub> 7.0 / F <sub>max</sub> 13.0                                  |
| Acceleration  | [m/s²] | a <sub>max</sub> 49.05  | a <sub>max</sub> ca. 68.65   |   | a <sub>max</sub> 14.72  |
| Linearity   | [%]    | ±0.1  | 0.3  | 0.4   | 0.05  |
| Mean distance per rotation  | [mm]   | 150.75  | 238.1  | 238.7   | 333.32  |
| Temperature range   | [°C]   | -20 °C up to +80 °C (observe max. encoder temperature)                            |  |   |   |
| Weight (without encoder)  | [g]    | 290   | ca. 500  |   | 850   |
| Material Housing  |        | Glass fibre reinforced plastic (PBT GF20)   | Glass fibre reinforced plastic (PA 6 GF30)   |   | Plastic (PA 6)  |
| Material measuring wire   |        | Stainless steel coated with polyamide (Ø 0.45 mm)                                 |  |   |   |
| Encoder requirements  |        | shaft: Ø 6 mm, synchro flange: Ø 58 mm, shaft length: 10 mm (Option AIX)          |  |   |   |
| Compatible encoder types  |        | all WDGI- (opt.) / WDGP- / WDGn- or WDGA- <b>58A-06-AIX</b>                       |  |   |   |
| Resolution absolute Encoder<br>(x = single-turn resolution)<br>Calculation of steps/mm:<br>2 <sup>x</sup> /Mean distance per rotation<br>= Steps/mm |        | Example:<br><br>2 <sup>12</sup> /150.75 = 4096/150.75<br>= ca. 27.17 Steps/mm     | Example:<br><br>2 <sup>12</sup> /238.1 = 4096/238.1<br>= ca. 17.2 Steps/mm         | Example:<br><br>2 <sup>12</sup> /238.7 = 4096/238.7<br>= ca. 17.16 Steps/mm         | Example:<br><br>2 <sup>12</sup> /333.32 = 4096/333.32<br>= ca. 12.29 Steps/mm |
| Resolution incremental Encoder<br>Calculation of pulses/mm:<br>Pulses/Mean distance per rotation<br>= Pulses/mm                                     |        | Example:<br><br>2500/150.75 mm =<br>ca. 16.58 Impulse/mm                          | Example:<br><br>2500/138.1 mm =<br>ca. 10.5 Impulse/mm                             | Example:<br><br>2500/138.7 mm =<br>ca. 10.47 Impulse/mm                             | Example:<br><br>2500/333.32 mm =<br>ca. 7.5 Impulse/mm                        |
| wachendorff-automation.com  |        | /szg50  | /szg78   |   | /szg107   |

**Any Questions?** Just call us at +49 (0) 67 22 / 99 65 414, send us an E-Mail to support-wa@wachendorff.de or call your local distributor: [www.wachendorff-automation.com/distri](http://www.wachendorff-automation.com/distri)

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