Z-SG / Z-SG2

Highlights

- Multifunction instruments (converters, meters, stand alone/third-party integrated systems)
- Nr.1 Analog input for reading (and power supply) strain gauge load cells (6-wire isolated measurement)
- Nr.1 Analog re-transmitted output of net weight in current (0..20, 4..20 mA) or voltage (0..5, 0..10 V)
- Nr. 1 Digital Input/Output for operation settings
- Accuracy class 0.01%
- ModBUS RTU slave half duplex protocol
- Multiple calibration methods (with or without PC, known weight and load cell)
- Programmable functions via DIP switches or software: full scale, threshold exceeding, stable weighing
- Advanced functions (Z-SG2): configurable resolution, adjustable sampling rate from 5.4 Hz to 1365.3 Hz, adjustable threshold alarm, stabilized measurement by noise filter, “piece counter” function, automatic tare reset

Z-SG / Z-SG2 are strain gauge load cell converters. The measurement, carried out with 4 or 6-wire technique, is available via ModBUS RTU serial protocol or analog output. The communication is configurable via DIP-switch or via software by connecting to the device with the Micro USB port on the front panel.

Z-SG and Z-SG2 are galvanically isolated 3-way modules up to 1500 Vac. The load cell sensitivity varies from 1 to 64 mV/V. The instruments are configurable via DIP-switch and software (EASY SETUP). The strain gauge can be directly powered by the instrument. The load cell calibration can be managed through sample weight or software. The Z-SG2 version stands out for new functions (piece counter, automatic tare reset, threshold alarm, firmware upgradeable automatically) and new flexible measurement management modes (measurements available both in full and floating point, measurement stabilized by anti-noise filter, configurable resolution).
### TECHNICAL DATA

#### GENERAL DATA
- **Power supply**: 10..40 Vdc / 19..28 Vac
- **Power consumption**: 1.5 W @ 24Vdc (typical); Max 2 W (max)
- **Isolation**: 1.5 kVac
- **ESD discharge protection**: Yes, 4 kV
- **Power transducers**: Yes
- **LED status indicators**: Power supply, Error, Data Transmission, Data Reception
- **Protection degree**: IP20
- **Operating temperature**: -10..+65°C
- **Dimension**: 17,5 x 102,5 x 111 mm
- **Weight**: Approx 110 g
- **Case**: PA6, black color
- **Connections**: Removable screw terminals for 2.5 mm² conductors, IDC10 rear connector for DIN rail 46277, Micro USB front
- **Mounting**: DIN rail 35mm IEC EN60715 in vertical position
- **Programming**: Only for Z-SG System Software (Z-NET4), Plug & Play configurator (EASY SETUP), DIP switch (for Z-SG2 only baud rate and address)

#### BASIC FUNCTIONS
- Cell calibration with software and sample weight;
- Stable weighing signaling via digital output/modbus register;
- Remote writing of the tare in volatile and/or non-volatile memory via digital input/modbus register;
- Strain gauge directly powered by the instrument;
- Ratiometric measurement

#### ADVANCED FUNCTIONS
- Only for Z-SG2: Configurable resolution; Sampling rate adjustable from 5.4 Hz to 1365.3 Hz; Alarm threshold adjustable; Measurement stabilized by noise filter; Measurements available in integer and floating point; “piece counter” function; Firmware upgradeable via software; Min/Max net weight values; Automatic reset tare

#### COMMUNICATION
- **Interfaces**: RS485 2 wires - RS232 (jack stereo 3.5 mm)
- **Speed**: Up to 115.200 bps
- **Protocols**: ModBUS RTU slave
- **Communication time**: < 10 ms (@38.400 bps)
- **Max distance**: Up to 1.200 m

#### STANDARD
- **Approvals**: CE
- **Norms**: EN61000-6-4, EN61000-6-2, EN61010-1

### INPUT / OUTPUT DATA

**Number of Channels**: 1 analog input, 1 analog output, 1 digital input/output

#### ANALOG INPUT
- **Analog input**: 4 or 6-wire differential measurement
- **Input impedance**: > 1 MΩ
- **Full scale**: ± 10 mV / ± 320 mV
- **Error**: 0.01% f.s.
- **Thermal stability**: 0.0025%/°C f.s.

#### LOAD
- **Supply voltage**: 5 Vdc
- **Minimum impedance**: 87 Ω equivalent
- **Sensitivity**: ±1 mV/V to ±64 mV/V
- **Load cells**: 4 or 6 wires

#### ANALOG OUTPUT
- Configurable voltage 0 - 10 Vdc, min load resistance 2 kΩ
- Configurable current 0 - 20 mA, max. load resistance 500 Ω
- Retransmission error: 0.1% of max range
- Response time (10%..90%): 5 ms

#### DIGITAL INPUT/OUTPUT
- **Opto-insulated Digital Input**: Min. voltage 12 V / Max. voltage 30 V
- **Opto-isolated Digital Output**: Min. current 50 mA / Max. voltage 30 V
- **Accuracy class**: 0,01%
- **Stability**: 0,025%/°C

### APPLICATION EXAMPLES

**WEIGHING SYSTEM ON CONVEYOR BELT**

**WEIGHT MEASUREMENT AND RETRANSMISSION WITH PARALLEL LOAD CELLS**

**ORDER CODES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>Z-SG</td>
<td>Strain gauge input module / RS485 ModBUS RTU</td>
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<tr>
<td>Z-SG2</td>
<td>Advanced strain gauge input module / RS485 ModBUS RTU</td>
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**ACCESSORIES**

<table>
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<tr>
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<tbody>
<tr>
<td>SD-EQ4</td>
<td>Equalization and connection system for load cells</td>
</tr>
<tr>
<td>SG-EQ4-B0XP7</td>
<td>Equalization and connection board for up to 4 load cells in parallel with IP66 containment box</td>
</tr>
<tr>
<td>CU-A-MICROB</td>
<td>USB-A Micro USB-B 5 P plug cable</td>
</tr>
<tr>
<td>Z-PC-DINAL2-17.5</td>
<td>DIN rail quick mounting bracket - HEAD +2 SLOT P=17.5mm</td>
</tr>
<tr>
<td>Z-PC-DIN2-17.5</td>
<td>DIN rail quick mounting bracket - 2 SLOT P=17.5mm</td>
</tr>
<tr>
<td>Z-PC-DIN8-17.5</td>
<td>DIN rail quick mounting bracket - 8 SLOT P=17.5mm</td>
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</tbody>
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**进程 Setup**

- Only for Z-SG System Software (Z-NET4)
- Plug & Play configurator (EASY SETUP)
- DIP switch (for Z-SG2 only baud rate and address)

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