WDOS
WEIGHT INDICATOR - WEIGHING AND BATCHING

PROGRAM | CODE
---|---
BASE | R76 - R61 | WDOS-MU
LOAD | R76 - R61 | WDOS-C
UNLOAD | R76 - R61 | WDOS-S
3 PRODUCTS | R76 - R61 | WDOS-3
6 PRODUCTS | R76 - R61 | WDOS-6
14 PRODUCTS | R76 - R61 | WDOS-14
Multiprogram | R76 - R61 | WDOS-MU

Multiprogram
External 8-relay modules included

CERTIFICATIONS

OIML R76:2006, class III, 3x10000 divisions, 0.2 μV/VSI / OIML R61 - WELMEC Guide 8.8:2011 (MID)

Initial verification in combination with weighing module

UL Recognized component - Complies with the United States and Canada standards

Complies with the Eurasian Custom Union standards (Russia, Belarus, Kazakhstan)

NMI Trade Approved - Complies with the Australian standards for legal use with third parties

FIELDBUSES

MODBUS RTU
MODBUS/TCP
CANopen
PROFIBUS
DeviceNet
EtherNet/IP
ETHERNET TCP/IP

Rev. 00 del 12/03/2015
WDOS
WEIGHT INDICATOR - WEIGHING AND BATCHING

DESCRIPTION
- Weight indicator in DIN box suitable for front panel mounting (dimensions: 96x96x130 mm; drilling template: 92x92 mm).
- Backlit graphic LCD display, resolution: 128x64 pixel, visible area: 60x32 mm.
- 6-digit red LED semi-alphanumeric display (10 mm height), 7-segment.
- 8 signalling LED.
- 10-key membrane keyboard.
- IP54 front panel protection rating (IP65 front optional).
- Real-time clock/calendar with buffer battery.
- Extractable screw terminal blocks.
- Multilanguage software (4 languages + 1 customizable).
- Connections to:
  - Multilanguage software (4 languages + 1 customizable).
  - Extractable screw terminal blocks.
  - Multilingual software (4 languages + 1 customizable).

MAIN FUNCTIONS
- Connections to:
  - PLC via analog output (on request);
  - PC/PLC via RS485/RS232 (up to 99 instruments with line repeaters, up to 32 without line repeaters);
  - remote display and printer via RS485/RS232;
  - up to 8 load cells in parallel by junction box;
  - intelligent junction box or other multichannel instruments: allow the use of advanced functions as digital equalization, load distribution analysis and automatic diagnostics.
- Simultaneous display of net weight and gross weight.
- Digital filter to reduce the effects of weight oscillation.
- Theoretical calibration (via keyboard) and real calibration (with sample weights and the possibility of weight linearization up to 5 points).
- Tare weight zero setting.
- Automatic zero setting at power-on.
- Gross weight zero tracking.
- Semi-automatic tare (net/gross weight) and preset tare.
- Semi-automatic zero.
- Displaying of the maximum weight value reached (peak).
- Direct connection between RS485 and RS232 without converter.
- Weight value printing with date and time via keyboard or external contact.
- TCP/IP WEB APP
  Integrated software in combination with the Ethernet TCP/IP option for remote supervision, management and control of the instrument.

- System parameters management protected by qualified access via software (password), hardware or fieldbus.
- Weight subdivisions displaying (1/10 e).
- Three operation mode: single interval or multiple ranges or multi-interval.
- Net weight zero tracking.
- Calibration.
- Alibi memory (option on request).
- The following values can be printed via keyboard or external contact: gross weight, net weight, tare, preset tare, date, time, ID code (alibi memory).

INPUTS/OUTPUTS AND COMMUNICATION
- RS485/RS232 serial ports for communication via ModBus RTU protocol, ASCII LCS bidirectional or continuous one way transmission.
- 5 relay outputs controlled by the setpoint values or via protocols (4 outputs if analog output is present).
- 3 optoisolated PNP digital inputs: status reading via serial communication protocols (2 inputs if analog output is present).
- 1 load cell dedicated input.
- Current or voltage 16 bit optoisolated analog output (option on request).

BASE PROGRAM
- Hysteresis and setpoint value setting.
- The indicator can be used as a remote display with setpoints.
- 12 groups selection by 5 setpoint via external selector switch or contact (option on request).

BATCHING PROGRAM
- Graphical representation of the system load status.
- 99 settable formulas.
- Batching resume after a blackout.
- Automatic fall calculation.
- Tolerance error control.
- Precision batching through slow function.
- Precision batching through tapping function.
- Consumption storage.
- Production storage.
- Products stocks management.
- Printing of batching data.
- Alarm contact management.
- Selection of the first 12 formulas via external selector switch or contact (option on request).
- Batching start via external contact or keyboard.

Only for:
LOAD and 3/6/14 PRODUCTS programs
- Autotare at batching start.

UNLOAD program
- Automatic loading of the product into the weighed structure.
- Management of batching with big bags.

3/6/14 PRODUCTS program
- Formulas programming in fixed or variable steps.

MULTIPROGRAM
- The Multiprogram instruments do not have any selected program but can be set by the installer with different operating modes: BASE, LOAD, UNLOAD, 3 PRODUCTS, 6 PRODUCTS, 14 PRODUCTS.
### TECHNICAL FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply and consumption</td>
<td>12÷24 VDC ±10%; 5 W (on request: 115÷230 VAC; 50÷60 Hz; 6 VA)</td>
</tr>
<tr>
<td>Number of load cells • Load cells supply</td>
<td>up to 8 (350 Ω) • 4/6 wires • 5 VDC/240 mA</td>
</tr>
<tr>
<td>Linearity • Analog output linearity</td>
<td>&lt;0.01% full scale • &lt;0.01% full scale</td>
</tr>
<tr>
<td>Thermal drift • Analog output thermal drift</td>
<td>&lt;0.0005% full scale/°C • &lt;0.003% full scale/°C</td>
</tr>
<tr>
<td>A/D Converter</td>
<td>24 bit (16000000 points) - 4.8 kHz</td>
</tr>
<tr>
<td>Divisions (with measurement range ±10 mV and sensitivity 2 mV/V)</td>
<td>±9999999 • 0.01 μV/d</td>
</tr>
<tr>
<td>Measurement range</td>
<td>±39 mV</td>
</tr>
<tr>
<td>Usable load cells sensitivity</td>
<td>±7 mV/V</td>
</tr>
<tr>
<td>Conversions per second</td>
<td>300/s</td>
</tr>
<tr>
<td>Display range</td>
<td>±9999999</td>
</tr>
<tr>
<td>Decimals • Display increments</td>
<td>0÷4 • x1 x2 x5 x10 x20 x50 x100</td>
</tr>
<tr>
<td>Digital filter • Readings per second</td>
<td>10 levels • 5÷300 Hz</td>
</tr>
<tr>
<td>Relay outputs</td>
<td>5/4 - max 115 VAC/150 mA</td>
</tr>
<tr>
<td>Optoisolated digital inputs</td>
<td>3/2 - 5÷24 VDC PNP</td>
</tr>
<tr>
<td>Serial ports</td>
<td>RS485, RS232</td>
</tr>
<tr>
<td>Baud rate</td>
<td>2400, 4800, 9600, 19200, 38400, 115200 (bit/s)</td>
</tr>
<tr>
<td>Optoisolated analog output (option on request)</td>
<td>16 bit = 65535 divisions. 0÷20 mA; 4÷20 mA (up to 300 Ω)</td>
</tr>
<tr>
<td>Humidity (condensate free)</td>
<td>85%</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-30 °C +80 °C</td>
</tr>
<tr>
<td>Working temperature</td>
<td>-20 °C +60 °C</td>
</tr>
<tr>
<td>Relay outputs</td>
<td>5/4 - max 30 VAC, 60 VDC/150 mA</td>
</tr>
<tr>
<td>Working temperature</td>
<td>-20 °C +50 °C</td>
</tr>
<tr>
<td>Power supply device marked “LPS” (limited power source) or “Class 2”</td>
<td></td>
</tr>
</tbody>
</table>

### METROLOGICAL SPECIFICATIONS OF TYPE-APPROVED INSTRUMENTS

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>single interval, multi-interval, multiple range</td>
</tr>
<tr>
<td>Accuracy class</td>
<td>III or IIII</td>
</tr>
<tr>
<td>Maximum number of scale verification divisions</td>
<td>10000 (class III); 1000 (class IIII)</td>
</tr>
<tr>
<td>Minimum input signal for scale verification division</td>
<td>0.2 μV/VSI</td>
</tr>
<tr>
<td>Working temperature</td>
<td>-10 °C +40 °C</td>
</tr>
</tbody>
</table>
Example screens for BASE program

Net weight, gross weight and inputs/outputs status displaying

2. Inputs and outputs status.

Gross weight and setpoint displaying

2. Setpoint status and value.
4. Number of setpoint class (only for instruments equipped with E/EC option).
5. Gross weight value.

Setpoint programming

1. Selected class.
2. Setpoint number.
3. Setpoint value.

Production displaying for each formula
(amount of batched product and number of cycles performed)

1. Date and time of last deletion.
2. Formulas list.
3. Selected formula.
4. Batched quantity and number of cycles performed.

Consumptions displaying for each product
3/6/14 PRODUCTS program

1. Date and time of last deletion.
2. Products list.
3. Selected product.
4. Consumptions.

Example screens for BATCHING programs

Formulas programming
3/6/14 PRODUCTS program

1. Selected formula.
2. Step number.
3. Product number.
4. Set value.

Formulas programming
LOAD and UNLOAD programs

1. Selected formula.
2. Preset value.
3. Set value.

Details of batching product displaying
LOAD and UNLOAD programs

1. Formula number.
2. Running cycle.
3. Product number.
4. Preset value.
5. Set value.
6. Fall value.
7. Tolerance value.

Displaying during the batching
3/6/14 PRODUCTS program

1. Product number and arrow indicating the product loading.
2. Product level on the scale.
3. Formula number.
4. Running cycle.
5. Product number or name.

Stocks displaying for each product
3/6/14 PRODUCTS program

1. Current date and time.
2. Products list.
3. Selected product.
4. Stocks.
# WDOS

**WEIGHT INDICATOR - WEIGHING AND BATCHING**

## OPTIONS ON REQUEST AND Compatibility with Batch Programs

### POWER SUPPLY

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B C S 3P 6P 14P</td>
<td>Power supply 115/230 VAC; 50/60 Hz; 6 VA. Not compatible with fieldbuses and USB port.</td>
</tr>
</tbody>
</table>

### ACCESSORIES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPZW96X96IP65</td>
<td>IP65 panel sealing gasket.</td>
</tr>
</tbody>
</table>

### INTERFACES AND FIELD BUSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPZW1ANALOOGICA</td>
<td>Optoisolated 16 bit analog output. One input and one output not available.</td>
</tr>
<tr>
<td>OPZW1RS485</td>
<td>Additional RS485 port. One input and one output not available. Not compatible with E/EC option.</td>
</tr>
<tr>
<td>OPZW1CAWGDOS</td>
<td>CANopen protocol. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1DEWDOS</td>
<td>DeviceNet protocol. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1PRWDOS</td>
<td>Profibus DP protocol. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1ETIPWDOS</td>
<td>Ethernet/IP protocol - Ethernet port. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1ETTCPWDOS</td>
<td>Ethernet TCP/IP protocol - Ethernet port. Integrated software for remote supervision, management and control of the instrument. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1MBTCPWDOS</td>
<td>Modbus/TCP protocol - Ethernet port. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZW1PNETIOWDOS</td>
<td>Profinet IO protocol - Ethernet port. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
<tr>
<td>OPZWUSBWDOS</td>
<td>USB port for data storage to pen drive (included). These data (weighed values, batchings, alarms) can be imported and processed on the PC using the PROG-DB software included in the supply. Not compatible with 115 VAC and 230 VAC.</td>
</tr>
</tbody>
</table>

*Select one option among those marked with an asterisk.*
## OPTIONS ON REQUEST AND COMPATIBILITY WITH BATCHING PROGRAMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPZWCONUSBIP68</td>
<td>USB male/female extension cable with IP68 sealed panel connector; length 50 cm, sealing cap and cover included.</td>
<td>B C S 3P 6P 14P</td>
<td>Code</td>
</tr>
<tr>
<td>OPZWCONETHEIP68</td>
<td>Ethernet male/female extension cable with IP68 sealed panel connector; length 50 cm, sealing cap included.</td>
<td>B C S 3P 6P 14P</td>
<td>OPZWCONETHE5MT</td>
</tr>
<tr>
<td>OPZWING010</td>
<td>Weight reading from 0-10 VDC input (15 kΩ).</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
<tr>
<td>OPZWING420</td>
<td>Weight reading from 4-20 mA input (120 Ω).</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
<tr>
<td>RELE5M</td>
<td>External 5-relay module to increase the capacity of SPDT contacts to 115 VAC/2 A.</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
<tr>
<td>RELE6PROD24V</td>
<td>12÷24 VDC</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
<tr>
<td>RELE6PROD230V</td>
<td>115 VAC</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
<tr>
<td>RELE6PROD230V</td>
<td>230 VAC</td>
<td>B C S 3P 6P 14P</td>
<td>Options on request and compatibility with batching programs</td>
</tr>
</tbody>
</table>
| *Select one option among those marked with an asterisk.*
## OPTIONS ON REQUEST AND COMPATIBILITY WITH BATCHING PROGRAMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Formulas setting in percentage.</th>
<th>Setting a quantity to be batched greater than the scale capacity with automatic calculation of cycles.</th>
<th>Intermediate unloadings during the batching.</th>
<th>Partial unloadings at cycle end.</th>
<th>Alibi memory.</th>
<th>Data transfer from the instrument to the PC, via RS232 (directly) or RS485 (by converter) serial port.</th>
<th>Manual batching with remote displays connected in parallel to the instrument via RS485 serial port; allows to display on different remote displays the following batching information: formula and product number, remaining quantity to be batched, gross weight.</th>
<th>Single gross weight values reading by others transmitting instruments (up to 8) via RS485 serial port.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELE14PROD</td>
<td>External 8-relay module to manage from 7 to 14 products to be added to RELE6PROD module; 8 relays up to max 115 VAC/2 A. Module included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWFORPERC</td>
<td>Modules included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWQMC</td>
<td>Modules included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWSCARI</td>
<td>Modules included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWSCARP</td>
<td>Modules included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWALIBI</td>
<td>Modules included with model 14 PRODUCTS.</td>
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<tr>
<td>OPZWDATIPC</td>
<td>Modules included with model 14 PRODUCTS.</td>
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</tr>
<tr>
<td>OPZWLAUMAN</td>
<td>Modules included with model 14 PRODUCTS.</td>
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</tr>
<tr>
<td>OPZWINGSER8</td>
<td>Modules included with model 14 PRODUCTS.</td>
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