WDOS
Weight Indicator- Weighing and Batching

LAUMAS® ELETTRONICA

CE | OIML | M | cRUus | EAC

NMI TRADE APPROVED | RS485 RS232 | ANALOG OUTPUT | ALIBI

MULTILANGUAGE SOFTWARE
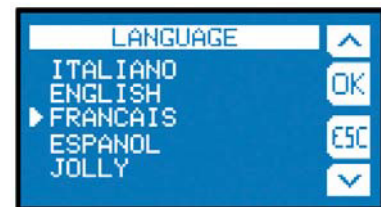
PROGRAM	OIML	M / NMI / EAC / cRUus	CODE
BASE	R76 - R61	● ● ● ●	WDOS-MU
LOAD	R76 - R61	● ● ● ●	WDOS-C
UNLOAD	R76 - R61	● ● ● ●	WDOS-S
3 PRODUCTS	R76 - R61	● ● ● ●	WDOS-3
★ 6 PRODUCTS	R76 - R61	● ● ● ●	WDOS-6
★ 14 PRODUCTS	R76 - R61	● ● ● ●	WDOS-14
Multiprogram	R76 - R61	● ● ● ●	WDOS-MU

★ External 8-relay modules included

ON REQUEST

CERTIFICATIONS

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

CERTIFICATIONS ON REQUEST

M	Initial verification in combination with Laumas weighing module
cRUus	UL Recognized component - Complies with the United States and Canada standards
EAC	Complies with the Eurasian Custom Union standards
NMI TRADE APPROVED	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 | PI CERTIFIED PROFIBUS · PROFINET

Version 02.2020

DESCRIPTION

- Weight indicator in DIN box suitable for front panel mounting (dimensions: 96x96x130 mm; drilling template: 92x92 mm).
- Backlit LCD graphic display, resolution: 128x64 pixel, visible area: 60x32 mm.
- 6-digit semi-alphanumeric red LED display (10 mm height).
- 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).

INPUTS/OUTPUTS AND COMMUNICATION

- RS485/RS232 serial ports for communication via protocols ModBus RTU, ASCII Laumas 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).

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.

CE-M version: 2014/31/EU-EN45501:2015-OIML R76:2006
- 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 (aliby memory).

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

Power supply and consumption	12÷24 VDC ±10%; 5 W (on request: 115÷ 230 VAC ; 50÷ 60 Hz; 6 VA)
Number of load cells · Load cells supply	up to 8 (350 Ω) – 4/6 wires · 5 VDC/240 mA
Linearity · Analog output linearity	< 0.01 % full scale · < 0.01 % full scale
Thermal drift · Analog output thermal drift	< 0.0005% full scale /°C · < 0.003% full scale /°C
A/D Converter	24 bit (16000000 points) – 4.8 kHz
Divisions (with measurement range ±10 mV and sensitivity 2 mV/V)	±999999 · 0.01 µV/d
Measurement range	±39 mV
Usable load cells sensitivity	±7 mV/V
Conversions per second	300/s
Display range	±999999
Decimals · Display increments	0÷4 · x1 x2 x5 x10 x20 x50 x100
Digital filter · Readings per second	10 levels · 5÷ 300 Hz
Relay outputs	5/4 – max 115 VAC /150 mA
Optoisolated digital inputs	3/2 – 5÷24 VDC PNP
Serial ports	RS485, RS232
Baud rate	2400, 4800, 9600, 19200, 38400, 115200 (bit/s)
Optoisolated analog output (option on request)	16 bit = 65535 divisions. 0÷20 mA; 4÷20 mA (up to 300 Ω) 0÷10 V; 0÷5 V; ±10 V; ±5 V (min 10 k Ω)
Humidity (condensate free)	85%
Storage temperature	–30 °C +80 °C
Working temperature	–20 °C +60 °C

c**UL**us	Relay outputs	5/4 – max 30 VAC , 60 VDC /150 mA
	Working temperature	–20 °C +50 °C
	Power supply device marked "LPS" (limited power source) or "Class 2"	

METROLOGICAL SPECIFICATIONS OF TYPE-APPROVED INSTRUMENTS

Applied standards	2014/31/UE - EN45501:2015 - OIML R76:2006
Operation mode	single interval, multi-interval, multiple range
Accuracy class	III or IIII
Maximum number of scale verification divisions	10000 (class III); 1000 (class IIII)
Minimum input signal for scale verification division	0.2 µV/VSI
Working temperature	–10 °C +40 °C
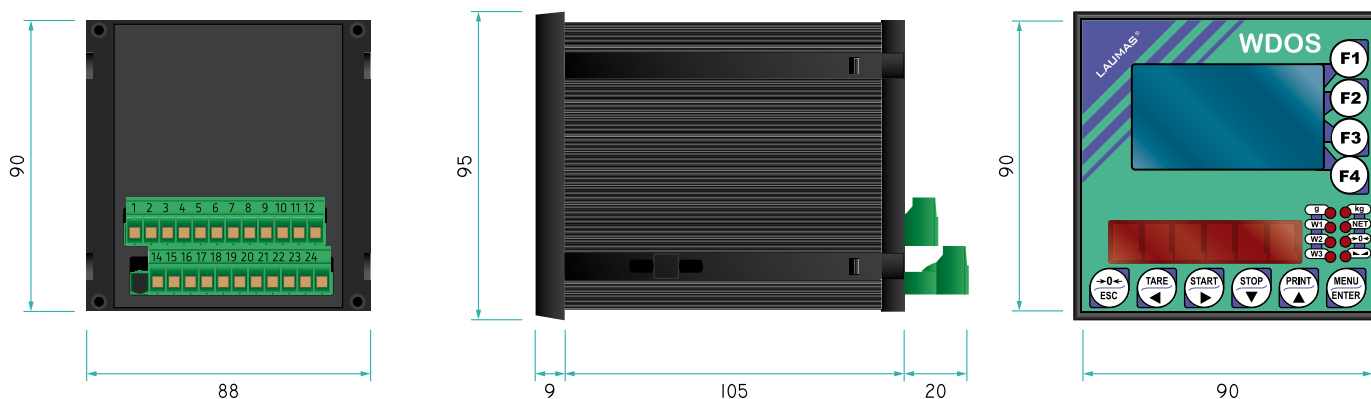
Example screens for BASE program

Net weight, gross weight and inputs/outputs status displaying

1. Gross weight symbol.
2. Inputs and outputs status.
3. Gross weight value.
4. Net weight value.

Gross weight and setpoint displaying

1. Gross weight symbol.
2. Setpoint status and value.
3. Gross weight 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.

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.
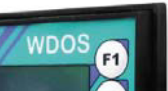4. Preset value.
5. Set value.
6. Fall value.
7. Tolerance value.

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.

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.
6. Gross weight value.
7. Batching product weight.

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.

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

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

OPTIONS ON REQUEST AND COMPATIBILITY WITH BATCHING PROGRAMS

POWER SUPPLY

	CODE					
Power supply 115/230 VAC; 50/60 Hz; 6 VA. ➡ Not compatible with fieldbuses and USB port.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

ACCESSORIES

OPZW96X96IP65

IP65 panel sealing gasket.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

INTERFACES AND FIELD BUSES

✶ OPZW1ANALOGICA

Optoisolated 16 bit analog output . ➡ One input and one output not available.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ OPZW1RS485

Additional RS485 port. ➡ One input and one output not available. ➡ Not compatible with E/EC option.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ OPZW1CAWDOS

CANopen protocol. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	–	–	–	–	–

✶ OPZW1DEWDOS

DeviceNet protocol. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	–	–	–	–	–

✶ OPZW1PRWDOS

Profibus DP protocol. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ OPZW1ETIPWDOS

Ethernet/IP protocol - Ethernet port. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	–	–	–	–	–

✶ OPZW1ETTCPWDOS

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.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ OPZW1MBTCPWDOS

Modbus/TCP protocol - Ethernet port. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ OPZW1PNETIOWDOS

Profinet IO protocol - Ethernet port. ➡ Not compatible with 115 VAC and 230 VAC.	B	C	S	3P	6P	14P
	•	–	–	–	–	–

OPZWUSBWDOS

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.	B	C	S	3P	6P	14P
	•	•	•	•	•	•

✶ Select one option among those marked with an asterisk.

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OPTIONS ON REQUEST AND COMPATIBILITY WITH BATCHING PROGRAMS

	Description	CODE						
	USB male/female extension cable with IP68 sealed panel connector; lenght: 50 cm, sealing cap and cover included.	OPZWCONUSBIP68						
		B •	C •	S •	3P •	6P •	14P •
	Ethernet male/female extension cable with IP68 sealed panel connector; lenght: 50 cm, sealing cap included.	OPZWCONETHEIP68						
		B •	C •	S •	3P •	6P •	14P •
	Ethernet male/male extension cable with IP68 sealed connector; lenght: 5 m, to be used in combination with the OPZWCONETHEIP68 option.	OPZWCONETHE5MT						
		B •	C •	S •	3P •	6P •	14P •
	Weight reading from 0-10 VDC input (15 kΩ).	OPZWING010						
		B •	C •	S •	3P •	6P •	14P •
	Weight reading from 4-20 mA input (120 Ω).	OPZWING420						
		B •	C •	S •	3P •	6P •	14P •

EXPANSIONS

	Description	CODE						
	Base: 12 groups selection by 5 setpoint via external selector switch. Load, Unload, 3/6/14 Products: selection of the first 12 formulas via external selector switch.	★ EC						
		B •	C •	S •	3P •	6P •	14P •
	Base: 12 groups selection by 5 setpoint via external contact. Load, Unload, 3/6/14 Products: selection of the first 12 formulas via external contact.	★ E						
		B •	C •	S •	3P •	6P •	14P •
	Simultaneous use of E/EC option with the analog output.	OPZWAEC						
		B •	C •	S •	3P •	6P •	14P •
	External 5-relay module to increase the capacity of SPDT contacts to 115 VAC/2 A.	RELE5M						
		B •	C •	S •	3P •	6P –	14P –
	External 8-relay module to manage from 1 to 6 products; 8 relays up to max 115 VAC/2 A. Module included with models 6/14 PRODUCTS. 12÷24 VDC — RELE6PROD24V 115 VAC — RELE6PROD115V 230 VAC — RELE6PROD230V							
		B –	C –	S –	3P –	6P inc.	14P inc.

★ Select one option among those marked with an asterisk.

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OPTIONS ON REQUEST AND COMPATIBILITY WITH BATCHING PROGRAMS

CODE

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.

RELE14PROD

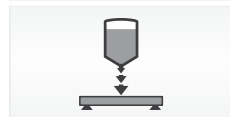| B	C	S	3P	6P	14P
–	–	–	–	–	inc.

APPLICATIONS - SOFTWARE

FORM
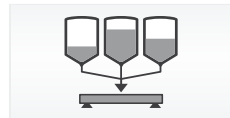⬇
%

Formulas setting in percentage.

OPZWFORPERC

B	C	S	3P	6P	14P
–	–	–	●	●	●

Setting a quantity to be batched greater than the scale capacity with automatic calculation of cycles.
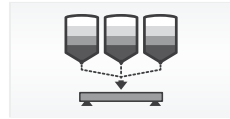➡ Not available for CE-M approved version.

OPZWQMC

B	C	S	3P	6P	14P
–	●	–	●	●	●

Intermediate unloadings during the batching.
➡ Not available for CE-M approved version.

OPZWSCARI

B	C	S	3P	6P	14P
–	–	–	●	●	●

Partial unloadings at cycle end.
➡ Not available for CE-M approved version.

OPZWSCARP

B	C	S	3P	6P	14P
–	–	–	●	●	●

Alibi memory.

OPZWALIBI

B	C	S	3P	6P	14P
●	●	●	●	●	●

Data transfer from the instrument to the PC, via RS232 (directly) or RS485 (by converter) serial port. These data (weighed values, batchings, alarms) can be imported and processed on the PC using the PROG-DB software included. We suggest to use this option when the indicator is always connected to the PC.
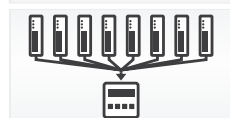
OPZWDATIPC

B	C	S	3P	6P	14P
●	●	●	●	●	●

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.

OPZWLAUMAN

B	C	S	3P	6P	14P
–	●	●	●	●	●

Single gross weight values reading by others transmitting instruments (up to 8) via RS485 serial port.

OPZWINGSER8

B	C	S	3P	6P	14P
●	–	–	–	–	–

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Althen stands for pioneering measurement and custom sensor solutions. In addition we offer services such as calibration, design & engineering, training and renting of measurement equipment.

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