# User Manual
**version 1.06**

# OPTIONS
## for W SERIES weight indicators

## KEY TO SYMBOLS

Below are the symbols used in the manual to draw the reader's attention:

Caution! High Voltage.

Caution! This operation must be performed by skilled workers.

Read the following indications carefully.

Further information.

## GUARANTEE

24 months from the delivery document date. The guarantee covers only defected parts and includes the replacement parts and labour. All shipping and packing costs are paid by the customer. It is possible to have the repair in guarantee on condition that the returned product has not been transformed, damaged or repaired without authorization. No guarantee is applicable on returned products without the original label and/or serial number. No guarantee against misuse.
Batteries: Laumas provides 1 year guarantee from the date of delivery note, against material defects or battery manufacturing faults.

## Disposal of Waste Equipment by Users in Private Households in the European Union

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. It is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help preserve natural resources and protect human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local waste disposal Authority or the equipment retailer.

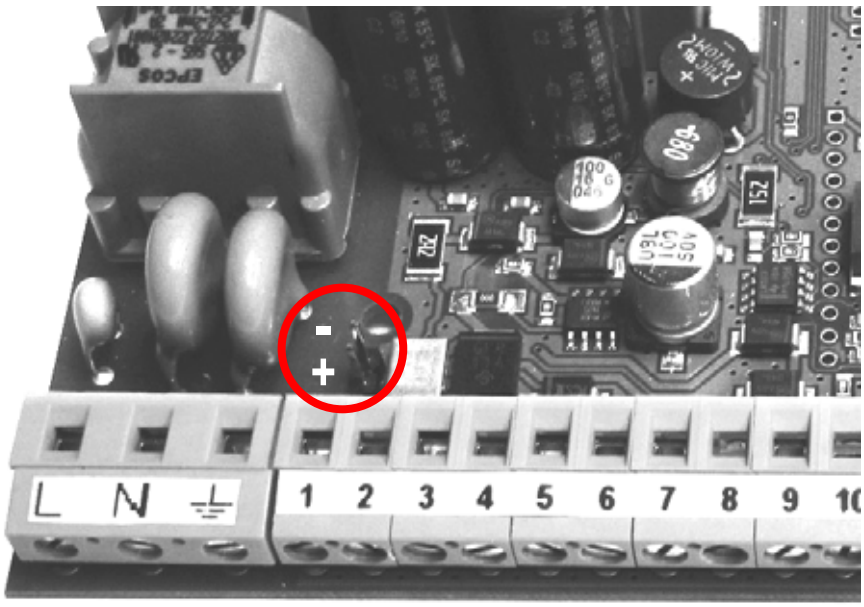
## TABLE OF CONTENTS

# OPZWBATTWDESK

| Instrument |
|---|
| WDESK |

- Battery pack made up of 8 1.2 V NiMh rechargeable elements, type AA, 2,500 mAh capacity, which is supplied already installed in the instrument.
- Use the functions of the EnErGY menu to optimize battery lifetime (see section **ENERGY SAVING** in the instrument's manual).
- The battery is recharged automatically every time the instrument is powered from an external power source (Power LED is on). A full charge takes about 20 hours.
- The instrument may be left connected to the external power source and this will not damage the battery.

## CONNECTING THE BATTERY TO THE INSTRUMENT




**-** : black cable
**+**: red cable

## WDESK-R

- The instrument indicates that the battery is low by displaying the LOUbAt message alternated with the weight display.
- When the battery is too low, the instrument displays LOUbAt for 2 seconds and then turns off automatically.

| Instrument | Maximum operating time (hours) |
|---|---|
| no. 1 load cell (350 ohm), energy saving disabled | 14 |
| no. 1 load cell (350 ohm), energy saving enabled | 16 |
| no. 4 load cell (350 ohm), energy saving disabled | 13 |
| no. 4 load cell (350 ohm), energy saving enabled | 15 |

## WDESK-L

The battery charge level is displayed by means of the following icon:

- 3 marks: battery charge level between 70% and 100%.
- 2 marks: battery charge level between 30% and 70%.
- 1 mark: battery charge level between 20% and 30%.
- 1 blinking mark: battery charge level below 20%.
- The instrument indicates that the battery is low by displaying the LOUBAt message alternated with the weight display.
- When the battery is too low, the instrument displays LOUBAt for 2 seconds and then turns off automatically.

| Mode | Maximum operating time (hours) |
|---|---|
| no. 1 load cell (350 ohm), energy saving disabled | 14 |
| no. 1 load cell (350 ohm), energy saving enabled | 16 |
| no. 4 load cell (350 ohm), energy saving disabled | 13 |
| no. 4 load cell (350 ohm), energy saving enabled | 15 |

## OPZWBATTWKLIGHT

| Instrument |
|---|
| WDESKLIGHT |

- 12.2 V rechargeable lead battery with 2.2 mAh capacity, which is supplied already installed in the instrument.
- Use the functions of the EnErGY menu to optimize battery lifetime (see section **ENERGY SAVING** in the instrument's manual).
- The battery is recharged automatically every time the instrument is powered from an external power source (Power LED is on). A full charge takes about 20 hours.
- The instrument may be left connected to the external power source and this will not damage the battery.

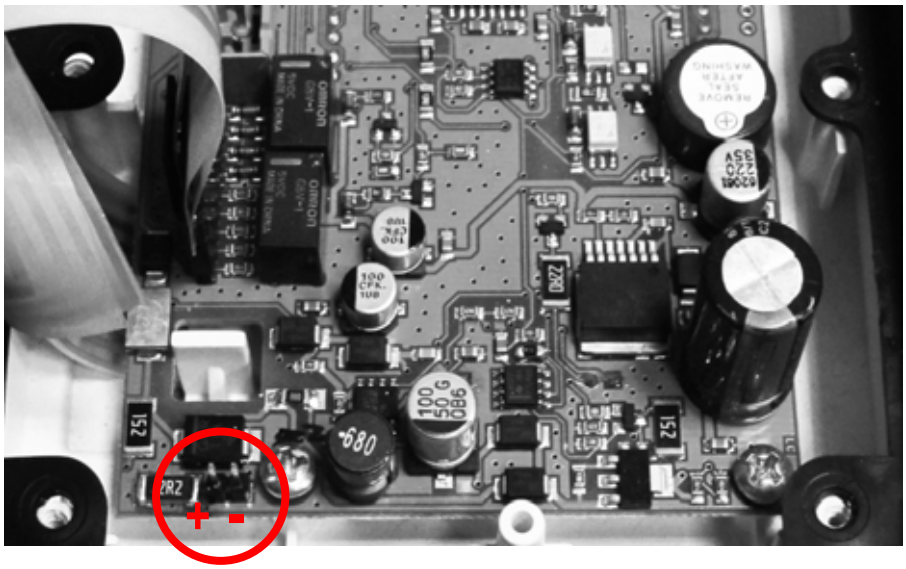
The battery charge level is displayed by means of the following icon:

- 3 marks: battery charge level between 70% and 100%.
- 2 marks: battery charge level between 30% and 70%.
- 1 mark: battery charge level between 20% and 30%.
- 1 blinking mark: battery charge level below 20%.
- The instrument indicates that the battery is low by displaying the LOUBAt message alternated with the weight display.

- When the battery is too low, the instrument displays LOUBAT for 2 seconds and then turns off automatically.

| Mode | Maximum operating time (hours) |
|---|---|
| no. 1 load cell (350 ohm), energy saving disabled | 18 |
| no. 1 load cell (350 ohm), energy saving enabled | 20 |
| no. 4 load cell (350 ohm), energy saving disabled | 14 |
| no. 4 load cell (350 ohm), energy saving enabled | 16 |

## CONNECTING THE BATTERY TO THE INSTRUMENT



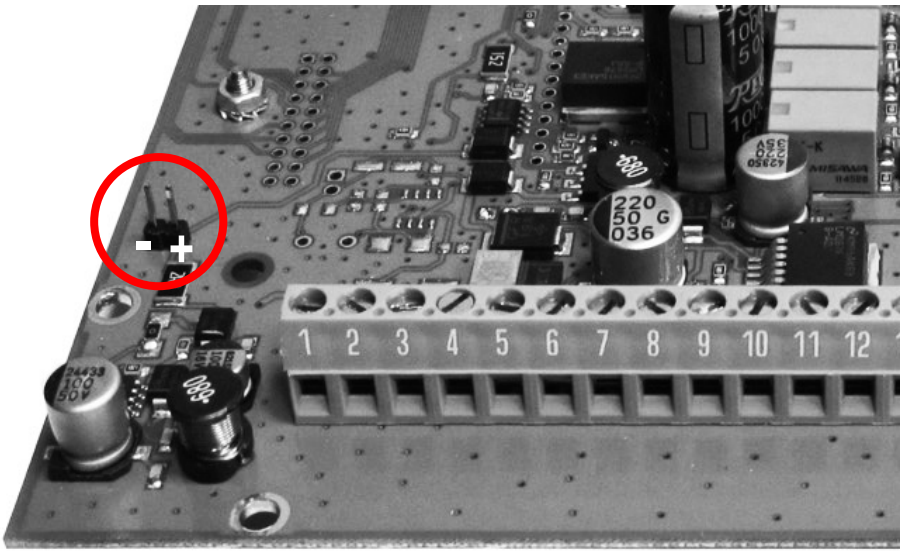

**-** : black cable
**+**: red cable

## OPZWBATTWINOX / OPZWBATTWTAB

| Instrument |
|---|
| WINOX / WTAB |

- 12.2 V rechargeable lead battery with 2.2 mAh capacity, which is supplied already installed in the instrument.
- Use the functions of the EnErGY menu to optimize battery lifetime (see section **ENERGY SAVING** in the instrument's manual).
- The battery is recharged automatically every time the instrument is powered from an external power source (Power LED is on). A full charge takes about 20 hours.
- The instrument may be left connected to the external power source and this will not damage the battery.

## CONNECTING THE BATTERY TO THE INSTRUMENT




**-** : black cable
**+**: red cable

## WINOX-R / WTAB-R

- The instrument indicates that the battery is low by displaying the LOUBAt message alternated with the weight display.
- When the battery is too low, the instrument displays LOUBAt for 2 seconds and then turns off automatically.

| Mode | Maximum operating time (hours) |
|---|---|
| no. 1 load cell (350 ohm), energy saving disabled | 18 |
| no. 1 load cell (350 ohm), energy saving enabled | 20 |
| no. 4 load cell (350 ohm), energy saving disabled | 14 |
| no. 4 load cell (350 ohm), energy saving enabled | 16 |

## WINOX-L / WTAB-L

The battery charge level is displayed by means of the following icon:

- 3 marks: battery charge level between 70% and 100%.
- 2 marks: battery charge level between 30% and 70%.
- 1 mark: battery charge level between 20% and 30%.
- 1 blinking mark: battery charge level below 20%.
- The instrument indicates that the battery is low by displaying the LOUBAt message alternated with the weight display.
- When the battery is too low, the instrument displays LOUBAt for 2 seconds and then turns off automatically.

| Mode | Maximum operating time (hours) |
|---|---|
| no. 1 load cell (350 ohm), energy saving disabled | 18 |
| no. 1 load cell (350 ohm), energy saving enabled | 20 |
| no. 4 load cell (350 ohm), energy saving disabled | 14 |
| no. 4 load cell (350 ohm), energy saving enabled | 16 |

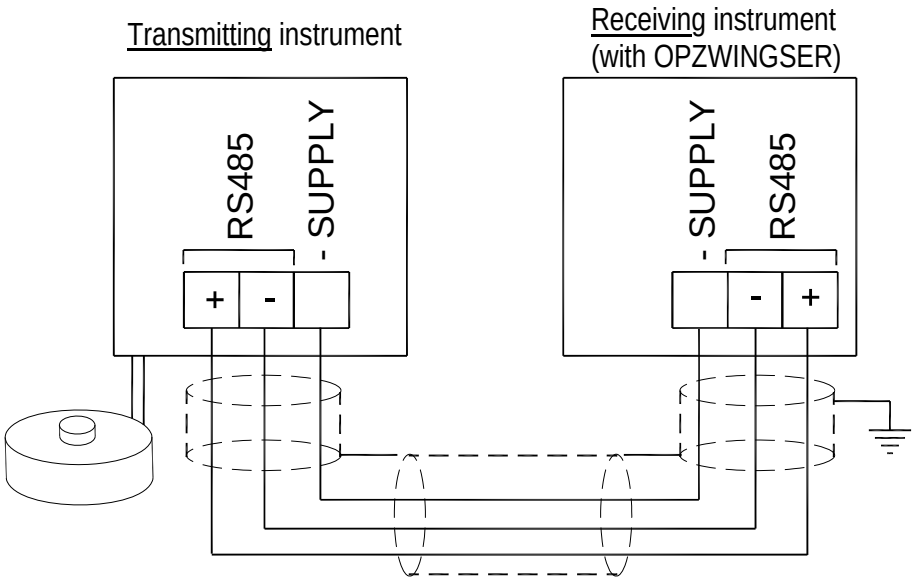
## OPZWINGSER: WEIGHT READING VIA SERIAL PORT

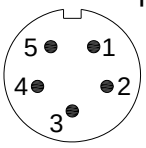
| Instrument | Version |
|---|---|
| W100 | BASE |
| W200/W200BOX | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDOS | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDESK | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WINOX | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WTAB | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |

Overview:
By transmitting instrument, it means the one connected to the load cell.
By receiving instrument, it means the one which receives the weight via serial port.

The option allows the instrument to read the weight by another instrument (transmitting instrument) rather than by a load cell, via the RS485 or RS232 serial port. Outputs, serial ports and analog output (if present) continue to work as described in the receiving instrument manual, using as weight value the one received via serial port.
The instrument supports two different modes of weight reading via serial port:
- WEIMOD (see section **WEIMOD MODE**)
- WEI RIP (see section **WEIRIP MODE**)

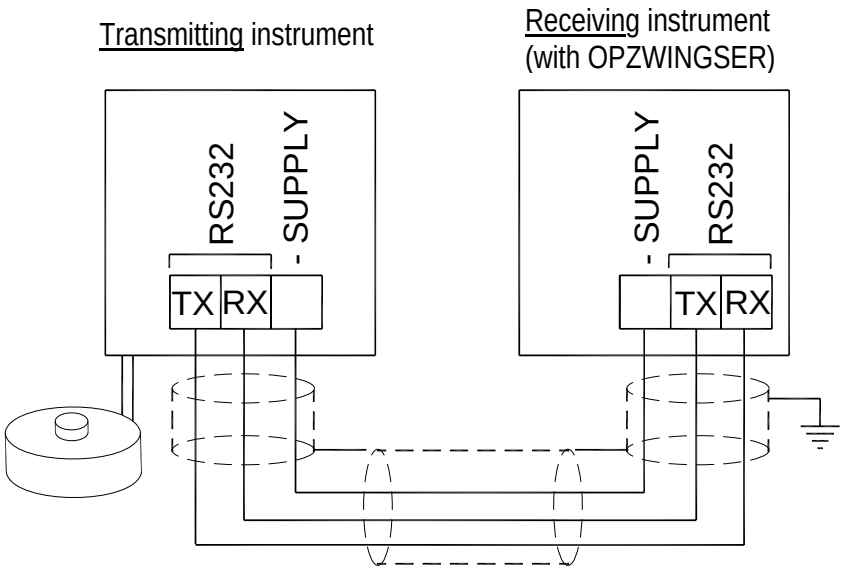
## RS485 CONNECTION

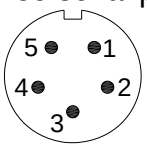


| INSTRUMENT | Connector | Pin | Signal | Internal terminal | Internal colour |
|---|---|---|---|---|---|
| W100<br>W200/W200BOX<br>WDOS | TERMINAL | 17 | RS485: - | --- | --- |
| | | 18 | RS485: + | --- | --- |
| | | 2 | RS485: SHIELD, GND | --- | --- |
| WDESK-P<br>WDESK-Q<br>WDESK-X<br>WINOX-P<br>WINOX-Q<br>WINOX-X | TERMINAL | 5 | RS485: - | --- | --- |
| | | 6 | RS485: + | --- | --- |
| | | 8 | RS485: SHIELD, GND | --- | --- |
| WDESK-N<br>WINOX-N | C5<br><br>RS485 serial port<br>  <br> | 1 | RS485: SHIELD, GND | 8 | black |
| | | 2 | RS485: - | 5 | yellow |
| | | 3 | RS485: + | 6 | blue |
| | | 4 | | | |
| | | 5 | | | |
| WDESK-D<br>WINOX-D<br>WTAB | D5<br>Male<br><br>RS485 serial port | 1 | | | |
| | | 2 | | | |
| | | 3 | | | |
| | | 4 | RS485: + | 6 | yellow |
| | | 5 | RS485: SHIELD, GND | 8 | black |
| | | 6 | RS485: - | 5 | blue |
| | | 7 | RS485: - | 5 | blue |
| | | 8 | | | |
| | | 9 | RS485: + | 6 | yellow |

If the RS485 network exceeds 100 metres in length or baud-rate is higher than 9600, two terminating resistors are needed at the ends of the network. Two 120 ohm resistors are to be connected, between the '+' and '–' terminals of the line on terminal strip of the instrument furthest away in the network. If should be there different instruments or converters, refer to the specific manuals to determine whether it is necessary to connect the above-mentioned resistors.

# RS232 CONNECTION




| INSTRUMENT | Connector | Pin | Signal | Internal terminal | Internal colour |
|---|---|---|---|---|---|
| W100<br>W200/W200BOX<br>WDOS | TERMINAL | 3 | RS232: TXD | --- | --- |
| | | 4 | RS232: RXD | --- | --- |
| | | 2 | RS232: SHIELD, GND | --- | --- |
| WDESK-P<br>WDESK-Q<br>WDESK-X<br>WINOX-P<br>WINOX-Q<br>WINOX-X | TERMINAL | 9 | RS232: TXD | --- | --- |
| | | 10 | RS232: RXD | --- | --- |
| | | 8 | RS232: SHIELD, GND | --- | --- |
| WDESK-N<br>WINOX-N | C5<br><br>RS485 serial port<br>  | 1 | RS232: SHIELD, GND | 8 | black |
| | | 2 | | | |
| | | 3 | | | |
| | | 4 | RS232: RXD | 10 | white |
| | | 5 | RS232: TXD | 9 | green |
| WDESK-D<br>WINOX-D<br>WTAB | D4<br>Male<br><br>RS232 serial port | 1 | | | |
| | | 2 | RS232: RXD | 10 | yellow |
| | | 3 | RS232: TXD | 9 | blue |
| | | 4 | | | |
| | | 5 | RS232: SHIELD, GND | 8 | black |
| | | 6 | | | |
| | | 7 | | | |
| | | 8 | | | |
| | | 9 | | | |

## OPTION CONFIGURATION

Into the **SERIAL COMMUNICATION SETTING** section (see receiving instrument manual), select the desired serial port and operation mode: WEIRIP (*UEI rIP*) or WEIMOD (*UEI MOd*).

It's not possible to enable the option on both serial ports; in case of conflict, the last serial set, remains active.

Settable parameters:

- *bAUd* (2400, 4800, 9600, 19200, 38400, 115200; default: 9600): transmission speed;
- *SLAUE* (from 1 to 99; default: 1): transmitting instrument address (only for *UEI MOd*);
- *dELAY* (from 0 to 200 msec; default: 0): delay in milliseconds which elapses before the instrument replies;
- *PArI tY*:
  - *nOnE* (default): no parity;
  - *EUEn*: even parity;
  - *Odd*: odd parity;
- *StOP* (1 – 2; default: 1): stop bit.

Receiving instrument parameters must be set with the same value of transmitting instrument parameters.

## WEIMOD MODE

Receiving instrument works as if the load cell is directly connected to the instrument. It's therefore possible to perform calibrations and zero-settings on the receiving instrument.

The used protocol is Modbus (the transmitting instrument works as "slave" and the receiving as "master").

Prior to set the *UEI MOd* mode on receiving instrument must be set the filter value to be used on transmitting instrument.

Set *ModbUS* protocol on transmitting instrument (see section **SERIAL COMMUNICATION SETTING** in instrument manual); the instrument display is automatically locked at power on and shows the instrument model. To unlock it, if necessary, cut off the connection to the receiving instrument and follow the procedure in **KEYPAD OR DISPLAY LOCKING** section (see transmitting instrument manual).

## WEIRIP MODE

The instrument receives via serial port the gross weight on the scale and works as if the load cell is directly connected to the instrument.
However it's not possible to perform calibrations and zero-settings on the receiving instrument. These operations must be done on the instrument connected to the load cell.

Set rIP protocol on transmitting instrument and set UEIrIP protocol on receiving instrument (see section **SERIAL COMMUNICATION SETTING** in instrument manual).
On receiving instrument it's possible to set Unit and dECIM parameters.

## ALARMS

- noCOM: communication problems between transmitter and receiver; check electrical connections and instruments configuration.
- ErOF: maximum displayable value exceeded on transmitting instrument (value higher than 999999 or lower than -999999).
- ErOL: weight display on transmitting instrument exceeds 110% of full scale.

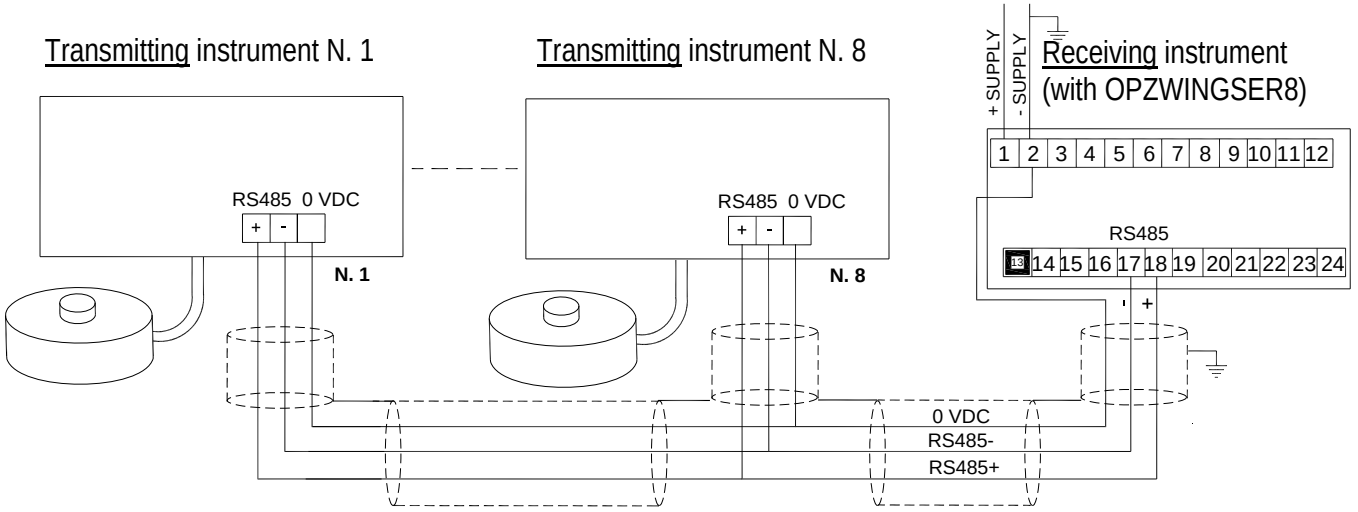
## OPZWINGSER8: WEIGHT READING OF MAX 8 INSTRUMENTS VIA SERIAL PORT

| Instrument | Version |
|---|---|
| WDOS | BASE |

Overview:
The transmitting instrument is the one connected to the load cell.
The receiving instrument is the one that receives the weight via serial.

The option allows the instrument to read the single gross weight values by others transmitting instruments (up to 8 instruments), rather than by load cells, via RS485 serial port. Outputs, serial port and analog output (if present) continue to work as described in the receiving instrument manual, using the gross weight value received from one of the transmitting instruments (defined as 'principal') or by using the sum of the gross weights of all the transmitting instruments.

## RS485 CONNECTION




If the RS485 network exceeds 100 metres in length or baud-rate is higher than 9600, two terminating resistors are needed at the ends of the network. Two 120 ohm resistors are to be connected, between the '+' and '–' terminals of the line on terminal strip of the instrument furthest away in the network. If should be there different instruments or converters, refer to the specific manuals to determine whether it is necessary to connect the above-mentioned resistors.

## OPTION CONFIGURATION

Before configuring the option into the receiving instrument, you must set the *dIUIS* and *FS-tEO* parameters (see section **THEORETICAL CALIBRATION** in instrument manual) as follows:

- *dIUIS*: enter the same value set in transmitting instruments.
- *FS-tEO*: enter the system total full scale (for example: if you have 8 transmitting instruments, load of 1000 kg each, the total full scale is given by 8 x 1000, that is 8000 kg) or enter the full scale set into the transmitting instrument considered as 'principal'.

Into the **SERIAL COMMUNICATION SETTING** section (see receiving instrument manual), select the desired serial port and the WEMOD8 (*UEMOd8*) protocol.

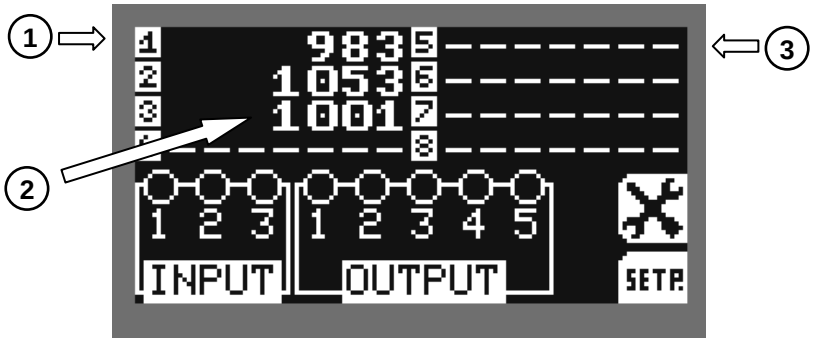
Settable parameters:

- *bAUd* (2400, 4800, 9600, 19200, 38400, 115200; default: 9600): transmission speed;
- *nSLAUE* (max 8; default: 8): number of transmitting instrument connected.
- *MAInSL* (from 0 to 8, default: 0): If 0 is set, the sum of the weights of all the transmitting instruments is considered as weight value; otherwise set the "principal" transmitting instrument address.
- *dELAY* (from 0 to 200 ms; default: 0): delay in milliseconds which elapses before the instrument replies;
- *PArItY*:
  - *nOnE* (default): no parity.
  - *EUEn*: even parity.
  - *Odd*: odd parity.

- StOP (1 - 2; default: 1): stop bit.

Set ModbUS protocol and instruments addresses Addr (from 1 to 8) on transmitting instruments; see section **SERIAL COMMUNICATION SETTING** in instrument manual.

## WEIGHTS DISPLAYING VIA SERIAL PORT




**1)** Modbus address of transmitting instrument
**2)** Weight value
**3)** Not active instrument

## ALARM MESSAGES DISPLAYING ON LCD DISPLAY

On LCD display, beside Modbus address of transmitting instrument, the following alarms can be shown:

- **ER OL**: weight display exceeds 110% of full scale.
- **ER OF**: maximum displayable value exceeded (value higher than 999999 or lower than -999999).
- **NO COM**: the instrument does not respond or detects a load cell failure.

## ALARM MESSAGES DISPLAYING ON 7 SEGMENT DISPLAY

If one of these errors occurs on the 'principal' transmitting instrument or if MAI nSL = 0, receiving instrument is stopped.

- no CON: communication problems between transmitting and receiving instruments; check the electrical connections and instruments settings.
- EErOF: maximum displayable value exceeded (weight greater than 999999 or lower than -999999) on any transmitting instrument (if MAI nSL = 0 is set) or on the 'principal' transmitting instrument (if MAI nSL is different from 0).
- EErOL: weight display on any transmitting instrument (if MAI nSL = 0) or on the 'principal' transmitting instrument (if MAI nSL is different from 0) exceeds 110% of full scale.

## PRINTING EXAMPLES

If the printer has been set (see section **SERIAL COMMUNICATION SETTING** in receiving instrument manual), when **PRINT** key is pressed weights are sent for printing.

```
-----------------------
WDOS    BASE      Addr:01
Date: 12/09/11 15:07:41

GROSS            3036  kg
NET              3036  kg
TARE                0  kg

-----------------------
External Cells
1       982 |5    ------
2      1053 |6    ------
3      1001 |7    ------
4    ------ |8    ------
```

*WEIGHTS PRINTING:*

*Single instruments weights are listed on the top.*

*NET and GROSS weight of* 'principal' *instrument are listed on the bottom.*

*In this example, weight is the sum of single instruments weights (nAI nSL = 0).*

## OPZWUSB_: DATA TRANSFER TO THE USB PEN DRIVE

| Instrument | Version |
|---|---|
| W200/W200BOX | BASE – REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDOS | BASE – REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDESK | BASE – REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WINOX | BASE – REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WTAB | BASE – REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |

The option allows the instrument to store the data (weighed values, batchings, alarms) on the USB pen drive. These data can then be imported and processed on PC using the PROG_DB software included in the supply (for more information, refer to the PROG_DB software manual).

**The USB pen drive pen drive can only be inserted in "USB 2" port.**

The instrument automatically detects USB device. In case of successfully recognition the USb OH message appears after about 20 seconds; otherwise the USb Er error message appears.

## DATA TRANSFER MODE CONFIGURATION

The instrument can operate in two different modes:

- Connected: the USB key should always be kept inserted in the instrument, so as to ensure that the data will be automatically saved to it;
- Disconnected: the data will be saved by the instrument to the internal memory and can be moved to the USB key only manually.

To select the data transfer mode, select the following options from the weight display:
**MENU** + **ESC** → USb → CONtI n

- nO: disconnected mode;
- YES: connected mode;

To manually move the data from the internal memory to the USB key, use the following procedure:

1. Insert the USB key in the instrument's "USB 2" port;
2. Wait for the display to show the message USb OH (for about 20 seconds);
3. Access the following menu: **MENU** + **ESC** → USb → dUdAtA then press **ENTER**
4. Wait for the data transfer to be complete (the display will show the transfer progress as a percentage value);
5. Remove the USB key;

## FOR "LOAD", "UNLOAD" AND "PRODUCTS" PROGRAMS

The instrument will save the data at every batching cycle. The data can be saved either directly to the USB key (if in connected mode) or to the internal memory (if in disconnected mode).
If you choose the first option, insert the USB key, then wait for the message USb OH to be displayed before you start a batching cycle. Otherwise, the instrument will display a USb Er alarm.
If you choose the second option, use the procedure described in the previous section to move your data from the memory to the USB key.
If a USb Er alarm is displayed during batching, this means that the instrument can't save your data to the USB key. Press **ENTER** to acknowledge the alarm and continue batching without saving the data to the USB key, or press **STOP** to stop batching.

However, manual data transfer can be used to recover any batching data that were not saved directly to the USB key.

## ONLY FOR "BASE" AND "REVER" PROGRAM

The instrument allows you to customize the methods and conditions used to store weight data. This way you can adapt the instrument's operation to your desired application.
When each storage procedure takes place the letter 'S' appears on the left of the display for 1 second.

## STORED DATA

- Gross Weight;
- Net Weight;
- Tare;
- Unit of measurement;
- Number of decimals set;
- Alibi Identification (only if alibi memory present);
- Coefficient or Peak Value (only if present);
- Coefficient unit of measure (only if present);
- Date and time of recording;

## DATA STORAGE CRITERIA

Storage criteria are subdivided into:

- Events: operations that can trigger storage;
- Conditions: requirements to be met in order to enable storage;

The events capable of triggering storage are:

- Press the **PRINT** button;
- Close an input (set as *Pr1 ntr*);
- Automatically, through the built-in timer;

**Note:** If you have chosen to use both the timer and the input, the latter acts as a START/STOP for the timer. When the input is closed the timer starts and the memorisation of the current weight continues until the input is opened. If only the timer is set, then the instrument will store data indefinitely.

**MENU** + **ESC** → *MEMdAt* → *EUEnt*:

- *dEFAUL*:: Restoring factory settings;
- *HEY*: (default: *YES*) Storage via the **PRINT** key;
- *I nPUt*: (default: *YES*) Storage on closing the input set as *"Pr1 ntr"*;
- *tMrUnt*: Set the timer unit of measurement:
  - *SEC*: (default) from 1 to 999,999 seconds
  - *MSEC*: from 3 to 999 milliseconds
- *t1 MEr*: (default: 0) Storage range setting;

**tMrUnt = MSEC:** This setting allows weight samples to be recorded at the maximum speed supported by the instrument (300Hz) (see section **DATA RECORDING FOR STRESS TESTS)**

**Note:** If the instrument is approved (M) and an alibi memory is present, the timer recording cannot be enabled.

- Moreover, the unit of measurement MSEC can only be selected if the event InPUt is active. Otherwise, the unit of measurement will be fixed on SEC.

Settings for the conditions that can enable storage:

You can select one or more conditions. These conditions will have to be checked before you can store any data.

**MENU** + **ESC** → MEMdAt → CondI t:

- dEFAUL: Restoring factory settings;
- CHAnGE: the weight must vary in accordance with the last stored weight;
- t0 MIn: the weight must fall below the minimum weight (20e) for a new storage to be able to be carried out;
- StAbLE: You can only store a weight if it is stable.

If the instrument is printing, you may not store a new weight until the printer has finished the current printing job.

## APPLICATION: RECORDING THE WEIGHT BEYOND THE THRESHOLD

The instrument's setpoint can be used to create a system that stores the moment when the weight exceeds a certain threshold (setpoint).
For example, connect output 01 to input 01 electrically so that the setpoint of output 01 activates the data storage via the input.
Access the main menu ( **MENU** + **ESC** ) and proceed as follows:

1. Select the input to be used to start the data storage: OUt-In → In 1 → PrIntr;
2. Activate the data storage via the external input: MEMdAt → EUEnt → InPUt;
3. Select any necessary conditions for storing the data: MEMdAt → CondI t (see section **DATA STORAGE CRITERIA**);
4. Also set a timer if necessary: MEMdAt → tIMEr → 0000 10 (if a Timer from 1 to 999,999 seconds is set, until the weight value on the scale remains beyond the threshold, the instrument stores a weight sample every so many seconds).

# APPLICATION: DATA RECORDING FOR STRESS TESTS

This application cannot be used with any approved instruments.

This mode enables the recording of weight values at the instrument's maximum sampling speed (300 Hz). This frequency applies only to the instrument. The frequency of the load cells is very much related to their mechanism and the application; therefore, to determine the maximum working frequency, practical tests must be carried out on the complete system.
During the test, the instrument saves the weight values temporarily in the RAM memory; at the end of the test, the values are transferred to the USB key.

For each test, the instrument can record a maximum of 5000 weight samples.
The USB key must be inserted at all times.

Access the main menu ( **MENU** + **ESC** ) and proceed as follows:

1. Set the filter to zero: FILTER → 0;
2. Set the USB to continuous mode: USb → CONTIn → YES;
3. Set the necessary conditions for storing the data to default: MEMORY → CONDIt → dEFAUL;
4. Activate the data storage via the external input: MEMORY → EVEnt → InPUt;
5. Set the timer unit of measurement: MEMORY → tMrUnt → MSEC;
6. Set the desired timer value (for example 3 ms): MEMORY → tIMEr → 003;
7. Select the input to be used to start the storage procedure: OUt-In → In 1 → PrInter;

Select a suitable timer value for the duration of the test.
For example: If 3 milliseconds are set, the maximum duration of the test will be 3 x 5000 = 15000 milliseconds = 15 seconds.

Before starting a test, you can activate the preset tare, the peak or the coefficient (by closing the relevant input). Do not edit any conditions while the test is running.

Close the IN1 input and keep it closed throughout the test. When the input is opened the instrument transfers the data of the test just completed to the USB key. At this point a new test can be carried out or the data can be imported to the PROG_DB program.

**For example:** To perform a breakage test on an object, connect input IN1 to output OUT1. Set a value of SETPOINT1 so that the storage begins when the weight exceeds this threshold. The test is automatically interrupted when the weight returns below the set value, as normally happens after the object breaks.

## ALARMS

- ErrOr:
  - USB pen drive has not been inserted in the “USB 2” port;
  - pen drive has not been formatted;
  - At least 10 Mbytes of free space are not available on the pen drive;
- USb Er:
  - an error occurred in data writing; the batching is temporarily interrupted until the operator intervention. By pressing **ENTER** key the batching resumes, but no current cycle data is saved on the USB pen drive.
  - the pen drive has been inserted in “USB 1” port; remove it and insert it in “USB 2”;
  - the pen drive has not been formatted; insert it into a PC and format it;
  - the pen drive does not have at least 10 Mbytes of free space, insert it into a PC and remove unnecessary files;
  - the pen drive has been removed during the batching; before the following batching cycle, insert a new pen drive.
- MEMFUL:
  - The batching data memory is 90% full, you must perform the data transfer on the USB pen drive;
  - The batching data memory is 95% full, you must perform the data transfer on the USB pen drive;
- MEMOUr:
  - The batching data memory is 99% full, you must perform the data transfer IMMEDIATELY or older data will be overwritten.
- EndtSt:
  - reached 5000 samples by STRESS TEST mode. Terminate the test to allow data transfer to the USB pen drive.

## OPZWDATIPC: DATA TRANSFER VIA SERIAL PORT TO PC

| Instrument | Version |
|---|---|
| W200/W200BOX | BASE - REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDOS | BASE - REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDESK | BASE - REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WINOX | BASE - REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WTAB | BASE - REVER - LOAD - UNLOAD - 3/6/14 PRODUCTS |

This option allows the instrument to transfer the data (weighed values, batchings, alarms) to your PC via RS232 serial port (or RS485 with a suitable converter).
These data can then be imported and processed on PC using the PROG_DB software included in the supply (for more information, refer to the PROG_DB software manual).

For more information about RS232/485 connection, refer to the instrument manual.

We recommend using Baud rates above19200bps, in order to reduce the time needed to complete the data transfer.

## FOR “LOAD”, “UNLOAD” AND “PRODUCTS” PROGRAMS

The instrument will save the data to a built-in memory at every batching cycle. Perform any batching data transfer when the instrument is in standby mode.
When the internal memory usage reaches 90%, the instrument goes into alarm and the operator must press **ENTER** to continue batching (see ALARMS section). Transfer the batching data as soon as possible. Otherwise, there is the risk that the older data will be overwritten.

## ONLY FOR "BASE" AND "REVER" PROGRAM

The instrument allows you to customize the methods and conditions used to store weight data. This way you can adapt the instrument's operation to your desired application.

### STORED DATA

- Gross Weight;
- Net Weight;
- Tare;
- Unit of measurement;
- Number of decimals set;
- Alibi Identification (only if alibi memory present);
- Coefficient or Peak Value (only if present);
- Coefficient unit of measure (only if present);
- Date and time of recording;

### DATA STORAGE CRITERIA

Storage criteria are subdivided into:

- Events: operations that can trigger storage;
- Conditions: requirements to be met in order to enable storage;

The events capable of triggering storage are:

- Press the **PRINT** button;
- Close an input (set as *Pr1 ntr*);
- Automatically, through the built-in timer;

**Note:** If you have chosen to use both the timer and the input, the latter acts as a START/STOP for the timer. When the input is closed the timer starts and the memorization of the current weight continues until the input is opened. If only the timer is set, then the instrument will store data indefinitely.

**Note:** If the instrument is approved (**M**) and an alibi memory is present, the timer recording cannot be enabled.

MEMORY → EVENT:

- DEFAULT: Restoring factory settings;
- KEY: Press the **PRINT** button;
- INPUT: Close the input set as "PRINTER";
- TIMER: Set a time value from 1 to 999,999 seconds;

Settings for the conditions that can enable storage:
You can select one or more conditions. These conditions will have to be checked before you can store any data.

MEMORY → CONDIT:

- DEFAULT: Restoring factory settings
- CHANGE: the weight must vary in accordance with the last stored weight;
- TO MIN: the weight must fall below the minimum weight (20e) for a new storage to be able to be carried out.
- STABLE: You can only store a weight if it is stable.

When each storage procedure takes place the letter 'S' appears on the left of the display for 1 second.

If the instrument is printing, you may not store a new weight until the printer has finished the current printing job.

**Note:** If the instrument is approved (**M**), the stability condition is activated as a mandatory setting.

## APPLICATION: RECORDING THE WEIGHT BEYOND THE THRESHOLD

The instrument's setpoint can be used to create a system that stores the moment when the weight exceeds a certain threshold (setpoint).
For example, connect output 01 to input 01 electrically so that the setpoint of output 01 activates the data storage via the input.
Access the main menu ( **MENU** + **ESC** ) and proceed as follows:

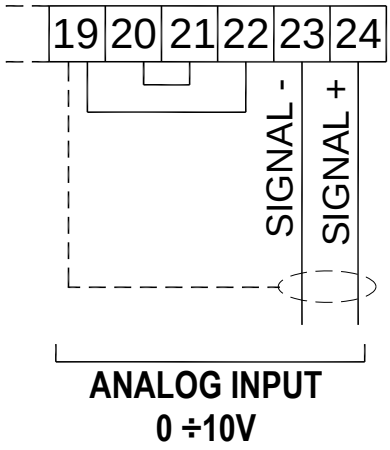
1. Select the input to be used to start the data storage: OUT-IN → IN 1 → PRINTER;
2. Activate the data storage via the external input: MEMORY → EVENT → INPUT;
3. Select any necessary conditions for storing the data: MEMORY → CONDIT → (see section **DATA STORAGE CRITERIA**);
4. Also set a timer if necessary: MEMORY → TIMER → 0000 10 (if a Timer from 1 to 999,999 seconds is set, until the weight value on the scale remains beyond the threshold, the instrument stores a weight sample every so many seconds).

- MEMFUL:
  - The batching data memory is 90% full, you must perform the data transfer;
  - The batching data memory is 95% full, you must perform the data transfer;
- MEMOUr:
  - The batching data memory is 99% full, you must perform the data transfer IMMEDIATELY or older data will be overwritten;

## OPZWING010: ANALOG INPUT VOLTAGE 0÷10V

This option allows to connect load cells to the instrument or, more generally, transducers with analog output voltage 0÷10 V.
The instrument input impedance is equal to 15 KΩ.

- In the theoretical calibration procedure (see section **THEORETICAL CALIBRATION** in instrument manual) the load cell sensitivity data (SEnS ib) is not required and the instrument considers 0V input as a weight value equal to 0, while 10V input corresponds to a weight value equal to the system full scale(FS-tEO).
- The input Volt (U-CELL parameter) are read instead of input mV by the load cell or transducer (see parameter MU-CELL in **LOAD CELL INPUT TEST** section in instrument manual).

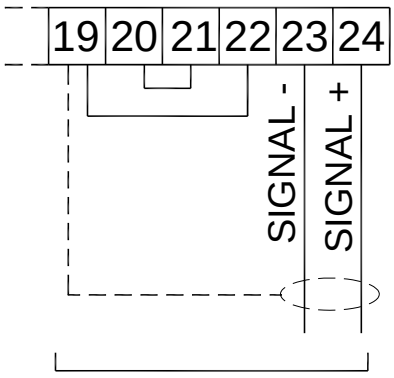



The other instrument functions remain unchanged (see instrument manual).

# OPZWING420: ANALOG INPUT CURRENT 0÷20 mA AND 4÷20 mA

This option allows to connect load cells to the instrument or, more generally, transducers with analog output current 0÷20 mA or 4÷20 mA.
The instrument input impedance is equal to 120 KΩ.

- In the theoretical calibration procedure (see section **THEORETICAL CALIBRATION** in instrument manual) the load cell sensitivity data (SEnS ib) is not required, but the new C-tYPE parameter is present, in which the type of input current is requested (0-20nA o 4-20nA).
  - If C-tYPE = 0-20nA (0÷20 mA input) the instrument considers 0 mA input as a weight value equal to 0, while 20 mA input corresponds to a weight value equal to the system full scale (FS-tEO).
  - If C-tYPE = 4-20nA (4÷20 mA input) the instrument considers 4 mA input as a weight value equal to 0, while 20 mA input corresponds to a weight value equal to the system full scale (FS-tEO).
- The input mA (nA-CELL parameter) are read instead of input mV by the load cell or transducer (see parameter nU-CELL in **LOAD CELL INPUT TEST** section in instrument manual).




**ANALOG INPUT**
**0÷20mA**
**4÷20mA**

The other instrument functions remain unchanged (see instrument manual).

# OPZFORPERC: SETTING FORMULAS IN PERCENTAGES

| Instrument | Version |
|---|---|
| W200/W200BOX | 3/6/14 PRODUCTS |
| WDOS | 3/6/14 PRODUCTS |
| WDESK | 3/6/14 PRODUCTS |
| WINOX | 3/6/14 PRODUCTS |
| WTAB | 3/6/14 PRODUCTS |

This option allows to set the product percentage to batch in the formula and the total amount on which calculate the percentages.

## FORMULAS PROGRAMMING

### FIXED STEPS (FSTEP = nO)

If FSTEP = nO (see section **OPERATION SETTING** in instrument manual) it's only possible to set the percentage of product to be batched, products batching sequence is not adjustable.

From weight displaying press **MENU** key and select FOrP; select the formula you want to program (eg FOrPO 1) and proceed as follow:

- Set the total quantity to be batched (tOt Pr);
- Select the product number to be batched (eg PrOdO 1);
- Set the percentage of product (with 1 decimal) to be batched (eg. 15.0 = 15,0%);

### VARIABLE STEPS (FSTEP = YES)

If FSTEP = YES (see section **OPERATION SETTING** in instrument manual) it's possible to set the step number, the product number and the percentage of product to be batched.

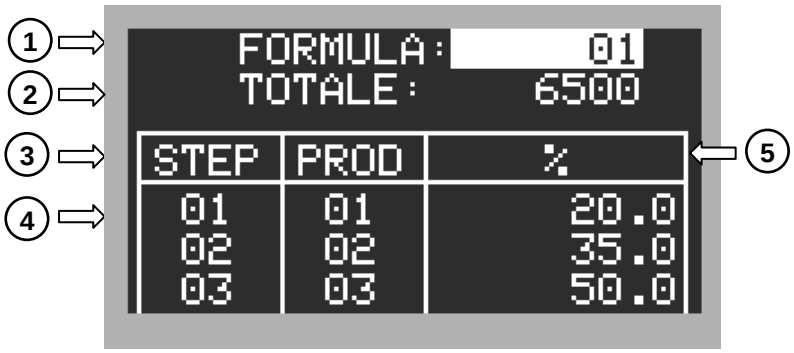
Example: 0 1P03 ( 0 1**: step number;** P03**: product number**)

From weight displaying press **MENU** key and select FOrP; select the formula you want to program (eg FOrPO 1) and proceed as follow:

- Set the total quantity to be batched (tOt Pr);
- Select the step number you want to modify (eg 0 1P0 1);
- Select the product number to be batched at the selected step (eg 0 1P0 1);
- Set the percentage of product (with 1 decimal) to be batched (eg. 15.0 = 15,0%);

## WDOS INSTRUMENTS DISPLAYING ON LCD DISPLAY

During formulas programming the following table is shown on LCD display:




**1)** Selected formula
**2)** Total quantity to be batched
**3)** Columns heading
**4)** Selected step and/or product
**5)** Percentage of product to be batched

## BATCHING

Before starting the batching (see section **BATCHING** in instrument manual), it is possible to program a total amount to be batched different from that set in formula, in addition to the formula setting and the cycles number to execute; the value set in formula is repeated, by default, in the following batching.

If the batching is started from external contact, the used total amount is always the one set in the formula.

## OPZWQMC: SETTING OF A QUANTITY TO BE BATCHED GREATER THAN THE SCALE CAPACITY

| NOT CE-M approved instruments | Version |
|---|---|
| W200/W200BOX | LOAD - 3/6/14 PRODUCTS |
| WDOS | LOAD - 3/6/14 PRODUCTS |
| WDESK | LOAD - 3/6/14 PRODUCTS |
| WINOX | LOAD - 3/6/14 PRODUCTS |
| WTAB | LOAD - 3/6/14 PRODUCTS |

This option allows to execute a batching sequence where the total quantity to be batched is greater than the scale capacity.
The instrument automatically calculates the number of cycles needed to batch the desired quantity.

The instrument redistributes in the last two cycles, in equal shares, the remaining quantity to be batched.

## SCALE CAPACITY SETTING

MASS (from 0 to max full scale; default: 0): maximum weight that the scale can load (see section **PROGRAMMING OF BATCHING CONSTANTS** in instrument manual). By setting 0, the function is disabled.

## OUTPUTS AND INPUTS CONFIGURATION

In outputs and inputs configuration (see section **OUTPUTS AND INPUTS CONFIGURATION** in instrument manual) you can select the new function End tH (END OF PRODUCT TRANSFER: the relay is closed at the end of the last batching cycle).

**"LOAD" PROGRAM:**

OUTPUT 5 (Default = TOLERANCE): it's possible to select one of the following functions:

- End tH (END OF PRODUCT TRANSFER)
- tOL ( TOLERANCE)

**"3 / 14 PRODUCT" PROGRAM:**

OUTPUT 5 (Default = SLOW): it's possible to select one of the following functions:

- End tH (END OF PRODUCT TRANSFER)
- ALArM (ALARM)
- SLOU (SLOW)

**"6 PRODUCT" PROGRAM:**

OUTPUT 5 (Default = ALARM): it's possible to select one of the following functions:

- End tH (END OF PRODUCT TRANSFER)
- ALArM (ALARM)

## FORMULAS PROGRAMMING

### "3 / 6 / 14 PRODUCTS" PROGRAM - FIXED STEPS (FStEP = nO)

If FStEP = nO (see section **OPERATION SETTING** in instrument manual) it's only possible to set the quantity of product to be batched, products batching sequence is not adjustable.

From weight displaying press **MENU** key and select FOrP; select the formula you want to program (eg FOrP0 1) and proceed as follow:

- Set the total quantity to be batched (tOt Pr);
- Select the product number to be batched (eg Pr0d0 1);
- Set the quantity of product to be batched (eg 150);

## "3 / 6 / 14 PRODUCTS" PROGRAM - VARIABLE STEPS (FSTEP = YES)

If FSTEP = YES (see section **OPERATION SETTING** in instrument manual) it's possible to set the step number, the product number and the quantity of product to be batched.

Example: 01 P03 ( 01**: step number;** P03**: product number**)

From weight displaying press **MENU** key and select FOrP; select the formula you want to program (eg FOrP01) and proceed as follow:

- Set the total quantity to be batched (tOt Pr);
- Select the step number you want to modify (eg 01 P01);
- Select the product number to be batched at the selected step (eg 01 P01);
- Set the quantity of product to be batched (eg 150);

## "LOAD" PROGRAM

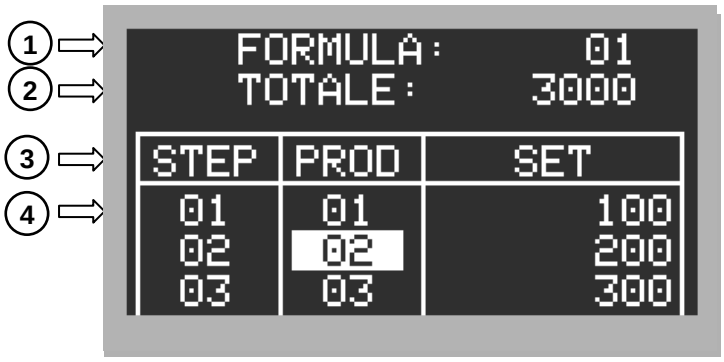
From weight displaying press **MENU** key and select FOrP; select the formula you want to program (eg FOrP01) and proceed as follow:

- Set the total quantity to be batched (tOt Pr);
- Set the Preset value (PrESEt);
- Set the Set value (SEt);

## WDOS INSTRUMENTS DISPLAYING ON LCD DISPLAY

During formulas programming the following table is shown on LCD display:

**"3-6-14 PRODOTTI" PROGRAM:**




**1)** Selected formula
**2)** Total quantity to be batched
**3)** Columns heading
**4)** Selected step and/or product

**"LOAD" PROGRAM:**


**1)** Selected formula
**2)** Total quantity to be batched

## BATCHING

Before starting the batching (see section **BATCHING** in instrument manual), it is possible to program a total amount to be batched different from that set in formula, in addition to the formula setting and the cycles number to execute; the value set in formula is repeated, by default, in the following batching.

If the batching is started from external contact, the used total amount is always the one set in the formula.

## ALARMS

*Er tOt*: it means that you are setting a total quantity to be batched lower than the one set in formula.

## OPZW1RS485: ADDITIONAL RS485 PORT

| Instrument | Version |
|---|---|
| W100 | BASE |
| W200/W200BOX | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDOS | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDESK | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WINOX | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WTAB | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |

Additional communication port, which supports all protocols of the instrument.

**WARNING**: This option is not compatible with the ANALOG OUTPUT.

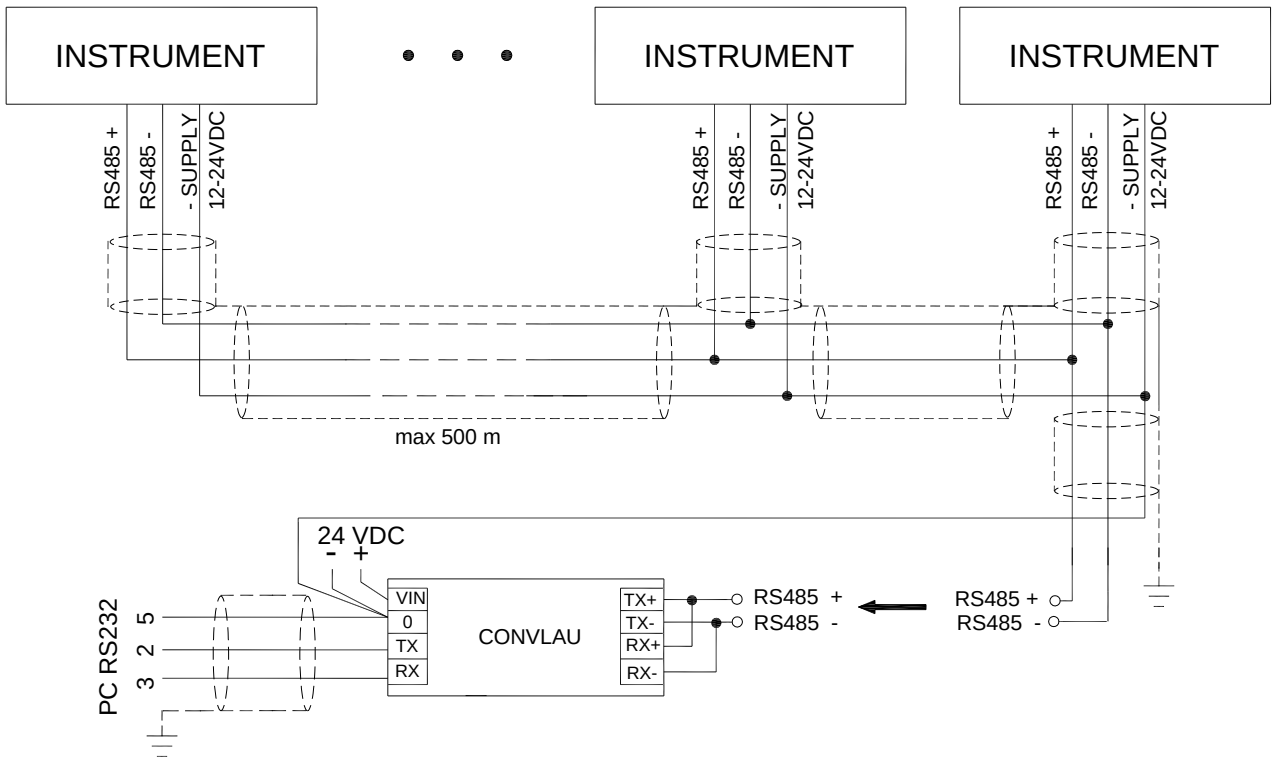
From the weight display, press simultaneously **MENU** and **ESC** keys and proceed in the following way:

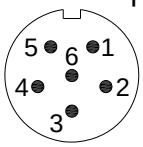
CALIb → SEriAL → rS485
rS232
rS485b

Select the parameter rS485b, confirm with **ENTER** to access the port setting (see section **SERIAL COMMUNICATION SETTING** in instrument manual).

## RS485 SERIAL COMMUNICATION

If the RS485 network exceeds 100 metres in length or baud-rate over 9600 are used, two terminating resistors are needed at the ends of the network. Two 120 ohm resistors must be connected between the '+' and '–' terminals of the line, on the terminal strip of the furthest instruments. Should there be different instruments or converters, refer to the specific manuals to determine whether it is necessary to connect the above-mentioned resistors.




| INSTRUMENT | Connector | Pin | Signal | Internal terminal | Internal colour |
|---|---|---|---|---|---|
| W100<br>W200/W200BOX<br>WDOS | TERMINAL | 15 | RS485: - | --- | --- |
| | | 16 | RS485: + | --- | --- |
| | | 2 | RS485: SHIELD, GND | --- | --- |
| WDESK-P<br>WDESK-Q<br>WDESK-X<br>WINOX-P<br>WINOX-Q<br>WINOX-X | TERMINAL | 3 | RS485: - | --- | --- |
| | | 4 | RS485: + | --- | --- |
| | | 8 | RS485: SHIELD, GND | --- | --- |
| WDESK-N<br>WINOX-N | C6<br><br>RS485 serial port<br>24 VDC output<br>  | 1 | RS485: SHIELD, GND | 8 | black |
| | | 2 | RS485: - | 3 | white |
| | | 3 | RS485: + | 4 | green |
| | | 4 | | | |
| | | 5 | | | |
| | | 6 | +(24 VDC) OUTPUT<br>**(115/230 VAC optional version)** | 7 | red |
| WDESK-D<br>WINOX-D<br>WTAB | D6<br>Male<br><br>RS485 serial port | 1 | | | |
| | | 2 | | | |
| | | 3 | | | |
| | | 4 | RS485: + | 4 | yellow |
| | | 5 | RS485: SHIELD, GND | 8 | black |
| | | 6 | RS485: - | 3 | blue |
| | | 7 | RS485: - | 3 | blue |
| | | 8 | | | |
| | | 9 | RS485: + | 4 | yellow |

# OPZWSCARI: INTERMEDIATE UNLOADINGS

| NOT CE-M approved instruments | Version |
|---|---|
| W200/W200BOX | 3/6/14 PRODUCTS |
| WDOS | 3/6/14 PRODUCTS |
| WINOX | 3/6/14 PRODUCTS |
| WDESK | 3/6/14 PRODUCTS |
| WTAB | 3/6/14 PRODUCTS |

This option allows intermediate unloadings to be carried out during the batching.
All or part of the product loaded until that moment can be unloaded.

## PROGRAMMING OF FORMULAS

From the weight display access the formula programming: **MENU** → FOrP.
Set the quantities of product to be batched, by pressing **ENTER** UnL 0F is displayed, press ▲ to pass to the following product programming or press **ENTER** to set an intermediate unloading: 0F starts to flash, press ▲ to set On and press **ENTER** to set the quantity to be unloaded; by setting the quantity to 0 the scale is fully unloaded. Press the **ENTER** button to confirm.
An intermediate unloading can be programmed at the end of each product batched.

## PROGRAMMING OF UNLOADING SET SLOW VALUE

From the weight display: **MENU** → COnSt → S EndC.

S EndC (default: 0): this allows the SLOW contact (if present) to be closed during the partial unloading of the product when the value already unloaded is equal to SEtUnL - S EndC.

## OPERATION

If, during dosing, an intermediate unloading is programmed. the display shows "u 0" ; the instrument closes the CYCLE END contact and product unloading proceed. The weight increases on the display (while on the scale the product decreases).

If an unloading set slow value has been programmed (S EndC), once the value SEtUnL - S EndC is reached the SLOW contact is closed.
Once the programmed set value has been reached, the CYCLE END and SLOW contacts are opened (if set) and the unloading is interrupted. The instrument waits for the waiting time to elapse before starting to batch the next product in the formula.

# OPZWSCARP: CYCLE END PARTIAL UNLOADINGS

| NOT CE-M approved instruments | Version |
|---|---|
| W200/W200BOX | 3/6/14 PRODUCTS |
| WDOS | 3/6/14 PRODUCTS |
| WDESK | 3/6/14 PRODUCTS |
| WINOX | 3/6/14 PRODUCTS |
| WTAB | 3/6/14 PRODUCTS |

This option allows partial unloadings to be carried out at the end of the cycle, activated by the keypad or an external output.
The product quantity to be unloaded can be set for each formula.

## PROGRAMMING OF FORMULAS

From the weight display access the formula programming: **MENU** → ForP.
Set the quantities of product to be batched, by pressing **ESC** SEtUnL is displayed, press **ENTER** to set the product quantity to be unloaded for each partial unloading.
By setting the quantity to 0 the product is unloaded all at once.

## PROGRAMMING OF UNLOADING SET SLOW VALUE

From the weight display: **MENU** → COnSt → S EndC.

S EndC (default: 0): this allows the SLOW contact (if present) to be closed during the partial unloading of the product when the value already unloaded is equal to SEtUnL - S EndC.

## OPERATION

Once all products in the formula have been batched and the waiting time has elapsed, the display shows P followed by the gross weight.
If the unloading set value is equal to 0 the batched product is unloaded all at once and the display shows the letter E followed by the weight. If on the other hand a set value has been programmed, press **ENTER** (or close the START input) to unload a quantity of product equal to the programmed set. In this phase the letter u is displayed, the weight increases (while the product decreases) and the CYCLE END contact is closed.
If an unloading set slow value has been programmed (S EndC), once the value SEtUnL - S EndC is reached the SLOW contact is closed.
Once the programmed set value is reached the CYCLE END and SLOW contacts (if set) are opened and the unloading is interrupted.
The partial unloading can be repeated until the weight is greater than the programmed set value.

When the weight is lower than the programmed set *ProdPP* is displayed. To unload the quantity remaining on the scale press **ENTER**, the CYCLE END contact is closed until the minimum weight is reached and after the safe emptying time has elapsed. To finish the batching without unloading the remaining product press **ESC**.

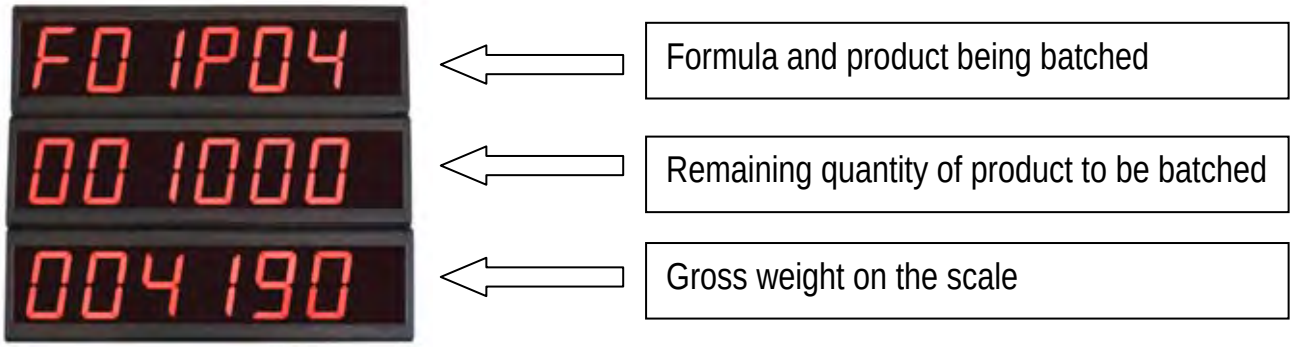
To interrupt the partial unloadings at any time press **STOP**.

## OPZWLAUMAN: DISPLAYING OF BATCHING DATA ON REMOTE DISPLAYS

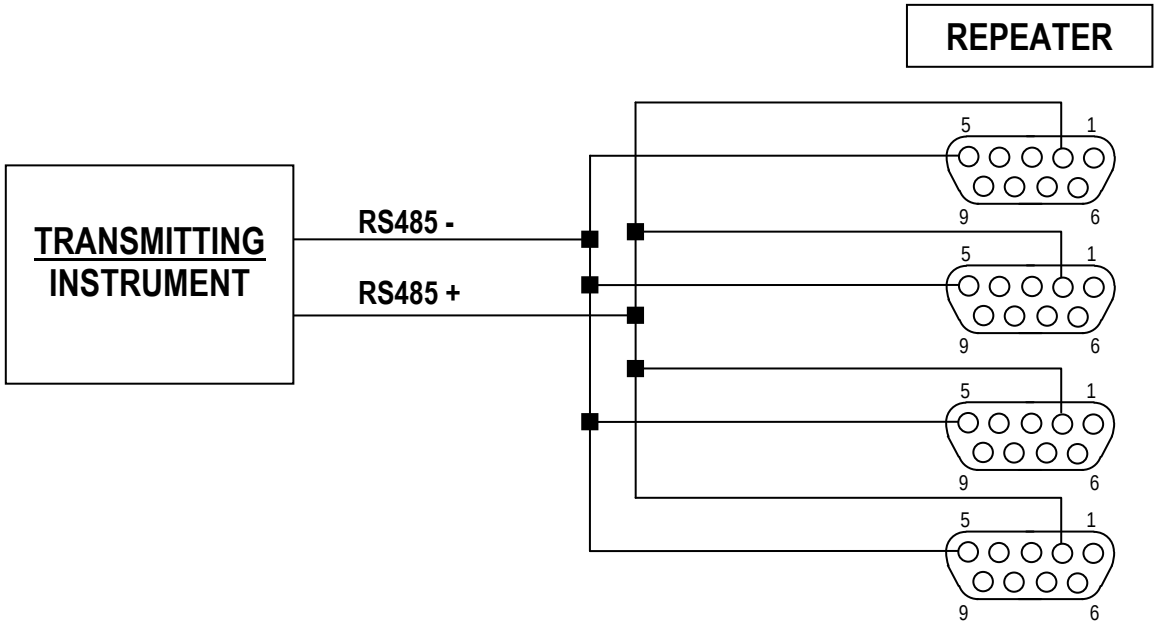
| Instrument | Version |
|---|---|
| W200/W200BOX | LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDOS | LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WDESK | LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WINOX | LOAD - UNLOAD - 3/6/14 PRODUCTS |
| WTAB | LOAD - UNLOAD - 3/6/14 PRODUCTS |

Overview:
Transmitting instrument means the one connected to the load cell.
This option allows the following batching information to be shown on different remote displays, connected in parallel to the instrument via serial port RS485: the remaining quantity to be batched, the gross weight, the net weight, the state of the instrument or, alternatively, the formula and product number.

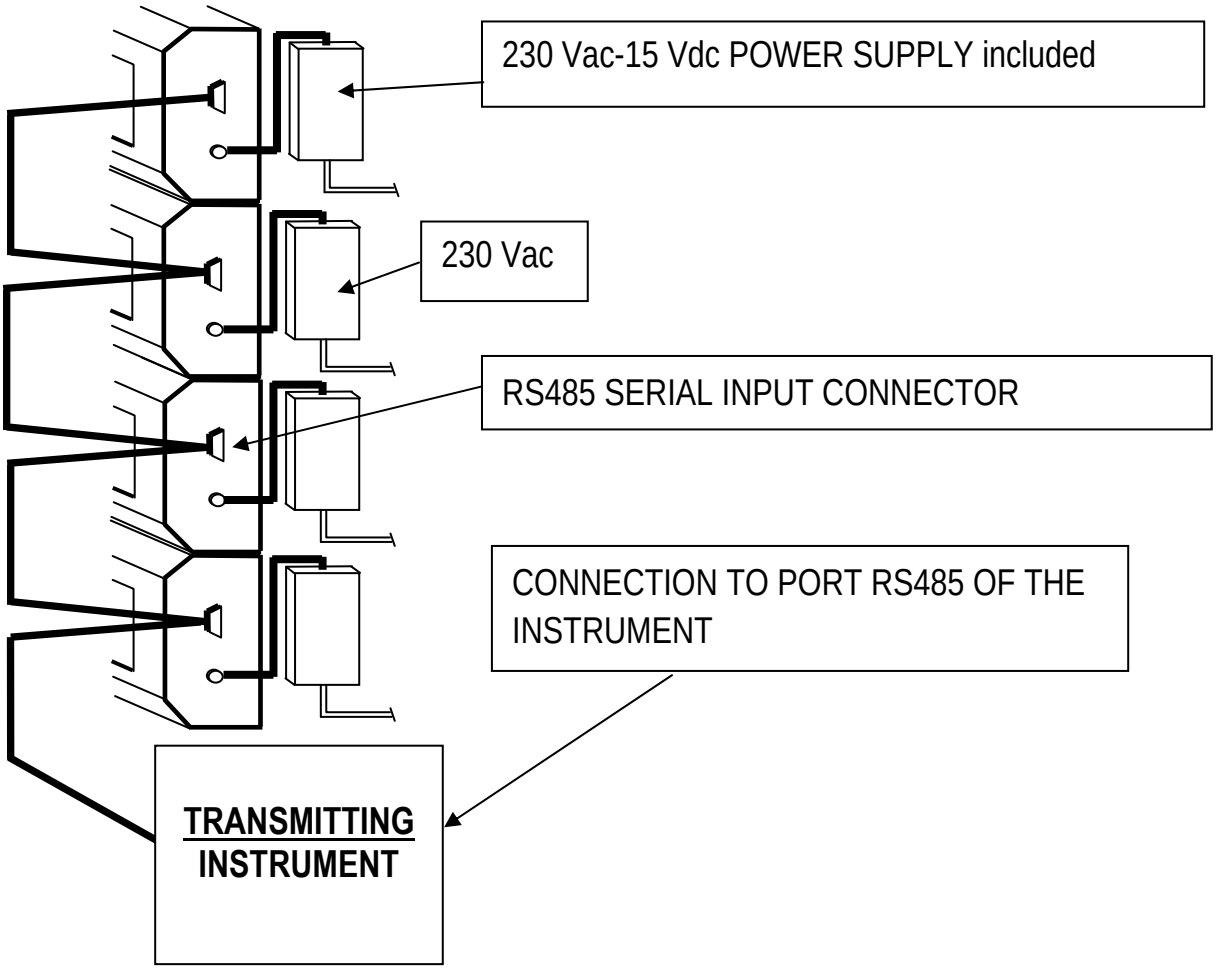
Example of application:



# RS485 SERIAL CONNECTION




If the RS485 network is longer than 100 metres or if baud rates higher than 9600 are used, two terminal resistors are required at the ends of the network. Connect two 120 ohm resistors between the + and – terminals of the line on the terminal strip of the instruments furthest away. Should there be different instruments or converters, refer to the specific manuals to determine whether it is necessary to connect the above-mentioned resistors.



## SETTING OF DATA TO BE SHOWN ON THE REMOTE DISPLAYS

A maximum of 4 pieces of information can be shown on the remote displays:

- **L**: gross weight on the scale;
- **N**: net weight on the scale;
- **A**: state of instrument / formula and product being batched / batching error code
- **B**: quantity still to be batched

By default the remote display shows the gross weight (L).
To change the type of information to be displayed the jumpers placed inside the remote display must be modified.

For more information on how to access the jumpers please refer to the remote display manual.

| K1 | K2 | K3 | K4 | Index (address) | Description |
|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | A | State of instrument / Formula and product being batched / Error code |
| 0 | 1 | 0 | 0 | B | Remaining quantity of product to be batched |
| 0 | 1 | 0 | 1 | L | Gross weight on the scale |
| 0 | 0 | 1 | 1 | N | Net weight on the scale |
| **0 = JUMPER OPEN** | | | | | **1 = JUMPER CLOSED** |

## SERIAL COMMUNICATION PROTOCOL

### VIA LAUMAS INSTRUMENTS

From the weight display press the **MENU** and **ESC** buttons at the same time; select the communication protocol from the system parameters menu:
CALIb → SEriAL → rS485 → riPLAU

Set the communication parameters:

- bAUd: 9600;
- StOP: 1;
- PAriEY: nOnE;

The string to be sent must be formatted as follows:

&AsxxxxxBsyyyyy\ckckCR

where:

| | |
|---|---|
| & | string start character (ASCII code 38) |
| A | identification character (index) of the remote display, it may be: A, B, L, N |
| S | '-' sign character or other characters with a decimal point ('.') |
| xxxxx | 5 alphanumeric characters, it may include '.' as a decimal point of the displayed value |
| B | identification character (index) of the remote display, it may be: A, B, L, N |
| yyyyy | 5 alphanumeric characters, it may include '.' as a decimal point of the displayed value |
| \ | separator character (ASCII code 92) |
| ckck | check-sum |
| CR | end of the string (ASCII code 13) |

Calculating the two check sum characters is not necessary as they are only present for reasons of compatibility with other instruments; however, they must be sent so that the string is always of the indicated length.

## OPZWTABSTA: INTEGRATED PRINTER

| Instrument | Version |
|---|---|
| WTAB | BASE - LOAD - UNLOAD - 3/6/14 PRODUCTS |

From the weight display press the **MENU** and **ESC** buttons at the same time and select the printer on RS485 port:

CALIb → SErIAL → rS485 → PrInt → PrtMod: select PLuSII ;

**ENERGY SAVING (BASE program only)**

CALIb → EnErGY →PrIntr

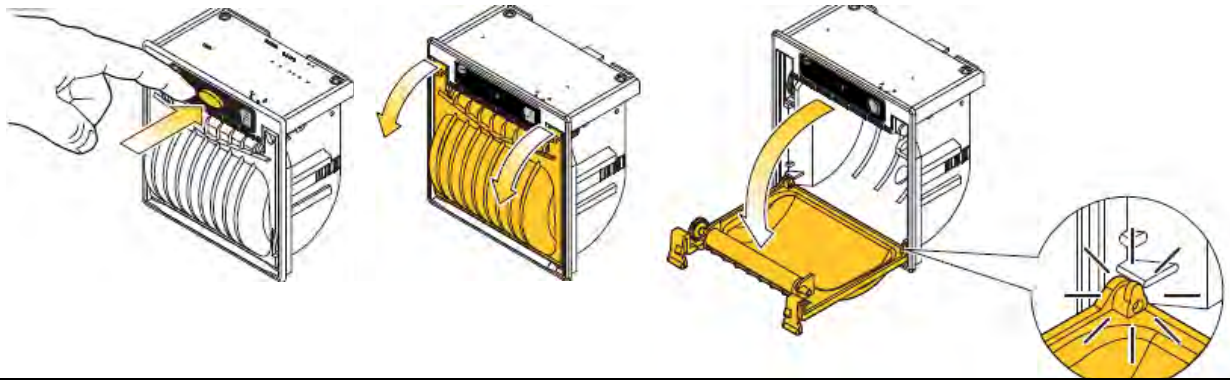
- On: the printer is always on;
- OnPrt: the printer automatically turns on when printing (recommended on battery-powered instruments).

## LED/KEY FUNCTION

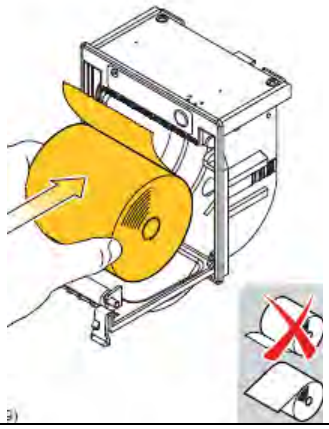
1. OPEN key: if lit indicates that the printer is on; press to open the paper roll compartment.
2. FEED key: press to advance the paper.


## PAPER ROLL REPLACEMENT

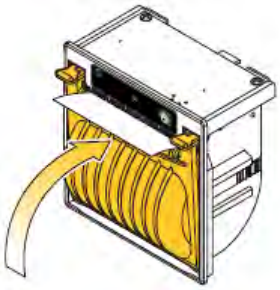
1. Open the paper roll compartment by keeping pressed the OPEN key and using the two opening notches.



2. Place the paper roll making sure that it unrolls in the proper direction as shown.



3. Take out the paper and close the cover.



4. Push on the plastic cover to lock it and tear off the exceeding paper using the jagged edge.