# *Installation user's manual*

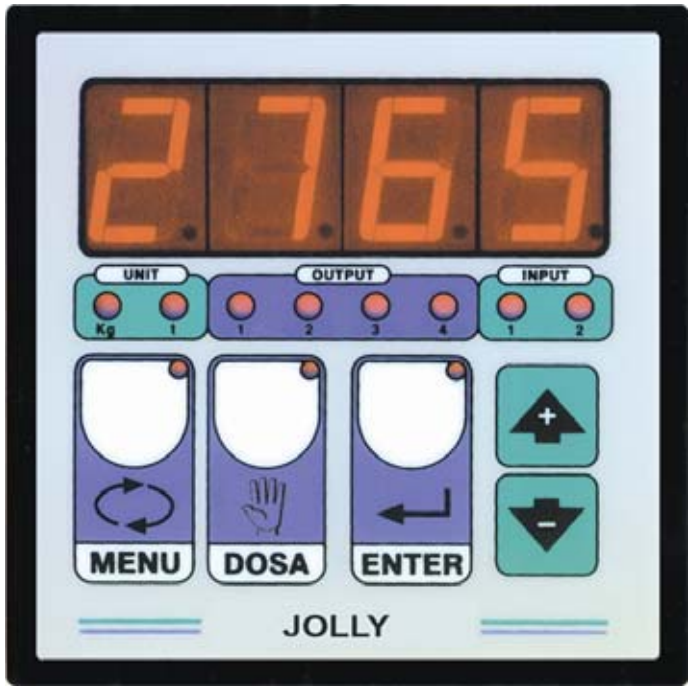
***version 3.3***

Warning!
electrical scheme
modified
JANUARY 2005

***DATA TO BE FILLED OUT BY THE INSTALLER (Page 1)***

# JOLLY2

## 6 different operating modes selectable




CE **2004/108/EC (EMC) - 2006/95/EC (LVD)**

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## LEGENDA

Caution! High Voltage.

Caution! This operation has to be carried out only by specialized personnel.

Pay particular attention to the following indications.

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 Household 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. Instead, 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 this time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the reseller.

THE INSTRUMENT IS SUPPLYED WITH CALIBRATION: 10000 KG, SENSITIVITY 2mV/V; RESOLUTION =1 . OPERATING MODE SELECTION BY THE INSTALLER.

SELECTING THE OPERATING MODE

Switch off the instrument, then turn on by keeping pressed and (at the same time), the "JOL.2=0" message appears ; you can select the following operating mode by using the arrows :

"1 = 2SEt" Weight indicator with two alarm thresholds normally activated
"2 = 1CAr" Loading: batching of 1 product with two speeds
"3 = 2CAr" Loading: batching of 2 products in succession
"4 = 1SCA" Unloading: batching of 1 product with two speeds
"5 = 2SCA" Unloading: batching of 2 products in succession
"6 = 1SEt" Weight indicator with one alarm threshold normally deactivated

Then press ENTER to restore the instruments, the selected operating mode appears followed by the version's number.

If you press ENTER while "JOL.2=0" is displayed, the "JOL.2 " message will appear again and the instrument will be DEACTIVATED.

In case of automatic reset, when the instrument switches on, the "JOL.2" message appears ad no command is accepted; select the operating mode again.

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TO BE FILLED OUT BY THE INSTALLER (ALSO THE INSTRUMENT'S LABEL):

2SEt ☐ 1CAr ☐ 2CAr ☐ 1SCA ☐ 2SCA ☐ 1SEt ☐

*CELL:* _____ *nU-U:* _____ *rISO:* _____ *dECP:* _____

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## TECHNICAL FEATURES

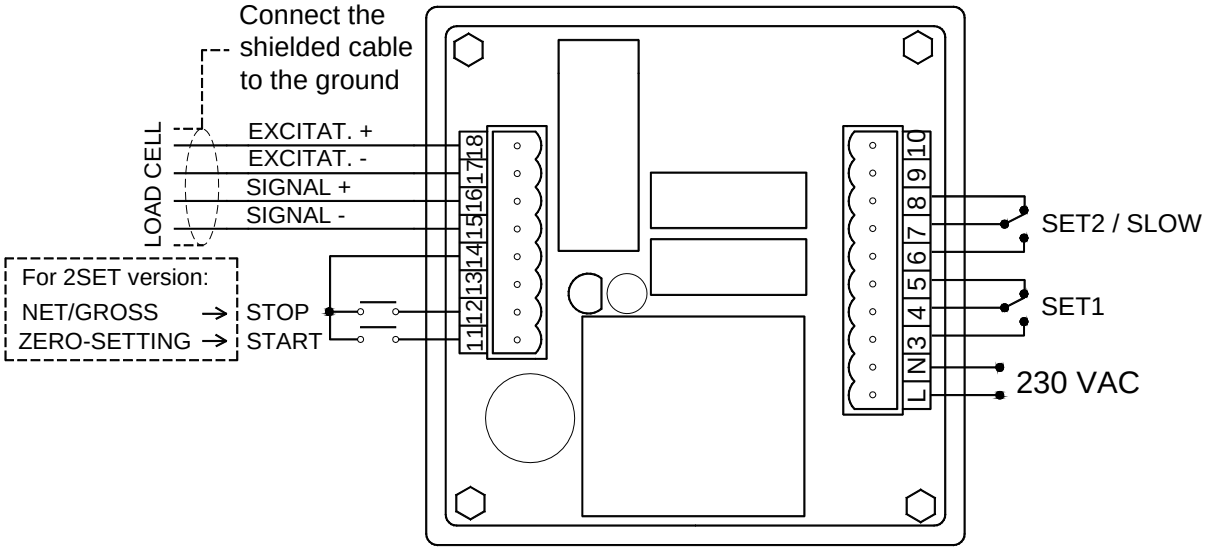
The instrument is able to read up to 19.999 divisions, when the 9.999 value is reached the visualized weight will restart again from 0 and will start blinking in order to inform that the above mentioned value has been passed.

POWER 230 Vac +/- 10% ; 50/60 Hz ; 5 VA consumption
LOAD CELLS SUPPLY 5 Vdc / 60 mA
LOAD CELL CONNECTIONS max 4 load cells (350 ohm) or max 8 load cells (700 ohm)
INTERNAL DIVISIONS 20000
DISPLAY RANGE - 999 ; +19999
MEASURING RANGE - 4 mV + 16.5 mV
READING RESOLUTION x 1 , x 2 , x 3, x 4, x 5
CONVERSION RATE 10 readings/sec
LOAD CELLS SIGNAL READING (mV) see Test page 2 – connection checks
LOGIC OUTPUTS 2 RELAY free contacts max 115Vca 2A
LOGIC INPUTS 2
UNIT OF MEASURE kg or t
FRONT PANEL PROTECTION IP64
DISPLAY semi-alphanumeric display 4 digits, 20 mm in seven segments
DECIMAL POINT (selectable) xxxx ; xxx.x ; xx.xx ; x.xxx
HUMIDITY (condensate free) max 90%
STORAGE TEMPERATURE -20° + 70° C
OPERATING TEMPERATURE -10° + 50° C

## ELECTRICAL CONNECTIONS

WARNING: The procedures here below described have to be carried out by specialized personnel only. Be sure to switch off the instrument before carrying out any connections at all.

Connect the load cells by means of a terminal board in a water-proof junction box connecting the leads having the same colour; perform the same operation for the shields. By means of a shielded 4-wire cable with a section not lower than 0,5 mmq connect the terminal board to the JOLLY instrument. The cable routing shall be far away from the power cables and possibly protected by a metal pipe.



## DISPLAYING ALARMS

“C.C.” : It appears when a short circuit happens on load cell excitation cores and when the displayed weight is higher in negative than the absolute valueprogrammed in the “A.cc” constant.

“SEGn” : It appears when one or two signal wires are disconnected.

“AL- -” : It appears when one or two excitation wires are disconnected.

“ CELL ” : It appears when the load cell response signal core is higher than 20 mV.

During the alarms displaying, outputs will be open.

## LOAD CELL SIGNAL TEST (mV) - INPUTS/OUTPUTS TEST

Switch the instrument on by keeping pressed the  key, the LOAD CELLS VALUE ( expressed in mV) will appear .

Press  , the “ ¯ ¯ ¯ 1 ” message appears, press ENTER to close / open the relay 1, by ensuring the changeover from “ ¯ ¯ ¯ ” to “ _ _ _ ” when the relative input changes from open to closed.

Press  , the “ ¯ ¯ ¯ 2 ” message appears, press ENTER to close / open the relay 2, by ensuring the changeover from “ ¯ ¯ ¯ ” to “ _ _ _ ” when the relative input changes from open to closed.

Press  to exit until the weight is displayed.

INSTRUMENT START-UP:

Switch on the instrument and wait for about 5 minutes until all the components will reach a steady temperature. Verify that the displayed weight is positive and that it increases if one subjects the container to a force weight. In case a negative value is displayed check the load cells connections and their correct installation ( direction of charge ). Check also that the container is correctly installed ( tubes position, links, etc.).
If the "JOL.2" message appears, select the desired operating mode, see page 1.

THEORETICAL INSTRUMENT CALIBRATION:

Switch off the instrument, then turn on by keeping pressed the MENU key, the *"C.0.S.c.",* message appears, press ENTER and the following will appear:

*"dECP"* , set the number of decimals (max. 3 decimals) using the ▼ and ▲ keys. Confirm with ENTER , the following will appear:

*"CELL"* , set 10% of the system's full scale by using the ▼ and ▲ keys (for example with 3 load cells of 100 kg ; full scale = 100 x 3 = 300.0 kg ; 10% of 300.0 kg = 30.0 kg).
Confirm with ENTER , the following will appear:

*"nU-U"* , set the load cell sensitivity expressed in mV/V (normally 2,000) using the ▼ and ▲ keys. Confirm with ENTER , the following will appear:

*"rISO"* , set the system resolution by using the ▼ and ▲ keys: x 1, 2, 3, 4, 5 . Confirm with ENTER , the following will appear:

*"unit"* , set the unit of measure using the ▼ and ▲ keys: 0 = kg; 1 = t.
Confirm with ENTER , the following will appear:

*"tArE"* , set the tare value, if you knows it, by using the ▼ and ▲ keys. Confirm with ENTER and *"C.0.S.c."* message appears again.

Press MENU to exit.

TARE ZERO-SETTING:

Make sure that the container is empty and press the ▲ key, the "*tArE* " message will be displayed, keeping pressed ▲ press the ENTER key at the same time and the tare will be set to zero.

By pressing ▲ , after 1 second, the tare value appears.

It is also possible to set the tare to the zero by using the ZERO-SETTING EXTERNAL CONTACT (ONLY FOR "2SEt" OPERATING ); in this case the LED of DOSA key will start blinking.

WARNING: TURNING OFF THE INSTRUMENT, THE DIVISIONS SET TO ZERO BY EXTERNAL CONTACT WILL BE LOST.

## INSTRUMENT CALIBRATION CHECK:

Make sure that the container is empty and that the instrument displays zero. Place a significant quantity of product in the container (at least 50% of the maximum quantity of product that is to be weighed but in any case less than 9,999) and make sure that the instrument displays the correct value.

- If there is a significant difference between the displayed value and effective amount ( greater than 1-2% ) check that this is not caused by a mechanical fault and check the electrical connections of the cell and the cell loading position.
- If the difference is not significant but around 1-2 %, then proceed to CORRECTING DISPLAYED WEIGHT FROM KEYBOARD.

## CORRECTING DISPLAYED WEIGHT FROM KEYBOARD:

When the weight is displayed, press ▼. The display will show "*CAL I".* Hold down the ▼ key and press ENTER. The display will show the weight value blinking. Use the ▼ and ▲ keys to correct it and set the value of the real quantity loaded in the container. Press ENTER to confirm. The display will show "*CAL I* " for an instant, then the correct value will appear.

If the display shows " *CAL I* ", this means that incorrect values have been set for the parameters "*CELL"* and "*nU-U"*. Repeat the calibration (see " Theoretical calibration ") restoring the laboratory setting.

## " 2SEt " PROGRAM

### Weight indicator with two alarm thresholds

The instrument will be set to zero by pressing the DOSA key or closing the external button NET/GROSS (the Led of DOSA key will light up) this function allows to the operator to load additional quantities of product.
To display the gross weight press again the DOSA key or closing the external button NET/GROSS for more 3 seconds (the related Led will light off).

The condition of relays changes because of gross weight.
For weight lower than the programmed SET values, relays are activated. For weight equal or greater than the programmed SET values, relevant relays are deactivated.
The relay changeover is performed for decreasing weight according to the hysteresis values ("VOL.1" e "VOL.2").

If "SEt. 1 = 100" and "VOL. 1 = 10", an increasing weight will set the relay to 100, a decreasing weight will set the relay to 90.

## " 2SEt " PROGRAMMING

Press the MENU key (the related Led will blink), the following will appear:

*"SEt.1"*, program the weight for SET 1(max 9999) by using the ▼ and ▲ keys, then confirm with ENTER, the following will appear:

*"SEt.2"*, program the weight for SET 2(max 9999) by using the ▼ and ▲ keys, then confirm with ENTER, the following will appear:

*"VOL.1"*, program the istheresys for SET 1 by using the ▼ and ▲ keys, the condition of the relay will change for decreasing weight when the weight will be equal to the programmed SET 1 value ("*SEt. 1")* minus the one programmed in this constant.

*"VOL.2"*, program the istheresys for SET 2 by using the ▼ and ▲ keys, then confirm with ENTER, the following will appear:

*"FiLt"* , program the filter to reduce the weight oscillations, set a value included between 0,1 and 9,9 seconds by using the ▼ and the ▲ keys.

Confirm with ENTER to exit.

By pressing MENU you can exit in any moment.

## " 1Car " PROGRAM

### Loading: batching of 1 product with two speeds

By closing the START contact or the DOSA key, the instrument checks that the weight in the container less the weight set in "set1" is not smaller than the minimum set weight (if it is higher than the max weight the "P¯ ¯ ¯" message appears for 3 seconds and the batching can not start). Then the instrument checks that the weight present in the container (negative or positive) is lower than the minimum weight, in this case "P_ _ _" appears for 3 seconds and the batching can not start. Once all the conditions are met, the instrument executes the autotare ( if enabled), "zero" appears and the Led of DOSA key will light up. The SET1 and SET2 relays will be activated (the weight increase is displayed while the weight is extracted), when the SET1 value less the slow value is reached, the instrument will open the SET2 contact ; when the SET1 value less the fall value is reached, the instrument will open the SET1 contact. After "PAUS" time has elapsed, the gross weight will appears and Led of DOSA key will switch off.
Press STOP to interrupt the batching in any moment; otherwise by pressing DOSA (the "Alt " message appears) the batching will be temporarily interrupted; press the ENTER key to start again the batching, by pressing the DOSA key again you can stop the batching definitely.

## " 1Car " PROGRAMMING

Press the MENU key (only if the Led of DOSA key is switch off), the relevant Led begins to blink, the following will appear:

*"SEt.1"*, program the weight for SET 1(max 9999) by using the arrows keys, then confirm with ENTER, the following will appear:
*"LEnt"*, (Set.2) program the slow value by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOLO"*, set the "fall" value (product in "fall" at the stop of the extractor ). 0=manual fall or 1=automatic fall (The instrument will calculate on itself the fall value) by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOL.1"*, program the "fall" value by using the arrows (if the automatic fall has been selected, the fall value calculated by the instrument appears). If the power break down this value will be lost. Confirm with ENTER, the following will appear:
*"AtAr"*, program 0= autotare disabled or 1 = autotare enabled , by using the arrows, then confirm with ENTER, the following will appear:
*"P _ _ _"* , program the min. weight (max 9999) by using the arrows; normally 20 is programmed, then confirm with ENTER, the following will appear:
*"P ¯ ¯ ¯"*, program the maximum weight (max 9999) by using the arrows, then confirm with ENTER, the following will appear:
*"PAUS"*, program the "pause" time (max 9,9 seconds) by using the arrows. This is the time elapsed between the conclusion of the batching and the displayed gross weight., then confirm with ENTER, the following will appear:
*"FiLt"* , filter to reduce the weight oscillations, program a value included between 0,1 and max 9,9 seconds.
Confirm with ENTER to exit.
By pressing MENU you can exit in any moment.

## " 2CAr " PROGRAM
### Loading: batching of 2 products in succession

By closing the START contact or the DOSA key, the instrument checks that the weight in the container less the weight set in "set1" and "set2" is not smaller than the minimum set weight (if it is higher than the max weight the "P¯ ¯ ¯" message appears for 3 seconds and the batching can not start). Then the instrument checks that the weight present in the container (negative or positive) is lower than the minimum weight, in this case "P_ _ _" appears for 3 seconds and the batching can not start. Once all the conditions are met, the instrument executes the autotare ( if enabled), "zero" appears and the Led of DOSA key will light up.
The SET1 relay will be activated. When the SET1 value less the "VOL1" value is reached, the instrument will open the SET1 contact. After "PAUS" time has elapsed, the instrument executes the autotare again and closes the SET2 contact, when the SET2 value less the "VOL2" value is reached, the SET2 contact will be opened.
After "PAUS" time has elapsed, the gross weight will appears and Led of DOSA key will switch off.
Press STOP to interrupt the batching in any moment; otherwise by pressing DOSA (the "Alt " message appears) the batching will be temporarily interrupted; press the ENTER key to start again the batching, by pressing the DOSA key again you can stop the batching definitely.

## " 2CAr " PROGRAMMING

Press the MENU key (only if the Led of DOSA key is switch off), the relevant Led begins to blink, the following will appear:

*"SEt.1"*, program the weight for SET 1(max 9999) by using the arrows keys, then confirm with ENTER, the following will appear:
*"SEt.2"*, program the weight for SET 2 by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOLO"*, set the "fall" value (product in "fall" at the stop of the extractor ). 0=manual fall or 1=automatic fall (The instrument will calculate on itself the fall value) by using the arrows keys, then confirm with "*VOL.1"*, program the "fall" value by using the arrows (if the automatic fall has been selected, the fall value calculated by the instrument appears). If the power break down this value will be lost. Confirm with ENTER, the following will appear:
*"VOL.2"*, value of "fall" 2 . Confirm with ENTER, the following will appear:
*"AtAr"*, program 0= autotare disabled or 1 = autotare enabled , by using the arrows, then confirm with ENTER, the following will appear:
*"P _ _ _"*, program the min. weight (max 9999) by using the arrows; normally 20 is programmed, then confirm with ENTER, the following will appear:
*"P ¯ ¯ ¯*", program the maximum weight (max 9999) by using the arrows, then confirm with ENTER, the following will appear:
*"PAUS"*, program the "pause" time (max 9,9 seconds) by using the arrows. This is the time elapsed between the conclusion of the batching and the displayed gross weight., then confirm with ENTER, the following will appear:
*"FiLt"* , filter to reduce the weight oscillations, program a value included between 0,1 and max 9,9 seconds.
Confirm with ENTER to exit.
By pressing MENU you can exit in any moment.

## " 1SCA " PROGRAM

### Unloading: batching of 1 product with two speeds

By closing the START contact or the DOSA key, the instrument checks that the weight present in the container less the value programmed in the "set1" parameter is not lower than the min. weight (if it is lower than the min. weight the "P_ _ _" message appears for 3 seconds and the batching can not start). Then the instrument executes the autotare, "zero" appears and the Led of DOSA key will light up. The SET1 and SET2 relays will be activated , the weight begins to increase, when the SET1 value less the slow value is reached, the instrument will open the SET2 contact ; when the SET1 value less the fall value is reached, the instrument will open the SET1 contact. After "PAUS" time has elapsed, the gross weight will appears and Led of DOSA key will switch off.
Press STOP to interrupt the batching in any moment; otherwise by pressing DOSA (the "Alt " message appears) the batching will be temporarily interrupted; press the ENTER key to start again the batching, by pressing the DOSA key again you can stop the batching definitely.

## " 1SCA " PROGRAMMING

Press the MENU key (only if the Led of DOSA key is switch off), the relevant Led begins to blink, the following will appear:

*"SEt.1"*, program the weight for SET 1(max 9999) by using the arrows keys, then confirm with ENTER, the following will appear:
*"LEnt"*, (Set.2) program the slow value by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOLO"*, set the "fall" value (product in "fall" at the stop of the extractor ). 0=manual fall or 1=automatic fall (The instrument will calculate on itself the fall value) by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOL.1"*, program the "fall" value by using the arrows (if the automatic fall has been selected, the fall value calculated by the instrument appears). If the power break down this value will be lost. Confirm with ENTER, the following will appear:
*"P _ _ _"* , program the min. weight (max 9999) by using the arrows; normally 20 is programmed, then confirm with ENTER, the following will appear:
*"PAUS"*, program the "pause" time (max 9,9 seconds) by using the arrows. This is the time elapsed between the conclusion of the batching and the displayed gross weight., then confirm with ENTER, the following will appear:
*"FiLt"* , filter to reduce the weight oscillations, program a value included between 0,1 and max 9,9 seconds.
Confirm with ENTER to exit.
By pressing MENU you can exit in any moment.

## " 2SCA " PROGRAM

### Unloading: batching of 2 products in succession

By closing the START contact or the DOSA key, the instrument checks that the weight present in the container less the values programmed in the "set1" and "set2" parameters is not lower than the min. weight (if it is lower than the min. weight the "P_ _ _" message appears for 3 seconds and the batching can not start). Then the instrument executes the autotare, "zero" appears and the Led of DOSA key will light up. The SET1 relay will be activated , the weight begins to increase, when the SET1 value less the "VOL1" value is reached, the instrument will open the SET2 contact ; when the SET1 value less the fall value is reached, the instrument will open the SET1 contact. After "PAUS" time has elapsed, the instrument executes the autotare again and closes the SET2 contact, when the SET2 value less the "VOL2" value is reached, the SET2 contact will be opened.
After "PAUS" time has elapsed, the gross weight will appears and Led of DOSA key will switch off.
Press STOP to interrupt the batching in any moment; otherwise by pressing DOSA (the "Alt " message appears) the batching will be temporarily interrupted; press the ENTER key to start again the batching, by pressing the DOSA key again you can stop the batching definitely.

## " 2SCA " PROGRAMMING

Press the MENU key (only if the Led of DOSA key is switch off), the relevant Led begins to blink, the following will appear:

*"SEt.1"*, program the weight for SET 1(max 9999) by using the arrows keys, then confirm with ENTER, the following will appear:
*"SEt.2"*, program the weight for SET 2 by using the arrows keys, then confirm with ENTER, the following will appear:
*"VOLO"*, set the "fall" value (product in "fall" at the stop of the extractor ). 0=manual fall or 1=automatic fall (The instrument will calculate on itself the fall value) by using the arrows keys, then confirm with "*VOL.1"*, program the "fall" value by using the arrows (if the automatic fall has been selected, the fall value calculated by the instrument appears). If the power break down this value will be lost. Confirm with ENTER, the following will appear:
*"VOL.2"*, value of "fall" 2 . Confirm with ENTER, the following will appear:"*P _ _ _"* , program the min. weight (max 9999) by using the arrows; normally 20 is programmed, then confirm with ENTER, the following will appear:
*"PAUS"*, program the "pause" time (max 9,9 seconds) by using the arrows. This is the time elapsed between the conclusion of the batching and the displayed gross weight., then confirm with ENTER, the following will appear:
*"FiLt"* , filter to reduce the weight oscillations, program a value included between 0,1 and max 9,9 seconds.

Confirm with ENTER to exit.
By pressing MENU you can exit in any moment.

## " 1SEt " PROGRAM

Weight indicator with an alarm threshold

This program not use inputs (terminals 11, 12, 14) and the second relay (terminals 6, 7, 8).

The condition of the SET1 relay changes because of gross weight.

For weight lower than the programmed SET value, relay is deactivated. For weight equal or greater than the programmed SET, the relay is activated.

## " 1SEt " PROGRAMMING

Press the ENTER key (the related Led will blink), the following will appear:

*"SEt.1"*, program the weight for SET1(max 9999) by using the and keys, then confirm with ENTER, the following will appear:

*"FiLt"* , program the filter to reduce the weight oscillations, set a value included between 0.1 and 9.9 seconds by using the and the keys.

Confirm with ENTER to come back to the weight displaying.