SISTEMI DI PESATURA INDUSTRIALE

ODECA s.r.l.

www.odecasrl.com

USER GUIDE

DIGITAL WEIGHT INDICATOR MOD. IRD
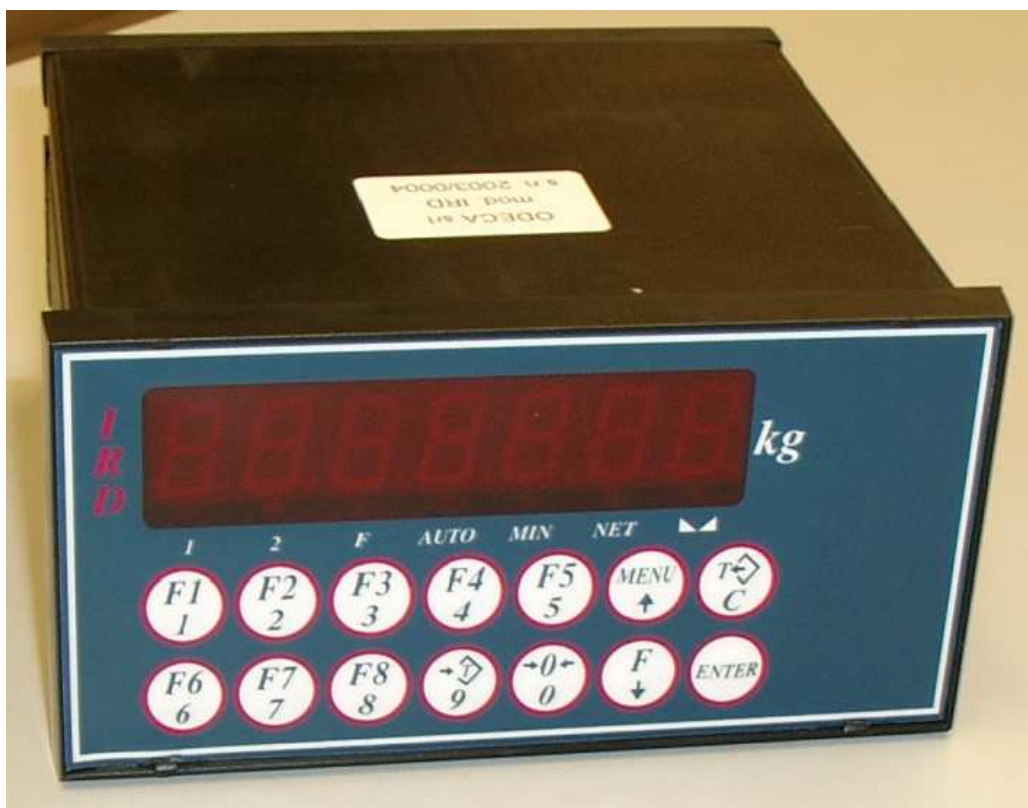
www.odecasrl.com

SOFTWARE CODE: P.W13.02   Set-points Control

RELEASE :   Rev. 1.4 (ENGLISH)

SECTION 2: PROGRAMMING THE INSTRUMENT

CONTENTS

MAIN FEATURES AND DISPLAYS

WEIGHING SET-UP

CHECKING THE SET-POINT VALUES

ZERO AND AUTOTARE FUNCTIONS

INSTRUMENT SET-UP

OPERATING FUNCTION SET-UP

PROGRAMMING PROCEDURES AND TROUBLESHOOTING

SECTION 2: PROGRAMMING THE INSTRUMENT

MAIN OPERATING FEATURES

The main operating features are:
- Control of up to 6 or up to 14 programmable weight set-point values, with relative hysteresis.
- Manual or automatic weighing procedures, weight totalization, printed reports for the individual weight values and the total.
- Serial connection Rs232 or Rs422/Rs485 to external devices such as PC's, PLC's, remote displays, printers.
- Control of the maximum weight value reached (peak).

The system configuration provides for the following **optional** installations:
- Analog output selectable as voltage or current.
- Memorization of weights in the alibi memory.
- 8 additional relay outputs through an external module.
- BCD output through an external card connection.
- Profibus-DP output through an external module for DIN rail guide.

For comprehensive installation instructions refer to section 1

INSTRUMENT FRONT PANEL

DISPLAY

- The **weight** value is normally displayed on the 7 digits display. On the basis of various programming procedures, the display is used to edit the parameters to be entered in the memory, or messages indicating the type of operation currently underway, which are therefore of use to the operator when using and programming the instrument.

LED INDICATORS

- There are 7 LED indicators located underneath the display:

1	in multirange mode, stands for range 1 (with led 2 on stands for range 3).
2	in multirange mode, stands for range 2 (with led 1 on stands for range 3).
F	indicates the activation of the timed key **F.**
AUTO	indicates the activation of the automatic weight totalization function.
MIN	indicates that the gross weight is within the minimum weight range.
NET	indicates that a tare is entered and the net weight is therefore displayed.
◣◢	indicates the stable weight condition.

USING THE KEYBOARD

- The instrument is programmed and controlled through the 14 keys of the front panel, 13 of them have a dual function. The function is automatically established by the instrument according to the operation underway.
- When managing a menu the ↑ and ↓ keys are used to scroll up and down the items, the **ENTER** key to access the relative submenu or programmable parameter and the **C** key to exit the menu or return to the previous level.
- The instrument's numerical parameters can be set by using the numerical keys, the data are reproduced on the display as on a calculator; a flashing display indicates that a programming procedure is underway. The **C** key is used to clear the value being programmed, while the **ENTER** key is used to confirm it.
- When selecting a parameter the ↑ and ↓ keys are used to choose among the data proposed by the display. The **ENTER** key is used to confirm the value shown on the display and enter it in the instrument's memory, while the **C** key cancels the operation and causes the instrument to exit the selection phase. The display flashes in order to indicate that the selection is underway.

START-UP MESSAGES

DISPLAY TEST

| 8888888 | When the instrument is switched on, all the digits light up in order to test the display, then they switch off completely. |

SOFTWARE CODE AND VERSION DISPLAY

| P02 R09 | Following the display test, a software identification code and relative version is displayed. Remember to indicate this code when requesting assistance. |

LOAD CELL CONNECTION TEST

In case of a problem in the load cell connection one of the following messages will be displayed.

NO CONN	The load cells are not connected.
LO SIGN	The load cell's signal input value is below the minimum level (< -3.9mV/V)
NO SIGN	The load cell's signal input value is over the maximum level (< +3.9mV/V).
	The load cell's signal wires are not connected.
ADC ERR	AD7730 A/D Converter internal error.

As soon as the problem is solved the instrument resumes normal operations.

WEIGHT DISPLAY

The display normally shows the weight present on the weighing system. The LED's under the display provide information about the weight displayed.
In this condition it is possible to programme the instrument.

INVALID WEIGHT INDICATION AT POWER ON

- - - - - -

If, during the power on sequence, the weight on the scale is outside the AUTO 0 range (page 2.13), the display will show this invalid weight indication.

OVERLOAD INDICATION

▬ ▬ ▬ ▬ ▬

When the gross weight on the scale exceeds the weighing system's maximum capacity by over 9 divisions, the display will show this indication.

UNDERLOAD INDICATION

▬ ▬ ▬ ▬ ▬

When the gross weight of the weighing system is over 9 divisions below zero, the display will show this underload indication.

OVERLOAD INDICATION

O-L

When the signal from the load cells is outside the instrument's measurement range (from –3,9mV/V to +3,9mV/V), or no signal is registered, the display will show this indication.

MULTIRANGE INDICATIONS

LED's 1 and 2 indicate the weighing range in which the weight is in.
When LED 1 is ON, the weight is inside the range 1.
When LED 2 is ON, the weight is inside the range 2.
When both LED's are ON, the weight is inside the range 3.

When the weight increases the passage from a lower range to a higher range takes place automatically when the load relative a certain range is exceeded; the weight is therefore indicated with the display division value immediately above it.

When the weight decreases there is no automatic passage to a lower range. The weight remains associated to the maximum range reached during the increment phase. The passage to range 1 only takes place automatically when the gross weight returns to 0, has stabilized and no tare values are entered in the memory.

WEIGHING SET-UP MENU

Only the personnel responsible for instrument and the system in which it is installed may access the parameters in this menu. In case of metrological use, the access to this menu is limited to personnel authorized by the current regulations.

The menu access modes depend on the function selected: FREE or METRIC.

MENU ACCESS (METRIC FUNCTION)

Switch on the instrument with the calibration jumper in CALIBRATION position in order to directly access the weight set-up menu.

Refer to the installation manual for instructions on the use of the calibration jumper.

Otherwise:

Press the **ENTER** key and keep it pressed **for 3 seconds** in order to gain access to the password access procedure.

The password table is required for this procedure.

ID	Type in the authorized operator's identification code, corresponding to the number in the password table. Confirm the setting by pressing **ENTER**. If 0 is confirmed the procedure comes to an end.
COD-000	A random 3 digits number is shown on the display. Identify the corresponding 4 digits password in the table, then press **ENTER** in order to be able to key it in.
PASS	Key in the password found in the table and confirm by pressing **ENTER**. If the password is correct you will granted access to the weighing set-up menu, otherwise the procedure will terminate here.

During metric function, all access to this menu is recorded in the consultable last 5 access operations history.

MENU ACCESS (FREE FUNCTION)

☞   Press the **ENTER** key and keep it pressed **for 3 seconds** in order to access the instrument set-up

menu. You may need to program the menu access password, if applicable.

ITEMS IN THE WEIGHING SET-UP MENU

| CONST | Access to the weighing data programming submenu (total load cell capacity, average load cell sensitivity, maximum capacity of the weighing system, display division value, multirange function activation). Page 2.6 |

| CALIBR | Dead weight calibration procedure (with test weight). Page 2.9 |

| PARAMET | Access to the metric / free use and weighing parameter programming submenu (filter, stability, autozero at power on, zero tracking, minimum weight, gravity acceleration value). Page 2.11 |

| TEST | Access to the weighing test submenu (display of subdivisions, internal counts of the A/D converter, load cell signal input in mV/V, division / A/D converter counts ratio). Page 2.28 |

MENU MANAGEMENT

☞   Press the ↑ and ↓ keys in order to scroll up and down the items, the **ENTER** key in order to

access the submenu or the relative procedure and the **C** key to exit the menu and end the procedure; in this case the instrument will automatically perform a reset procedure and will prepare itself for operational use.

WEIGHING SYSTEM DATA PROGRAMMING

📖 To access this procedure, see the **weighing set-up menu**.

"CONST" MENU ITEMS

L-CELLS	Programming the total nominal capacity of the load cells (in kg) (from 1 to 500000) **(****)**
SENSIT	Programming the average sensitivity of the load cells (in mV/V) **(****)**
CAPAC-	Programming the maximum capacity of the weighing system (in kg) (from 1 to 500000) **(****)**
DEAD L	Programming the dead load value on the load cells (in kg). This represents the weighing systems fixed tare **(****)**
DSP DIV	Selection of the display division value (from 0.0001 to 100) **(****)**
M-RANGE	Activation of 2 or 3 weighing field multirange.

MENU MANAGEMENT

☞ Press the ↑ and ↓ to scroll up and down the items, press the **ENTER** key in order to access the menu item displayed, press the **C** key in order to exit the submenu and return to the **weighing set-up menu ("CONST").**

✋ The coherence of the programmed data is checked when exiting the "CONST" menu. It is not possible to exit the submenu if the memorized data is not acceptable. The data coherence conditions are described in the relative paragraph.

TOTAL NOMINAL CAPACITY OF THE LOAD CELLS ("L-CELLS" SUBMENU)

This parameter is expressed in kg and represents the nominal capacity of the load cell connected to the instrument (this information can be easily found on the load cell's specific label or in the calibration certificate that accompanies it). In case of several load cells connected in parallel, the value to be set consists of the **sum** of all the individual capacities.
The programmed capacity value can range from 1 kg to 500,000 kg.

AVERAGE SENSITIVITY OF THE LOAD CELLS ("SENSIT" SUBMENU)

This parameter is expressed in mV/V and represents the sensitivity value of the load cell connected to the instrument (this information can be easily found on the load cell's specific label or in the calibration certificate that accompanies it). In case of several load cells connected in parallel, the value to be set consists of the **average** of all the individual nominal sensitivities.

WEIGHING SYSTEM MAXIMUM CAPACITY ("CAPAC-" SUBMENU)

This parameter is expressed in kg and represents the maximum load permitted on the weighing system. This value may be lower than the sum of the nominal load cell capacities. The programmed capacity value can range from 1 kg to 500,000 kg.

It is mandatory to programme the weighing system maximum capacity value.

Following the modification of the maximum capacity value, it is necessary to re-calibrate the weight.

DEAD LOAD VALUE ("DEAD L" SUBMENU)

This parameter is expressed in Kg and represents the weight of the mechanical structure that permanently weighs on the load cells. The sum of "DEAD L" + "CAPAC" must never exceed the value of "L-CELLS"

DISPLAY DIVISION VALUE ("DSP DIV" SUBMENU)

This parameter represents the minimum increment of the weight value. It is expressed in kg.
The value can be selected between 0.0001 kg and 100 kg.
If the multirange function is active, the display division value selected refers to the highest range.
The ratio between the system maximum capacity and the division value represents the system resolution (number of divisions).

In case of metric use, select the division value so as to respect the limits provided for. In case of free use, limit the resolution to the weighing system accuracy.

Once the display division value has been modified, if no changes have been made to the maximum capacity and the multirange function, the weight calibration is automatically corrected.

(****)
THEORETICAL CALIBRATION

When setting the parameters marked by **(****)** the instrument performs a **theoretical calibration** with an accuracy of 0.1%. This procedure is very useful in various cases, such as when calibrating large tanks in which a simple level measurement is required and on which the direct load of test weights may be prove difficult for calibration purposes.
When the accuracy provided by the **theoretical calibration is acceptable, thecalibration with test weights is not necessary.**
Obviously, if the accuracy provided by this type of calibration is not acceptable, it is necessary to carry out the normal calibration procedure with dead weights, as described in the chapter entitled "WEIGHT CALIBRATION" on page 2.9

MULTIRANGE FUNCTION SELECTION ("M-RANGE" SUBMENU)

This parameter is used to select the normal 1 field function or the multirange 2 or 3 field function. In case of multirange function, the display division value refers to the highest range. The display division values of the other ranges are taken from the values immediately below that set. The lower range limits are set automatically on the basis of the number of divisions in the top range, with possible rounding off by default to 1000 divisions.

For indication of the multirange function weight, see the paragraph entitled "WEIGHT INDICATION".

The display shows the stored selection (flashing):

| OFF | Normal single field operation. |

or:

| 2R | Two weighing range operation. |

or:

| 3R | Three weighing range operation. |

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

DATA COHERENCE

- The number of maximum capacity divisions (resolution), or rather the capacity / division value ratio, must be between 500 and 600,000.
- If only the division value is changed, the weight calibration is recalculated, resulting in a number of divisions, referred to the 2mV/V signal, between 100 and 600,000.
- During multirange function, each weighing field must have a number of divisions of no more than 6000.
- In the 2-range function, the selected division value cannot be less than 0,0002 kg.
- In the 3-range function, the selected division value cannot be less than 0.0005 kg.

If one of these conditions is not met, the message INVALID will be displayed for a few seconds when exiting the submenu and the weighing data programming submenu will come up again.

WEIGHT CALIBRATION

To access this procedure, see the **weighing set-up menu**.

Weight calibration is carried out in two steps:
- **Zero calibration** (zeroing the dead load on the weighing system).
- **Full scale calibration**

In case of metric use, only use this weight calibration method.

CAL

During the calibration phase, the display shows this message alternating with the weight.

ZERO CALIBRATION

With the weighing system unloaded and the stable weight condition, set the zero calibration by

pressing the →0← key.

The weight displayed must be zeroed. If needed, this operation can be repeated several times.

FULL SCALE CALIBRATION

In order to perform the full scale calibration procedure you must use a known weight (test weight), as near as possible to the maximum capacity of the weighing system.

Load the test weight on the weighing system; the display will show the measured value to be

calibrated. When the test weight has stabilized, press the **9 →T** key.

SPAN

Key in the value of the test weight just loaded on the weighing system. Confirm the setting by pressing **ENTER.**

The weight now shown on the display corresponds to the calibration made.

If the value set is greater than the resolution offered by the A/D converter it will not be accepted and the display will show an error message for a few seconds.

It is not possible to use or to enter test weight values higher than the maximum capacity of the weighing system (CAPAC parameter)

It is always possible to repeat the calibration procedures without annulling previous ones.

☞ If you wish to **erase the calibration** press the **C** key during the calibration phase.

The display will show the message **CANCEL** for a few seconds.

While this message is displayed

- Press the **→0←** key in order to erase the zero calibration.
- Press the **9 →T** key in order to erase the full scale calibration.

NOTE: Following this procedure, the zero will be equivalent to a signal of around 0mV/V, while the full scale will be equivalent to around 10000 divisions with a signal of 2mV/V.

🖐 **The full scale calibration procedure will erase any saved gravity acceleration values.**

END OF THE CALIBRATION PROCEDURE

☞ Press **ENTER** to exit the procedure, save the weight calibration and return to the **weighing set-up menu (CALIBR).**

WEIGHING PARAMETER PROGRAMMING

To access this procedure, see the **weighing set-up menu**.

"PARAMET" SUBMENU ITEMS

| USE | Metric use or free use selection. Some of the limits set by the metric regulations are not applied during free use. |

| FILTER | Selection of the adjustable digital filter value from 0.2 to 50 Hz. This parameter can also be programmed in the instrument set-up menu. |

| MOTION | Selection of weight stability parameter, which can be excluded or adjusted from 3 divisions in 1 second to 0.5 divisions in 0.5 seconds. This parameter can also be programmed in the instrument set-up menu. |

| AUTO 0 | Programming the automatic zero function at power-on. |

| 0 TRACK | Selection of zero tracking value. Can be excluded or adjusted from 0.5 to 3 divisions per second |

| 0 BAND | Programming the minimum weighing set-point. |

| G-CAL | Programming gravity acceleration in the weight calibration area. |

| G-USE | Programming gravity acceleration in the area where the instrument will operate. |

SUBMENU MANAGEMENT

Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant procedure, **C** to exit the submenu and return to the **weighing set-up menu (PARAMET)**

FREE USE / METRIC USE SELECTION ("USE" SUBMENU)

This selection is used in order to exclude a series of limitations set by the metric regulations if these limits are not required.
The following controls are excluded if the FREE operation is selected:
- When the instrument is switched on, if the weight exceeds the automatic zero range, zero calibration does not take place and the weight measured is considered valid.
- Access to the weighing set-up menu is not governed by the calibration jumper and the password table system reserved for authorized personnel.

The display shows the stored selection (flashing):

FREE

Free use operation.

or:

METRIC

Metric use operation.

☞   Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired

selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

✋ **If the FREE mode is changed to the METRIC mode, it is necessary to access the weighing set-up menu following the procedure described on page 2.4**

An access test is therefore required in order to confirm and save this change.

DIGITAL FILTER ("FILTER" SUBMENU)

Use this parameter to adjust the action of the digital filter applied on the measured weight. The filter operates on all weight data displays (display, serial output, analog output, etc.). Programming a high value gives a low filter action whereas a low value gives a more filtered weight.

Filter value in Hz
50
25
10
5
2.5
1.5
1
0.7
0.4
0.2

STABLE WEIGHT ("MOTION" SUBMENU)

The weight is considered stable when it doesn't change above a fixed weight range for a fixed time. This parameter selects various default combinations as indicated in the table below. In case of oscillations that affect the weight of some units, decrease this value to make it stable.

Value	Parameter Range of action
0 - 0	Stability control excluded
3 - 1	3 divisions in 1 second
2 - 1	2 divisions in 1 second
1 - 1	1 divisions in 1 second
0.5 - 1	0.5 divisions in 1 second
3 – 0.5	3 divisions in 0.5 seconds
2 – 0.5	2 divisions in 0.5 seconds
1 – 0.5	1 divisions in 0.5 seconds
0.5 - 0.5	0.5 divisions in 0.5 seconds

AUTOMATIC ZERO AT POWER-ON ("AUTO 0" SUBMENU)

Programme the automatic zero range in weight value. The automatic zero function involves automatic zero calibration when the instrument is switched on, but only if the weight measured during the switching on phase is within the set limit. In order to disable the function, set the value at 0. During metric use, no weight can be considered valid until this function has been performed.

During metric use, this parameter may not exceed 10% of the weighing system capacity.

ZERO TRACKING ("O TRACK" SUBMENU)

The zero tracking function involves automatic zero calibration when the weight undergoes a slight variation over time, determined by this parameter as shown in the table below. Set the value at 0 in order to disable the function.
The maximum number of divisions that can be zeroed in one time is 3. The total sum of each single zero tracking operation cannot exceed the 2% of the maximum capacity ("CAPAC" parameter).

Zero tracking value	Variation
0	Control excluded
0.5	0.5 div / sec.
1	1 div / sec.
2	2 div / sec.
3	3 div / sec.

Default value: 0

This parameter may not exceed 0.5 (0.5 div / sec) during metric use.

MINIMUM WEIGHING VALUE ("0 BAND" SUBMENU)

This parameter is expressed in number of divisions and represents the weight set-point that must be exceeded in order to consider the scale loaded by a significant weight value. The value must therefore exceed zero movements due to accumulated dirt, oscillations or other zeros that should not be taken into consideration.

This parameter must be set at 20 divisions in case of metric use.

GRAVITY ACCELERATION PROGRAMMING ("G-CAL" AND "G-USE" SUBMENU)

The 2 parameters that can be programmed with the gravity acceleration value make it possible to compensate the weight difference between the place in which the instrument is calibrated and the place in which the instrument will operate, due to different gravity acceleration. After programming both the gravity acceleration values, the weight calibration is automatically corrected. The gravity acceleration values must be between 9,77000 and 9,84000.

These parameters are zeroed when the full scale calibration is changed.

CHECKING THE WEIGHING SYSTEM

📖 To access this procedure, see the **weighing set-up menu**.

"TEST" SUBMENU ITEMS

| HI-RES | Subdivision visualization (weight with 10x resolution). |

| COUNTS | Visualization of the internal A/D converter counts. |

| SIGNAL | Visualization of the load cell mV/V signal. |

| C-DIV | Visualization of the internal counts / weight division value ratio. |

SUBMENU MANAGEMENT

☞ Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant procedure, or **C** to exit the submenu and return to the **weighing set-up menu.**

DATA DISPLAY

The datum selected in the submenu is shown on the display.

☞ Press **C** to close the display and return to the submenu.

HOW TO EXIT FROM THE WEIGHING SET-UP MENU

Press the **C** key when anyone of the following messages is displayed: CONST, CALIBR, PARAMET, TEST.

The instrument switches-off and on automatically in order to make the changes operative.

CHECKING THE SET-POINT VALUES

SELECTING THE NUMBER OF SET-POINTS (8 or 14)

The instrument in the standard configuration has the ability to check 6 set-point values.
The number of set-points can be extended to 14 if the optional 8 relays external module is used.
Refer to pages 1.8 and 1.15 of the installation manual (Section 1) for wiring.

In case the sum of all the programmed set-points values exceeds the maximum capacity of the weighing system (CAPAC parameter) the message "ERROR" appears on the display.

PROCEDURE:

☞ Switch-off the instrument. Press the **MENU** key and keep it pressed. Switch-on the instrument and release the **MENU** key only when the following message appears on the display:

1D

Enter the password **32647** and press the **ENTER** key

N SET

By using the ↑ or ↓ keys select **6 SET** or **14 SET** (default is **6 SET**)

Press the **ENTER** key to confirm.

The instrument returns to the operating mode automatically.

ZERO AND AUTOTARE FUNCTIONS

SEMIAUTOMATIC ZERO

☞ Press the →0← key to restore the zero of the weighing system.

Or:

☞ Close **input 3** impulsively key to restore the zero of the weighing system.

This operation is only effective when the weight is stable. The maximum weight that can be zeroed corresponds to 2% of the weighing system maximum capacity (positive or negative).

✋ In case of FREE use (non METRIC) of the instrument, the zeroing procedure is memorized when the instrument is switched off.

ENTERING THE TARE

The tare can be entered in two different ways: by keying in the fixed tare value or by zeroing the weight present on the scale (automatic tare). It is also possible to perform an automatic tare (thereby zeroing the net weight present on the scale) after already having set a fixed tare; in this case the value of the 2 tares is added together. The maximum tare value that can be entered corresponds to the weighing system maximum capacity less 1 division.

The entered tare value will be lost if the instrument is switched off.

ENTERING A FIXED TARE BY THE KEYBOARD

Press the **F** key followed quickly by the **→T** key in order to access the fixed tare programming.

To confirm the value without changing it, press **ENTER**. To change the tare, press **C** first in order to erase the old value and then set the new tare value. To erase the tare, confirm the value 0.

The **NET** LED on the display indicates that a tare value has been entered.

AUTOMATIC TARE OPERATION

Press the **→T** key to perform the automatic tare operation.

Or:

Close **input 1** impulsively to perform the automatic tare operation.

The automatic tare operation is only possible if the gross weight is positive and stable

ERASING THE TARE

Press the **T←** key to erase the saved tare.

Or:

Close **input 2** impulsively to erase the saved tare.

The gross weight is shown on the display and the **NET** LED is switched off.

In case the multirange function is active and a tare has been entered, the automatic passage from range 2 or 3 to range 1 is only possible after having manually erased the tare.

INSTRUMENT SET-UP MENU

ACCESSING THE MENU

☞ Press the **MENU** key and keep it pressed for **2 seconds** in order to access the instrument set-up menu. You may need to programme the menu access password, if applicable.

SET-UP MENU ITEMS

PARAMET	Access to the weighing parameter programming submenu (filter, stability) and load cell mV/V signal display.
TIME-DA	Clock / calendar adjustment.
SERIAL	Programming the communication parameters, COM 1 (Rs232) and COM2 (Rs422 / Rs485) protocols, instrument's address, heading in the printout, number of line feed after printing.
ANALOG	Optional analog output configuration (full scale, mA or V type output, weight transmitted, calibration).
ACCESS	Weighing set-up menu access history (last 5 times the menu was accessed) (identification, progressive and date).
LANGUAG	Display and printer language selection (Italian, English).
REMOTE	Access to the download and upload procedures of the weighing set-up memory and the instrument set-up memory on the Rs232 serial line.
ALIBI M	Optional alibi memory parameters.
TEST	Hardware and software diagnostic.

MENU MANAGEMENT

☞ Press the ↓ and ↓ keys in order to scroll up and down the items, the **ENTER** key in order to access the submenu, the relative data selection or programming procedure and the **C** key to exit the menu and end the procedure.

PROGRAMMING THE DIGITAL FILTER, WEIGHT STABILITY, AND CHECKING THE LOAD CELL SIGNAL

To access this submenu, see the **instrument set-up menu**.

"PARAMET" MENU ITEMS

FILTER	Adjustable digital weight filter factor programming from 0 to 9. The same parameter can also be set in the weighing set-up menu.
MOTION	Adjustable stability weight factor programming from 0 to 4. The same parameter can also be set in the weighing set-up menu.
SIGNAL	Load cell mV/V input signal display.

SUBMENU MANAGEMENT

Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant

procedure, or press **C** to exit the submenu and return to the **instrument set-up menu.**

DIGITAL FILTER ("FILTER" SUBMENU)

Use this parameter to adjust the action of the digital filter applied on the measured weight. The filter operates on all weight data displays (display, serial output, analog output, etc.). Programming a high value gives a low filter action whereas a low value gives a more filtered weight.

Filter value in Hz
50
25
10
5
2.5
1.5
1
0.7
0.4
0.2

WEIGHT STABILITY ("MOTION" SUBMENU)

The weight is considered stable when it undergoes no variations above a fixed weight range for a fixed time. This parameter selects various default combinations as indicated in the table below. In case of oscillations that affect the weight of some units, decrease this value to make it stable.

Value	Parameter Range of action
0 - 0	Stability control excluded
3 - 1	3 divisions in 1 second
2 - 1	2 divisions in 1 second
1 - 1	1 divisions in 1 second
0.5 - 1	0.5 divisions in 1 second
3 - 0.5	3 divisions in 0.5 seconds
2 - 0.5	2 divisions in 0.5 seconds
1 - 0.5	1 divisions in 0,5 seconds
0.5 - 0.5	0.5 divisions in 0.5 seconds

SIGNAL DISPLAY ("SIGNAL" SUBMENU)

The load cell signal expressed in MV/V is shown on the display.

Press **C** to close the display and return to the submenu.

Press **C** again to return to the main menu (PARAMET).

TIME / DATE ADJUSTMENT

By using the ↓ key select the message "TIME-DA" and press the **ENTER** key.

"TIME-DA" MENU ITEMS

ADJUST

Sequential current date and time programming.

SUBMENU MANAGEMENT

Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant procedure, or press **C** to exit the submenu and return to the **instrument set-up menu.**

CLOCK / CALENDAR ADJUSTMENT

The HOURS, MINUTES, DAY, MONTH and YEAR values are programmed in sequence. A message is displayed for 2 seconds before accessing the set-up, to identify the parameter being set.

☞ **During the timed display of the message** indicating the parameter being set, press ↑ and ↓ to scroll up and down the sequence, **ENTER** to access the parameter set-up or **C** to exit the sequence.

☞ **While setting up the flashing parameter**, to confirm the value without editing it press **ENTER**. To change the value, press **C** to reset, enter the new value using the alphanumerical keys, then confirm pressing **ENTER**.

HOUR	Programming current hour.
MINUTES	Programming current minutes.
DAY	Programming current day of the month.
MONTH	Programming current month (from 1 to 12).
YEAR	Programming current year (from 00 to 99).

The procedure is completed when the last value in the sequence is confirmed and the display returns to the clock / calendar adjustment submenu.

☞ Press **C** to return to the main menu (TIME-DA).

SERIAL COMMUNICATION PARAMETERS SET-UP

📖 By using the ↓ key select the message "SERIAL" and press the **ENTER** key.

This submenu makes it possible to configure the serial ports COM1 and COM2 and the communication parameters. The instrument is equipped with two independent serial ports available on the same 9 pin Sub-D connector:
- COM1 with Rs232 interface
- COM2 with Rs422/Rs485 interface

📖 For instructions on how to connect the serial ports, see the installation manual (Section 1).

"SERIAL" MENU ITEMS

| BAUD C1 | Baud rate selection for COM1. |

| PROTOC1 | Communication protocol selection for COM1. |

| BAUD C2 | Baud rate selection for COM2. |

| PROTOC2 | Communication protocol selection for COM2. |

| ADDRESS | Instrument's serial address. This parameter is also used as ID code in the printouts. |

| F-FEED | Programming the number of paper advance lines at end of printout. |

| PROF AD | Profibus address (number of the slave in a Profibus-DP network) |

| HEADER | Heading in the printout report. |

SUBMENU MANAGEMENT

☞ Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant procedure or **C** to exit the submenu and return to the **instrument set-up menu (SERIAL).**

BAUD RATE SELECTION (BAUD C1) (BAUD C2)

The selection procedure is the same for COM1 and for COM2. The display shows the stored selection (flashing): the baud rates that can be selected are:

1200, 2400, 4800, 9600, 19200, 38400 and 115200 bit / sec.

☞ Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

PROTOCOL SELECTION FOR COM1 (Rs232) (PROTOC1)

The display shows the stored selection (flashing):

CONTIN	Continuous transmission to a remote display (transmission frequency 5 Hz).
AUTOMAT	Automatic weight string transmission upon weighing.
PC REQ	MASTER / SLAVE protocol with data transmission upon request from the serial line.
MODBUS	MODBUS RTU protocol.
PRINTER	Connection to panel printer for printing out the single weighing procedures and the totals.
OUT BCD	Connection to optional card for weight output in BCD code.

☞ Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

PROTOCOL SELECTION FOR COM2 (Rs422) (PROTOC2)

The display shows the stored selection (flashing):

CONTIN	Continuous transmission to a remote display (transmission frequency 5 Hz)
AUTOMAT	Automatic weight string transmission upon weighing
PC REQ	MASTER / SLAVE ASCII protocol with data transmission upon request from the serial line
MODBUS	MODBUS RTU protocol.
PROFIB	Profibus-DP protocol (for more detailed information on this protocol consult this manual from page 2.46 to page 2.49)

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired

selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

INSTRUMENT SERIAL ADDRESS PROGRAMMING (ADDRESS)

This parameter represents the communication address in the "PC request" and "Modbus" protocols.
Moreover, if it is set at any number other than 0, it is printed out as identification code on the printouts.
The value can be programmed from 0 to 99.

Press **ENTER** to confirm the value without changing it. To change the value, press **C** to reset,

enter the new value using the alphanumerical keys, then confirm pressing **ENTER**.

PROGRAMMING THE PAPER ADVANCE DISTANCE AFTER PRINTING (F-FEED)

If a configured printer is used, this parameter adjusts the paper advance distance after printing in order to
optimize the size of the receipt on the basis of the paper rip or economy. The value can be programmed from
0 to 9.

Press **ENTER** to confirm the value without changing it. To change the value, press **C** to reset,

enter the new value using the alphanumerical keys, then confirm pressing **ENTER**.

PROFIBUS NODE ADDRESS PROGRAMMING (PROF AD)

This parameter makes it possible to give the instrument a number that acts as its Profibus node address.
The value can be programmed from 0 to 126.
It is necessary to set this parameter only if the Profibus protocol has been activated in the selection of the
COM2 serial line (see page 2.22)

Press **ENTER** to confirm the value without changing it. To change the value, press **C** to reset,

enter the new value using the alphanumerical keys, then confirm pressing **ENTER**.

ANALOG OUTPUT PARAMETERS SET-UP

By using the ↓ key select the message "ANALOG" and press the **ENTER** key.

Check that the instrument is equipped with the optional analog output.

The type of analog output (selectable as voltage or current) is decided in the factory.
The current output may range from 0 to 20 mA or from 4 to 20 mA, while the voltage output may range from 0 to 10 V or from 0 to 5 V.
The analog output is obtained through the D/A conversion of the digital weight value (gross or net) with a resolution of 16 bit (65535 divisions).
The signal update frequency is the same as the display update frequency and it is affected by the digital filter actioncan be modified in the instrument set-up procedure. The filters applied to the analog output (being a reconversion of the digital value) are those applied to the weight display.

The range of values that the analog output can assume is as follows:
• in case of current output, from around –0.4 mA to 21.5 mA.
• in case of voltage output, from around –0.2 V to 10.5 V.

When the weight is invalid (weight outside the measurement field, weight not yet measured upon switching on), the output signal assumes the minimum value.

For analog output wiring see the installation manual (Section 1).

"ANALOG" SUBMENU ITEMS

| F-SCALE | Programming the weight value corresponding to the analog output full scale. |

| AN MODE | Weight transmitted as analog signal (net / gross) selection. |

| RANGE | Analog output range selection (0-10V, 0-5V, 0-20mA, 4-20mA). |

| OFFSET | Analog output calibration through offset adjustment. |

SUBMENU MANAGEMENT

Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant

procedure or **C** to exit the submenu and return to the **instrument set-up menu (ANALOG).**

FULL SCALE (F-SCALE)

This parameter programmes the weight value corresponding to the analog output full scale (10V, 5V or 20 mA). This makes it possible to use the entire voltage (or current) range even when the weight used is lower than the maximum capacity of the weighing system (default value).

TRANSMITTED WEIGHT SELECTION (AN-MODE)

The display shows the stored selection (flashing):

| NET | The analog output assumes the value corresponding to the net weight |

Or:

| GROSS | The analog output assumes the value corresponding to the gross weight |

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

ANALOG OUTPUT RANGE SELECTION (RANGE)

The display shows the stored selection (flashing):

| 0-10V | 0 – 10 V output; |

or:

| 0-5V | 0 – 5 V output; |

or:

| 4-20MA | 4 – 20 mA output; |

or:

| 0-20MA | 0 – 20 mA output. |

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

After modifying the analog output range, it is necessary to perform the offset adjustment procedure.

ANALOG OUTPUT CALIBRATION (OFFSET ADJUSTMENT)

Measure the analog output value with a digital meter in order to adjust the minimum value (0) and the maximum value (FS).

SET -0-	Indicates that the analog signal zero is being adjusted. The analog output assumes the value corresponding to the zero.
SET-FS-	Indicates that the analog signal full scale is being adjusted. The analog output assumes the value corresponding to the full scale.

Press the ↑ and ↓ keys in order to perform the **coarse** adjustment of the analog output value.

Press the **F1** and **F6** keys in order to perform the **fine** adjustment of the analog output value.
Press the →0← keys in order to select zero adjustment.
Press the →T keys in order to select full scale adjustment.
Press **ENTER** in order to save the adjustment and end the procedure.

VIEWING ACCESSES TO THE WEIGHING SET-UP MENU

By using the ↓ key select the message "ACCESS" and press the **ENTER** key.

"ACCESS" MENU ITEMS

ACC-1	Access the data display relative to the last access to the weighing set-up menu.
ACC-2	Access the data display relative to the second last access to the weighing set-up menu.
ACC-3	Access the data display relative to the third last access to the weighing set-up menu.
ACC-4	Access the data display relative to the fourth last access to the weighing set-up menu.
ACC-5	Access the data display relative to the fifth last access to the weighing set-up menu.

SUBMENU MANAGEMENT

Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant

procedure or **C** to exit the submenu and return to the **instrument set-up menu (ACCESS).**

VIEWING DATA RELATIVE TO ACCESS TO THE WEIGHING SET-UP MENU

The following pieces of information are displayed in order of time. At the end of the last process in time the procedure automatically concludes.

| ID 1 | Identification code used for access (password table). If access takes place with the calibration jumper, the identification is 0. |

| PR 2 | Progressive access number. This value is never reset. |

| 13-1-03 | Date (day, month and year) of access. |

SELECTING THE DISPLAY AND PRINTER MESSAGES LANGUAGE

By using the ↓ key select the message "LANGUAG" and press the **ENTER** key.

The display shows the stored selection (flashing):

| ITAL | The messages on the display and the printed receipts are in Italian; |

or:

| ENGL | The messages on the display and the printed receipts are in English. |

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

HARDWARE AND SOFTWARE TEST PROCEDURES

📖   By using the ↓ key select the message "TEST" and press the **ENTER** key.

"TEST" MENU ITEMS

| TIME-DA | Access the visualization of current date and time. |

| ANALOG | Access the analog output test procedure. |

| INPUTS | Access the remote input test procedure. |

| OUTPUTS | Access the relay output test procedure. |

SUBMENU MANAGEMENT

☞   Press ↑ and ↓ to scroll up and down the items, **ENTER** to access the programming or the relevant procedure or **C** to exit the submenu and return to the **instrument set-up menu (TEST).**

CLOCK / CALENDAR TEST (TIME-DA)

| 13-1-03 | The current date and time are showed on the display in succession. |

☞   Press **C** to close the display and return to the "TIME-DA" submenu.

ANALOG OUTPUT TEST (ANALOG)

This procedure makes it possible to check the analog output operation. Use a digital meter connected to the terminals 14 and 15 of the MC terminal block to measure the analog output value. Refer to page 1.13 of the installation manual for wiring.

| TEST 0 |

The figure on the right indicates the output value percentage with respect to the full scale.

☞ Press the **numerical keys from 1 to 9** in order to select the output value from 10% to 90%.

Press the **numerical key 0** in order to select 100% output value.
Press the **F** key in order to select 0 output value.
Press **C** to close the display and return to the "ANALOG" submenu.

REMOTE INPUT TEST (INPUTS)

✋ Use this procedure to check the hardware.

| 000000 |

The status of the 6 remote inputs is shown on the display.
0 = input de-activated; 1 = input activated.
Input 1 corresponds to the 1st digit on the left.
Refer to page 1.7 of the installation manual (Section 1) for wiring.

☞ Activate and de-activate the inputs in order to check their corresponding status on the display.

☞ Press **C** to close the display and return to the "INPUTS" submenu.

RELAY OUTPUT TEST (OUTPUTS)

| 010100 |

The status of the 6 relay outputs is shown on the display.
0 = relay contact open, 1 = relay contact closed.
Output 1 (and 7, in case of 14 set-points) corresponds to the 1st digit on the left.

☞ Press the keys 1 to 6 to activate/de-activate the outputs 1 to 6 (and 7 to 12, in case of 14 set-points).

Press the keys 7 and 8 to activate/de-activate the outputs 13 and 14.
Use an ohmmeter connected to the MB terminal block of the instrument (and to the 10 pin terminal block of the 8 relays external module, in case of 14 set-points) to check if the relay contacts work properly.

Press **C** to close the display and return to the "OUTPUTS" submenu.

OPERATING FUNCTION SET-UP MENU

ACCESSING THE MENU

☞ Press the **MENU** key in order to access the operating function set-up menu. You may need to program the menu access password, if applicable.

MENU ITEMS

| MODE S1 | Set-point #1 operating mode selection (net/gross/peak, NO/NC output, positive/negative weight, stable/unstable weight). |

| MODE S2 | Set-point #2 operating mode selection (net/gross/peak, NO/NC output, positive/negative weight, stable/unstable weight). |

| MODE S3 | Set-point #3 operating mode selection (net/gross/peak, NO/NC output, positive/negative weight, stable/unstable weight). |

| MODE S4 | Set-point #4 operating mode selection (net/gross/peak, NO/NC output, positive/negative weight, stable/unstable weight). |

| MODE S5 | Set-point #5 operating mode selection (net/gross/peak, NO/NC output, positive/negative weight, stable/unstable weight). |

MODE S6

The Set-point #6 can be programmed in two different operating modes: **Set-point** or **IN PROCESS**.
When selected as "Set-point" the relay contact is associated to the 6th set-point value and operates as the other set-points (1 to 5).
When selected as "IN PROCESS" the 6th set-point is missing and the relay contact #6 enables when one of the following conditions occur: **overload condition**, **error in the weight reading**, **data programming**.
The relay contact can be selected as NO or NC.

| HYSTER | Programming of the hysteresis values for the 6 (or 14) set-points. |

| MODE | Weighing mode (automatic / manual) selection and programming of weight delta between 2 weighing procedures. |

| SECURE | Keyboard lock selection and menu access password programming (can be excluded). |

MENU MANAGEMENT

☞ Press the ↑ and ↓ keys to scroll through the items, the **ENTER** key to access the selected item or programme the relative data and the **C** key to exit the menu and end the procedure.

WEIGHT SET-POINT OPERATING MODE SET-UP

📖 To access this procedure, see the **operating functions set-up menu**.

✋ The procedure is the same for all the set-points (6 or 14).

This procedure makes it possible to establish the output activation conditions on a weight basis for each set-point. The output can be activated by controlling:
- the net weight, the gross weight or the peak;
- when the weight is above (normally open) or below the programmed set-point (normally closed);
- with positive or negative weight values;
- only when the weight is stable or also when it is moving.

NET – GROSS – PEAK SELECTION

The display shows the stored selection (flashing):

NET

The set-point is compared with the gross weight;

or:

GROSS

The set-point is compared with the net weight;

or:

PEAK

The set-point is compared with the calculated peak value.
In this case the set-point is compared with the last peak value acquired, even when the peak function is not active.

👉 Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.
The next selection will be displayed.

NO / NC SELECTION

The display shows the stored selection (flashing):

N-OPEN

The relay contact is **open** when the weight is lower than the set-point value

or:

N-CLOSE

The relay contact is **closed** when the weight is lower than the set-point value

👉 Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.
The next selection will be displayed.

POSITIVE WEIGHT / NEGATIVE WEIGHT SELECTION

The display shows the stored selection (flashing):

POSIT-	The set-point is compared with positive weight values only;

or:

NEGAT-	The set-point is compared with negative weight values only;

☞ Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

The next selection will be displayed.

NORMAL / STABLE WEIGHT ONLY SELECTION

The display shows the stored selection (flashing):

NORMAL	The relay contact enables immediately when the weight reaches the set-point value, even if the weight is unstable.

or:

STABLE	The relay contact enables when the weight reaches the set-point value, but only if the stability condition is reached.

☞ Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

When this selection is confirmed, the procedure comes to an end and the display returns to the **operating function set-up menu**.

WEIGHT SET-POINT HYSTERESIS VALUE SET-UP

📖 To access this procedure, see the **operating function set-up menu**.

A hysteresis value can be set for each of the 6 (or 14) set-points and operates as follows:

- When the weight reaches a set-point the respective relay output enables; this output stays enabled until the weight differs from the set-point by the set hysteresis value.

For example: Set-point = 1000, hysteresis = 10. The respective relay output enables at 1000 and disables at 990.

✋ If the hysteresis value is = 0 or $\geq$ Set-point value, the hysteresis control is excluded.

Default value: 2 divisions

PROGRAMMING SEQUENCE

The hysteresis values relative to the set-points are programmed in sequence.
A message is displayed for 2 seconds before accessing the set-up, to identify the parameter being set.

☞   **During the timed display of the message**, indicating the parameter being set, press ↑ and ↓ to

scroll the sequence, **ENTER** to access the parameter set-up, or press **C** to exit the sequence.

☞   **While setting up the flashing parameter**, to confirm the value without editing it press **ENTER**. To

change the value, press **C** to reset, enter the new value using the alphanumerical keys, then confirm
pressing **ENTER**.

| HYST 1 | Hysteresis value for set-point 1. |

| HYST 2 | Hysteresis value for set-point 2. |

| HYST 3 | Hysteresis value for set-point 3. |

| HYST 4 | Hysteresis value for set-point 4. |

| HYST 5 | Hysteresis value for set-point 5. |

| HYST 6 | Hysteresis value for set-point 6.
(Only if MODE 6 has been selected as "Set-point"). |

In case the 14 Set-points operating mode has been selected the instrument allows the setting of the
hysteresis values 7 to 14 after the 6th .
The procedure ends when the last value in the sequence is confirmed.
The display returns to the **operating function set-up menu.**

WEIGHING MODE SET-UP

📖   To access this procedure, see the **operating function set-up menu**.

This procedure makes it possible to select whether to carry out the weighing procedure **manually** (ENTER
key or input 4) or **automatically** when the weight stabilizes at a value greater than the minimum weighing
set-point (default 20 divisions – See page 2.13).

This procedure also programmes a weight value corresponding to the minimum variation that must intervene between two successive weighing procedures (**weight delta**).

If the **weight delta** value is zero, the instrument checks that the gross weight goes under the minimum weighing set-point (i.e. that the scale is emptied) between two successive weighing procedures. **Default value: 20 divisions.**

If the **AUTO** LED is on during weighing, this indicates automatic weighing.

For a description of required weighing conditions, see the paragraph entitled "**Perform the weighing procedure**" (Page 2.37).

MANUAL / AUTOMATIC SELECTION

The display shows the stored selection (flashing):

| MANUAL | The weighing is carried out manually; |

or:

| AUTOMAT | The weighing is carried out automatically when the weight is stable. |

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

Now proceed with the programming of the weight delta.

WEIGHT DELTA PROGRAMMING

| DELTA | Weight value corresponding to the minimum variation that must intervene between two successive weighing procedures. |

Press **ENTER** to confirm the value without changing it. To change the value, press **C** to reset, enter the new value using the alphanumerical keys, then confirm pressing **ENTER**.

Confirm the weight variable settings to end the procedure and return to the **operating function set-up menu**.

KEYBOARD LOCK AND ACCESS PASSWORD

To access this procedure, see the **operating function set-up menu**.

This procedure makes it possible to activate the keyboard lock and set a password to protect access to the 3 set-up menus: the operating function menu, the instrument menu and the weighing menu.

LOCK

When the keyboard is locked, the "lock" message appears on the display for 2 seconds if any of the keys are pressed.

NOTE:

- When **the keyboard is locked** the only procedure that can be activated is the access to the operating function menu, which must therefore be **protected by a password**.
- The **password is the same** for all 3 set-up menus. The password is excluded when = 0.
- If **metric use** is selected, the access to the **weighing set-up menu** is not controlled by the password, but by the access procedure reserved for authorized personnel.

KEYBOARD LOCK SELECTION

The display shows the stored selection (flashing):

UNLOCK

The keyboard can be freely used;

or:

LOCK

The keyboard is disabled. It is only possible to access the operating function menu.

Press **ENTER** to confirm the selection without changing it, or press ↑ and ↓ to display the desired selection and **ENTER** to confirm. Pressing **C** cancels the selection without saving the changes.

Now move on to programming the password.

PROGRAMMING THE MENU ACCESS PASSWORD

PASS

Numerical 6 digits password to be set for access to the set-up menus.

Press **ENTER** to confirm the value without changing it. To change the value, press **C** to reset, enter the new value using the alphanumerical keys, then confirm by pressing **ENTER**.

By confirming the password the procedure ends and the instrument returns to the **operating function set-up menu**.

WEIGHT SET-POINT SET-UP

Press **F1** to enter the value of set-point 1.

| SET 1 |

Press **F2** to enter the value of set-point 2.

| SET 2 |

Press **F3** to enter the value of set-point 3.

| SET 3 |

Press **F4** to enter the value of set-point 4.

| SET 4 |

Press **F5** to enter the value of set-point 5.

| SET 5 |

Press **F6** to enter the value of set-point 6.

| SET 6 |

(Only if "MODE S6" is selected as Set-point).

In case the parameter "**N SET**" is equal to "**14 SET**" (see page 2.15), also the set-point values from 7 to 14 can be programmed

Press the keys **F + F1…..F8**

| SET7…14 |

To confirm the value without changing it, press

ENTER. To change the set-point, press **C** first in order to erase the old value, set the new set-point value with the numerical keys and confirm the setting by pressing **ENTER**.

The programmed set-points are compared with the weight on the basis of the criterion established during the instrument set-up phase.

PERFORM THE WEIGHING PROCEDURE

The weighing procedure can be performed manually or automatically when the weight stabilizes, on the basis of the selection made during the operating function set-up phase, which can however be modified. The stored selection is indicated by the **AUTO** LED (lights on when "AUTOMATC").

MANUAL WEIGHING PROCEDURE

☞ Press the **ENTER** key to perform the weighing procedure.

Or:

☞ Close **input 4** impulsively in order to perform the weighing procedure.

AUTOMATIC WEIGHING PROCEDURE

The weighing procedure is performed automatically when the weight stabilizes at a value above the minimum weighing value and if all the necessary conditions are met.

NECESSARY CONDITIONS

The weighing procedure can take place if all the following conditions are met:
- The weight has undergone a variation corresponding to at least the weight delta (if set) with respect to the last weighing procedure, or the gross weight has decreased to a value below the minimum weighing level.
- The weight is stable.
- The gross weight is positive and equal to/greater than the minimum weighing value.
- The weight is a valid value within the weighing system capacity.
- The net weight is not nil.

📖 For automatic or manual weighing procedure selection and programming the weight delta see paragraph "**Weighing mode set-up**".

FUNCTIONS FOLLOWING THE WEIGHING PROCEDURE

The following operations are performed after the weighing procedure:
- Sum of the net weight value in the total.
- If the printer is configured the weighing receipt is printed out.
- If configured, the transmission of the weight value over the serial line takes place.
- The net weight is saved in a memory register which can be consulted on request through the serial line.
- If configured, the weighing procedure is recorded in the alibi memory.

📖 For the configuration of the serial ports and alibi memory see the "**instrument set-up menu**".

WEIGHING PROCEDURE RECEIPT

A copy of the weighing procedure receipt follows below:

```
   09/03/03      10:30
    ID code 90
GROSS WEIGHT    211.5 kg
TARE              2.5 kg
NET WEIGHT      209.0 kg
```

✋ If the ID code is zero, the ID line is not printed.

VIEWING AND PRINTING THE TOTALS

VIEWING THE TOTAL

☞ Press the **F8** key in order to view the total of all the weight values stored in the memory.

The total weight value flashes on the display.

PRINTING THE TOTAL

☞ Press the **ENTER** key in order to print out the total weight value (only if the printer is configured).

A copy of the total weight value receipt follows below:

```
   09/03/03       10:30
    ID code 90
         TOTAL

NET WEIGHT      209.0 kg
```

✋ If the ID code is zero, the ID line is not printed.

After printing, the instrument returns to the weighing function automatically.

ZEROING THE TOTAL

☞ Press the **C** key in order to zero the total displayed.

| 2ERO | This message is shown on the display for 2 seconds. Confirm the zeroing by pressing the **ENTER** key while the message is displayed. If configured, the printer automatically prints out the total weight value before zeroing. After printing, the instrument returns to the weighing function |

automatically.

END OF VIEWING

Press the **F8** key in order to end viewing and return to the weighing functions.

The total weight value remains in the memory even when the instrument is switched off.

MANAGING THE PEAK FUNCTION

ACTIVATING THE FUNCTION

Press the **F7** key in order to enable the peak value acquisition function.

Or:

Keep the **input 5** activated in order to enable the peak value acquisition function.

PEAK VALUE ACQUISITION

P <peak>

The letter P is shown on the left of the display when the peak function is active. The maximum net weight value (positive or negative) is automatically memorized and shown on the display.

PEAK VALUE RESET

Press the **C** key in order to erase the peak value.

DISABLING THE FUNCTION

Press the **F7** key in order to disable the peak value acquisition function.

Or:

De-activate **input 5**.

The peak value remains in the memory even when the user disables the function or the instrument is switched off. It is displayed again when the peak function is activated again or the instrument is switched on.

INPUT AND OUTPUT FUNCTIONS

INPUTS	FUNCTION
Input 1	Automatic tare (impulsive)
Input 2	Tare erasing (impulsive)
Input 3	Semiautomatic zero (impulsive)
Input 4	Weighing procedure (impulsive)
Input 5	Peak activation (static)
Input 6	Keyboard lock (static)

OUTPUTS	FUNCTION
Output 1	Check set-point 1
Output 2	Check set-point 2
Output 3	Check set-point 3
Output 4	Check set-point 4
Output 5	Check set-point 5
Output 6	Check set-point 6 / IN PROCESS function

ADDITIONAL OUTPUTS	FUNCTION
Output 7	Check set-point 7
Output 8	Check set-point 8
Output 9	Check set-point 9
Output 10	Check set-point 10
Output 11	Check set-point 11
Output 12	Check set-point 12
Output 13	Check set-point 13
Output 14	Check set-point 14

The 8 additional relay outputs are handled by the optional 8 relays external module S097 (refer to the installation manual – Section 1, page 1.15)

When programming data using the keyboard, the input and output functions are disabled.

SERIAL COMMUNICATION PROTOCOLS

CONTINUOUS SERIAL PROTOCOL

This protocol is used for continuous transmission, usually to a remote display.

COMMUNICATION PARAMETERS: Start bit = 1, Data bit = 8, Stop bit = 1, Parity = none.

TRANSMISSION STRING AT A FREQUENCY OF 5 Hz:

STX <status> <net> ETX <csum> EOT

<status> = character coded as per table below (bit = 1 if condition TRUE)

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	1	1	Tare entered	Min. weight	Stable weight	Centre of zero

<net> = 8 ASCII characters for net weight value. Right hand justified.
In overload conditions, the field takes the value: "^^^^^^^^".
In underload conditions, the field takes the value: "_ _ _ _ _ _ _ _".
In weight reading error conditions, the field takes the value: " O-L ".

<csum> = string data control sum. It is calculated executing the exclusive OR (XOR) of all characters from STX (or from <Ind>) to ETX, excluding the latter; the XOR result is resolved into 2 characters considering the 4 highest bits (first character) and the 4 lowest bits (second character) separately; the 2 resulting characters are then coded in ASCII; (e.g.: XOR = 5Dh; <csum> = "5Dh" i.e. 35h and 44h).

AUTOMATIC TRANSMISSION PROTOCOL DURING WEIGHING

This protocol is used for the automatic or manual transmission to a PC; the instrument transmits the weight string and does not receive data.

COMMUNICATION PARAMETERS: Start bit = 1, Data bit = 8, Stop bit = 1, Parity = none.

STRING TRANSMITTED:

STX <status> <net> <tare> (<code>) ETX <csum> EOT

<status> = character coded as per table below (bit = 1 if condition TRUE)

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	1	1	Tare entered	Min. weight	Stable weight	Centre of zero

<net>, <tare> = 2 fields, 7 ASCII characters each for net weight and tare values. Right hand justified.
The characters can take values between "0" and "9" (30h and 39h), space (20h) or decimal point "." (2EH);
in case of negative weight the first character in the <net> field corresponds to "-" (2Dh).

(<code>) = if the alibil memory is selected, this field corresponding to the code associated with the weight is also sent.

<csum> = string data control sum. It is calculated executing the exclusive OR (XOR) of all characters from STX (or from <Ind>) to ETX, excluding the latter; the XOR result is resolved into 2 characters considering the 4 highest bits (first character) and the 4 lowest bits (second character) separately; the 2 resulting characters are then coded in ASCII; (e.g.: XOR = 5Dh; <csum> = "5Dh" i.e. 35h and 44h).

SERIAL PROTOCOL ON PC REQUEST (SLAVE)

This protocol is used when the serial port is configured in the "transmission on request" mode.

COMMUNICATION PARAMETERS: Start bit = 1, Data bit = 8, Stop bit = 1, Parity = none.

LIST OF AVAILABLE COMMANDS:

1. Enter a tare value.
2. Automatic tare command.
3. Semiautomatic zero command.
4. Current net weight and tare request.
5. Weighing procedure command.
6. Last weighing procedure data request.
7. Last weighing procedure data reset.
8. Programme the 6 set-point values.
9. Reading the programmed 6 set-point values.
10. Programme the 8 additional set-point values.
11. Reading the programmed 8 additional set-point values.
12. Peak value request.
13. Activate peak function.
14. Reset peak value.
15. Exit peak function.

The unit connected to the instrument (tipically a personal computer) acts as a MASTER and is the only unit that can start the communication procedure. The communication procedure must always consist of the transmission of a string from the MASTER followed by a response from the SLAVE.

DESCRIPTION OF THE COMMANDS FORMAT:

The **" "** characters represents constant characters (always respect capital and lower case letters)
The symbols **<** and **>** represents variable numerical fields.

1. ENTER A TARE VALUE

MASTER: **<Ind> "T" <tare> ETX <csum> EOT**
INSTRUMENT: **<Ind> "T" ACK EOT** or   **<Ind> NAK EOT**

2. AUTOMATIC TARE COMMAND

MASTER: **<Ind> "tare" EOT**
INSTRUMENT: **<Ind> "tare" ACK EOT**   or   **<Ind> NAK EOT**

3. SEMIAUTOMATIC ZERO COMMAND (ZERO MEMORIZATION)

MASTER: **<Ind> "zero" EOT**
INSTRUMENT: **<Ind> "zero" ACK EOT**   or   **<Ind> NAK EOT**

4. CURRENT NET WEIGHT AND TARE REQUEST

MASTER: **<Ind> "N" EOT**
INSTRUMENT: **<Ind> "N" <status> <net> <tare> ETX <csum> EOT**
            or   **<Ind> NAK EOT**

5. WEIGHING PROCEDURE COMMAND

MASTER: **<Ind> "tot" EOT**
INSTRUMENT: **<Ind> "tot" ACK EOT**   or   **<Ind> NAK EOT**

6. LAST WEIGHING DATA REQUEST

MASTER: **<Ind> "F" EOT**
INSTRUMENT: **<Ind> "F" <net> <tare> (<code>) ETX <csum> EOT**

or   **<Ind> NAK EOT**

7. RESET LAST WEIGHING DATA

MASTER: **<Ind> "reset" EOT**
INSTRUMENT: **<Ind> "reset" ACK EOT**   or   **<Ind> NAK EOT**

8. PROGRAMME THE 6 SET-POINT VALUES

MASTER: **<Ind> "S" <s1> <s2> <s3> <s4> <s5> <s6> ETX <csum> EOT**
INSTRUMENT: **<Ind> "S" ACK EOT** or   **<Ind> NAK EOT**

9. READING THE PROGRAMMED 6 SET-POINT VALUES

MASTER: **<Ind> "R" EOT**
INSTRUMENT: **<Ind> "R" <s1> <s2> <s3> <s4> <s5> <s6> ETX <csum> EOT**
                or **<Ind> NAK EOT**

10. PROGRAMME THE 8 ADDITIONAL SET-POINT VALUES

MASTER: **<Ind> "M" <s1> <s2> <s3> <s4> <s5> <s6> <s7> <s8> ETX <csum> EOT**
INSTRUMENT: **<Ind> "M" ACK EOT** or   **<Ind> NAK EOT**

11. READING THE PROGRAMMED 8 ADDITIONAL SET-POINT VALUES

MASTER: **<Ind> "Q" EOT**
INSTRUMENT: **<Ind> "Q" <s1> <s2> <s3> <s4> <s5> <s6> <s7> <s8> ETX <csum> EOT**
or **<Ind> NAK EOT**

12. PEAK VALUE REQUEST

MASTER: **<Ind> "P" EOT**
INSTRUMENT: **<Ind> "P" <peak> ETX <csum> EOT** or   **<Ind> NAK EOT**

13. ACTIVATE PEAK FUNCTION

MASTER: **<Ind> "peak" EOT**
INSTRUMENT: **<Ind> "peak" ACK EOT**   or   **<Ind> NAK EOT**

14. PEAK VALUE RESET

MASTER: **<Ind> "res_p" EOT**
INSTRUMENT: **<Ind> "res_p" ACK EOT**   or   **<Ind> NAK EOT**

15. EXIT PEAK FUNCTION

MASTER: **<Ind> "esc_p" EOT**
INSTRUMENT: **<Ind> "esc_p" ACK EOT**   or   **<Ind> NAK EOT**

CHARACTERS USED IN THE STRINGS:

<Ind> = INSTRUMENT address, is the ASCII character obtained by adding 80h to the address number (i.e. address 1: <Ind> = 80h + 01h = 81h).

<csum> = string data control sum; it is calculated executing the exclusive OR (XOR) of all characters from <Ind> to ETX, excluding the latter; the XOR result is resolved into 2 characters considering the 4 highest bits (first character) and the 4 lowest bits (second character) separately; the 2 resulting characters are then coded in ASCII. (i.e.: XOR = 5Dh; <csum> = "5Dh" i.e. 35h and 44h).

<status> = status byte (see status register in MODBUS protocol).

<tare>, <s1>...<s8>, <peak> = 10 fields, 7 ASCII characters each, for tare, set-point and peak values. Right hand justified. The characters can take values between "0" and "9" (30h and 39h), space (20h) or decimal point "." (2Eh); the position of the decimal point must respect that of the instrument display.

<net> = 1 field, 7 ASCII characters. Right hand justified. The characters can take values between "0" and "9" (30h and 39h), space (20h) or decimal point "." (2EH); in case of negative weight the first character in the <net> field corresponds to "-" (2Dh);

In overload conditions, the field takes the value: "^^^^^^^".
In underload conditions, the field takes the value: "_ _ _ _ _ _ _".
In weight reading error conditions, the field takes the value: " O-L ".

BCD OUTPUT PROTOCOL

The serial transmission to the BCD board is based on a specific protocol. The output update frequency is set at 10 Hz with a baud rate of 9600 bit/sec. Consequently it is necessary to programme this value as Baud rate for COM1.
The weight transmitted to the BCD board is the gross weight.
The maximum value that can be represented is: 39999 whatever the division value used.
With a weight over the maximum capacity, with an invalid weight or with a negative or positive weight, all the outputs are activated (1FFFF) while the polarity output operates normally.

THE MODBUS RTU PROTOCOL

For further information on this protocol please refer to the general technical specifications PI_MBUS_300

Functions supported: **READ HOLDING REGISTER** and **PRESET SINGLE REGISTER**

LIST HOLDING REGISTER

Address	Description	R/W
40009	Instrument Error	R
40011	Status Register	R
40012	Gross weight H **(*)**	R
40013	Gross weight L **(*)**	R
40014	Decimal point	R
40015	Net weight H **(*)**	R
40016	Net weight L **(*)**	R
40017	Decimal point	R
40018	Net weight string (char 1 and 2)	R
40019	Net weight string (char 3 and 4)	R
40020	Net weight string (char 5 and 6)	R
40021	Net weight string (char 7 and 8)	R
40030	Command Register	W

(*) Signed

ERROR CODIFICATION IN ADDRESS 40009 "Instrument Error"

Address 40009	Condition	Meaning
00 00	**No errors**	The instrument functions normally
00 03	**Out of range**	The signal coming from the load cell exceeds the maximum value of 3.9 mV/V
00 05	**Overload**	The weight value exceeds the maximum capacity
00 07	**Underload**	The weight value is less than 9 divisions below zero

LIST OF BITS IN THE ADDRESS 40011 "Status Register"

The bits set to 1 have the following meaning:

Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Range2	Range1	Out of range	Over load	Under load	Valid weight	Tare entered	Min. weighing	Stable weight	Centre of zero

LIST OF FUNCTIONS IN THE ADDRESS 40030 "Command Register"

The following commands will be performed when writing the following functions in the "Command register" address:

	Function		
	9	**8**	**7**
Command performed	Erase tare	Semiautomatic zero	Automatic tare

INFORMATION ON THE MODBUS ADDRESSES FROM 40018 TO 40021 ("Net weight string")

This group of addresses contains the **value of the net weight expressed with ASCII code** and is used for communication with an ESA touch screen panel (optional), which can be interfaced with the instrument for special applications.
The following operations are possible on the touch screen panel:
- Weight value and LED's status visualization
- Manual tare, automatic tare and tare reset programming
- Semiautomatic zero
- Operating data visualization and programming

The following table shows an example of representation of a net weight value equivalent to 125974 kg.
The first line (ASCII) represents the coded ASCII weight characters, just as they are read through Modbus RTU protocol.
The second line shows the decimal correspondence

	Address 40018		Address 40019		Address 40020		Address 40021	
	Character 1	Character 2	Character 1	Character 2	Character 1	Character 2	Character 1	Character 2
ASCII	30	30	31	32	35	39	37	34
DEC	0	0	1	2	5	9	7	4

THE PROFIBUS-DP PROTOCOL (OPTIONAL)

ADDRESSES

PROFIBUS Input Data Area

VARIABLES	BYTES MAPPING
Instrument error register	0 – 1
Status register	2 – 3
Gross weight (MSW) (*)	4 – 5
Gross weight (LSW) (*)	6 – 7
DP position (GW)	8 – 9
Net weight (MSW) (*)	10 – 11
Net weight (LSW) (*)	12 – 13
DP position (NW)	14 – 15
Last Net weight (MSW) (*)	16 – 17
Last Net weight (LSW) (*)	18 – 19
DP position (LNW)	20 – 21
Last Tare value (MSW) (*)	22 – 23
Last Tare value (LSW) (*)	24 – 25
DP position (LTW)	26 – 27
Code (MSW)	28 – 29
Code (MSW)	30 – 31

(*) Signed
(MSW) = Most Significant Word   (LSW) = Least Significant Word

PROFIBUS Output Data Area

VARIABLES	BYTES MAPPING
Command register	0 – 1

Instrument error register

Value	Meaning
00	Normal function
03	Out of range
05	Overload
07	Underload

Status register

Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Range2	Range1	Out of range	Over load	Under load	Valid weight	Tare entered	Min. weighing	Stable weight	Centre of zero

Command register

Value	Meaning
07	**Semiautomatic tare**
08	**Semiautomatic zero**
09	**Delete tares**
10	**Perform the weighing procedure**
11	**Reset data weight**

Viewing errors on the instrument display

The errors are only displayed instead of the weight if no data programming procedure is underway:

NO COMM = absence of Profibus network connection. Automatically disappears when Profibus network connection is restored.

E-PROF= absence of connection between the MC302 and the Profibus module S125. After several connection attempts the communication is interrupted. Press the F key in order to reactivate communication.

E-CRC= communication error between the MC302 and the Profibus module S125 (automatically disappears when the error is restored by the instrument).

GSD FILE STRUCTURE (supplied on floppy disk with the instrument)

```
;==============================================================
; Profibus Device Database of :
;   HMS Industrial Networks AB DP slave
;   Model : ANYBUS-IC PDP
;   Description : ANYBUS-IC Profibus DP slave
; Language : English
; Date : 12 September 2001
; Author : HMS Industrial Networks AB
;==============================================================
#Profibus_DP

GSD_Revision        = 2

; Device identification
Vendor_Name         = "HMS Industrial Networks AB"
Model_Name          = "AnyBus-IC PDP"
Revision            = "Version 1.00"
Ident_Number        = 0x1810
Protocol_Ident      = 0             ; DP protocol
Station_Type        = 0             ; Slave device
FMS_supp            = 0             ; FMS not supported
Hardware_Release    = "Version 1.02"
Software_Release    = "Version 1.00"

;Used bitmap
Bitmap_Device = "ABIC_DE"
Bitmap_Diag   = "ABIC_DI"
Bitmap_SF     = "ABIC_SF"

; Supported baudrates
9.6_supp            = 1
19.2_supp            = 1
45.45_supp            = 1
93.75_supp            = 1
187.5_supp            = 1
500_supp            = 1
1.5M_supp           = 1
3M_supp             = 1
6M_supp             = 1
```

```
12M_supp              = 1

; Maximum responder time for supported baudrates
MaxTsdr_9.6           = 60
MaxTsdr_19.2          = 60
MaxTsdr_45.45         = 250
MaxTsdr_93.75         = 60
MaxTsdr_187.5         = 60
MaxTsdr_500           = 100
MaxTsdr_1.5M          = 150
MaxTsdr_3M            = 250
MaxTsdr_6M            = 450
MaxTsdr_12M           = 800

; Supported hardware features
Redundancy            = 0         ; not supported
Repeater_Ctrl_Sig     = 2         ; TTL
24V_Pins              = 0         ; not connected
Implementation_Type = "SPC3"

; Supported DP features
Freeze_Mode_supp      = 1         ; supported
Sync_Mode_supp        = 1         ; supported
Auto_Baud_supp        = 1         ; supported
Set_Slave_Add_supp    = 1         ; supported

; Maximum polling frequency
Min_Slave_Intervall = 1           ; 100 us

; Maximum supported sizes
Modular_Station       = 1         ; modular
Max_Module            = 24
Max_Input_Len         = 48
Max_Output_Len        = 48
Max_Data_Len          = 96
Modul_Offset          = 1

Fail_Safe             = 1         ; state CLEAR accepted

Slave_Family          = 0
Max_Diag_Data_Len     = 6

; Definition of modules
Module = "IN/OUT:  32 Byte (16 word)" 0x7F
EndModule
;
Module = "OUTPUT:  16 Byte ( 8 word)" 0x67
EndModule
```

==

NOTE:

0x7F corresponds to: "IN/OUT: 32 Byte (16 word)" 0x7F
0x67 corresponds to: "OUTPUT: 16 Byte (8 word)" 0x67

This means that the PLC master must be configured for handling 32 Input bytes and 48 output bytes.

PROFIBUS S125 MODULE SPECIFICATIONS (AnyBus-IC PDP)

AnyBus-IC PDP is a module designed for communication within a Profibus-DP network and acts as a Profibus-DP **slave** module.

Characteristics:

- **32 bytes input / 48 bytes output** (see note on page 2.48)
  The significant bytes in the MC302 communication protocol are:
  32 for the Profibus input area (32 bytes from 0 to 31, see "Profibus Input Data Area" page 2/46)
  2 for the Profibus output area (2 bytes from 0 to 1, see "Profibus Input Data Area" page 2/46)

- **Support of all the baud rates from 9.6 kbit/s to 12 Mbit/s**
  The module automatically adjusts its communication speed to match that of the Master

- **Galvanic insulation**
  The module is separated from other electronic devices through a DC/DC converter.
 The transmission and reception signals are isolated through opto-isolators.

Profibus ID number

The Profibus ID number of the AnyBus-IC module (shown in the GSD file) is **1810h**

Sub-D 9 pin connector

The connector numbering is described on page 1.17 of the installation manual Section 1

LIST OF PROGRAMMING PROCEDURES

KEY	FUNCTION
F1	Set-point 1 programming
F2	Set-point 2 programming
F3	Set-point 3 programming
F4	Set-point 4 programming
F5	Set-point 5 programming
F6	Set-point 6 programming
F7	Peak function activation
F8	Total viewing
F + F1….F8	Set-points 7 to 14 programming
→T	Autotare command
F + →T	Entering a tare value
→0←	Semiautomatic zero command
T←	Erasing the tare
ENTER(short press)	Perform weighing procedure
ENTER (3 sec.)	Access the weighing set-up menu
MENU (short press)	Access the operating function set-up menu
MENU (2 sec.)	Access the instrument set-up menu

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The set-point control does not work	• the set-points have not been set • the instrument is not in the normal weighing phase	• set the set-point values by following the relative instructions • exit the programming phase
The instrument does not check the set-points correctly	• the set-point control parameters have not been set	• make sure that they are set as required
The serial communication does not work properly	• installation has not been carried out correctly • the serial interface function selection is incorrect	• check the installation as described in section 1 • select the correct settings
The semiautomatic zero function does not work	• The gross weight exceeds the action limit of the semiautomatic zero • The weight does not stabilizes	• Calibrate the weight in order to restore the zero • Wait for the weight to become stable, or adjust the digital filter parameter
The semiautomatic tare function does not work	• The gross weight is negative or exceeds the maximum capacity value • The weight does not become stable	• Check the gross weight • Wait for the weight to become stable, or adjust the weight filter parameter.
The messages on the display and printer do not correspond to those described in the manual	• The language selected is not english	• Select English language
The keyboard does not work or it is not possible to access the programming menus	• The keyboard lock is enabled • The menu access password function is enabled	• Check the keyboard lock and menu password access modes selected

ODECA s.r.l.
Via Dell'Industria, 20
21044 - CAVARIA - VA –

CE	**DICHIARAZIONE DI CONFORMITA'** *Declaration of conformity*

Lo strumento per pesare a funzionamento non automatico
The non-automatic Weighing instrument

Fabbricante: Manufacturer:	**ODECA srl**
Tipo/Modello: Type/Model:	**IRD**

al quale si riferisce la presente dichiarazione,
è conforme alla/e seguente/i norma/e o documento/i normativo/i :
to which this declaration refers to,
conforms with the following standard(s) or other regulations document(s) :

Conformità CE / *CE Conformity* :
* Direttiva CEE 89/336 sulla Compatibilità Elettromagnetica
Norme Europee EN 55011 , EN 50082-1
89/336 EU EMC Directive adopted European Standard EN 55011 , EN50082-1
* Direttive CEE 73/23 e 93/68 sulla sicurezza elettrica in bassa tensione.
Norma Europea EN 61010-1
73/23 and 93/68 EU Directives regarding low voltage electrical safety.
Adopted European Standard EN 61010-1

Altre Norme e Direttive / *Other Directives and Standards* :
(°) Direttiva CEE 90/384 , Requisiti metrologici per strumenti per pesare a funzionamento non automatico. Norma Europea EN 45501.
(°) *90/384 EU Directive, Metrological aspects of non-automatic weighing instruments.*
Adopted European Standard EN45501:1992
(°) Solo se è presente il marchio "M" / *Only if "M" mark is applied*

Odeca s.r.l.