dinamica generale
Electronic weight systems and automation
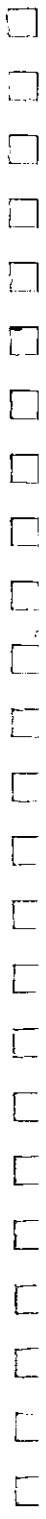
Microcomputer
Stad 04 Plus

User Handbook

REV. A.5

22/11/2006

WARNING

⚠ The power supply must be connected directly to the battery or to a regulated feeder.
If it is not the case, DG is not responsible for damages to the micro computer..

⚠ Disconnect the power supply from the micro computer when the battery is undergoing recharge.
*If it is not the case, DG is not responsible for damages to the micro computer.*

⚠ Disconnect all lines from the local plant before undertaking welding on the lorry.
If it is not the case, DG is not responsible for damages to the micro computer.

⚠ For a correct functioning, please make sure that the battery has always a higher voltage than 10,5 Volt.

⚠ This marking on the product or on its packaging illustrates that, under European Directive 2002/96/EG governing used electrical and electronic device, this product may not be disposed of with normal household waste. You are responsible for disposal of this equipment through a designated waste electrical and electronic equipment collection. To determine the locations for dropping off such waste electrical and electronic, contact your government office, the waste disposal organization that serves your household or the company at which you purchased the product.
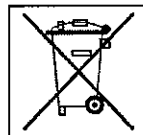
⚠ Before cleaning the mixer wagon with jets of water under high pressure, protect the equipment from possible ingress of water. In addition, take great care not to subject the indicator, load cell, junction box, audible alarm, cables or any options to direct jets of water.

⚠ If the equipment needs to be cleaned, use a soft, damp, lint-free cloth. Never use sprays, solvents, abrasives, or sharp or pointed objects that could damage the indicator.
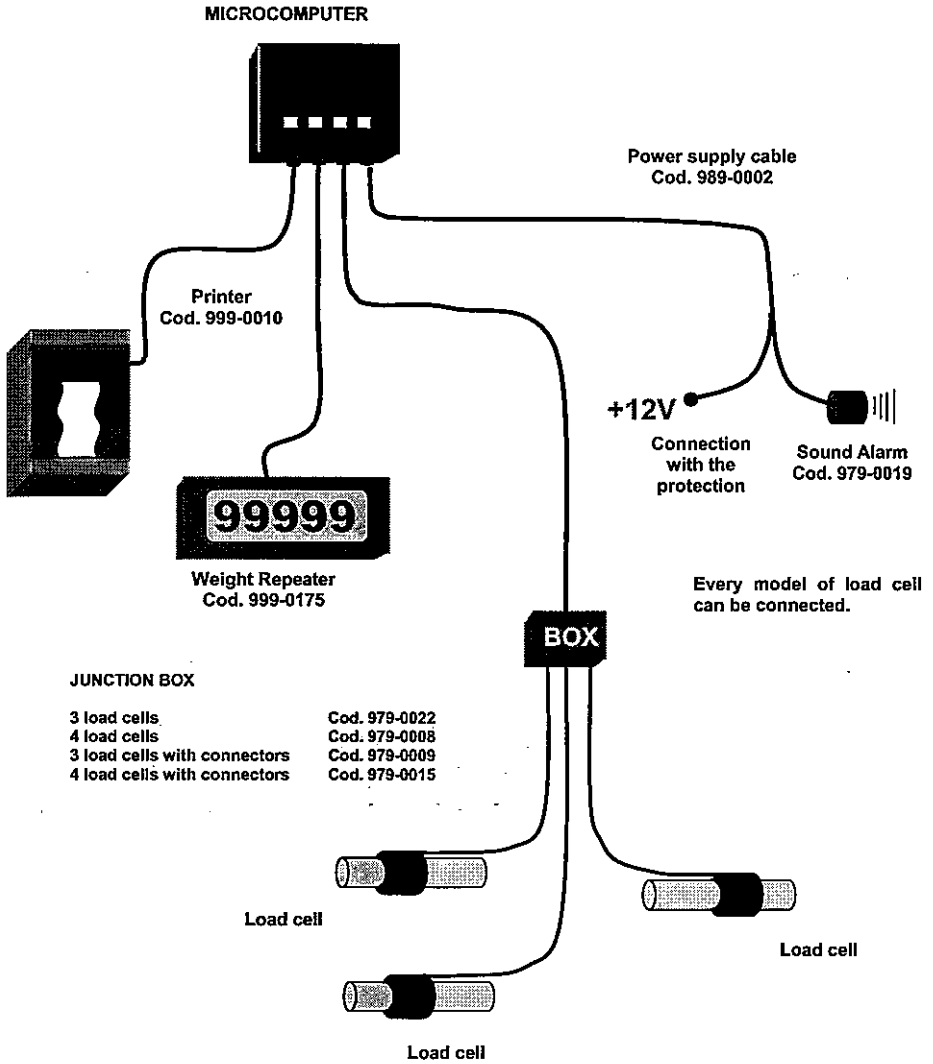
1

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1 TECHNICAL DATA

Range (f.s.):	0 – 65.000 kg
Resolution:	1 – 2 – 5 –10 kg
Precision:	< +/- 0,015 % f.s.
Operating temperature:	– 30 °C / + 65 °C
Input voltage:	9 - 32 Vd.c. ("LOW BATTERY" alarm < 9,0 V d.c.)
Dimensions (mm):	220 x 200 x 100
Weight (gr):	2000
Case:	IP66 protection (IP67 for a short time)* Polyamide (PA) 30% fibre glass, noise shielded
Display:	5 digit high efficiency red LED diodes 40 mm high 16 LCD alpha-numeric types 7,5 mm high black light
Visibility display:	≥ 15 m

* Complete protection from dusts and water sprinklings, guaranteed in water full
  immersion for short time with connectors closed by cap or with cables / accessories
  connected.

MICROCOMPUTER

Power supply cable
Cod. 989-0002

Printer
Cod. 999-0010

+12V

Connection
with the
protection

Sound Alarm
Cod. 979-0019

99999

Weight Repeater
Cod. 999-0175

Every model of load cell
can be connected.

BOX

JUNCTION BOX

3 load cells	Cod. 979-0022
4 load cells	Cod. 979-0008
3 load cells with connectors	Cod. 979-0009
4 load cells with connectors	Cod. 979-0015

Load cell

Load cell

Load cell

4

3   MICROCOMPUTER USE

1) START UP

Turn ON the microcomputer using the key ... [image] ... wait .... Rev. xxx
then ... - - - - - ,therefore ... XXXX ... (a value of weight).

2) TARE

If the microcomputer indicates a weight values over 14÷20 kg, do the tare by
pressing at the same time the keys MINUS and PARTIAL until the message–
TA – is displayed and then the message– END – .
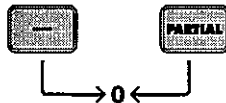
3) PROGRESSIVE WEIGHING

Now you are ready for the progressive weighing (loading the weight increases, unloading the weight
decreases).

4) LOADING WITH ALARM

a) Turn ON the microcomputer as indicated in point 1) and 2).

b) Press at the same time the keys PLUS and MINUS.

c) When the display shows ... -ALARM- ... leave the key.

d) After displaying ... 0. ... set the weight with the keys PLUS and MINUS singly pressed.

e) Confirm the set weight by pressing the key ... [PARTIAL] ... before loading (the weight to be loaded
is underlined by 3 flashing dots). When 85% load is reached an intermittent alarm will start to
sound and then it sounds continuously at 100%

f) After 5 seconds the microcomputer automatically goes to the total weight.

g) Repeat the same procedure for each item to be loaded starting from point b).

5) UNLOADING WITH ALARM

Follow the same procedure indicated in point LOADING WITH ALARM 4.b)
The microcomputer automatically recognises the unloading phase.

NOTE 1: if an alarm weight has already been set and the weight change during a movement, it
is possible to re-set it by pressing these keys in sequence:

first [TOTAL] and then ... [PARTIAL]

NOTE 2: if the microcomputer is turned OFF when an alarm weight has been set, the set value
returns to zero.

4 SUPPLEMENTARY FUNCTIONS

TOTAL

This key allows to pass to the progressive weighing at any time (it displays
the total weight inside the wagon).

BATTERY CONTROL

Press both the PARTIAL and TOTAL keys the battery voltage is displayed.

TIME and DATE

DISPLAYING / VISUALISATION

Press both the PRINT and MINUS keys the time and the date is displayed.

PROGRAMMING

At turn ON the microcomputer, wait ... $\boxed{- - - - -}$, therefore press the keys ... ...
(keep then pressed for at least 7 seconds).

In sequence, the display shows HOURS (0 - 23), MINUTES (0 - 59), DAY (1 -31), MONTH (1 - 12),
YEAR (0 – 99).

Each parameter is set with the PLUS and MINUS keys ...

Confirm by pressing ... ... It returns automatically to the normal working.

THE FUNCTION IS NOT AVAILABLE WHEN THERE IS NO PRINTER.

PRINT

To press the key PRINT to print the displayed weight.

THE FUNCTION IS NOT AVAILABLE WHEN THERE IS NO PRINTER.

6

5 PROGRAMMING RECIPES

Using the key ... **SELECT** ... set on "PROG. R1"

with the keys ... **[—] [+]** ... choice the recipe to program (or change) – 10 recipes -

confirm the choice by pressing ... **[←┘]**

with the keys ... **[—] [+]** ... insert the COWS ("COWS")

> N.B.: with "COWS NUMBER = 0", to program for per TOTALS (In kg)

confirm by pressing ... **[←┘]**

with the keys ... **[—] [+]** ... insert the weight relative to the indicated

component confirm by pressing ... **[←┘]**

> N.B.: see the table 1 for the program of the maximum value for component and program.
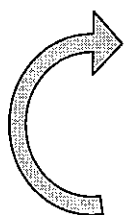
REPEAT for all 12 components

If it has a printer, it is possible to print the recipe from any following point to the programming of the

n° of cows pressing the keys ... **[PRINT BLOCK]**

To exit in any moment to press the keys ... **SELECT**

TABLE 1

Kind of program	Max value for component	Max total for program	Error message**
Per Cows	65	65.000	-HHH-
Per Totals	6500	65.000	-HHH-

** The ERROR message appears when, programming a component, the total of the program

(automatically calculated by the scale) exceeds the value 65.000.

Clicking on **SELECT** the value of the last programmed component is erased, the program is

memorized and the scales goes back to the selection menu.

Using the key ... **SELECT** ... set on "EXEC. R 1"

with the keys ... **[–]** **[+]** ... choice the recipe to execute

confirm the choice by pressing ... **[←]**

If the recipe is programmed for COWS

with the keys ... **[–]** **[+]** ... it is possible to change the "NUMBER of COWS "

confirm by pressing ... **[←]**

If the recipe is programmed for TOTALS

leave the NUMBER of COWS to Zero and confirm by pressing ... **[←]**

I can move in correspondence of the component to load with the keys ... **[–]** **[+]**

Once you have finished loading the print automatically starts.

The microcomputer returns to the MANUAL working.

N.B.

A.   If during the performance, you wish to make a **suspension** (stop weighing) press the key ... **[PRINT BLOCK]** ...to resume execution press the same key again.

B.   – Moving to the next, or previous, ingredient by using the PLUS and MINUS keys does not store any weighing.
–You can automatically load the quantity indicated on the screen by waiting for the automatic movement to the next.

– I can load only a part of the quantity indicated on the screen, confirming the partial weighing with the ... **[←]** ... key (in this case the load was stored and, therefore, counted.

7 SETTING OF THE PARAMETERS

7.1 ACCESSED TO THE PASSWORD MENU`

Turn ON press ... when this is displayed ... press contemporarily the keys ... release when this is displayed

On little display

— — — — —

$-PS-$

On big display

P 0
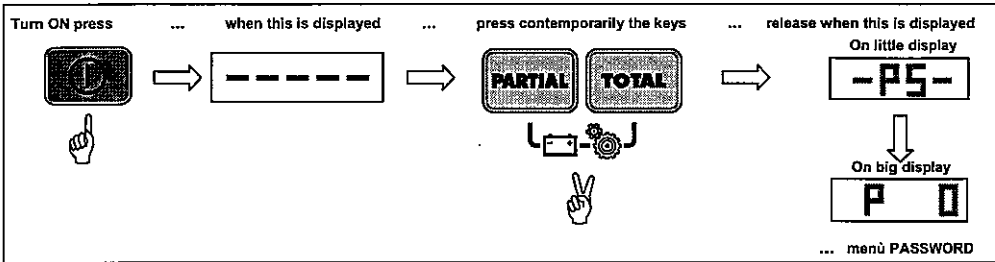
... menù PASSWORD

7.2 SETTING OF THE PASSWORD

Using the PLUS and MINUS keys ... set the desired password ... confirm to press the key ...

P 12	Calibration
P 19	Bases Parameters
P 67	Weight modification

... leave then immediately.
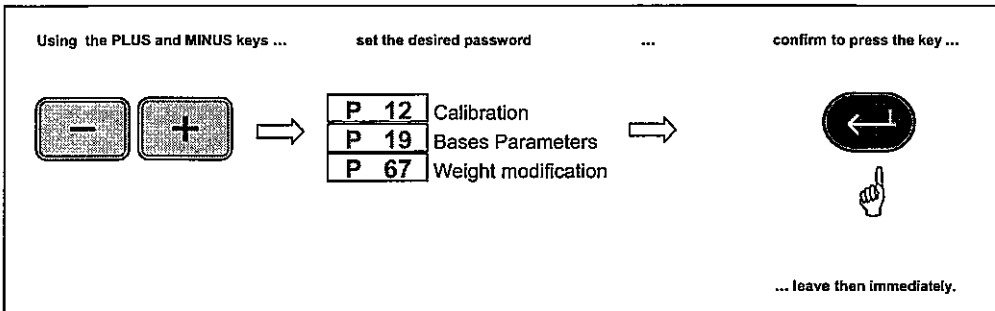
7.3 TO GET OUT OF THE PASSWORD MENU`

To confirm the configuration on until displaying ... to press ...

On little display ...

PS

On big display ...

0

... leave then immediately.

9
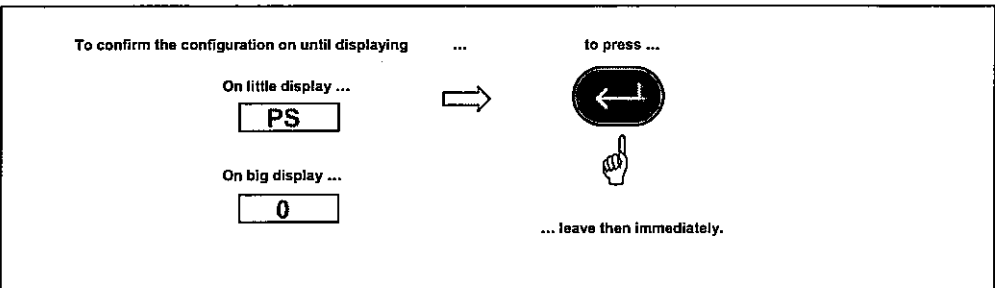
7.4 CALIBRATION – Password 12 – "- CAL -"

Set the desired calibration by using the keys PLUS and MINUS
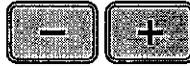
Confirm the choice by pressing at the same time ...   ... leave then immediately.

7.5 BASES PARAMETERS – Password 19 –

In order the change the set values,
you have to use the keys PLUS and MINUS.

To confirm the changing by pressing at the same time ... ... leave then immediately.

In order to get out, it is necessary to pass all voices in succession

- MOT - | **Motion** (Suggested: 250)

The MOTION is an alarm that signals sudden weight changes that can damage the system.
If that occurs, verify the installation of the weight system and the calibration values.

- DI - | **Resolution of the weight visualisation** (Suggested: 5)

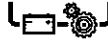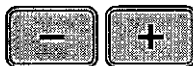The setting up of the division of the Kg. to be displayed can be set at 1, 2, 5 or 10 Kg always by pressing the keys
PLUS and MINUS.

- PAL - | **Percentage on the alarm intervention** (Suggested: 10)

The setting up of the percentage on the sound alarm intervention that controls the weighings.
Setting 15, the alarm will be working at the programmed weight minus the 15 %.
This is the pre-alarm phase and the sound signal is working in an intermittent way.

- AT - | **Time of the permanence of the alarm intervention** (Suggested: 7)

The programming of the sound permanence that controls the weighings.
The set number corresponds to the time of the sound alarm permanence, which is expressed in seconds and it
starts from the reaching of the programmed value.

- FI - | **Setting up of a filter for the weight reading stabilisation** (Suggested: 4)

The setting up of a filter that allows the weight visualisation that can be more or less fast.
Setting a low value, the weight visualisation will be very fast and sensitive even to the very little changes.
Setting an high value, the weight visualisation will be more firm and less sensitive to the little changes
Recommended value = 4 or 5.

- AUTO - | **Advance way from a component to the following one** (Suggested: 1)

Advance way of the components (in the programmed loading) and of the unloading points (in programmed
unloading).
Setting "AUTO = 1" the passage from a component to the following one (or from the unloading point to the following
one) will be automatic.
Setting "AUTO = 0" the passage from a component to the following one (or from the unloading point to the following
one) will be in manual way confirming by pressing the key "ENTER"
The setting up of the value '0' or '1' is always made by the keys PLUS and MINUS

PS | **To press ENTER for exit.**
On little display ...

0
On big display ...

7.6 WEIGHT MODIFICATION (-10% ÷ +10%) – Password 67 – "- CPC-"

Select the percentage of the weighing change
(-10% ÷ +10%) by using the keys PLUS and MINUS

Confirm the choice by using at the same time ...   ... leave then immediately.

8.1 PRINTER – Cod. 999-0010

- It is connectable to every STAD microcomputer.
- Possibility to define the customer's headline, name, address, company title etc...
- Watertight caseIP65 for critical environment.
- Low cost of maintenance.
- Operating temperature from 0 to 50°C
- Roll paper, width 57,5 mm, max. diameter 50 mm
- Thermal impact print module
- In accordance with EEC directives

- During the manual working, it is possible to print the current weight value (TOTAL and/or PARTIAL) with date and time pressing the PRINT key
- During the execution of loading or unloading with program, the RECIPE or the UNLOADING program are automatically printed at the end of the process.
- The LOADING and UNLOADING programs which are stored on the weight system can be printed by pressing the PRINT key at the end of every programming or at the end of a simple visualisation of the stored program.
- In order to get the advancing of the paper by hand, press the red key on the printer panel.

- The printer is automatically activated immediately after the switching on of the weight system (if it is predisposed).
- If the printer is not correctly identified, the message "TEST PRINTER" is displayed. The message remains till the problem is not solved.
- Check the possible causes of the problem that normally are due to the wrong connection of the cable or the power supply voltage. If the problem is not solved, contact the customer service.
- In order to go on, excluding the printer, press the PLUS key for 5 seconds; the weight system will normally work without taking into consideration the printer connection.
- If the printer is not connected to the microcomputer, the respective starting TEST are not considered and the scale switches-on normally.

- To gain the accession to the time regulation present on the weight system, press the PRINT & MINUS (-) keys together immediately after the switching on.
- It will be displayed in succession TIME(0 - 24), MINUTES (0 - 60), DAY (1 -31), MONTH (1 - 12), YEAR (1980 - 2080).
- The setting up of every parameter is done by the PLUS (+) and MINUS (-). The set up value is confirmed pressing the TOTAL & PARTIAL keys together.
- At the end of the programming, you pass automatically to the normal working mode.
- In order to display the time and the date, press the TOTAL & MINUS (-) keys together: the current time and date, that will use on the print, appear.

ENGLISH

8.2 DISPLAY REMOTE – Cod. 999-0175
Weight repeater with big digits connectable to every microcomputer

- Dimensions 281 x 124 x 87
- Red "diodes LED" display high efficiency 60 mm high.
- Display visibility: more than 20 meters.
- Weight reading till 99.999 Kg.
- Metal watertight case IP66 protected against radio frequency noises.
- Simple and direct connection to the STAD microcomputers DINAMICA GENERALE.
- Every datum which is displayed by the microcomputer is repeated on the REMOTE display.
- Possibility to convert a wire communication to a wireless one at any time.
- Possibility of a series connection of more devices.
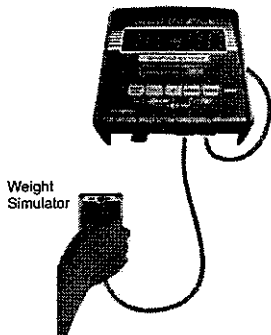
8.3 RADIO-CONTROL– Cod. 979-0063
Radio Frequency / Remote Control

- Repeats ALL the function of the microcomputer (except ON/OFF).
- Range up to 25 meters.
- Battery type AAA 1,5 Volt.
- Autonomy 120 days (normal function).

9 SEARCH FOR BREACKDOWNS

9.1 TO FIND OUT THE DAMAGED COMPONENTS

9.1.1 Check the working of the scale

Weight
Simulator

a) Connect the WEIGHT SIMULATOR (calibrator) with the lever in position "Var" (varying) to the connector SENSORS of the scale.

b) Do the TARE by pressing at the same time the keys MINUS and PARTIAL.

c) The scale has to become stable displaying "0" kg.

d) Verify the correct working of the scale by turning the WEIGHT SIMULATOR knob (the clockwise increases the weight, the counter-clockwise decreases the weight).

IF EVERYTHING WORKS CORRCTLY, THE SCALE DOES NOT HAVE ANY PROBLEM, IT IS NECESSARY TO GO ON WITH THE CONTROLS.

ON THE CONTRARY, CONTACT THE SERVICE DEPANRTMENT.

9.1.2 Check the working of the SENSORS CABLE and of the JUNCTION BOX

a) Open the JUNCTION BOX.

b) Disconnect the sensors leaving connected only the cable that goes to the scale (SENSOR CABLE).

c) Connect the WEIGHT SIMULATOR using the proper adapter in the place of one sensor.

d) Do the TARE by pressing at the same time the keys MINUS and PARTIAL.

e) The scale has to become stable displaying "0" kg.

f) Verify the correct working of the scale by turning the WEIGHT SIMULATOR knob (the clockwise increases the weight, the counter-clockwise decreases the weight).

Junction box

Weight
Simulator

REPEAT THE TEST BY CONNECTIN THE WEIGHT SIMULATOR IN THE PLACE OF EACH SENSOR

TEST RESULTS AND ACTIONS TO DO

1) If the working is always correct, the SENSORS CABLE and the JUCTION BOX do not have any problems, it is necessary to verify each sensor.
2) If the working is correct only for some positions, probably this due to the JUNCTION BOX (Try to replace it).
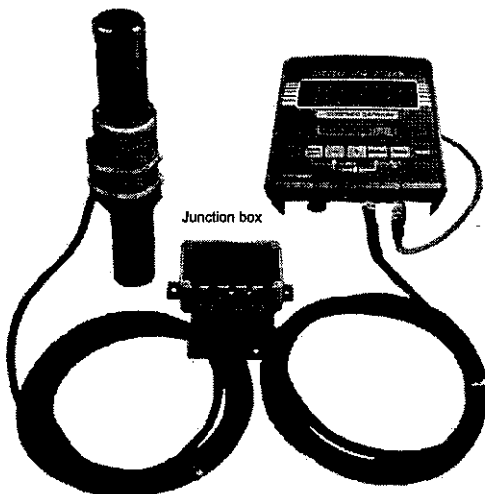3) If the working is not correct, it is necessary to replace the SENSORS CABLE (and eventually also the JUNCION BOX)
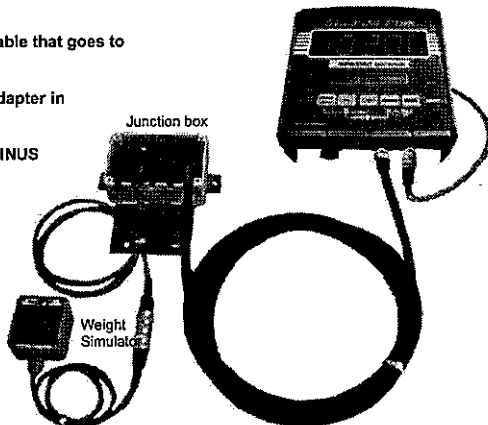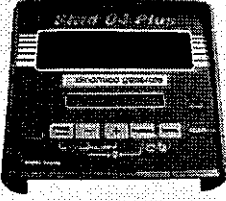
9.1.3   Verify the SENSORS working

a)   Open the JUNCTION BOX.

b)   Let connected only one sensor and the cable that goes to the (SENSOR CABLE).

c)   Do the TARE by pressing at the same time the keys MINUS and PARTIAL.

d)   The scale has to become stable by displaying "0" kg.

e)   Verify the correct working by trying to load the connected sensor (the displayed weight is
     not indicative but it has to be stable).

REPEAT THE TEST BY CONNECTING EACH SENSOR ONE AFTER THE OTHER.

THE SENSOR OR THE SENSORS THAT DO NOT HAVE A STABLE WEIGHT ARE BROKEN.

Junction box

9.2 PARTICULAR SITUATIONS

	CAUSE	SOLUTION
MOTION ALARM	The signal coming from the sensors shows sudden and important weight changes.	Solution1: do the TARE (MINUS + PARTIAL).
	A connection cable or a load cell does not work correctly.	Solution2: do the calibration with password 12 and then do the TARE (MINUS + PARTIAL).
		Solution3: do the checking procedure to verify the CABLES, JUNCTION BOX and SENSORS.
It does not switch on	The power supply does not reach the microcomputer.	Solution1: verify very carefully the power connection cable.
		Solution2: verify the efficiency of the power supply system (minimum 9 Volts / 0.5 A).
		Solution3: ship the microcomputer to manufacturer for the repairing.
OVERRANGE ALARM	The microcomputer can not read the signal of the load cells: the load cell connection cable does not work correctly.	Solution1: do the TARE (MINUS + PARTIAL).
	A connection cable or a load cell does not work correctly.	
	The signal coming from the sensors is out of the valid "RANGE" (see the password 99)	Solution2: do the calibration with the password 12 and then do the TARE (MINUS + PARTIAL).
		Solution3: do the checking procedure to verify the CABLES, JUNCTION BOX and SENSORS.

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LOW BATTERY ALARM	The microcomputer power is lower than the fixed value.	
		Solution1: verify the right battery working.
		Solution2: verify the CABLES that supply the power from the BATTERY to the MICROCOMPUTER.
UNSTABLE weight The weight goes on oscillate of tens or hundreds kg	The signal coming from the sensors is jammed: a cable or a load cell does not work correctly.	Solution1: do the checking procedure to verify the CABLES, JUNCTION BOX and SENSORS.

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10 CONFORMITY DECLARATION

Company name: DINAMICA GENERALE s.r.l.

Company address: Via Mondadori, 15
                                                   46025 Poggio Rusco (MN)
                                                   ITALY

STATE THAT THE PRODUCT

Product name: Stad 04 Plus

Product options: All

Is in accordance with the following characteristics (in compliance with 89/336/CEE):

EMC generic standard for emission:

> EN 61326-1
> EN 55011(1999) – A1(2000) – A2(2003)
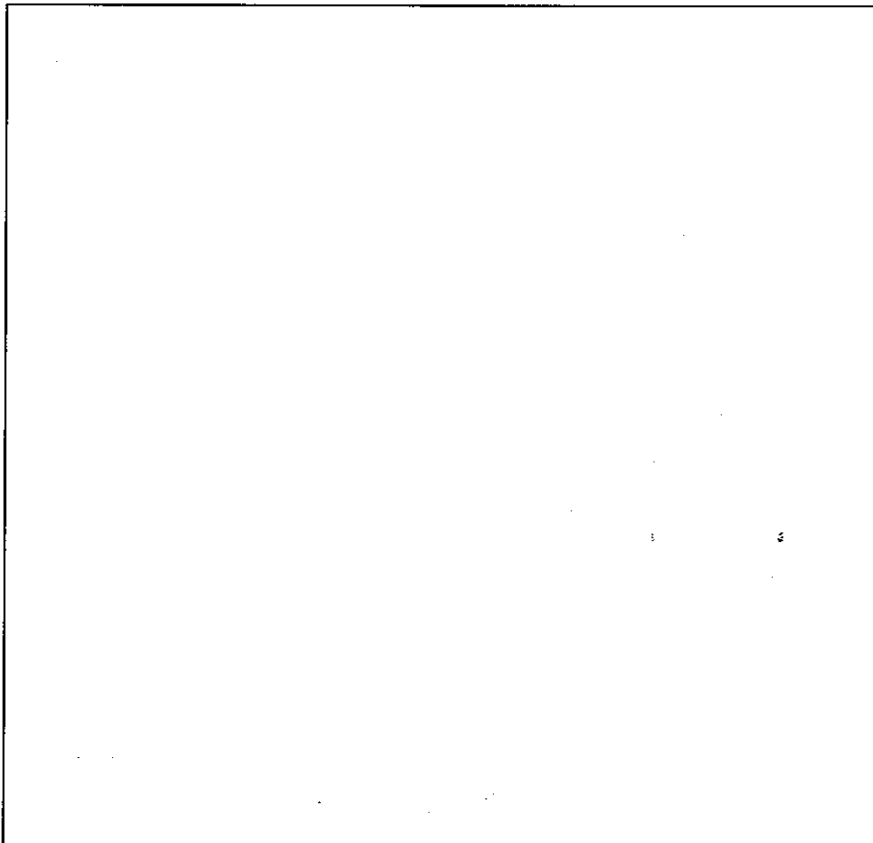
EMC generic standard for immunity:

> EN 61000-4-2 (96) – A1 (99) – A2 (01)
> EN 61000-4-3 (97) – A1 (02)
> EN 61000-4-4 (96) – A1 (01) – A2 (01)
> EN 61000-4-5 – (1997)
> EN 61000-4-6 (97) – A1 (01)
> EN 61000-4-8 (97) – A1 (01)
> EN 61000-4-11 (97) – A1 (01)

The product was tested in a typical configuration with "Dinamica Generale s.r.l." load cells.

11 GUARANTEE

The supplier guarantees, for a period of 24 months from the delivery date, the good quality of the materials used, the perfect construction and the regular working of the equipment produced by him and having the factory Logo or the production series number. During the guarantee period, the supplier undertakes the responsibility to repair or substitute the defective parts because of bad material or defect in construction found ex works, as long as these parts are sent, ex works, to the supplier's factory. Deficiencies and defects due to incorrect use of the equipment, bad maintenance, modifications made without the supplier's agreement and normal wear; are not included in the guarantee. Responsibility and compensation on the supplier's part for direct or indirect damage to people, things or production even as a consequence of a defective material or construction are excluded.

NOTES:

Stad04Plus_Man_RevA5_2ing_985-0002.doc

Manual code: 985-0002