RM5 HD-T

EN

Operating manual

Cod. DMGET00001.0EN   Rel. 1.0   11 – 06 - 2015

$C\epsilon$

GUIDE TO THE SYMBOLS IN THIS MANUAL

The following symbols have been included in this manual to facilitate its consultation.

Important information

Read carefully before use

Caution!

DECLARATION **C E** OF CONFORMITY

THE MANUFACTURER: Comesterogroup s.r.l. via M. Curie 8, 20060 Gessate MI

DECLARES

That the product: RM5HD-T

TYPE: Electronic coin mechanism
BRAND: Comesterogroup
MODEL: RM5HD-T

Is conform to the following European Directives, including their latest amendments, as well as to the national implementation legislation:
2004/108/CEE

Observing the following indications:
EN 61000-6-2
EN 61000-6-3

Gessate, 04/06/2009
Riccardo Chionna, CEO Comesterogroup s.r.l.

SAFETY INFORMATION

To prevent damages caused by short circuits and fires, this device is equipped with safety devices.

These devices must not, under any circumstance, be excluded from the circuit, nor must they be removed
Should they be deactivated to carry out maintenance or repair operations, it is possible to operate on the equipment only in absence of electric power.

The safety devices have been made in compliance with the regulations in force.
The operator must regularly verify the efficiency of the equipment.

Possible hazards from machine use

If kept in good conditions and if installed correctly (according to the indications in this manual), the equipment does not expose the user to any kind of hazards.

Risks from electricity: direct contacts during its connection to the main power supply.
Operations to be carried out by **qualified personnel**.

Risks during installation and preparation of the device.

Follow the installation instructions, in order to minimise risks to people and objects.

Risks from electricity: direct contacts during its connection to the main power supply. Operations to be carried out by **qualified personnel**.

Precautions :

- Make sure that the distribution line is sized according to the intensity of the current absorbed by the equipment.

- Carry out the earth connection before connecting equipment or aggregate devices.

Risks during the maintenance of the device

Risks from electricity: direct contact with live parts inside the electrical components cabinet.
Operations to be carried out by **qualified personnel**.

Precautions :

- Operate on the equipment only after ensuring that the main power switch is turned off.

GENERAL GUARANTEE CONDITIONS

Please read the following carefully in order to understand the general warranty conditions for this product.

ART. 1 - Scope of application

These general terms and conditions shall apply to all the goods and services provided by our company. Placed orders shall imply the full and unconditional acceptance of these general terms and conditions of sale. The contract of sale shall be considered perfected when the Purchaser receives the order confirmation from the Seller.

ART. 2 - Electromagnetic compatibility and safety

Our company certifies that the supplied goods comply with the standards concerning electromagnetic compatibility and safety; mandatory declarations are indicated in detail in the plates and labels affixed on the products and in the technical documentation attached or available at our premises. The recipients of the supply undertake to use or market the supplied goods, ensuring the integrity, completeness and usability of such information.

ART. 3 – Warranty

Except in cases where the mandatory provisions in Leg. Decree No. 206/2005 ("Consumer Code") or in other relevant laws are to be applied, the goods and services are supplied under warranty by our company for a period of 12 months. This period starts from the date of purchase of the product. The warranty is exclusively limited to the normal operation of the goods supplied and to the result of the service provided. The warranty exclusively involves the repairs or replacement of the goods. Restoration of the goods to their normal operative state shall be carried out in our factory. Although not provided for here, Art. 1512 CC is also applicable in terms of revocation and limitation.

Our company shall not be liable in any way for operation of goods supplied in environmental conditions or technical conditions other than those established by our specifications, usually set out in the technical documentation. Any liability for direct or indirect damage not deriving from a malfunction is expressly excluded.

The warranty is void and null if the purchaser is insolvent in paying the established price. The warranty does not apply in the following cases:

1. lack of or improper maintenance, even if carried out by qualified personnel;

2. repairs or alterations made by the purchaser on his unilateral initiative;

3. inadequate or irregular voltage in the power lines, insufficient flow rate and abnormal electrical systems;

4. corrosive action of detergents;

5. poor or non-functioning software or hardware or loss of data recorded by the purchaser as a result of storms, lightning, high temperature or voltage variations of the electric current, earthquakes, fire, etc.;

6. with reference to all the electrical components and mechanical plastic moving parts subject to normal wear, which must be replaced during routine maintenance;

7. where the products have been used in conjunction with or incorporated into equipment or materials whose specifications have not been approved in writing by the selling company;

8. tampering with the label showing the serial number of the machine;

9. fault or breakage due to transport, acts of vandalism, natural calamities or wilful damage;

10. wrong or bad installation of the product;

11. carelessness, negligence or lack of skill in using the product;

12. failure to comply with the operating instructions in the technical manual;

13. interventions for alleged defects or casual checks;

14. repairs carried out without our authorization.

Malfunctioning of the machine due to the software not being upgraded is not considered a defect. Comesterogroup is not obliged in any way to upgrade the software free of charge or upgrade the mechanical components which may be necessary due to new coins or banknotes being introduced by the Italian and European authorities, when repairing a product that is covered by the warranty. However, such upgrades could still be requested from Comesterogroup and the company is obliged to send a quotation to the customer prior to intervention.

Any repair or tampering carried out on the supplied goods by subjects who are not authorized by us will render the warranty null and void.

We declare to have carefully considered, to the best of our knowledge and manufacturing practices, the issue related to preventing the goods supplied from being violated by persons who intentionally intend to alter their operation. However, we shall no assume any liability for illegal conduct or damage that may result fraudulent use of the goods supplied. All required repairs not covered by the warranty must be paid for and the Comesterogroup price list shall apply whose updates are regularly communicated.

ART. 4 – Limitation of Liability

Notwithstanding the hypotheses in art. 1229 of the Italian Civil Code and notwithstanding the mandatory provisions of law, for every damage caused directly or indirectly by failures or delays of the Seller or by the purchased products to objects or persons, including but not limited to lost profits and damage to the corporate image, the compensation payable by the Seller shall not exceed, in any case, 10% of the amount paid by the Purchaser for the product that caused the damage.

ART. 5 – Delivery

The goods subject of the supply are considered delivered at the time and in the place they are passed on to the carrier; therefore, our company shall not be held liable for total or partial shortages, damage or delays related to transport. Upon delivery, the recipient must duly note any errors or damage on the bill of lading. The Purchaser's refusal to accept or collect all or part of the ordered goods does not suspend obligation to pay. The terms of delivery indicated in the order confirmation allow for a grace period of 60 days. Upon delivery, the Purchaser must carry out a complete technical verification of the

quality and functionality of the product within eight days. If not, the product shall be considered accepted without reservations or objections by the Purchaser.

ART. 6 - Retention of Title

The supplied goods shall remain the property of our company until full payment of the price has been made. In the event of termination of the contract for non-payment, the Seller is entitled to claim the unpaid items held by the Purchaser, which must be returned at the Purchaser's expense. All sums already paid will be retained by the seller as compensation and penalty.

ART. 7 – Terms of payment

Invoices must be paid in accordance with the agreements and within the deadline specified on the invoice. Any delay in payment will automatically result, without the need of formal notice, the application of interest at the rate stipulated in Legislative Decree no. 231 of 9.10.2002, unless agreed otherwise. If the purchaser delays, each benefit in the terms and conditions that may have been granted shall be deemed null and void and the seller may demand immediate payment of all outstanding amounts as well as of additional orders on receipt of the goods.

ART. 8 – Returns

Return of faulty goods or of goods requiring our assistance must be expressly authorised by us. Therefore, we reserve the right to reject the return or ask you to return the good to another destination other than our headquarters. We shall be liable for the goods only when it will be delivered to the indicated address.

ART. 9 - Applicable law and court of jurisdiction

The supplies regulated by these general terms and conditions are governed by Italian law. Any dispute shall be resolved by the Court of Milan.

Dear Customer,

thank you for choosing a Comesterogroup product; by carefully following the indications of this instruction manual, you will be able to appreciate over time, and with much satisfaction, the quality of our equipments.

Please read the use and maintenance instructions carefully and comply with all safety precautions before using the equipment.

Keep this manual for future reference.

Contents

1. Introduction

This manual and its annexes provide all the necessary information for a correct installation of the product and all its components, as well as for its correct use and maintenance. The information contained in this manual can be modified without prior notice and do not constitute a commitment on behalf of Comesterogroup. **The latest version of the manual is always available online (www.comesterogroup.com).** The information contained in this manual has been collected and verified with the utmost care; however, Comesterogroup has no liability arising from its use. Unless otherwise stated, any reference to companies, names, dates, and addresses is purely coincidental and has the sole purpose to illustrate the use of the product. The reproduction of any part of this manual without prior authorisation is prohibited.

2. Product description

RM5 HD T combines the high safety and reliability levels of the RM5 HD coin validator with the ability to automate up to 2 payment services. RM5 HD T can be used in facilities such as self-service workstations with extractors, car mat washers or dispensers with car products, but it is also ideal for facilities like automated laundries and camping sites, where service dispensers are standard items. Through 5 different sensors and the 10 different recognition parameters, it ensures a high level of recognition and discrimination of counterfeit coins with unprecedented speed (up to 6 coins per second), while the advanced electronic and mechanical anti-fraud systems guarantee excellent security in all the various installation modes. Four configurations are available :

- Single pulse totaliser with automatic activation: the pulse is activated once the cost of the service is reached.
- Dual pulse totaliser with one price with external activation using keys.
- Single timer with automatic activation.
- Dual timer with 2 prices with external activation using keys.

3. Warnings

Read this manual carefully before installation The indications and information contained in this manual are essential for a correct use of the product. Upon receiving your product, make sure it has not been damaged during transport. Pay attention to the electrical connections. Faults and malfunctions deriving from non-compliance with the instructions contained in this manual are not covered by guarantee. In this document, symbols are used to highlight important aspects that must be carefully observed.

4. Handling and unpacking

4.1 Delivery of the packaged product

Upon receiving your product, make sure it has not been damaged during transport. Should you notice damage of whatever nature, contact the delivery company and immediately file a complaint.

Following transport, the package must be intact, i.e., it must *not* show:

- Dents, signs of knocks, deformation or rupture of the packaging.
- Wet or damp patches or signs which indicate that the package has been exposed to rain, frost or heat.
- signs of tampering.

Also, make sure that the content of the packaging corresponds to your order.

Fig. 1

4.2 Handling

To prevent any damages to the equipment, we recommend handling it inside its original packaging.
After a first inspection, reinsert the equipment in its packaging to bring it to its point of installation.

We recommend:

- not to knock the equipment.
- not to leave the equipment exposed to weather agents (even if inside its packaging).

4.3 Unpacking

The equipped machine is delivered following commissioning in two types of packaging according to the number of RM5 HD coin validators required: a multiple-unit (20) packaging (fig.2) or a single-unit packaging.

Both packaging consist of corrugated cardboard. The packaging materials contained in it are made to meet the standards regarding recycling and disposal (as for disposal, follow the regulations in force in your country).
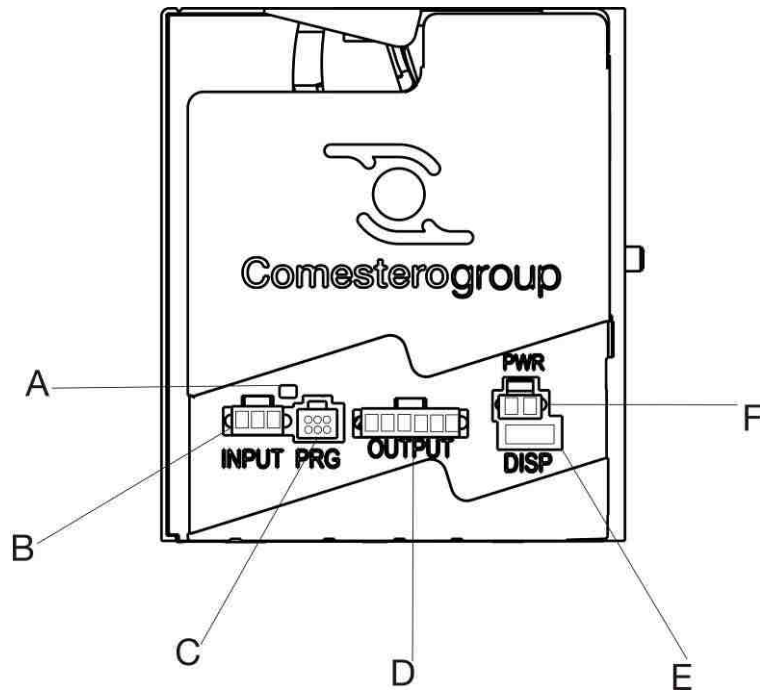
Fig. 2

4.4 Dimensions

FRONT VIEW

LEFT SIDE

TOP VIEW

Fig. 3
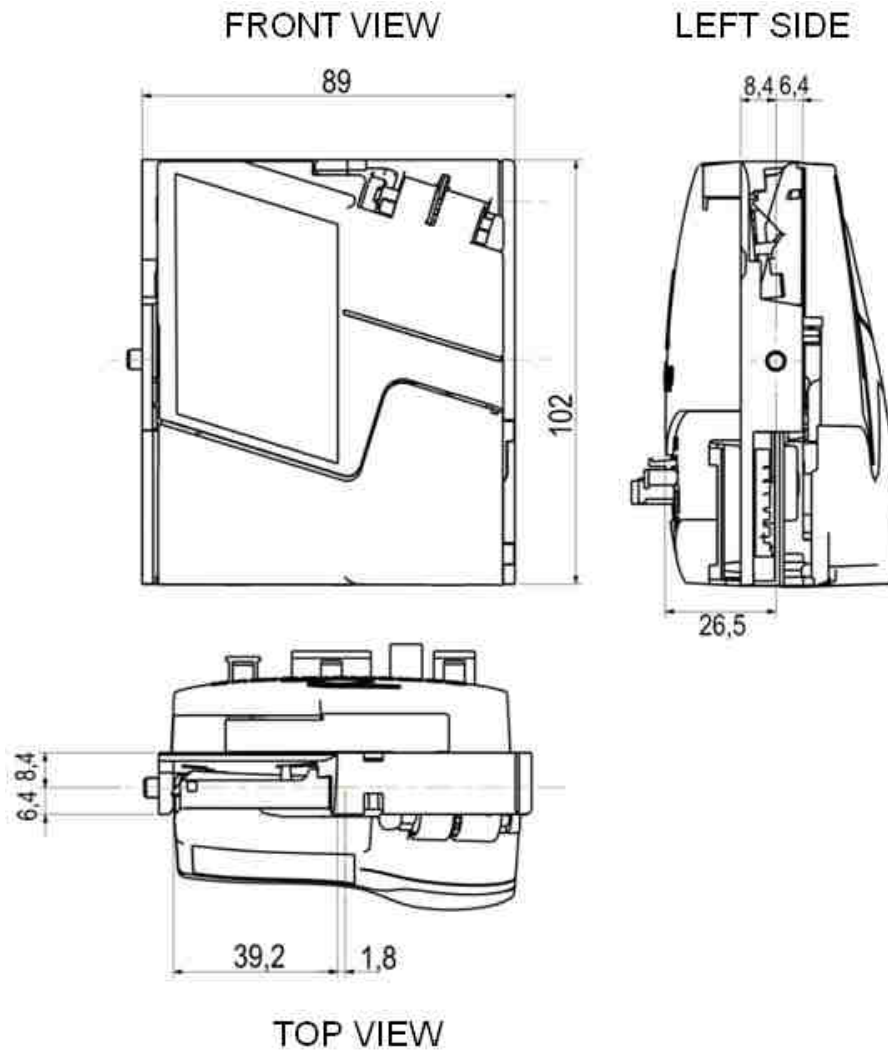
4.5 Names of parts

Fig. 4

A. LED INDICATOR	D. OUTPUT CONNECTOR
	1 NO
B. INPUT CONNECTOR	2 C
1 COM	3 NC
2 IN2 BUTTON 2	4 NO
3 IN1 BUTTON 1	5 C
	6 NC
C. PGR CONNECTOR	
1 COM	**E. DISPLAY CONNECTOR**
2 VCC	1 GND
3 TX	2 VCC
4 RX	3 DCLK
5 BKGD	4 DDATA
6 RST	
	F. POWER CONNECTOR
	1 Vac (vdc)
	2 Vac(Vdc)
	Polarization is not necessary

4.6 Equipment identification

The figure shows the label affixed on the coin mechanism, which contains the main equipment operation and identification information.
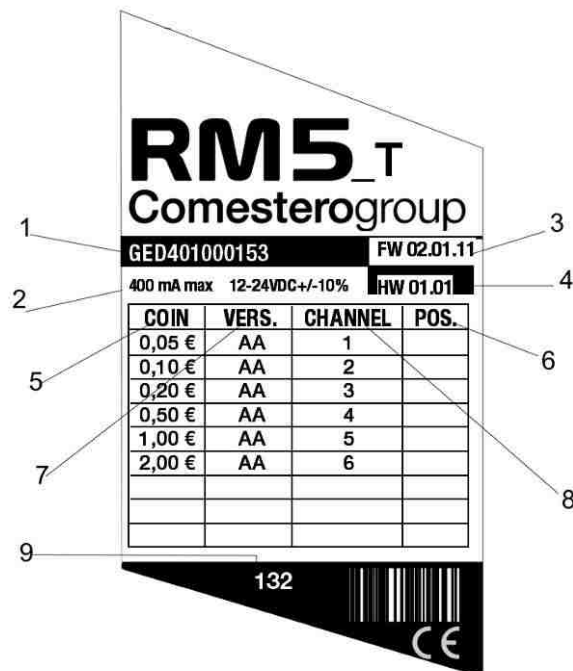

Fig. 5

1	Coin mechanism code
2	Power supply
3	Firmware version
4	Hardware version
5	Accepted coins
7	Calibration version
8	Channel onto which the coin is calibrated
9	Serial number

5. Installation

5.1 Installation

5.1.1 Mechanical configurations

RM5 HD-T is available in two versions :

- Version A, code GED401xxxxxx, optimised for Euro, accepts coins with a maximum diameter of 27 mm. and a maximum thickness of 2.4 mm.

- Version B, code GED406xxxxxx, accepts coins with a maximum diameter of 31.5 mm and a maximum thickness of 3.2 mm.

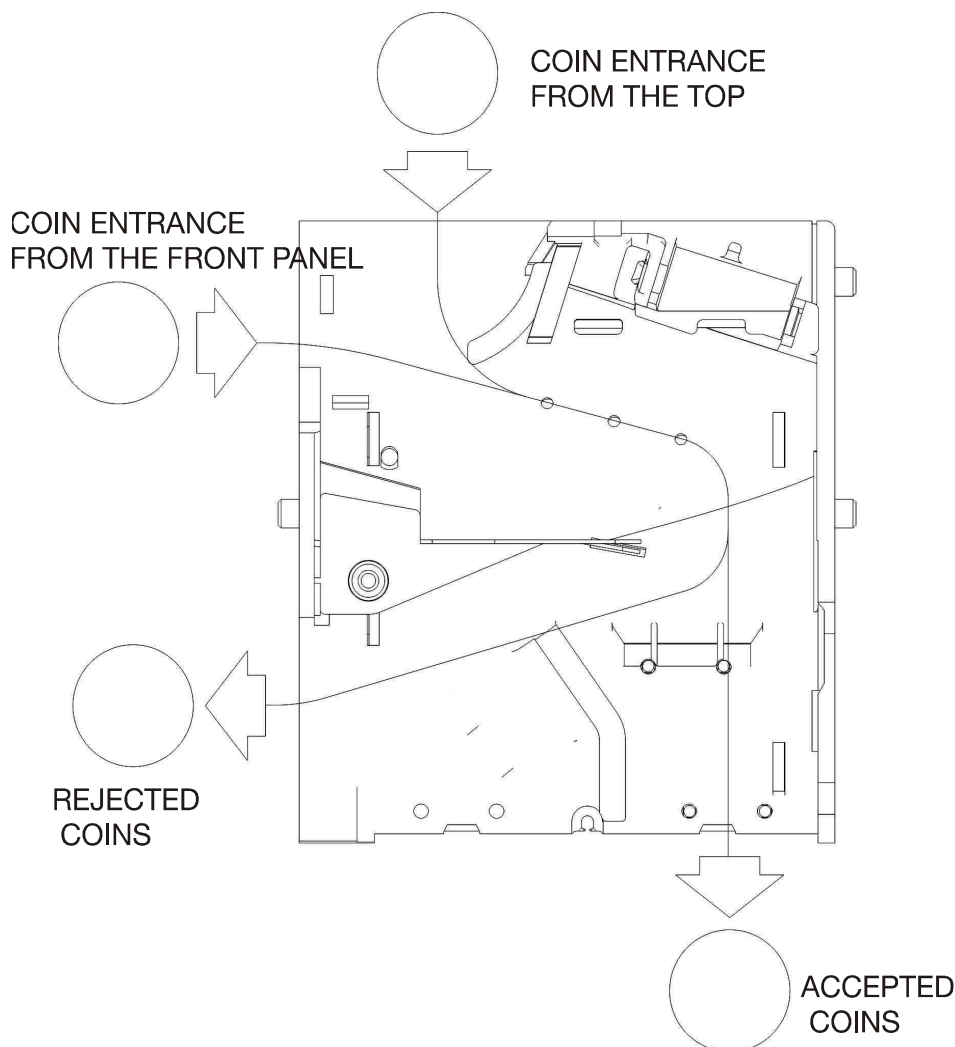The figure below shows the coin travel path in the coin validator.

COIN ENTRANCE FROM THE TOP

COIN ENTRANCE FROM THE FRONT PANEL

REJECTED COINS

ACCEPTED COINS

Fig. 6

5.1.2 Front panel

RM5 HD-T is compatible with F1 and F6 front panels and can be mounted either on the front or the rear of any machine. For details regarding installation, follow the instructions on the leaflet attached to each plate.
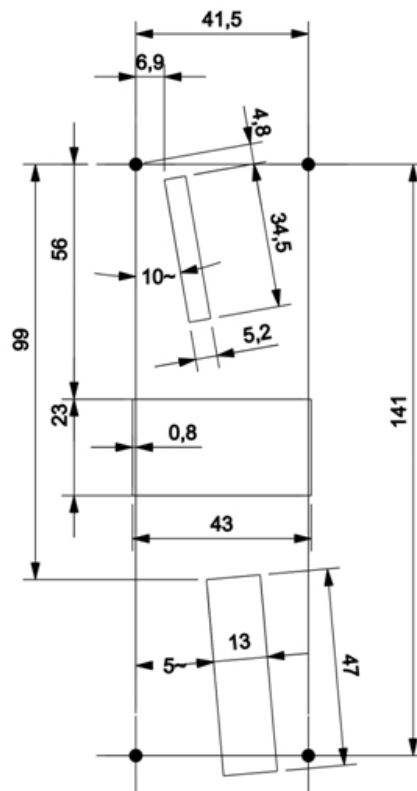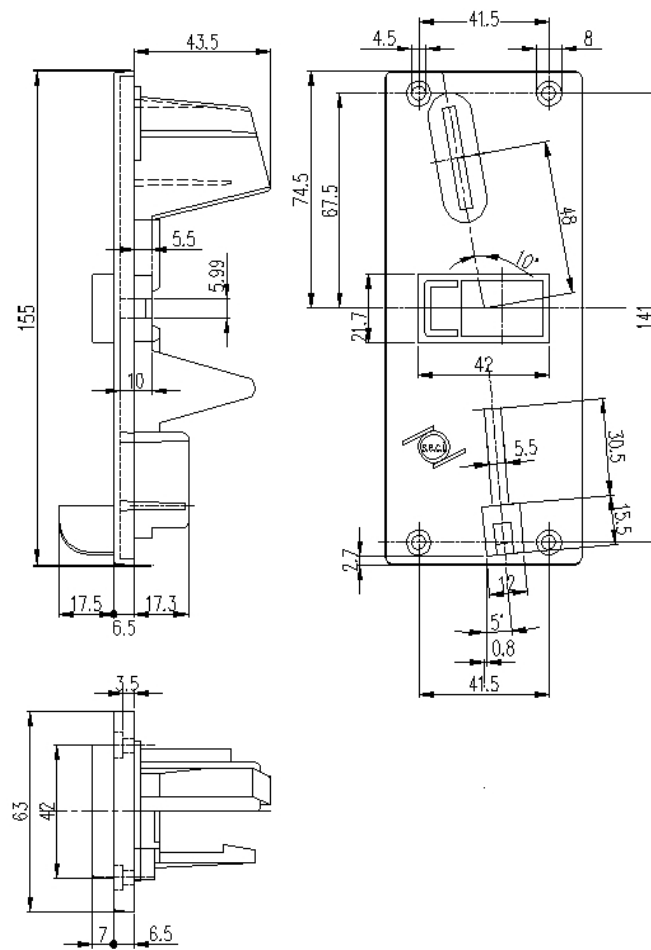
A. Plate F1
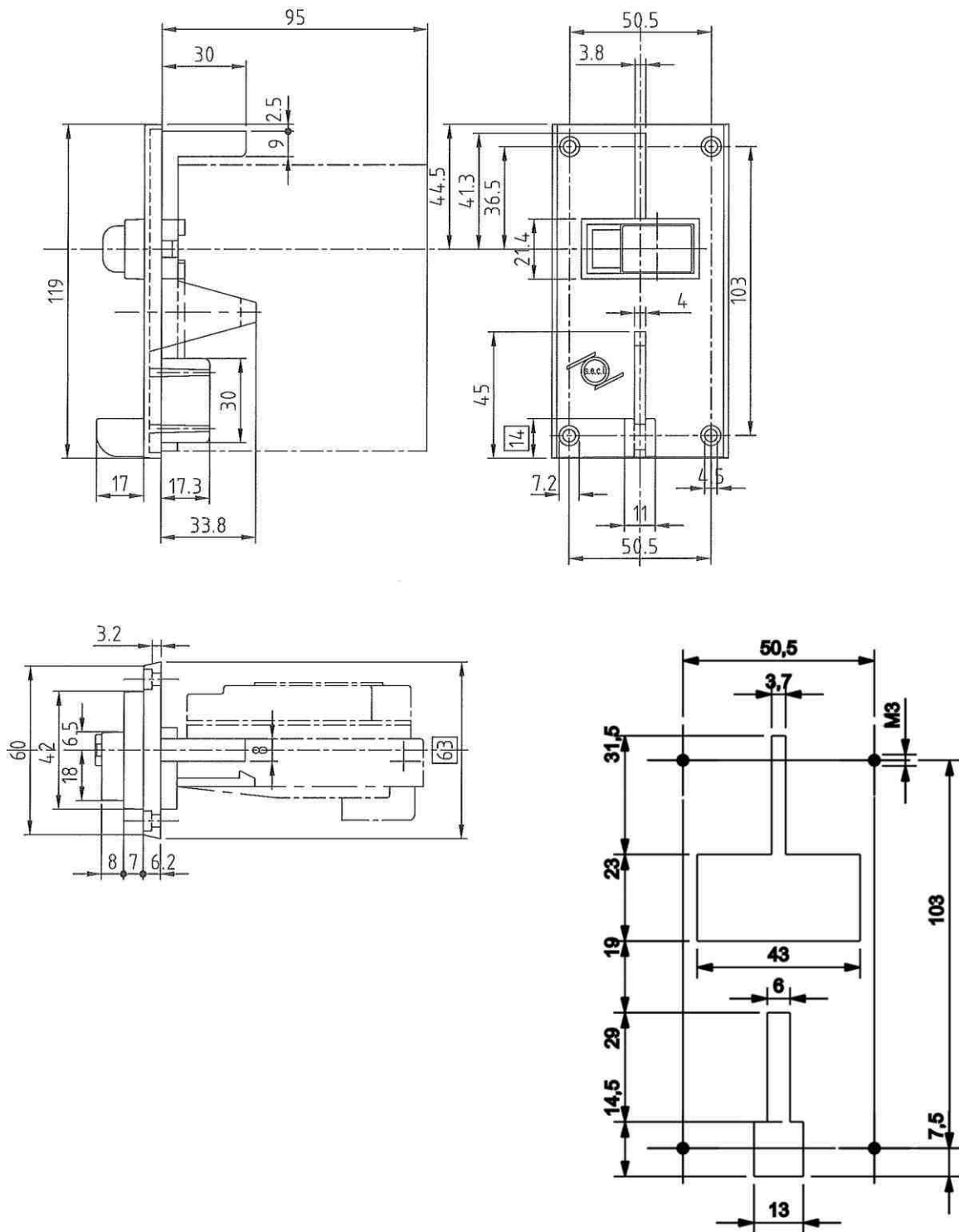
HOLES FOR FRONT PANEL F1

Fig. 7

B. Front panel F6

HOLES FOR FRONT PANEL F6

Fig. 8

5.2 Connections

The following paragraphs provide the necessary information for RM5 HD-T connections by means of the connectors with which it is equipped.
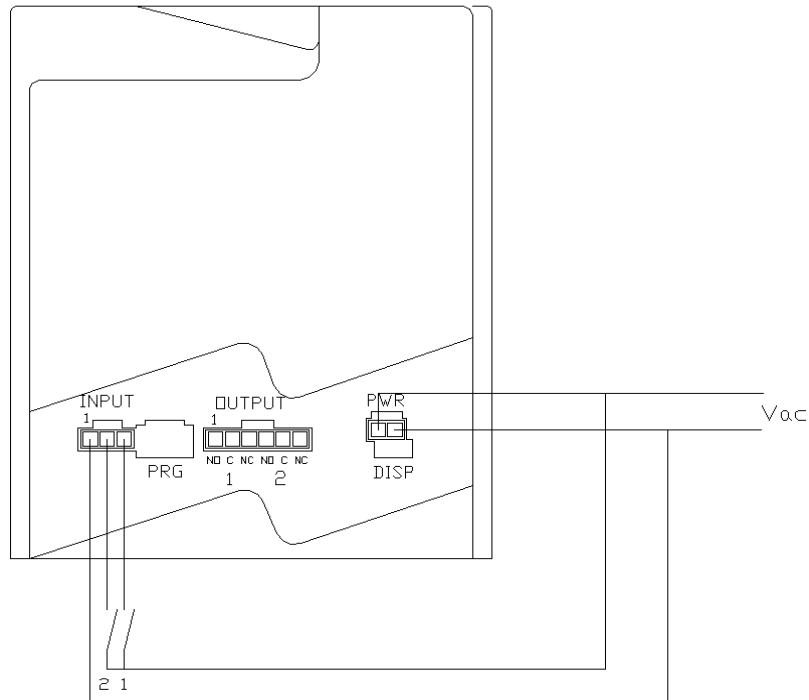

Fig. 9

5.2.1 Connection to a PC

RM5 HD-T can be connected to a PC by means of C connector. This connection allows configuring RM5 HD-T in all its functions by means of the Multiconfig program.
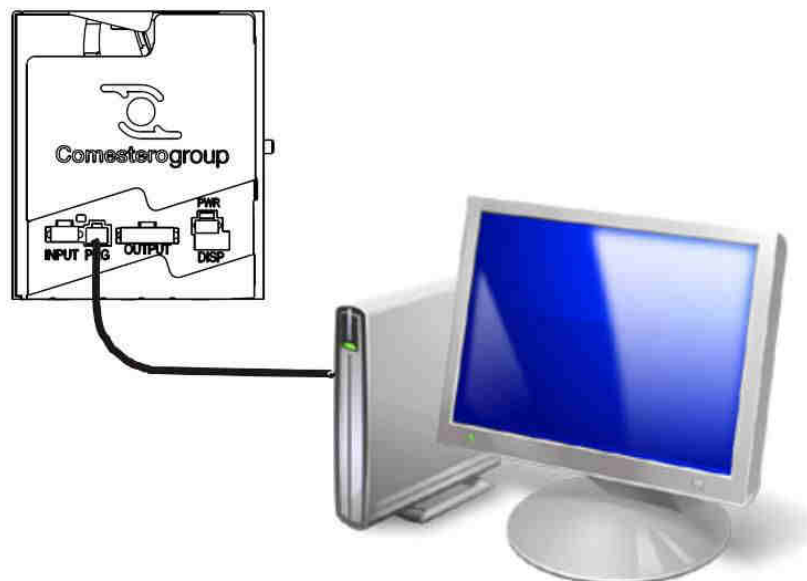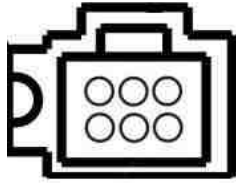

Fig. 10

You can find below the pin numbering for the C connector:

Pin number	C (PGR)
1	COM
2	VCC
3	TX
4	RX
5	BKGD
6	RST

5.2.2 LED

All RM5 HD-T coin mechanisms are equipped with a led, which provides the following information on the status and diagnostics through light pulses.

Light indication	Meaning
2 red pulses and 2 green pulses	ON
Red flashing	A problem occurred
Orange pulse	Recognised coin but not enabled
Green pulse	Recognised coin accepted
Red pulse	Coin recognised as false and discarded

6. Settings

6.1. Configuration

You need to configure the RM5 HD-T coin mechanism by setting the operation mode.

1- Single pulse totalizer with automatic activation: the pulse is activated once the cost of the service is reached (2020)

In this operating mode the coin mechanism manages a single service which is automatically activated by an impulse as the programmed credit is reached.
There are also two programmable bonus levels, both with a threshold value.
As the values are reached, the coins mechanism provide a set number of credits and programmable as a bonus. You can set the time which must be reached by both bonus levels. This time is counted starting from the introduction of first coin.

2- Dual pulse totalizer with one price with external activation using keys (2222)

In this operating mode, the coin mechanism manages two services which must be activated from the outside by pressing one of two available selection buttons. The necessary credit value for the supply is unique for both services, as well as the two programmable bonus levels.

3- Single timer with automatic activation (3030)

In this operating mode, the coin mechanism manages one single service which must be activated from the outside by pressing one of two available selection buttons. The

necessary credit value is unique for both services, as well as the two programmable bonus levels.

4– Dual timer with 2 prices with external activation using keys (3232)

In this operating mode the coin validator manages two different services which are supplied for a programmed time , in seconds or minutes, and with two different prices. The activation is carried out via one of the two buttons.

6.2 Configuration by means of Multiconfig program

Multiconfig is the configuration program available for free download on our website.
This program allows a complete configuration of the RM5 HD-T, setting all the operation modes and parameters.
Before starting up Multiconfig, connect RM5 HD-T to your PC by means of the PRG connector. **Multiconfig is provided with an on-line manual that guides the user through the various functions**.

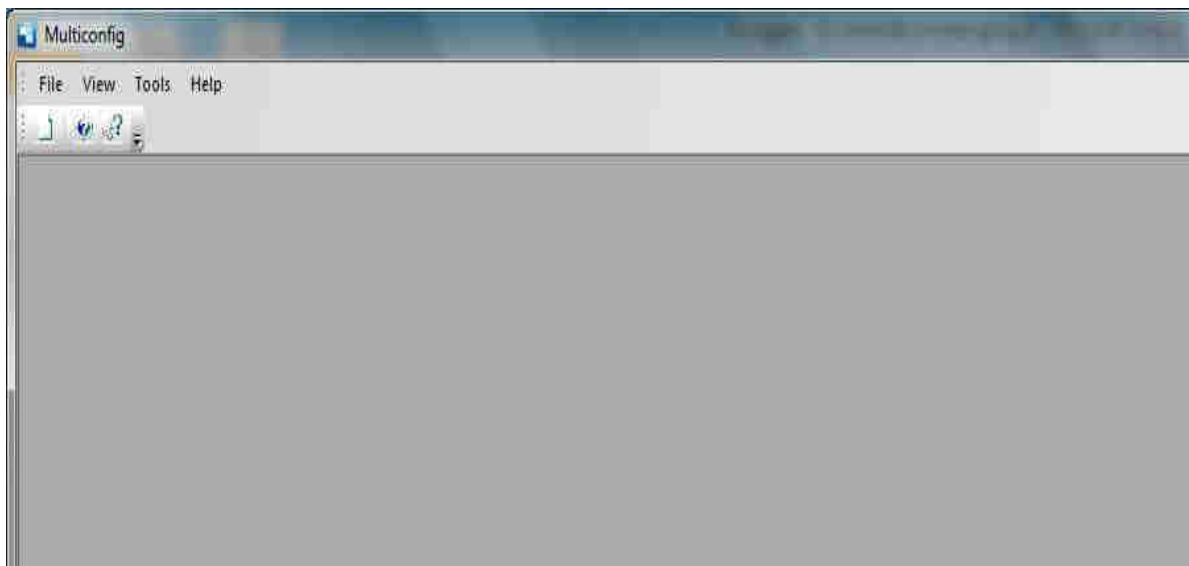1. Starting up Multiconfig, the following screen will be displayed:

Fig. 11

2. Here you can select the screen language. To activate the desired language you have to click on **Tools**, then select **Language** and the **desired language** .
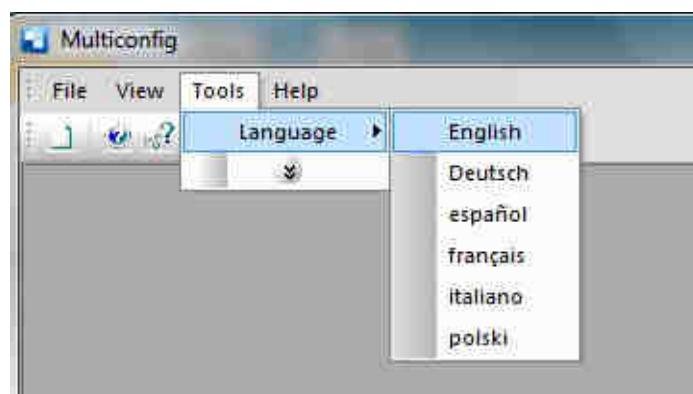

Fig. 12

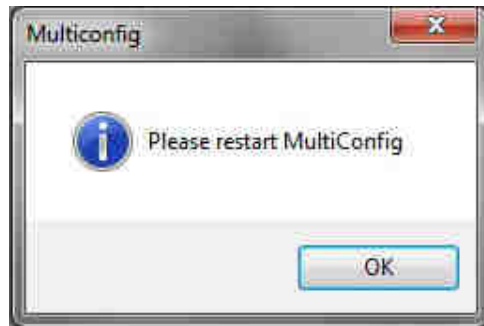3. Once the language has been selected, a message asking to close and restart software will be displayed:

Fig. 14

4. Once Multiconfig software has been restarted the chosen language is active.
5. Now you can start the configuration session clicking on **File**, then **New** or the **toolbar icon** .
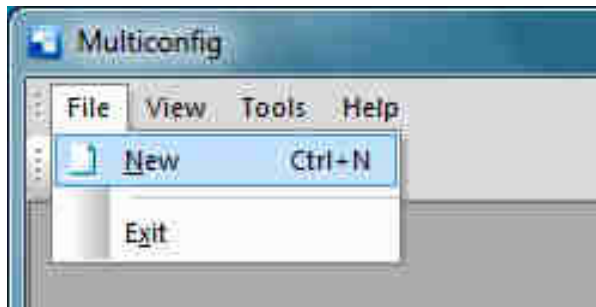
Fig. 15
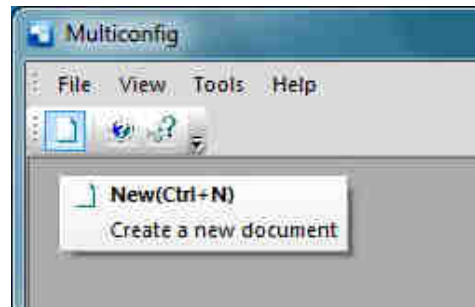
Fig. 16

6. The following window will be displayed:

Fig. 17

7. Press **OK** to start the Multiconfig device data reading. The software, after few seconds, recognizes the device and detects its configuration, showing the following screen.
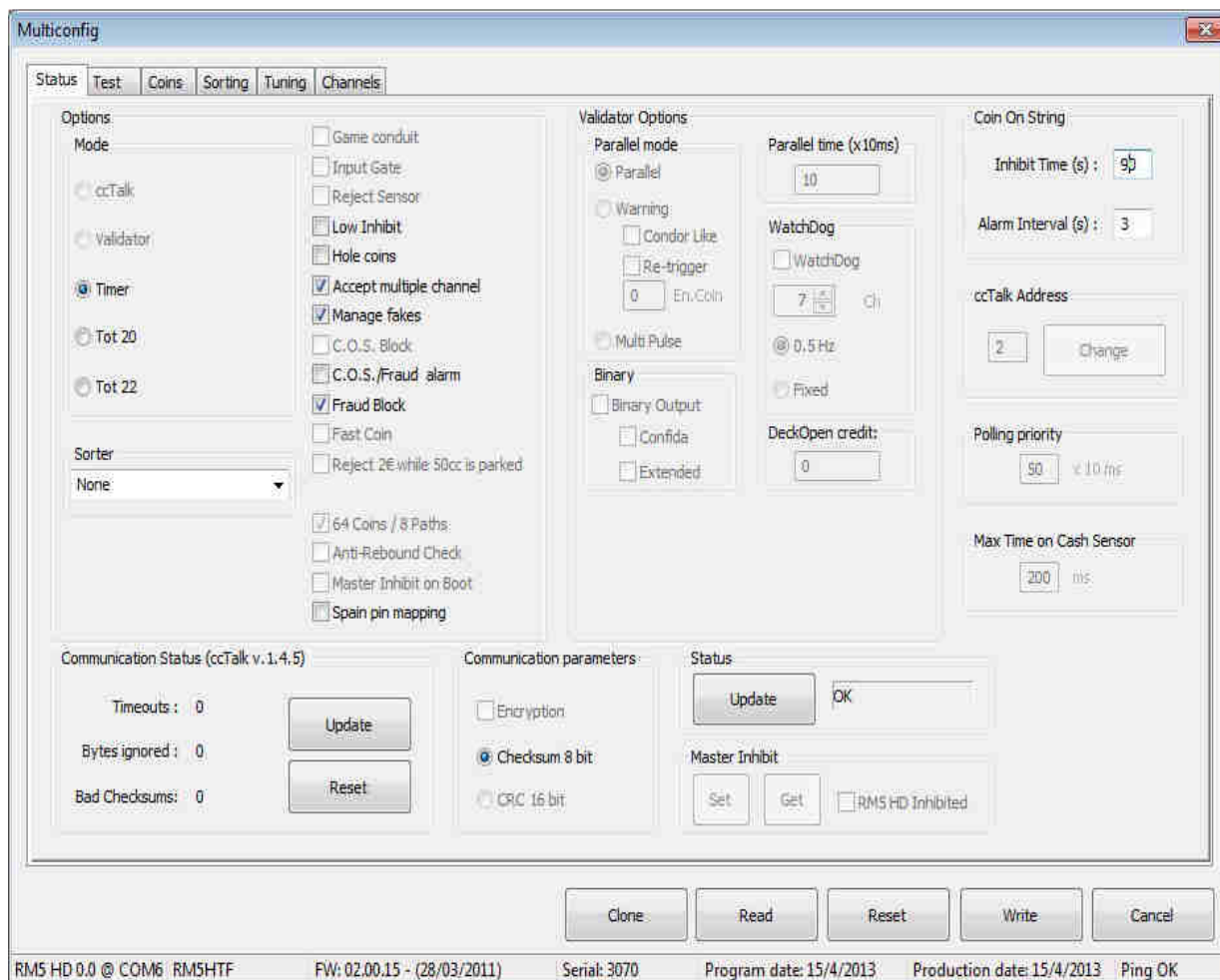
Fig. 18

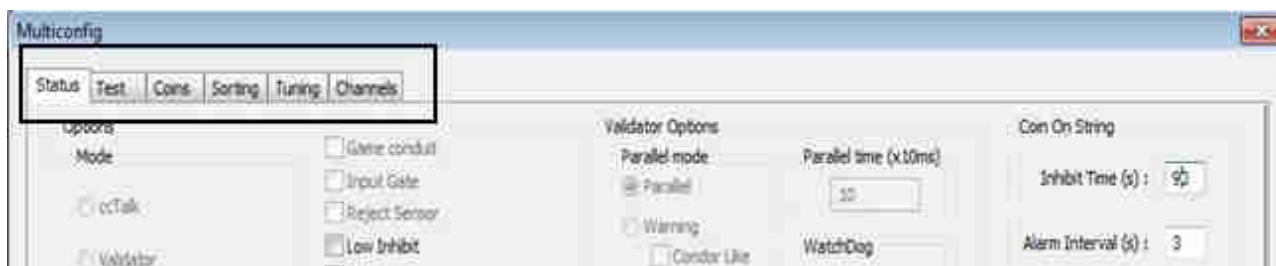8. The configuration screen shows the following six tabs : **STATUS, TEST, COINS, SORTING, TUNING, CHANNELS**.

Fig. 19

9. In the lower part you can find five buttons: **CLONE, READ, RESET, WRITE, CANCEL**.

Fig. 20

6.2.1 Status Tab

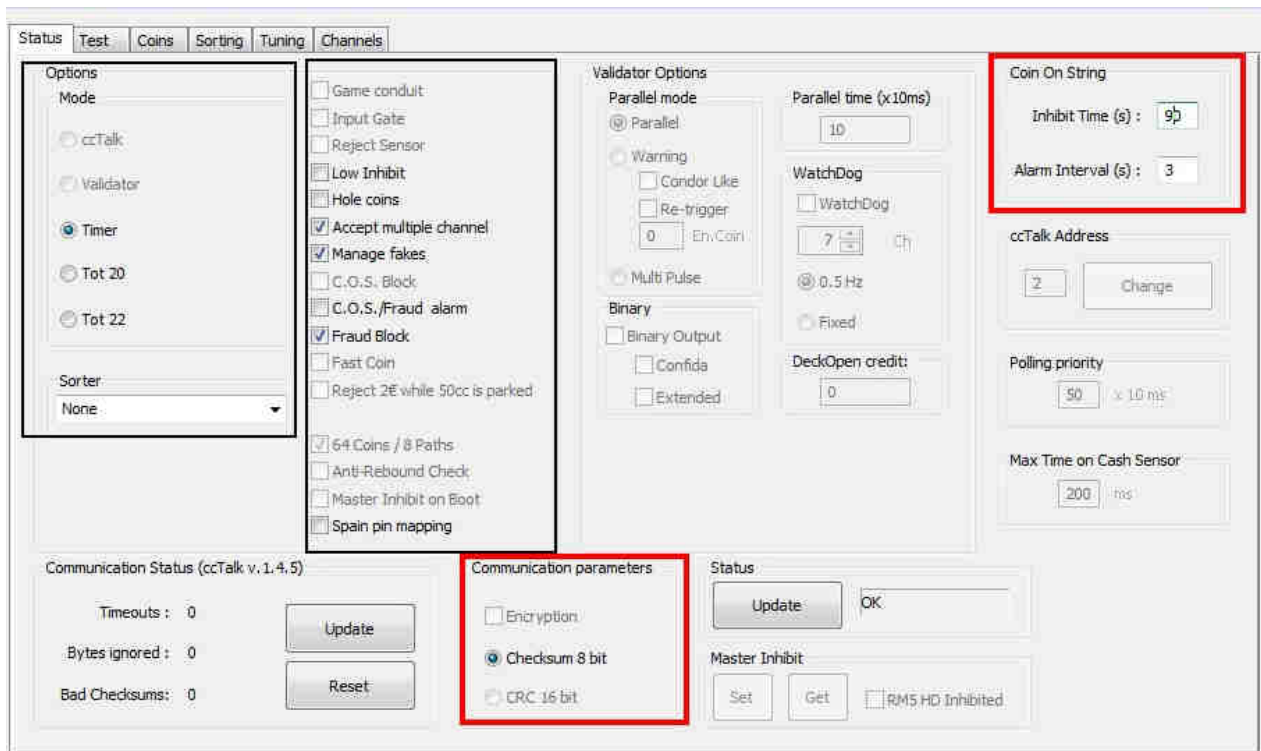The **STATUS** tab will be displayed as follows:

Fig. 21

The first selection regards the use of the coin validator in the **Options** area – **Mode**.

- Select **Timer:** the coin validator works as single or dual timer.
- Select **Tot 20:** the coin validator works as single impulse totalizator with automatic activation.
- Select **Tot 22:** the coin validator works as dual impulse totalizator single price with external activation by using a button.

IMPORTANT: this selection can be made only using the configuration via MultiConfig software and not using configuration on board. In **Options** area you can also find a list of options you have to tick off.

Other **Options** you can tick off are the following:

- **Low Inhibit**: not applicable for coin validator RM5 HD-T.
- **Hole coins** : if chosen, enables the identification of coins with hole.
- **Accept multiple channel:** allows the coin validator to accept two different sets of parameter values for the same coin (see Channels tab paragraph).
- **Manage fakes:** the coin validator can learn to recognize a fake coin.
- **C.O.S./Fraud alarms** : not applicable for RM5 HD-T.
- **Fraud Block**: the coin validator can be locked for a time in case the sensors detect coin return.
- **Spain pin mapping**: not applicable for RM5 HD-T.

- **Coin On String** area - **Inhibit time (s):** you can set the time interval (in seconds) when coin validator remains locked.

- **Coin On String** area - **Alarm Interval (s):** not applicable for RM5 HD-T.

- **Communication parameters:** not used for RM5 HD-T.

- **Status:** not used for RM5 HD-T.

6.2.2 Test Tab
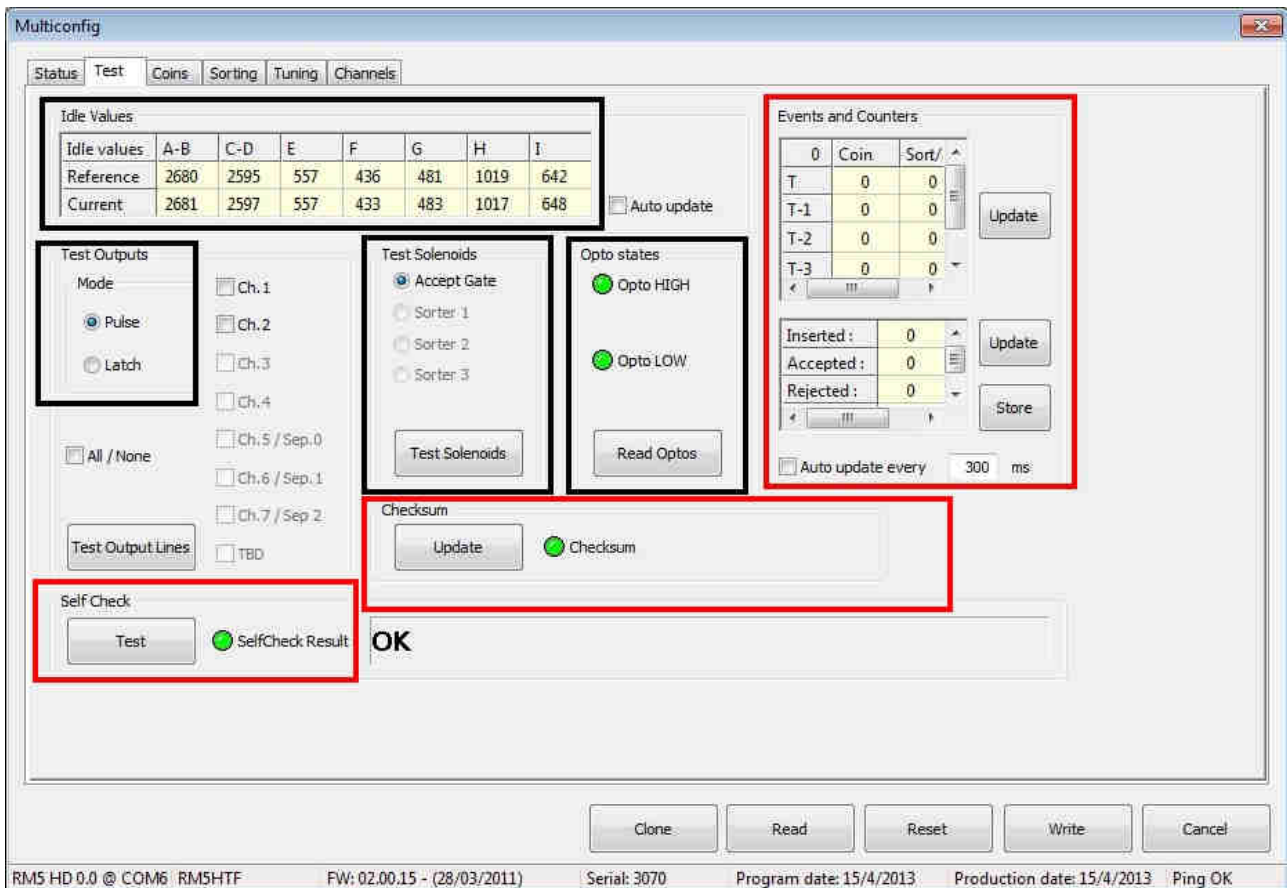
The **Test** tab will be displayed as follows:

Fig. 22

This tab allows you to perform a series of tests to verify the correct operation of the coin mechanism.

- **Idle Values:** allows to compare the sensor values of the detected coin validator with the reference values in a state of rest.

- **Test Outputs**: clicking on **Test Output Lines** you can send a pulse or a status signal from one or both outputs of the coin validator to verify that it works correct.

- **Test Solenoids:** clicking on **Test Solenoids** you can make a check of the solenoid of the **Coin acceptance** channel.

- **Opto states:** clicking on **Read Optos** you can perform the reading of the signal sent from each of the two optical sensors, placed along the path of the coin validator. This way you can check the possible presence of coins stuck in correspondence of their position. If you have coins stuck in one of the two positions, the colour of the related circle changes from green to red.

- **Checksum**: not used for RM5 HD-T.

- **Self Check**: clicking on **Test** you can perform a check of the operation. If the test goes successfully the colour of the circle is green and the OK message is displayed.

- **Events and Counters:** clicking on **Update** buttons the information about last five occurred events and the accounting of the loaded coins (Inserted, Accepted, Rejected, Fakes). This way you can know the causes of the possible faults and also request an automatic update of events and accounting for a set time interval.

6.2.3 Coin Tab

The **Coin** tab will be displayed as follows:
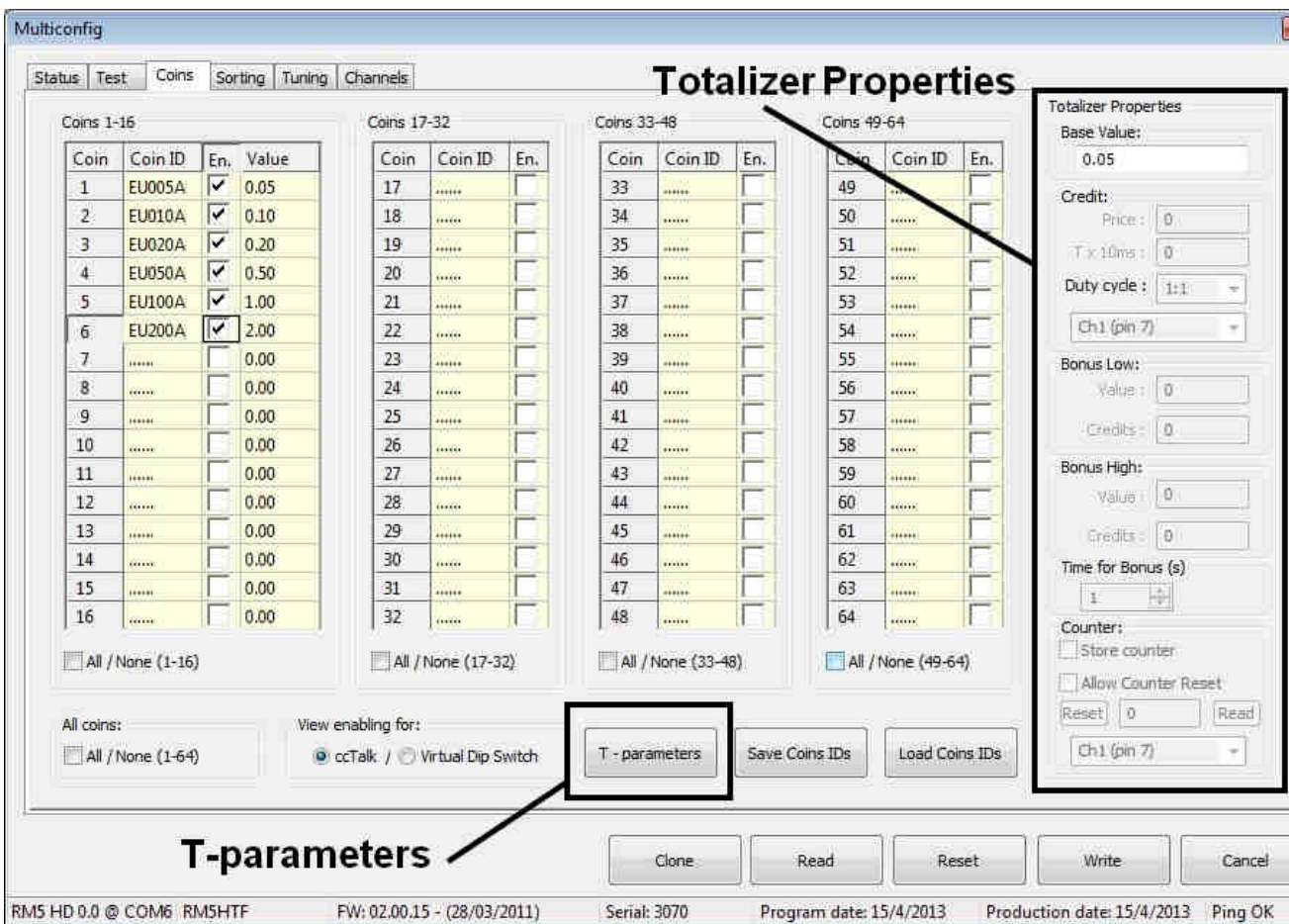
Fig. 23

This tab contains information about coins which the coin validator is enabled to identify. To enable or disable one denomination you can tick off or not the check mark in the appropriate box.

If in the **Status** tab you have previously set the **Option** mode as a **Timer**, only the **Base Value** is activated in the **Totalizer properties.** The **Credit, Bonus Low, Bonus High, Time for Bonus (s)** and **Counter** are not activated.

Fig. 24

Fig. 25

The **T-parameters** button is activated at the bottom of the window.

Fig. 26

Clicking on it the following window will be displayed. Here you can set the price and the length of each of two services.

Fig. 27

Time is set in seconds by default but you can set time counter in minutes. In the window you can also add the minimum credit which, added to ongoing service, carries its extension for a proportional time.
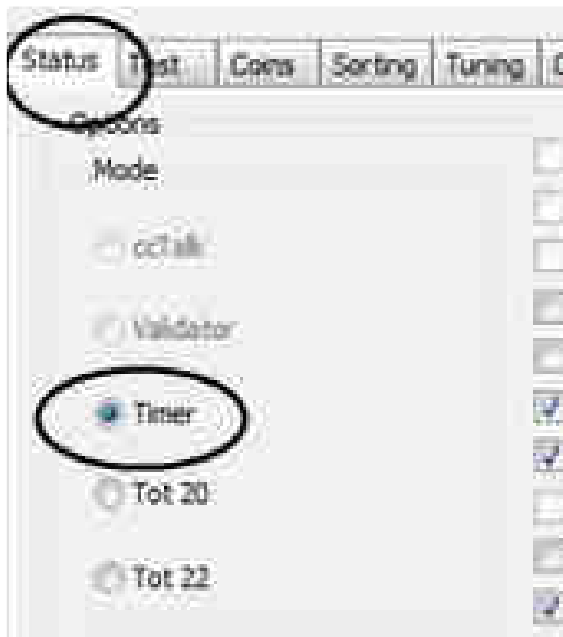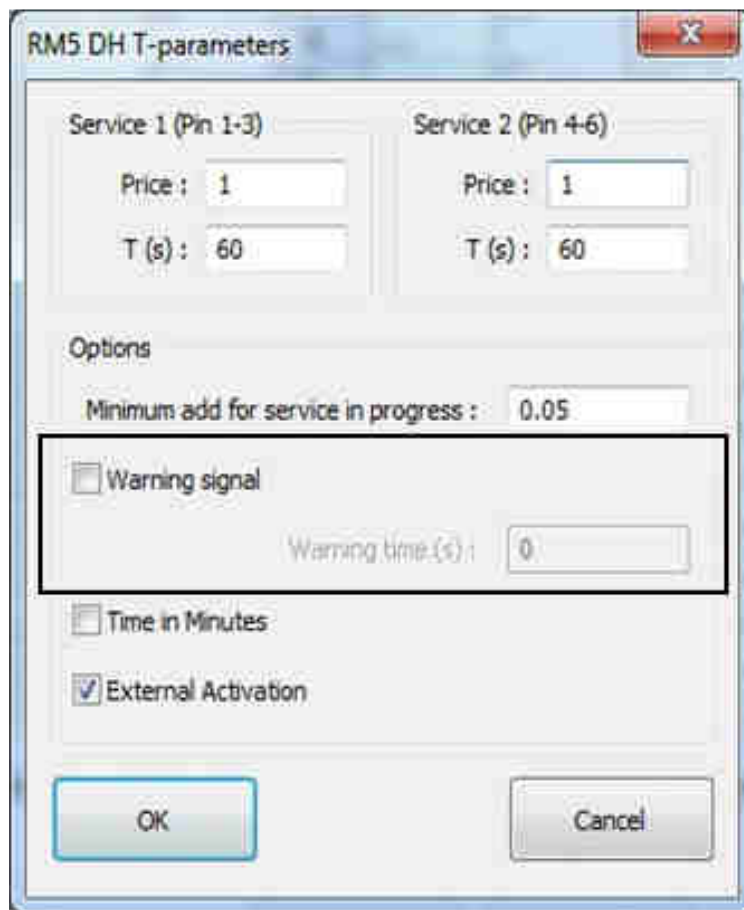
Only in the event of single timer you can also request a warning signal that means the end of service supply.

The external service activation is an optional in the event of single timer, while it is mandatory in the event of dual timer. In this case you must choose the service to activate by pressing the corresponding button.

Conversely, if in the **Status** tab you have previously set the **Option** mode as **Tot 20** (single pulse totalizer) or **Tot 22** (dual pulse totalizer), also **Credit, Bonus Low, Bonus High and Time for Bonus (s)** are activated in the **Totalizer** area, in addition to **Base Value**. The **T-parameters** button is not active.

In the **Base Value** there is a multiplying factor which depends on the used currency.

> **NB. Don't change the set value in the Base Value area in Coins tab to not distort the order of magnitude attributed to the inserted amounts.**

Credit: insert in the **Price** box the amount for the service you need and in the **T x 10ms** box insert the activation pulse duration as a multiple of 10 ms.

In the **Bonus Low** and **Bonus High** boxes you can insert two different credit increments to be added as the credit reaches two pre-set thresholds.

6.2.4 Sorting Tab

Sorting tab is not applicable to the electronic coin validator RM5 HD-T.

6.2.5 Tuning Tab

Tuning tab displays as follows:
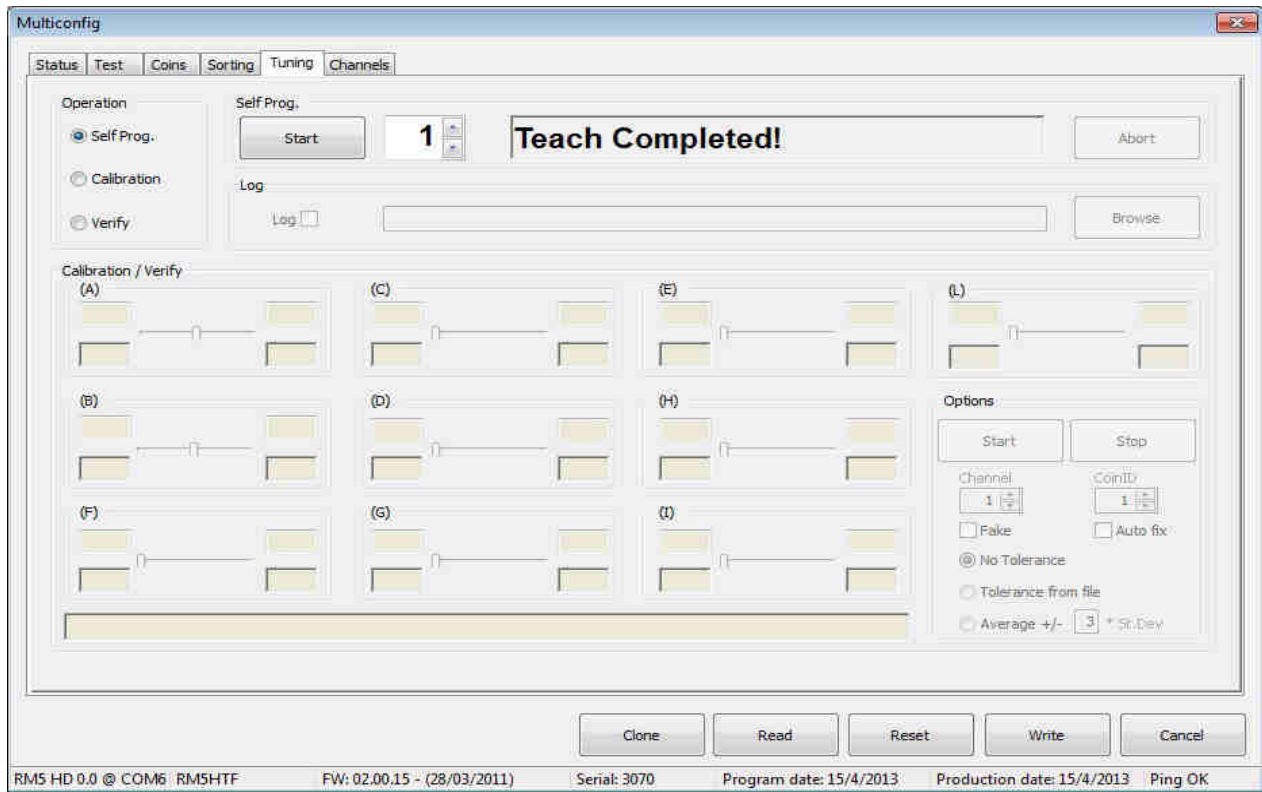
Fig. 28

This tab allows to make **Self Prog, Calibration, Verify** and to recognize coins and tokens different from those set by default.

Self Prog is the quick and simple procedure with which the coin validator, by the insertion of 15 samples, identifies parameters to recognize a token or a coin different from those set by default.

Calibration is a complex procedure to identify the recognition parameters for coins or tokens and requires the insertion of a much greater number of samples, typically 100-150.

Verify is the procedure to check if the calibration has been done.

6.2.6 Channel Tab

Channels tab displays as follows :

Fig. 29

This tab contains a table in which rows represent channels and columns represents measurement parameters. The boxes show for each channel the minimum and maximum acceptable values for each parameter.

In the white column **Coin** you can find reference codes of coins as stated in the **Coins** tab.

In the green column **En.** you can enable the reading of the coin by means of a check mark.

In the red column **Fake**, you can set the calibration channel as fake coin through a tick mark, in order to handle the recognition of fakes.

Fig. 30

Clicking on **Reset Channel** button, you can reset the single channel. Clicking on **Reset All** button, you can reset all the channels. Clicking **Check Overload** button, you can ask to the coin validator to check if there are similar parameter values for different coins or tokens. In this case, when two channels have an Overlapping, a message of warning is sent.

The **Copy** Channel allows to copy the sensor values from a single channel to another one. At the end of the operations, by means of **Save Channels** button, you can save the

changes in a file. Furthermore you can also import data from a saved file, using **Load Channels** button.

6.3 Local Configuration

In case of no programming tools, it is possible to set some of the coin mechanism parameters via the two keys and the display. To use this function proceed as follows. The input column shows if these inputs are enabled or not.

6.3.1 Local programming for Double progressive timer mode with notice

When the figures are edited the decimal point is used to show which figure is currently selected.

Description	Display	Inputs
coin mechanism off	off	enabled
coin mechanism start up		enabled
input being configured	3232 (flashing)	enabled
		disabled
	1 (flashing)	
setting first digit of price 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of price 1	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of price 1	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of price 1	1234.	input 1 increases units input 2 moves to next field
	2 (flashing)	
setting first digit of time 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of time 1	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of time 1	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of time 1	1234.	input 1 increases units input 2 moves to next field
	3 (flashing)	
setting first digit of price 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of price 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of price 2	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of price 2	1234.	input 1 increases units input 2 moves to next field
	4 (flashing)	
setting first digit of time 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of time 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of time 2	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of time 2	1234.	input 1 increases units input 2 moves to next field
	9999 (flashing)	
End of configuration. Switch the coin mechanism off and restart it to enable the new settings		

During programming the following checks must be carried out:

- The minimum increase value of a price is equal to the basic value. For this reason, if the basic value is 10 it is not possible to set the price units, but only the thousands, the hundreds and the tens.
- The time settings are in minutes or seconds depending on the coin mechanism setting ("Service duration in sec/min" field in Clone5).

6.3.2 Local programming for progressive timer mode

It is possible to set some of the coin mechanism parameters via the two keys and the display. To access the programming and set the values proceed as follows.
When the figures are edited the decimal point is used to show which figure is currently selected.

Description	Display	Inputs
coin mechanism off	off	enabled
coin mechanism start up		enabled
input being configured	3030 (flashing)	enabled
		disabled
	1 (flashing)	
setting first digit of price	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of price	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of price	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of price	1234.	input 1 increases units input 2 moves to next field
	2 (flashing)	
setting first digit of time	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of time	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of time	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of time	1234.	input 1 increases units input 2 moves to next field
	3 (flashing)	
setting first digit of notice time	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of notice time	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of notice time	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of notice time	1234.	input 1 increases units input 2 moves to next field
	9999 (flashing)	
End of configuration. Switch the coin mechanism off and restart it to enable the new settings.		

6.3.3 Local programming for single impulsive totalizer mode (automatic start)

Description	Display	Inputs
coin mechanism off	off	enabled
coin mechanism start up		enabled
input being configured	2020 (flashing)	enabled
		disabled
	1 (flashing)	
setting first digit of price	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of price	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of price	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of price	1234.	input 1 increases units input 2 moves to next field
	2 (flashing)	
setting first digit of time	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of time	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of time	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of time	1234.	input 1 increases units input 2 moves to next field
	3 (flashing)	
setting first digit of bonus 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of bonus 1	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of bonus 1	123.4	input 1 increases tens input 2 moves to units
Setting fourth digit of bonus 1	1234.	input 1 increases units input 2 moves to next field
	4 (flashing)	
setting first digit of credit value bonus 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of credit value bonus 1	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of credit value bonus 1	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of credit value bonus 1	1234.	input 1 increases units input 2 moves to next field
	5 (flashing)	
setting first digit of bonus 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of bonus 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of bonus 2	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of bonus 2	1234.	input 1 increases units input 2 moves to next field
	6 (flashing)	
setting first digit of credit value bonus 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of credit value bonus 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of credit value bonus 2	123.4	input 1 increases tens input 2 moves to units

Description	Display	Inputs
setting fourth digit of credit value bonus 2	1234.	input 1 increases units input 2 moves to next field
	7 (flashing)	
Bonus Time	1.234	input 1 increases thousands input 2 moves to hundreds
Bonus Time	12.34	input 1 increases hundreds input 2 moves to tens
Bonus Time	123.4	input 1 increases tens input 2 moves to units
Bonus Time	1234.	input 1 increases units input 2 moves to next field
	9999 (flashing)	
End of configuration. Switch the coin mechanism off and restart it to enable the new settings.		

6.3.4 Local programming for single impulsive totalizer mode (press the button before start)

Description	Display	Inputs
coin mechanism off	off	enabled
coin mechanism start up		enabled
input being configured	2222 (flashing)	enabled
		disabled
	1 (flashing)	
setting first digit of price	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of price	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of price	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of price	1234.	input 1 increases units input 2 moves to next field
	2 (flashing)	
setting first digit of time	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of time	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of time	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of time	1234.	input 1 increases units input 2 moves to next field
	3 (flashing)	
setting first digit of bonus 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of bonus 1	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of bonus 1	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of bonus 1	1234.	input 1 increases units input 2 moves to next field
	4 (flashing)	
setting first digit of credit value bonus 1	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of credit value bonus 1	12.34	input 1 increases hundreds input 2 moves to tens

Description	Display	Inputs
setting third digit of credit value bonus 1	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of credit value bonus 1	1234.	input 1 increases units input 2 moves to next field
	5 (flashing)	
setting first digit of bonus 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of bonus 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of bonus 2	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of bonus 2	1234.	input 1 increases units input 2 moves to next field
	6 (flashing)	
setting first digit of credit value bonus 2	1.234	input 1 increases thousands input 2 moves to hundreds
setting second digit of credit value bonus 2	12.34	input 1 increases hundreds input 2 moves to tens
setting third digit of credit value bonus 2	123.4	input 1 increases tens input 2 moves to units
setting fourth digit of credit value bonus 2	1234.	input 1 increases units input 2 moves to next field
	7 (flashing)	
Bonus Time	1.234	input 1 increases thousands input 2 moves to hundreds
Bonus Time	12.34	input 1 increases hundreds input 2 moves to tens
Bonus Time	123.4	input 1 increases tens input 2 moves to units
Bonus Time	1234.	input 1 increases units input 2 moves to next field
	9999 (flashing)	
End of configuration. Switch the coin mechanism off and restart it to enable the new settings.		

6.3.5 On board calibration

RM5HD-T allows to set a channel, typically dedicated to a token or a coin, without using Multiconfig 2.

NB: The channel to be set is **number 6**. Only the measures related to the coin/token recognition will be set. For this reason it is necessary that a value has been already assigned to channel 6.

Below you can find the procedure required for channel setting.

Description	Display	Inputs
coin validator off	off	Input 1 enabled, input 2 disabled
Power supply to coin validator	7777 flashing for a few seconds	
to set the channel	7777	With input 1 activated, initiate input 2 for about 1 second and then deactivate it. Deactivate then also the input 1.
channel setting	15	
waiting for the first coin	15	

Description	Display	Inputs
inserting the first coin	14	According to the operating modes, the display can go back to 0.00 and go on to show the coin number.
inserting the second coin	13	According to the operating modes, the display can go back to 0.00 and go on to show the coin number.
inserting the third coin	12	According to the operating modes, the display can go back to 0.00 and go on to show the coin number.
…		
inserting the fourteenth coin	1	According to the operating modes, the display can go back to 0.00 and go on to show the coin number.
inserting the fifteenth coin. When the last coin has been read, the coin acceptance solenoid moves 1 time	0 [for a few seconds, then 0.00]	According to the operating modes, the display can go back to 0.00 and go on to show the coin number.
switch off the coin validator		
switch on the validator again, now it can recognize the coin with which it has been set.	0.00	

6.3.6 Assignment of the value to the calibrated channel

RM5HD-T allows to assign a value to the set channel, without using Multiconfig 2.
Below you can find the procedure required to set the channel.

Description	Display	Inputs
coin validator off	off	Input 1 enabled, input 2 disabled
power supply to coin validator	6666 flashing for a few seconds	
To assignment a value to the coin	0.000	With input 2 activated, initiate input 1 for about 1 second and then deactivate it. Deactivate then also the input 2.
setting first digit of price	1.234	Input 1 increases thousands Input 2 moves to hundreds
setting second digit of price	12.34	Input 1 increases hundreds Input 2 moves to tens
setting third digit of price	123.4	Input 1 increases tens Input 2 moves to units
setting fourth digit of price	1234.	Input 1 increases units Input 2 moves to the next field
End of token value setting	9999 for a few seconds, then 0.00	

7. Care and maintenance

All maintenance operations on the validator must be carried out when the machine onto which the validator is installed is disconnected from the power supply.

We strongly recommend following these instructions carefully in order to always keep the validator in the best operating conditions and to prevent dangerous situations that would make the guarantee void.

7.1 Maintenance and external cleaning

Always keep the external surfaces of the equipment clean; to do so, we recommend using a damp cloth or a mild detergent.   In case of resistant dirt, clean the surface with water and alcohol. Do not use aggressive petroleum or trichlorethylene-based chemical solvents, nor abrasive detergents or sponges that could damage the equipment.
Do not submerge in or expose the equipment to water or other liquids of whatever nature.
Regularly verify the equipment surfaces with special attention to those areas that, due to normal operation conditions, could represent a hazard for the user.

7.2 Maintenance and internal cleaning

The inside of the validator must be cleaned using compressed air only.
Regularly check the cable connections making sure the cables do not have points that are not insulated and are not excessively twisted. Should the cables or connectors present any anomaly, replace them immediately.

8. Diagnosis and technical assistance

In this section are described the main anomalies that may occur using this product, with the possible solutions to minimise or eliminate machine downtime.

If the problem you are encountering is not described here or should the solution not solve it, please contact our after-sales service at: +39 0295781111.

Problem	Possible cause	Solution
The validator is not functioning	The power supply connector may be disconnected	Make sure all the connections are firmly in place
Low coin acceptance	The optical sensors may be dirty	Clean the sensors with compressed air
The coins get stuck in the acceptance duct	Deposits of dirt or mechanical damage due to fraud	Check lifting the door
Authentic coins not accepted	Configuration error or coin not set	Refer to the Multiconfig on-line manual
No coin recognised	The power supply cable may be disconnected or the validator may be inhibited	Verify the configuration settings

9. Technical data

Dimensions (Lxlxh) [mm] :	102x99x55,5
Weight [g] :	200
Supply Voltage [Vdc] :	12 ÷ 24 (±10%)
Relay outputs with voltage-free exchange contacts [A/Vdc]:	2/30
Relay outputs with voltage-free exchange contacts [A/Vac] :	1/24
2 optically isolated inputs with alternating or direct current [Vdc/Vac] :	24 / 24
Current consumption [mA] :	Stand by Max 70 In acceptance Max 400
Range of temperature [°C] :	-25 ÷ +70
Not condensed humidity [%] :	10 ÷ 75
Accepted coins dimension	
GED401xxxxxx	Ø (16÷27) mm thickness : 2,4 mm
GED406xxxxxx	Ø (17÷31,5) mm thickness : 3,2 mm
Acceptance speed (without sorter) :	Up to 6 coins/second
RM5 HD-T is able to manage a 4 digit display	

10. Annexes

10.1 Decommissioning and disposal

At the end of its intended life, the product must be decommissioned and disposed of at a recycling site.

Remove the equipment from its installation site, empty all the coins out of it and remove the power supply cable. Contact your dealer to pick up the obsolete equipment.

This equipment must be disposed of in compliance with Legislative Decree No. 151 dated 25/07/2005.

Please read carefully the following information.

As of the 31st December 2006, specific guidelines regarding the disposal of electrical and electronic equipment (WEEE) have been established to protect the environment.
This equipment falls into the scope of Legislative Decree 151/2005 Annex 1B art. 2 paragraph 1 being:

7.6   A coin / token machine

10.2   an automatic cash or vending machine

In summary:

- This equipment is not to be disposed of as unsorted municipal waste but must be disposed of separately.

- Dealers will pick up used equipment free of charge and take it to appropriate recycling centres for its correct disassembly and possible recovery of the used materials.

- Special centres have been specifically created for the disposal of electrical and electronic equipment (WEEE). The user can return this used equipment to his/her local dealer when purchasing a new equivalent machine.

- This equipment or parts of it may cause potentially hazardous effects on the environment and on human health if used improperly or if not disposed of in compliance with the procedure described above, due to the presence of some substances in the electronic components.

- The crossed-out wheeled bin symbol printed visibly on this equipment indicates that this product has been placed on the market after 13 August 2005 and must be disposed of separately.
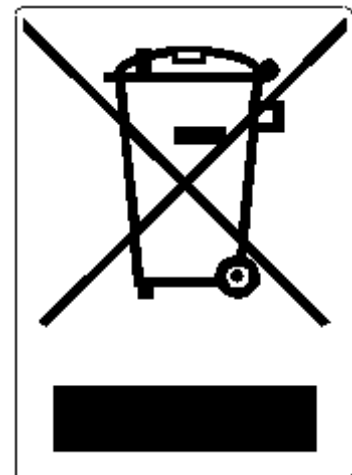
Sanctions in the event of illegal disposal of such waste :

1. The distributor who does not retrieve the used electrical or electronic equipment free of charge, as stated in art. 6, paragraph 1, letter b), will be fined between 150 and 400 Euros, for every equipment unretrieved or retrieved not free of charge.

2. Manufacturers who fail to provide a separate professional EEE disposal system in compliance with article 6 –paragraph 3, as well as EEE retrieval, handling, treatment and recycling systems according to article 8 - paragraph 1, article 9 – paragraph 1, 11 – paragraphs 1 and 12 – paragraphs 1, 2 and 3, notwithstanding for the latter operations, agreements concluded in compliance with article 12 – paragraph 6, will be fined between 30.000 and 100.000 Euro.

3. Any manufacturer who after the 13th August 2005 releases electrical or electronic equipment without financial guarantee in compliance with article 11 – paragraph 2 or art. 12 - paragraph 4, will be fined between 200 and 1,000 Euros for every machine released onto the market

4. Manufacturers who in EEE use instructions do not provide the information as in article 13 – paragraph 1, will be fined between 200 and 5,000 Euros

5. Manufacturers who, within one year from releasing a new type of EEE , do not make information available to disposal/recycling centres according to article 13 – paragraph 3, will be fined between 5000 and 30,000 Euros.

6. Manufacturers who, after the 13th August 2005, releases EEE without the indications and symbols as in art. 13, paragraphs 4 and 5, are fined between 200 and 1,000 Euros for each equipment released. The same fine is charged should the aforementioned indications and symbols are not conform to the requirements set by art. 13, paragraphs 4 and 5.

7. Manufacturers who releases EEE without having registered with the chamber of commerce in compliance with article 14 – paragraph 2, will be fined between 30,000 and 100,000 Euros

8. Any manufacturer who, within the time limit established in article 13 – paragraph 8 does not communicate to the national registry concerning the disposal of EEE as stated in article 13 – paragraphs 3, 4 and 5 will be subjected to the foreseen sanctions

9. Notwithstanding the exceptions as in article 5 – paragraph 2 , anyone releasing EEE containing substances listed in article 5- paragraph 1 after the 1st of July 2006, will be fined between 50 and 500 Euros for each unit released, or between 30,000 and 100,00 Euros