

SUZOHAPP



World Key *World Key Lite* *World Key Move*

EN

Mifare Cashless System



Operating Manual

GUIDE TO THE SYMBOLS IN THE MANUAL

The following symbols are used in this manual
in order to facilitate its understanding.

EN



Important information



Read carefully before use



Warning!

RFTECH S.r.l. - Via Roma 3 - I-28060 Sozzago (NO)
T: +39 0321 70 00 08 - F: +39 0321 70 00 10
info@rftech.it - www.rftech.it



EC DECLARATION OF CONFORMITY

The manufacturer: **RFTECH SRL**

Address: **via Roma 3 28060 Sozzago (NO)**

Hereby declares that the product:

TYPE: **WORLDKEY**
TRADEMARK: **RFTECH**
MODEL: **WORLDKEY**

Complies with that foreseen by the following EU directives, including the latest amendments, and with relative national legislation of transposition:

2004/108/CE
1999/05
2006/95/CE

and that the following harmonised standards were applied

EN61000-6-3:2007
EN61000-6-1:2007
EN301489-3 V1.4.1:2002
EN301489-1 V1.8.1:2008
EN300330-2 V1.5.1:2010-02
EN60950-1:2006+A11:2009

Sozzago, 05/10/2011

A handwritten signature in black ink, appearing to read "Graziano Marcolli", written over a horizontal line.

Ing. Graziano Marcolli Presidente RFTECH SRL

Cap. Soc. €10.000, i.V. - R.E.A. MI 1925675 Reg. Imprese di Milano - C.F./P. I.V.A.: 06952760962 - Sede Legale: Via P. L. Da Palestrina, 10 - Milano
Sede Amministrativa: Via Roma, 3 - 28060 Sozzago (NO)



EC DECLARATION OF CONFORMITY

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Address: **via Roma 3 28060 Sozzago (NO)**

Hereby declares that the product:

TYPE: **WORLDKEY**
TRADEMARK: **RFTECH**
MODEL: **WORLDKEY LITE**

Complies with that foreseen by the following EU directives, including the latest amendments, and with relative national legislation of transposition:

2004/108/CE
1999/05
2006/95/CE

and that the following harmonised standards were applied

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EN301489-3 V1.4.1:2002
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T: +39 0321 70 00 08 - F: +39 0321 70 00 10

info@rftechsrl.com - www.rftechsrl.com



EC DECLARATION OF CONFORMITY

The manufacturer: **RFTECH SRL**

Address: **via Roma 3 28060 Sozzago (NO)**

Hereby declares that the product:

TYPE: **WORLDKEY**

TRADEMARK: **RFTECH**

MODEL: **WORLDKEY MOVE**

Complies with that foreseen by the following EU directives, including the latest amendments, and with relative national legislation of transposition:

2004/108/CE

1999/05

2006/95/CE

and that the following harmonised standards were applied

EN61000-6-3:2007

EN61000-6-1:2007

EN301489-3 V1.4.1:2002

EN301489-1 V1.8.1:2008

EN300330-2 V1.5.1:2010-02

EN60950-1:2006+A11:2009

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World Key, World Key Lite and World Key Move CPUs, the UNICO and UNICO AUDIT software, the Moon, Sky and Galaxy reading heads were designed and produced by RFTech SRL, a company partner of Comestero group, specialized in the development of products with Mifare cashless technology.

SAFETY INFORMATION

This machine is equipped with safety devices in order to prevent damage due to short circuits and fire.



These devices must not be bypassed, removed or disabled for any reason.

If the devices must be disabled to carry out maintenance or servicing, operate on the appliance only when the power supply has been switched off.



The safety devices have been constructed in compliance with existing regulations.

We recommend the operator to periodically check their correct operation.

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Risks deriving from using the machine

If maintained in good operating conditions and installed correctly (according to the instructions of this manual), the machine does not pose any danger for the operator.



Electrical hazards: direct contacts during connection to the main power supply.

Operations carried out by a **qualified technician**.

Hazards during machine installation and setup

Follow the machine installation instructions below so that risks for people and property are minimal.



Electrical hazards: direct contacts during connection to the main power supply. Operations carried out by a **qualified technician**.

Caution:

- Make sure that the distribution line is sized according to the power supply used by the machine.

- Connect the system to ground before connecting the machine and the accessories.
- Connect the device to SELV type circuits.

Hazards during machine maintenance



Electrical hazards: direct contact with live parts within the electrical cabinet.

Operations carried out by a **qualified technician**.

Caution:

- Service the machine only after the main power supply has been switched off.

Hazards linked with battery replacement



Explosion hazard should the battery supplied with the appliance be replaced with another battery which is incompatible.

Caution:

- The battery installed in the device has been dimensioned to last as long as the appliance. If the battery presents any problems, do not try to replace it but contact the Comesterogroup after-sale service.

GENERAL WARRANTY

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.

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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. Comestergroup 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 Comestergroup 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 not assume any liability for illegal conduct or damage that may result from fraudulent use of the goods supplied. All required repairs not covered by the warranty must be paid for and the Comestergroup 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.

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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 Comestergroup product; by following the instructions of this manual carefully you will be able to appreciate and be satisfied by its quality.

Please read the operation and maintenance instructions carefully, in compliance with the safety provisions, before using the machine and store this manual for future reference.

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1. Introduction

This manual and its annexes provide all information needed to install and operate the product and all its parts and its correct maintenance.

The information in this manual can change without notice and is not binding for Comestergroup. The information in this manual has been collected and verified with utmost care; however Comestergroup cannot be held liable for any claim deriving from using the manual.

Please refer to our website at www.comestergroup.com to download the latest version of this manual.

When not specified otherwise, all references to companies, names, contacts and addresses used in the examples are purely fictional and have the aim of illustrating the operation of the product.

It is prohibited to reproduce this document, even partially, in any form without express authorization by Comestergroup.

2. Presentation

The new World Key/World Key Lite/World Key Move cashless/contactless system uses the Mifare® (standard, Plus, DesFire, NFC) technology platform to ensure high safety standards and management of multiple applications.

Security in transferring data is ensured by the combination of the proprietary encryption Mifare® and RFTech TDES (Triple Data Encryption Standard).

The possibility of managing multiple applications is due to the capability of the system of interfacing with a wide range of devices:

- Devices which use the Executive protocol.
- Devices which use the MDB and BDV protocol.
- Comestero KPD and KPM boards.
- Parallel interface integrated in Word Key Par.
- Set up for integration of Ethernet, RS485, CAN BUS and ccTalk interfaces.

Executive, MDB and BDV protocols cover the most devices in the vending machine industry, while KPD, KPM and Word Key Par boards are intended to interface electromechanical devices for service dispensers.

The system also allows various sale or identification applications to be managed (access to different services also of different managers), storing them on a single RFID support (card/key/tag).

Finally, World Key allows you to use all types of electronic wallets for payment (cards, keys and any other form of RFID tag/transponder in MIFARE standard) in order to meet all needs and different use experiences of the end users. The type of products/services the customer can access can also be specified for each card/key/tag.

3. Warnings



Read this manual carefully before use.
Knowledge of the information and instructions of this manual is fundamental to use the product correctly.
Check upon receipt that the package and the product have not been damaged during transport.

Take care with the electrical connections. Faults due to failure to follow the warnings of this publication are not covered by warranty.
Significant situations that need to be followed strictly are signalled by specific symbols in this manual.

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4. Unpacking

4.1 Reception of packaged product

Check upon receipt that the product has not been damaged during transport. If any damage is noticed, notify the transporter immediately.

After transport the package must be intact, that is, it must *not*:

- Show dents, signs of shocks, deformation or breakages of the container.
- Show areas that are wet or signs that would point to the fact that the casing has been exposed to rain, frost or heat.
- Show signs of tampering.

Also, check that the content of the package matches the order.

4.2 Handling



In order to prevent damage to the machine, it is recommended to transport it exclusively inside its original packaging.

We recommend:

- ***not to*** bump the machine.
- ***not to*** leave the machine (even if still in the package) exposed to atmospheric agents.

5 Appliance identification

5.1 Identification plate

The following photographs highlight the identification plate of the World Key, World Key Lite and World Key Move devices respectively. The plate is on the front of the World Key and World Key Lite devices.

World Key



Fig. 1

World Key Lite



Fig. 2

The plate is on the back of the World Key Move device.

World Key Move



Fig. 3

The plate bears the main operating data and the serial number identifying the device. This number must always be mentioned when contacting the manufacturer for assistance, spare parts, repairs or information concerning operation of the equipment.



It is forbidden to remove the identification plate from the appliance or to tamper with the data it contains.
Should it be damaged or lost, ask the manufacturer to have it replaced with a new one.
Remember that the warranty is linked to the identification number of the machine.

5.2 Description of the parts



- 1 World Key/World Key Lite/World Key Move system CPU
- 2 Galaxy/Sky/Moon Reading Heads

5.3 Accessories

5.3.1 Display

The display is available only for World Key and World Key Move, but not for World Key Lite. The ready-to-install kit includes, besides the display, the plastic support and protective glass.

Type of accessory	World Key	World Key Lite	World Key Move	Functions
Display+support+ protective glass kit (Code: +RFT-001-D)	X		X	

5.3.2 Cables

The World Key/World Key Lite/World Key Move systems are available in many configurations and are therefore supplied with the relative dedicated cables.

Cable type	World Key	World Key Lite	World Key Move	Functions
EXE EXE(2) (Code: RFT-L09A)	X	X	X	VMC → executive connection Peripheral → executive connection
EXE- MDB(2) (Code: RFT-L09B-AL)	X	X	X	VMC → executive connection Peripheral → MDB connection
MDB_M - MDB_S (1) (Code: RFT-L09E-MS)	X	X	X	VMC → MDB slave connection Peripheral → MDB master connection
MDB_S (Code: RFT- L09E)	X	X	X	VMC → MDB slave connection
Micro USB cable (Code: RFT-MUSB-A-018)	X	X	X	Micro USB cable for connection to PC
Power cable (Code: RFT-L10AL)	X		X	Power cable
MDB power cable (Code: RFT-L10ALMDB)	X		X	Power cable + cable for MDB peripheral connection
KPM/KPD/display cable (Code: RFT-L10KPM)	X		X	Cable connecting display and KPM/KPD boards
Micro USB Pen Drive cable (Code: RFT-AUSBOTG)	X		X	Micro USB cable for pen drive connection
RM925 cable (Code: RFT-L10925)	X		X	RM925 connection cable
KPM/KPD cable (Code: C4EK-I2C-ESP)	X			Connection cable between KPM and KPD (only used if there is more than one board)
Cable connection WorldKey – Audit (Codice : RFT-L09AUDIT)	X		X	Cable to download the Audit data from the WorldKey on a PC

N.B :

- 1. TYPE OF CONNECTION FOR USING THE WORLDKEY SYSTEM AS CONCENTRATOR FOR COLLECTING THE AUDIT DATA of the VMC and from the payment systems,**
- 2. The BDV version may also be available with an adapter.**

5.3.3 Boards

Type of accessory	World Key	World Key Lite	World Key Move	Functions
KPM board (Code: FSE---KPM-C)	X			4-service management board (4 relay outputs and 8 inputs)
KPD board (Code: FSE---KPD-1-C)	X			2-service management board (2 relay outputs and 4 inputs) equipped with network transformer
RM925 board (Code: FSE---925/2/A/T)	X			1-service management board

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5.3.4 Software

Type of accessory	World Key	World Key Lite	World Key Move	Functions
Unico (Code: RFT-UNICO-LC)	X	X	X	Complete configuration and management software
Unico Audit (Code: RFT-AUDITSW)	X	X	X	Partial audit data management software
Unico Card (Code: RFT-CARDSW)	X	X	X	Partial cards management software

5.3.5 Keys, cards, tags, stickers and related accessories

Type of accessory	World Key	World Key Lite	World Key Move	Functions
Yellow audit key (Code: RFT-006-MA)	X	X	X	Audit key
Red programming key (Code: RFT-006-PK)	X	X	X	Programming key
Dark blue user key (Code: RFT-006-BLU)	X	X	X	Dark blue user key
Light blue user key (Code: RFT-006-AZZURRO)	X	X	X	Light blue user key
Orange user key (Code: RFT-006-ARANCIO)	X	X	X	Orange user key

Type of accessory	World Key	World Key Lite	World Key Move	Functions
Cool white user key (Code: RFT-006-GHIACCIO)	X	X	X	Cool white user key
Lilac user key (Code: RFT-006-LILLA)	X	X	X	Lilac user key
White user card (Code: RFT-CARD)	X	X	X	White user card
Comesterogroup user card (Code: RFT-CARDCO)	X	X	X	User card with Comesterogroup standard printing
Comesterogroup user tag (Code: RFT-TAGS)	X	X	X	User tag with Comesterogroup standard printing
Payment support HAPPY (Cod. RFTTAGS-CRYSTAL)	X	X	X	Payment support compatible with the full range of Worldkey cashless system and all existing media
Neutral user sticker (Code: RFT-008STICK)	X	X	X	Neutral user sticker (minimo 2000 pz)

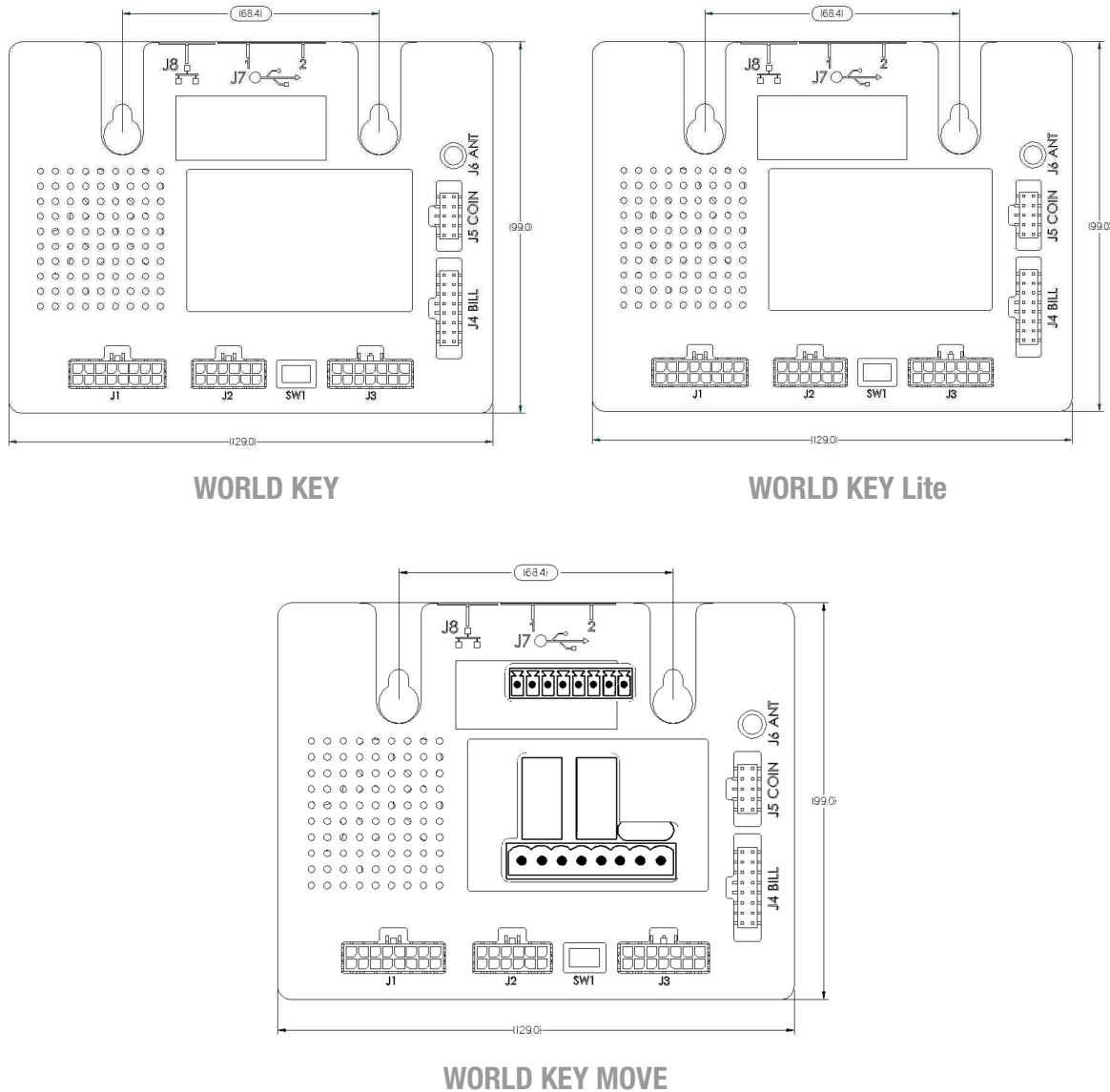
*Customized cards, tags and e stickers can be supplied on request.
Please contact Comesterogroup for more information.

5.3.6 Other accessories

Type of accessory	World Key	World Key Lite	World Key Move	Functions
Credit box (Code: RFT-CREDIT-BOX)	X	X	X	Credit box to transfer credit from cashless systems coming from other management boards
Universal programming portable device UHHT (Code: RFT-003)	X	X	X	Universal programming portable device UHHT

6 Installation and Connections

6.1. Installation of World Key/World Key Lite/World Key Move CPU



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The CPU is ready to be fixed to a vending machine using the M3/M4 screws. It is arranged as near as possible to the reading key/card, keeping in consideration that the length of the cable is about 1 m.

As for all electronic components, it is necessary to prevent the board from being subject to vibrations, humidity and dirt, which could lead to malfunctioning. The device can also be fixed to the distributor using the velcro element of the 3M supplied in the package. However, the CPU is ready for fixing according to the CVS standard.

6.2. Installing the reading heads

6.2.1 Installing the Moon reading head

The installation of the Moon reading key is simple in that it is sufficient to make a 33 mm diameter hole with a hollow mill, which can easily be found in specialist shops. Once the vending machine metal sheet has been pierced, insert the reader and fix it using the relevant nuts supplied (M32 nuts).

There is a projection on the perimeter of the reading head to prevent the round frame from turning.

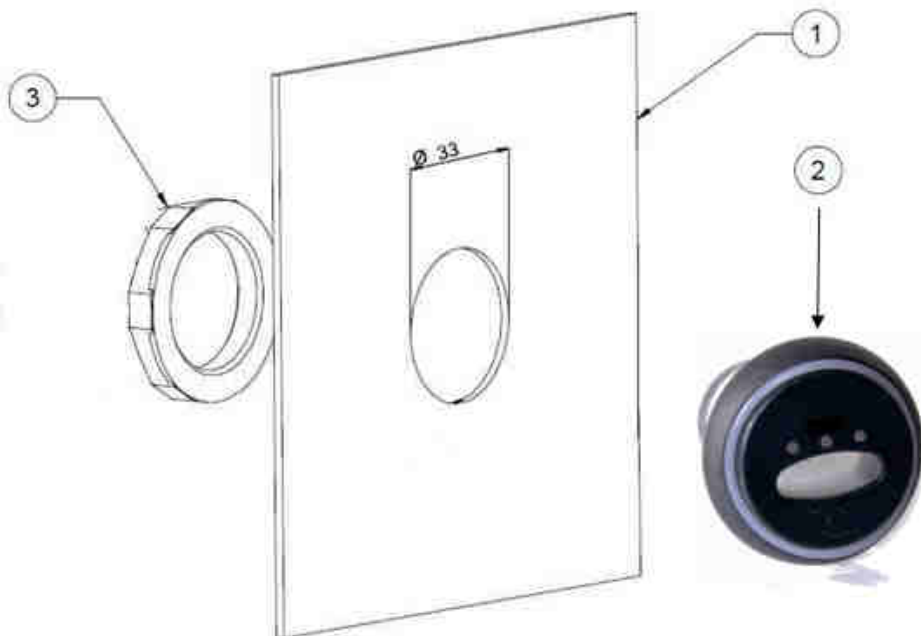


Fig. 4

1. Vending machine surface
2. Moon reading key
3. Fixing nut

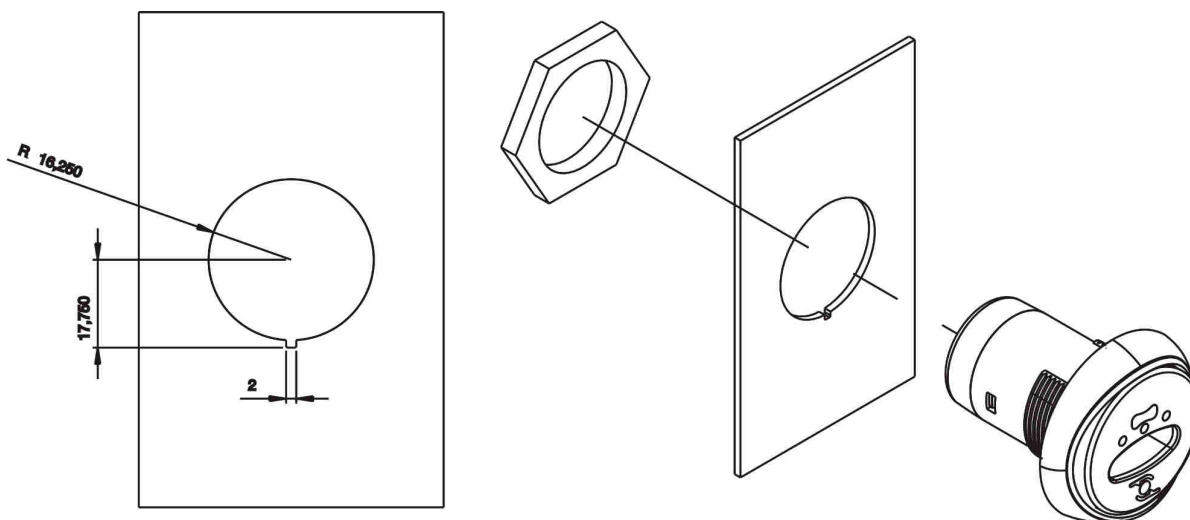


Fig. 5

6.2.2 Installing the Moon reading head with frame

If the Moon reader is installed in a vending machine that already has a hole from previously used EURO KEY cashless systems, the oval shaped frame supplied must be inserted before the reader in order to close up the rectangular hole. There is a projection on the circular perimeter of the reading head to prevent the oval frame from turning.

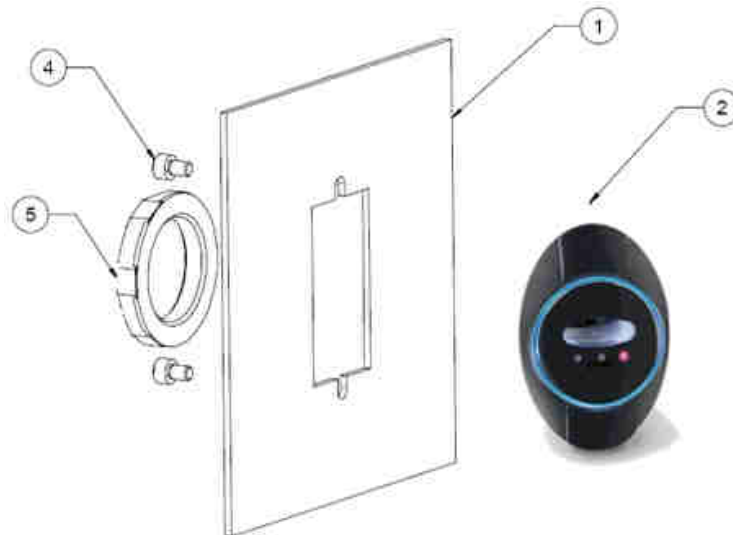


Fig. 6

1. Vending machine surface
2. Moon reading key
3. Fixing screws
4. Fixing nut

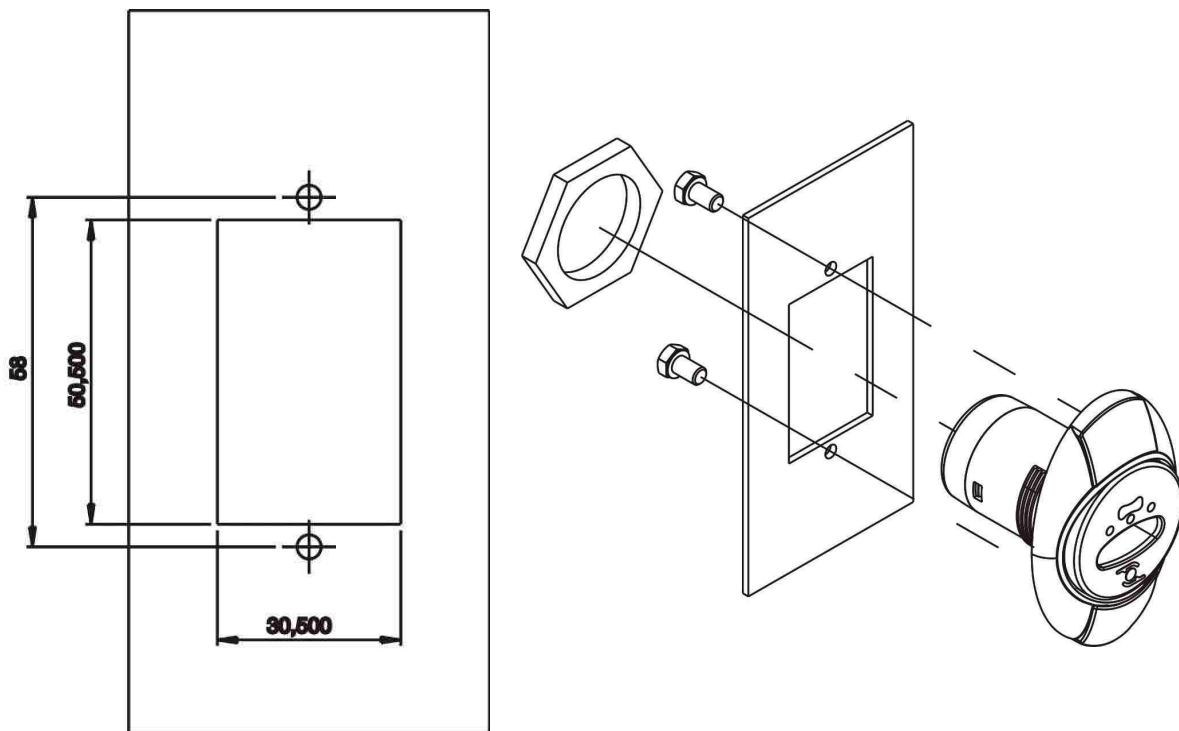


Fig. 7

6.2.3 Installing the Galaxy reading head

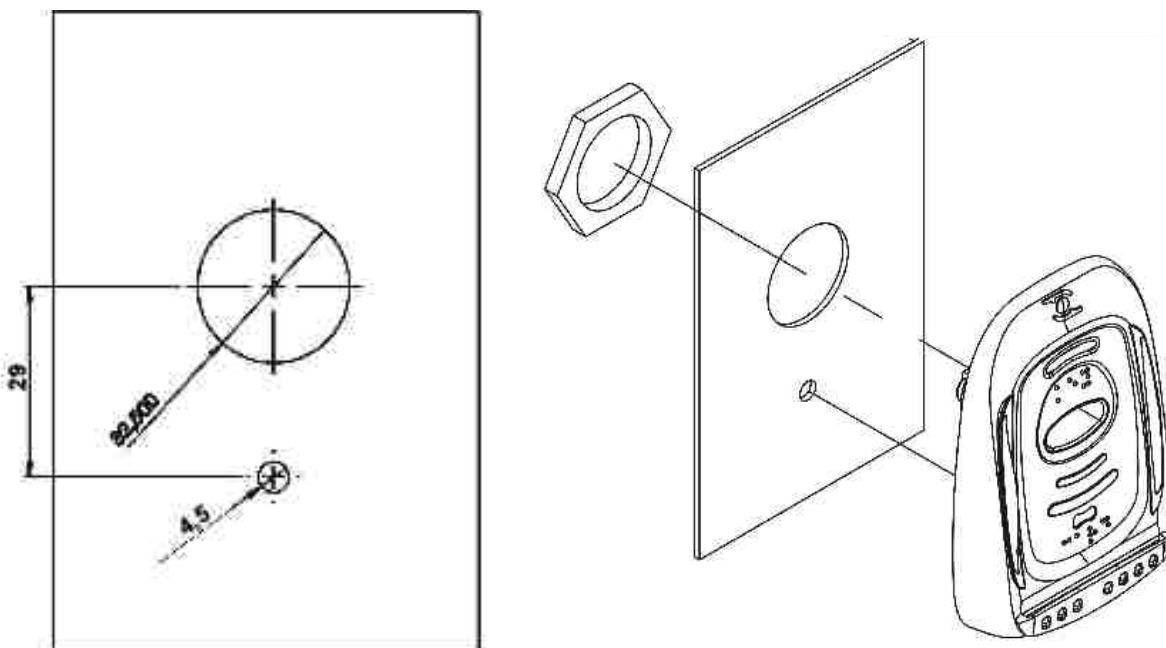


Fig. 8

6.2.4 Installing the Sky reading head

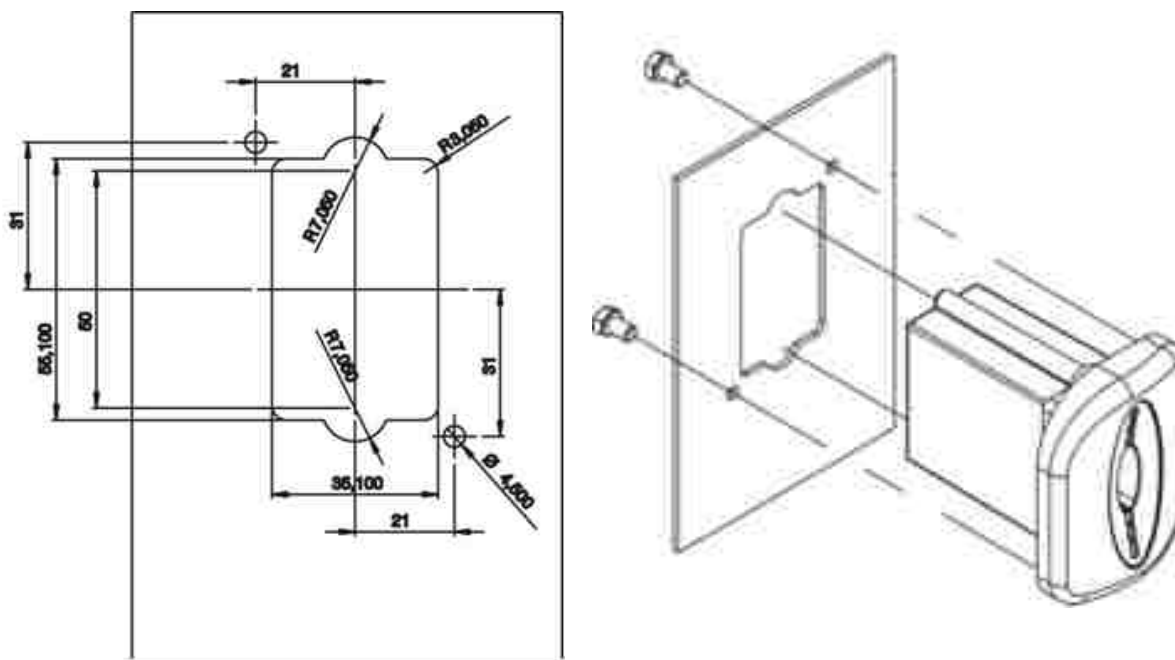


Fig. 9

N.B. The Sky reading head can be installed at the back of the board for particular safety requirements. Contact the Comestergroup Custom Service for further information.

6.3. Display installation

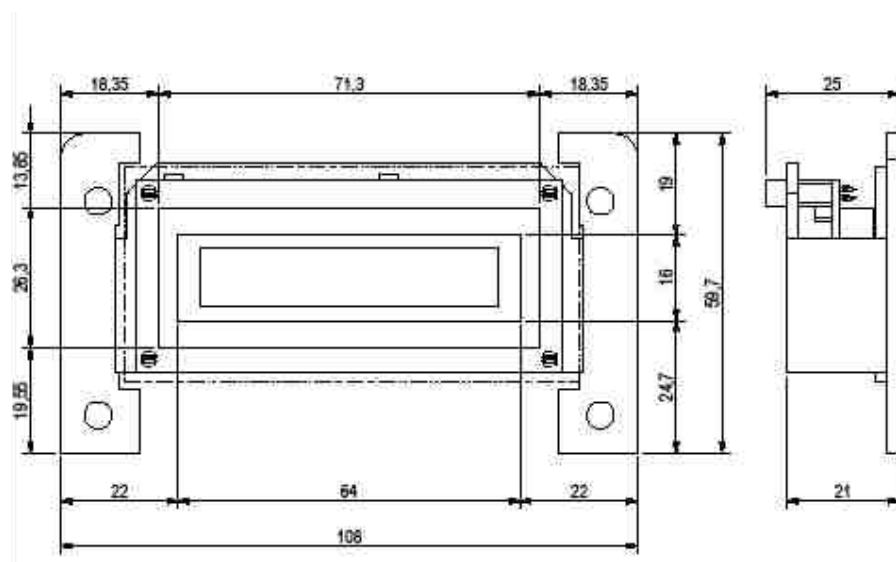


Fig. 10

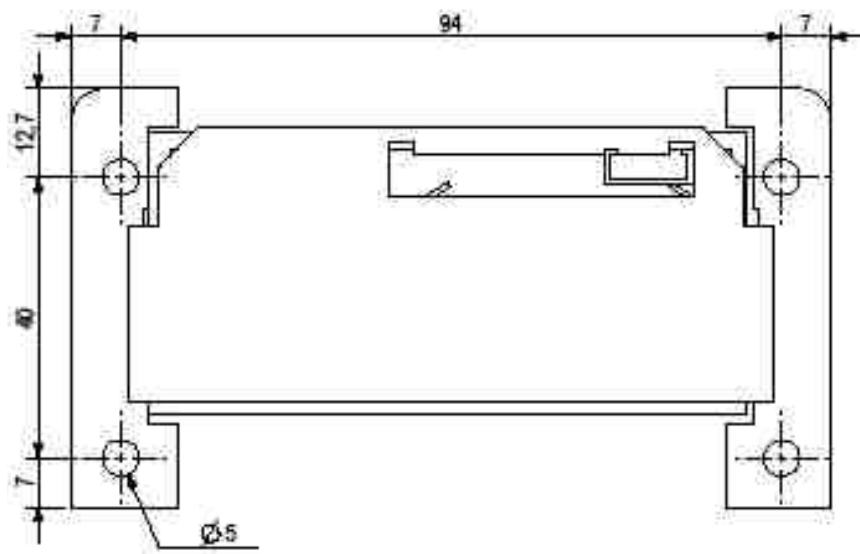


Fig. 11

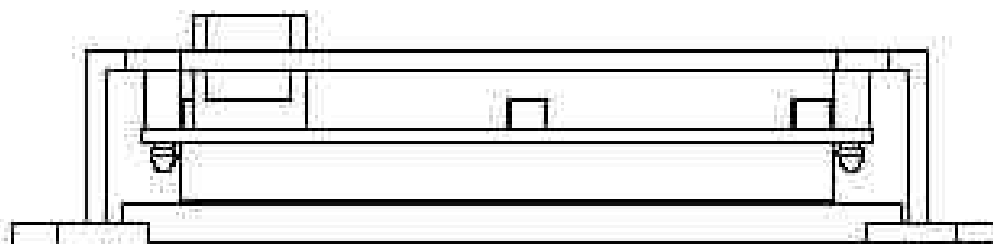


Fig. 12

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6.4. Installation of accessories

N.B.:

The boards are intended exclusively for the normal World Key and cannot be applied to World Key Lite.

General installation information:

- Position the boards correctly, being careful not to rest them directly against the metal parts.
- Be careful of possible uncovered wiring especially near high voltage parts.
- Provide the system with appropriate ventilation.

6.4.1 Installing KPM board

This is an additional board intended exclusively for World Key. It makes it possible to manage up to 4 services simultaneously (4 relay outputs for service activation and 8 inputs, of which 4 to choose the service and 4 for inhibit/busy signal).

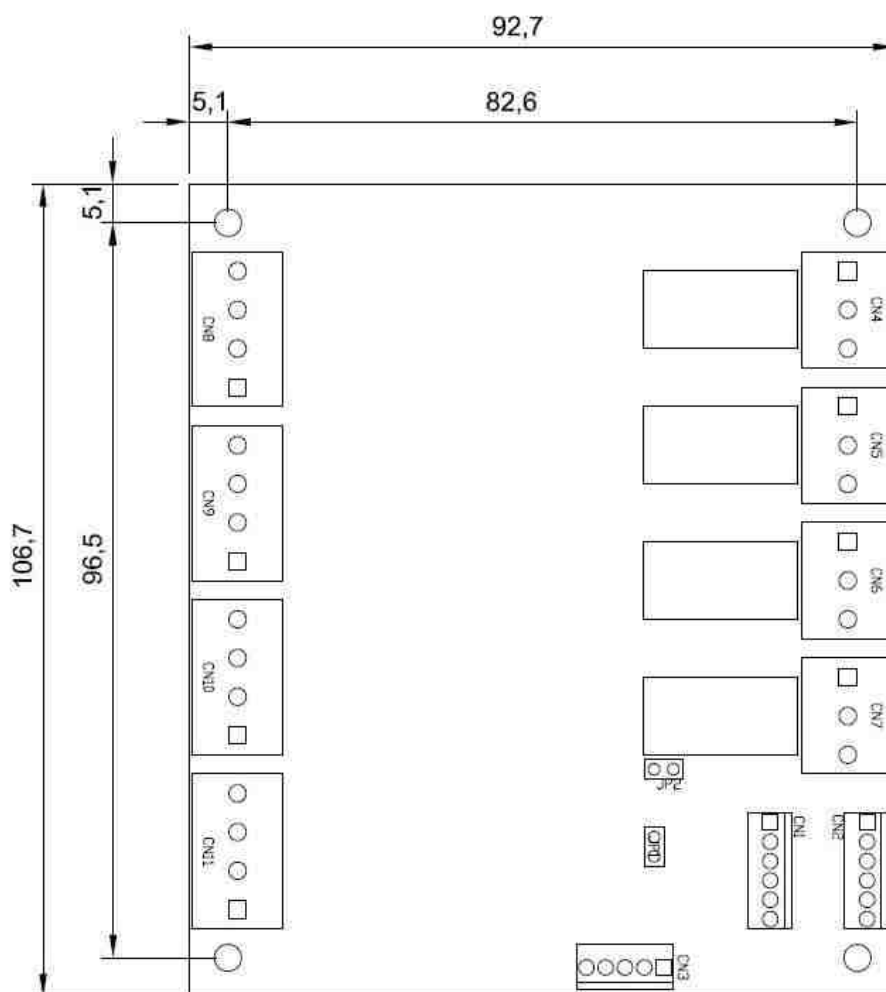


Fig. 13

6.4.2 Installing KPD board

This is an additional board intended exclusively for World Key. It makes it possible to manage up to 2 services simultaneously (2 relay outputs for service activation and 4 inputs, of which 2 to choose the service and 2 for inhibit/busy signal). It is equipped with a network transformer.

N.B.:

The specified data of the transformer on the KPD is 230 Vac/24 Vac (15W).

The overall consumption of the connected peripherals must be lower than the limits set by the specified data.

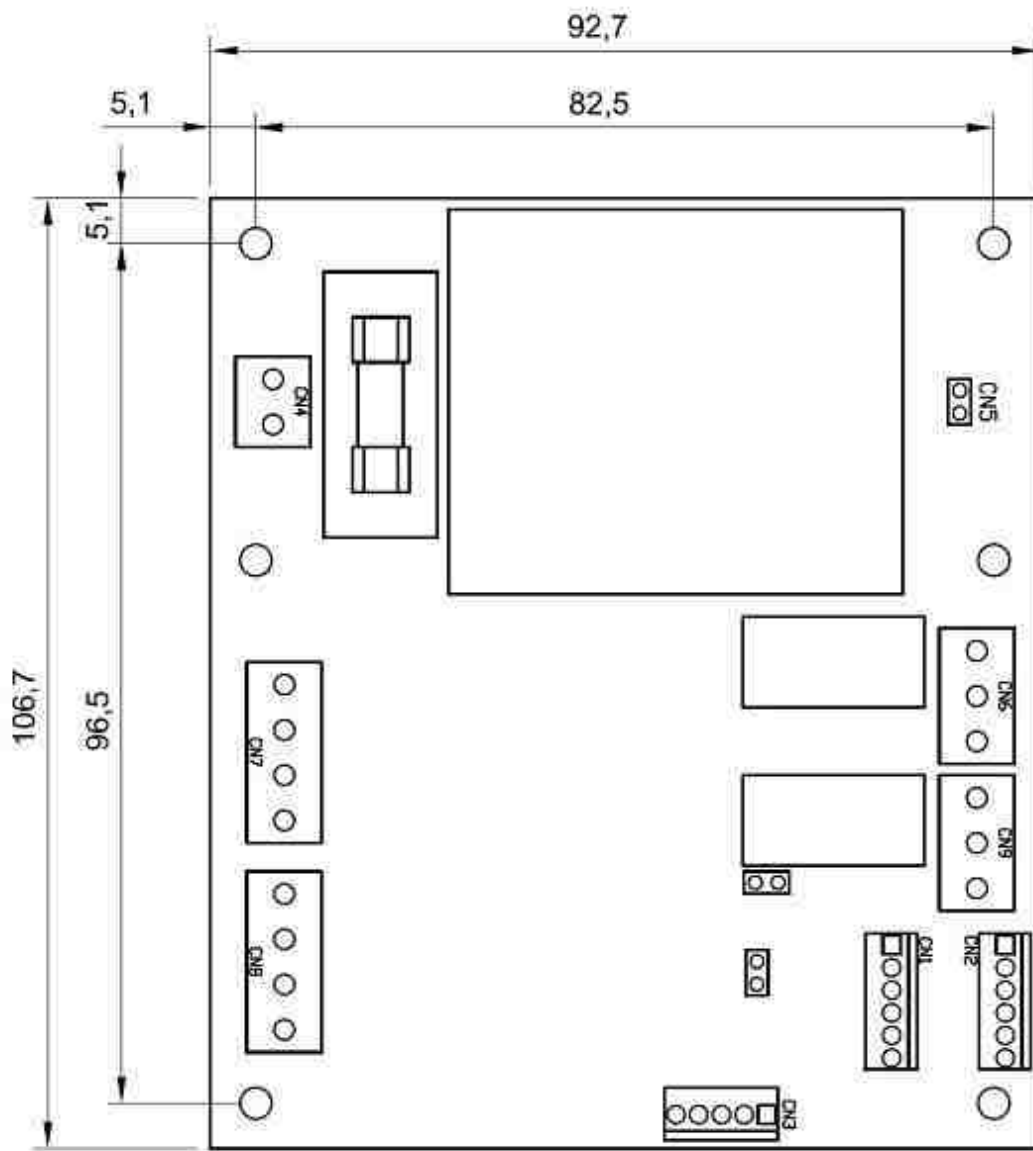


Fig. 14

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6.4.3 Installing RM 925 board

This board is only provided to guarantee compatibility with previous systems and does not allow connection of any peripheral.

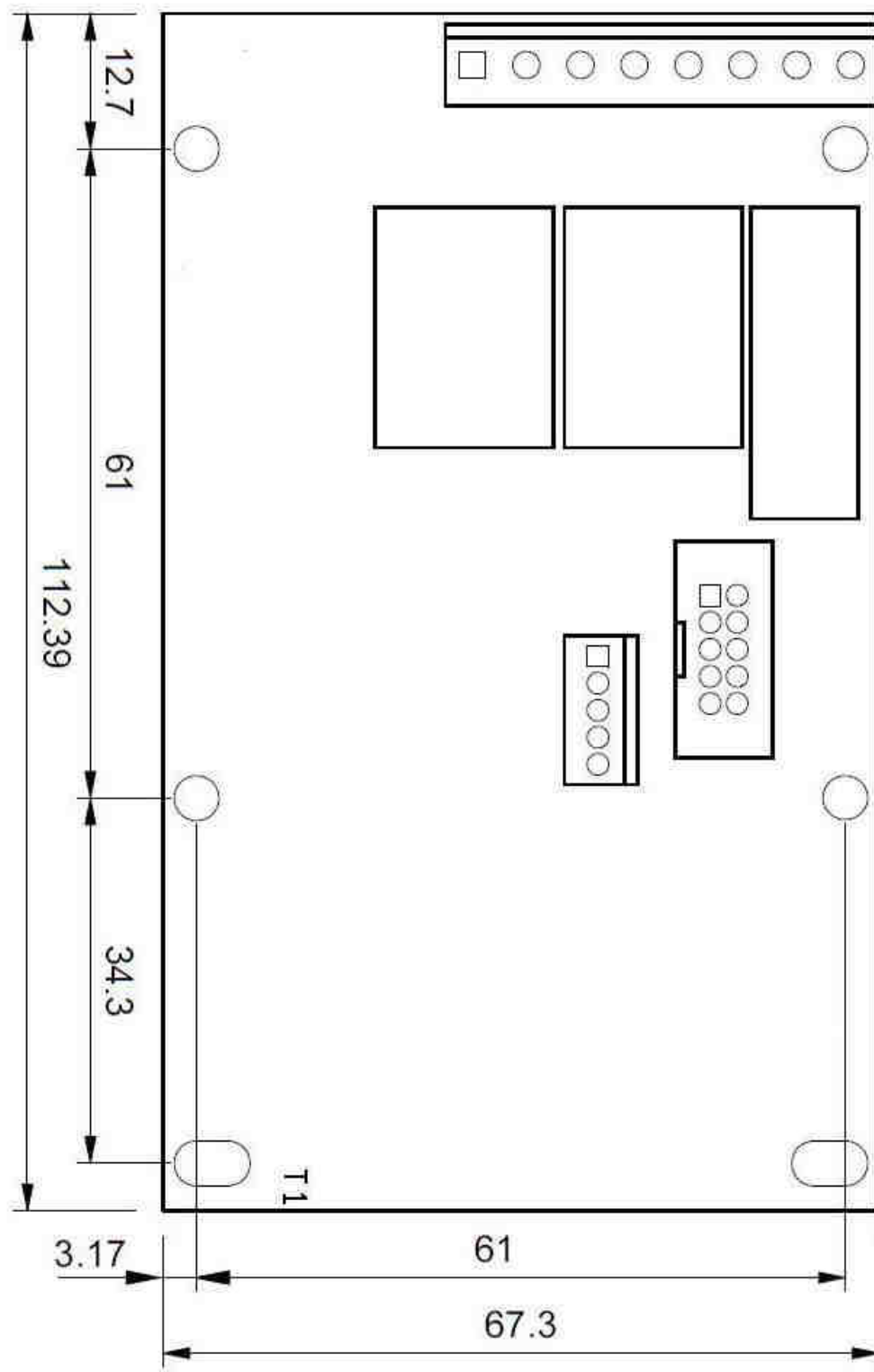


Fig. 15

6.5 Connections

6.5.1 World Key and World Key Move CPU connections

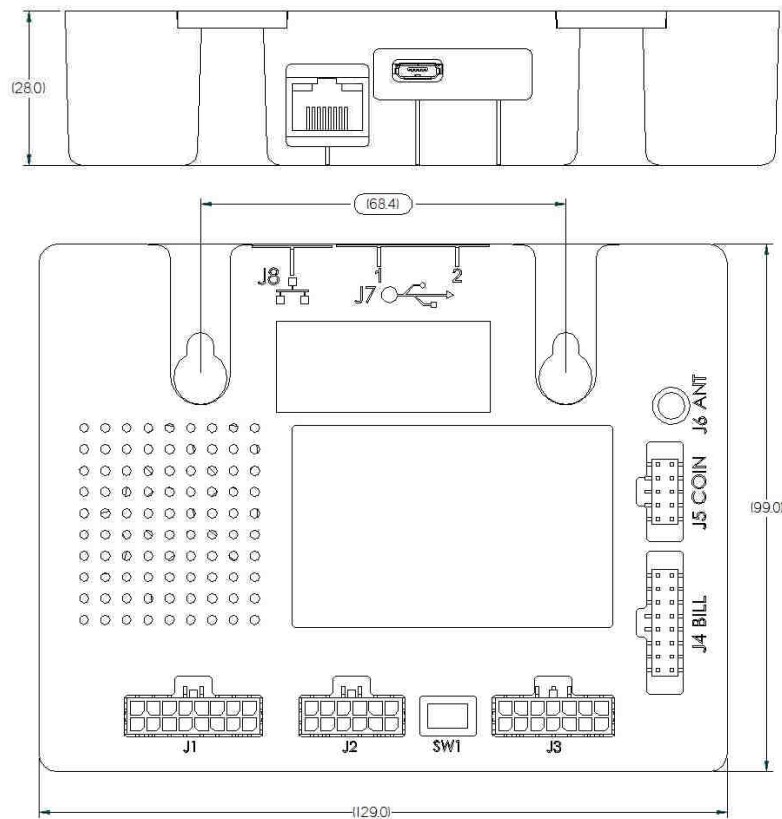


Fig. 16

J1 = microfit 3mm 16 poles	Connection of VMC and payment devices power supply
J2 = microfit 3mm 12 poles	Connection RS232 – I2C, +5Vdc, +12Vdc (KPM, KPD boards and display)
SW1	Line end resistances switch, RS485, Can Bus
J3 = microfit 3mm 14 poles	Connection of industrial devices, RS485, CAN BUS, CCTALK
J4 = strip 2.54mm 16 poles	Connection of banknote reader 12Vdc 2.3A ± 10%
J5 = strip 2.54mm 10poles	Connection of coin validator 12 Vdc 0.5 A±10%
J6 = MCX 50 Ohm	Connection of Moon, Sky, Galaxy reading heads coaxial cable
J7 = Micro USB OTG	Connection to USB Host devices (PC) or (mass filing peripheral) device
J8 = Ethernet 10/100	RJ45 connection to Ethernet network

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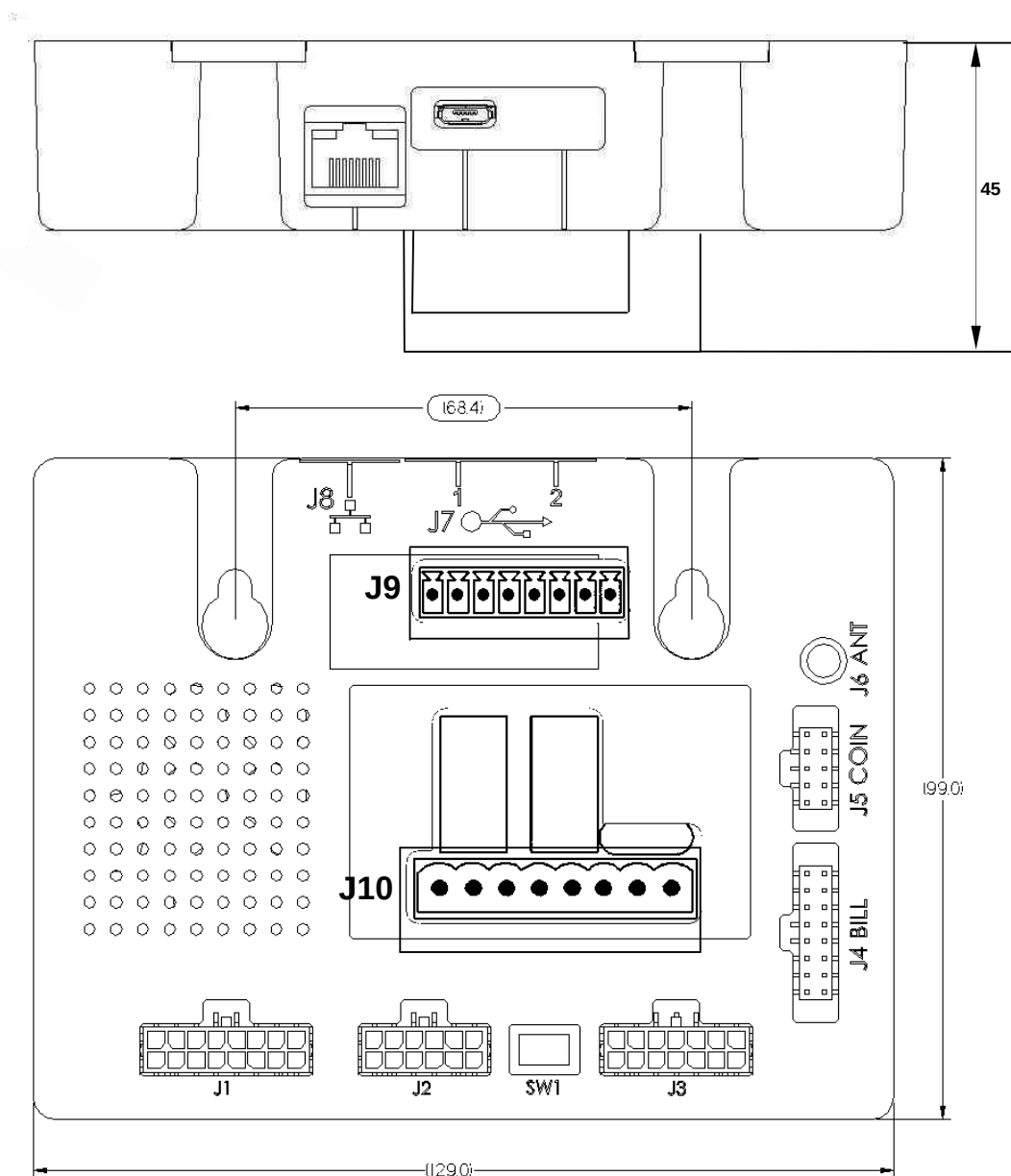
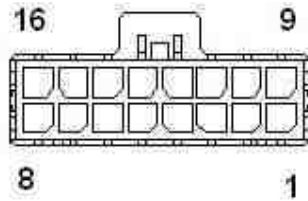


Fig. 17

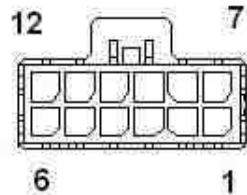
J9	4-input low voltage connector Vdc range: 8-30 Vac range: 8-28 V
J10	High voltage connector 2 relays 250 Vac / 5 A 1 input Vac range: 15-230 Vac. Enter a 250 mA fast fuse on a 230 V input line (pin 7 and 8) and maintain adequately separated the high voltage wires from the safety very low voltage wires.

J1 = microfit 3mm 16 poles: Connection of VMC and payment devices power supply



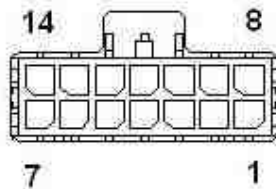
- | | |
|---------------|---------------|
| 1. TX1 MASTER | 9. VAC2 |
| 2. RX1 MASTER | 10. VAC1 |
| 3. TX1 SLAVE | 11. VRAD |
| 4. RX1 SLAVE | 12. TX2 SLAVE |
| 5. GND1-E | 13. GND-SLAVE |
| 6. GND1-K | 14. GND |
| 7. TX2 MASTER | 15. GND |
| 8. RX2 MASTER | 16. RX2 SLAVE |

J2 = microfit 3mm 12 poles: Connection RS232 – I2C, +5Vdc, +12Vdc



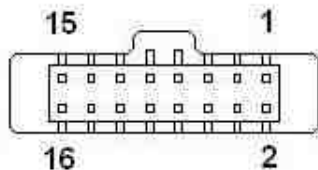
- | | |
|---------------|-----------------|
| 1. GND | 7. PROG_FLASH |
| 2. GND | 8. CTS_ISP_CONN |
| 3. RX232_CONN | 9. TX232_CONN |
| 4. GND | 10. +12 V |
| 5. GND | 11. +5 V |
| 6. SCL_EXT | 12. SDA_EXT |

J3 = microfit 3mm 14 poles: Connection of banknote reader 12Vdc 2.3A $\pm$ 10%



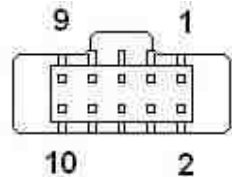
- | | |
|----------------|-----------------|
| 1. GND | 8. SEL_B |
| 2. GND | 9. SEL_A |
| 3. GND | 10. +5 V |
| 4. GND | 11. +12 V COIN |
| 5. GND | 12. CCTALK_CONN |
| 6. RS485A_CONN | 13. RS485B_CONN |
| 7. CAN_L_CONN | 14. CAN_H_CONN |

J4 = strip 2.54mm 16 poles: Connection of banknote reader 12Vdc for a maximum of 2.3A $\pm$ 10%



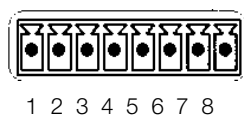
- | | |
|---------------|--------------------|
| 1. +12 V COIN | 9. BILL 1 INHIBIT |
| 2. GND | 10. BILL 1 INHIBIT |
| 3. NC | 11. BILL 1 INHIBIT |
| 4. NC | 12. BILL 1 INHIBIT |
| 5. NC | 13. BILL 3 |
| 6. NC | 14. BILL 4 |
| 7. BILL_BUSY | 15. BILL 1 |
| 8. NC | 16. BILL 2 |

J5 = strip 2.54mm 10poles: Connection of coin validator 12Vdc



- | | |
|--------------|-----------------|
| 1. GND | 6. COIN INHIBIT |
| 2. +12V COIN | 7. COIN_1 |
| 3. COIN_5 | 8. COIN_2 |
| 4. COIN_6 | 9. COIN_3 |
| 5. COIN_IRQ | 10. COIN_4 |

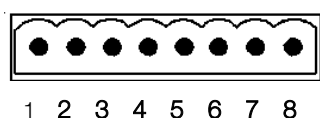
J9 = 4-input low voltage connector Vdc range: 8-30 Vac range: 8-28 V



- | | |
|--------------|--------------|
| 1. + START 1 | 5. + RESET 1 |
| 2. - START 1 | 6. - RESET 1 |
| 3. + START 2 | 7. + RESET 2 |
| 4. - START 2 | 8. - RESET 2 |

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J10 = High voltage connector 2 relays 250 Vac / 5 A 1 input Vac range: 15-230 V



- | | | |
|----------|-------------------|--------------------------------|
| 1. NO 1 | 5. COM 2 | } IN OR AI
PIN 5-6
OF J9 |
| 2. COM 1 | 6. NC 2 | |
| 3. NC 1 | 7. IN 5 (230 VAC) | |
| 4. NO 2 | 8. RETURN IN 5 | |

6.5.2 World Key Lite CPU connections

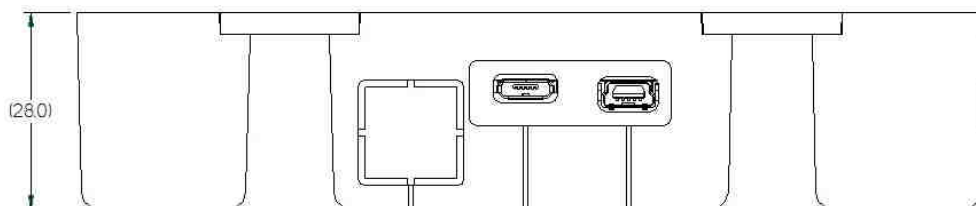


Fig. 18

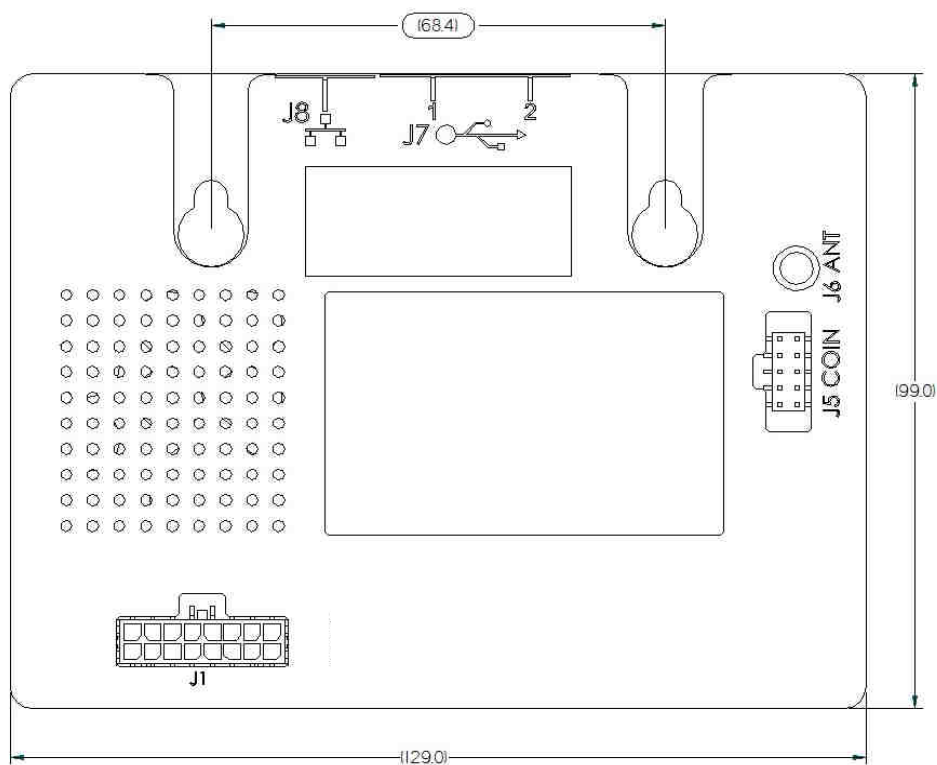


Fig. 19

J1 = microfit 3mm 16 poles

J5 = strip 2.54mm 10poles

J6 = MCX 50 Ohm

J7 = Micro USB

J8 = Ethernet 10/100

Connection of VMC and payment devices power supply

Connection of coin validator 12 Vdc $\pm$ 10%
0.5 A $\pm$ 10%

Connection of Moon, Sky, Galaxy reading heads coaxial cable

Connection to USB Host devices (PC)

RJ45 Connection with Ethernet network

6.5.3 KPD board connections

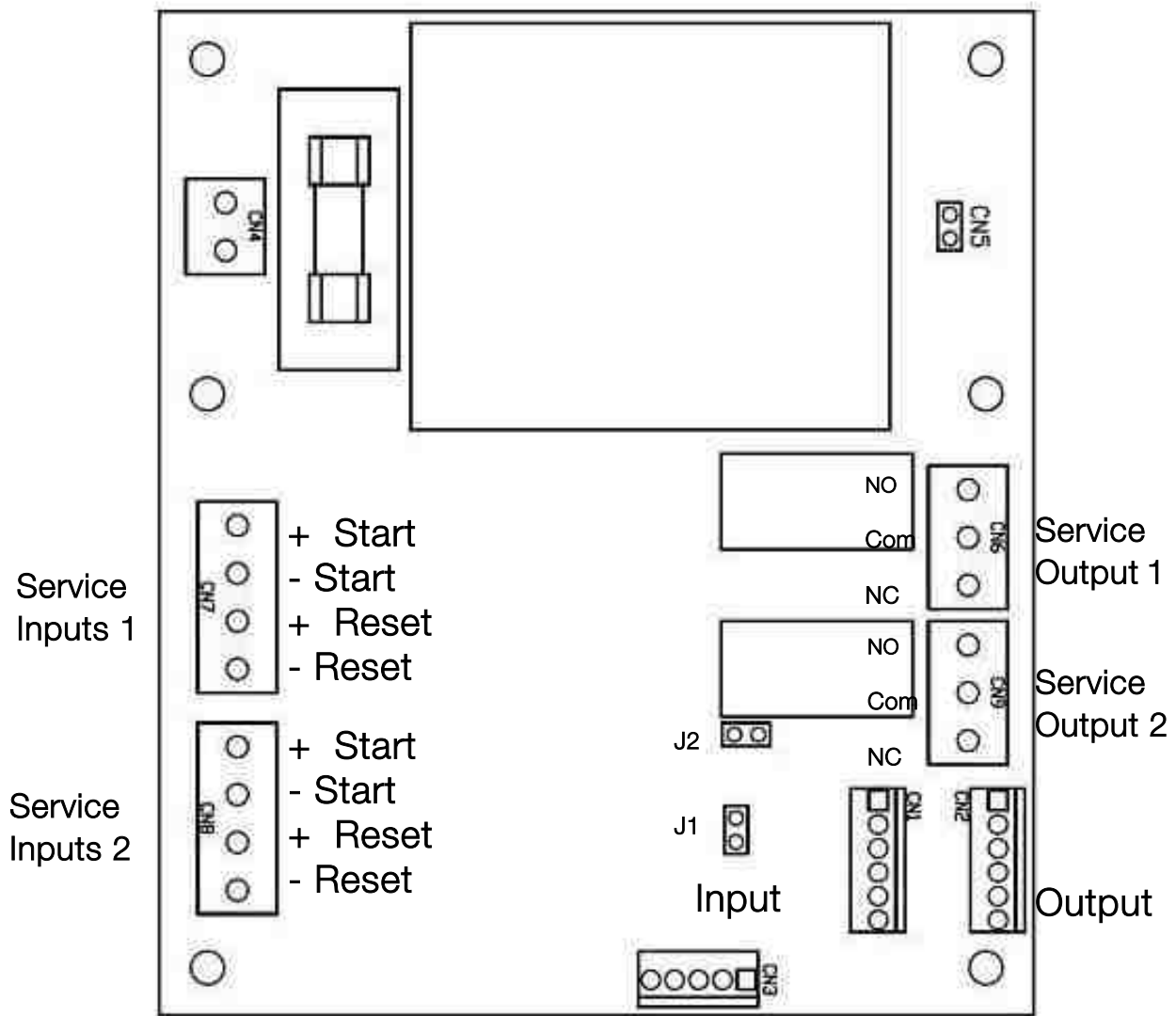


Fig. 20

Address configuration:

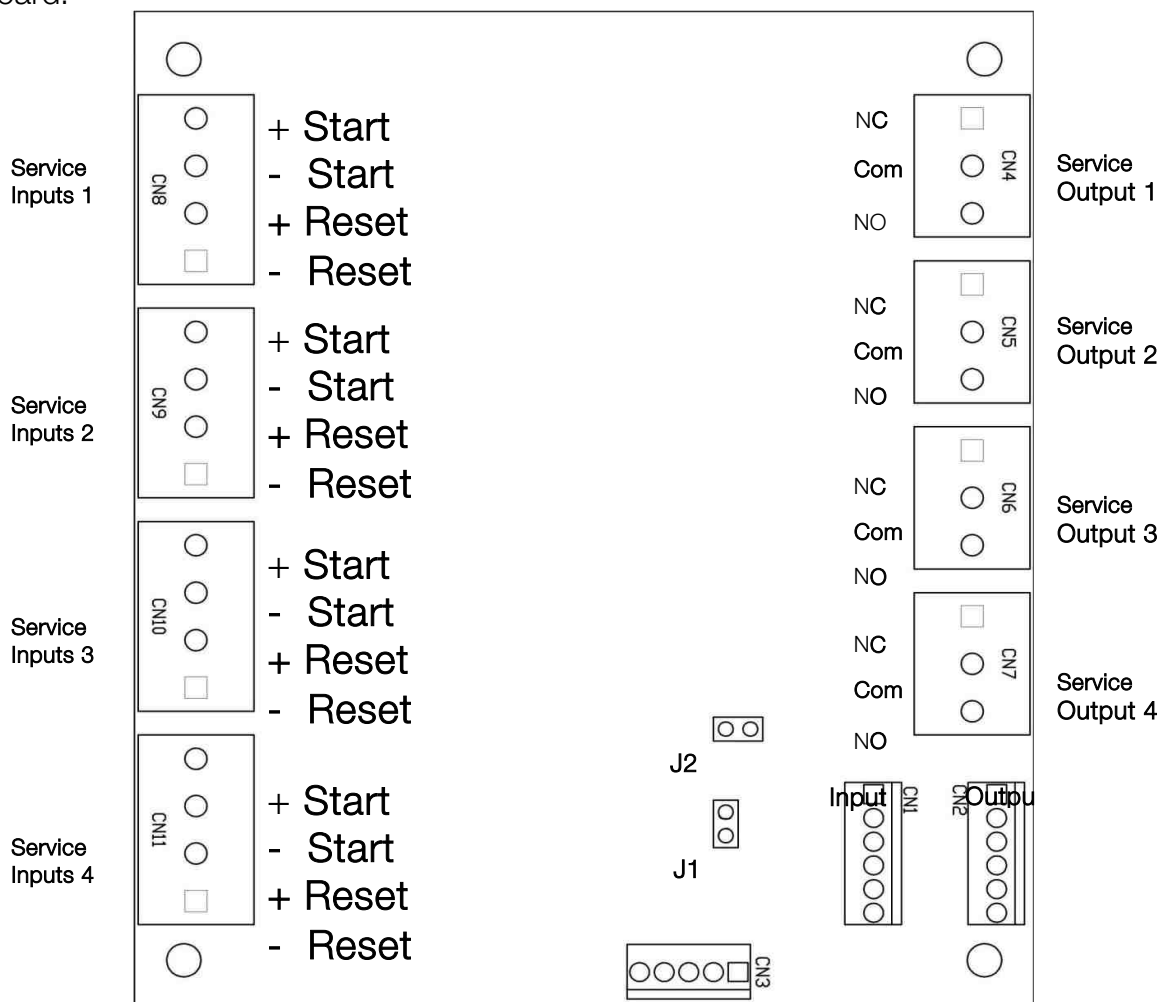
	J1	J2
1 - 2	OFF	OFF

CN1	Input to be connected to World Key with KPM/KPD/display cable
CN2	Output for connection of KPD board to other boards with KPM/KPD cable
CN4	230 Vac power supply input
CN5	24 Vac power supply output to be connected to World Key with power cable or power cable + MDB peripheral connection cable
CN6	Service output 1 230 Vac 4A
CN7	Service inputs 1 5-30 Vdc/Vac The Start inputs are reserved for economy function buttons The Reset inputs are reserved for machine inhibit or reset signals
CN8	Service inputs 2
CN9	Service output 2

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6.5.4 KPM board connections

Up to 4 KPM boards can be connected in cascade to manage as many as 16 different services. In this case, the input of the first KPM board is connected to the World Key, while the output of each board is connected to the input of the following board.

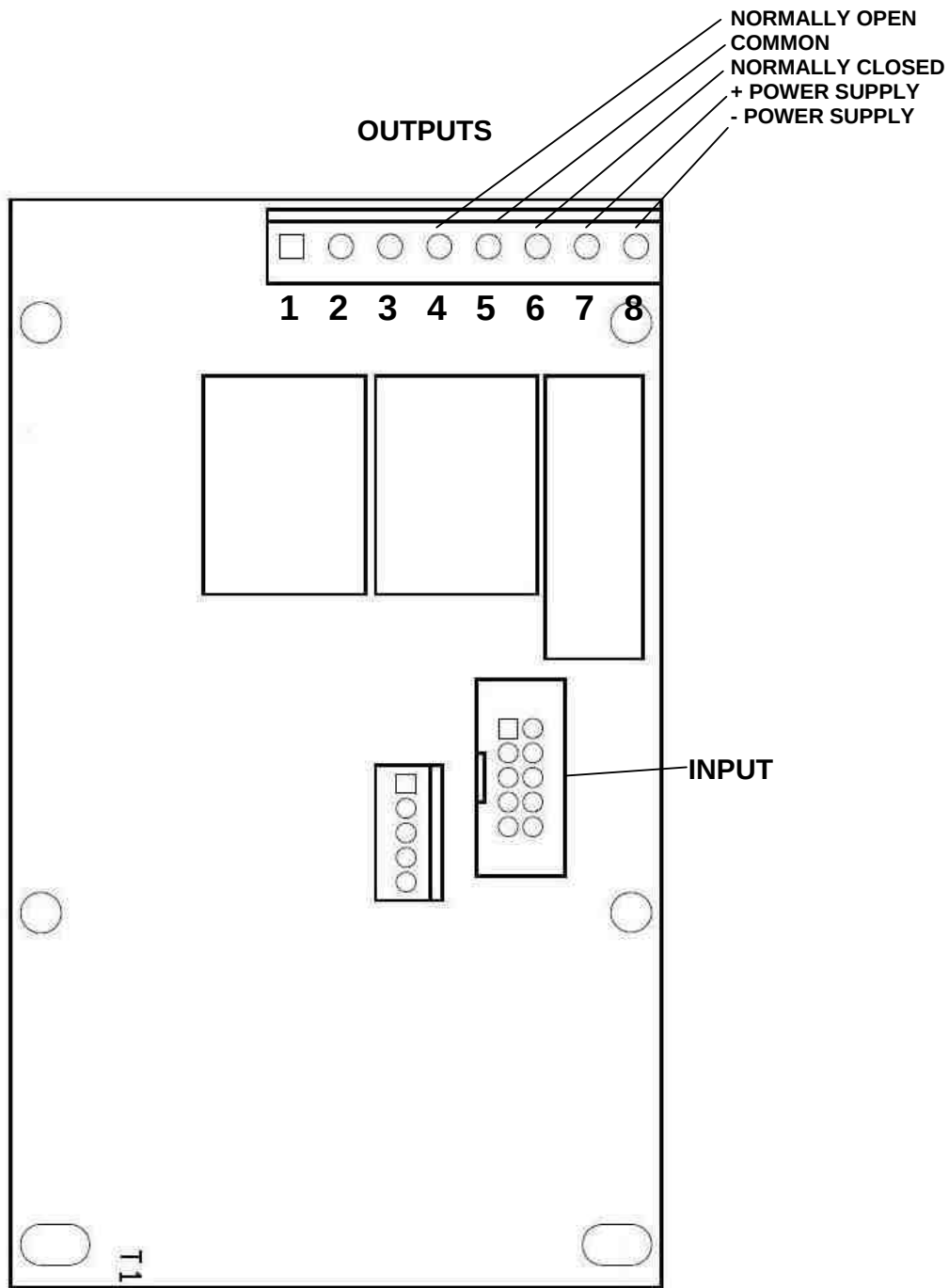


Address configuration:

	J1	J2
1 – 4	OFF	OFF
5 – 8	ON	OFF
9 – 12	OFF	ON
13 – 16	ON	ON

CN1	Input to be connected to World Key with KPM/KPD/display cable or to the previous KPM board with the KPM/KPD cable
CN2	Output for connection of KPM board to following board
CN4	Service output 1 230 Vac 4A
CN5	Service output 2
CN6	Service output 3
CN7	Service output 4
CN8	Service inputs 1 5-30 Vdc/Vac The Start inputs are reserved for economy function buttons The Reset inputs are reserved for machine inhibit or reset signals
CN9	Service inputs 2
CN10	Service inputs 3
CN11	Service inputs 4

6.5.5 RM925 board connections



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N.B. :

This type of board is not recommended for new developments.

7. LED Signals

Below is a list of the main signals that the World Key device can make using the three LEDs installed in the reading head.

 Red			 Yellow	 Green
  			Legend of the signaling LEDs	
			When the reader is switched on, the red LED lights up to signal the lack of protocol. After a few seconds if the protocol programmed on the reader is the same as that of the VMC, the green LED comes on, otherwise if the red LED stays on, it means that there are protocol problems.	
			 When the protocol is operating perfectly or there are no configuration errors the green LED comes on, then the reader is ready to accept the key/card.	
			 When a user key/card is entered, if the manager code is the same as that programmed on the reader, the yellow flashing LED (1s) comes on after the key has been inserted for a few seconds and the buzzer is activated to indicate the presence of the key. This function can be eliminated by lowering the volume of the buzzer to a minimum with the UNICO program.	
			 When a sale is made the yellow LED stops flashing and becomes fixed for the entire duration of the sale.	
			When a user key/card is inserted with a different manager code or without a user application loaded (card code = 29) the red flashing LED comes on and the buzzer signals an error tone.	
			When an Key Audit or programming key without a user code is inserted, the red flashing LED (1s) comes on	
			 When an audit key or programming key is inserted and the programming key is correct, the yellow LED stays on fixed for the entire time during which the data is being stored on the key. When the transfer has finished, the yellow LED goes off and the green LED comes on flashing every second.	
			 When the programming key is used when some reader settings need to be changed without connecting the reader to the UNICO program. When the key and correct manager code are entered, the yellow LED comes on and when the programming is finished the yellow LED goes off and the green one comes on flashing every second. At this point the key can be removed. After this operation the reader carries out an auto reset operation so as to restart with the new configuration with the red LED on.	
			 When the red LED and the green LED are flashing at the same time, a low voltage is signaled.	
  			When all the LEDs flash together it means the key or card must be re-inserted in the reader	

8. Programming and data collection

8.1 Programming

UNICO software, the programming key and the Clone programming key are used to program the World Key, World Key Lite and World Key Move devices. UNICO AUDIT and UNICO CARD software is used respectively to manage the media, both keys and cards, and accounting.

World Key, World Key Lite and World Key Move can be connected to a PC which has UNICO software installed on it by means of the USB port. The devices are also powered through the USB port. Therefore if no other peripherals are connected, no external power supply is required.

8.1.1 Safety codes

A safety code is required to access device configuration and to read or modify the entered data. There are three configuration levels which can be accessed through three different codes to manage different privilege/access levels.

Administrator Code: numerical code which identifies a single administrator and allows access to all machines in all rentals managed by him.

Rental Code: numerical code which identifies a single area managed by a single administrator.

Access Code: numerical code which identifies a subarea in a single rental managed by a single administrator.

When leaving the factory, all codes of each device consist in a sequence of zeros. These codes must be modified before activating the devices to prevent tampering or frauds.

N.B.:

The safety codes are necessary to access device configuration.

If they are lost, they cannot be recovered and the device must be reset completely.

It is therefore recommended to write down the safety codes and to keep them in a safe place.

8.1.2 Programming with UNICO software

The use of UNICO software is described in detail in the specific manual.

8.1.3 Programming Key

The programming key is a special contactless key with an anthracite coloured cap and a red body. This key can program the operating parameters of many of the World Key devices. The data on this key is formatted according to the type of operation requested through the UNICO program. The subsequent programming of the system takes place simply and quickly by inserting the key in the reading head (Moon, Sky or Galaxy). The presence of the CVS signalling LEDs guides the user through the exact programming sequence of the World Key device parameters.

The key is delivered without the application or the safety codes; for use, please refer to the UNICO software guide.

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8.1.4 Clone Programming Key

The Clone programming key is a special contactless key the same colour and with the same storage capacity as the programming key, able to clone the configuration present on a device transferring that configuration onto other devices without using PC software.

The key is delivered without the application or the safety codes; for use, please refer to the UNICO software guide.

8.1.5 Firmware update

It is possible to update the operating firmware of the World Key readers and the reading heads using the PC with the connection cable via USB. Two distinct firmware exist for updating the World Key systems, one for updating the CPU and one for updating the reading heads.

8.2 Data collection

In the World Key system, the data can be collected through three devices:

- Audit Key.
- Via Rs232 or USB with PC and UNICO & UNICO AUDIT program.
- IrDA interface.

8.2.1 Audit Key

The Audit Key is a special key with an anthracite coloured cap and a yellow body, with a high storage capacity, able to make up to 65/70 collections, depending on the quantity of data to be exported. Subsequently via a PC, the desktop terminal and the UNICO or UNICO AUDIT software, it is possible to download the data stored on the key, view it, print it or save it in a .TXT or .XML file for subsequent processing using special management software. Appropriate formatting of the Audit -> Audit + Log key also enables the logs recorded inside the reader to be stored during the data collection stage. In this particular function, the following can be exported for each key: Machine no. - Key no. date/time - type of operation performed on the key; With this function enabled the number of machines from which the audits can be extracted decreases.

The key is delivered without the application or the safety codes; for use, please refer to the UNICO software guide.

8.2.2 PC with UNICO & UNICO AUDIT Program

The use of UNICO and UNICO AUDIT software is described in detail in the specific manuals.

8.2.3 IrDa Interface

The IrDA interface provided as standard on all the reading heads of the World Key system allows the data to be collected in EVA-DTS format using a palm top PC.

The LED and the buzzer on the reading head guide the operator through the correct data acquisition sequence.

9. Care and Maintenance



All the maintenance operations performed on the device must be completed while it is unplugged from the power supply.



Follow the warnings carefully so that the machine is always in the best operating conditions, preventing dangerous situations or situations which would render the warranty null and void.

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9.1 External maintenance and cleaning

Clean the exterior surface of the device; use a damp cloth with water or a mild cleaning solution. Do not use aggressive solvents, detergents or abrasive sponges that could damage the machine.

Do not immerse the device or expose it to direct sprays of water or of any other type of liquid.

Periodically check the state of the machine's surfaces paying special attention to the areas which, in normal operating conditions or through malice, could be hazardous for the user.

10. Technical Assistance



For any faults or malfunctioning contact the Comestero group After-Sale service at the following number: (+39) 02 95781111.

11. Technical Data

11.1 Technical Specifications – CPU

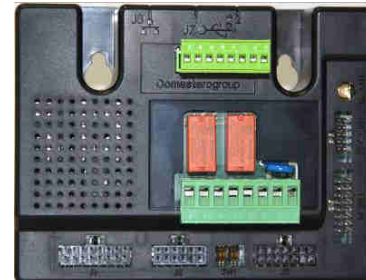
World Key



World Key Lite



World Key Move



	WorldKey	WorldKey Lite	WorldKey Move
Dimensions (bxhxd) [mm]	129 x 99 x 28	129 x 99 x 28	129 x 99 x 46
Weight [g]	200	170	240
Warning regarding power supply	To guarantee the correct functioning of all peripherals we recommend a power supply of 24Vac 50 VA		To guarantee the correct functioning of all peripherals we recommend a power supply of 24Vac 50 VA
Power supply voltage	15 – 40 Vdc 12-27Vac 50/60Hz	17 – 39 Vdc 14-26Vac 50/60Hz	15 – 40 Vdc 12-27Vac 50/60Hz
	5V USB if it is connected directly to a host without peripheral	5V USB if it is connected directly to a host without peripheral	5V USB if it is connected directly to a host without peripheral
Absorbed power [W]	3,75@ 24Vac	3,25@ 24Vac	3,75@ 24Vac
	(without connected peripheral)	(without connected peripheral)	(without connected peripheral)
Operating Temperature [C°]	-20 ÷ +50	-20 ÷ +50	-20 ÷ +50
Humidity (not condensed) [%]	90	90	90

11.2 Technical specifications - reading heads



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	Galaxy	Sky	Moon
Dimensions (bxhxp) [mm]	77 x 113 x 50	55 x 75 x 75	50 x 75 x 55
Weight [g]	90	60	45
Operating Temperature [C°]	-20 ÷ +50	-20 ÷ +50	-20 ÷ +50
Humidity (not condensed) [%]	90	90	90

12. Waste disposal

12.1 Putting device out of service and waste disposal

At the end of its life, the product must be put out of service and then sent to a waste disposal facility.

Remove the appliance from its installation site and remove the cables. Contact your dealer to collect the appliance no longer in use

The appliance must be disposed of as prescribed by the Legislative Decree 25/07/2005 N. 151.



To this end, we recommend reading the following very carefully.

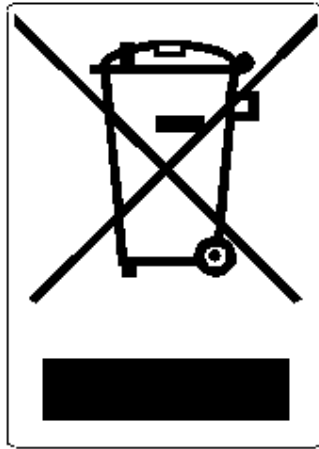
On December 31, 2006 when the decree entered into force, precise criteria was laid down concerning Waste of Electric and Electronic Equipment (WEEE) aimed at environmental protection.

This appliance is included in the field of application of the legislative decree 151/2005 Annex 1B article 2 comma 1 being.

3.2.8 Pocket and desk calculators and other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means.

In syntheses:

- This appliance must not be disposed of as municipal waste but must be collected separately.
- The dealers will collect the used appliance free of charge to then send it to specific collection centres for proper disassembly and possible recovery of reusable materials.
- Collection centres of waste of electric and electronic equipment (WEEE) have been established. The user may hand over this used appliance to his dealer upon purchase of a new equivalent appliance.
- This appliance or parts of it can cause potentially harmful effects for the environment and human health if used improperly and if not disposed of in conformity with the present procedure due to some substances present in electronic components.
- The symbol of the crossed-off bin applied in a well-and visible manner on this appliance indicates unmistakably that the appliance was placed on the market after August 13, 2005 and must be collected separately.



Penalties foreseen in case of illegal disposal of this waste:

1. The distributor who, as supposed in article 6, comma 1, letter b), inappropriately does not collect, free of charge, the electric or electronic equipment, will be fined from 150 to 400 Euros, for each piece of equipment not collected or collected upon charge.
2. The manufacturer who does not organise the separate collection system of professional WEEE referred to in article 6 - comma 3 and the collection and dispatch systems, of processing and recovering of WEEE, referred to in articles 8 - comma 1 and 9 - comma 1, 11 - comma 1 and 12 - commas 1, 2 e 3, and without prejudice, for these last operations, any agreements stipulated in compliance with article 12 - comma 6, will be fined from 30,000 to 100,000 Euros.
3. The manufacturer who, after August 13, 2005, when placing electrical or electronic equipment on the market, does not provide an economical warranty referred to in articles 11 - comma 2, or 12 - comma 4, will be fined from 200 to 1,000 Euros for each piece of equipment placed on the market.
4. The manufacturer who does not apply, in the operating instructions of the EEE, the information referred to in article 13 - comma 1, will be fined from 200 to 5,000 Euros.
5. The manufacturer who, within one year after placing on the market any new type of EEE, does not make the information referred to in article 13 - comma 3 available to reuse centres and processing and recycling facilities, will be fined from 5,000 to 30,000 Euros.
6. The manufacturer who, after August 13, 2005, places on the market EEE without the indication or symbol referred to in article 13, commas 4 and 5, will be fined from 200 to 1,000 Euros for each appliance placed on the market. The same fine will be applied should the aforementioned indication or symbol be incompliant with the requirements stipulated in article 13, commas 4 and 5.
7. The manufacturer who, without being registered at the Chamber of Commerce in compliance with article 14, comma 2, places EEE on the market, will be fined from 30,000 to 100,000 Euros.
8. The manufacturer who, within the deadline established by decree referred to in article 13, comma 8, does not report to the national register of parties obligated for disposal of WEEE, the information referred to in article 13, commas 4 3 5.

9. Without prejudice to the exceptions referred to in article 5 comma 2, whoever after July 1, 2006, places on the market new EEE containing the substances referred to in article 5, comma 1 or further substances identified in compliance with article 18, comma 1, will be fined from 50 to 500 Euros for each appliance placed on the market or from 30,000 to 100,000 Euros.

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Comestergroup S.r.l. – a SUZOHAPP company -

Via Marie Curie 8, 20060 Gessate (MI)

Tel : +39 02 95781111 Fax: +39 02 95 380178

www.comestergroup.it - comestero@comestergroup.it

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