CATERLINK

Release 1.2 – January 2004

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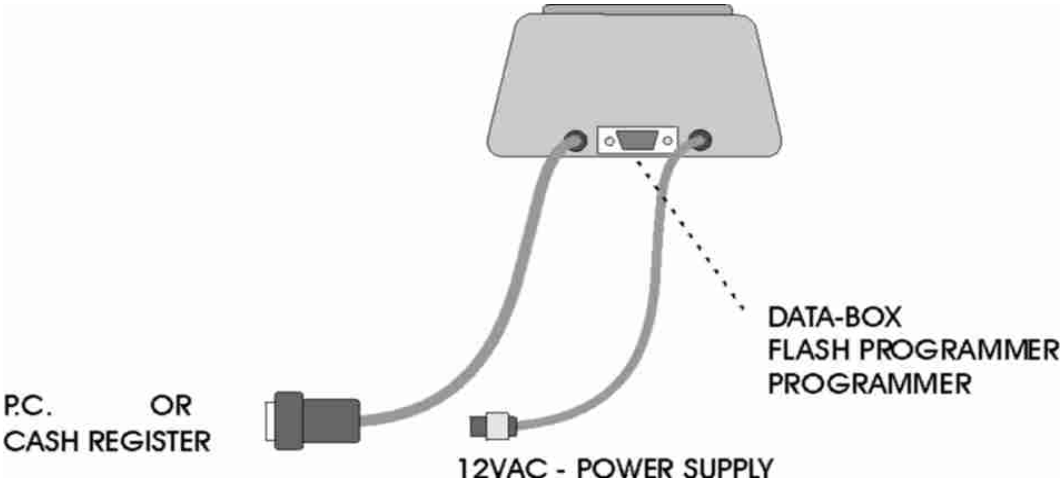
! WARNING

When using the ZIP key/card reader, the functions indicated in this manual for the key are also valid for the card,

1. TECHNICAL DATA

POWER SUPPLY VOLTAGE	:	230 VAC 50-60Hz
ABSORBED POWER	:	7VA (10VA max)
OPERATION	:	Contactless key/card
COMMUNICATION WITH KEY/CARD	:	Radio Frequency 125 KHz



D-SUB 9 pin connector signal assignments.

PIN Number	Signal Name	Signal Direction	Description
2	**TxD**	**Output**	**Transmits data to the master**
3	**RxD**	**Input**	**Receives data from the master**
5	**Gnd**		**Ground Signal**

2. SYSTEM FEATURES

2.1 GENERAL FEATURES

- The Zip Caterlink can be connected to a Cash Register or to a PC Cash Register. The connection between the Cash Register and the Zip Caterlink is serial and it is based on a protocol called "Zip Caterlink Communication Protocol".
- The Zip Caterlink is the best solution when it is necessary to use both cash and keys/cards.
- Il Zip Caterlink consists of:

- a LCD display 2 lines x 16 characters;
- a 16 keys keypad used for the programming;
- a key/card reader.

2.2 DIMENSIONS

Height: 75 mm;
Width: 115 mm;
Length: 195 mm.

2.3 FUNCTIONAL FEATURES

- It allows to decrease / increase the credit stored in a sale key/card.
- The sale key/card can be charged by using:

– the Charge key;
– the PC interface;
– the ZIP Revaluation Unit or tabletop charger;
– the Programmer;
– the ZIP Caterlink keypad;
– the Cash Register.

- It allows using the Free Sale Key.
- The system can be programmed using:

– the ZIP Caterlink keypad;
– the Programmer;

- The statistics can be collected using:

– the Data Box;
– a PC with special software.

3. SALES AND CHARGING METHODS

3.1 INSERTION OF A SALES KEY/CARD

When a sales key/card is inserted in the reader of the Zip Caterlink, the following information will appear on the display:

– the number and credit stored in the key/card: the codes of the key/card are compatible with those programmed in the Zip Caterlink;
– "EVENT 1": the credit area of the key/card is altered (see statistic S48);
– "EVENT 2": the codes programmed in the Zip Caterlink do not match the ones programmed in the key/card (see statistic S49);
– "EVENT 6": the key function code is wrong (see statistic S53);
– "EVENT 7": the key inserted has more credit than the usable credit (abs max credit) programmed in the Zip Caterlink (see statistic S54).

To view the above messages it is necessary to enable the "ERROR MESSAGES" in the menu "OTHER PARAMETERS".

3.2 DECREASING CREDIT

The communication protocol between the Zip Caterlink and the Standard Cash Register or the PC Cash Register (hereafter referred to as Master) has two commands that make it possible to modify the credit of the key/card:

- Decrease credit;
- Increase credit.

WARNING

These commands must always be preceded by the command "Read Media" (see the "Zip Caterlink Communication Protocol").

The sequence for decreasing the credit of a sales key/card is the following:

- The user inserts a key/card into the reader of the Zip Caterlink;
- If the codes of the key/card are compatible with those programmed into the Zip Caterlink, the number of the key/card and the credit is displayed on the first line of the LCD display (e.g. " n.123456 20,50"), otherwise an error message is displayed (e.g. "EVENT 2") and the key/card must be extracted;
- The master sends to the Zip Caterlink the command "Decrease Credit" followed by the amount to detract from the key/card, any discounts applied and a message concerning the transaction to be shown on the display of the Zip Caterlink;
- If there is enough credit in the key/card and the decrease has been performed correctly, on the second line of the display of the Zip Caterlink the message (sent by the master) is shown along with the amount detracted from the key/card (e.g. "pizza 4,56"). In this case there is an updating of the statistic S6 ("KEY SALES") with the amount detracted and of the statistic S9 ("DISCOUNTS") with the discount applied.
- If the decrease did not occur, one of the following messages will be shown on the first line of the display of the Zip Caterlink:
  - "EVENT 4": the credit of the key/card is less than the amount to be detracted;
  - "EVENT 9": writing error of the key/card (e.g. because it was extracted before the writing of the key/card was completed);
  - "EVENT 12": writing performed but not verified;
  - "EVENT 16": the "Decrease Credit" command sent from the master was not preceded by the "Read Media" command (before the decrease of the credit of the key/card it is necessary to read it).
- If an "EVENT 9"or an "EVENT 12" takes place, the corresponding statistic S56 or S59 is updated and the user must extract the key/card from the reader before beginning a new transaction.

3.3 INCREASING CREDIT

The sequence for increasing the credit of the sales key/card is the following:

- The user inserts a key/card into the reader of the Zip Caterlink;
- If the codes of the key/card are compatible with those programmed into the Zip Caterlink, the number of the key/card and the credit is displayed on the first line of the LCD (e.g. " n.123456 20,50"), otherwise an error message is displayed (e.g. "EVENT 2");
- The master sends to the Zip Caterlink the command "Increase Credit" followed by the amount to credit to the key/card and a message concerning the transaction to be shown on the display of the Zip Caterlink;
- If the crediting operation has occurred correctly, on the second line of the display the message sent by the master and the amount credited are shown and statistic S2 ("TILL REVALUE") is updated, otherwise one of the following messages will be shown on the first line:
  - "EVENT 3": the credit of the key/card is not less than the *chargeable credit* (programmed in the Zip Caterlink) or the amount to charge added to the credit already in the key/card is more than the *usable credit*;

- "EVENT 9": writing error of the key/card (e.g. because it was extracted before the writing of the key/card was completed);
- "EVENT 12": writing performed but not verified;
- "EVENT 16": the "IncreaseCredit" command sent from the master was not preceded by the "Read media" command (before increasing the credit of the key/card it is necessary to read it).

– If an "EVENT 9"or an "EVENT 12" takes place, the corresponding statistic S56 or S59 is updated and the user must extract the key/card from the reader before beginning a new transaction.

3.4 OTHER METHODS OF CHARGING KEYS/CARDS

3.4.1 CHARGING KEY/CARD WITH CHARGE KEY

The Charge Key is a special key that makes it possible to charge sales keys/cards with a preset amount.
The sequence of operations to perform to charge a sales key/card is the following:

– ensure that the use of the charge key has been enabled by placing the item "Charge Key" ON in the menu "Other Parameters" in the "Programming" menu;
– insert the charge key in the reader of the Zip Caterlink: if there are charges in the key the number of charges will be shown for 3 seconds followed by the value of the single charge, otherwise nothing will be shown;
– After the amount to charge has been displayed it is possible to extract the charge key and insert the key/card to be charged: the amount of the charge will be transferred to the sales key and statistic S10 ("PROGRAMMED CREDIT") will be updated.

If the key/card is not inserted within 30 seconds from the extraction of the charge key, the charge amount will be reset to zero; this amount will be accounted for in statistic S58.

WARNING
While the number of charges is displayed, the charge key can be extracted without reducing the number of charges (this means that it is possible to check the number of charges left in the key).

3.4.2 CHARGING KEY USING THE PROGRAMMER

The sales keys/cards can be charged using the programmer, or using the keyboard and the Zip Caterlink display once having entered programming: in fact, in the menu "Key Management" it is possible to set the new credit to be charged in the sales key/card. In this case the amount accredited is accounted for in statistic S10 ("PROGRAMMED CREDIT.").

3.4.3 OTHER WAYS OF CHARGING SALES KEYS/CARDS

The sales key/card can also be charged using:

– the PC interface;
– the Wall Loader or the Tabletop Charger;
– VMC equipped with validators or bill acceptors.

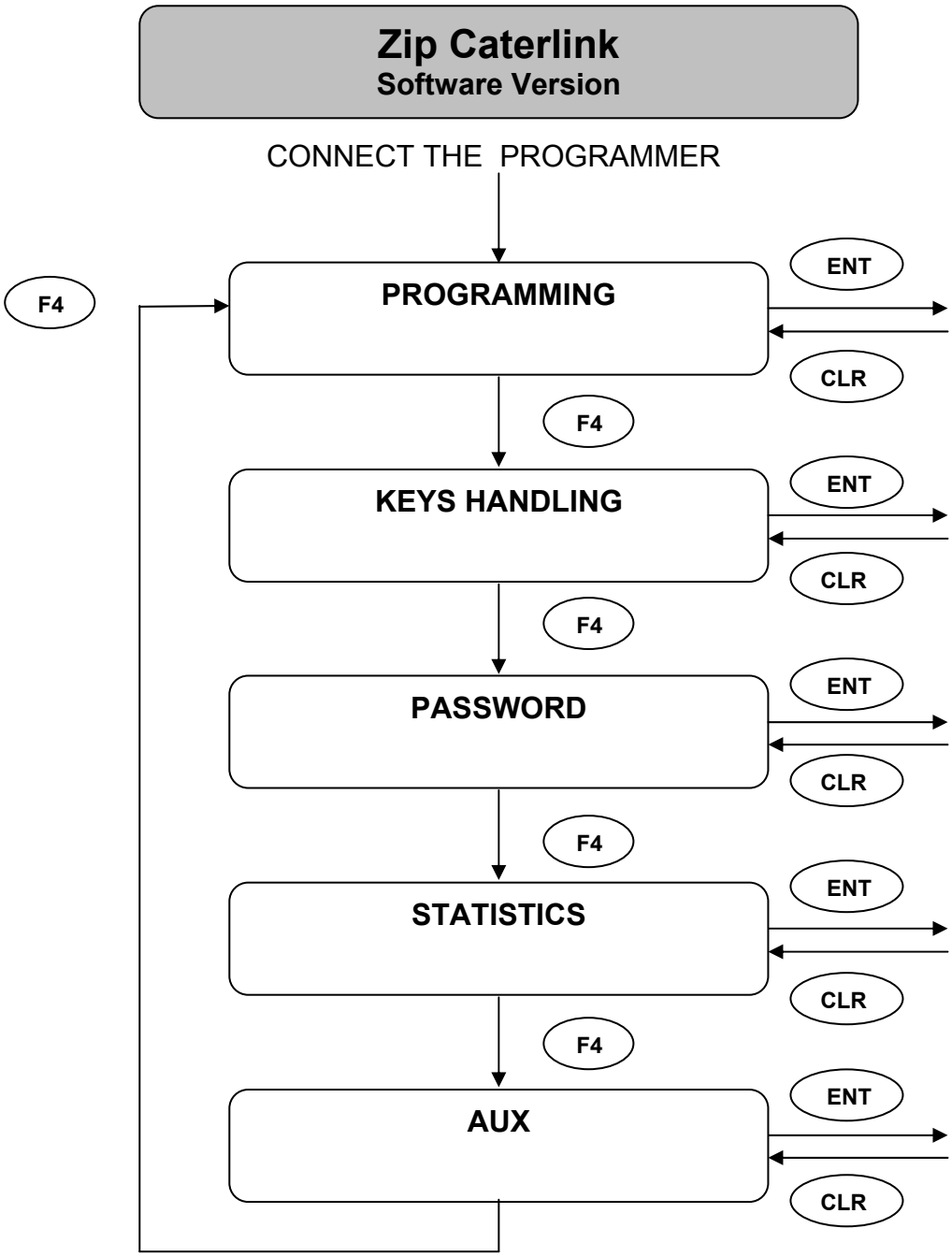
3.4.4 FREE SALE KEY/CARD

The free sale key/card is a special key/card that can be used, for example, to make a purchase without deducting the price from the credit of the key/card.
If a free sale key is inserted in the reader and it is enabled, the key number and "gratis" is displayed on the first line of the display. Now, if the cash register or the PC sends the Zip Caterlink the "Decrease Credit" command, the Zip Caterlink will answer "decrease OK".
Sales carried out through the use of a free sale key/card are accounted for in the statistic S8 ("FREE VENDS").
To enable the free sale key/card it is necessary to program ON in the menu "PROGRAMMING" – "OTHER PARAMETERS" – "FREE KEY ENABLE".

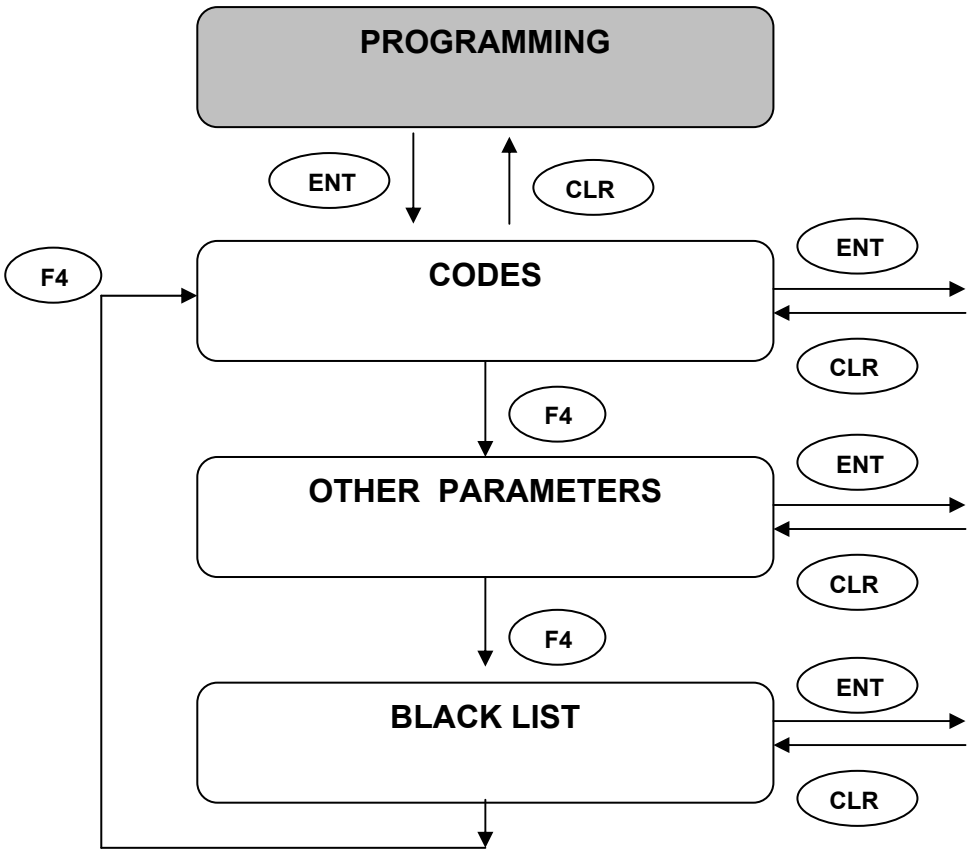
4. PROGRAMMING

The programming of the system can be done using:

- the Programmer (connected to the D-SUB 9 pin connector in the back of the Zip Caterlink);
- using the 16 keys keypad and the LCD display. To enter the programming it is necessary to push F1 key. Moreover, if the password is programmed, it is necessary to insert this.



4.1 PROGRAMMING



4.1.1CODES

The Zip Caterlink contains some protective codes which make keys/cards incompatible if they are not programmed with the same codes. If a key/card with incompatible codes is inserted in the reader of the Zip Caterlink and if "Error Messages" in the menu "Other Parameters" are enabled, the message "EVENT 2" will be shown in the LCD display. In this case key/card data are not sent to the cash register or PC connected to the Zip Caterlink.

- **DEPARTMENT CODE (default value = 001)**

This is composed of 3 numbers (max 255) and its purpose is to avoid the transfer of credit among different companies served by the same operator.
If the department code is programmed to 000 in the key/card or in the Zip Caterlink, it is not verified (Table 1).

- **CUSTOMER CODE (default value = 000001)**

This is composed of 5 numbers (max 65535) and its purpose is to avoid the transfer of credit among different companies served by the same operator.
If the customer code is programmed to 000 in the key/card or in the Zip Caterlink, it is not verified (Table 1).

- **OPERATOR CODE (default value = 00000001)**

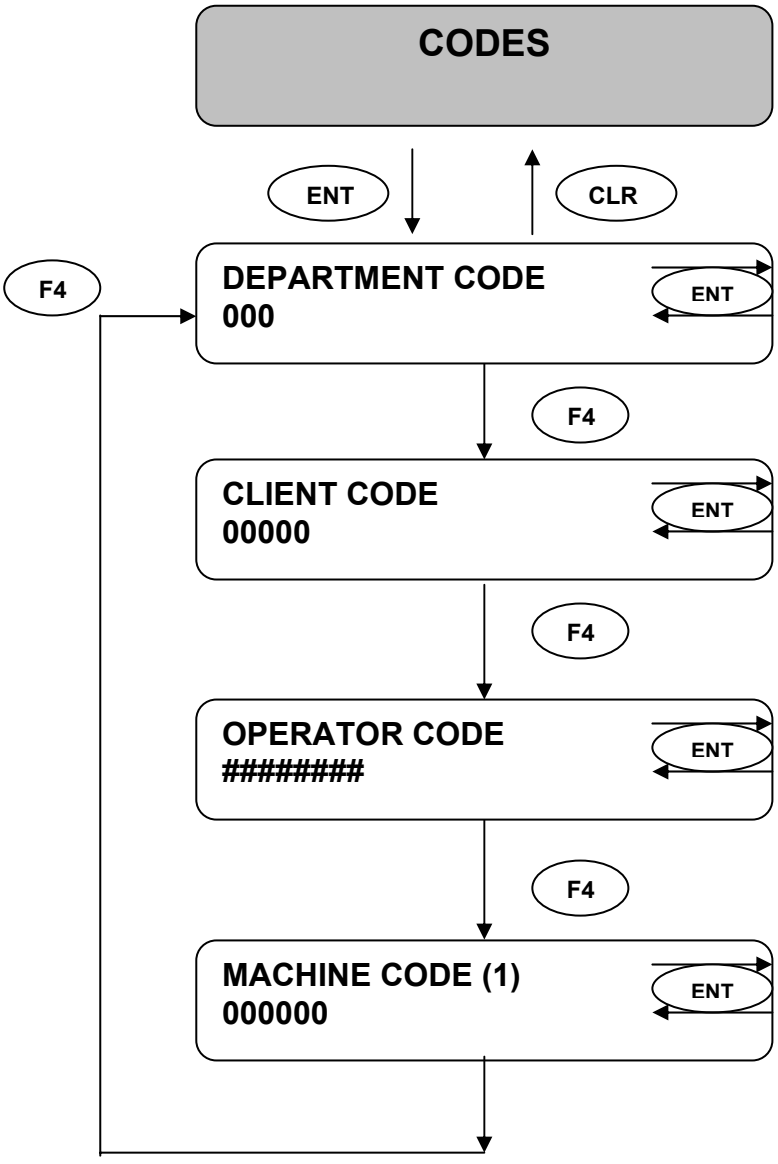
This is composed of 8 numbers (max 99999999) and its purpose is to not accept keys/cards that do not belong to the company owner of the Zip Caterlink.
When a key/card, with an operator code different from the one programmed in the Zip Caterlink, is inserted in the reader of the Zip Caterlink, the key/card is not accepted (key/card number and credit are not displayed) (Table 1).

Table 1

	Operator code	Customer code	Department code
Codes in the key/card	**12345678**	**12345 or 00000**	**123 or 000**
Compatibility condition	**Same**	**Same or one of two = 00000**	**Same or one of two = 0000**
Codes programmed in the Zip Caterlink	**12345678**	**12345 or 00000**	**123 or 000**

- **MACHINE CODE (default value = LinkRd)**

It is an identification code of the Zip Caterlink: it isn't an access code. It consists of six alphanumeric characters and is collected in the statistics.



Can be programmed with alfanumeric symbols using F2 and F3 buttons of Programmer

4.1.2 OTHER PARAMETERS

- **CHARGEABLE CREDIT ("MAX.CHARG.CREDIT")**

This represents the credit limit chargeable in the key/card (max 65535). A key/card with credit equal or greater than this value can't be recharged.
This value is programmed in hundredths.

- **USABLE CREDIT ("ABSOL.MAX.CREDIT")**

This represents the maximum credit that a key/card can have to be used in the Zip Caterlink (max 65535). If a key/card with credit greater than this value is inserted in the reader, the key/card will be refused, and if the "Error messages" are enabled the message "EVENT 7" will be shown on the display.

- **ACOUSTIC ALARM ("BUZZER")**

This enables/disables (ON/OFF) the acoustic alarm.

- **ERROR MESSAGES**

This enables/disables (ON/OFF) error messages.

- **STATISTICS**

This can be enabled/disabled (ON/OFF). If this parameter is enabled, a check is carried out on the integrity of the data collected in the statistics. If an error is detected and "Statistics" has been programmed ON, the system is blocked. If this parameter is disabled, the system continues to function even if an error has been detected.
NOTE: The statistics are collected regardless of the value of this parameter.

- **CHARGE KEY**

This enables/disables (ON/OFF) the use of the charge key.

- **FREE SALES KEY**

This enables /disables (ON/OFF) the use of the charge key.

- **LANGUAGE**

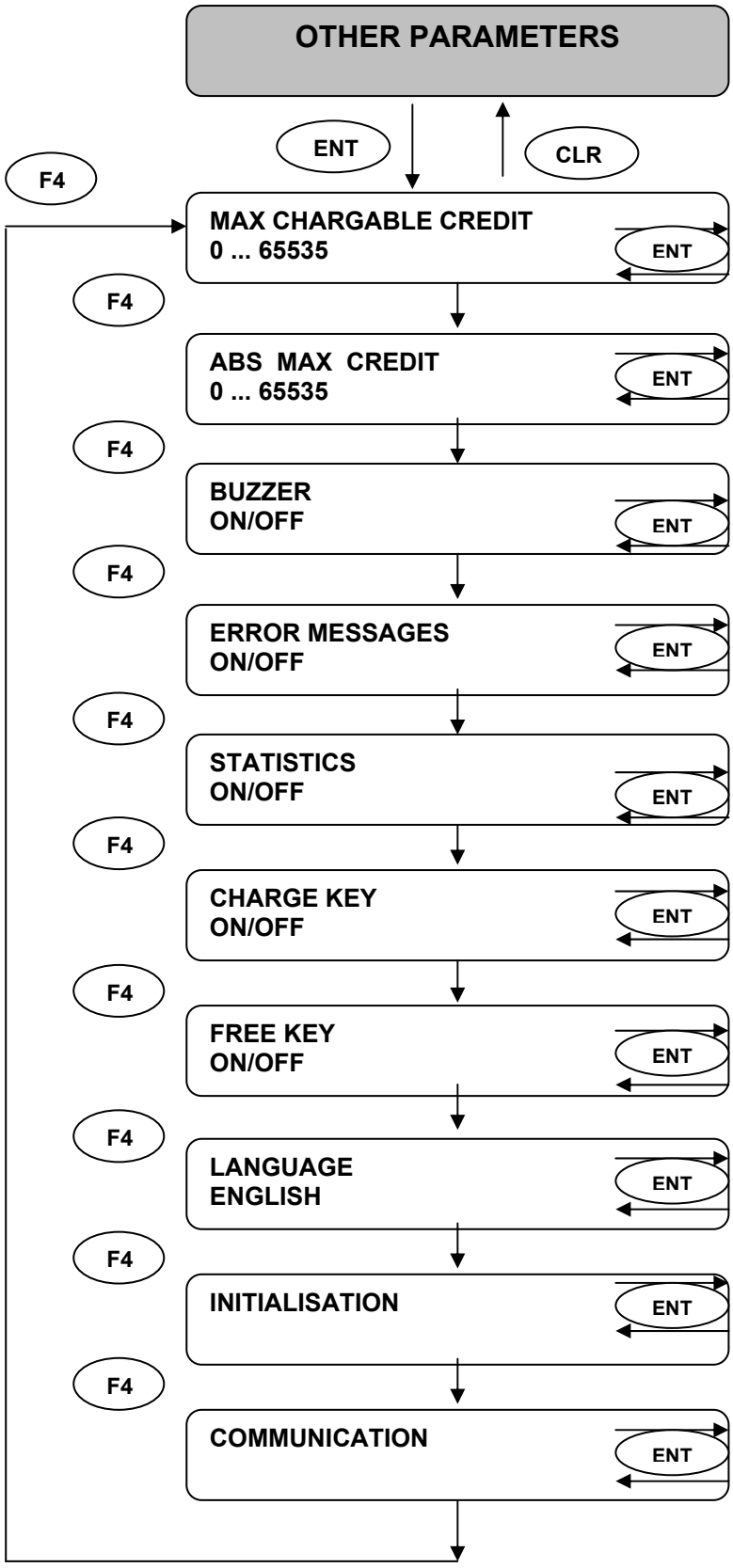
This parameter allows choosing the language in which messages are shown.

- **INITIALIZATION**

This command allows initializing all parameters of the Zip Caterlink with default values.

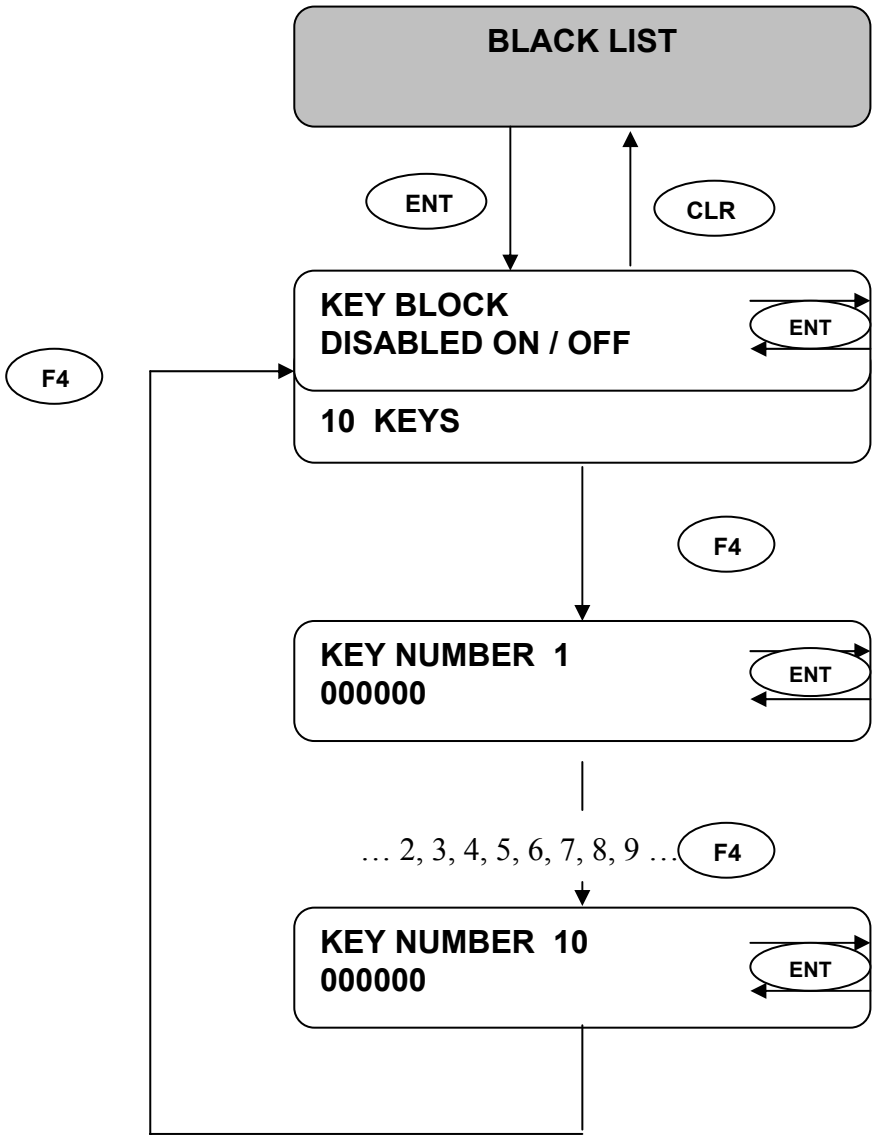
- **COMMUNICATION**
  - MAX. RESPONS. TIME (default value 100 ms);
  - INTERBYTE TIME (default value 5 ms).

  In order to understand the meaning of these two parameters see the "Zip Caterlink Communication Protocol".

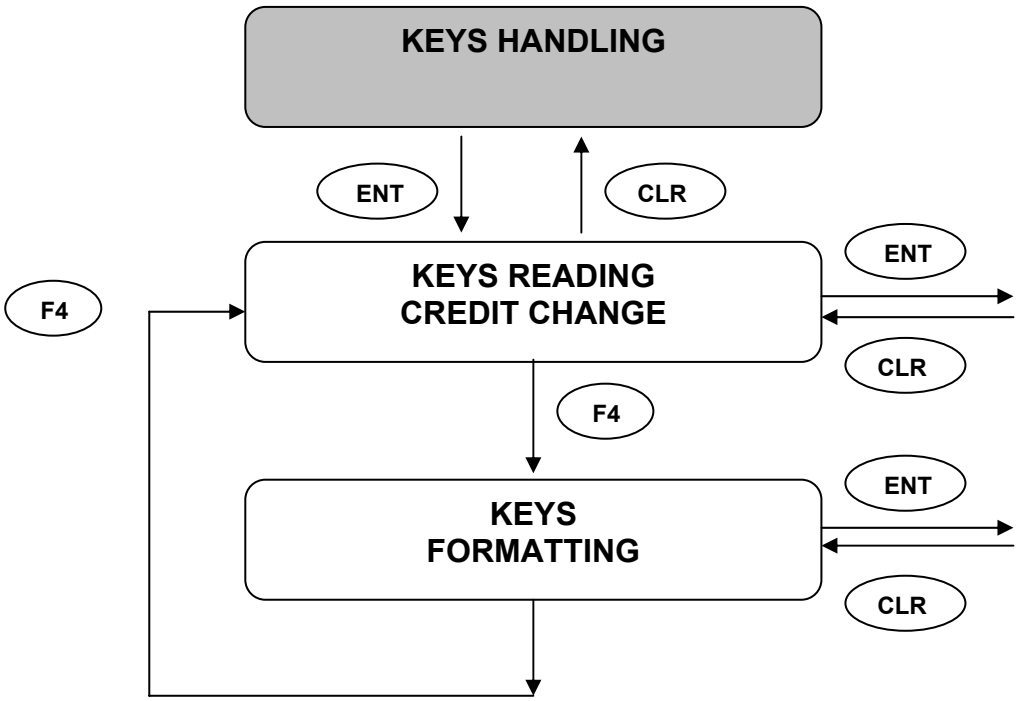

OTHER PARAMETERS
ENT
CLR
F4
MAX CHARGABLE CREDIT
0 ... 65535
ENT
F4
ABS MAX CREDIT
0 ... 65535
ENT
F4
BUZZER
ON/OFF
ENT
F4
ERROR MESSAGES
ON/OFF
ENT
F4
STATISTICS
ON/OFF
ENT
F4
CHARGE KEY
ON/OFF
ENT
F4
FREE KEY
ON/OFF
ENT
F4
LANGUAGE
ENGLISH
ENT
F4
INITIALISATION
ENT
F4
COMMUNICATION
ENT

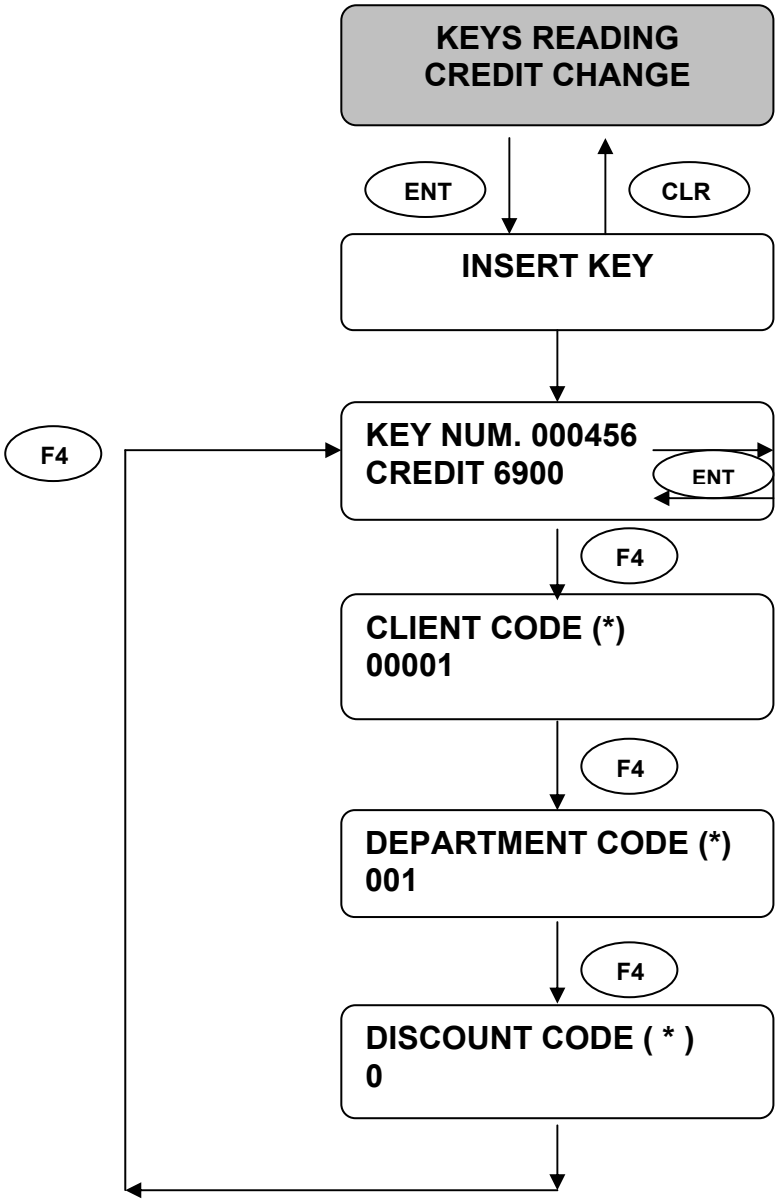
4.1.3 BLACK LIST

The "Black List" contains the list of the keys/cards numbers which have been disabled.
The "Black List" can be enabled or disabled.
If "KEY BLOCK" is "DISABLED", the "Black List" isn't managed.
On the contrary, if "KEY BLOCK" is programmed to "10 KEYS" and "ERROR MESSAGES" is ON, inserting a key/card belonging to the "Black List", "EVENT 13" is shown on the LCD display, the statistic S60 is updated and key/card data are not transmitted to the cash register or PC.

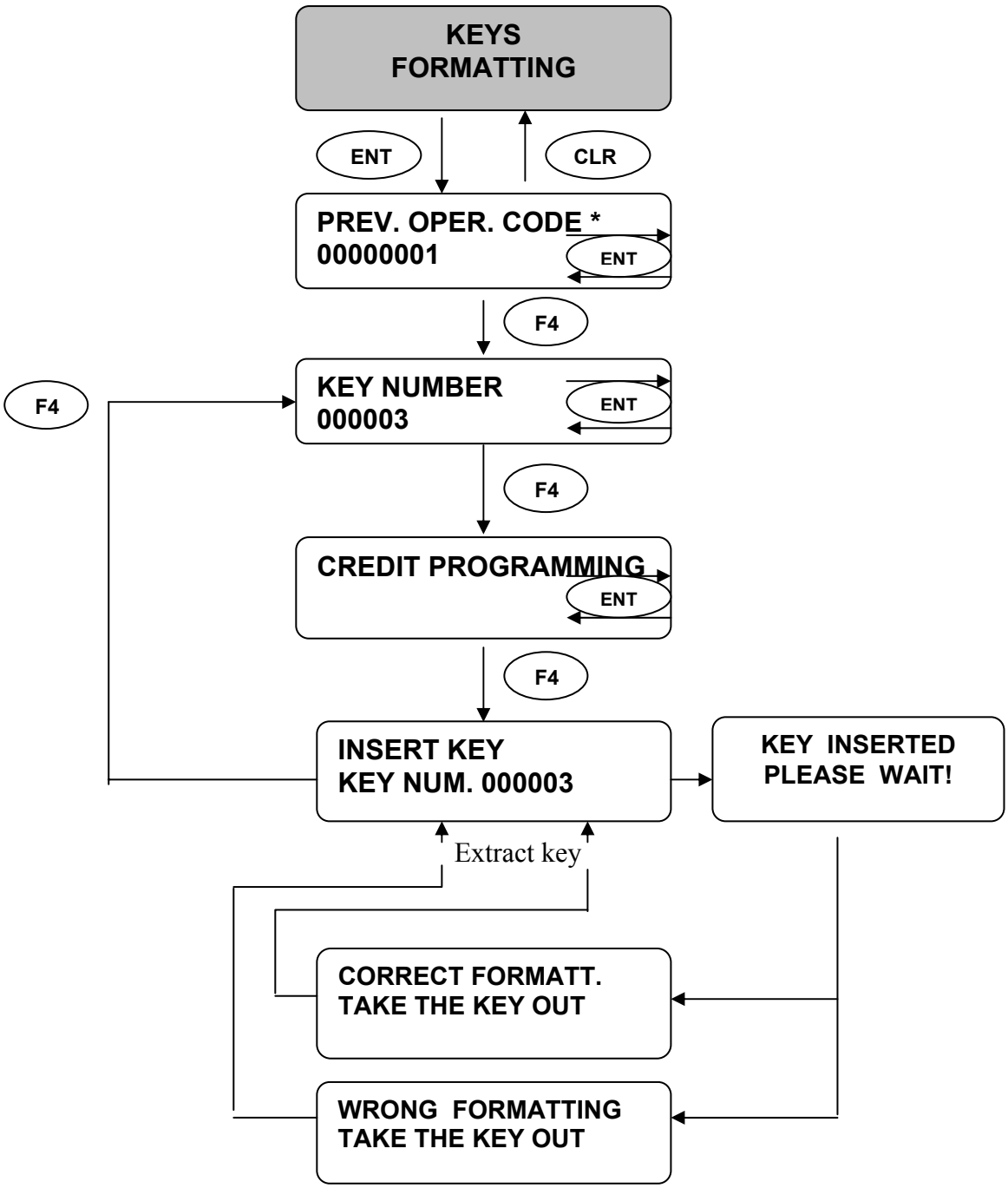


4.2 KEYS HANDLING





* Data reading only

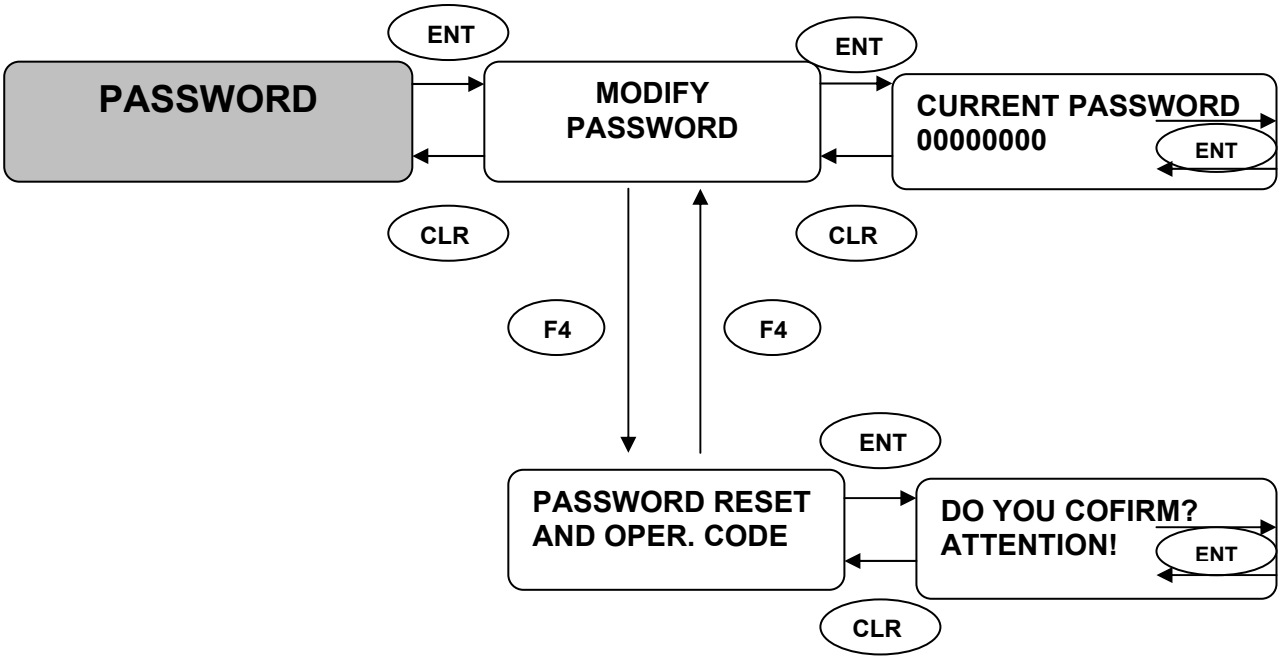


* NOTE: if PREVIOUS OPERATOR CODE programmed in the ZIP system is different from the one programmed in the key, when inserting the key in the reader the following message is displayed:

WRONG DATA !
TAKE THE KEY OUT

4.3 PASSWORD

The Zip Caterlink allows programming a password that is composed of 8 numbers (max 99999999).



"MODIFY PASSWORD" allows programming the password.
If the password is programmed and if Programmer is used, the password is requested when you try to modify the operator code, the date and time of the Zip Caterlink, the credit of a sales key/card or the number of charges of a charge key.
On the contrary, if the keypad and the display of the Zip Caterlink are used and the password is programmed, the password must be inserted before entering in programming.
"PASSWORD RESET AND OPERATOR CODE" allows to set the password to 00000000 and the operator code to 00000001.

4.4 STATISTICS

The Zip Caterlink internally memorizes data concerning transactions, system configuration and errors that may have occurred during the Zip Caterlink's operation.
These data can be collected by using:
1. a Data Box, a palmtop terminal PSION or a Data Key (format Data Box or Excel);
2. a PC in which appropriate special software has been installed.

It is important to remember that the Zip Caterlink statistics (with the exception of some that can't be reset) are reset after collection.
The "Main Statistics" and "Diagnostics Statistics" can be seen in the menu "STATISTICS": the list of these statistics is in Table 2.

Table 2. List of Statistics.

LIST OF STATISTICS

Statistics	Description
Main Statistics	
S2	TILL CHARGING (Credit charged into the keys/cards by means PC or Cash Register)
S6	KEY SALES (Sales with keys/cards)
S8	FREE SALES (Sales due to free sales)
S9	DISCOUNTS (Missing sales due to discounts)
S10	PROGRAMMED CRED. (Credit charged into the keys/cards by means of Programmer, keypad and display of Zip Caterlink or charge key)
Diagnostics Statistics	
S46	SF - LAST ERROR (latest error)
S47	CUMULATIVE ACQ. (cumulative number of acquisitions)
S48	E01 (number of insertion of keys/cards with altered credit)
S49	E02 (number of insertion of keys/cards with wrong codes)
S50	E03
S51	E04
S52	E05
S53	E06 (number of insertion of keys/cards with wrong function code)
S54	E07 (number of insertion of keys/cards with credit greater than usable credit)
S55	E8 (not used)
S56	E9 (number of errors in key/card writing)
S57	E10 (number of errors in connecting the Data Box)
S58	E11 (failed loadings with charge key)
S59	E12 (number of writings performed but not checked)
S60	E13 (n. of insertions of a key/card included in the Black List)
S61	E14 (number of resets of the credit area)
S62	E15 (not used)
S63	SA – KEY WRITINGS NUM (number of key/card writings)
S64	SB - KEY READINGS NUM (number of key/card readings)
S65	SC – SHORT POWER INT. (number of power resets)
S66	SD – LONG POWER INT. (number of power failures)
S67	SE – PROGRAM. STATUS (system programming status)

4.5 AUX

This menu allows programming date and time in the Zip Caterlink.

5. LIST OF STATISTICS DATA BOX FORMAT

MAIN STATISTICS

1 – Cash box
- coins: not used;
- banknotes: total of loading to the keys/cards using the PC or a Cash Register.

2 – Loading: not used.

3 – Cash sales
- sales: not used;
- failed sales: not used;
- overpay: not used.

4 – Key sales
- sales: not used;
- failed sales: not used.

5 – Special Key sales
- free sales: total of Sales with Free Keys;
- discounts: total discounts applied to the keys/cards using the discounts programmed in the PC or in the Cash Register.

6 – Net Key sales: Total Key/card sales.

7 – Total sales cash + Key: not used.

8 – Total loading
- Cash: not used.
- Programmer or charge Key: total loadings using the Programmer, the keyboard of Zip Caterlink or the Charge Key.
- Bonus: not used.

9 – Net Key Sales: not used

10 – Current key balance: not used.

11 – Failed loading using charge key: not used.

12 – Cash sales: not used.

13 – Key sales: not used.

14 – Total sales number cash + Key: not used.

15 – Coins
- coin A: cumulative sales with keys/cards;
- coin B: cumulative discounts;
- coin C: cumulative free vends;
- coin D: cumulative credit charged into the keys/cards using the Programmer, the keyboard of the Zip Caterlink or the Charge Key;
- coin E: cumulative credit charged into the keys/cards using a PC or a Cash Register;
- coin F: not used;
- coin G: not used;
- coin H: not used.

19 - Bankonotes: not used.

20 – Diagnostic
List of events for the Zip Caterlink (see above table "List of statistics").

21 – Black list
It indicates the Key numbers included in the Black List.

See below a list of statistics using software Box32:

BOX32 File: lastaudit box Databox: 1
26/11/03 Acquisition N, 12 User: ADBabDBex

Audit number: 12 Audit date: 17.11.03 17:38 Previous audit: 17.10.03 9:54
Customer code: 000000 Machine code: LinkRd Sw.version: CATERLINK

1 - CASH BOX		7,40
- coins	0,00	
- banknotes	7,40	
2 - LOADING (1-3)		7,40
3 - CASH SALES		0,00
- sales	0,00	
- failed sales	0,00	
- overpay	0,00	

4 - KEY SALES		401,00
- sales	401,00	
- failed sales	0,00	
5 - SPECIAL KEY SALES		4,11
- free sales	0,00	
- discounts	4,11	
6 - NET KEY SALES (4-5)		396,89

7 - TOTAL SALES CASH + KEY (3+6)	396,89

8 - TOTAL LOADING	106,40
- cash	7,40
- programmer or charge key	99,00
- bonus	0,00
9 - NET KEY SALES	396,89
10 - CURRENT KEY BALANCE (8-9)	-290,49

11 - FAILED LOADING USING CHARGE KEY	0,00

12 - CASH SALES	n°	price
price line 1	0	0,00
price line 2	0	0,00
price line 3	0	0,00
price line 4	0	0,00
price line 5	0	0,00
price line 6	0	0,00
price line 7	0	0,00
price line 8	0	0,00
price line 9	0	0,00
price line 10	0	0,00
totals ales	0	
out of tables ales		0,00
totals ales		0,00

13 - KEY SALES	n°	price
price line 1	0	0,00
price line 2	0	0,00
price line 3	0	0,00
price line 4	0	0,00
price line 5	0	0,00
price line 6	0	0,00
price line 7	0	0,00
price line 8	0	0,00
price line 9	0	0,00
price line 10	0	0,00
totals ales	0	
out of table sales		0,00
totals ales		0,00

14 - TOTAL SALES NUMBER CASH + KEY (without out of table sales)	0

15 - COINS	n°	price
coin A	0	534,20
coin B	0	6,99
coin C	0	142,99
coin D	0	2387,29
coin E	0	360,65
coin F	0	0,00
coin G	0	0,00
coin H	0	0,00

16 - BANKNOTES

	n°	price
banknote 1	0	0,00
banknote 2	0	0,00
banknote 3	0	0,00
banknote 4	0	0,00

17 - DIAGNOSTICS

		E7	7	E15	23
E0	12	E8	0	SA	179
E1	0	E9	0	SB	155
E2	15	E10	0	SC	0
E3	0	E11	0	SD	19
E4	0	E12	0	SE	1862795296
E5	1	E13	0	SF	14
E6	2	E14	51		

18 - BLACK LIST

	number		number
key 1	0	key 6	0
key 2	0	key 7	0
key 3	0	key 8	0
key 4	0	key 9	0
key 5	0	key 10	0

DICHIARAZIONE DI CONFORMITÀ - DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ - KONFORMITÄTSERKLÄRUNG
DECLARATIÓN DE CONFORMIDAD - DECLARAÇÃO DE CONFORMIDADE.

ADE S.r.l.
Via L.Galvani, 6 - 33089 Villotta di Chions (PN) - ITALY
Tel. (0434) 421711 r.a. - Fax (0434) 421790

Dichiara che la macchina, descritta nella targhetta di identificazione, è conforme alle disposizioni legislative delle direttive: **89/336, 73/23 CEE** e sucessive modifiche ed integrazioni.

Declares that the machine described in the identification plate conforms to the legislative directions of the directives: **89/336, 73/23 EEC** and further amendments and integrations.

Déclare que l'appareil décrit dans la plaque signalétique satisfait aux prescriptions des directives: **89/336, 73/23 CEE** et modifications/intégrations suivantes.

Erklärt, daß das im Typenschild beschriebene Gerät den **EWG** Richtlinien **89/336** und **73/23**, sowie den folgenden Änderungen/Ergänzungen entspricht.

Declara que la máquina descripta en la placa de identificación, resulta conforme a las disposiciones legislativas de las directivas: **89/336, 73/23 CEE** y modificaciones y integraciones sucesivas.

Declara que o distribuidor descrita na chapa de identificação è conforme às disposições legislativas das directivas CEE 89/392,73/23 e sucessivas modificações e integrações.

Villotta di Chions, 01-10-2002

NELLO TESOLIN

Presidente
Chairman
Prèsident
dar Präsident
President

FIRMA - SIGNATURE - UNTERSCHRIFT
ASSINATURA