



ELECTRONIC PAYMENT TERMINAL DEBIMAT 200



Cii Honeywell Bull

There is nothing simpler than paying cash for a purchase at the cashier's desk in a store, or for a service at the window in an office, a hotel or an agency - though it is often necessary either to have the exact change, or to give change back and to check on the amount received.

With the increasing use of modern payment methods (cheques, payment cards) and the growth of credit, the payment operation has become a relatively complex one that can be broken down into several successive phases. It will not be really perfect until the end of the process of transferring funds initialized at the cashier's office. In fact, payments made in this way are accepted only with the implicit reservation that they can be collected.

Thus the notion of GUARANTEED PAYMENT has emerged, implying a whole series of checking operations, qualitative as well as quantitative, that are to be carried out as rigorously, discreetly and quickly as possible in the joint interest of tradesmen and of their customers.

This notion is the basis of complete automation of the collection process, now possible thanks to recent developments in electronic technology.

It is to meet the tradesmen's demand for safety and rapidity, as well as consumers' desires for greater ease in using their purchasing power, that CII HONEYWELL BULL has designed and built the DEBIMAT 200* Electronic Payment Terminal.

THE DEBIMAT 200

The DEBIMAT 200 payment unit, fully electronic, is intended for "single-cash point" shops as well as "multi-cash point" commercial establishments.



Its modular design and open architecture make it a versatile payment machine, able to accept all payment media: cash, checks, magnetic-stripe payment cards and electronic money.

Consisting of distinct functional elements that can be regrouped or separated, the DEBIMAT 200 can make the best possible adjustment to the various constraints conditioning the particular environment of each selling point. This very flexible configurability allows the use of ergonomics in setting up job positions.

The DEBIMAT 200 provides the whole range of functions included in execution of a payment operation; those relating to the cashier's work in the shop as well as those entailed by data exchanges with the banks' data processing systems. Test and service functions enable the operator to check on his machine's proper operation at any time. Extra options are provided to extend even further the working possibilities of the DEBIMAT 200 and thus make it a veritable universal collection terminal. The configuration shown opposite corresponds to the "electronic money" version.

OPERATING PRINCIPLE

The DEBIMAT 200 was designed to ensure the best possible service to the customer as well as the merchant. The basic element of this service is an individual payment card with built-in electronic microcircuit, a card endowed with personalized "purchasing power".

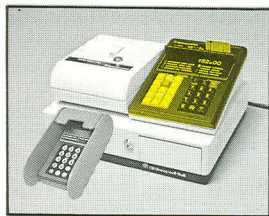
At each transaction, it is reduced by the amount of the purchase, and the transaction is simultaneously recorded in the card memory and in the DEBIMAT 200 memory cartridge (a veritable "till" for electronic money).

The customer is debited afterwards, when the

merchant has sent his recorded items to his bank for collection purposes, and possibly after a clearing circuit comparable to the process of handling checks.

In addition to the usual functions of cash registers, the DEBIMAT 200 includes an automatic telephone number dialer and a "modem" that enables it to carry out this transmission over a standard telephone line. It can also be connected to an authorization center to allow the customer to carry out transactions of amounts greater than the payment limit recorded on the card.





...Designed for the merchant

THE VENDOR MODULE

This module is for use only by the staff of the shop or store to receive payments made using the electronic microcircuit card. This module is connected to the control logic module by means of a flexible cable. Its overall dimensions are $180 \times 250 \times 100$ mm.

The vendor module comprises five functional units :

A numeric keypad of 15 keys. Ten keys are marked 0 to 9 and are used to enter the price to be paid. The remaining keys are a "OO" key, a decimal point key ",", a key marked "*", a correction key "C" and a cancel key "NUL".



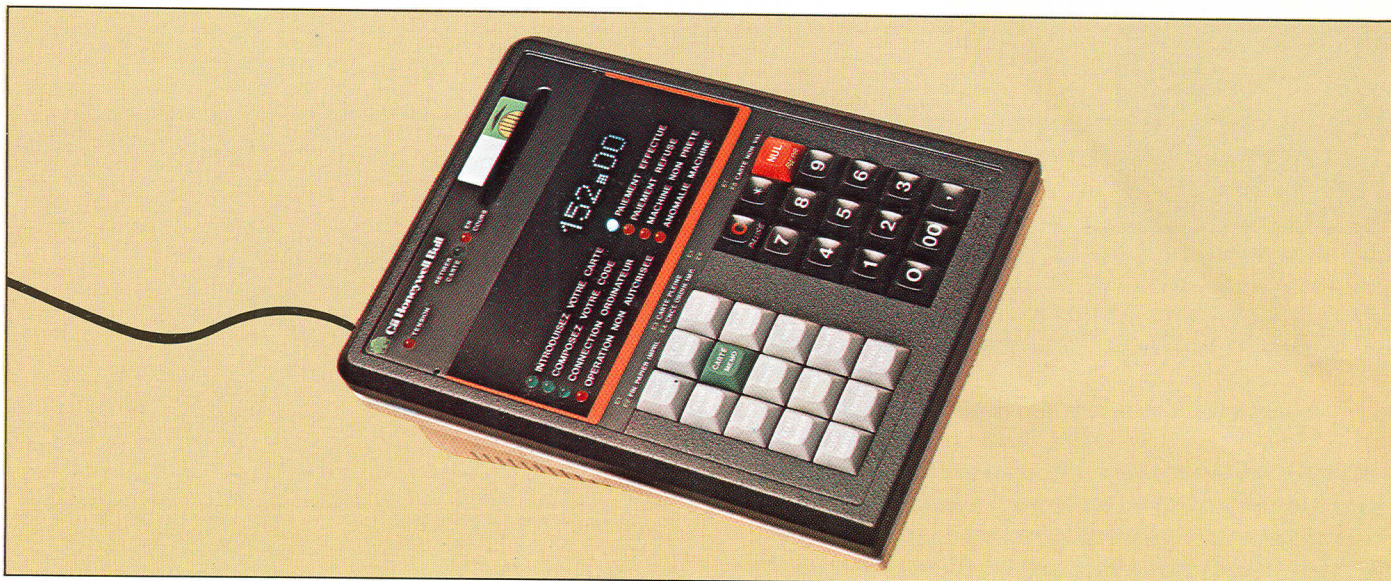
A keyboard of the kind of a cash-register, which may be equipped with up to 15 function keys. This is used by the shop staff to initialise the terminal, to open and close the device, to consult the log store and to communicate with the inter-bank data processing system.

The display unit can show up to 12 characters on a single line, each character being 6×9.6 mm. This display can show the total amount of payments registered or the amount to be paid by the current customer.

A set of eight LED indicators advise the operator as to the progress of each transaction. Green indicates normal operation or an instruction, whereas red indicates a fault or external intervention prohibition.

Malfunctions codes displayed on the screen may be interpreted by reference to legends written at the top of the keyboard.

The card reader, the single visible part of which is the card slot on the upper face of the device.



CASH REGISTER FUNCTIONS

These functions are not concerned with customers, and enable the cashier of the shop or store to open and close the machine, to identify himself at the workstation and to control operation of the log cartridge of the terminal.

Opening procedure

Powering up the DEBIMAT 200 trips a self-test sequence covering the various modules of the terminal. If these tests give a positive result then initialisation of EFT operation is enabled.

The initialisation sequence comprises a dialogue between the operator and the machine, the operator using the keypad of the vendor module and the machine printing out messages at the beginning of the log. This sequence may be used to enter into the cartridge reference data concerning the point of sale : date, time, identity of operator. This latter item of information is entered from the personal access card of the operator (shop-keeper, member of sales staff, cashier) verified by checking the secret code, in the same way as for payment cards.

This sequence terminates with the printout of a message to indicate that the DEBIMAT 200 may be connected to the interbank computer system, in order to update the blacklist of invalid cards. On completion of this exchange of data the message "TERMINAL OPEN" is printed to indicate that the DEBIMAT 200 is now ready for use.

Each time the member of staff responsible for the till changes during the day, and each time there is any interruption in use of the till, then each "shift" must be identified by recording the time at which it starts and ends and the name of the member of staff concerned. Members of staff wishing to use the terminal must first identify themselves by means of their card, the secret code being checked as previously.

The information relating to each shift is stored in the log cartridge and simultaneously printed out on the log.

Thus the log comprises a complete and chronological record of all operations carried out at the point of sale concerned during the day.

Closing procedure

This operation is executed by inserting the staff member card and pressing the "CLOSE" key.

The closure of the DEBIMAT 200 is recorded on the log cartridge and the log itself is printed.

End of day procedure

When the till is closed for the day the accounts procedure for that day must be terminated, by pressing the "END SHIFT" key. This is recorded on the log cartridge and printed on the log.

Terminating the log

The log is terminated by pressing the "END CARTRIDGE" key and inserting a staff card. When the secret code is recognized as correct, the "END CARTRIDGE" sequence is recorded on the cartridge and printed on the log.

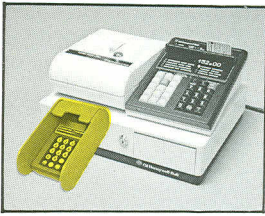
Temporary shutdown

It may be necessary to temporarily shut down the DEBIMAT 200 without closing the till, if the operator is to absent himself for a short time, for example.

To do this the staff card is inserted and the "PAUSE" key pressed.

In this condition the DEBIMAT 200 cannot accept any payment or communicate with the interbank computer system. To resume use of the till the staff card is inserted again and the "RE-START" key pressed.

NOTE : the staff card used for this purpose must be the same as that used to open the till.



...As for the customer

THE CUSTOMER MODULE

This module enables the customer :

- to identify himself as the legitimate bearer of the card, by entering his personal secret code,
- to indicate his acceptance of the amount for payment and authorise the appropriate transfer of funds,
- to be advised why payment has been refused, when this occurs.

This module has been designed for discreet use by the customer, and combines a numeric keypad with a line display. The module is $250 \times 140 \times 90$ mm and is connected to the control logic module by a flexible cable.

The keypad has 15 keys, 10 of which carry alpha-numeric markings corresponding to a telephone dial. The customer presses these keys to enter his secret code discreetly and free from outside interference.

- a "CANCEL" key may be used to cancel the transaction in progress,
- a "CORRECTION" key may be used to correct any keying errors,
- a "BALANCE" key may be used to indicate the balance of purchasing power remaining in the card,
- a "VALIDATE" key is pressed to execute the transaction (the electronic equivalent of signing a cheque).

The display unit shows the customer the amount to be paid, in green characters 2×5 mm. The display can accommodate 8 characters.

Four LED indicators provide further assistance to the customer. Green indicates normal operation or an instruction, whereas red indicates a fault or external intervention prohibition.





PAYMENT FUNCTIONS

Card balance consultation

Before making a payment, the customer can find out the remaining purchasing power of his card by inserting it into the reader of the vendor module and pressing the "BALANCE" key on the customer module.

When a payment is registered the residual balance is automatically displayed on the screen of the customer module.

Transaction execution

The transaction is effected according to a "scenario" which appears to be very simple, in spite of the multiple checks carried out conjointly by the card itself and the DEBIMAT 200. The transaction details are recorded simultaneously on the

card itself and in the memory of the terminal. The phases involved in executing a transaction are as follows :

- the total amount to be paid is entered via the vendor module keypad and immediately displayed on the screen of the customer module,
- the card is inserted into the card-reader of the vendor module by the operator, cashier or shopkeeper,
- the customer enters his personal secret code via the customer module keypad,
- the customer accepts the payment by pressing the "VALIDATE" key on the customer keypad, this constituting an electronic equivalent of signing a cheque and authorising the transfer of funds (the amount paid is debited to the card and the remaining balance updated, with the transaction record simultaneously entered into the log store of the terminal : date, amount, customer reference account number),
- the payment receipt is printed simultaneously with the writing of a line in the transactions log.

Checks

The following checks are executed consecutively :

- the **validity** of the card presented by the customer is checked by comparing its expiry date with the current date and also comparing the card number with the numbers on a blacklist stored in the terminal,
- the **qualification** of the person presenting the card is verified by checking the personal secret code entered. If the code entered is different from the one stored on the card on each of three consecutive attempts, the transaction is refused,
- the **solvency** of the customer is verified by comparing the remaining balance on the card with the amount to be paid,
- the **memory capacity** available to record the transaction on the card (the electronic equivalent of the cheque stub) and in the log memory of the terminal is checked.



The DEBIMAT 200 also accepts payment cards with standardized magnetic stripes. To this end, one needs only to supply the vendor's module with a specialized card reader, the LCPM /model 203 M, which can read standard magnetic stripes (ISO/2/3554).

The card is moved manually under the reading head at a speed varying from 10 to 150 centimeters a second.



Printing function

THE PRINTER MODULE

This module is used to print out onto usual paper all those data reflecting account inquiries and transaction records.

The overall dimensions of the printer module are $180 \times 250 \times 90$ mm, and it is connected to the control logic module by means of a flexible cable. It comprises the following units :

A **serial printer** with the following specifications :

- 20-column alphanumeric printout,
- 5×7 dot matrix printhead,
- character size 1.82×2.58 mm,

- printing speed 1.8 lps,
- ordinary paper rolls, maximum diameter 60 mm, width 60 mm, 12 mm centre hole.

An **electronic printer control and control logic interface circuit card**.

A motor-driven paper **winding-system** (for the log).

A **power supply unit**. The printer is powered up from the control logic module. A red indicator lamp on the printer comes on when the printer is powered up.



DEBIMAT OPEN

• DATE/TIME 22 01 82
8 H 00 MN
• STAFF CARD: 33

• GENERAL STORES
OXFORD STREET 125
LONDON
• Albert DUQUESNE
• Currency: £ - 250

**END OF SHIFT

SHIFT: N° 03
DATE/TIME: FROM 23/01/82
19 H 31 MN
TO 24/01/82
20 H 05 MN

• CARD: XX
XXXXXXXXXXXXXXXXXXXX
FRANCIS LONG
• SESSION: 01
(O) 23/01/82 - 8 H 30 MN
(C) 23/01/82 - 12 H 00 MN
01 - 11 - £ 1203.00
*

• SESSION: 02
(O) 23/01/82 - 12 H 03 MN
(C) 23/01/82 - 16 H 30 MN
00 - 08 - £ 926.50
*

• SESSION: 03
(O) 23/01/82 - 16 H 32 MN
(C) 23/01/82 - 19 H 30 MN
02 - 25 - £ 3712.25
*

• N° OF SESSIONS : 03
• PAYMENTS REFUSED : 03
• PAYMENTS ACCEPTED: 44
• TOTAL : £ 5841.75

DEBIMAT CLOSED

SHIFT N° 03
SESSION N° 10
FROM 23/01/82
19 H 30 MN
TO 23/01/82
20 H 00 MN
OPERATOR: XX -

• PAYMENTS REFUSED: 02
• PAYMENTS ACCEPTED: 25
TOTAL £ 3712.25

Payment refused

Two Roses Hotel
Victoria avenue
Brighton

DATE: 22.02.82 - 14
ACCOUNT 30 003 51678
09321652231-03-01
CARD 01 -

*CARD INVALID: E90
CONTACT YOUR BANK

SORRY

Payment effected
normally

Two Roses Hotel
Victoria avenue
Brighton

DATE: 22.02.84 - 14
ACCOUNT 30 003 51678
09321652231
CARD 01

PAYMENT No 023
AMOUNT: £ 211.50
*

THANK YOU

Payment receipts and the log are printed simultaneously. The top panel of the printer module incorporates a window through which the customer may sign the log if requested to do so by the sales staff. The sales staff also use this window to add annotations to the log, where necessary. The log is kept locked at all times.

The cashier's receipt may bear a name and be printed in the language corresponding to the currency of the payment card, i.e., the bearer's language.

Of course, the log is protected by an access key. It reproduces, in identical fashion, all of the cashier's receipts issued, and records all of the operating routines: opening, closing, change of cashier, etc...



The DEBIMAT 200 exploitation

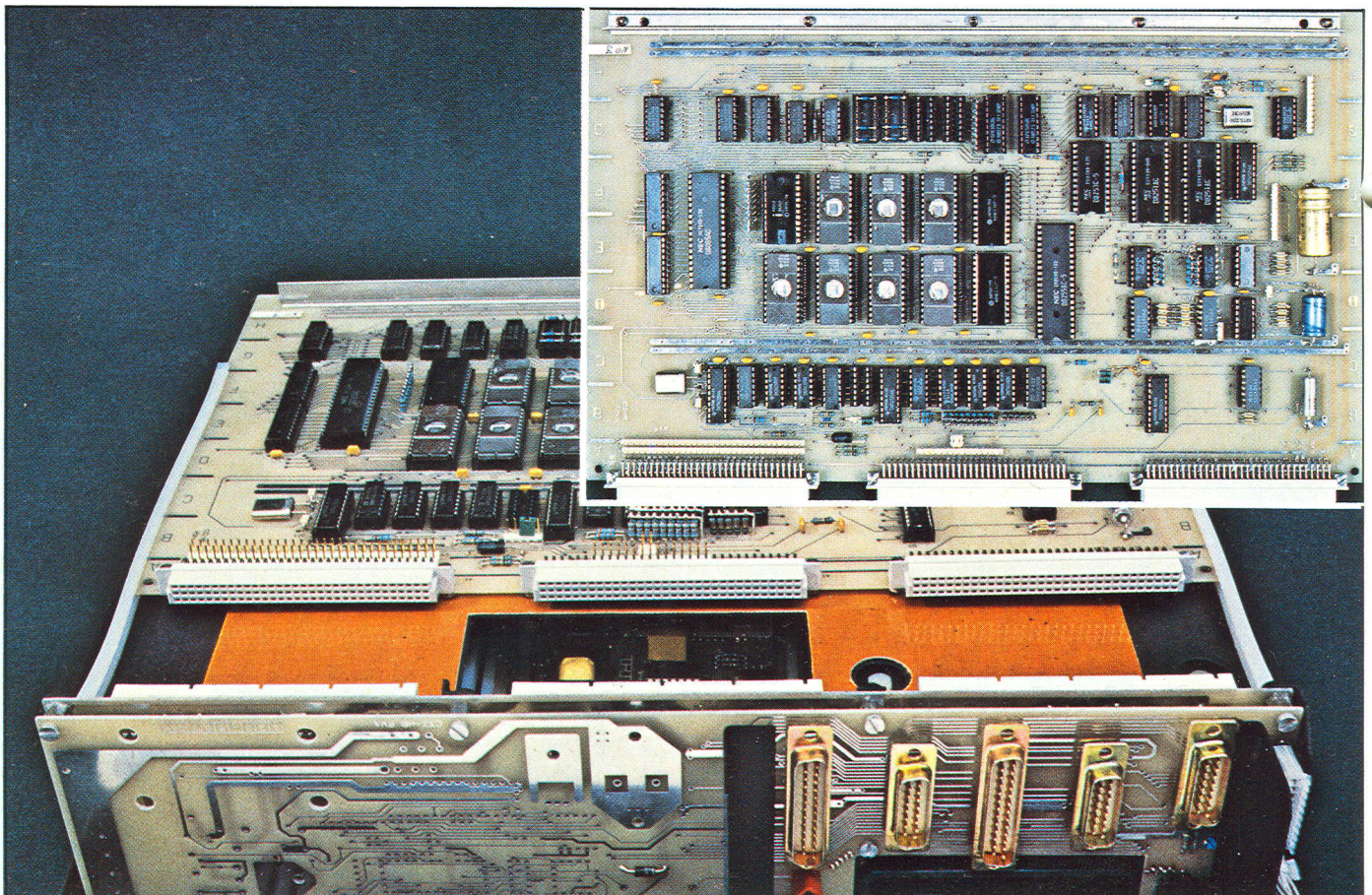
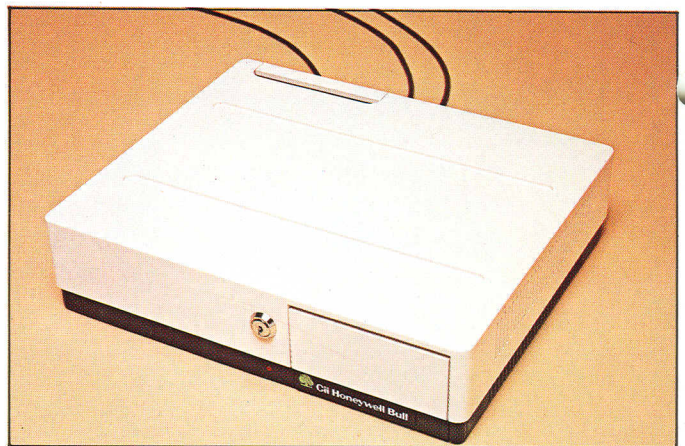
THE CONTROL LOGIC MODULE (CLM)

The control logic module is housed in a rectangular case $370 \times 305 \times 90$ mm containing :

- the **program memory**,
- the **log store**, in the form of a removable 8 Kbytes cartridge on which parameters of transactions effected are recorded, and access to which is controlled by a key,
- a **power supply** unit providing the appropriate voltages to the functional modules of the terminal from the local 220 V 50 Hz main supply,
- the **connectors** for interconnecting the functional modules with the basic module,
- the **communication interface** by means of which the DEBIMAT 200 may be connected into a data processing network via the switched telephone network, including a built-in 1 200 baud modem with automatic dialler and automatic response facilities.

The control logic module is supplied complete with all mounting accessories, telephone connecting cable, main supply cable and peripheral modules connecting cables.

In accordance with programmed procedures, it ensures proper functioning of peripheral modules and the correct execution of the various operations described : it guides execution of transactions, manages the use of the memory cartridge and the communications with the inter-bank computer. It is the security device of the DEBIMAT 200.



COMPUTER LINK FUNCTIONS

The DEBIMAT 200 includes a built-in modem transmitting over the switched telephone network in half-duplex mode at 1 200 bauds. The modem can call the computer system automatically, by referring to a prerecorded number, and respond automatically to a call from the computer system.

The link to the computer system may thus be set up at the initiative of the DEBIMAT 200 when the till is opened, or by the computer system calling the DEBIMAT 200 while the shop or store is closed. It is only possible to exchange data when the log has been properly terminated. The DEBIMAT 200 may not be used while it is communicating with the computer. Any attempt to do so will be ignored and totally ineffective.

The basic functions of the computer link are :

- to load and update the blacklist in the log store of the DEBIMAT 200 from files managed by the interbank computer,
- to transmit the contents of the log store to the computer system at the end of the day (or shift), this data representing payments effected and permitting the accounts to which these payments relate to be updated as appropriate.

```
*COMPUTER CONNECTION
DATE/TIME 28/01/82
          20 H 29 MN
CENTRE: IDENTIFICATION
*STATEMENT
• N° OF PAYMENTS: 142
• AMOUNT       : £ 7947.25
• ACCOUNT      XXXXX-XXXXX
                XXXXXXXXXX
• NAME (of vendor)
•
•
*BLACKLIST
VALIDITY 31/03/82
*DATE/TIME CHANGE - NONE
```

ANCILLARY FUNCTIONS

These functions provide for local consultation of the status of the till and the log cartridge.

The corresponding information is printed on the log, and includes the state of the totalising counter for the current shift :

```
**CONSULTATION
*TILL STATUS
SHIFT : 03
SESSION: 02
CARD : 04 -
DATE/TIME: 30/02/82
          10 H 22 MN
• CASH : £ 36-1030.00
• CHEQUES: £ 3-7658.00
• MISC. : £ 1- 35.35
• CARD : £ 18- 786.50
TOTAL : £ 58-9509.25
***
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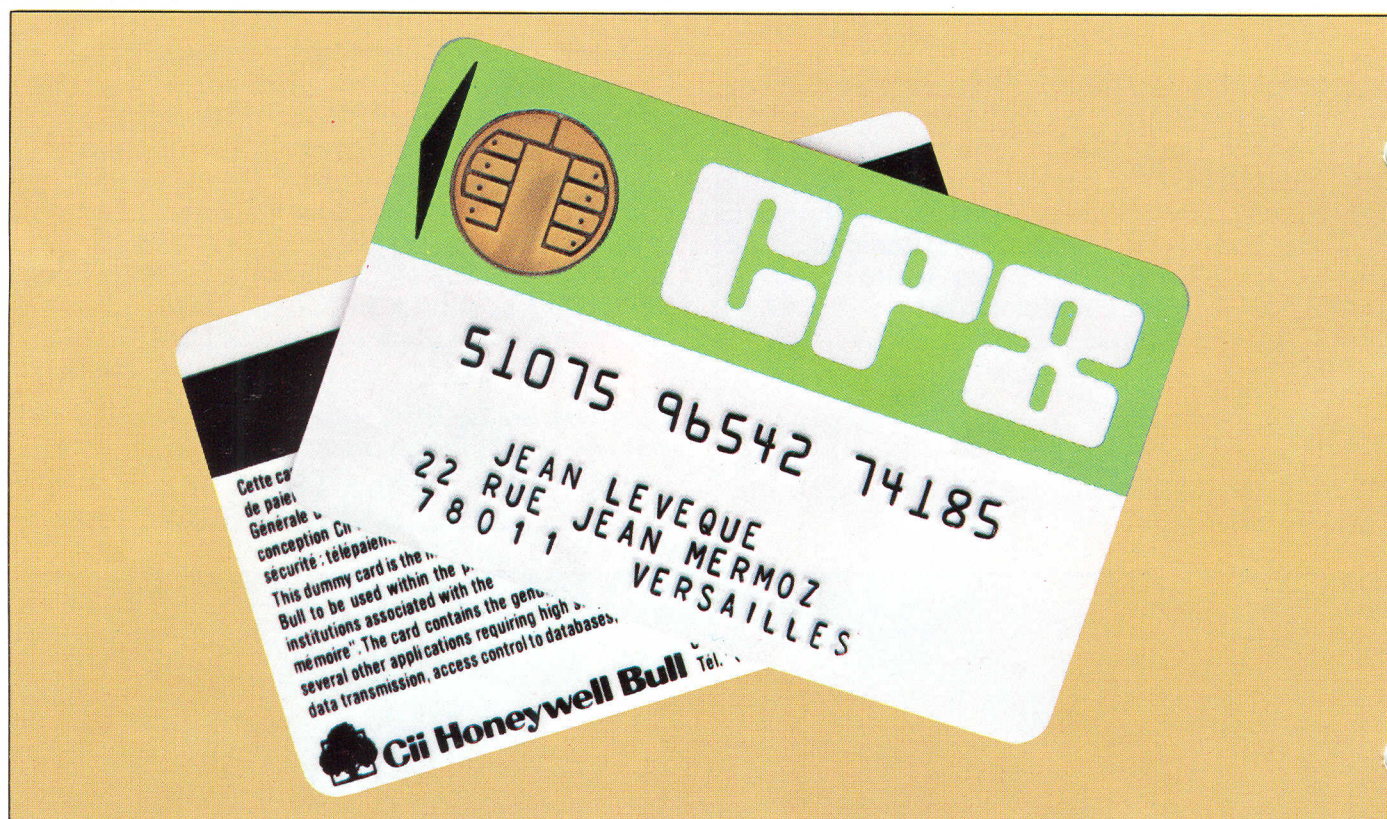
```
**CONSULTATION
*CARTRIDGE STATUS
SHIFT: 03
OPEN
• CARD 32 -
• N° OF PAYMENTS : 143
• PAYMENTS REFUSED : 01
• PAYMENTS ACCEPTED: 142
• TOTAL : £ 5841.75
• AVAILABLE:
  40 PAYMENTS
***
```

Another ancillary function tests the LED indicators, displays and printer. This enables the vendor to check out the peripheral modules for correct operation himself.

This card, with electronic microcircuit, contains a self-programmable microcalculator patented by CII HONEYWELL BULL*. Its size (dimensions, thickness) conforms to the ISO 2894 standard, making it possible to use it as part of varied applications operating secret programs and data of

personal or confidential nature.

It makes a reality of the new concepts of portable individual file and of high-security access key required by data communications and office automation applications.



The card with microcircuit, used as a payment instrument, offers an unequaled degree of safety that leads us to anticipate the most widespread use. The DEBIMAT 200 makes it possible to use this card under the same conditions as the usual

magnetic-stripe payment cards, and may be used either in the off-line or in the on-line mode of operation. This characteristic allows its integration into a pre-existing infrastructure, as well as its use in all forms of trade.

* CII HONEYWELL BULL holds her own patents and a license of Innovatron's patents.

DEBIMAT 200 TECHNICAL SPECIFICATIONS

- **Dimensions :**

Logic module	:	370 × 305 × 90 mm
Customer module	:	250 × 140 × 90 mm
Vendor module	:	250 × 180 × 100 mm
Printed module	:	250 × 180 × 90 mm
LCPM 203 M	:	130 × 60 × 45 mm

- **Weight :**

Logic module	:	7 kg
Customer module	:	1 kg
Vendor module	:	2 kg
Printer module	:	4 kg
LCPM 203 M	:	0,250 kg

- **Power consumption :**

Logic module	:	45 W
Printer module	:	20 W

The customer and vendor modules are supplied with power from the control logic module. The above figures thus include the power consumed by these modules.

- **Operating temperature range :**
10 to 45°C.

- **Maximum relative humidity :** 85 %.

- **Electrical power supply :**

220 V 50 Hz
Standard two-pin plug.
Double-insulated (class 2).

- **Telephone connection :**

Standard hybrid plug/socket connector.
4 m connecting cable.

- **Peripheral connecting cable :**

Supplied with control logic module.
2 × 3 m cable.
1 × 0.3 m cable.
Standard 15-pin HE 05 connectors.

- **Installation :**

Accessories for mounting the control logic module in the horizontal or vertical position are supplied with the module.

Peripheral modules may be mounted on top of the control logic module, in which case they are retained in position magnetically, or installed away from the control logic module.

This is only a document for information.

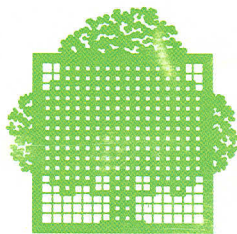
The characteristics and specifications shown in the present brochure may be modified without notice. For further information, please contact :

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