

BOS COP INC.

Cash Card Access and Debit Reader

Instruction Manual

Model: BC201 Copy



**Boscop Inc.
159 Dana Hill Rd
New Hampton NH 03256
Phone: 603-744-2188
Fax: 603-744-2062
email: service@boscop.com**

STANDARD CARD READER 1010

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1. Sales and Service

At Boscop Inc., complete customer satisfaction is our number one goal. As such, customer support is readily available to satisfy any need you may have. Whether it's sales information, a service requirement or just general inquiry, you can be assured of a prompt response to you need(s).

If you require technical assistance, advice or parts, please contact Boscop Inc. and ask for the Service Department.

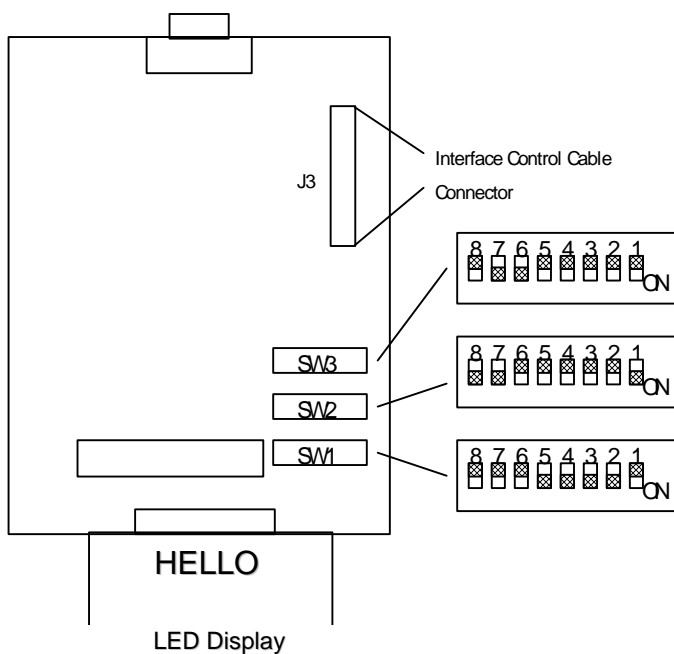
If you are a new or existing customer with a new installation in mind, our highly qualified sales staff will custom tailor a product solution for "your" particular need(s). Simply call Boscop Inc. and ask for Sales Assistance.

BOSCOPE INC.
Phone: 603-744-2188
Fax: 603-722-2062

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2. SET UP

2.1 Setting the Dip Switches.



NOTE: SW2 shown set for C1 ROM Code.

1. Unplug the power supply from the wall outlet.
2. To access the switches, insert the key in the back of the reader and turn it 180 degrees which will unlock the transport from the cover.
3. Remove the transport by pushing the black front bezel where the card would be inserted at the front of the reader. Once the bezel has cleared the face plate on the cover, slide the transport completely out.
4. The switches are located on the board on the top right side of the transport.
5. Set the switches according to your site requirements as follows:

DIP SWITCH SETTINGS

<u>BANK 'A'</u> SW 1	SW 1	*OFF	- Allow OTHER Format ie none supplied cards
		ON	- Reject OTHER Format
	SW 2	*OFF	- Do not Flag Cards
		ON	- Flag Cards
	SW 3	OFF	- Do not Verify
		*ON	- Verify after write
	SW 4	OFF	- Not Used
		*ON	- not Used
SW 5	OFF	- Do not use SENSOR 3	
	*ON	- Use SENSOR 3	
SW 6	*OFF	- Do not allow COMMAND CARD use	
	ON	- Allow COMMAND CARD use	
SW 7	*OFF	- Do not perform TEST	
	ON	- Perform TEST + Diagnostic Data on Printout	
SW 8	*OFF	- Do not CONVERT code	
	ON	- CONVERT code	

***Preferred switch settings for normal operation.**

<u>BANK 'B'</u> SW 2	SW 1-4	"ROM CODE" see ROM code settings
	SW 5-8	"START BYTE" see ROM code settings

<u>BANK 'C'</u> SW 3	SW 1-4	"ROM for XCP systems"	
	SW 5	OFF	- TOGGLE "HELLO"
		ON	- STATIONARY "HELLO"
	SW 6	OFF	- Not Used
		ON	- Not Used
	SW 7	OFF	- Not Used
		ON	- Not Used
	SW 8	OFF	- Hecon Printer
ON		- Standard RS-232 Printer	

ROM Code Settings

The following table shows the settings to be used on Switch Bank B for common ROM codes. If you cannot locate your ROM code or have any questions, contact Boscop Inc..

CODE SWITCH	1	2	3	4	5	6	7	8
40	Off	Off	Off	Off	Off	Off	On	Off
C0	Off	Off	Off	Off	Off	Off	On	On
C1	On	Off	Off	Off	Off	Off	On	On
B9	On	Off	Off	On	On	On	Off	On

Parameter Set-Up

In order for the Standard Cash Card Reader to operate properly, it must be initially set up using the "Set Parameters" card. This is one of three command cards used by the system.

NOTE: Switch bank A position 6 must be "on" to use command cards

Outlined below is a list of instructions describing how to set the reader up.

1. Insert the "Set Parameters" card into the reader mouth with the label face up.
2. The reader will take the card and the display will show "Pre Set".
3. Remove the card from the reader.
4. The display will flash between "i.d." and a "value", where the "i.d." is the machine identification and the "value" is what it is set to.
5. If the parameter is set properly, proceed to step 9.
6. To change this number, press the black front panel button once.
7. This will cause the number to increment by 1.
8. Press and hold the black front panel button until the desired value is obtained. The button may be pressed and released as many times as required in order to achieve the number.
If you exceed the number, hold the Card Eject button down and re-insert the card across the first sensor. The value will now return to zero. Release the front panel button and remove the card. You can now re-edit this parameter.
9. In order to advance to the next parameter, insert the "Set Parameters" card until it stops inside the mouth and remove it quickly.
10. The next parameter will appear on the display with the setting. If it is not set properly, follow step 6. If it is set properly, proceed to step 9.
11. Repeat this process until all the parameters are set properly. At the last parameter, once the card is inserted and removed quickly, the display will show "**HELLO**" which indicated that the card reader is in its idle state.

1. I.D.#	(i.d.)	Machine Ident. #
2. CASH 1.A	(CASH 1.A)	Group A/Price 1
3. CASH 1.B	(CASH 1.b)	Group B/Price 1
4. CASH 1.C	(CASH 1.C)	Group C/Price 1
5. CASH 2.A	(CASH 2.A)	Group A/Price 2
6. CASH 2.B	(CASH 2.b)	Group B/Price 2
7. CASH 2.C	(CASH 2.C)	Group C/Price 2

8. UNIT'S PL/1	(Unit 1)	Units Charge PL/1 (All Groups)
9. UNIT'S PL/2	(Unit 2)	Units Charge PL/2 (All Groups)
10. PULSE	(PULSE)	Copy Sense Pulse Time
11. BLIND	bLind)	Copy Sense/Disable Time
13. EJECT DELAY	(dEL.Ejt)	Eject Sw./Card Return Delay
14. AUTO-EJECT TIME	(Auto)	No Activity Eject Time (0=Disable)
15. LARGEST CASH AMOUNT	(LG.CASH)	Max. Cash Card Allowed (0=Disable)
16. LARGEST UNIT AMOUNT	(LG.UNIT)	Max. Unit Card Allowed (0=Disable)
17. DISP TENTH CENT	(tEntH.D)	Display tenth of a cent Yes or No
18. Hold Card if Bad	(HOLd)	Hold Card if coding is bad
19. Price 2 Input	(2 nd .InP)	If PULSE is set, it will deduct Price 2 when a Pulse is applied to Price 2 If LEVEL is set and a high signal is applies to Price 2 Input, a Pulse on Price 1 Input will charge Price 2.
20. SITE/GROUP A	(Site A)	Code for Group A
21. SITE/GROUP B	(Site b)	Code for Group B
22. SITE/GROUP C	(Site C)	Code for Group C

2.4 Site Code Information

When using the Cash Card Reader with older systems that referred to the site code by what was set on the Dip Switches, the site code must be converted to its decimal value.

To convert the setting of the "DIP" set Site/Group code to a decimal number, use the following chart.

SWITCH #	1	2	3	4	5	6	7	8
VALUE	1	2	4	8	16	32	64	128

For each switch in the "ON" position, add the corresponding value from the above chart.

Example:

Dip Switch setting of ole unit=site code 1347

SW1 = ON, SW2 = OFF, SW3 = ON, SW4 = ON, SW5 = OFF, SW6 = OFF, SW7 = ON, SW8 = OFF

Add the values corresponding to: SW1 + SW3 + SW4 + SW7 = 1347 Dip Switch Setting.

The Decimal equivalent is: $1 + 4 + 8 + 64 = 77$

Decimal setting as set in the parameters.

DISPLAY**PROBLEM**

ER 1	A Card was not properly inserted or something is blocking one of the sensors
ER 2	Blank card inserted, card was not encoded or card was inserted the wrong way
ER 3	No Start Byte Encountered, defective data on card or ROM Code set on Bank B incorrect. Use an approved cleaning card to clean the magnetic head
ER 4	No ROM Code Match, switches on Bank B were not properly set or data on Card is corrupted
ER 5	Field Error, defective data on Card
ER 6	No End Byte Found, defective data on Card
ER 7	LRC Not Correct, defective data on Card
ER 8	LRC is Inverted (Flagged), the card was removed manually during a power-off state or the current location is having power issues. (i.e. Brown Outs)
ER 9	Site Code Error, check that the proper site code is set.
ER 10	Maximum Card Value Exceeded: i.e. value exceeds LG Cash or LG Unit
ER 11	Prices are set to Zero, check the parameters cash and/or units
ER 12	Motor Speed Error, problem with the Card Reader
ER 13	Command Card Switch no "ON": switch 6 on Bank must be on to use encode, clear meters or set parameters cards
ER 14	Illegal User Card: Card cannot be used with this system
ER 15	Illegal Command Card: Command card inserted does not work with the new Reader
ER 16	Illegal Account Card Inserted: Card cannot be used with this system
ER 17	Illegal Card Format: To accept cash/unit cards from older system, Switch 1 on Bank A must be "OFF"
ER 18	Our of Account Memory
ER 19	Memory Error
ER 24	To clear the meters, the front panel button must be held while the card is inserted.

3. ENCODING and FORMATTING CARDS

All Cash Card Readers have the encode capability. Operation as an encoder depends on the proper switch settings within the unit as well as the use of a special command card.

No external connection to a machine is required for the reader to function as an encoder.

To operate the Cash Card Reader as an encoder:

1. Make sure the ALLOW COMMAND CARD switch is in the "ON" position. (See Section for Switch identification)
2. You have been supplied with "ENCODE" cards. These are command cards that will allow the 1010 to encode "value" cards.

One card is labeled:	ENCODE CASH
The other is labeled:	ENCODE UNITS

3. To encode cash value:
 - 3.1 Insert the ENCODE CASH card into the reader. The card will be read and returned. The display will indicate: CASH as the card is being returned, then the display will indicate: 00.000 or whatever value the card is currently programmed for. If the value you want to encode is correct, go to step 3.5.
 - 3.2 Depress the Front Panel button once and release.
 - 3.3 Depress the button again and hold in the depressed state. The display will increment very rapidly.
 - 3.4 As the value approaches the desired cash value, release the button and step slowly to set the exact value desired.

Note: It is very important NOT to re-insert the Encode Card at this point.
 - 3.5 Insert a blank card, the value displayed will be encoded on the card. If additional blank cards are inserted, they will be encoded with the same value.
 - 3.6 To reset the Cash Card Reader to its normal of operating, simply press the Front Panel button, the display will indicate "HELLO".
4. To encode units value cards, follow the same procedure as in (3) except use the ENCODE UNITS Card.

NOTE: Command Cards with a preset value (e.g. Encode \$10.00, Encode 100 Units) may be ordered from Boscop Inc. at a cost of \$10.00 each.

4. METERING

4.1 Meter Reading

The 1010 Card Reader will provide a number of different readings as to the activity of the unit.

In order to retrieve the reading, the operator must insert the "Read Meter" Control card. The 1010 will read the card and eject it from the reader.

The display will show "rd.met" and then toggle between "CASH" and a "value". The 1010 is indicating the meter reading and the value of that reading.

To advance to the next reading, the operator has to insert the card until it hits the Front sensor, then remove it again.

A list of the readings is outlined below.

Once all the readings have been displayed, the display on the 1010 will show "HELLO" which means the 1010 is in its idle state or pressing the front panel button at any point will return it to the idle state.

4.2 Primary Meters (Display Output)

- 1 - CASH 1.A
(CASH 1.A) Total Copies Made/Cash Cards/PL-1/Group A
- 2 - CASH1.B
(CASH 1.b) Total Copies Made/Cash Cards/PL-1/Group B
- 3 - CASH 1.C
(CASH 1.C) Total Copies Made/Cash Cards/PL-1/Group C
- 4 - CASH 2.A
(CASH 2.A) Total Copies Made/Cash Cards/PL-2/Group A
- 5 - CASH 2.B
(CASH 2.b) Total Copies Made/Cash Cards/PL-2/Group B
- 6 - CASH 2.C
(CASH 2.C) Total Copies Made/Cash Cards/PL-2/Group C
- 7 - UNIT 1
(UNIT 1) Total Copies Made/Unit Cards/PL-1
- 8 - UNIT 2
(UNIT 2) Total Copies Made/Unit Cards/PL-2
- 9 - SERVICE COPIES 1
(S.COPY 1) Total Service Copies Made/PL-1 (Not Used)
- 10 - SERVICE COPIES 2
(S.COPY 2) Total Service Copies Made/PL-2 (Not Used)

- 11 BYPASS COPIES 1
(bypass 1) Total Bypass Copies Made/PL-1 (Copies made without card in reader i.e. Coin copies)
- 12 - BYPASS COPIES 2
(bypass 2) Total Bypass Copies Made/PL-2 (Copies made without card reader i.e. Coin Copies)
- 13 - TOTAL CASH DEDUCTED
(t.CASH) Total Cash Deducted from Cash Cards
- 14 - TOTAL UNITS DEDUCTED
(t.Unit) Total Units Deducted from Unit Cards
- 15 - TOTAL # OF CASH CARDS ENCODED
(t.CCArd) Total # of Cash Cards Encoded
- 16 - TOTAL # OF UNIT CARDS ENCODED
(t.UCArd) Total # of Unit Cards Encoded
- 17 - TOTAL CASH VALUE ENCODED
(t.ECASH) Total Cash Value Encoded on Cards
- 18 - TOTAL UNITS ENCODED
(t.Eunit) Total # of Units Encoded on Cards
- 19 - TOTAL MACHINE ENABLES
(t.relay) Total # of Machine Enables
- 20 - TOTAL # OF CARDS READ
(t.CArd) Total # of Cards Read
- 21 - LARGEST CASH CARD SEEN
(LG.CASH) Largest Cash Card Value Seen
- 22 - LARGEST UNIT CARD SEEN
(LG.UNIT) Largest Unit Card Value Seen
- 23 - CLEAR # of Times "CLEAR" Card Used

4.3 Meters & Diagnostic Data Available Through I/O Channel
MODEL 1010 VERSION 3.26
Meter Report for Machine #1

SITE A CASH DEBITS:

Price line 1 copies..... X
 Price line 2 copies..... X

SITE B CASH DEBITS:

Price line 1 copies..... X
 Price line 2 copies..... X

SITE C CASH DEBITS:

Price line 1 copies..... X
 Price line 2 copies..... X

UNITS DEBITS:

Price line 1 copies by units..... X
 Price line 2 copies by units..... X

MISCELLANEOUS:

Price line 1 copies by service cards..... X
 Price line 2 copies by service cards..... X
 Price line 1 copies in bypass..... X
 Price line 2 copies in bypass..... X
 Cash deducted from cash cards..... \$X.XXX
 Units deducted from units cards..... X
 Number of cash cards encoded..... X
 Number of units cards encoded..... X
 Value of cash cards encoded..... \$X.XXX
 Value of unit cards encoded..... X
 Number of relay closures..... X
 Number of cards inserted..... X
 Largest cash value accepted..... \$X.XXX
 Largest unit value accepted..... X

NON-RESETTABLE METERS:

Total # of meter clears..... X
 Total cash copies made..... X
 Total units copies made..... X
 Total Service copies made..... X
 Total bypass copies made..... X
 Total bypass copies made..... X
 Total number of cash cards encoded..... X
 Total number of units cards encoded..... X
 Total value of cash cards encoded..... \$X.XXX
 Total value of unit cards encoded..... X

4.4 Serial (Printer) Protocol

Standard RS232 Output

9600
ODD Parity
8 Data Bits
1 Stop Bit

Pinout from Reader (9 Pin D-Connector)

Pin 2 – Data

Pin 3 – DTR (Busy)

Pin 5 – Gnd

Pin 7 -

Must be Shorted to indicate
That the Serial device is attached

Pin 8 –

To obtain printout:

1. Connect Printer to Card Reader
2. Make sure Printer is "ON LINE"
3. Insert Read Meters Command Card

SEIKO DPU PRINTER TO 1010 READERS

9 Pin D-Sub Male		9 Pin D-Sub Male
2 Data	BLACK	3 Data
5 Ground	RED	5 Ground
3) } 7) } 8)	Short	4 & 6 Shorted

Card Reader 1010 - Bank "C" SW-8 ON

Printer DPU 411 - 2 + 7 + 8 of 8 **ON**
 - 1 + 3 of 6 **ON**
 - All other switches **OFF**

Printer DPU 414

Dip SW-1

1. (OFF) : Input = Serial
2. (ON) : Printing Speed = High
3. (OFF) : Auto Loading = OFF
4. (ON) : Auto LF = ON
5. (OFF) : Setting Command = Disable
6. (OFF) : Printing
7. (ON) : Density
8. (ON) : 100%

Dip SW-2

1. (OFF) : Input=Serial
2. (OFF) : User Font Back-up = ON
3. (ON) : Character Select = Normal
4. (ON) : Zero = Normal
5. (ON) : International
6. (ON) : Character
7. (ON) : Set
8. (OFF) : U.S.A.

Dip SW-3

1. (ON) : Data Length = 8 bits
2. (OFF) : Parity Setting = Yes
3. (ON) : Parity Condition = Odd
4. (OFF) : Busy Control = XON/XOFF
5. (OFF) : Baud
6. (ON) : Rate
7. (ON) : Select
8. (ON) : = 9600 bps

WEIGHTRONICS TO 1010 READERS

<u>1010 (9 Pin Male)</u>	<u>Pin</u>	<u>Color</u>	<u>Pin</u>	<u>Printer (25 Pin Male)</u>
TD (Transmit Data)	2	Red	3	RD (Receive Data)
DTR (Busy)	3	Black	11	CTS (Clear to Send)
GND (Ground)		5 Green	7	SG (Signal Ground)
Short to 7	7	White	N/C	
Short to 8	8	White	N/C	

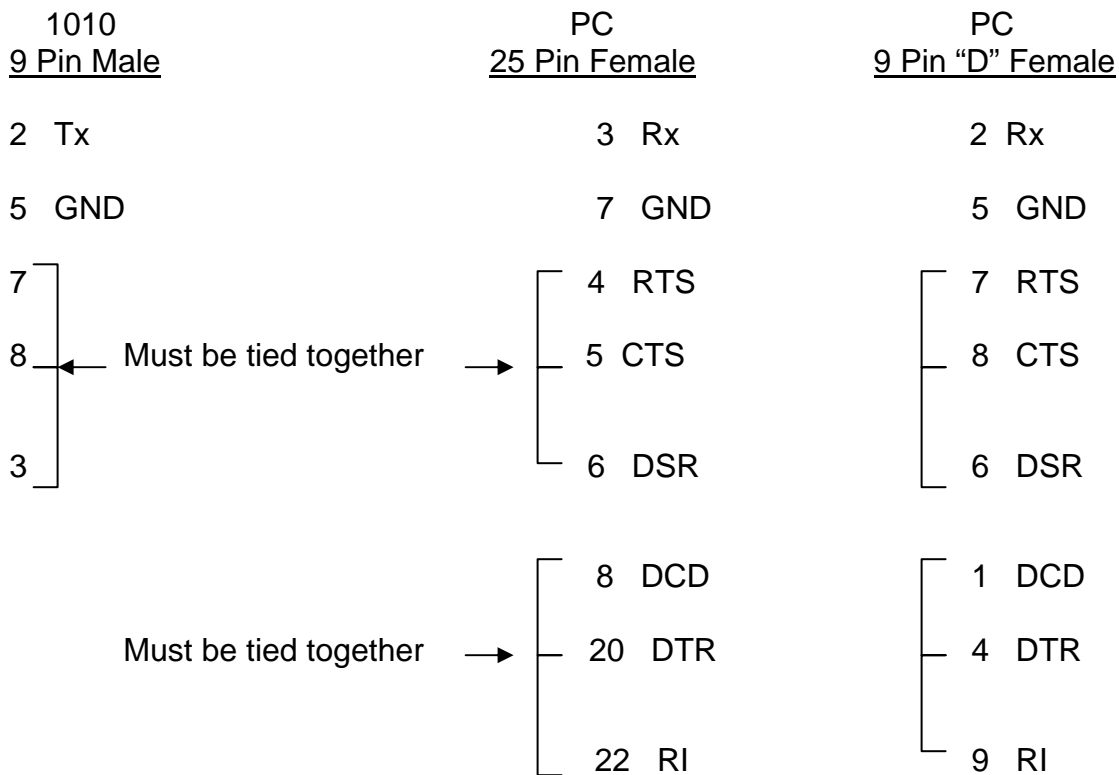
1010 Set-Up

Bank C - Switch 8 **ON**

Weight-Tronics Set-Up

Baud: 9600
 Data Bits: 8
 Stop Bits: 2
 Hnd Shake: Busy-Buffer
 Cols: 32

1010 to PC Serial Communication Cable



Capturing the 1010 Meter Reading using Hyper-Terminal

1. Obtain the cable that will attach the PC to the 1010. Connect the Male end to the 9 pin port on the rear of the 1010. Connect the other (female) end to the read of the computer into an available Com port.
2. Launch Hyper-terminal on the computer by double clicking on the Hyperterm.exe Icon.
3. Enter a new connectionName:968N1.HT when prompted by the computer. Select "OK" to continue. On the next screen when prompted for a phone number, leave the entry blank, go to the bottom selection bar Titled: "Connect using" and select "Direct to com 1" (or the Com port being used on the computer). Select "OK" at the bottom of the window.
4. In the COM 1 properties: Port Settings Select:

Bits per second	9600
Databits	8
Parity	None
Stop bits	1
Flow control	None

Select OK at the bottom of the window.

5. Select File from the main menu bar, then select Properties. Select the Settings tab, then the ASCII Setup...bottom. Under "ASCII Receiving", check off the box marked "Append line feeds to incoming line ends". Select the OK button at the bottom of the ASCII Setup window. Select the OK button at the bottom of the Properties window to register the settings.
6. Select Transfer on the main menu bar, then select Capture text. At this point a window will pop up labeled "Capture Text" and prompt for a file name to be entered.

An appropriate file name such as "1010meter.txt" is to be entered in the File selection bar. Select the "Start" button to begin the communications session.

7. Insert the read meters card into the 1010. The meters will be displayed on the main screen of the hyper-terminal program.
8. Once the meters are finished scrolling, select "Transfer" under the main bar and under "Capture Text" select "Stop".
The meter readings have now been saved to a file that was specified in step (1010meter.txt). The txt file can be opened or manipulated in the desired fashion through an appropriate application such as Workpad.
9. Close the hyper-terminal application and select "YES" when prompted to disconnect. When prompted to save the session "96N81.", selecting yes will create an icon under the hyper terminal folder named 968N1.HT
10. In future, double clicking on the "968N1.HT" icon created above will launch the hyper-terminal application with the settings preset so that the meters are ready to be captured immediately starting at step 7.

4.5 Clearing the Meters

In order to clear the meters, the operator must insert the “Clear Meters” control card while the Front Panel button on the 1010 is pressed. The operator must hold the button while the card is being read by the reader.

If the clearing was successful, the display will show “CLEAR”. If the front panel button was not held while the “Clear Meters” control card was inserted, the display will show “ER 24” indicating that the meters were NOT CLEARED.

In order to clear the meters, simply insert the card again with the front panel depressed.

5. INSTALLATION

The Card Reader may be mounted in any convenient location on or next to the controlled machine. Double sided foam mounting tape works well to secure the reader to most surfaces. Surfaces must be clean and oil free.

5.1 Mechanical

Mount the reader securely to the machine or to a stand or desk using double stick foam mounting strips. In less secure locations, it is advisable to bolt the reader to the case of the machine. The screw length should be the thickness of the machine or stand surface plus $\frac{1}{4}$ inch.

5.2 Electrical – Single Price Application (Using the key counter connector-Connector)

Most copy machines are provided with a key counter (“Auditron”) connector, or at least a place to mount a key counter connector. In such cases, the connector itself is wired to the machine using a secondary connector; hence the term key counter connector-connector. In such cases, the connection to the machine can be accomplished as shown in Figure 1.

- a. Locate the key counter connector or the location where such a connector could be mounted.
- b. Remove the paneling from the machine such that the wiring to the connector is accessible.
- c. Check to see if the external key counter connector has a secondary, small, 4-pin connector inside the machine or as part of the wiring harness.
- d. If the internal connector is available, and if you do not intend to use the key counter as an access device, simply unplug the external key counter connector from the internal plug, connect the wire ends of the extension cable supplied with the card reader to the appropriate points on a mating connector, and plug the card controller into the internal key counter connector-connector.

- e. If your machine does not have a key counter connector, or if you do not choose to disable the counter, you may simply connect the wires to the two circuits involved using the clip-on "T-Splice" connectors supplied with the card reader.
- f. The wire link or jumper normally used to enable the machine will have to be located and the connection broken so that the machine can be controlled from the card controller.

5.3 Multiple Pricing Applications

The Model 1010 is designed to allow the operator the option of charging two different prices for different machine functions.

The most common use of this option is to charge for two different paper sizes.

To achieve this, the following set-up can be used as a guideline:

1. Attach Black and White enable as per single price
2. Attach Black and Red across the 24 volt paper clutch for small paper (8-1/2 x 11)
3. Attach Yellow and Violet across the 24 volt paper clutch for large paper (8-1/2 x 14)
4. Attach Green to chassis ground

***NOTE: Contact Boscop Inc. or your copier dealer for assistance.**

5.4 Wiring Guide

Relay Contacts (Normally Open)

Black
White

Pulse Count (12 to 24 Volts)

Red	
Brown	Price 1
Yellow	
Violet	Price 2

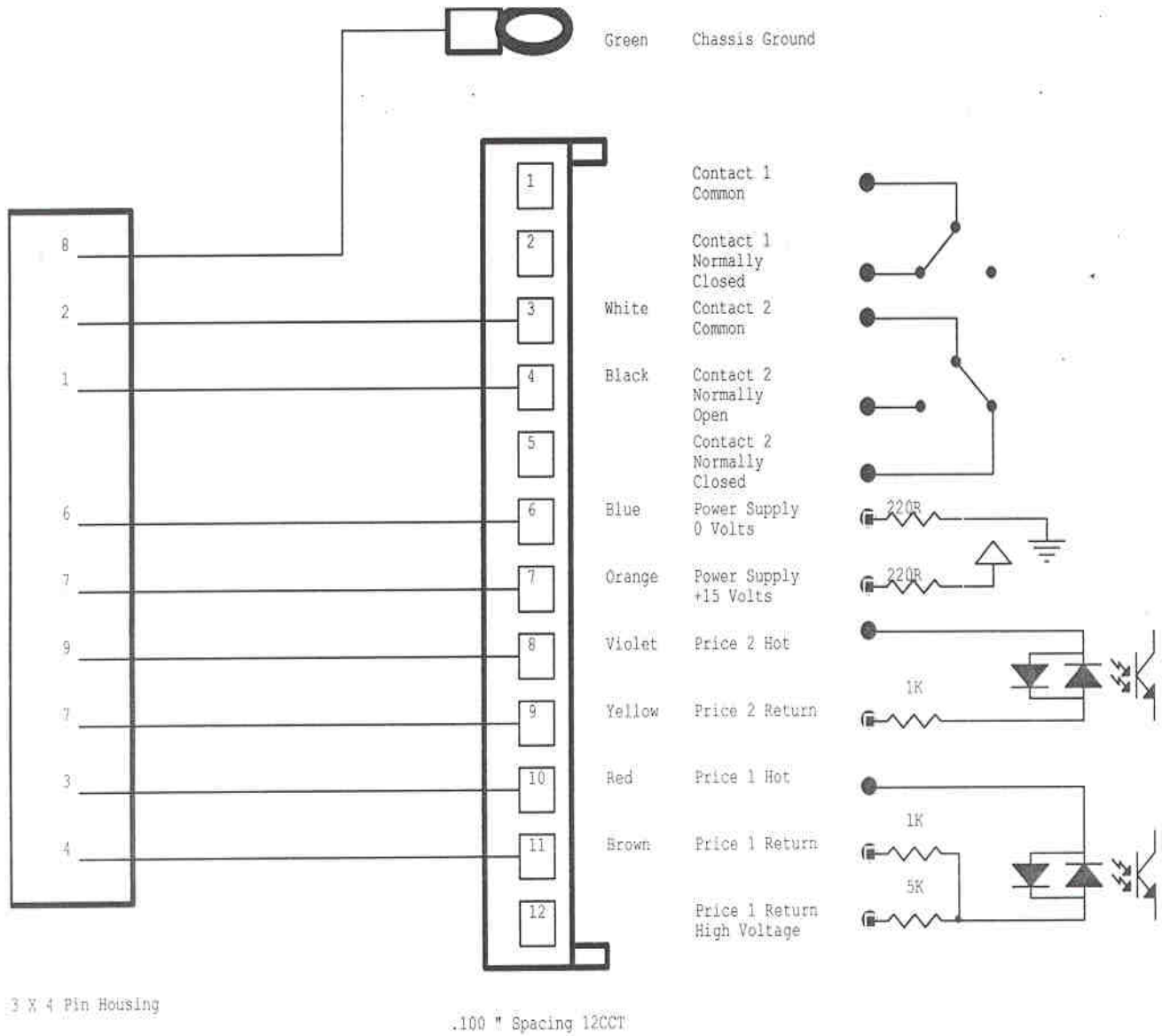
Chassis Ground *Must be attached to copier chassis ground

Green

15 Volt DC Supply (Low Current Supply suited for providing a pulse voltage on copiers that provide a contact closure for a Billing Signal).

Orange (+)
Blue (-)

1010 Control Cable Pinout



5.5 Machine Wiring

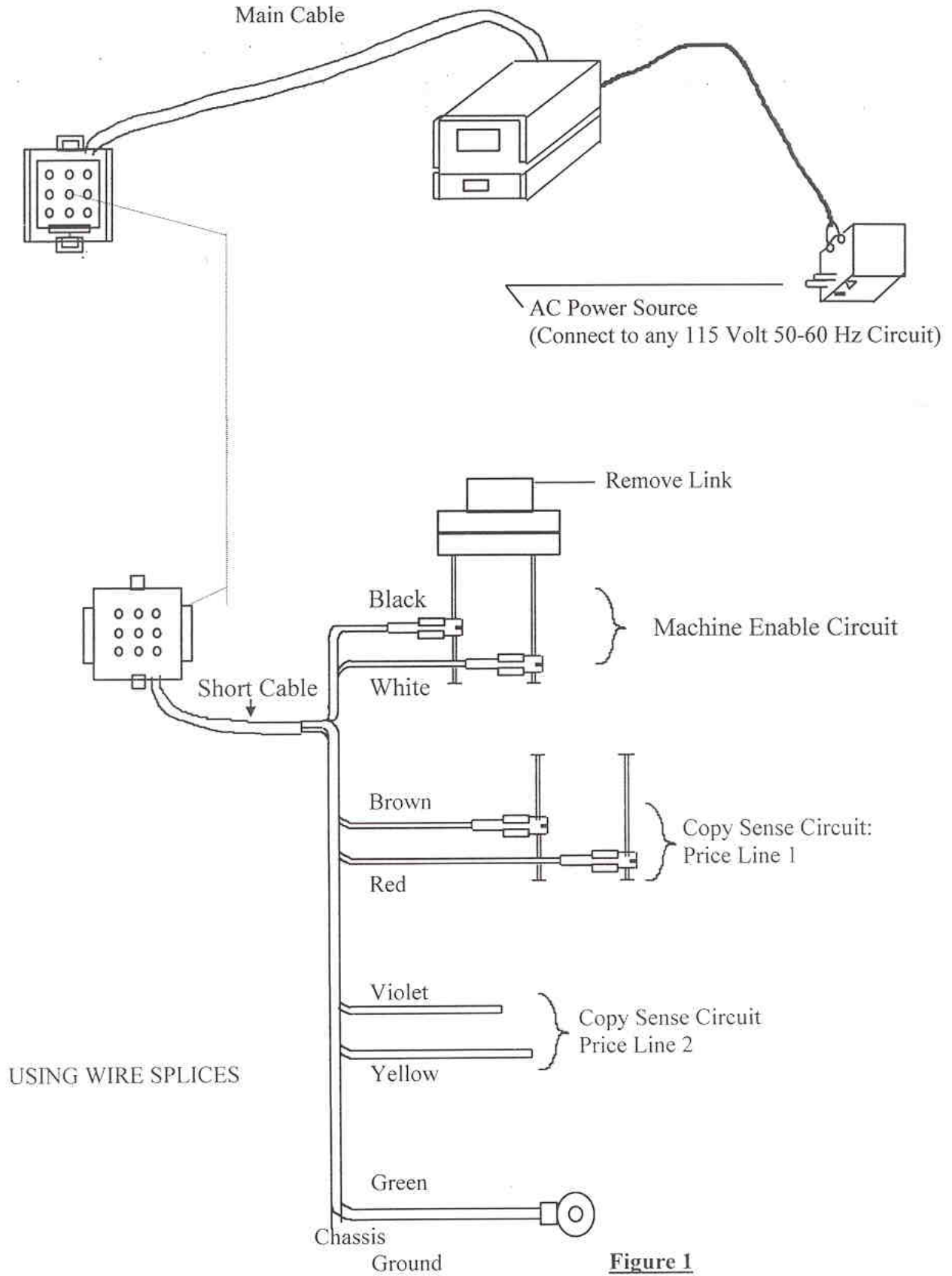


Figure 1

6.

Cash Card Reader Installation Data**Model: 1010 VER 3.26****Serial #:**_____

Date_____ Customer_____ Building_____

Address_____

Contact_____ Phone_____ Fax_____

Equipment & Model_____

Dip Switch Settings

BANK "A" (ON)_____ BANK "B" (ON)_____ ROM CODE_____

BANK "C" (ON)_____

Parameter Settings

I.D.#_____ CASH 1.A_____ CASH 1.B_____ CASH 1.C_____ CASH 2.A_____

CASH2.B_____ CASH 2.C_____ UNIT"s PL/1_____ UNIT"s PL/2_____

PULSE_____ BLIND_____ DELAY DISABLE_____ EJECT DELAY_____

AUTO-EJECT_____ LARGE CASH_____ LARGE UNIT_____

TENTH DISP_____ HOLD_____ 2ND INPUT_____

SITE A_____ SITE B_____ SITE C_____

Wiring Information

Black (Enable)_____ Red (Pulse 1)_____ Purple (Pulse 2)_____

White (Enable)_____ Brown (Pulse 1)_____ Yellow (Pulse 2)_____

Orange (+15V)_____ Blue (15V Return)_____ Green (Ground)_____

NOTES:

7. Frequently Asked Questions

1010 Card Reader

For Error messages, refer to Error Code list.

What do each wire on the copier control cable represent?

Black/White – Enable

Red/Brown – Count

Green – Ground

The copier is enabled all the time.

Disconnect the card reader cable from the cable connected to the copier. Does the copier remain enabled? Yes, contact the copier technician. If no, check cable connections, then cycle power to reader. If that does not correct the problem, contact Boscop Inc. (603-744-2188).

When a card is inserted, the copier does not enable.

Check all cable connections from the reader is connected to the copier. If still a problem, remove the reader from its case and at the back, on the right side, there is a clear relay. Insert a card and check to see if the relay moves. If it does check for continuity on black & white wires. If the enable wires have continuity with a card in, it's a copier problem. If no continuity, contact Boscop Inc. (603-744-2188).

The card reader is not charging for copies or is counting for too many. Why?

Check the Brown/Red wires to ensure that the copier is sending the pulse.

Check the pulse and blind time using the Command Card SET PARAMETERS.

How to remove a card jammed from a reader.

Unplug the reader and remove the reader from its case and locate the white gears on the right side when facing the front. Turn the gears counterclockwise until the card comes out. For stubborn jams, follow the procedure above but push down on the roller on the underside of the reader.

The card goes in and the value flashes and then the card is ejected.

The value on the card is not enough to pay for copying. Add more value to the card.

How are the parameter settings set?

Use the Command Card SET PARAMETERS.

The parameter will not go to zero, it just increments. Why?

The procedure to set the parameter to zero is as follows: hold the front button in, then insert the parameter card in the reader, release the button, then remove the card.

During a copying sequence, the card ejects automatically.

Check the AUTO Parameter, set it to NO. This parameter is used to automatically eject a card when there is no activity between the reader and copier.

The reader does not display the Hello message.

Ensure that the reader is getting power from the outlet. Plug the unit into another outlet in another room. Check the power cable for any broken wires.

7.1 EXPLANATION OF TERMS USED FOR COPIER READERS

Audit Report Printer: An optional serial printer can be attached to the printer output jack on the main board. When the printer is attached and the device is requested to print, a hard copy of the account information will be printed. Refer to the specific product manual for details.

Auditron **The device provided by photocopy manufacturers to**
 /Key Counter easily allow the interface of external audit devices such
/Foreign Interface: as Coin-Ops, Card Readers, Keypads, etc. These auditron devices
 range from simple 4 wire plugs hidden inside the copier to external
 foreign interfaces that are located outside the copier.

Blind Time: The time between deduct pulses that the controller ignores the deduct
 signal. This can be used to block out "relay bounce" from the copier or
 when the copier gives 2 or more pulses close together per page printed.
 Be careful that the blind time is not set too high as this would "ignore" the
 pulse from the next page. To test, run a 5-page job. If less than 5 pages
 deduct, **DECREASE** the blind time. If more than 5 pages deduct,
INCREASE the blind time. This test should be repeated for all paper
 sizes available to ensure proper timing.

Cancel: See Relay Drop Time section.

Card Format: The format of the data on the card is referred to as card format. Often
 the format is named after the company that manufactures the readers
 that utilize it. I.E. ACT, Daynl, ICS, ITC and XCP formats, etc. Some
 formats are named for card the issuing body such as MONDEX or
 VISACASH. Many debit readers can be setup to read other formats of
 cards through settings and/or specific firmware revisions.

Card Reader: Device that accepts the card, determines the value of the card and
 transfers the value of the card to the control board or enables the copier,
 etc. When the transaction is finished and the eject button is pushed, the
 card reader writes the new value onto the card and returns the card to
 the customer. The card readers used are the 10XX-YY-Z series, where
 XX=application, YY=card size (CR-50 or CR-80) and, in the case of CR-
 80, Z determines the track position on the card that the magnetic stripe is
 located (2, 4, 5). Common is CR-80 TRK 4

Card Size Two standard card sizes are the CR-80 (typical credit
 /CR-50 card size-approximately 54 mm) and CR-50 (narrower
 /CR-80: card-approx. 44mm). These are standard size, based on ISO
 /CR-80: standards.

Card Swipe:	A device that reads an encoded card and transfers the data serially to another device (i.e. 7500-SW, cash register, etc.). This device only reads the card and cannot write. This unit also has no motor and the data is read by manually “swiping” the magnetic stripe across a magnetic read head.
Card Track:	The location of the magnetic stripe on the card. The locations are based upon ISO standards. Some common tracks are 5.5, 2, and 4, and in the case of CR-50, centered. The advantage to the CR-50 centered track is the card can be read/written from either end.
Clutches /Pick-up Clutch /Registration Clutch /Paper Feed Clutch:	A clutch is an electromagnetic solenoid that receives a short voltage pulse to allow movement of a paper roller inside a photocopier or printer. These voltage pulses typically range from +5V to +24V and last approximately 50 milliseconds. A registration clutch is typically the main feeder clutch leading into the fuser process of a copier or printer. The paper feed clutch is the clutch that is pulsed to allow the paper pick-up in a paper tray.
Command Card Switch:	An internal DIP switch located on the top board of the reader that must be set correctly to allow use of command cards. This is typically switch 6 on BANK A (front DIP switch) and it must be in the ON position to allow command cards. For security reasons, it can be turned off except when using command cards.
Command Cards Control Cards Set-Up Cards:	Command Cards are used by various readers to do Administrative tasks. Some of these tasks include: Setting parameters, Reading meters, Clearing meters, Encoding cash or units onto user cards, and Logging in or out operators. See Command Card Switch section for important note.
Communication port:	See Serial Port section.
Control Cards:	See Command Cards.
Count:	See Exit Delay section.
Delay Disable:	See Relay Drop Time section.
Delay Eject:	See Exit Delay section.
Eject Button:	User accessible button on the front of card readers to return the users card. This button is also used to set parameters and exit meter-reading routines.

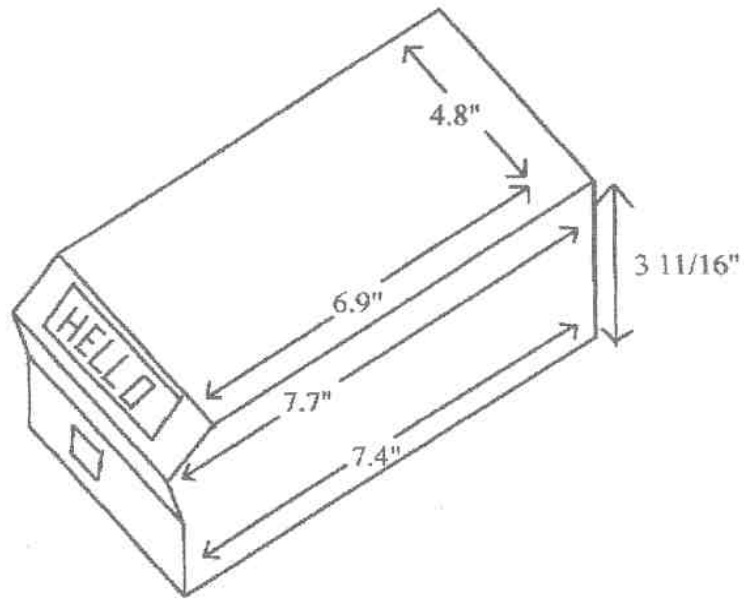
Exit Delay /Delay Eject /Count:	The time between the eject button being pressed and the return of the card. This should be set high enough so that the last copy is counted before the card or coins are returned. This can be determined by timing the print cycle from the press of the print button and the charge being deducted on the coin-op display and adding .5 seconds.
High Field:	A magnetic data stripe with high coercivity in the range of 4000 oersted (generally a black color stripe). This is a higher security medium that takes a much larger magnetic field to encode. Typically, the write CCT drives through a 15-ohm resistor. See Low Field.
Key Acct. Software	See Serial Port section.
LED LCD Display	The display used to show information on status, etc. to the user. There are two main types used. LED (Light Emitting Diode) and LCD (Liquid Crystal Display) are the proper names for these displays.
Limits:	Pre-determined limits on number of copies/prints available by account. Applies to 7500 and 101 executive drives.
Low Field:	A magnetic data stripe with low coercivity in the range of 400 oersted (generally a brownish color stripe). This is a lower security medium equivalent to a typical bankcard that can easily be affected by a magnetic field. Typically the write CCT drives through a 220 to 330 ohm resistor. See High Field.
Machine ID#	An arbitrary number, the operator can assign to the device to track which unit is making what copies. This number will be printed on the audit reports if an audit report printer is used. This ID number is critical for POS cash register use where it must be set to 1.
Parameter /Option	Administrator settable variables to determine how the system will function, values to be charged, card compatibility, etc., These are either numerical values, ON/OFF, Yes/No, or similar choices.
Password:	Many functions and parameter settings are password protected. These passwords vary and give certain access to different menus for the administrator.
Power Adapter	See Power Supply section.

Power Supply /Power Adapter /Transformer	A Class 2 device (wall plug type) that converts the 120 volt power supplied by the mains to a lower AC or DC Voltage. This lower voltage (typically 16 volts) is then utilized by the controller. Using a class 2 device makes the product safer as there is no direct path to 120 volts.
Price 1:	The value to be deducted or charged for prints under normal circumstances when the Price 2 shift is not activated or is not connected. It is worth noting that this price can be set to charge different amounts for card or cash prints to encourage card use on some ITC devices.
Price 2:	The value to be deducted or charged for prints when the Price 2 shift circuit is energized by the copier. Typically, this is used to charge for prints made onto larger paper or colour prints. This price can also be set to charge different amounts for card or cash prints on some ITC devices.
Printer Settings:	Typically, printers are used to obtain and audit readings. To allow for maximum versatility, most printers and many controllers have settable parameters included: Baud Rate, Parity, Data Bits, Stop Bits, Null Characters, etc. The settings of the printer and controller must match for proper printout. See Null for explanation.
Pulse:	The minimum amount of time (typically in milliseconds) that the controller must be activated through its deduct circuit to consider a copy to have been made. This is settable on most controllers so as to match the characteristics of the device being controlled. When "ghost" deductions happen randomly, this setting can often be increased to ignore noise. When copies are not counted at all, the pulse may have to be lowered as the copier may be supplying a very short signal. Most copiers provide a pulse of at least 50 milliseconds. Also used with Blind Time.
Relay Drop Time /Cancel /Delay Disable:	This is the time between pressing the eject button and the opening of the Enable relay. On some copiers, if the enable is opened midcycle, the paper will jam inside the copier.
ROM Code:	This is the last digit in the ROM Group Code (see STX Code for proper settings).
Serial Port Communication port Key Account Software Actors Software	Some devices (1040 Plus, 7500, 101, etc.) have a built in serial communication port to interact with a computer or Audit Report Printer to report meter readings. Special communication packages are also available for some devices to upload and download information including parameters, account information and meter readings. (i.e. 7500 & Key Account, 1010 and Actors)

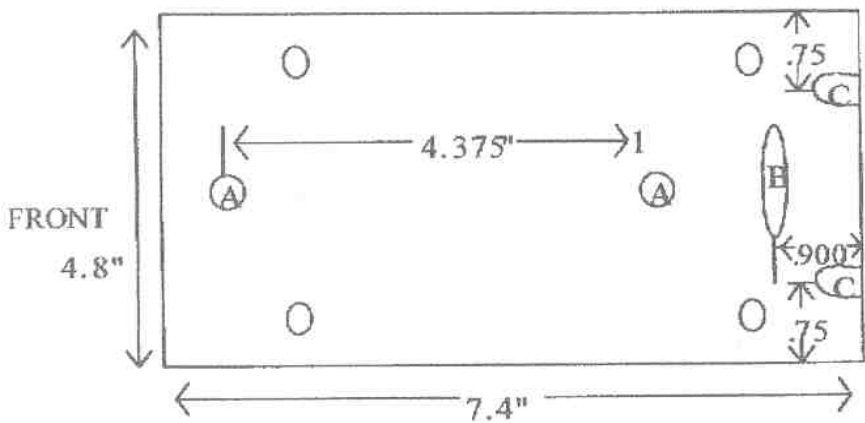
- Set-Up Cards:** See Command Cards
- Site Code:** This is a unique code assigned to the location so only cards at that location can be used. Site Codes are assigned in groups called ROM groups (see ROM and STX). Up to 3 Site Codes can be set on each Coin-Op for different pricing applications.
- Smart Card:** A card with a memory chip embedded in it to store data instead of storing data on a magnetic stripe. The smart card has exposed terminals for data transfer to a Smart Card Reader device. The data contained on the smart card is encrypted according to the specific application.
- Software/Firmware:** The program that runs within the controller. Contained on an EPROM (or, in some cases, a microprocessor), it can be easily upgraded by exchanging the EPROM. **NOTE:** EPROMS are very fragile and sensitive to static electricity so handling precautions should be observed. The label on the EPROM does not necessarily indicate the orientation of the EPROM to the socket! Always double check that the notch on the EPROM matches the notch on the socket.
- STX Code:** This is the first digit(s) in the ROM Group. This is set by determining the start byte(s) of the ROM Group Code. For example: in ROM Group C1A, the start byte is "C". This is entered in DECIMAL (i.e. 12) at the parameter STX Code.
- | ROM Group | STX Code | ROM Code |
|-----------|----------|----------|
| B9A | 11 | 9 |
| C0A | 12 | 0 |
| C1A | 12 | 1 |
| C2A | 12 | 2 |
| E70 | 231 | 0 |
| E71 | 231 | 1 |
| 40A | 4 | 0 |
- Transformer** See Power Supply section
- Troubleshoot:** To diagnose a specific problem or malfunction in a device through the process of elimination of working functions and components vs. non-working functions and components through a logical, methodical approach and process.

8.

TECHNICAL SPECS
1010, 1010e, 1015, 1035 READERS
Approximate Case Dimensions



BOTTOM VIEW



- A = 10 x 32 Threaded Hole
- B = Slot .2x 1.2
- C = Notch .2x .65

NOTE: ALL DIMENSIONS IN INCHES