

# *Cameo<sup>™</sup> PEP*

Portable Encoding Printer

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## User's Manual



**Zebra Technologies International, LLC**

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## **FCC Compliance Statement**

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

Changes or modifications to this unit not expressly approved by Zebra Technologies Corporation could void the user's authority to operate this equipment.

## **Canadian Compliance Statement**

"IC:" before the equipment certification number signifies that the Industry Canada technical specifications were met. It does not guarantee that the certified product will operate to the user's satisfaction.

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*Magnetic Stripe Card reader/Encoder*

*Keypad*

*Serial  
Communications  
Port*

*IR window  
(for optional IrDA  
communications)*

*Battery Latch*

*Media Cover*

*THE CAMEO™ PEP PORTABLE ENCODING PRINTER*



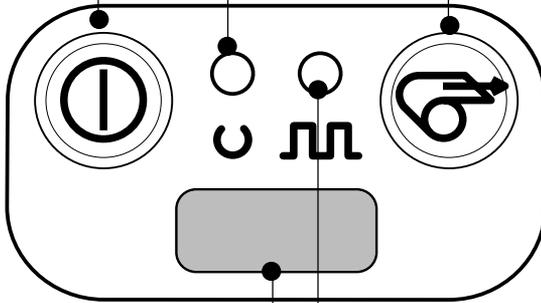
# CONTROLS

## Keypad Functions

*On Switch:  
momentary action  
turns on unit*

*Power Light:  
Indicates unit  
is turned on  
Flashing light  
indicates low  
battery*

*Feed Switch:  
Advances media  
when held down.*



*IR Window;  
must be aligned with  
corresponding window on host  
for IR communications to occur.  
(Units with IR option only)*

*Status Light: Steady  
light indicates printer is  
either out of media, or  
media cover is open.  
Flashing during data  
transmission between  
host and printer  
indicates normal  
wireless operation.*

## Self Test

Cameo PEP can perform a self test which will print a line of interlocking "x" characters to insure all elements of the print head are working, and then print out the version of software loaded in the printer. Refer to the Troubleshooting section for details on interpreting the self-test.

The self test is activated by the following key sequence:

1. Press the "FEED" key
2. While still holding down the "FEED" key, turn on the printer by pressing and releasing the "ON" key.
3. Keep the "FEED" key depressed until self test starts.

The printer will perform the self test and remain on.

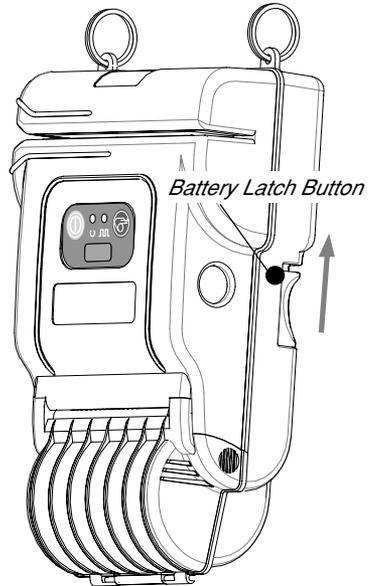
## BATTERIES AND CHARGING



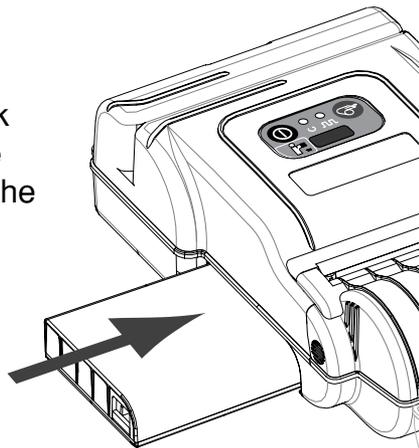
*Battery terminals are recessed to prevent accidental short circuiting of the battery. Allowing these terminals to contact conductive material will create a short circuit which could cause burns and other injuries or could start a fire.*

### Removing and Replacing Battery Packs

To remove the battery pack from the Cameo PEP: Slide the Battery Latch button in the direction shown in the top illustration, and slide the battery out.



To replace the battery, insert the end of the pack with the contacts into the battery well and slide in the direction shown in the illustration at right.



*continued next page*

## Conditioning Battery Packs

### IMPORTANT



*Cameo batteries must be cycled several times before maximum capacity is realized.*

*A battery is "cycled" by fully charging it, then fully discharging it through normal use.*

### Chargers

Listed below are the specifications for the Cameo PEP chargers:

#### **UCN72-4:** (p/n series AC15482-tab)

Designed to charge up to four batteries simultaneously. Battery packs may be charged separately or while plugged into the printer. Typical charge time is 90 minutes. Switch selectable 110/220 V.A.C. input voltage. Supplied with line cords compatible with most international standards.



*Do not attempt to charge batteries with the UCN72-4 Charger while printing. Attempting to print while charging batteries can result in unreliable charging.*

Part numbers will vary depending on specific country of use. Consult factory for complete part numbers.

#### **UC72N:** (p/n series AT15244-tab)

A wall mounted single charger . Universal 110 to 230, 50-60 Hz. VAC input. Multiple plug configurations comply with most international standards.



*Do not attempt to charge batteries with the UC72N Charger while printing. Attempting to print while charging batteries can result in unreliable charging.*

Part numbers will vary depending on specific country of use. Consult factory for complete part numbers.

## Low Battery Shutdown

The Cameo PEP monitors the battery charge level in software and will cause the Power LED to flash as the battery becomes depleted. When the Power LED begins to flash, the printer should be shut off and the battery pack recharged or replaced. The Cameo PEP will automatically shut off if the battery become severely discharged.

## Safety Warnings



*Use of any charger not approved specifically by Zebra for use with Cameo series NiMH batteries could cause damage to the battery pack or the printer and will void the warranty.*

## INSTALLATION OF MEDIA

The following details media installation:

1. Turn unit off.
2. Squeeze the two finger grips on either side of the media compartment cover. Rotate the top back to reveal the paper compartment.
3. Drop a new roll of paper into the compartment. Media should feed from the top of the roll and the roll should fit between the edge guide and the right hand wall.

*The inner core on the media roll should be Ø.75" [ 19 mm] or larger to prevent the roll from jamming.*

4. If using narrow media, adjust the edge guide by snapping it into the desired slots on the printer body. Insure the media can turn freely.

Use the table below as a guide for allowable media widths:

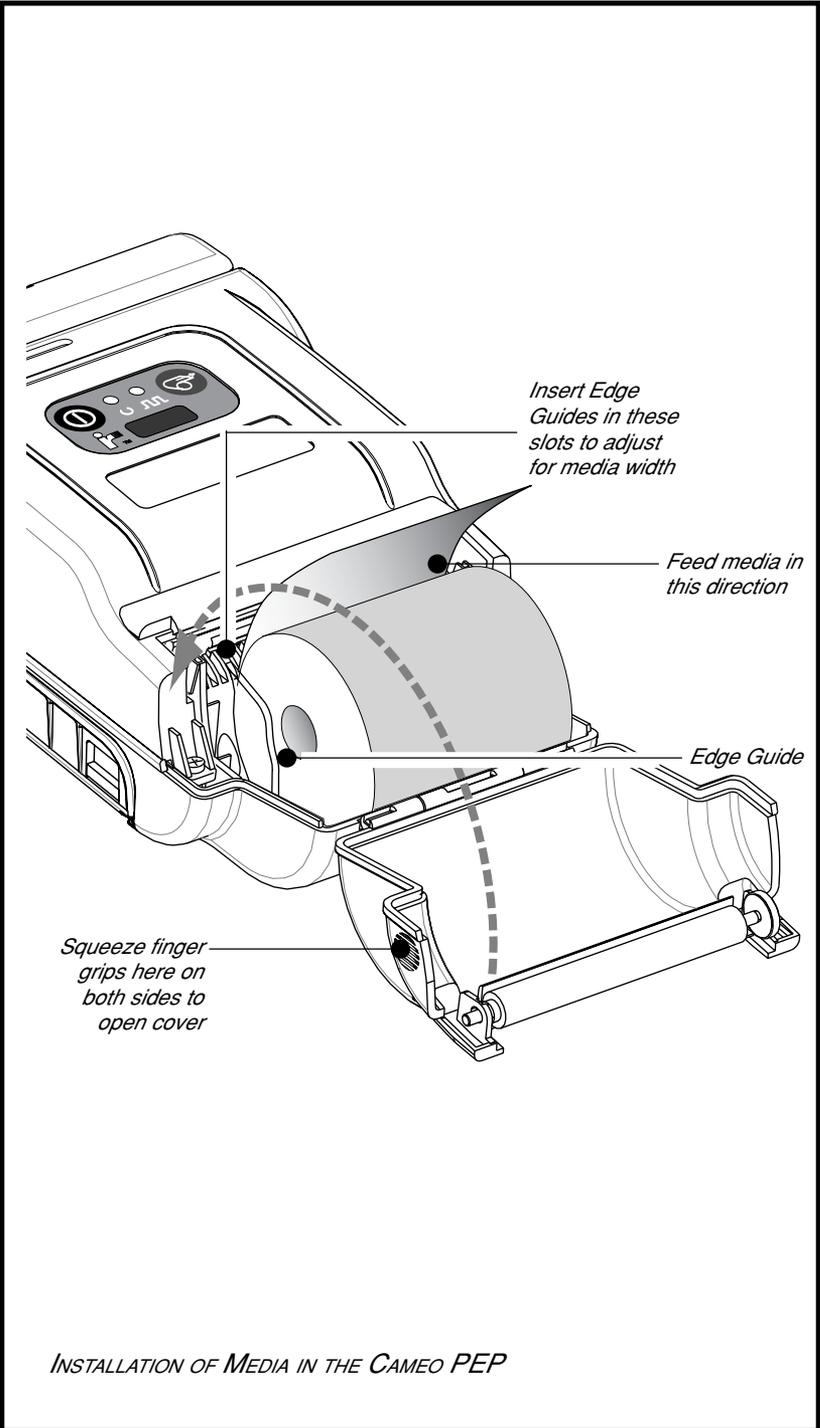
### Cameo PEP Media Widths<sup>1</sup>

1.47 (37.3 mm)
1.60 (40.64 mm)
1.72 (43.7 mm)
1.85 (47.0 mm)
1.97 (50.0 mm)
2.10 (53.3 mm)
2.22 (56.4 mm)
2.35 (59.7mm)
2.47 (62.7 mm)
2.60 (66.0 mm)
2.72 (69.1 mm)
2.85 (72.4 mm)
2.97 (75.4 mm)
3.10 (78.7 mm) <sup>2</sup>

1. All dimensions 2002 2002 mm]

2. This width available only with edge guide removed.

5. Close the cover while holding the free end of the media roll.
6. Insure the cover is securely latched before beginning to print.



*Insert Edge Guides in these slots to adjust for media width*

*Feed media in this direction*

*Edge Guide*

*Squeeze finger grips here on both sides to open cover*

*INSTALLATION OF MEDIA IN THE CAMEO PEP*

# MAINTENANCE

The Cameo PEP will provide reliable service if a few simple guidelines are followed. The printer should be cleaned approximately every two weeks or more often, depending on usage and the type of media being employed. Components of the printer that require periodic maintenance are the print head, print roller (platen), and the media sensor. When cleaning, please use only isopropyl alcohol.. Always use Zebra label or ticket stock for maximum print quality and extended printer life.

## **Cleaning the print head:**

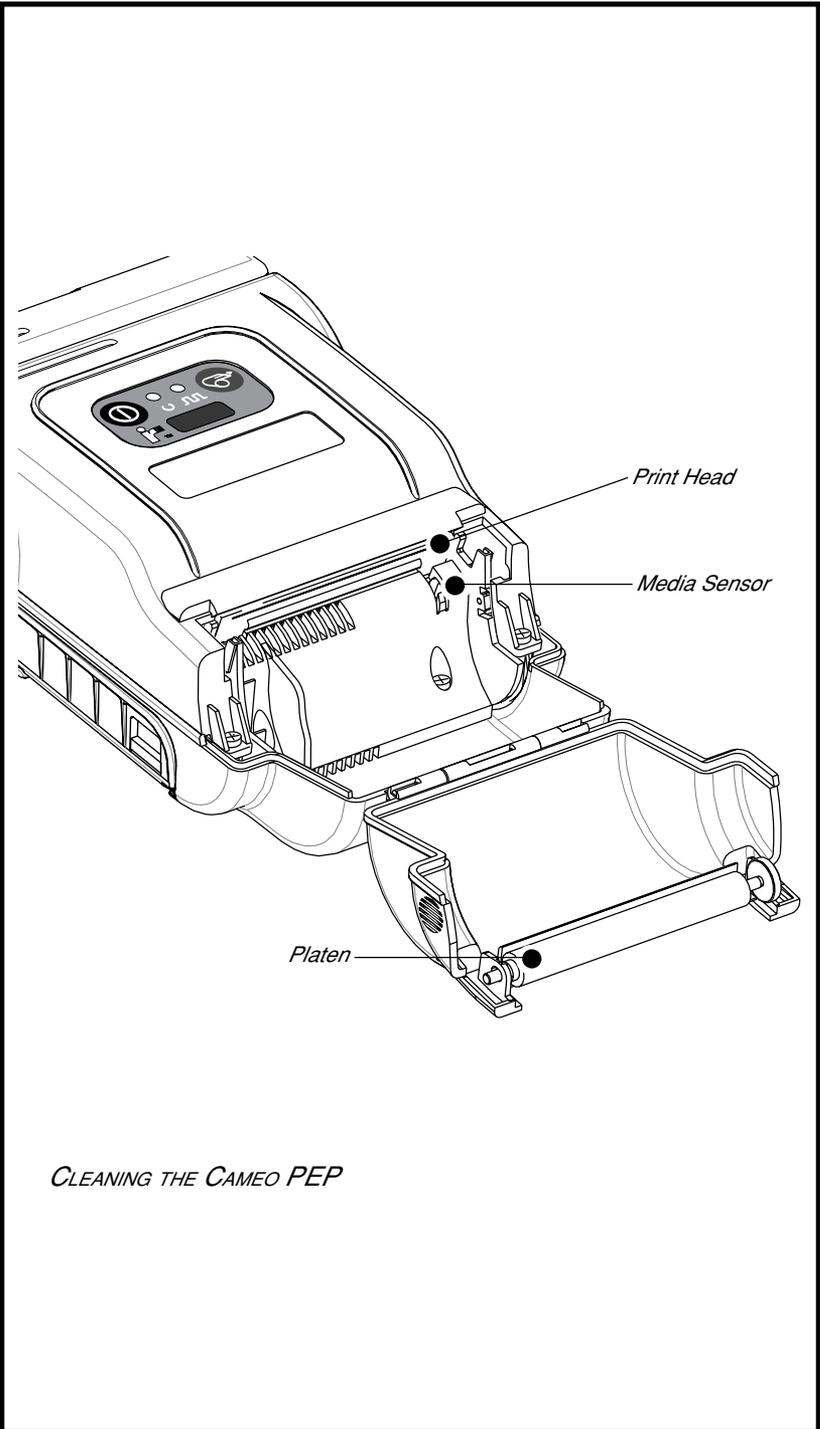
1. Always turn the printer off prior to any cleaning operation.
2. Open the printer by squeezing the finger grips on either side of the media compartment cover.
3. Swing the media compartment cover open.
4. Use the cleaning pen supplied with the printer and/or alcohol and cotton swabs to clean the surface of the print head.

## **Cleaning the platen (print roller):**

1. Open the printer by squeezing the finger grips on either side of the media compartment cover and swinging it open.
2. Gently clean the platen with the cleaning pen supplied with the printer and/or alcohol and a cotton swab while rotating the platen.

## **Cleaning the Media Sensor**

The Media sensor is located inside the media compartment under the print head. Blow out any dust deposits carefully, then finish cleaning with the cleaning pen supplied with the printer and/or alcohol and cotton swabs.



*CLEANING THE CAMEO PEP*

# MAGNETIC CARD ENCODER (MCE)

The magnetic stripe reader/encoder is used as follows:

## Reading Cards

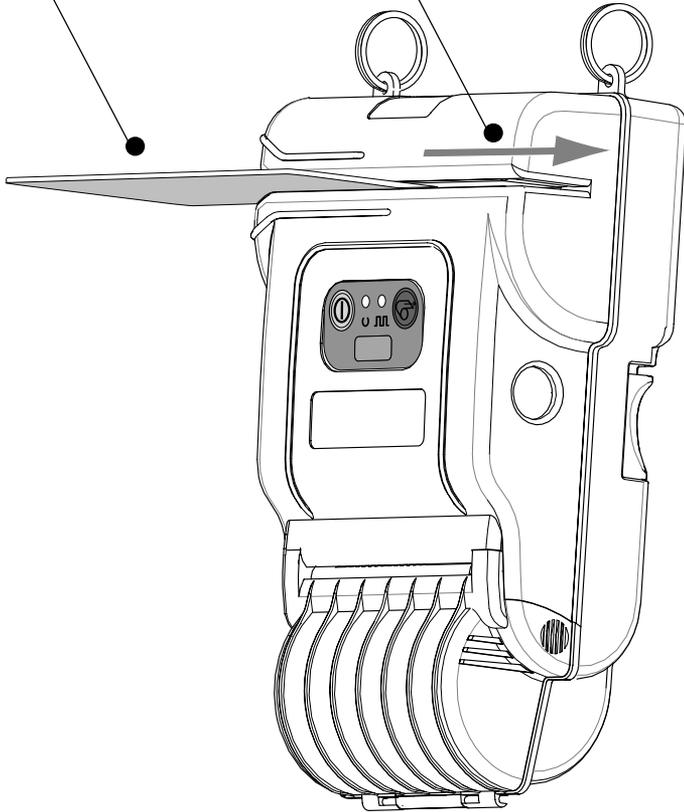
1. A flashing status light indicates the printer is available to scan. Insert the magnetic stripe of the card being read or encoded into the printer. The stripe must face the top of the printer as shown opposite.
2. Slide the card through the slot in the direction shown. Depending on the application software, the printer will sound a beep on a successful scan.

## Encoding Cards

1. When the printer is ready to encode a card, it will beep once.
2. Slide the card through the slot as though reading it as described above. The magnetic stripe must be inserted into the body of the printer and face the top of the printer as shown opposite.  
Slide the card with one smooth motion. Avoid jerking the card while encoding.
3. The printer will beep three times if the card was successfully encoded.

*Stripe faces this way*

*Slide card in this direction*

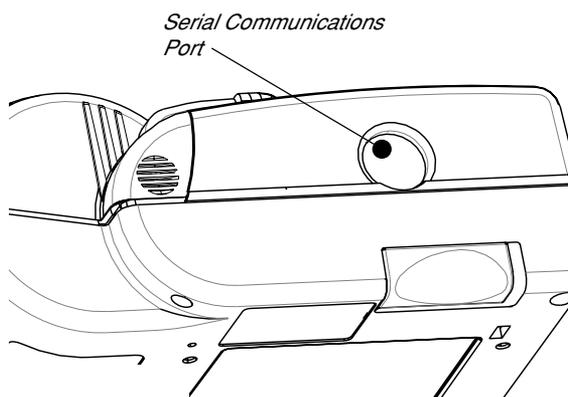


*USING THE CAMEO PEP MAGNETIC CARD ENCODER*

## COMMUNICATING TO THE PRINTER

The printer must establish communications with a host terminal which sends the data to be printed. Communications occur in three basic ways:

- By a cable between the printer and its host terminal
- Infrared (usually by means of the industry standard IrDA protocol)
- Using the Bluetooth™ wireless protocol



*CAMEO PEP SERIAL COMMUNICATIONS PORT*

### **Cable Communications**

The Cameo PEP printer can communicate by cable; the specific cable supplied with your printer will vary with the host terminal. The 8-pin circular connector on your communications cable plugs into the serial communications port on the side of the Cameo PEP printer. It is keyed to assure correct alignment; do not try to force it if it does not plug in. The other end of the cable must be plugged into the host terminal. Communications between the terminal and the printer is controlled by the applications running on the terminal and the printer.

## **IR Communications**

Printers equipped for infrared (IR) communications are identified by a small “IR” logo on the unit’s keypad. IR allows wireless communications between the printer and the host terminal. IR units can also communicate with a cable as detailed above, however, IR functions are disabled when the cable is plugged in. Cameo units with the IR option can be configured to conform to the standard IrDA communications protocol

### *Linking a Printer to an IrDA Host*

IrDA compliant terminals will automatically initiate communications to the printer. First insure that there is a direct line of sight between the printer and the terminal that will be sending data. The IR window on the keypad (refer to the Controls section of this manual) of the Cameo PEP must face the corresponding window on the terminal to properly send and receive signals. An IrDA compliant terminal will seek out any linkable devices and establish communications between them, even turning the printer on if necessary.

*continued next page*

## Bluetooth™ Networking Overview

“Bluetooth” is a worldwide standard for the exchange of data between two devices via radio frequencies.

Bluetooth radios are relatively low powered to help prevent interference with other devices running at similar radio frequencies. This limits the range of a Bluetooth device to about 10 meters (about 32 feet).



### *Exposure to Radio Frequency Radiation*

*The radiated output power of this internal wireless radio is far below the FCC radio frequency exposure limits. Nevertheless, this Bluetooth radio must be used in such a manner that the antenna is 2.5 cm or further from the human body.*

*The radio and antenna are mounted internally in this printer in such a way that, when the printer is used in a standard configuration (belt clip, soft case, shoulder strap), the 2.5 cm distance from the users body will be met. Do not use the printer in an unauthorized manner.*

*The internal wireless radio operates within guidelines found in radio frequency safety standards and recommendations. The level of energy emitted is far less than the electromagnetic energy emitted by wireless devices such as mobile phones.*

In order to exchange data, two Bluetooth enabled devices must establish a connection. Bluetooth software is always running in the background, ready to respond to connection requests. One device (known as the *master* or the *client*) must request a connection with another. The second device (the *slave* or the *server*) then accepts or rejects the connection. A Bluetooth enabled Cameo will always act as a slave device. The miniature network created by this connection is sometimes referred to as a “piconet” and in theory can consist of several Bluetooth enabled devices.

Each Bluetooth Cameo has a unique Bluetooth Device

Address (BDA) loaded into its radio module when manufactured.

### *A Typical Bluetooth Connection Sequence*

In this simplified sequence “Joe’s Terminal” is a Bluetooth ready hand held terminal running an application that needs access to a printer.

1. Joe’s Terminal performs a search of its “piconet” (a Device Inquiry) and determines that there are four Bluetooth devices in the vicinity.
2. Joe’s Terminal queries each of the four nearby devices to determine which services they provide (a Service Discovery). The Bluetooth enabled Cameo “Sandy’s Printer” offers the printing service.
3. Joe’s Terminal sends a print connection request to Sandy’s Printer.
4. Sandy’s Printer evaluates the request and determines that Joe’s Terminal is permitted to use the print service, *but only if the correct password is submitted.*
5. Sandy’s Printer queries Joe’s Terminal for the password (Authentication).
6. Joe’s Terminal returns the correct password and the print connection is established.
7. After Joe’s Terminal is finished printing it disconnects with Sandy’s Printer. (Some Bluetooth services disconnect automatically, others must be closed manually.)

There are several layers of security in the Bluetooth system, so this sequence may not be a completely accurate representation of how your printer may function in a Bluetooth environment. For the most part, communications using the Bluetooth protocol are initiated and processed without any operator intervention, much like the IrDA system described previously.

# TROUBLESHOOTING

## **Self Test:**

Perform the self test as described in the Controls section. Unit should print a line of interlocking “x” characters to insure all elements of the print head are working, print out the version of software loaded in the printer and then print two reports. The first report indicates model, ROM version, serial number, baud rate, etc. The second report contains application information. If no second report appears, there is no application loaded.

## **Troubleshooting Guide**

### *No power*

- Check battery, recharge or replace as necessary.

### *Media does not feed:*

- Be sure media compartment cover is closed and latched.

### *Poor or faded print:*

- Clean print head.
- Check/replace battery.
- Check quality of media.

### *Partial/missing print:*

- Check media alignment
- Clean print head.
- Verify media compartment cover is closed and latched

### *Prints illegible characters:*

- Check baud rate.

### *No print:*

- Check baud rate
- Replace battery
- Check cable connection to terminal
- Wireless units: verify communication link between printer and terminal

- Invalid label format or command structure — use Hex Dump Mode for troubleshooting.

### ***Reduced battery charge life:***

- Recondition (cycle) battery.
- Damaged battery-replace.
- Check battery date code: if one to two years old, short charge life may be due to normal aging.

### ***Status light flashing and beeper chimes:***

- No application: reload program.
- If using wireless communications: normal indication while data is being received.

### ***Status light always on:***

- Check media is loaded and media compartment cover is closed and latched

### ***Communication Error:***

- Check media is loaded, media compartment cover is closed and latched, and error light is off.
- Check baud rate.
- Replace cable to terminal.

### ***Card will not Read/Write:***

- Ensure a smooth sliding motion is used and that card remains seated in the MCE slot.



***Never use any sharp objects on the printer mechanism as it could damage the print head. Use only alcohol, the supplied cleaning pen and /or a cotton swab for cleaning the printer.***

# Appendices

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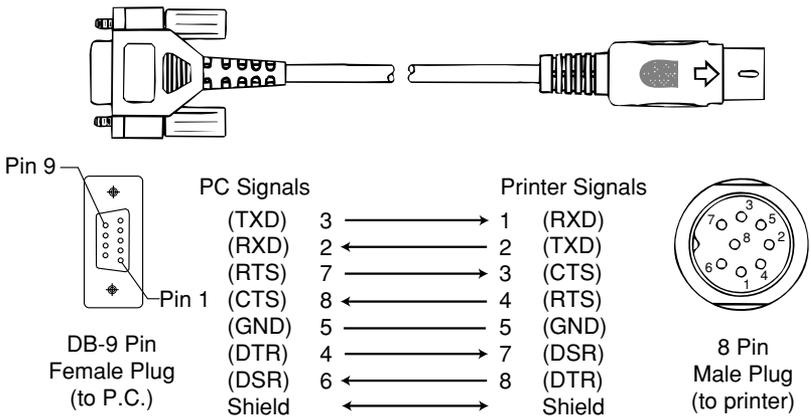
# APPENDIX A

## INTERFACE CABLES

Part Number BL11757-000  
8-Pin DIN to 9-Pin DB PC Cable

This part is also available as a coiled cable under  
Part Number BL15063-1.

For Use With a Personal Computer



# APPENDIX A

## INTERFACE CABLES

Terminal	Cable Part Number	Cord Lgth/Type	Terminal Connector	Printer Connector	Notes
COMPSEE					
Apex II	BL12093-3	8' Coiled	RJ45	8 Pin DIN	
NORAND					
RT1100/1700 Series	BL11537-1	8' /Coiled	6 Pin MiniDIN	8 Pin DIN Over-molded	
RT1100/1700 Series	BL11537-2	12' /Coiled	6 Pin MiniDIN	8 Pin DIN Over-molded	
RT5900 Series	BL12803-1	8' /Coiled	15 Pin D-Sub	8 Pin DIN	
RT1100/1700 Series	BL12804-1	8' /Coiled	6 Pin MiniDIN	8 Pin DIN -Locking	
RT1100/1700 Series	BL13298-1	8' /Coiled	6 Pin MiniDIN	8 Pin DIN Over-molded	Auto ON/OFF
RT1100/1700 Series	BL13309-1	8' /Coiled	6 Pin Mini DIN	8Pin DIN	Auto ON/OFF
SYMBOL					
PDT3300 Series	BL11391-000	8' /Coiled	DB25 male	8 Pin DIN	Must be used with Symbol RS232
PDT4100 Series	BL11757-000	6' /Straight	9 Pin DB Fern.	8 Pin DIN	Adapter - Symbol PN#25-12059-01
PDT3100/3500 /6100 Series	BL12093-1	8' /Coiled	RJ45	8 Pin DIN	a. Power On/Off (+5V) b. Used for the Percon Falcon
PDT3100 Series	BL12093-2	8' /Coiled	RJ45	8 Pin DIN	Power On/Off (DTR Line)
SPT1700 Series	BL15483-1	9' /Coiled	Cradle	8 Pin DIN	No Power On/Off (DTR Line)
SPT2700 Series	BL15482-1	9' /Coiled	Cradle	8 Pin DIN	Power On/Off (DTR Line)
LRT/LDT3800 Series	CC11371-3	6' /Coiled	PIM Optical	8 Pin DIN	"S" Printers Only
LRT/LDT3800 Series (2 Way)	CC11371-4	6' / Coiled	PIM Optical	8 Pin DIN	"S" Printers Only

# APPENDIX A

## INTERFACE CABLES (continued)

Terminal	Cable Part Number	Cord Lgth/Type	Terminal Connector	Printer Connector	Notes
SYMBOL (CONT.)					
LRT/LDT3800 & 6800 Series	CC11371-5	6' / Coiled	PIM Optical	8 Pin DIN	"S" Printers Only
TEKLOGIC					
7030 ILR	BL13285-2	Coiled	36 Pin IDC Fem	8 Pin DIN	
7025 ILR	BL13285-1	Coiled	15 Pin DB male	8 Pin DIN	
TELXON					
960	BL11122-1	8' / Coiled	RJ45	8 Pin DIN	
960SL Adapter for BL1122-1	CC13711-1	n/a	n/a	n/a	
960 (BL1122-1) & 960SL (CC13711-1)	CP74005	n/a	n/a	n/a	
960	BL12996-1	8' / Coiled	RJ45	8 Pin DIN-Locking	
860 & 912	CL11314-000	8' / Coiled	DB25	8 Pin DIN	

## APPENDIX B

### MEDIA SUPPLIES

To insure maximum printer life and consistent print quality and performance for your individual application, it is recommended that only media produced by Zebra be used. These advantages include:

- Consistent quality and reliability of media products.
- Large range of stocked and standard formats.
- In-house custom format design service.
- Large production capacity which services the needs of many large and small media consumers including major retail chains world wide.
- Media products that meet or exceed industry standards.

For more information call Zebra Technologies Corporation at +1.866.230.9495 (U.S., Canada and Mexico) and ask to speak to a Media Sales Representative.

## APPENDIX C

### MAINTENANCE SUPPLIES

In addition to using quality media provided by Zebra, it is recommended that the print head be cleaned as prescribed in the maintenance section. The following items are available for this purpose:

- Cleaning Pen (10 pack), Reorder No. AN11209-1  
*(Recommended for use with Bravo™, Cameo™ and Encore™ printers.)*
- Cleaning Kit with Cleaning Pen, and Cotton Swabs, Reorder No. AT702-1  
*(Recommended for use with Bravo™, Cameo™ and Encore™ printers.)*

## APPENDIX D

### PRODUCT SUPPORT

For product support, contact Zebra Technologies at:

**[www.zebra.com](http://www.zebra.com)**

#### **Zebra Technologies International, LLC**

333 Corporate Woods Parkway  
Vernon Hills, Illinois 60061-3109 USA  
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Buckinghamshire HP13 6EQ, UK  
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Fax: +44.1494.450103

#### **Zebra Technologies**

Latin American Sales Office  
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Fax: +1.305.558.8485

#### **Zebra Technologies Asia Pacific, LLC**

1 Sims Lane, #06-11  
Singapore 387355  
Phone: +65-68580722  
Fax: +65-68850838

# PATENT INFORMATION

This product and/or its use may be covered by one or more of the following US patents and corresponding international patents worldwide

D275,286	5,029,183	5,364,133	5,543,610	6,034,708
D347,021	5,047,617	5,367,151	5,545,889	6,036,383
D389,178	5,103,461	5,372,439	5,552,592	6,057,870
D430,199	5,113,445	5,373,148	5,570,123	6,068,415
D433,702	5,140,144	5,378,882	5,578,810	6,070,805
3,964,673	5,132,709	5,396,053	5,589,680	6,095,704
4,019,676	5,142,550	5,396,055	5,612,531	6,109,801
4,044,946	5,149,950	5,399,846	5,642,666	6,123,471
4,360,798	5,157,687	5,408,081	5,657,066	6,147,767
4,369,361	5,168,148	5,410,139	5,768,991	6,151,037
4,387,297	5,168,149	5,410,140	5,790,162	6,201,255 B1
4,460,120	5,180,904	5,412,198	5,791,796	6,231,253 B1
4,496,831	5,229,591	5,415,482	5,806,993	6,261,009
4,593,186	5,230,088	5,418,812	5,813,343	6,261,013
4,607,156	5,235,167	5,420,411	5,816,718	6,267,521
4,673,805	5,243,655	5,436,440	5,820,279	6,270,072 B1
4,736,095	5,247,162	5,444,231	5,848,848	6,285,845 B1
4,758,717	5,250,791	5,449,891	5,860,753	6,292,595
4,816,660	5,250,792	5,449,893	5,872,585	6,296,032
4,845,350	5,262,627	5,468,949	5,874,980	6,364,550
4,896,026	5,267,800	5,479,000	5,909,233	6,379,058 B1
4,897,532	5,280,163	5,479,002	5,976,720	6,409,401 B1
4,923,281	5,280,164	5,479,441	5,978,004	6,411,397 B1
4,933,538	5,280,498	5,486,057	5,995,128	6,428,227 B2
4,992,717	5,304,786	5,503,483	5,997,193	6,530,705
5,015,833	5,304,788	5,504,322	6,004,053	6,540,122
5,017,765	5,321,246	5,528,621	6,010,257	6,607,316
5,021,641	5,335,170	5,532,469	6,020,906	6,609,844



[www.zebra.com](http://www.zebra.com)

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