

# Convert Box for DECLaser

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## Installation and Configuration Guide

Order Number: EK-LNCPB-UG-002

**Digital Equipment Corporation**

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**Second Edition, August 1996**

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Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Connection of peripherals requires the use of grounded shielded signal cables.

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### CE Mark

- Directive 89/336/EEC on the Electromagnetic Compatibility  
based on: EN55022 Class B  
EN50082
- Richtlinie 89/336/EWG zur elektromagnetischen Störfreiheit,  
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EN 55 022 Klasse B  
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EN55022 Classe B  
EN50082
- Direttiva 89/336/EEC sulla compatibilità elettromagnetica  
basata su:  
EN55022 Classe B  
EN50082

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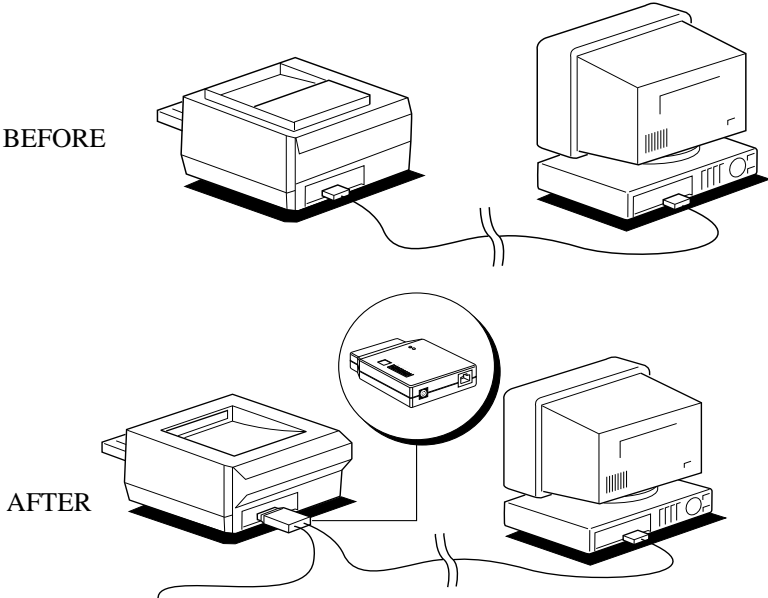
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# Preface

## Introduction

Convert Box for DECLaser is a conversion box designed to print on new Digital laser printers, jobs originally intended for DEC PPL3 printers. The DEC PPL3 printer is replaced by the box connected to a target printer as shown in the before and after situation in the following figures. This box stands between the host computer and the targeted Digital printer.

DEC PPL3 is the Digital ANSI-Compliant Printing Protocol which includes functions for page printers.



## Features

The box has the following features:

### **Compatibility to Digital PPL3 ANSI Protocols**

The conversion box with the printer replaces Digital PPL3 printers without degrading the overall performances.

The box emulates the following DEC PPL3 printers:

DECLaser 1100, DECLaser 2100/2200, DECLaser 3200, LN03 Plus.

### **Ease-of-use**

Simple configuring and operating.

### **Separate Power Supply**

The conversion box is powered via an external AC/DC adapter.

### **Direct Connection Concept**

The conversion box is designed to be connected directly to the parallel printer port through a bi-directional Nibble 1284 interface and uses a standard serial interface for the host connection.

### **Compact Size and Lightweight**

Allows a direct connection onto the printer without significantly increasing the overall printer footprint.

### **Autosensing capabilities**

Can automatically detect whether the type of job being sent to it is PostScript or DEC PPL3 compatible.

### **Transparent Mode for Job Control**

In this mode, the Convert Box operates in bi-directional communications without conversion. This operating mode is used in environments with software applications for job-level printer control and printer status information.

For instance, this mode applies to the following:

- using the DCPS (DECprint Supervisor) software for printing PostScript jobs.
- printing under PJJ (Printer Job Language) control for PCL or PostScript jobs

### Target Printer Detection

The box is capable of detecting which printer is attached to the parallel port. This allows addressing of the specific printer features.

The following printers are supported:  
DECLaser 3500, DECLaser 5100, LN17.

## Operating Modes

The convert box can operate in one of the following main modes:

- Data Conversion mode (DEC PPL3 to PCL 5)
- Bi-directional Communications Transparent mode
- Autosensing mode (data conversion or PostScript transmission)
- Hex Dump mode

The operating mode is selected by the dipswitch settings or by software configuration.

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**Note:** See table “Convert Box and Printer Settings” in *Chapter 1*.

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### The Data Conversion mode

This is the Convert Box primary operating mode. The Convert Box processes DEC PPL3 data from the serial input port and converts the data into PCL 5 protocol to the parallel output port. In this mode, the Convert Box emulates the following Digital printers: the DECLaser's 1100, 2100/2200, 3200, and the LN03 Plus.

This mode includes a secondary mode, called LN03 Plus, which covers a reduced range of DEC PPL3 commands and in which the Convert Box emulates an LN03 Plus printer only.

### The Bi-directional Communications Transparent mode

In this mode, the Convert Box operates as a two way serial to parallel interface with no data conversion. When bi-directional communications must apply between the host and the printer for reporting, job control or monitoring, the printer connected to the parallel port must be configured so that bi-directional communication

is enabled and so that the printer system language supports reporting and job control (PJM or PostScript, for instance).

In this mode the Convert Box may be used in a DCPS (DECPrint Supervisor) environment provided that the printer connected to the parallel port is set to the PostScript system language.

### **The Autosensing mode**

In this mode, the Convert Box detects whether the data received through the serial input port is a DEC PPL3 job or a PostScript job. When the Convert Box is idle for a given time-out, the first data string is analyzed. If the string is made of "%!PS-Adobe", the data is considered as PostScript data, therefore no data conversion and interpretation take place. If the string is not made of the above, data conversion from DEC PPL3 to PCL5 is active.

The given time-out is 20 seconds by default and can be modified by software configuration.

### **The Hex Dump mode**

In this mode, all data received from the input serial port is printed in Hexadecimal representation on the printer connected to the parallel port. This mode allows the user to analyze the data sent by the host to the convert box .

## **About this Guide**

This guide contains all the information required to install, configure, operate and troubleshoot the conversion box. The guide is structured as follows:

### ***Chapter 1 - Installing the Conversion Box***

This chapter helps you check you have received everything you need, identifies the various parts of the kit, and tells you how to prepare and connect the box.

### ***Chapter 2 - Configuring and Operating***

This chapter shows you how to configure the conversion box and introduces the commands that you can use to set specific configuration options.

***Chapter 3 - Troubleshooting***

This chapter contains a troubleshooting guide for problems which may occur, and tells you how to solve them.

***Chapter 4 - Target Printers Information***

This chapter details information about the supported printers and their default settings.

***Appendices A-C***

The appendices describe the conversion box specific commands, the default configuration, the serial and parallel technical characteristics.

There is also an index.

**Conventions**

This guide contains two types of notation which should always be read carefully.

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**Note:** This NOTE gives you additional information and hints on the subject in question.

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**Caution:** *This CAUTION should catch your attention, advising you of a particular situation and/or problem which may occur and/or be avoided as a result of a certain sequence of operations*

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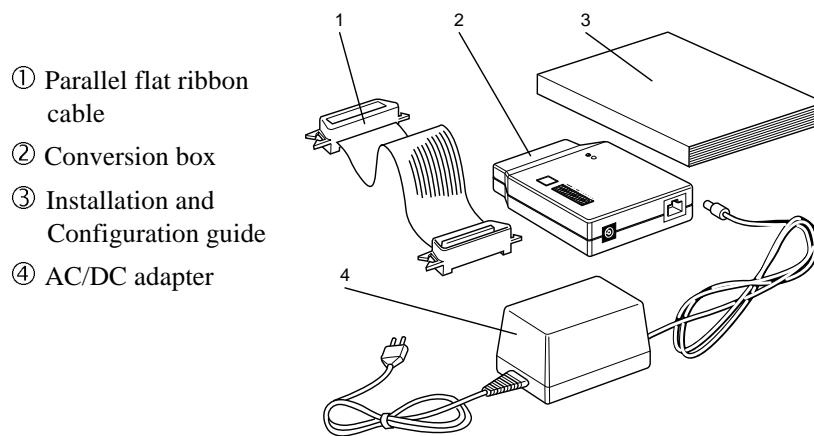


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## Installing the Conversion Box

### Unpacking the Conversion Box

1. Open the carton and remove all parts
2. Check that all parts are present and undamaged



*Carton Contents*

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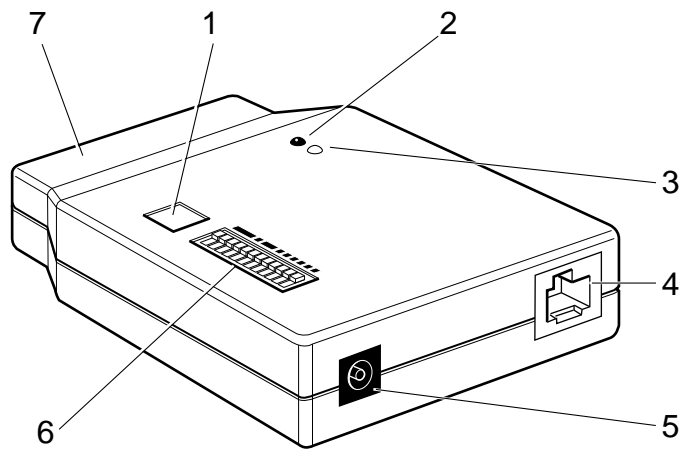
**Note:** Keep all the packing materials in case you have to return the box for maintenance. If anything is missing or damaged, call your dealer immediately.

---

## Conversion Box Description

The figure below shows the Conversion Box and its main features which are described in the following:

- ① Button for reset mode and internal tests purposes
- ② ③ Two indicators showing power and box operating states
- ④ MMJ6 connector for serial communication, RS232 type, to connect to the host computer
- ⑤ AC/DC adapter socket
- ⑥ Dipswitch bank for configuration
- ⑦ Parallel Centronics connector, for connection to the target printer



*The Conversion Box*



## Installing the Conversion Box

The box is installed in three stages:

1. Pre-installation Checks
2. Connecting
3. Power on and Testing

In many instances there will be no need to configure the box and you can simply connect the box, power on and go. However, it might be necessary to configure the box as described in Chapter 2.

### Stage 1 - Pre-installation Checklist

Before you begin the installation, you need to check several aspects of the operation of the host computer and the target printer. The settings of these two pieces of equipment must match the settings of the box if everything is to work properly.

- 1. Check the serial communication parameters of the host.  
They must match those of the conversion box.**

For example, if you had an LN03PLUS printer connected to the host, you can check the settings that currently exist by pressing the **T** button on the rear of the printer. This causes the printer to output a configuration sheet which you can compare with the default settings of the box.

If the host settings do not match the default settings on the box, then the box has to be configured as described in Chapter 2.

## Installing the Conversion Box

The default settings for the conversion box serial communications are as given in the following table:

### **Box Serial Communication Default Settings**

<b>Parameters</b>	<b>Value</b>
Baud rate	9600
Bit size	8
Parity	disabled
Buffer Flow Control	Xon/Xoff

### **2. Check the paper format dipswitch setting on the box.**

Switch 10 (G) on the dipswitch should be set to On for US Letter size or Off for A4 (as used in most European countries). The paper format should match the size of paper in your target printer.

### **3. Make the box settings and the printer settings according to your printing application:**

See the following table “Convert Box and Printer Settings” to configure both the convert box and your printer according to your printing application. For example, if you print only DEC PPL3 jobs, the convert box operates in Data Conversion (PPL3) mode, and the recommended settings are the following:

### **Convert Box Settings**

<b>Feature</b>	<b>Setting</b>
PPL3/LN03+:	PPL3
Autosensing/Transparent:	Autosensing

### **Printer Settings**

<b>Feature</b>	<b>Setting</b>
Parallel Port:	Bi-directional On
System Language:	PCL or Autosensing

**Convert Box and Printer Settings**

Printing Application	Convert Box Operating Mode	Convert Box Settings		Printer Settings	
		<u>Autosensing / Transparent</u>	<u>PPL3 / LN03+</u>	Parallel Port	System Language
Printing DEC PPL3 Jobs	Data Conversion (PPL3)	Autosensing	PPL3	Bidir. On	PCL or Autosensing
Printing LN03+ Jobs	Data Conversion (LN03+)	Autosensing	LN03+	Bidir. On	PCL or Autosensing
Printing PostScript Jobs - Non DCPS environment	Transparent	Transparent	-	Bidir. On or Off	PostScript or Autosensing
Printing PostScript Jobs - DCPS environment	Bi-directional Transparent	Transparent	-	Bidir. On	PostScript
Printing PCL jobs	Transparent	Transparent	-	Bidir. On or Off	PCL or Autosensing
Printing PCL or PostScript Jobs under PJL control	Bi-directional Transparent	Transparent	-	Bidir. On	PCL, or PS, or Autosensing

Installing the Conversion Box

Printing Application		Convert Box Operating Mode	Convert Box Settings		Printer Settings	
			<u>Autosensing / Transparent</u>	<u>PPL3 / LN03+</u>	Parallel Port	System Language
Printing PPL3 or PostScript jobs alternatively (non DCPS environment)	Jobs are separated by an idle time	Autosensing	Autosensing	PPL3 or LN03+	Bidir. On	Auto-sensing
	Jobs are NOT separated by an idle time	Data Conversion or Transparent alternatively. Selection made by software configuration prior to each job. See <i>Appendix A</i>	-	-	Bidir. On	Auto-sensing

		Hex Dump	Parallel Port	System Language
Printing Jobs in Hex Dump Mode	Hex Dump	On	Bidir. On or Off	PCL or Autosensing

## Stage 2 - Connecting the Conversion Box

Provided that the pre-installation checks do not require any configuration, you can now connect the pieces of equipment together in the following sequence:

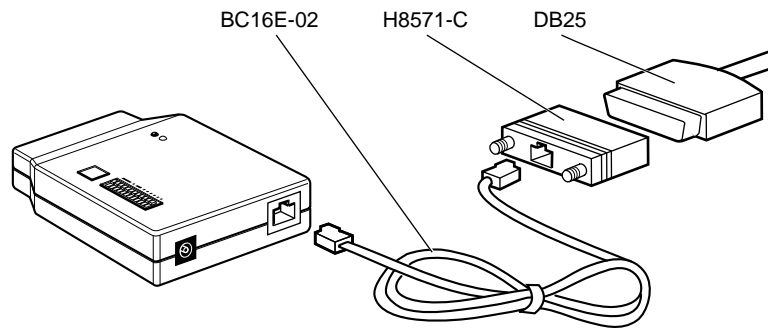
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**Note:** Ensure that all equipment is switched off and the power cables removed from the mains power outlet before you connect any cables.

---

1. Connect the conversion box directly to the target printer parallel connector, or via the flat ribbon cable. Close the spring clips on both sides of the connector.
2. Connect the serial communication host cable into the conversion box female MMJ6 connector. If your serial communication host cable is ending with an MMJ6 male cable, connect it into the MMJ6 connector on the Convert Box directly. If your serial communication host cable is ending with a DB25 connector, you may connect it to the Convert Box via two optional parts as follows:

- BC16E-02 flat cable with MMJ6 connector
- H8571-C converter DB25 to MMJ6 connector



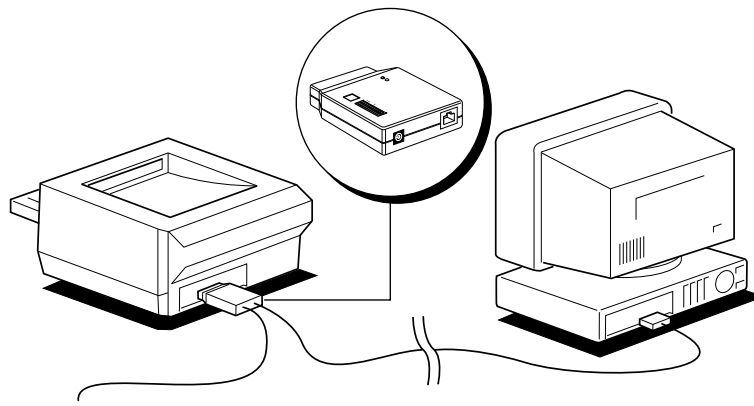
3. Connect the AC/DC adapter to the conversion box.

---

**Note:** At this stage, DO NOT connect the AC/DC adapter cable to the main power outlet.

---

## Installing the Conversion Box



*Connecting the Conversion Box*

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**Note:** The figure shows the connection without using the flat ribbon cable, and with direct connection through the MMJ6 connector.

---

### Stage 3 - Power on and Testing

Having successfully completed stages one and two, you can now power on the box and the printer and run some tests to determine if all is well.

1. Apply power to the box by connecting the AC/DC adapter to the mains power outlet. The mains socket outlet must be easily accessible.  
The On indicator on the conversion box should light.
2. Switch the printer ON, and wait the printer ready indication
3. Run Internal Tests

To verify the installation of the conversion box on the target printer is successful, run the internal tests using the reset button. It will give you its current configuration settings as well as the resident fonts list.

Function	Action on the button
Configuration printout	Press the button once
Fonts list printout	Press the button twice in a row

**Note:** Running internal tests does not test the serial communication between the host and the box. To be sure the complete installation is correct, you need to send a job from the host.

If the internal tests do not run, see *Chapter 3 - Troubleshooting* for more information.

## Operating the Box

The box operation should mainly be transparent to the user. However, there are tests that you can run and indications that you should be aware of. These are described in the following two tables.

### Button Functions

Function	Action on the button
Reset mode	Press and hold the button for 5 seconds
Configuration printout	Press the button once
Fonts list printout	Press the button twice in a row

**Note:** An example of Configuration and Fonts list printouts is given in the *Appendix C- Technical Characteristics*.

### Indicators

Indicator	State	Meaning
On	Lit	The box is powered on
	Off	The box is not powered on
Status	Lit	Data reception mode
	Off	Standby mode
	Blinking	Printing internal tests
	Blinking quickly	- Reset mode - Printing problem



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## Configuring and Operating

### Configuring the Conversion Box

If the default settings of the box and your host and printer do not match, you will need to configure the box. You can do this primarily through changing the dipswitch settings on the box (dipswitch configuration). In addition to this, you can use control commands issued from the host that can override or dynamically change the dipswitch settings or set other parameters (software configuration). Both these techniques are described in the following sections.

Configuration information is saved in memory, and is recovered after each power up, or when the box is reset using the reset button. You can print out the configuration information by running one of the internal tests as described in Power On and Testing in Chapter 1.

## Dipswitch Configuration

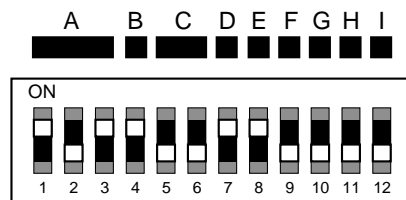
The dipswitch settings control the main configuration parameters of the box. The box is delivered with default settings that you might have to change according to your host and printer parameters which you check before installing the box.

The dipswitch enables you to set the following parameters on the box:

- Serial communications
- Autowrap
- Paper format
- Operating mode
  - Autosensing/Transparent
  - PPL3/LN03plus
  - Hex Dump

The serial communication and the paper format setting are mandatory.

The figure below shows the default settings for the dipswitch (European version)

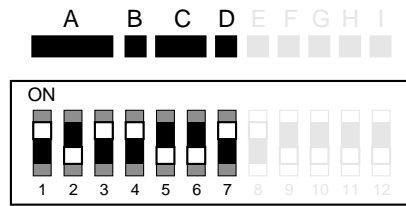


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**Caution:** *Make sure the conversion box is powered down and disconnected from the printer and the host. It is important to also remove power from the printer. After you have configured the box dipswitches, reconnect the box to the host and printer. Power up the box first and then the printer.*

---

## Setting the Serial Communications



**Note:** Make sure those parameters exactly match the ones of the serial host communication.

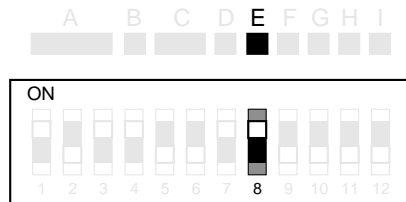
Switches 1-2-3 ( Group A): Baud rate from 300 to 38400  
 See *Dipswitch Settings* for full baud rate option settings

Switch 4 (B): Data Bit selection 7 or 8

Switch 5-6 ( Group C): Parity: Disable or Enable and Odd or Even

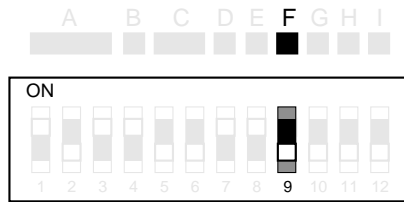
Switch 7 (D): Buffer Control: Xon/Xoff or DTR

## Setting Autowrap Mode



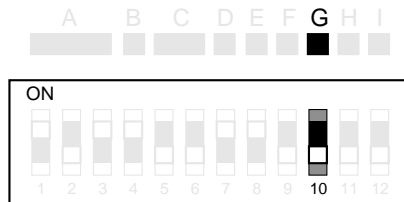
Switch 8 (E): Instructs the conversion box whether to execute an automatic Carriage Return/Line Feed when the active position exceeds the right margin.

## Setting Hexdump Mode



Switch 9 (F): Diagnostic feature which allows the user to analyze all the bytes transferred from the computer to the box. Each byte transmitted is printed in hexadecimal format, allowing the user to check the data codes received.

## Setting Paper Format

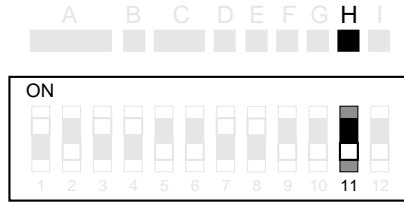


.....  
**Note:** Make sure this selection matches exactly the printer setup selection and the paper installed in it.  
.....

Switch 10 (G): The dipswitch setting controls the paper format. It is overridden dynamically by software commands. The ON position is for US Letter size paper and the Off position is A4 (European sizes).

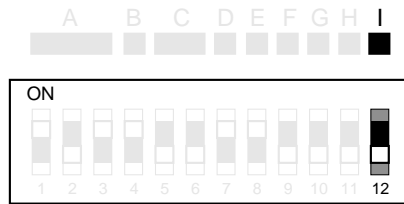
### Setting PPL3 or LN03plus Mode

Switch 11 (H): This dipswitch setting controls whether the Convert Box in data conversion box emulates a DEC PPL3 printer or an LN03plus. The ON position is for the LN03plus mode, and the OFF position is for the DEC PPL3 mode.



### Setting Autosensing or Transparent Mode

Switch 12 (I): This dipswitch setting controls whether the Convert Box operates in Autosensing mode or in Transparent mode. See Preface for the description of those two modes. The ON position is for the Transparent mode, and the OFF position is for the Autosensing mode.



## Dipswitch Settings

		A	B	C	D	E	F	G	H	I
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Baud Rate</i>	38400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
	19200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	9600	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
	4800	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
	2400	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
	1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	600	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
300	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
<i>Bit Size</i>	8		<input type="checkbox"/>							
	7		<input checked="" type="checkbox"/>							
<i>Parity</i>	Enable			<input type="checkbox"/>						
	Disable			<input checked="" type="checkbox"/>						
	Even				<input type="checkbox"/>					
	Odd			<input checked="" type="checkbox"/>						
<i>Buffer Control</i>	XON/XOFF				<input type="checkbox"/>					
	DTR				<input checked="" type="checkbox"/>					
<i>Autowrap</i>	ON					<input type="checkbox"/>				
	OFF					<input checked="" type="checkbox"/>				
<i>Hexdump</i>	ON						<input type="checkbox"/>			
	OFF						<input checked="" type="checkbox"/>			
<i>Paper Size</i>	US Letter							<input type="checkbox"/>		
	A4							<input checked="" type="checkbox"/>		
<i>LN03+ PPL3</i>	ON								<input type="checkbox"/>	
	OFF								<input checked="" type="checkbox"/>	
<i>Transparent Autosensing</i>	ON									<input type="checkbox"/>
	OFF									<input checked="" type="checkbox"/>

ON    
  OFF    
   Default

## Software Configuration

The dipswitch setting is designed to ensure a proper installation of the box. However, it does not cover all the possibilities offered by the conversion box. To that end, a more application oriented software based configuration facility, has been implemented.

The software configuration is performed by sending control commands to the conversion box from the host. There are two types of commands:

- Specific Conversion Box Commands
- Digital ANSI Configuration Command

---

**Note:** Software configuration can only be performed with the conversion box powered on, and connected to the host.

---

### Specific Conversion Box Commands

These commands have been designed to perform additional operations to ensure the box works in the best manner with the target printer.

You can use the commands to set the following parameters:

- Reset all parameters to factory default
- Select target printer
- Set the time out on serial input port
- Set the time out on parallel output port
- Set input buffer size
- Set image offset
- Set horizontal printing protection
- Set vertical printing protection
- Set font printing protection
- Select device identification

---

**Note:** For complete information about the use of these features, refer to *Appendix A - Specific Conversion Box Commands*.

---

## Digital ANSI Protocol Configuration Command

The Digital ANSI protocol has a command called DECFNVR which is designed to perform a custom configuration of the conversion box.

DECFNVR can be used to set the states of the following parameters:

- Line Feed Mode
- Carriage Return Mode
- Character Set
- Number of copies

### Use of DECFNVR

1. Send to the conversion box one or more of the Digital commands corresponding to the features listed above
2. Send to the conversion box DECFNVR command

.....  
**Note:** The DECFNVR command has the following format:

ASCII	Hexadecimal
CSI ! u	9B 21 75

.....



---

## Troubleshooting

### Resetting the Box

You can recover the power up default parameters by resetting the conversion box. This procedure is recommended when the printer gives unexpected results, and you do not succeed in solving your problem.

To reset the box, press and hold for five seconds the reset button until the Status indicator starts blinking quickly.

---

**Note:** The factory default parameter values are listed in *Appendix B*.

---

### Indicator Warning

Indicator	State	Meaning
On	Off	The box is not powered on
Status	Blinking quickly	Reset mode and Failure operating state

## Solving Problems

### Installation Problems

#### ***Missing or damaged parts***

- Contact your dealer immediately.

#### ***The conversion box does not power on***

- Make sure the AC/DC adapter is inserted correctly into the conversion box and to the power outlet.
- Check that power is supplied through your power outlet.

#### ***The configuration printout does not print at all***

- Check the conversion box is securely connected to the printer parallel connector.
- Check the printer is switched On and Ready with paper available.
- Check the printer setup is appropriate as described in Chapter 4.

### Connection Problems

#### ***Problems with connection to the host computer***

- Check that your serial interface cable is of the correct type (see *Appendix C*).
- Make sure you have fixed the interface connectors properly both to the conversion box and to the host computer.

#### ***Problems with connection to the target printer***

- Check that your parallel interface cable is of the correct type (see *Appendix C*).
- Make sure you have fixed the interface connectors properly both to the conversion box and to the printer.

***The Configuration Sheet does not reflect the correct printer connected (“Not identified” printed next to the target printer name)***

- Check that the printer is listed as a supported target printer.
- Check that the parallel port of the printer is set for bi-directional communications (IEEE 1284).

## **Printing Problems**

### ***Printing after first power-up is not the expected one***

- Run the configuration printout to verify the current settings. See the default printer configurations given in Chapter 4.
- Check that the conversion box hardware and software configuration settings are appropriate for the printer you are using.

### ***Printing unexpected characters***

- Check that the conversion box configuration matches the serial host settings: baud rate, parity, data bit and buffer control (see Chapter 2 for details).
- Make sure the data sent to the Convert Box in data conversion mode is DEC PPL3 compatible. The convert Box emulates the Digital printers DECLaser 1100, DECLaser 2100/200, DECLaser 3200, and the LN03 Plus in DEC PPL3 modes, but the Convert box does not emulate the other emulations supported by those printers. For instance the LN03 Plus supports a Tektronix emulation which is not supported by the Convert Box.

### ***Printing unexpected characters when you send jobs under different emulations***

- If you send alternate jobs under Digital ANSI protocol, and Postscript emulation, the conversion box and the printer setup should be set to «Autosensing».
- Check the time-out setting is appropriate (see *Appendix A* for details).
- See *Printing DEC PPL3 or PostScript Jobs Alternatively* in *Appendix A*.

***The conversion box does not print data coming from the host***

- Check that the serial communication connection is correct. The Status indicator should light when receiving data.
- Check the printer display to verify data is received. If so, try to eject the page by pressing the Form Feed button of the printer, and verify that your application terminates the job by a Form Feed command.  
For that, you can run a Hexadecimal Printout (see *Chapter 2* for details).
- Check the serial communication with another working device to validate it.

***Page layout and margins not exactly as expected***

- Check the PPL3 / LN03Plus dipswitch setting on the Convert Box. The two emulations may have slight differences in page margins and some other functions in some instances.

***Page break occurs frequently***

- Check the time out setting on conversion box is equal to or greater than the target printer time out. See *Chapter 4* for the default target printer configuration and *Appendix A* for information on time out setting.
- Check the host does not frequently interrupt jobs.  
The conversion box time out should always be greater than host interruptions.

***Printing stops***

- Check there is paper in the printer tray.
- Check the host computer did not interrupt the job.

***Printing positioning is not correct***

- Check the paper format setting on dipswitch is correct.  
The paper format setting on box dipswitch and printer setup, and paper installed in the printer should match.
- Check the Specific Conversion Box Commands as given in *Appendix A* for more information on the parameters.

***Printing distorted or incomplete***

- Check you have enough resident memory available in your printer (at least 2 Mb) and that the printer set-up is correct. «Page Protect» parameter, if it exists, should be set (see *Chapter 1* for details).

***Printing appears with a bad contrast***

- Check the printer setup parameter «Enhancement» setting, if it exists.

***Printing in general is incoherent***

- Reset the conversion box by pressing and holding the reset button for five seconds.

***Printing quality Problems (poor quality, light character...)***

- Check the Printer User Manual Troubleshooting section.

---

**Note:** If you need to analyze deeply the content of the job sent, it is helpful to use «Hexdump» mode (see *Chapter 2 - Configuring and Operating* ).

---

## Contacting your Digital Services Center

Before calling for support, ensure you have tried solving your problem using the processes described above.

If the problem persists, you should prepare the following information and then contact your local services center:

- The details of your configuration:
  - Target Printer model and configuration
  - Host configuration
  - Application software
- The serial number and part number of the conversion box, which can be found face down
- A description of the problem
- The specific failure symptoms



---

## Target Printers Information

### Printers Supported by the Conversion Box

- LN17
- DECLaser 3500
- DECLaser 5100

### Printer Parameters to Configure

For most applications, the factory default configuration of your printer should work directly with the conversion box. However, depending on the application type you want to run, it may be necessary to change the parameters and set up your printer accordingly.

The most important parameters to look at when setting up the printer for proper operation are:

- Communication
- Emulation
- Paper Format setting

---

**Note:** When the printer configuration is complete, it is recommended to power cycle the printer to ensure both the printer and the conversion box synchronize correctly.

---

Recommended target printer settings are given in the following tables. To configure your target printer, refer to its User's Guide.

**Digital LN17 Parameters Interaction with the Box and Recommended Setting**

<b>Menu Item</b>	<b>Interaction / Recommended Setting</b>
<b>PCL</b>	
Copies	Yes (Overridden by Digital Commands)
Font Source	No
Font Number	No
Pitch	No
Point Size	No
Default Source	Yes (Overridden by Digital Commands)
Source Mapping	Yes (Overridden by Digital Commands)
Paper size	No
Front Tray size	No
Env Feeder Size	No
Output bin	Yes
Orientation	No
Form Length	No
Symbol Set	No
Edge to Edge	No
Page Protect	Yes
Jam Recovery	Yes
Resolution	No
Print Quality	No
State Saving	Yes
Duplex	Yes (Overridden by Digital Commands)
Page Size Cont	Yes



<b>Menu Item</b>	<b>Interaction / Recommended Setting</b>
<b>PostScript</b>	Yes
<b>Interface / Parallel</b>	
Port Enable	Must be On
Port Timeout	Yes / 30 seconds <sup>1</sup>
System Language	Yes
Lang. Sensing	Yes
Auto Job end	No
Bi-directional	Yes
<b>System</b>	
Hex Dump	Yes
Power Saver	Yes
Auto Continue	Yes
Print Density	No
Defaults	No
Disk Spooling	No
Perform Enhance	No

**Note:** <sup>1</sup> You should always set this value equal to or less than conversion box parallel output time out setting.

**DECLaser 3500 Parameters Interaction with the Box and Recommended Setting**

<b>Menu Item</b>	<b>Interaction / Recommended Setting</b>
<b>Paper</b>	Yes / Must be set according to the paper format used and dipswitch setting
<b>Output Options</b>	
Print Resolution	No
Print Enhancement	Yes (when sending graphic data) / OFF
Number of Copies	No (except when sending PostScript data)
<b>Font Setup - PCL</b>	
Font Name	No
Pitch	No
Symbol set	No
<b>Page Setup - PCL</b>	
Orientation	No
Line Per Page	No
Line Wrap	No
<b>Parallel</b>	
Enable Interface	Yes / ON
Printer Type	Yes / PS/PCL Sensing
Bi-directional	Yes / OFF
<b>Time-Outs</b>	
Postscript Wait	Yes / 30 seconds <sup>1</sup>
PCL Wait	Yes / 30 seconds <sup>1</sup>
Paper Select Wait	No
Manual Feed Wait	No
<b>Systems Settings</b>	No

**Note:** <sup>1</sup> You should always set this value equal to or less than the conversion box parallel output time out setting.

**DECLaser 5100 Parameters Interaction with the Box and Recommended Setting**

<b>Menu Item</b>	<b>Interaction / Recommended Setting</b>
<b>Feeders</b>	Yes / Must be set according to the paper format used and dipswitch setting
<b>PostScript</b>	No
<b>PCL</b>	
Resolution	No
Enhancement	No
Page Protect	Yes/ON (when sending large graphic data)
Copies	Yes (Overridden by Digital Commands)
Page Size	No
Orientation	No
Form Length	No
Font Source	No
Font Number	No
Pitch	No
Point Size	No
Symbol Set	No
<b>Communications</b>	
COMM: Serial	No
COMM: Parallel	
PAR: Interpreter	Yes / Automatic
PAR: I/O timeout	Yes / 30 seconds <sup>1</sup>
PAR: Mode	Centronics
COMM: Local Talk	No
COMM: Network	No
<b>Miscellaneous</b>	No
<b>Feeder Select</b>	Yes

**Note:**<sup>1</sup> You should always set this value equal to or less than conversion box parallel output time out setting.

**Caution:** It is not recommended to reset your printer during printing operation. Otherwise, a reset of the box will be also required.



# A

---

## Specific Conversion Box Commands

### General Rules

The specific conversion box commands (*command\_n*) are introduced with the introducer command *DCS 58 ; li*, and terminated by the String Terminator *ST*.

The introducer and string terminator can be given in hex form as necessary.

Both methods are shown in the following table:

ASCII	Hexadecimal value
<i>DCS 58 ; li Command_n ST</i>	<i>90 35 38 3B 31 69 Command_n 9C</i>

These commands can be sent from any text terminal editor.

## Command\_n Syntax

The *command\_n* syntax is as follows:

(Operator Type Family / Attribute\_1 / Attribute\_n Value)

Where:

Operator	is used to indicate the operation type; assign or reset.
Type Family	designates the parameter which is to be configured.
Attribute	specifies the argument which is used with Type Family parameter.
Value	is the quantifier component or a constant parameter

---

**Note:** There must be a space between the operator and type and also between the attribute and the value parameters.

---

Each part is described in more detail in the sections that follow.

### Conventions

- The upper and lower cases are allowed in the syntax.
- Additional spaces, Carriage Return CR, and Line Feed LF are only allowed between:
  - Operator and Type Family parameters
  - Type Family and Value parameters
  - Attribute (s) and Value parameters.
- The Attribute(s) can be placed in any order between Type Family and Value parameters.

Examples:

```
(= printer/protection/horizontal #ON) or  
(= printer/horizontal/protection #ON)
```

- Unlimited commands are allowed between the Introdncer Command and the String Terminator.

Example:

```
DCS 58 ; li (= printer/model #LN17) (= emulation #transparent) ST
```

## Specific Conversion Box Parameters

### Operator Parameter

The Operator parameter can take two values:

- |       |   |
|-------|---|
| =     | Used with the other <code>Type Family</code> parameters as given in the following table to assign values.     |
| Reset | Can be used with all <code>Type Family</code> components to return parameters value to their factory default. |

## Type Family Parameters

The following table identifies the Type Family parameters that can be used.

### Type Family Parameters List

Type Family	Attribute	Value	
Buffer	Size	0 to 10 ( <i>default= 5 Kbytes</i> )	
Emulation		#Autosensing ( <i>default</i> )	
		#Transparent	
		#PPL3	
		#LN03plus	
Printer	Model <sup>1</sup>	#LN17 ( <i>default</i> )	
		#DEC3500	
		#DEC5100	
		Protection/Vertical	#OFF ( <i>default</i> ) #ON
		Protection/Horizontal	#OFF ( <i>default</i> ) #ON
		Protection/Fonts	#OFF ( <i>default</i> ) #ON
		Offset/Vertical	0 to 100 ( <i>default= 0</i> )
		Offset/Vertical/Negative	0 to 100 ( <i>default= 0</i> )
		Offset/Horizontal	0 to 100 ( <i>default= 0</i> )
		Offset/Horizontal/Negative	0 to 100 ( <i>default= 0</i> )



Type Family	Attribute	Value
Timeout	Serial	0 to 1000 (default= 20 seconds)
	Parallel	0 to 1000 (default= 30 seconds)
Device_id		#Default <sup>2</sup> (default)
		#LA100
		#LQP02
		#LN03plus
		#PPL3

<sup>1</sup>Model: Since the Convert Box detects which printer is connected automatically, this attribute is used only when the connected printer is unknown or when the Convert Box is unable to detect it.

<sup>2</sup>PPL3 or LN03plus, depending on the dipswitch setting

### Poweron Attribute

The Poweron attribute can be used with any function to save it in memory so that the selected value will be retrieved at Power-up by default. Example: (=Buffer/Size/Poweron 7)

## Commands List

The tables in this section show examples of the box specific commands (*command\_n*) and describes their meaning.

For simplification in the examples shown below, the Introducer DCS (9OH) and String Terminator ST (9CH) sequences are not included. Do not forget to insert them when sending the complete command.

### Using the Reset Operator

The `Reset` operator recalls the factory default values for the Type family parameter selected.

When `Reset` is used alone, all Type family parameters are reset to their factory values, as well as all Digital commands.

Examples:

```
-(Reset)
-(Reset Emulation)
-(Reset Timeout)
```

---

**Note:** See *Appendix B* for factory default configuration setting.

---

### Assigning a Condition Using the = Operator

The following tables give examples of how you can assign specific values to the commands. They are categorized according to type family.

#### Buffer

Command Syntax	Meaning
(= Buffer/Size numeric value)	Modifies the size of the input buffer by assigning a numerical value specified in Kbytes. Decreasing the buffer size allows you to support more down line loaded fonts.
for example: (= Buffer/Size 7)	Sets current input buffer to 7 Kbytes

**Emulation**

<b>Command Syntax</b>	<b>Meaning</b>
(= Emulation #PPL3)	Translates DEC PPL3 protocol to be interpreted by the target printer.
(= Emulation #LN03plus)	Translates Digital LN03plus protocol to be interpreted by the target printer.
(= Emulation #Transparent)	All data coming into the serial input of the conversion box simply go through the printer via the parallel port without any modifications.
(= Emulation #Autosensing)	Sense data coming into the serial port, and switch automatically to the correct emulation (Digital ANSI protocol or PostScript).

## Specific Conversion Box Commands

### Printer

Command Syntax	Meaning
(= Printer/Model <sup>3</sup> #LN17)	Selects printer as LN17 <sup>1</sup>
(= Printer/Model <sup>3</sup> #DEC3500)	Selects printer as DEC3500 <sup>1</sup>
(= Printer/Model <sup>3</sup> #DEC5100)	Selects printer as DEC5100 <sup>1</sup>
(= Printer/Protection/Horizontal #ON)	Solves incorrect horizontal print positioning
(= Printer/Protection/Vertical #ON)	Solves incorrect vertical print positioning
(= Printer/Protection/Fonts #ON)	Avoids font deselection
(= Printer/Offset/Vertical numeric value)	Shifts the logical page down vertically by a numeric value <sup>2</sup>
(= Printer/Offset/Horizontal numeric value)	Shifts the logical page right horizontally by a numeric value <sup>2</sup>
(= Printer/Offset/Vertical/Negative numeric value)	Shifts the logical page up vertically by a negative numeric value <sup>2</sup>
(= Printer/Offset/Horizontal/Negative numeric value)	Shifts the logical page left horizontally by a numeric value

**Note:** <sup>1</sup> Will map paper tray accordingly

<sup>2</sup> numeric value is expressed in millimeters to 1 decimal point.

<sup>3</sup> Model: Since the Convert Box detects which printer is connected automatically, this attribute is used only when the connected printer is unknown or when the Convert Box is unable to detect it.

### Time out

Command Syntax	Meaning
(= Timeout/Serial numeric value)	Set the time (in seconds) on the serial input port before the box: - Returns to Autosensing - Perform an internal reset  The value should be always equal or greater than the host time out.
(= Timeout/Parallel numeric value)	Set the time (in seconds) on the parallel output port. Used when change emulation.  The value should be always equal or greater than the printer time out

**Device\_id**

<b>Command Syntax</b>	<b>Meaning</b>
(= Device_id #Default)	Set the device identifier to PPL3.
(= Device_id #LA100)	Set the device identifier to LA100.
(= Device_id #LN03plus)	Set the device identifier to LN03plus.
(= Device_id #LQP02)	Set the device identifier to LQP02.

## Printing DEC PPL3 or PostScript Jobs Alternatively

When DEC PPL3 jobs and PostScript jobs are not separated by a sufficient idle time, the Convert Box cannot switch from the data conversion mode to the transparent mode automatically, even if the Autosensing mode is set. Therefore, prior to each job, it is necessary to set the appropriate mode by sending software configuration commands according to the job to be printed.

This section provides examples of strings to be sent to the Convert Box according to the job to be printed.

---

**Caution** *In this application, the PostScript job is forwarded to the printer through the Convert Box without data conversion. Therefore, this section applies only to configurations in which the printer has a PostScript interpreter installed and enabled through a language sensing setup feature.*

---

**Note:** In the following strings, spaces appear between the control codes DCS and ST for clarity, they are not part of the command. Names have been given to each string as examples so that they can be used as setup modules in the next section (VMS environment).

---

String to be sent prior to each DEC PPL3 job - (Filename: PPL3.TXT):

ASCII format: DCS 58;li(= Emulation #PPL3) ST

String to be sent prior to each LN03Plus job - (Filename: LN03.TXT)

ASCII format: DCS 58;li(= Emulation #LN03plus) ST

String to be sent prior to each PostScript job - (Filename: PS.TXT)

ASCII format: DCS 58;li(= Emulation #Transparent) ST

## **Sending the Appropriate Sequences in a VMS Environment**

The following provides guidelines on two methods of sending the appropriate sequences via the Convert Box depending on the type of job to be printed. The two methods involve the setup modules mentioned in the above section (PPL3.TXT, LN03.TXT and PS.TXT) which must be created in a device control library using the LIBRARY command. See detailed information on the VMS commands in the appropriate VMS documentation.

The two methods are the following:

1. Invoking the Setup modules at the Print command.
2. Defining Separate Print Queues.

### **Invoking the Setup Modules at the Print Command**

Depending on the type of job to be printed, use the following commands with the setup modules previously defined:

Printing a PPL3 job:

```
PRINT  Filename/SETUP=(PPL3)
```

Printing a LN03plus job:

```
PRINT  Filename/SETUP=(LN03)
```

Printing a PostScript job:

```
PRINT  Filename/SETUP=(PS)
```

### **Defining Separate Print Queues**

The principle is to define a separate Print Queue for each type of job, even if all Print Queues apply to the same physical serial communications port. Print Queues are specified with the VMS commands DEFINE/FORM/SETUP and INITIALIZE/QUEUE/DEFAULT. The same setup modules as in the previous section are used.

***Setting a Print Queue for PPL3 Jobs***

The Form PRT\$PPL3 is defined by the command  
DEFINE/FORM/SETUP=(PPL3) PRT\$PPL3

The Print Queue ConvBox\_PPL3 is set by the command  
INITIALIZE/QUEUE/ON=print\_port/DEFAULT=(FORM=PRT\$PPL3)  
ConvBox\_PPL3

Then each PPL3 job is printed by the command  
PRINT/QUEUE=ConvBox\_PPL3 Filename

***Setting a Print Queue for LN03plus Jobs***

The Form PRT\$PPL3 is defined by the command  
DEFINE/FORM/SETUP=(LN03) PRT\$LN03

The Print Queue ConvBox\_LN03 is set by the command  
INITIALIZE/QUEUE/ON=print\_port/DEFAULT=(FORM=PRT\$LN03)  
ConvBox\_LN03

Then each LN03 job is printed by the command  
PRINT/QUEUE=ConvBox\_LN03 Filename

***Setting a Print Queue for PostScript Jobs***

The Form PRT\$PS is defined by the command  
DEFINE/FORM/SETUP=(PS) PRT\$PS

The Print Queue ConvBox\_PS is set by the command  
INITIALIZE/QUEUE/ON=print\_port/DEFAULT=(FORM=PRT\$PS)  
ConvBox\_PS

Then each LN03 job is printed by the command  
PRINT/QUEUE=ConvBox\_PS Filename



# B

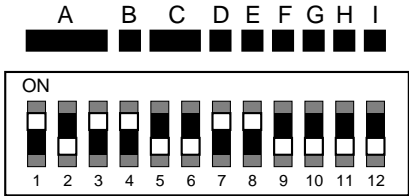
---

## Factory Default Configurations

### Dipswitch Configuration

The conversion box has two factory default configurations; US and European. These configurations differ by the paper format setting of switch #10 (G) only.

The factory default settings are as follows:



For the European versions, switch #10 (G) will be in the off position.

## Software Configuration

Software configuration is performed using specific conversion box and Digital ANSI protocol commands. They can override or dynamically change the dipswitch settings. The factory default settings determined by these commands are:

### **Specific Conversion Box Command - Factory Default Configuration**

<b>Features</b>	<b>Value</b>
Target Printer	LN17
Emulation	Autosensing (PPL3 / PostScript)
Time out on input serial port	20 seconds
Time out on output parallel port	30 seconds
Image offset (horizontal)	0
Image offset (vertical)	0
Input buffer size	5 Kbytes
Horizontal Print Protection	Not set
Vertical Print Protection	Not set
Font Print Protection	Not set
Device Identificator	PPL3

### **Reset to Factory Default**

The factory default configuration can be recovered by sending the Specific conversion box command `Reset «DCS 58 ; Ii (Reset) ST»` from the host.

**Digital ANSI Protocol Commands - Factory Default Configuration**

<b>Features</b>	<b>Value</b>
Vertical Spacing (Lpi)	Font dependent 6.25 for DEC Built-in
Horizontal Spacing (Cpi)	Font dependent: - 10 for DEC Built-in US Format - 10.3 for DEC Built-in A4 Format
Position Unit Mode	Character Unit
Graphic Unit	1/720"
Horizontal Tabulations	Every 8 character
Vertical Tabulations	Every Line
LF / New Line	LF
CR / New Line Mode	CR
Character Set (G0 = GL)	US ASCII
Character Set (G2 = GR)	DEC Supplemental
SGR (Font)	10 (DEC Built-in = Courier 10 point)
Lines Per Page	66
Columns per page	80
Margins (Top / Bottom)	- 1 / 66 (Paper Format = US Letter) - 3 / 69 (Paper Format = A4)
DECOPM	Reset (0.25" from the upper-left edge of the paper)
GSS	100
GSM	-100:100 (Paper Format = US Letter) -100:83 (Paper Format = A4)
DECSNC (Number of Copies)	1

**Reset to Factory Default**

The features listed above return to factory default configuration when sending the specific conversion box command `Reset «DCS 58; li (Reset) ST»` from the host

**Reset to Power Up default**

The power up state of the box for the following features can be different from the factory default, when they are used along with the DECFNVR command.

- LF / New Line
- CR / New Line Mode
- Character Set (G0 = GL)
- Character Set (G2 = GR)
- DECSNC (Number of Copies)

This also applies when the RIS and DECSTR reset commands are used.

---

**Note:** For more information about DECFNVR command, see  
*Chapter 2 - Configuring and Operating.*

---

---

## Technical Characteristics

### Main Characteristics

<b>Interfaces</b>	Input serial (RS 232 type) MMJ6 type	
	Output parallel (Centronics - bi-directional Nibble 1284 mode)	
<b>Supported Emulation</b>	DEC PPL3/ LN03plus	
<b>Resident Fonts</b>	<ul style="list-style-type: none"> <li>- Built-in family</li> <li>- Courier family</li> <li>- Courier 10 pts, 10 pitch</li> <li>- Courier 10 pts, 10.3 pitch</li> <li>- Elite family</li> <li>- Elite 10 pts, 12 pitch</li> <li>- Modern Gothic, 14 pts, 8 pitch</li> </ul>	
<b>RAM</b>	10 Kbytes	
<b>Electrical Characteristics</b>	AC/DC adapter AC input voltage: <ul style="list-style-type: none"> <li>- 110/120 V / 60 Hz (US version)</li> <li>- 220/240 V / 50 Hz (European version)</li> </ul>	
<b>Operating Environment</b>	<ul style="list-style-type: none"> <li>- Temperature: 15 to 35°C</li> <li>- Relative Humidity: 15% / 85%</li> </ul>	
<b>Certification</b>	<ul style="list-style-type: none"> <li>- Electromagnetic Compatibility: FCC class B</li> <li>- CE Mark</li> </ul>	
<b>Physical Characteristics</b>	Conversion Box - <b>Height:</b> 2.4 cm - <b>Width:</b> 9.5 cm - <b>Depth:</b> 7.55 cm - <b>Weight:</b> 125 g	AC/DC Adapter - <b>Weight:</b> 300 g

## Character Set List

- US ASCII
- DEC Supplemental
- DEC Technical
- VT100 Line Drawing (DEC Special Graphics)
- National Replacement Character Sets (NRC sets):
  - British
  - Dutch
  - Finnish
  - French
  - French Canadian
  - German
  - Italian
  - JIS Roman
  - Norway/Danish
  - Spanish
  - Swedish
  - Swiss
  - ISO Norway/Danish
  - ISO Latin 1 Supplemental
  - Legal
  - Hebrew character sets:
    - DEC 7-bit Hebrew
    - DEC Hebrew supplemental
    - ISO Latin Hebrew supplemental

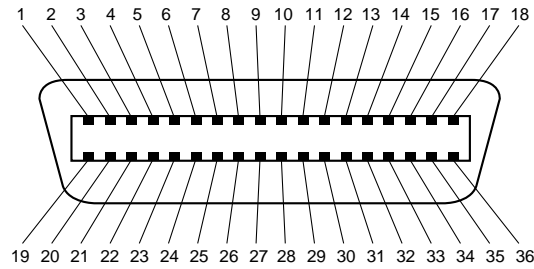
## Conversion Box Interfaces

### Parallel Interface

The conversion box can be directly connected to the parallel input port of the target printer, or through the flat cable delivered in the kit.

#### Characteristics

<b>Compatibility</b>	CENTRONICS
<b>Circuit Logics</b>	CMOS
<b>Data Format</b>	8 bits
<b>Logic Voltage Levels</b>	TTL-compatible
<b>Connector</b>	Amphenol 36 pins (male)



*Parallel Interface Pin Assignment*

## Technical Characteristics

The following table details the signal to pin assignment for the interface and the direction of the signal.

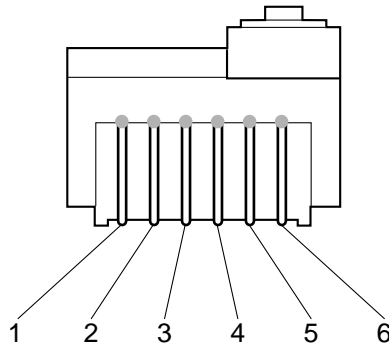
### Pin Assignment

<b>Pin</b>	<b>Signal Direction</b>	<b>Signal Description</b>
<b>1</b>	To printer	<b>STROBE</b>
<b>2-9</b>	To printer	<b>DATA 0-7</b>
<b>10</b>	From printer	<b>ACKNOWLEDGE</b>
<b>11</b>	From printer	<b>BUSY</b>
<b>12</b>	From printer	<b>PAPER EMPTY</b>
<b>13</b>	From printer	<b>SELECT</b>
<b>14</b>	To printer	<b>AUTOFEED (host busy)</b>
<b>16</b>	--	<b>LOGIC GROUND</b>
<b>17</b>	--	<b>CHASSIS GROUND</b>
<b>18</b>	From printer	<b>+ 5 Volts</b>
<b>19-30</b>	--	<b>SIGNAL GROUND</b>
<b>31</b>	To printer	<b>INIT</b>
<b>32</b>	From printer	<b>ERROR</b>
<b>33</b>	--	<b>LOGIC GROUND</b>
<b>36</b>	To printer	<b>SELECT-IN</b>



### Serial Interface

The serial communication port is a 6 pin modular MMJ, RS232 standard interface. The serial cable must be a Digital connect cabling system with snap-in connector and a flat 6 conductor cable.



*Serial Interface Pin Assignment*

The following table details the signal to pin assignment for the interface and the direction of the signal.

#### Pin Assignments

Pin	Signal Direction	Signal Description
1	From box	DTR
2	From box	TRANSMIT
3	--	GROUND
4	--	BUSY
5	To box	RECEIVE
6	To box	DSR



---

**Note:** In the Configuration Sheet, the target printer listed under the General title is identified by the Convert Box automatically. In case the Convert Box is not able to identify which printer is connected to the parallel port, the tag “(Not Identified)” is printed next to the Target Printer name which is defined by default. The Convert Box is not able to identify the connected printer when the printer is unknown, or when the printer is not able to provide an identifier string according to the IEEE 1284 Nibble mode.

---

# Fonts List Printout

The printout will show:

- Resident fonts
- Down line loaded fonts

To run the font lists printout, press the button twice in a row.



## Convert Box for DEClaser

### FONT LIST

Revision Level V1.0

```

*-- DBULTM1 *-
DBULTM1J02SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
DBULTM1J02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
DBULTM1J02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
DBULTM1J02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
DBULTM1J02SKOOGS0001QZZZ02F000 : ABCDEF stuvwX
DBULTM1202SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
DBULTM1202SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
DBULTM1202SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
DBULTM1L02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
DBULTM1L02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
DBULTM1L02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
DBULTM1L01VKOOGS0001QZZZ02F000 : ABCDEF stuvwX
DBULTM1L01VKOOGS0001CZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
DBULTM1L01VKOOGS0001QZZZ02F000 : ABCDEF _H-t |
DBULTM1L01VKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
*-- RCOURIR *-
RCOURIRJ02SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
RCOURIRJ02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
RCOURIRJ02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
RCOURIRJ02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
RCOURIR202SKOOGS0001QZZZ02F000 : ABCDEF stuvwX
RCOURIR202SKOOGS0001CZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
RCOURIR202SKOOGS0001QZZZ02F000 : ABCDEF _H-t |
RCOURIR202SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
RCOURIR101VKOOGS0001UZZZ02F000 : ABCDEF stuvwX
RCOURIR101VKOOGS0001CZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
RCOURIR101VKOOGS0001QZZZ02F000 : ABCDEF _H-t |
RCOURIR101VKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
*-- RELITLO *-
RELITLOL02SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
RELITLOL02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
RELITLOL02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
RELITLOL02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
*-- D000000 *-
D000000J02SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
D000000J02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
D000000J02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
D000000J02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
D000000202SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
D000000202SKOOGS0001CZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
D000000202SKOOGS0001QZZZ02F000 : ABCDEF _H-t |
D000000202SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
D000000L02SKOOGS0001UZZZ02F000 : ABCDEF stuvwX
D000000L02SKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
D000000L02SKOOGS0001CZZZ02F000 : ABCDEF _H-t |
D000000L02SKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
D000000101VKOOGS0001UZZZ02F000 : ABCDEF stuvwX
D000000101VKOOGS0001CZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
D000000101VKOOGS0001QZZZ02F000 : ABCDEF _H-t |
D000000101VKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE
*-- DMDRGTH *-
DMDRGTHH03WKOOGS0001UZZZ02F000 : ABCDEF stuvwX
DMDRGTHH03WKOOGS0001QZZZ02F000 : ÁÁÁÁÁÆ ööðöæø
DMDRGTHH03WKOOGS0001CZZZ02F000 : ABCDEF _H-t |
DMDRGTHH03WKOOGS0001QZZZ02F000 : œ+ΔΔç ar?fwE

```

Font List Printout

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