

## MODEL DMTD - TIME/DATE STAMP SERIAL MINI-PRINTER

- DOT MATRIX OR THERMAL VERSION
- PANEL MOUNT OR DESKTOP
- TIME/DATE STAMP
- LINE COUNTER STAMP
- INTERVAL TIMER OUTPUT FOR REQUESTING DATA
- STANDARD SIZE THERMAL PAPER
- PRINT HEAD ON/OFF COMMANDS
- FRONT PANEL OR SERIAL PROGRAMMING



### DESCRIPTION

The DMTD can be panel mounted or used as a desk-top unit. The unit's programmable Time and Date Stamping feature can print the actual time and date following each data printout. The Line Counter Stamping feature can keep a running record of the number of lines printed. The unit can print one line at a time or can print a group of lines with a print buffer command. Character height, width, and font size can be changed along with inverting the direction of print. The unit can be programmed by the front panel buttons or by serial commands. To allow other nonprintable communications on the same serial loop, the print head can be turned off and on serially.

The unit's unique transistor Interval Timer Output can be connected to any Red Lion Controls product with a user input or print request terminal. When the user input is programmed for print request, the RLC product will serially send it's data to the printer on a periodic basis as determined by the setting of the Interval Timer feature. The interval values can be set from every 5 seconds through every 24 hours.

Red Lion Controls offers serial converters to interface the unit's RS232 communications to any RLC product with serial communications capability. Direct PC access is through any terminal emulator program and any PC RS232 serial communications port. Accessories available from Red Lion Controls include paper and ribbons for the Dot Matrix printer. Thermal paper is a standard size available at most office supply stores. A ten foot generic printer cable is also available.

### ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
DMTD*	Dot Matrix Printer - 115 VAC	DMTD0000
	Dot Matrix Printer - 220 VAC	DMTD0010
	Dot Matrix Printer - +7.5 to 13.6 VDC	DMTD0020
	Dot Matrix Printer - +15 to 24 VDC	DMTD0030
	Thermal Printer - 115 VAC	DMTDTP00
	Thermal Printer - +7.5 to 13.6 VDC	DMTDTP20
---	Dot Matrix Paper: 12 rolls	DMTDPR12
---	Dot Matrix Ribbon: 12 cartridges	DMTDRB12
---	Printer Cable: 4 wire w/shield, one end 25DP male, 10 feet long	DMTDCB00
GCM232	Serial Converter 20mA/RS-232	GCM23201
ICM4	RS232/RS485 Serial Converter	ICM40030
ICM5	RS232/RS485 Converter Module	ICM50000

\* Printer power cables are removable and have a DC connector on the printer end.

### SPECIFICATIONS

1. **POWER:**
  - DMTD0000: 115 VAC ±5% (1.0 A @ 9 V)
  - DMTDTP00: 115 VAC ±5% (2.0 A @ 9 V)
  - DMTD0010: 230 VAC ±5% (1.0 A @ 9 V)

The above models have a wall mount transformer w/5.5' cord

  - DMTD0020: +7.5 to 13.6 VDC @ 1.0 A max.
  - DMTDTP20: +7.5 to 13.6 VDC @ 2.0 A max.
  - DMTD0030: +15 to 24 VDC @ 1.0 A max.

Wire color for 18" cord of above models: Red wire is +DC, Black wire is -DC
2. **SERIAL COMMUNICATIONS:**
  - Type:** RS232
  - Communication Format:**
    - Baud Rate:** DIP switch selectable for 150 through 9600
    - Parity:** DIP switch selectable for odd, even, or no parity
    - Data Bits:** 7 or 8 bits
    - Buffer:** 2K
    - Connection:** 25 DP female
3. **PAPER:** (One roll supplied) 2.25" Plain Paper Roll (2.5" ext. diameter)
4. **RIBBON CARTRIDGE:** (One ribbon cartridge supplied)  
Blue ink, Self reversing, 250 K character life
5. **PRINT:**
  - Dot Matrix: 40 or 30 characters per line
  - Thermal: 24 through 64 characters per line
  - 2.5 lines per second printing
  - 5 lines per second, paper feed mode
  - Full ASCII character set
6. **INTERVAL TIMER OUTPUT:** NPN Open Collector Transistor output  
**Max. Voltage:** +30 VDC  
**Max. Current:** 100 mA  
**Range:** 5 seconds to 24 hours  
**Pulse Length:** 100 msec.
7. **TEMPERATURE RANGE:** 0 to 50° C
8. **RELATIVE HUMIDITY:** 20 to 90% non-condensing
9. **WEIGHT:** 2 lbs (0.907 kg)

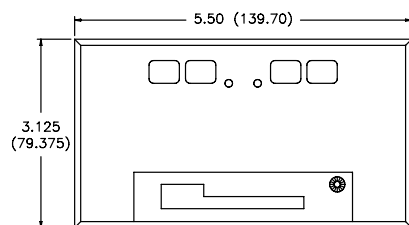


**CAUTION: Risk of Danger.**  
 Read complete instructions prior to installation and operation of the unit.

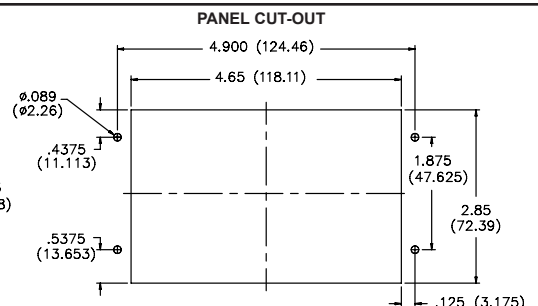
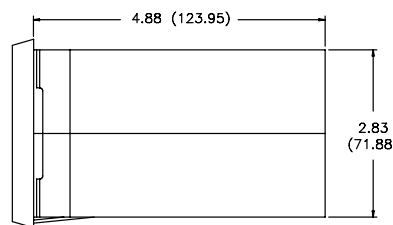


**CAUTION: Risk of electric shock.**

### DIMENSIONS In inches (mm)



Front View of Dot Matrix Printer shown. Thermal Printer does not have a ribbon.



## INSTALLATION ENVIRONMENT

The unit should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation. Placing the unit near devices that generate excessive heat should be avoided.

The bezel should be cleaned only with a soft cloth and neutral soap product. Do NOT use solvents. Continuous exposure to direct sunlight may accelerate the aging process of the bezel.

Do not use tools of any kind (screwdrivers, pens, pencils, etc.) to operate the push buttons of the unit.

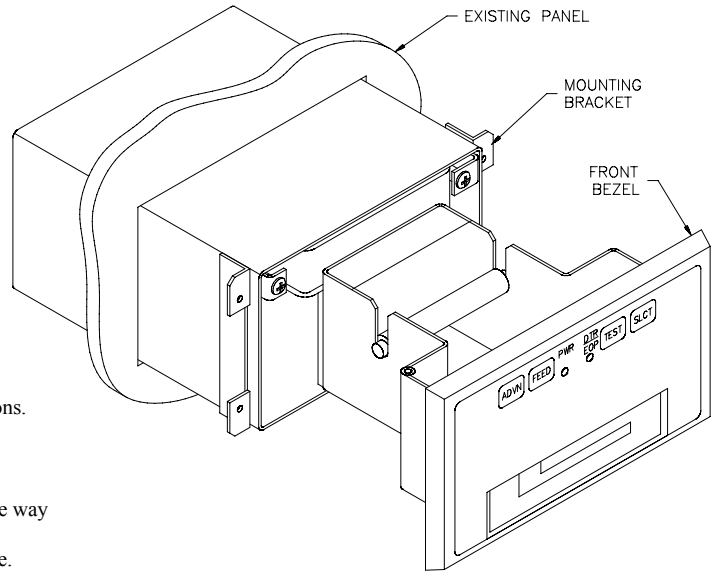
## INSTALLATION

If this unit will be desk top mounted, proceed to Wiring Diagrams. The unit installation is complete.

### PANEL MOUNTING

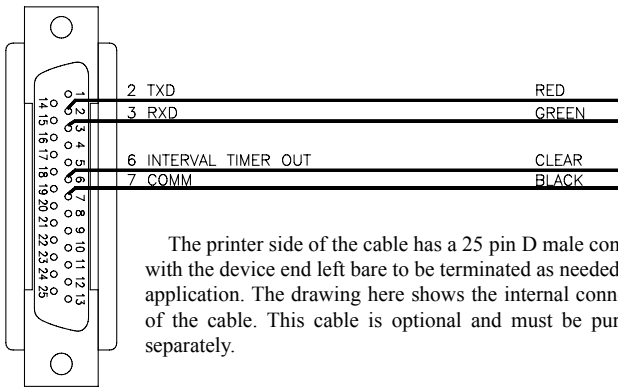
The following procedure assures proper installation:

1. Cut panel opening and drill mounting holes to specified dimensions. Remove burrs and clean around panel opening.
2. Pull unit from case until stops are reached.
3. Slide printer case into the panel.
4. Install 4 mounting screws through the brackets on the printer case all the way through the panel. Screws may be secured with lock washers.
5. Push the bezel of the printer toward the panel until it latches in the case.



## WIRING DIAGRAMS

### Red Lion Controls Optional Printer Cable

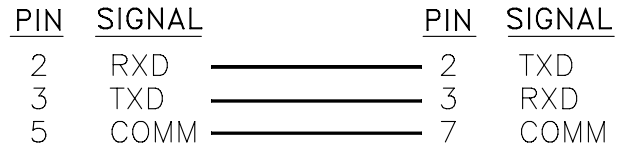


### PC 9 Pin RS-232 To 25 Pin RS-232 Printer

To connect the printer to the RS-232 port of a computer, a null modem cable is needed. If this cable is not available, then one can be fabricated using a 9 pin to 25 pin D male connector, wired as shown in the cable diagram. Programming using the PC is described later. Baud Rate and Format is described later.

#### COMPUTER 9 PIN RS-232

#### PRINTER 25 PIN RS-232

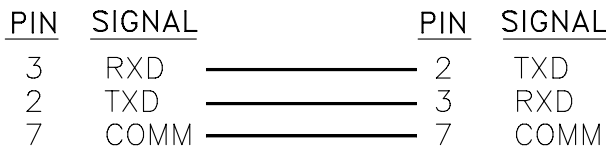


### PC 25 Pin RS-232 To 25 Pin RS-232 Printer

To connect the printer to the RS-232 port of a computer, a null modem cable is needed. If this cable is not available, then one can be fabricated using a 25 pin to 25 pin D male connector, wired as shown in the cable diagram. Programming using the computer is described later. Baud Rate and Format is described later.

#### COMPUTER 25 PIN RS-232

#### PRINTER 25 PIN RS-232

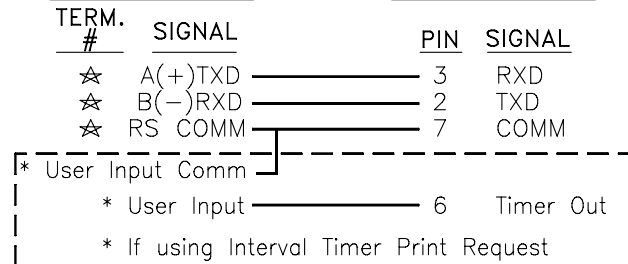


### Red Lion Controls RS-232 To RS-232 Printer

To connect the printer with another RLC product using RS-232 communications, a cable must be fabricated using a 25 pin D male connector, wired as shown in the cable diagram. If using the Interval Timer of the printer as a print request to RLC products, then connect the wires marked \*.

#### RLC PRODUCT WITH RS-232

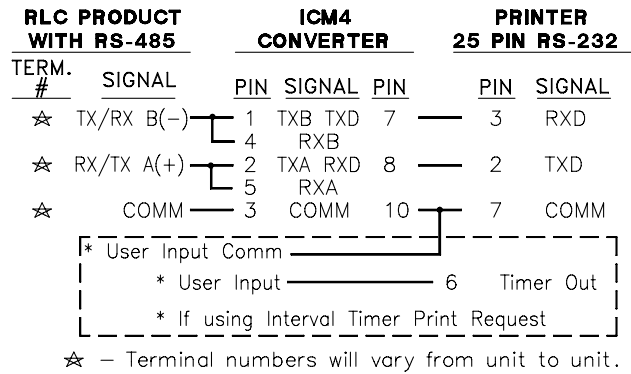
#### PRINTER 25 PIN RS-232



☆ - Terminal numbers will vary from unit to unit.

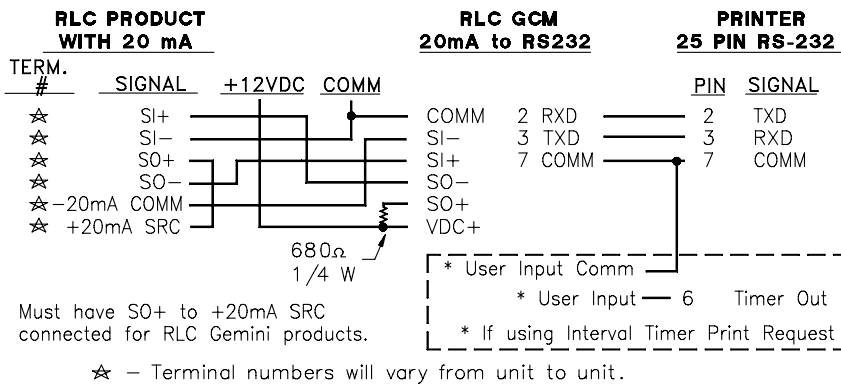
## Red Lion Controls RS-485 to RS-232 Printer

To interface the printer with an RLC product using RS-485 communications, a cable must be fabricated using a 25 pin D male connector to the ICM4 (RS485 to RS232 converter) and another cable from the ICM4 to the RLC product per the shown cable diagram. The printer will print the unit's address when it is setup on the RLC unit. If using the Interval Timer of the printer as a request print to RLC products, then connect the wires marked \*. (There is no minimum baud rate for ICM4 operations, when communications from RS485 to RS232 only.)



## Red Lion Controls 20mA Serial Loop to RS-232 Printer

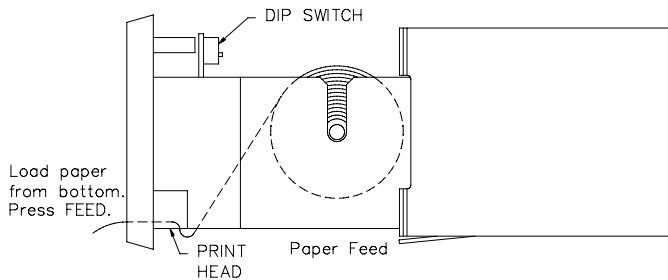
With 20 mA serial communications, multiple RLC products can be on the same loop and send data to the printer. The printer will print the unit's address when it is setup on the RLC unit. For RS232 to 20 mA use a RLC GCM converter and then use the below cable diagram. A 25DP male to 25DP male cable is needed between the printer and GCM. If using the Interval Timer of the printer as a request print to RLC products, then connect the wires marked \*.



## INSTALLING PAPER

When the printer is out of paper, the yellow DTR/EOP LED will blink. Printer power must be on to install paper.

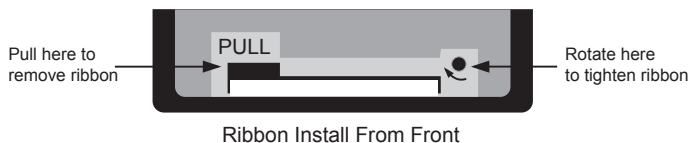
To replace the paper supply, pull the front bezel forward, insert a new roll of paper and thread as shown in the diagram. Repeatedly press <FEED> to advance the paper over the ribbon and through the front panel.



## INSTALLING RIBBON (Dot Matrix Only)

To replace the ribbon, pull the installed ribbon cartridge forward to remove. Insert the new cartridge with the paper under the ribbon. Turn the knob toward the arrow to tighten the ribbon.

Note: Remove the ribbon if printer will be idle for more than two weeks.



## FRONT PANEL DESCRIPTION

### LEDS

**PWR** (green): When lit power is on.

**DTR/EOP** (yellow): When lit printer is On-Line.

When flashing printer is out of paper.

### FUNCTION KEYS

#### ON-LINE:

<SLCT> : Press to change printer from on-line to off-line mode.

On-Line: The DTR/EOP LED is on.

<ADV N> : Press when printer is On-Line to advance paper five lines .

<TEST> : Press to print program version, time, date and count value of printer.

<FEED> : Press to advance paper one line.

#### OFF-LINE:

<SLCT> : Press to change printer from off-line to on-line mode.

Off-Line: The DTR/EOP LED is off.

<ADV N> : Press when printer is On-Line to advance paper five lines .

: Press when printer is Off-Line to enter Printer Set Mode menus

<TEST> : Press to print program version, time, date and count value of printer.

<FEED> : Press to advance paper one line.

# FRONT PANEL PROGRAMMING

## Main Set Menu

With DTR/EOP on, press <SLCT> then <ADVN> to access the menu below:

- <SLCT> EXIT SET MODE: Exits the Set Mode and places the printer on-line.
- <ADVN> BAUD RATE AND PARITY: See Baud Rate and Parity section.
- <TEST> CLOCK/ CALENDAR/ INTERVAL: See Clock/ Calendar/ Counter/ Interval Timer Section.
- <FEED> PRINT FEATURES: See Print Features Section.

## PRINT AND CHARACTER FEATURES

From the Main Set Menu, press <FEED> to access the menu below:

### Fields for Print and Character Features

- <SLCT> EXIT SET MODE: Exits the Set Mode and places the printer on-line.
- <ADVN> BACKUP TO PREVIOUS MENU: Exits to Main Set Menu.
- <TEST> ADVANCE FIELD SELECTED: Advances selections in the field marked with “→” (This arrow indicates the changeable field).
- <FEED> GO TO THE NEXT FIELD: Moves “→” to the next field.

#### Example:

→ LINE | NORMAL | H07 | W05 | CRLF | F40  
 Field: A | B | C | D | E | F

Field	Selections For Print And Character Features Fields
A	LINE : Prints as soon as a complete line of characters is stored or when a Carriage Return Form Feed Vertical Tab or Line Feed is received. (Default)
	BUFFER : Only prints when 2K buffer is full or with CTRL D.
B	NORMAL : The bottom of the characters come out of the printer first. (Default)
	INVERTED : The top of the characters come out of the printer first. First line transmitted is printed last.
C	H07 : Character normal height 7 dots (Default)
	H14 : Character expanded height 14 dots
D	W05 : Character width 5 dots (Default)
	W10 : Character width 10 dots (Dot Matrix Only)
E	CRLF: If Carriage Return and Line Feed is received it is converted to LF OR after a full line both Carriage Return and Line Feed is ignored. (Default)
	All : All Carriage Returns and Line Feeds are processed.
F	F30 : 30 character per line F40 : 40 character per line (Default)      Dot Matrix
	F24, F32 (Default), F40, F42, F48, F64:      Thermal

Printer returns to default settings with a serial CTRL X command. The clock/calendar/counter stamp and program menus will always print in normal height and width.

## Clock/Calendar/Counter/Interval Timer Features

From the Main Set Menu, press <TEST> to access the menu below:

### Printer Clock/Calendar/Counter/Interval Timer Selection Mode Menu

- <SLCT> EXIT SET MODE: Exits the Set Mode and places the printer on-line.
- <ADVN> BACKUP TO PREVIOUS MENU: Exits to Main Set Menu.
- <TEST> CLOCK/CALENDAR FORMAT: Formats printout of Clock/ Calendar/ Counter/ Interval Timer.
- <FEED> CLOCK/CALENDAR SET: Sets Clock/Calendar/Counter/Interval Timer.

## Fields for Clock/Calendar/Counter/Interval Timer Set

From the Selection Mode Menu, press <FEED> to access the menu below:

- <SLCT> EXIT SET MODE: Exits the Set Mode and places the printer on-line.
- <ADVN> BACKUP TO PREVIOUS MENU: Exits to Main Set Menu.
- <TEST> ADVANCE FIELD SELECTED: Advances selections in the field marked with “→” (This arrow indicates the changeable field).
- <FEED> GO TO THE NEXT FIELD: Shows the value entered and moves “→” to the next field. Pressing <FEED> from field G loops back to field A.

#### Example:

→ 21 | :30 | 04 | /24 | /98 | 0000 | OFF  
 Field: A | B | C | D | E | F | G

Field	Selections for Clock/Calendar/Counter/Interval Timer Set Fields
A	00-24: Set hours in 24 hour format. Press <TEST> for each hour to be advanced.*
B	00-59: Set minutes. Press <TEST> for each minute to be advanced.*
C	00-12: Set month. Press <TEST> for each month to be advanced.*
D	00-31: Set date. Press <TEST> for each date to be advanced.
E	00-30 96-99: Set year. Press <TEST> for each year to be advanced.* (When using this method, the setting will jump at 30 to 96.)
F	0000-9999: Reset line counter (counts number of Carriage Returns). Press <TEST> to reset to 0000.
G	OFF 05S 15S 30S 01M 02M 05M 15M 30M 01H 02H 04H 06H 08H 12H 24H Sets the interval time between the pulsing of the Interval Timer pin 6. Press <TEST> for each time period to be advanced and displayed.

\* Value will advance without display indication. Press <FEED> to review.

## Fields for Clock/Calendar/Line Counter Format

From the Selection Mode Menu, press <TEST> to access the menu below:

- <SLCT> EXIT SET MODE: Exits the Set Mode and places the printer on-line.
- <ADVN> BACKUP TO PREVIOUS MENU: Exits to Main Set Menu.
- <TEST> ADVANCE FIELD SELECTED: Advances selections in the field marked with “→” (This arrow indicates the changeable field).
- <FEED> GO TO THE NEXT FIELD: Moves “→” to the next field.

#### Example: (This line will not reflect the set time and date.)

→ ON | HH:MM | :SS | MM/DD | /YY | COUNT ON  
 Field: A | B | C | D | E | F

Field	Selections for Clock/Calendar/Counter/Interval Timer Formats		
	Enabled	Disabled	
A	ON	OFF	Clock Printout
B	HH:MM	:	Hours & Minutes Printout
C	:SS	:	Seconds Printout
D	MM/DD	/	Month & Date Printout
E	/YY	/	Year Printout
F	COUNT ON	COUNT OFF	Line counter printout

The values and formats are saved and the clock/calendar continues to run during power down by an internal nonreplacable battery. The time date stamp will not occur until one second after the final carriage return of a transmission. The line counter will continue to count carriage returns even if the line counter printout is off.

## Baud Rate and Parity Features

From the **Main Set Menu**, press <ADVN> to access the menu below:

*Note: Before setting Baud Rate and Parity be sure to review the interfaced RLC product limitations. See DIP Switches for default settings.*

### Fields for Baud Rate and Parity Features

<SLCT> **EXIT SET MODE**: Exits the Set Mode and places the printer on-line.

<ADVN> **BACKUP TO PREVIOUS MENU**: Exits to Main Set Menu

<TEST> **ADVANCE FIELD SELECTED**: Advances selections in the field marked with "→" (This arrow indicates the changeable field).

<FEED> **GO TO THE NEXT FIELD**: Moves "→" to the next field

#### Example:

→ **BAUD 2400** | **DATA 7** | **PARITY NONE**  
 Field:        A        |        B        |        C

Field	Selections for Baud Rate and Parity Fields
A	150 300 600 1200 1800 2400 4800 9600: Baud Rate
B	7 8: DATA
C	EVEN ODD NONE: Parity Set

## DIP Switches

The printer communication protocol can be changed by the front panel or by DIP switches located inside the printer. When power is cycled to the printer, the printer **WILL ALWAYS DEFAULT** to the DIP switch settings. It is preferred to set the printer communication (Baud Rate and Parity) protocol by the following DIP switch tables. After setting the DIP switches, cycle power to the printer to enable the new settings.

**Factory Setting:** 2400 baud, Data 7, Parity Enable, Parity Odd

### Baud Rate

Switch#	150	300	600	1200	1800	2400	4800	9600
1	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
3	ON	ON	ON	ON	OFF	OFF	OFF	OFF

ON = Switch Down

### Format

Switch#	Data7 Bit	Data8 Bit
4	ON	OFF

Switch#	Parity None	Parity Enable
5	ON	OFF

Switch#	Parity Even	Parity Odd
6	ON	OFF

ON = Switch Down

Refer to the RLC product's specifications for specific baud rate and communication format limitations. Serial settings of 7 data bits, no parity and one stop bit may not be recognized as valid by the printer. When using a time and date stamp, baud rates should be set higher than 300 to prevent erroneous stamping in the middle of transmissions.

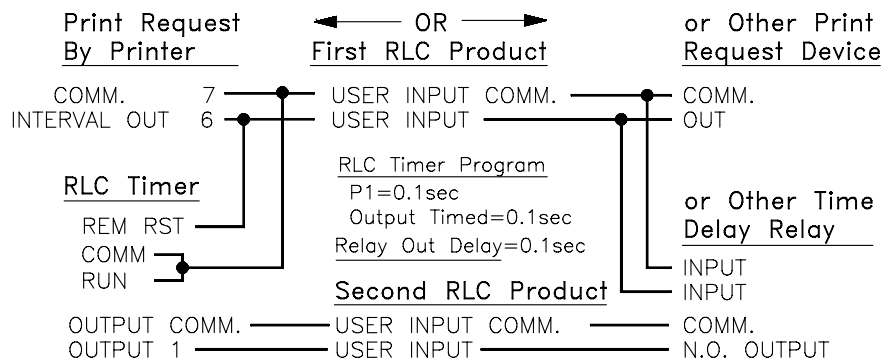
## Interval Timer Output

This printer has an NPN Open Collector transistor 100 msec output closure between pin 6 and pin 7. To use this output, wire pin 6 to the user input or print request terminals of Red Lion Control products and pin 7 to RLC common. This user input must be in the sinking position (active low) to perform a print request from the printer. With this configuration, the printer could be programmed to have the RLC product send its data to the printer on a timer interval basis. The interval can be programmed by the front panel or by serial communications. The Interval Timer transmits [05] by RS232 when this output is activated. Wiring for single product Interval Timer print request was shown previously.

## Two Or More Products Printing At Same Time

At least a 100 msec time delay is needed between transmissions, when more than one RLC product is sending information to the printer at the same time. The Interval Timer output of the printer or other print request device must be parallel from the first RLC user input to a RLC timer or other time delay device or relay. The delayed output from these units would then go to the second RLC product user input. An additional time delay is needed for each additional RLC product. Wiring for this is shown below.

### Wiring for Multi-product Print Request Transmission Time Delay



The RS232, RS485, and 20 mA wiring is not shown here.



# SERIAL PROGRAMMING

The following ASCII commands and ESCAPE functions can be used in a PC using a terminal emulator program (available from Red Lion Controls in SFMD programs). The ASCII commands can be programmed into messages of Red Lion Controls ADI or MDI message display products. To print messages in the ADI/MDI the message DESTINATION must be on TRANSMIT and after each message to be printed add a Carriage Return. In the ADI/MDI CONFIGURATION file the XON/XOFF should be OFF.

## ASCII Printer Commands

Address Decimal	Hex	Control Keys (Letters are CAPS)	Symbols In MDI/ADI	Comments
0	[00]	CTRL @	∅	
1	[01]	CTRL A	☺	
2	[02]	CTRL B	☹	Select character per line: Dot Matrix - 30 Thermal - 24
3	[03]	CTRL C	♥	Select character per line: Dot Matrix - 40 Thermal - 32
4	[04]	CTRL D	♦	End of Text or print buffer
5	[05]	CTRL E	♣	Transmitted by Interval Timer
6	[06]	CTRL F	♠	
7	[07]	CTRL G	+	
8	[08]	CTRL H	⊕	Back Space: Remove previous character.
9	[09]	CTRL I	□	Horizontal Tab: Advances four spaces in line.
10	[0A]	CTRL J	⊞	Line Feed: Advance to beginning of next line.
11	[0B]	CTRL K	σ	Vertical Tab: Advance 5 lines.
12	[0C]	CTRL L	♀	Form Feed: Advance 10 lines. (SLCT Key sends <XON> [12] when pressed.)
13	[0D]	CTRL M		Carriage Return: Advance beginning next line.
14	[0E]	CTRL N	↵	All characters expanded height.(14 dots)
15	[0F]	CTRL O	✱	All characters normal height.* (7 dots)
16	[10]	CTRL P	⏏	
17	[11]	CTRL Q	⏏	XON
18	[12]	CTRL R	↑	Print Head On: Turns print head on after an off.
19	[13]	CTRL S	!!	XOFF
20	[14]	CTRL T	Π	MDI/ADI software can not use this character.
21	[15]	CTRL U	§	Print Head Off: Turns print head off. Does not turn off DTR/EOP LED
22	[16]	CTRL V	-	
23	[17]	CTRL W	↕	
24	[18]	CTRL X	↑	Resets printer to defaults.
25	[19]	CTRL Y	↓	
26	[1A]	CTRL Z	→	
Num. Lock numbers must be used for ALT commands.				
27	[1B]	ALT 27	←	[ESC] Escape: Precedes various functions
28	[1C]	ALT 28	└	All Characters Expanded Width: 10 dots
29	[1D]	ALT 29	↔	All Characters Normal Width:* 5 dots

Note: The Clock/Calendar/Counter Stamp and programming menu will always print in normal height and width even if the data is expanded.

\* Cannot combine expanded width and inverted text on Dot Matrix models. Could result in loss of printing functions. To correct this error, send a CTRL X Command or press <SLCT> <ADVN> <FEED> <FEED> <FEED> <FEED> <TEST>.

## Escape Key [ESC] Printer Functions

Command (Letters must be CAPS)	Function
[ESC]E	Auto print clock/calendar/counter. Enter once to Auto print after each carriage return per [ESC]F format.
[ESC]F{Format Character*}	Format print clock/calendar/line counter for Auto print [ESC]E.
[ESC]D	Disable print clock/calendar/line counter. Enter once to stop Auto print [ESC]E.
[ESC]T{Format Character*}	Single serial transmit clock/calendar/line counter per this format.
[ESC]P{Format Character*}[CTRL M]	Single print clock/calendar/line counter per this format.
[ESC]S{time date}[CTRL M]	Set {time and date} 24 hour format: HH:MM:SS MM/DD/YR Note: Can only be performed in normal width mode. Example: [ESC]S26:30:00 01/24/98[CTRL M]
[ESC]C	Reset line counter to 0000.
[ESC]I@	Disable interval timer.
[ESC]I?	Prints current interval timer settings.
[ESC]I{Interval Character}	Set interval timer {see Interval Timer Chart for Interval Character}.
[ESC]MN	Normal mode: Bottom of the character prints first. (Default)
[ESC]MI	Inverted mode: Top of the character prints first. First line transmitted is printed last.
[ESC]ML[CTRL D]	Line mode: Prints as soon as a complete line of characters is stored or when a Carriage Return, Form Feed, Vertical Tab, or Line Feed is received. (Default)
[ESC]MB	Buffer mode: Only prints when 2K buffer is full or with CTRL D print buffer command.
[ESC]MC	CR-LF mode: If Carriage Return and Line Feed is received it is converted to LF OR after a full line both Carriage Return and Line Feed is ignored. (Default)
[ESC]MA	Print All mode: All Carriage Returns and Line Feeds are processed.
[ESC]F{Format Number**}	Format font size for thermal models.

\*See the Clock/Calendar/Line Counter Format Chart for Format Character.

\*\*See the font size chart for format number.

Note: CTRL X: Resets printer to Default.

## Print Head On/Off

This printer has a Print Head On/Off function. The Print Head Off (CTRL U) serial command function allows other communications to be on the serial loop without being printed. For example, the Red Lion Controls products ADI and MDI can ask for embedded data from other products on the loop without the communications being printed. The Print Head On (CTRL R) serial command function will then turn the printer back on allowing the next information to be printed. These commands can be in separate ADI/MDI messages or in the same message.

Single Message Example:

Message: CTRL U **Test A** CTRL R **Test B** Carriage Return

Print Result: **Test B**

### Clock/Calendar/Line Counter Format Chart

This chart is only used for Escape Functions F, T, and P.

Format Character	Hours/ Minutes	Seconds	Month/ Day	Years	Line Counter
@	■	■	■	■	■
A or I			■	■	■
B or R	■	■			■
C or S or K					■
D	■	■	■	■	
E or M			■	■	
F or V	■	■			
G or O or W					
H	■		■	■	■
J or Z	■				■
L	■		■	■	
N or ^	■				
P	■	■	■		■
Q			■		■
T	■	■	■		
U			■		
X	■		■		■
Y			■		■
[					■
]		■			
\	■		■		

### Interval Timer Chart

This chart is only used for Escape Function I.

Interval Character	Interval Time
@	OFF
A	5 sec
B	15 sec
C	30 sec
D	1 min
E	2 min
F	5 min
G	15 min
H	30 min
I	1 hour
J	2 hour
K	4 hour
L	6 hour
M	8 hour
N	12 hour
O	24 hour
?	prints current setting

For additional explanations of these settings, see Interval Timer Output.

### Font Size Chart

This chart is only used for Escape Function F.

Format Number	Font Size
0	24
1	32
2	40
3	42
4	48
5	64

### Printing From a PC or Similiar Terminal Device

The printer requires a Carriage Return/Line Feed combination in order to print the last line of ASCII text from a PC or similiar terminal device. This is known as the "Enter" or "NewLine" key on a keyboard.

For Red Lion Controls PARADIGM Operator Interfaces, this is accomplished by programming the function "PrintNewLine()" after the text to be printed.

For G3 Operator Interfaces, this is accomplished by programming the function "/R" after the text to be printed.

### Unwanted Multiple Transmissions of Same Data

In some products, multiple transmissions of the same data may occur when using the Red Lion Controls' product front button (print request). This is normal operation for those products. When using the product's user input and multiple transmissions of the same data occurs, the following could help:

- 1) Lower the User Input active pulse length to just below a single transmission time. (With this printer, the Interval Timer output is at fixed 100 msec. pulse length.)
- 2) Lower the baud rate of the transmission to the slowest possible.
- 3) Add mnemonics, serial unit address, or more than one parameter to the transmissions.

#### **LIMITED WARRANTY**

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company's option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

The customer agrees to hold Red Lion Controls harmless from, defend, and indemnify RLC against damages, claims, and expenses arising out of subsequent sales of RLC products or products containing components manufactured by RLC and based upon personal injuries, deaths, property damage, lost profits, and other matters which Buyer, its employees, or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-637), as now in effect or as amended hereafter.

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