

Models: LD9800 Series

***Universal
Customer Displays***

2 by 20 character display

USER MANUAL



NOTICE

The manufacturer of the POS pole display makes no representations or warranties, either expressed or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of fitness for a particular purpose or for any indirect, special or consequential damages. Information in this document is subject to change without notice and does not represent a commitment on the part of the manufacturer.

FCC NOTICE

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

LOGIC CONTROLS, INC.

355 Denton Avenue
New Hyde Park, NY 11040
TEL: (516) 248-0400
FAX: (516) 248-0443
Email: loi@logiccontrols.com
<http://www.logiccontrols.com>

TABLE OF CONTENTS

FEATURES..... 1

MODEL IDENTIFICATION..... 2

CARTON CONTENTS 2

HARDWARE INSTALLATION 3

INTERFACE DRIVER INSTALLATION..... 5

FUNCTIONAL TEST 7

OPOS DRIVER INSTALLATION 10

INTERFACE CONNECTORS 11

SOFTWARE COMMAND SET DOWNLOAD..... 13

SOFTWARE COMMAND DESCRIPTION 14

HARDWARE CONFIGURATION 18

CHARACTER CODE TABLES 19

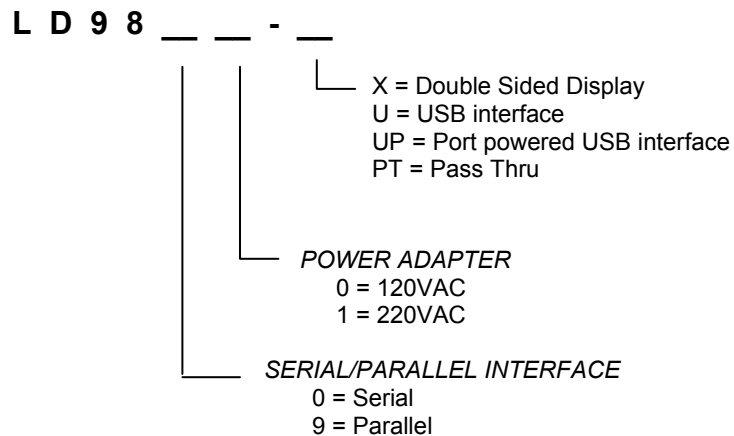
GENERAL SPECIFICATIONS..... 25

FEATURES

The LD9800 family of universal command pole displays offers a wide range of high quality features and models to choose from. Listed below are the features incorporated into each pole display. Not all features are available in all models. The model identification chart will assist you in selecting the model best suited to the application needs.

- Two line display with twenty 9mm high characters each line
- Bright blue-green fluorescent display
- Double sided display available
- Downloadable command sets and fonts for emulating current and future pole displays
- Supports wide variety of languages with multiple fonts, including English, Spanish, German, French, and Italian
- Programmable power-up default setting for international symbols and font code selection
- OPOS/JPOS compatible
- Better visibility due to optically matched anti-scratch lens and wider character pitch
- Long life and trouble free operation
- Adjustable viewing angles
- Available with 120V or 220V Power Adapters
- Available in beige or dark gray
- Port powered or standard USB interface
- Direct RS232C or parallel interface
- RS232 or parallel pass-thru interface for POS printer
- Programmable RS232C baud rate, supporting high speed serial protocol up to 19,200 baud
- User definable character
- Automatic standard or smart message scrolling on top or bottom line
- Real time clock display
- One time message scrolling

MODEL IDENTIFICATION



CARTON CONTENTS

1. Pole display, pre-assembled.
2. Interface cable. For serial interface, the display comes with a DB9F connector (to computer) and a MiniDIN8 connector (to pole display) as standard equipment. Optional DB25F connector (to computer) is available.

Note: This cable is only supplied with standard serial pole displays with no pass-thru function. Other interface options will have different cables.

3. Transformer adapter 120VAC to 7.5VAC (optional 220VAC).
4. Metal base plate with mounting hardware.
5. Quick Installation Guide.

HARDWARE INSTALLATION

The LD9800 family of universal pole displays has been pre-assembled to make the installation as simple as possible. Please follow steps below for models of different interfaces.

LD9800 Standard Serial Interface Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Connect the round Mini-DIN8 male connector from the pole display to the round Mini-DIN8 female connector of the interface cable.
4. Connect the DB9 female connector to the computer's serial port (for example, COM1 or COM2).
5. Connect the female power jack of the power adapter to the male power jack of the interface cable.
6. Plug the power adapter into a 120VAC outlet.
7. A start up text message will be present for a short time to identify the downloaded command set. When this message disappears the cursor will be displayed at the left-most digit of the top row.

LD9890 Standard Parallel Interface Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Connect the DB25M male connector to the computer's parallel printer port (for example, LPT1).
4. Connect the female power jack of the power adapter to the male power jack of the pole display cable.
5. Plug the power adapter into a 120VAC outlet.
6. A start up text message will be present for a short time to identify the downloaded command set. When this message disappears the cursor will be displayed at the left-most digit of the top row.

LD9800-PT Serial Interface Pass-thru Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Connect the DB25M connector to the peripheral device or a serial pass-thru terminator (optional accessory). Turn on power of the peripheral device.
4. Connect the DB9F connector to the computer's serial port (for example, COM1 or COM2).
5. Connect the female power jack of the power adapter to the male power jack of the pole display cable.
6. Plug the power adapter into a 120VAC outlet.
7. A start up text message will be present for a short time to identify the downloaded command set. When this message disappears the cursor will be displayed at the left-most digit of the top row.

LD9890-PT Parallel Interface Pass-thru Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Connect the DB25F female connector to the peripheral device or parallel pass-thru terminator (optional accessory). Turn on power of the peripheral device.
4. Connect the DB25M male connector to the computer's parallel printer port (for example, LPT1).
5. Connect the female power jack of the power adapter to the male power jack at the DB25M/DB25F connector.
6. Plug the power adapter into a 120VAC outlet.
7. A start up text message will be present for a short time to identify the downloaded command set. When this message disappears the cursor will be displayed at the left-most digit of the top row.

LD9800U Standard USB Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Connect the female power jack of the power adapter to the power socket from the pole display.
4. Plug the power adapter into a 120VAC power outlet.
5. Install USB driver following instructions on INTERFACE DRIVER INSTALLATION section (note that the procedure is not the same for different operating systems).
6. Plug the USB cable from the pole display into the computer's USB port.

LD9800UP Port Powered USB Models Installation

1. Mount the pole display to the metal base plate using the mounting hardware provided.
2. The pole display can be used in a freestanding mode or attached to the counter using the remaining mounting hardware.
3. Install USB driver following instructions on INTERFACE DRIVER INSTALLATION section (note that the procedure is not the same for different operating systems).
4. Plug the USB cable from the pole display into the computer's USB port.

INTERFACE DRIVER INSTALLATION

Serial and parallel interface displays do not need additional interface driver installations. The interface port drivers are included in the operating systems. USB interface displays will need driver installations for the display to communicate with the POS software. The USB drivers are available for download on our web site at www.logiccontrols.com. Please download and unzip the suitable driver files before installation.

There are two types of drivers available. First one use a specific device name (\\.\LCLD9) to access the pole display directly. Install this driver if you are using OPOS or the POS software was tailored to use this device name. If the POS software is only able to access COM ports for the pole display, use the Virtual COM port device driver. After the virtual COM port driver is

installed, the USB interface will be assigned a COM port name so that the POS software will be able to communicate with the USB display as a COM port. Note that the operating system will assign the display a different COM port number if the display is plugged into a different USB port.

For Windows 2000/XP:

1. DO NOT plug the device in USB port.
2. Run "setup.exe" program in this driver package.
3. Select "Device Name Driver" or "Virtual COM Port Driver" by clicking the radio buttons.
4. Click <Install> button to start pre-installation and click <OK> to end setup program.
5. Plug the device in USB port and wait for the hardware wizard message box to display.
6. Click <Next> button, and then click <Continue Anyway> button to continue installation automatically. When finished, click <Finish> button to end installation.
7. Invoke Device Manager to check the device driver's name or COM port number. Device Name driver is installed under "Universal Serial Bus Controllers" and Virtual COM Port Driver is installed under "Ports (COM & LPT)".
8. To change the assigned COM port number, double click "LCI USB Line Display ... Comm Port (COMx)" to display the Properties dialog box and select <Port Settings> tab. Then click <Advanced...> button.
9. Click on COM port number box to select from the list of unused port number and click <OK> to accept new settings
10. Unplug the display from the USB port for a few seconds and then plug the device back into the USB port. Device Manager should show the changed port number. Check operation with the new COM port number.

For Windows 98/ME:

Installing USB Device Name Drivers:

1. When Windows tried to search for a driver, click on the check box "Specify a location" and click [Next]. Enter the folder name where the unzipped driver files are saved as the location and click [Next].
2. Select driver "LCLD9.inf" and click [Next].
3. If Windows prompts for inserting driver disk again, click [OK] to continue and enter the folder name again in the "Copy files from" dialog box. Then click [OK] to continue. When finished installing, click [Finish] and reboot computer.
4. Go to "Device Manager" to check that the pole display has been installed correctly under "Universal Serial Bus Controllers" section.

Installing Virtual COM Port Device Drivers:

1. When Windows tried to search for a driver, click on the check box "Specify a location" and click [Next]. Enter the folder name where the unzipped driver files are saved as the location and click [Next].
2. Select driver "LCID9USB.inf" and click [Next].
3. If Windows prompts for inserting driver disk again, click [OK] to continue and enter the folder name again in the "Copy files from" dialog box. Then click [OK] to continue. When finished installing, click [Finish] and reboot computer.
4. After reboot, Click on [Start] -> [Settings] -> [Control Panel].
5. Click on [Add/Remove Hardware] and then [Next].
6. Windows will search for Plug & Play devices. Click [Next] to continue.
7. When prompted, click on the check box for "No, the device isn't in the list" and click [Next].
8. When prompted again, click on the check box for "No, I want to select the hardware from a list" and click [Next].
9. In the device list, select "Ports (COM & LPT)" and click [Next].
10. Click on [Have Disk], enter the folder name where the driver was saved and select "LCI LCID9 COM Port". Then click [Next].
11. There is no need to change hardware settings. Just click [Next] to continue installation.
12. When finished installing, click [Finish] and reboot computer.
13. Go to "Device Manager" to check that the pole display has been installed correctly under "Ports (COM & LPT)" section and note down the COM Port number used for the pole display.

FUNCTIONAL TEST

The universal pole display is loaded with Logic Controls command set by default. The following test sequence will verify that your pole display is working properly with Logic Controls command set. Before you start this procedure, you must install the pole display correctly as outlined under the INSTALLATION section. The functional test should be done under *MSDOS command prompt* by booting up the computer in DOS mode, or shell out to DOS prompt (in window95/98/ME) or COMMAND prompt (in windows 2000/XP).

For double sided displays, the messages will be shown on both sides at the same time.

*NOTE: The actual key entries in the text below are enclosed within quotation marks (" "). Do **not** type the quotation marks as part of your entries.*

Serial Interface Pole Displays Functional Test

This test procedure assumes the pole display is connected to COM1 of the computer. If COM2 is being used, type COM2 where COM1 is called out.

Close all opened application programs that use the same COM port before going into DOS command prompt. Enter the following command lines to open the COM port for communication with the pole display:

Type "MODE COM1 96,N,8,1" and press the ENTER key.
Type "TYPE CON>COM1" and press the ENTER key.

LD9800

1. Type "ABCDEFGH" and press ENTER key. The display will show "ABCDEFGH" on the first line.
2. To end the test press Ctrl-C (hold down Ctrl and press C).

LD9800-PT

1. Type "ABCDEFGH" and press ENTER key. The display will show "ABCDEFGH" on the first line.
2. Type "^APASSTHRU" (^A is entered as Ctrl-A) and press ENTER key. The data will be passed through to the peripheral (e.g. a printer). These characters are not shown on the display.
3. Type " !#^BNUMBER12345" (^B is entered as Ctrl-B), then press ENTER key. The display will show "NUMBER12345" on the first line.
4. To end the test press Ctrl-C (hold down Ctrl and press C).

Parallel Interface Pole Displays Functional Test

This procedure assumes the pole display is connected to the LPT1 port of the computer. If parallel port LPT2 is being used, type LPT2 where LPT1 is called out.

LD9890

1. Type "ECHO ABCDEFGH>LPT1" and press ENTER key. The display will show "ABCDEFGH" on the first line.

LD9890-PT

1. Type "ECHO ABCDEFGH>LPT1" and press ENTER key. The display will show "ABCDEFGH" on the first line.
2. Type "ECHO ^APASSTHRU>LPT1" (^A is entered as Ctrl-A) and press ENTER key. The data will be passed through to the peripheral (e.g. a printer). These characters are not shown on the display.
3. Type "ECHO !#^BNUMBER12345>LPT1" (^B is entered as Ctrl-B), then press ENTER key. The display will show "NUMBER12345" on the first line.

USB Interface Pole Displays Functional Test

Virtual COM port driver

1. Check the assigned COM port number under Device Manager.
2. Type "ECHO ABCDEFGH>COMx" and press ENTER key where 'x' is the assigned COM port number. The display will show "ABCDEFGH" on the first line.

Device name driver

1. Type "ECHO ABCDEFGH>\\.\LCLD9\" and press ENTER key. The display will show "ABCDEFGH" on the first line.

OPOS DRIVER INSTALLATION

If the POS software uses OPOS (OLE-POS) software interface for controlling the pole display operations, OPOS drivers must be installed. The OPOS driver supplied by Logic Controls will work with the default Logic Controls command set.

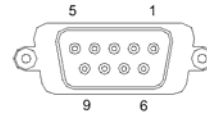
1. The Logic Controls OPOS display drivers come in a CD. Either copy all files in the CD into a harddisk folder or use the CD directly for installation.
2. Click on file <setup.exe> to start installation and follow instructions on the screen to go through installation.
3. After installation, setup the OPOS driver by running PDSetup.exe. Start <PDSetup> under Start Menu -> Programs -> LC OPOS -> Setup. The left part of the dialog window is for setting up the configuration and the right part is for testing commands sent to the OPOS display.
4. Select appropriate port name (for USB with device name drivers, select LD9USB). Next, setup LDN (Logic Device Name). Click Add new LDN and a new form will be displayed. Enter a new LDN, for example, "LineDisplay" and then click OK.
5. To rename an LDN or delete an LDN, click Rename LDN or Delete LDN.
6. To test the pole display, follow the order of buttons. First click "Open", then "Claim", then "Enable Device". Now the pole display is ready to display messages.
7. Click on "DisplayText", a string is displayed on the pole display. Test other functions to verify operations.
8. Click on "Release" and then "Close". Click on "Exit" to quit the program. The OPOS driver has been setup and ready to run OPOS application software.
9. Set up the POS software to use the same Logical Device Name configured in the OPOS driver and test with the POS software.

INTERFACE CONNECTORS

Serial Interface Connector Configuration

The pin out configuration for the standard serial pole display is a DB9F connector. It plugs directly into the serial port of the computer.

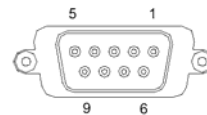
1. DCD (tied to pins 4&6)
2. NC
3. TXD from PC
4. DTR (tied to pins 1&6)
5. Ground
6. DSR (tied to pins 1&4)
7. RTS (tied to pin 8)
8. CTS (tied to pin 7)
9. NC



DB9F (to computer)

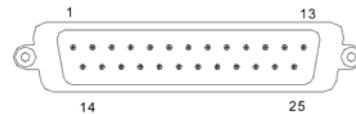
For pass-through models, the display cable comes with two connectors. The DB9F is to be connected to the computer while the DB25M is for connection to the peripheral.

1. DCD (tied to pins 4&6)
2. TXD to PC
3. RXD from PC
1. DTR (tied to pins 1&6)
2. Ground
3. DSR (tied to pins 1&4)
4. RTS (tied to pin 8)
5. CTS (tied to pin 7)
6. NC



DB9F (to computer)

1. NC
2. TXD to peripheral
3. RXD from peripheral
4. RTS
5. CTS (tied to pin 20)
6. NC
7. Ground
8. NC
- 9-19 NC
- 20 DTR (tied to pin 5)
- 21-25 NC

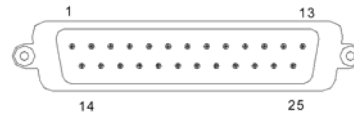


DB25M (to peripheral)

Parallel Interface Connector Configuration

All standard parallel pole displays will have DB25 male connectors. It is connected to the printer port of the computer.

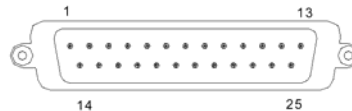
1. –Strobe
2. Data 0
3. Data 1
4. Data 2
5. Data 3
6. Data 4
7. Data 5
8. Data 6
9. Data 7
10. –Ack
11. Busy
- 12-17 NC
- 18-25 Ground



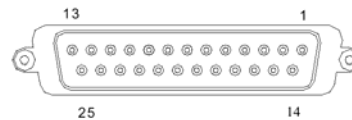
DB25M (to computer)

For pass-through model, the display cable comes with a dual DB25M/F connector. The DB25M is to be connected to the computer while the DB25F is for connection to the peripheral.

1. –Strobe
2. Data 0
3. Data 1
4. Data 2
5. Data 3
6. Data 4
7. Data 5
8. Data 6
9. Data 7
10. –Ack
11. Busy
12. Paper End
13. Select
14. -Auto Feed
15. -Error
16. -Initialize Printer
17. -Select In
- 18-25. Ground



DB25M (to computer)



DB25F (to peripheral)

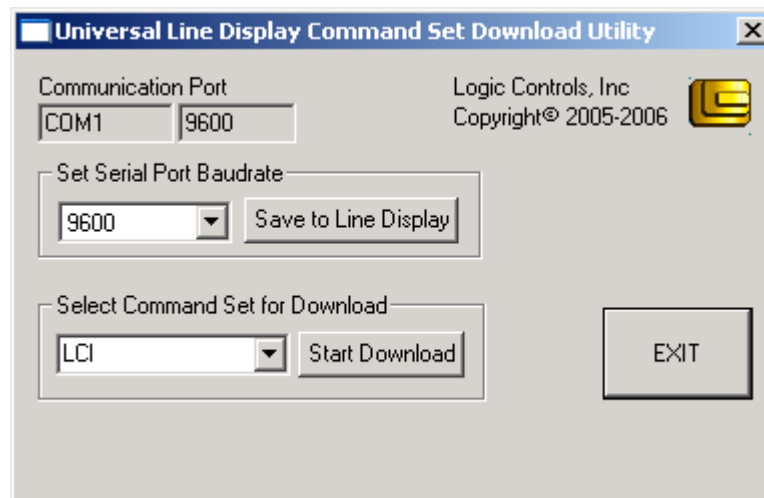
USB Interface Connector Configuration

All USB pole displays will have standard USB type-A connectors. It is connected to the USB port of the computer.

1. V+
2. D-
3. D+
4. Ground

SOFTWARE COMMAND SET DOWNLOAD

Logic Controls universal pole displays are controlled by command codes and data from the computer. The display is able to emulate different popular command sets to meet requirements of different POS software. Please download the required command set according to requirement of the POS software with the provided download utility software.



Select the required command set and click "Start Download" button to download the command set into the line display. When download finished, the display will show the command set name briefly. If the display turns on all display segments after download, it means that the download was unsuccessful. The download process has to be repeated.

SOFTWARE COMMAND DESCRIPTION

Commands are transmitted to the pole display as ASCII codes. The command codes listed below are expressed in hexadecimal (base 16) numbers enclosed inside angle brackets < >, in decimal numbers enclosed in parenthesis (), and in ASCII characters enclosed in curly brackets { }. Do not include the brackets as part of the command. ' ^ ' character denotes 'Ctrl' in the keyboard. Press and hold 'Ctrl', then press the next key.

LOGIC CONTROLS COMMAND SET (LD9800, LD9800-X):

- 1. Vertical Scroll Mode <12>, (18), {^R}:**
Data is written into the second row and transferred to the first row when carriage return is received, leaving the second row empty.
- 2. Normal Display Mode <11>, (17), {^Q}:**
Data can be written into either row. Moves to the left most digit of the other row when line is full.
- 3. Brightness Control <04>, (04), {^D}:**
The brightness of the display can be adjusted using this command followed by a data byte <FF>, <60>, <40> or <20>.
- 4. Back Space <08>, (08), {^H}:**
The cursor position moves one digit to the left erasing the previous information.
- 5. Horizontal Tab <09>, (09), {^I}:**
The cursor position shifts one digit to the right without erasing character at original cursor position.
- 6. Line Feed <0A>, (10), {^J}:**
The cursor position moves to the same position in the other row. In vertical scroll mode, if cursor was in second row, the cursor will not move and display will scroll up.
- 7. Carriage Return <0D>, (13), {^M}:**
The cursor moves to the left most digit of the row it is in.
- 8. Digit Select <10>, (16), {^P}:**
Moves the cursor to any position on the display with this command followed by a data byte of <00> to <27>, or in decimal (00) to (39).
- 9. Cursor On <13>, (19), {^S}:**
Turns on the cursor.

10. **Cursor Off <14>, (20), {^T}:**
Turns off the cursor.
11. **Reset <1F>, (31), {^_}:**
All characters are erased and all settings are returned to the power-on reset conditions.
12. **Down Load Font <03><X> <F> <F> <F> <F> <F>:**
Assign a keyboard key (ASCII code <20> to <7F>) to a different style font. The "X" represents the ASCII code for the selected key. The "F's" represent the 5 segments that will make up the special font.
13. **Message Scroll Left on Top Line
<05><X><X><X> ... <X><0D>:**
Scrolls a continuous message of up to 45 characters from right to left on the top line.
14. **Message Scroll Left on Bottom Line
<1B><06><X><X><X> ... <X><0D>:**
Scrolls a continuous message of up to 45 characters from right to left on the bottom line.
15. **Message Scroll Right on Top Line
<1B><07><X><X><X> ... <X><0D>:**
Scrolls a continuous message of up to 45 characters from left to right on the top line.
16. **Message Scroll Right on Bottom Line
<1B><0B><X><X><X> ... <X><0D>:**
Scrolls a continuous message of up to 45 characters from left to right on the bottom line.
17. **Both Side Display <1B><0C>, (27)(12), {^[]{^L}:**
After this command, all messages followed are displayed on both sides of double sided displays.
18. **Front Side Display <1B><0E>, (27)(14), {^[]{^N}:**
After this command, all messages followed are displayed only on front side of double sided displays.
19. **Back Side Display <1B><0F>, (27)(15), {^[]{^O}:**
After this command, all messages followed are displayed only on back side of double sided displays.
20. **Clock Display <1B><1A><h><h><3A><m><m>:**
Displays real time clock on bottom line in the 12 hour format hh:mm.

21. Smart Message Scroll Left on Top Line

<1B><15><X><X><X> ... <1C> ... <1C> ... <X><0D>:

Scrolls a multi-part message of up to total of 45 characters from right to left on the top line. Message parts are separated by <1C> and each part must be less than 20 characters.

22. Smart Message Scroll Left on Bottom Line

<1B><16><X><X><X> ... <1C> ... <1C> ... <X><0D>:

Scrolls a multi-part message of up to total of 45 characters from right to left on the bottom line. Message parts are separated by <1C> and each part must be less than 20 characters.

23. Smart Message Scroll Right on Top Line

<1B><13><X><X><X> ... <1C> ... <1C> ... <X><0D>:

Scrolls a multi-part message of up to total of 45 characters from left to right on the top line. Message parts are separated by <1C> and each part must be less than 20 characters.

24. Smart Message Scroll Right on Bottom Line

<1B><14><X><X><X> ... <1C> ... <1C> ... <X><0D>:

Scrolls a multi-part message of up to total of 45 characters from left to right on the bottom line. Message parts are separated by <1C> and each part must be less than 20 characters.

25. Select Font Code

<1B><25><X>:

Select font code (0-6) for extended ASCII characters from 80 hex to FF hex. Refer to the font code tables for list of font selections.

26. Select International Symbols

<1B><26><X>:

Select international symbol set (0-13) for various languages. Refer to the international symbol table for list of language symbol selections.

27. Save Font Code and International Symbols

<1B><27><n><m>:

Save font code <n> (0-6) and international symbol set <m> (0-13). The setting will be saved and will be loaded at power up. Refer to the font code tables and international symbol table for list of font and language symbol selections.

PASS-THRU COMMANDS (LD9800-PT, LD9890-PT):

All software commands of the non-pass-thru single sided model are available to pass-thru models with following additional commands for pass-thru control. When power is turned on or after a reset command has been initiated, all text is displayed on the pole display.

1. Data to Peripheral <01>, (01), <^A>:

All data following this command will be sent to the peripheral until a "Data to Display" command is received.

2. Data to Display <21><23><02>, (33)(35)(02), {!}{#}{^B}:

All data following this command will be sent to the pole display until a "Data to Peripheral" command is received.

HARDWARE CONFIGURATION

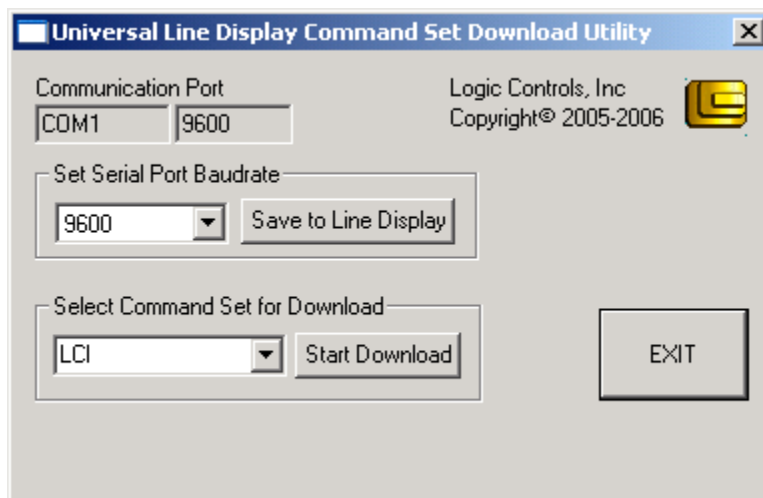
Serial pole displays were factory configured for serial RS232C interface using the following protocol:

- Baud Rate: 9600
- Data Bits: 8
- Stop Bit: 1
- Parity: None

The baud rate is programmable with the download utility. Options are as follows:

2400
4800
9600
19200

After selecting the desired baud rate, click “Save to Line Display” to save the setting into the display and then click “EXIT”.



CHARACTER CODE TABLES

The characters displayed on the customer display are defined by the character code tables. Character codes from 00h (hexadecimal) to 1Fh (hexadecimal) are non-displayable control codes.

The standard ASCII code table displayable characters are from 20h (hexadecimal) to 7Fh (hexadecimal) and are the same for all font set selections.

For Logic Controls and some other command sets, a few characters among character codes from 20h to 7Fh can be changed by selecting the international symbol set. Refer to International Symbol code table for details.









































































































































































Character codes 80h to FFh are special characters. Different command sets may have different sets of character fonts. The Logic Controls universal display command set contains 7 sets of font codes selectable by software command. Refer to the font code tables for details.

With Logic Controls command set, both International symbol and font setting can be saved into power up default.

































































































































Standard ASCII code table

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20h																
30h																
40h																
50h																
60h																
70h																

































































































































Internal Symbol code table

Code	Country	ASCII codes (Hexadecimal)											
		23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	USA												
1	France												
2	Germany												
3	UK												
4	Denmark I												
5	Sweden												
6	Italy												
7	Spain I												
8	Japan												
9	Norway												
10	Denmark II												
11	Spain II												
12	Latin America												
13	Korea												

































































































































Logic Controls default font (Font 0)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
90h																
A0h																
B0h																
C0h																
D0h																
E0h																
F0h																

































































































































CP437 (Font 1)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
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A0h																
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





























































































































CP850 (Font 2)

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





























































































































CP858 (Font 3)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
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CP863 (Font 4)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
90h																
A0h																
B0h																
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F0h																

CP865 (Font 5)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
90h																
A0h																
B0h																
C0h																
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E0h																
F0h																

CP852 (Font 6)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80h																
90h																
A0h																
B0h																
C0h																
D0h																
E0h																
F0h																

GENERAL SPECIFICATIONS

	<u>LD9800</u>	<u>LD9800X</u>
OPTICAL:		
Number of rows	2	2 x 2 sides
Number of digits/row	20	20
Dot matrix	5 x 7	5 x 7
Digit height)	0.374in. (9.5mm)	0.374in. (9.5mm)
Digit width	0.244in. (6.2mm)	0.244in. (6.2mm)
Character config.	ASCII	ASCII
Brightness (typical)	900 cd/m ²	900 cd/m ²
Display color	Blue-Green	Blue-Green
MTBF (hours)	300,000	300,000
MECHANICAL:		
Weight	2.7 lb.	2.9 lb.
Dimensions (in inches)	(w x h x d)	(w x h x d)
Display head	8.50 x 3.37 x 1.75	8.50 x 3.37 x 2.25
Rectangular base	2.12 x 2.0 x 2.12	2.12 x 2.0 x 2.12
Base plate	4.0 x 0.09 x 8.0	4.0 x 0.09 x 8.0
Overall height (typical)	8 to 25	8 to 25
ELECTRICAL:		
Adapter input power	120VAC, 60Hz; optional 220VAC, 50Hz	
Adapter output power	7.5VAC, 1000mA	
ENVIRONMENTAL:		
Operating temperature	0 to +50 ° C	
Storage temperature	-20 to +70 ° C	
Relative Humidity	80%, non-condensing	
Vibration (10 to 55 Hz.)	4G's	
Shock	40G's	
CABLES & CONNECTORS:		
Serial		
Display cable	8-pin Mini-DIN (male)	
Interface cable	8-pin Mini-DIN (female)	
	DB9 (female); optional DB25 (female)	
	2.5mm power jack (male)	
Parallel		
Display cable	DB25 (female)	
	2.5mm power jack (female)	
USB		
Display cable	USB Type-A	
	2.5mm power jack (female)	