Chapter 2

Introduction to DX LCD Display

Introduction

The DX LCD Display unit is a person/controller interface used with the DX-9100 series of controllers. The display can act as a simple adjust and indication unit or be used for more complex tasks often associated with a workstation. The display is designed for the maintenance person who needs a straightforward way to monitor and adjust points in a controller without being limited in capability. This chapter gives an overview of the DX LCD Display.

Note: In this guide, Building Automation System (BAS) is a generic term, which refers to the Metasys® Network, Companion™, and Facilitator™ supervisory systems. The specific system names are used when referring to system-specific applications.
**Key Concepts**

**DX LCD Display**

Figure 2-1 shows the DX LCD Display.

![DX LCD Display](image)

**Figure 2-1: DX LCD Display**

Use the display as either a portable, hand-held unit for use with more than one controller, or it can be permanently mounted on the wall, on a Universal Packaging Module (UPM) or in a panel as an integral part of the controller application.

**Features**

The DX LCD Display:

- Stores up to eight configurations.
- Displays up to 8 pages of 12 points per page (up to 96 points) for each configuration.
- Chooses the appropriate configuration to match the connected controller.
- Allows you to configure the display unit to communicate with any one of eight controllers connected to an N2 Bus, using the appropriate configuration to match the selected controller. **No other supervisory system may be connected in this configuration.**
- Allows you to fully configure point data using the GX-9100 software configuration tool.
• Indicates alarms both visually and audibly.
• Maintains an Alarm Summary of points currently in an alarm state.
• Maintains an Alarm Log of the last 96 alarm and return-to-normal Changes-of-State (COSs) with time and date stamp. For the Alarm Log feature to operate as described, the DX LCD Display must be permanently connected to one DX controller.
• Displays Trend Data collected in the DX controller (if supported by the controller).
• Allows you to define and change Time Schedule parameters.
• Allows you to define and change Optimal Start/Stop parameters.
• Allows you to set the system clock, date, and daylight saving times.
• Includes sealed membrane keypad.
• Provides backlit, 240 by 128 pixel Liquid Crystal Display (LCD) (equivalent to 16 lines of text with 40 characters per line).
• Displays graphical Home Pages with selected ‘live’ data that can be customized according to Original Equipment Manufacturer (OEM) or end user requirements.
• Allows use of the DX LCD Display as either a portable, hand-held device or permanently mounted in a panel or on the wall. A wire stand pulls out of the back of the display to set it at an angle on a table top or hang it on a door panel during portable operation.

Theory of Operation

The DX LCD Display works with the DX-9100 (Version 2.0 or later) and DX-9120 Series of digital controllers. The display connects directly to the built-in RS-232 serial port of the DX controller, allowing easy access to all of the system functions available at the user’s password level.

A DX LCD Display unit with an earlier firmware version (2.x) can communicate directly with one DX controller by a direct connection, but not via the N2 Bus. The DX LCD Display with firmware starting from Version 3 can use an RS-232/RS-485 converter (with plug adapter) to communicate, via the N2 Bus, with one of up to eight DX controllers working in standalone mode (that is with no supervisory system monitoring the N2 Bus).

The DX LCD Display is operated through a keypad and menu system to provide access to the data and parameters stored in the DX controller.

Note: In the remainder of this guide, the DX-9100 and DX-9120 controllers are referred to simply as DX controllers.
Display Configurations

Each DX LCD Display unit stores up to eight display configurations. Different configurations customize the display as required for different applications or situations. When defining a configuration you can describe point names, point units, and digital (binary) state names, and each configuration can indicate whether a specific point can be commanded (adjusted or overridden) by the user of the display. Each configuration specifies a graphical Home Page, allowing you to display pictures such as a company logo or a system diagram. You can map live data points to the Home Page as desired.

Each display configuration is identified by a configuration name and configuration code. The configuration (i.e., application) stored in the DX controller is also identified by a configuration code (also called the User Config Code). When you attach the DX LCD Display to a controller, the display unit attempts to match one of its stored configuration codes with the User Config Code defined in the controller configuration. If it finds a match, then the DX LCD Display uses the corresponding display configuration. If it does not find a match, it uses the default configuration.

In N2 Bus mode, the DX LCD Display unit matches the available configurations to the DX controllers found on the bus.

Both DX controller configurations and DX LCD Display configurations are defined using the GX-9100 Software Configuration Tool, part of M-Tool. The configurations are then downloaded to the controller or display unit through the serial interface.
Related Information

This guide describes how to install and operate the DX LCD Display. Refer to Table 2-1 for additional information on configuring the DX LCD Display, and installing and configuring DX-9100 controllers:

Table 2-1: Related Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Document</th>
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<tbody>
<tr>
<td>Configuring the DX LCD Display</td>
<td>GX-9100 Software Configuration Tool LIT-6364060 (FAN 636.4 and 1628.4)</td>
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<tr>
<td>Configuring the DX-9100 Controller</td>
<td>DX-9100 Configuration Guide, LIT-6364030</td>
</tr>
<tr>
<td></td>
<td>DX-9100 Software Configuration Tool LIT-6364060 (FAN 636.4 and 1628.4)</td>
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<tr>
<td>Installing and Operating the DX-9100 Controller</td>
<td>DX-9100 Extended Digital Controller Technical Bulletin, LIT-6364020 (FAN 636.4 and 1628.4)</td>
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