



DX LCD Display Terminal

The DX LCD Display Terminal is a local user interface for DX-9100 Series controllers. It is designed for the operator or maintenance person who needs a straightforward way to monitor and adjust controller points. Information may be presented graphically and in textual format. The display can be used as a portable, hand-held unit, or permanently mounted in a panel or on the wall to monitor a single controller, or any one of up to eight controllers by keyboard selection.



Figure 1: DX LCD Display Terminal

Features and Benefits	
<input type="checkbox"/> Menu Operation	Provides easy/intuitive operation - select from a list of functions to monitor and control the system
<input type="checkbox"/> Alarm/Summary Log	Provides a quick view of current and past alarm conditions
<input type="checkbox"/> Trend Log Display	Provides graphical display of analog and textual display of binary trend values
<input type="checkbox"/> Password Access	Provides protection against unauthorized use
<input type="checkbox"/> Edit Time Schedules	Allows time schedules and holiday definitions to be modified
<input type="checkbox"/> Adjusting/Overriding	Allows authorized users to adjust setpoints and to override outputs between defined limits
<input type="checkbox"/> N2 Communications	Communicates with any one of eight DX-9100 controllers as master on the N2 Bus
<input type="checkbox"/> Graphic Display	Up to eight graphic displays of controlled equipment
<input type="checkbox"/> Flash Memory	Allows the user to configure the database and upgrade the firmware of the DX LCD Display from the GX-9100 Software Configuration Tool

Product Overview

The DX LCD Display provides system diagnostic views of the system controlled by the DX controller. For example, you can view mixed air, discharge air, and zone temperature at the same time. You can view setpoints, actual temperatures, and controller outputs on a single screen. User defined text provides familiar point descriptions unique to specific installation.

The DX LCD Display comes from the factory with a default configuration showing the value of each input and output. For basic operation, it is not necessary to load the DX LCD Display, just plug it in.

The DX LCD Display plugs directly into the controller. Convenient portability and simultaneous display of multiple data points make it the ideal hand-held tool.

The DX LCD Display can be used with multiple DX controllers. Communication is established by configuring and installing the unit as a master on an N2 Bus with up to eight DX controllers, or by simply plugging the cable into any one DX controller. When connected to a controller, the proper configuration is automatically selected.

Display Configurations

The DX LCD Display unit stores up to eight separate display configurations. A configuration specifies up to 96 points (items) of the DX controller that can be displayed and monitored by the DX LCD Display. Each unique configuration includes 12 trend definition variables and a graphical display (home page). Each configuration is identified by a configuration code, which allows the display to automatically select the appropriate configuration for the connected controller.

Alarm Indication

When an alarm condition is detected, an alarm sounds and a Light-Emitting Diode (LED) flashes. Acknowledgment, by pressing a key, silences the audible alarm. The LED also stops blinking, but remains on steady until the alarm is cleared.

The Alarm Summary provides an overview of all points currently in alarm state in the connected controller.

The Alarm Log shows the history of the last 96 alarms that occurred in your system and the date and time of their occurrence.

Password Protection

The DX LCD Display has a password system with three possible security clearances:

- **No Clearance** – Monitor equipment only
- **Level 2** – Monitor equipment and adjust/override setpoints and outputs
- **Level 1** – Full access – Edit Time Schedules and Optimal start/stop parameters

Programming

The DX LCD Display is programmed with the standard GX-9100 software tool. You can select and name points for a particular controller, using the predefined point descriptions in the application program, or modify them as you see fit, in terms familiar to the end user.

Upgradeable Firmware

The DX LCD Display firmware (Version 3 or later) is upgradeable using the standard GX-9100 Software Configuration Tool (Version 6.0 or later).

N2 Communications

The DX LCD Display can communicate with any one of up to eight DX Series controllers, acting as a supervisory system for small to mid-size systems.

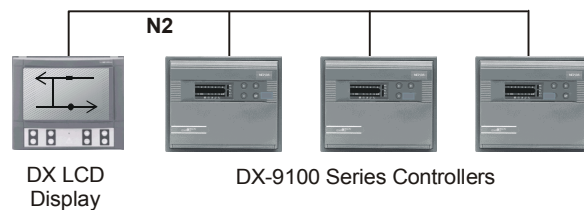


Figure 2: N2 Communications

Edit and Command Capabilities

When connected to a DX controller, the DX LCD Display can adjust/override points in the point data screens and view and edit the following:

- time and date
- eight time schedules and thirty holidays
- optimal Start/Stop module parameters

The Point Data screen provides fast identification of operating values, showing input, setpoint, and output values simultaneously.

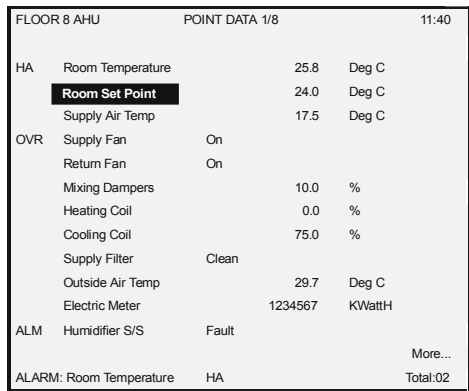


Figure 3: Point Data Screen Example

View Trend Data

A DX controller (Version 2.3 or 3.3 firmware or later) that supports Trend Log can collect and store trend data for up to 12 analog and logic variables. The 12 trend variables may also be defined for display on the DX LCD Display. The trend data is shown graphically for analog values and as text for binary values.

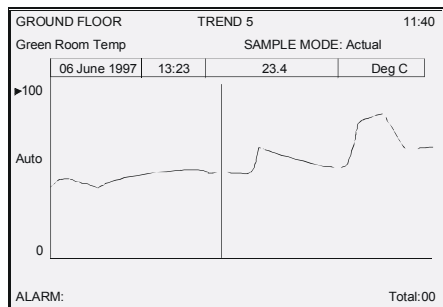


Figure 4: Trend Data

Home Page

The DX LCD Display shows a graphical home page as the default initial screen. Each of the eight display configurations can have a different home page. The home pages are customizable, and typically show a customer logo or graphical representation of the controlled equipment including live point data from the DX controller. A sample custom home page is shown here.

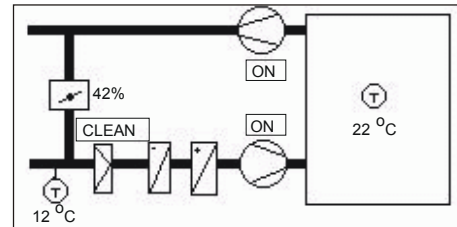


Figure 5: Sample Customized Home Page

Mounting Options

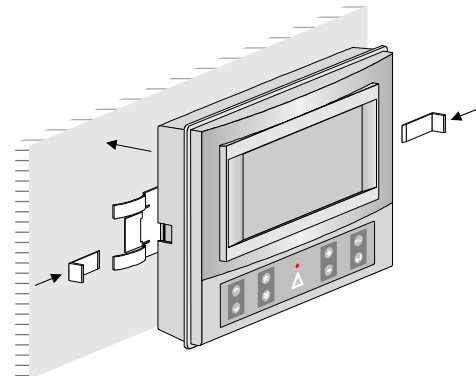


Figure 6: Wall Mounting

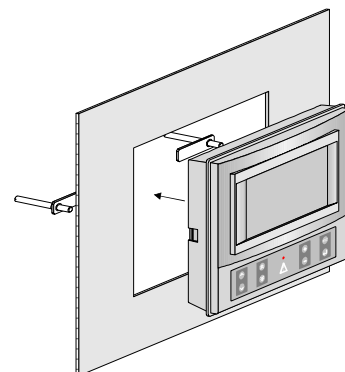


Figure 7: Panel Mounting

Ordering Codes

Table 1: Ordering Codes

Item	Part Number
DX LCD Display Unit (includes Serial Communication Cable and Panel Mounting Kit)	DT-9100-8104
Wall Mounting Kit	DT-9100-8902
Replacement Panel Mount Kit	DT-9100-8903
Plug Adapter for MM-CVT Converter	DT-9100-8904
Replacement Serial Communication Cable	DT-9100-6801 0.45m (18 in) extending to >= 1.4m (4 ft 6 in) length
9 VDC Power Supply (AC Adapter) (120 VAC source - North America)	NP-PWR1209-0
RS-232 to N2 Communications Converter	MM-CVT101-0
M-Tool Programming Toolset (includes GX-9100 Tool)	MW-MTool-0 (new user) MW-MTool-6 (upgrade)

Specifications

Power Requirements	Power supplied from 24 VAC @ 4 VA or 9-18 VDC from AC Adapter (nominal: 250 mA @ 12 VDC)
Terminations	Separable Terminal Block for 1-1.5 mm ² (14 AWG [maximum]) cables for 24 VAC supply and alarm relay contacts Universal jack connection for DC power supply (AC Adapter)
DX Communication Cable/Wiring	9600 baud asynchronous, half duplex via 6-pin RJ12 telephone style jack 0.09 mm ² (28 AWG) phone cable Maximum 15m (50 ft) (RS-232C) DX/PC plug adapter supplied. Order MM-CVT101 adapters separately.
Ambient Operating Conditions	0 to 50°C (32 to 122°F) 10 to 90% relative humidity (non-condensing) 30°C (86°F) maximum dew point
Ambient Storage Conditions	-20 to 60°C (-4 to 140°F) 10 to 90% relative humidity (non-condensing) 30°C (86°F) maximum dew point
Dimensions (H x W x D)	150 x 180 x 47 mm (5.91 x 7.09 x 1.85 in.)
Shipping Weight	0.78 kg (1.72 lb)
Display	LCD 16 x 40 characters (240 x 128 pixels) Screen Size: 110 x 60 mm (4.3 x 2.4 in) Backlit with time-out for extended life
Alarm Indicator	Red LED, Beep Tone, and Relay Contacts (30 VAC/48 VDC, 1 ampere maximum)
Agency Listings	CE Directive 89/336/EEC: EN 50081-1, EN 50082-1 UL and CUL per UL 916 (pending) FCC Part 15 - Class A - CISPR22B

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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