DX-9200 LONWORKS® Compatible Digital Controller

The LONWORKS® compatible digital controller, DX-9200 series, is the ideal digital control solution for air handling unit or distributed lighting and related electrical equipment control applications.

The controller has both the hardware and software flexibility to adapt to the variety of control requirements in its targeted applications and can extend its input and output point capability by communicating with input/output (I/O) modules on an extension bus. The controller provides monitoring and control of all connected points at an integral LED display and keyboard or from a separate DT-9100 display unit.

The DT-9100 display unit, with a text and graphic LCD screen and keypad, provides a standard and customized presentation of data according to the application and customer requirements.

Both the DX-9200 controller and the DT-9100 display unit can be mounted within an electrical enclosure or in a cabinet door, and the DT-9100 display unit can also be mounted directly onto the controller within a panel, on a wall or can be used as a portable device.

Additionally, the controller can share data with other LONMARK® compatible devices on the same LONWORKS network. When the LONWORKS network is integrated into a Metasys® system, point and control information is available throughout the network and at all Metasys operator workstations.

Figure 1: DX-9200-8454

Figure 2: DT-9100-8204

Features and Benefits	
❑ **LONWORKS® compatible network variable interface**	Interoperates with other LONMARK devices Open communications network system
❑ **Integration into Metasys system network via NAE** ❑ **Dynamic data access capabilities with Metasys system network**	Facility-wide control efficiency and cost-effective information availability
❑ **Full set of control algorithms in software modules** ❑ **Graphic configuration tool software**	Easy to configure for a wide range of standard and custom applications
❑ **Standalone control of HVAC and other equipment** ❑ **Real-time clock and time programs**	Distributed control for system reliability
Continued on the next page…	

Features and Benefits (Cont.)	
❑ **Extension bus for additional I/O points** ❑ **Extension modules for a variety of analog and digital I/O combinations**	Modular hardware set for low-cost installation in the various applications
❑ **Model with integral display and control panel** ❑ **Text and graphic display unit (DT-9100)** ❑ **Extension modules with manual override switches**	Multiple display and override possibilities are available for the controller, close to or remote from the controlled equipment

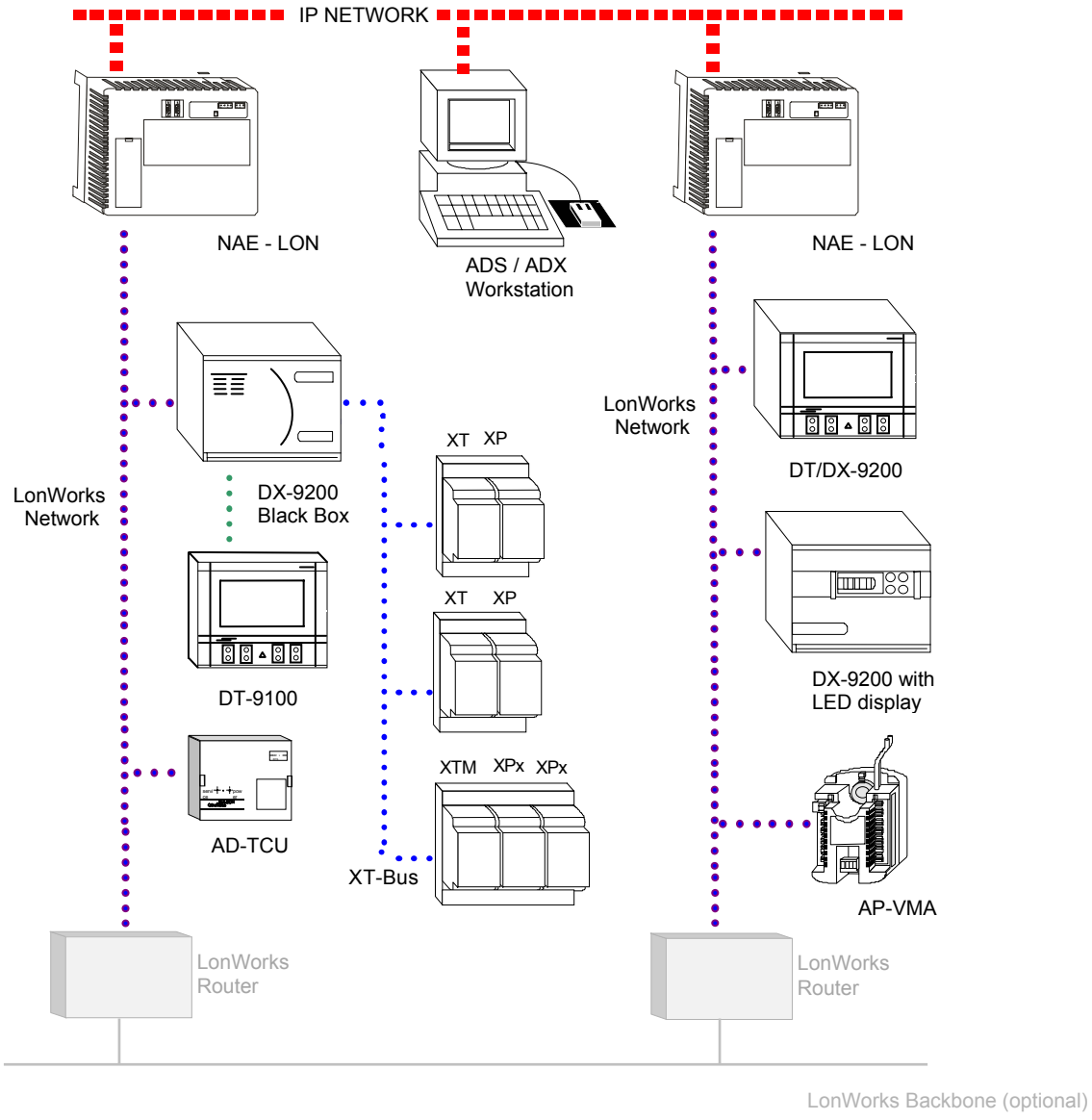

Figure 3: LONWORKS Compatible DX-9200 Digital Controller on the Metasys System Network

Flexible Installation

The DX-9200 controller is available with an integral LED display and keyboard that gives access to control data for the technical user, mainly to commission and service the controller. This controller model may be installed within an electrical enclosure using the mounting base or fixed into a cabinet door using the mounting frame to give access to the display without opening the cabinet.

The controller is also available without an integral display and keyboard as a “Black Box” model for use with the DT-9100 display unit In this case the DT-9100 display unit may be mounted in the cabinet door or attached to the front cover of the controller within the cabinet. This latter option enables the display unit to be used when the door is wide open and the display unit can easily be detached from the controller and used as a hand-held portable device.

The mounting base and mounting frame have all the terminals and connections to enable the field wiring to be completed before installing the controller.

The DT-9100 display unit is supplied with a panel mounting kit and a kit is available to enable the unit to be surface mounted, for example, on a wall. The display unit can also be used as a portable device, and a standard 230 VAC/12 VDC adaptor can be used to power it. A flexible cable is provided to connect the display unit to the DX-9200 controller.

Figure 4: DX Controller with LED Display and Keyboard on Panel Mounting Base

Figure 5: DX-9200 with LED Display and Keyboard in Cabinet Door Mounting Frame

Figure 6: DX-9200 Controller – Black Box – on Panel Mounting Base

Figure 7: DX-9200 Controller with DT-9100 Display Unit on Panel Mounting Base

Extension Modules

The extension (XT-9100 and XTM-905) and expansion (XP-910x and XPx) modules may be mounted next to the controller on the same DIN rail, or remotely, up to 1200 m from the controller.

An extension module set is assembled from sub-modules, providing various combinations of analog and digital (binary) I/O points. Up to eight extension modules can be connected to the controller via the RS485 extension bus.

The XTM extension module and its expansion modules provide a wider and more flexible range of I/O options as well as a manual override option on outputs.

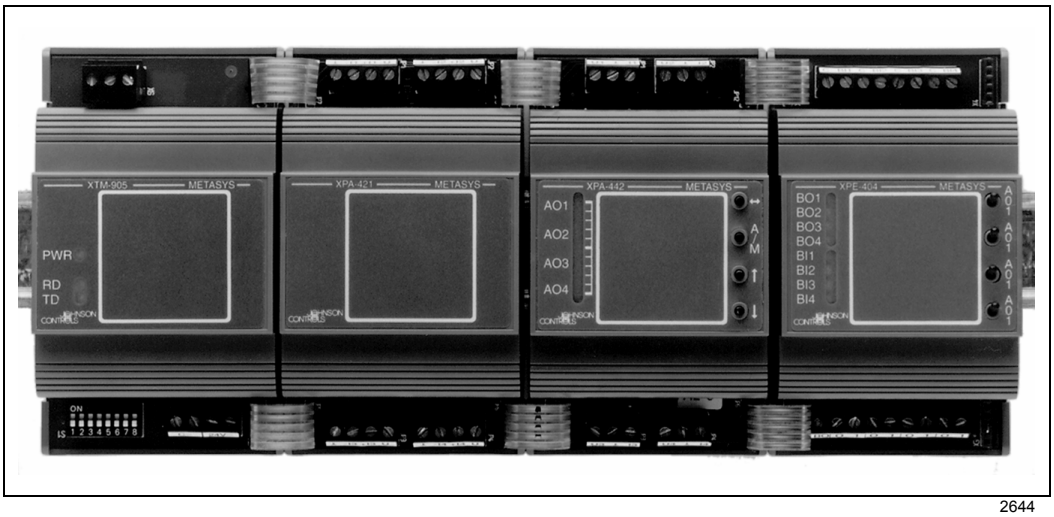

Figure 8: Extension Modules with Manual Override

Table 1: Point Configuration

Point Type	Quantity			Characteristics
	DX-9200	XT	XTM	
Analog Inputs	8	6	4/8	0-10 VDC (impedance 300 KΩ) 0/4-20 mA DC (impedance 100 Ω) RTD Ni1000 (JCI), A99 (JCI), and Pt1000 (DIN) XTM only: RTD Pt100 (DIN), Ni100 (DIN), potentiometer (5 kOhm)
Digital (Binary) Inputs	8	4/8/16	4/8/16	Dry Contacts (potential free)
Digital (Binary) Outputs	6	4/8/16	2…4/8/16	24 VAC Triacs (minimum 0.05 amps, maximum 0.5 amps) XT/XTM only: Relay Contact (max. 250 VAC 3 amps) XTM only: Relays with momentary, magnetically latched or electrically held operation
Analog Outputs	4 4	2	4/8	0-10 VDC (10 mA maximum) or 0/4-20 mA DC 0-10 VDC (10 mA maximum) only

Sensors and Actuators to Complete the System

The DX-9200 controller and extension modules are matched to a family of sensors and actuators for the control valves and dampers needed to complete the control of HVAC equipment and other cooling and heating equipment. Its sensor inputs can accept 0-10V transmitters and passive temperature sensors from the Johnson Controls range, as well as industry standard 4-20mA transmitters. Outputs are available to control both proportional and incremental electric actuators, as well as motor control relays, staged heating and cooling and other electrical equipment such as lighting control relays. Pneumatic actuators may be controlled by the use of an external transducer.

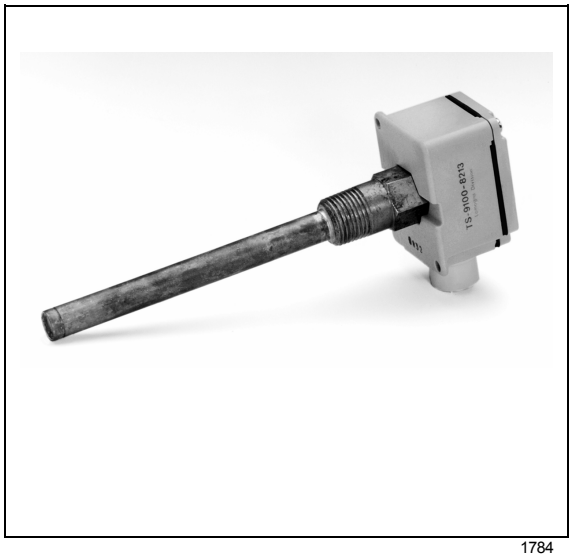

Figure 9: Typical Flow Temperature Sensor

Figure 10: Typical Room Temperature Sensor

Table 2: XT Bus Configuration

Maximum number of XT/XTMs per DX-9200	8
Maximum number of I/Os for each XT/XTM	8 analog + 8 digital (binary), or 16 digital (binary)
Maximum number of I/Os from XT/XTMs per DX-9200	64

Table 3: Flow Chart Module Configuration Options

Flow Chart Module	Configuration Options
Analog Inputs	Sensor/transmitter ranging High/low limits Filter constants Square root
Control Blocks	PID loops Remote reset logic Operation modes Control limits and alarms Sequencer and step control logic
Digital Inputs	Source points for logic functions
Calculation Blocks	Averaging Minimum or maximum select Enthalpy, wet bulb and dew point Input selector Arithmetic calculator Compare logic Line segment function Timer functions Run-time counter Totalizer and Integrator
Logic Blocks	"And", "Or", "Not" State change detect "Set" and "reset" of parameters
Time Schedule Blocks	Yearly holiday calendar Start-stop times for days of week and holidays Optimal start/stop modules (2 modules available)
Analog Outputs	High/low ranging
Digital Outputs (DX-9200 Controller)	Incremental, with or without feedback Duration adjust type On/off, including pulse and start/stop
Digital Outputs (XT/XTM Modules)	On/off, including pulse and start/stop
Trend Log (for DT-9100 only)	12 channels Analog values (60 samples) or binary values (30 events) Sample rate (5 seconds to 24 hours)
LONWORKS Network Variable Inputs	Connection to inputs of flow chart modules in the controller (see Tables 4, 5 and 6)
LONWORKS Network Variable Outputs	Connection to outputs of flow chart modules in the controller (see Tables 4, 5 and 6)

C onvenient Configuration Setup

The DX-9200 digital controller does not need to be programmed in the traditional sense. Instead, the control algorithms, time programs and input/output point assignments are configured with the use of a Graphic Configuration Tool, which runs under the Windows® operating system. The graphic software is installed on a laptop computer which is plugged into the controller's RS-232-C port for loading the application configuration into the controller.

The DX controller operating system is stored in Flash memory. Program data and parameters loaded into the controller and into the extension modules are stored in EEPROM, so there is no need to reload software after a loss of power. Real time and operating data in the controller are stored in battery backed RAM.

Configuring a controller and its extension modules is a simple matter of selecting desired module types to form a flow chart diagram, connecting inputs to control and logic blocks, and completing the control strategy by making the connections from the control and logic blocks to the outputs. Inputs may come from directly wired sensors or from LONWORKS network variable inputs. Similarly outputs may be sent to directly wired actuating devices or to LONWORKS network variable outputs. As the flow chart is being filled in, the set point parameters, gains, alarm limits, start and stop times, etc., are added to the control and logic blocks to complete the configuration.

Names may be entered for inputs, outputs and operating parameters for use in the optional display unit and for project documentation purposes.

I ntegral Display Panel

Once the controller and its extension modules are configured, the operating parameters and input/output values can be seen at the display panel built into the controller. Outputs can be manually overridden and operating parameters may be changed by an operator who has plugged his security key into the controller. The same information viewed on the face of the controller can be displayed and changed from the Graphic Configuration Tool when in online commissioning mode.

D isplay Unit (DT-9100)

The display unit provides similar features to the integral display panel, but the data which appears on the screen is adapted to suit the application with user-defined names for each value displayed. The control of outputs and modification of operating parameters is password protected. Trend logs stored in the controller are shown in graphic format and the main screen may show the controlled equipment as a graphic diagram with actual values displayed. The unit can generate alarms and keeps a log of alarms with the time and date of occurrence. The display unit is configured using the Graphic Configuration Tool.

A pplication Versatility

The DX-9200 controller can be configured to meet a wide variety of HVAC plant applications. Configurations may be pre-configured for common applications to use as a foundation to customize your particular needs. If the pre-configured examples don't cover your needs, you can start with a blank flow chart template on the Graphic Configuration Tool, and configure a totally customized process to meet your specific application requirements.

With the LONWORKS networking capability, an application may be designed to run in more than one controller as data may be exchanged between controllers on the LONWORKS network. Network inputs and outputs can be used to receive or transmit data from other LONMARK compliant sensing and control devices on the LONWORKS network that are involved in the overall control strategy.

Table 4: LONMARK Network Variables for Model DX-9200-8454-A - General Purpose Room Control Applications

Network Variables	Variable Type	Quantity	Typical Application
Inputs:			
nviSwitch1 – nviSwitch4	SNVT_switch	4	Network lighting level sensor Motor status and speed from network variable speed drive Status and value from another network device
nviSwitch5 – nviSwitch8	SNVT_switch (state field only)	4	Binary status from another DX-9200(-A) controller
nviOccupancy1 – nviOccupancy4	SNVT_occupancy	4	Network occupancy sensor Occupancy status from another network device
nviLevPercent1 – nviLevPercent4	SNVT_lev_percent	4	Network relative humidity sensor Network actuator position Analog value from another DX-9200(-A) controller
nviTempP1 – nviTempP8	SNVT_temp_p	8	Network temperature sensor Temperature value from another network device
nviTimeStamp	SNVT_time_stamp	1	Real time clock synchronization from LON NAE, LON NCM or other supervisory device
Outputs:			
nvoSwitch1 – nvoSwitch4	SNVT_switch	4	Send lighting level to network lighting controller Send required motor status and speed to network variable speed drive Send status and value to another network device
nvoSwitch5 – nvoSwitch8	SNVT_switch (state field only)	4	Send binary status to another DX-9200(-A) controller
nvoOccupancy1 – nvoOccupancy4	SNVT_occupancy	4	Send occupancy status to another network device
nvoLevPercent1 – nvoLevPercent4	SNVT_lev_percent	4	Send relative humidity value to network controller Send actuator position to another network device Send analog value to another DX-9200(-A) controller
nvoTempP1 – nvoTempP4	SNVT_temp_p	4	Send temperature value to network controller
nvoScene1 – nvoScene4	SNVT_scene	4	Send command to network lighting controller to recall or learn a scene configuration

Table 5: LONMARK Network Variables for Model DX-9200-8454-D - AHU or Discharge Air Control Applications

Network Variables	Variable Type	Typical Application
Inputs:		
nviDuctStatSP	SNVT_press_p	Duct static pressure setpoint input from network sensor
nviFanDiffSP	SNVT_press_p	Fan differential setpoint input from network sensor
nviDAClSP	SNVT_temp_p	Discharge air cooling setpoint input from network controller
nviDAHtSP	SNVT_temp_p	Discharge air heating setpoint input from network controller
nviOutdoorTemp	SNVT_temp_p	Outdoor air temperature input from network sensor or supervisory system
nviMATSP	SNVT_temp_p	Mixed air temperature setpoint input from network sensor
nviSpaceTemp	SNVT_temp_p	Space temperature input from network sensor
nviSpaceTempSP	SNVT_temp_p	Space temperature setpoint input from network controller
nviCO2ppm	SNVT_ppm	CO_2 air quality sensor input from network sensor
nviCO2ppmSP	SNVT_ppm	CO_2 air quality setpoint input from network controller
nviOAMinPos	SNVT_lev_percent	Outdoor air minimum position input from network controller
nviOutdoorRH	SNVT_lev_percent	Outdoor air humidity input from network sensor or supervisory system
nviSpaceRH	SNVT_lev_percent	Space humidity input from network sensor
nviSpaceRHSP	SNVT_lev_percent	Space humidification setpoint input from network controller
nviSpaceDehumSP	SNVT_lev_percent	Space dehumidification setpoint input from network controller
nviSwitch1	SNVT_switch	Switch input (value & state) from another device
nviOccSchedule	SNVT_tod_event	Occupancy scheduler input from supervisory system
nviOccManCmd	SNVT_occupancy	Occupancy override command input from supervisory system
nviApplicMode	SNVT_hvac_mode	Normal command to plant from supervisory system
nviEmergOverride	SNVT_hvac_emerg	Emergency command to plant from supervisory system
nviState1	SNVT_state	Status / alarms (application specific) from another device
nviState2	SNVT_state	Status / alarms (application specific) from another device
nviState3	SNVT_state	Status / alarms (application specific) from another device
nviPriCoolEnable	SNVT_switch (state field only)	Primary cool enable input from supervisory device
nviPriHeatEnable	SNVT_switch (state field only)	Primary heat enable input from supervisory device
nviHumEnable	SNVT_switch (state field only)	Humidification enable input from supervisory device
nviDehumEnable	SNVT_switch (state field only)	Dehumidification enable input from supervisory device
nviTimeStamp	SNVT_time_stamp	Real time clock synchronization from LON NAE, LON NCM or other supervisory device
Continued on the next page…		

Network Variables (Cont.)	Variable Type	Typical Application
Outputs:		
nvoDuctStatPress	SNVT_press_p	Duct static pressure output to supervisory device
nvoRetFanPress	SNVT_press_p	Return fan pressure output to supervisory device
nvoOAEnthalpy	SNVT_enthalpy	Outdoor air enthalpy output to supervisory device
nvoSpaceEnthalpy	SNVT_enthalpy	Space enthalpy output to supervisory device
nvoDischAirTemp	SNVT_temp_p	Discharge air temperature output to supervisory device
nvoLocalOATemp	SNVT_temp_p	Local outdoor air temperature output to supervisory device
nvoMATemp	SNVT_temp_p	Mixed air temperature output to supervisory device
nvoSpaceTemp	SNVT_temp_p	Space temperature output to supervisory device
nvoRATemp	SNVT_temp_p	Return air temperature to supervisory device
nvoOADamper	SNVT_lev_percent	Outdoor air damper position to supervisory device or network actuator
nvoCoolPrimary	SNVT_lev_percent	Primary cooling output to supervisor or network actuator
nvoHeatPrimary	SNVT_lev_percent	Primary heating output to supervisor or network actuator
nvoSpaceRH	SNVT_lev_percent	Space humidity output to supervisory device
nvoHumidifier	SNVT_lev_percent	Humidifier output to supervisor or network humidifier
nvoSupFanStatus	SNVT_switch	Supply fan status or command to network fan drive
nvoRetFanStatus	SNVT_switch	Return fan status or command to network fan drive
nvoHeatCool	SNVT_hvac_mode	Effective heat/cool output to another network device
nvoApplicMode	SNVT_hvac_mode	Application mode output to another network device
nvoEffectOccup	SNVT_occupancy	Effective occupancy output to another network device
nvoState1	SNVT_state	Status / alarms (application specific) to supervisory device
nvoState2	SNVT_state	Status / alarms (application specific) to another device
nvoState3	SNVT_state	Status / alarms (application specific) to another device
nvoState4	SNVT_state	Status / alarms (application specific) to another device
nvoEconEnabled	SNVT_switch (state field only)	Economizer Enabled status to supervisory device or another network device
nvoDehumidifier	SNVT_switch (state field only)	Dehumidifier status to supervisory device or command to network dehumidifier
nvoCWFlow	SNVT_switch (state field only)	Condenser Water Flow status to supervisory device
nvoCWPump	SNVT_switch (state field only)	Condenser Water Pump status to supervisory device
nvoUnitStatus	SNVT_hvac_status	Unit Status Output to supervisory device

Table 6: LonMark Network Variables for Model DX-9200-8454-U - Universal Applications

Network Variables	Variable Type	Quantity	Typical Application
Inputs:			
nviAnalogIn [1] – nviAnalogIn [16] **Array of 16 analog values**	SNVT_lev_cont_f full float range	16	Receive analog values (independent of measurement units) from another DX9200(-U), LON NAE, LON NCM, or third-party device. Third-party LON devices may restrict range to 0-100% as defined for SNVT_lev_cont_f in LonMark guidelines.
nviDigitalIn [1] – nviDigitalIn [8] **Array of 8 digital values**	SNVT_state 16 bit	8	Receive digital values from another DX9200(-U), LON NAE, LON NCM, or third-party device.
nviTimeStamp	SNVT_time_stamp	1	Real time clock synchronization from LON NAE, LON NCM or other supervisory device.
Outputs:			
nvoAnalogOut [1] – nvoAnalogOut [16] **Array of 16 digital values**	SNVT_lev_cont_f full float range.	16	Send analog values (independent of measurement units) to another DX9200(-U), LON NAE, LON NCM, or third-party device. Third-party LON devices may restrict range 0-100% as defined for SNVT_lev_cont_f in LonMark guidelines.
nvoDigitalOut [1] – nvoDigitalOut [8] **Array of 8 digital values**	SNVT_state 16 bit	8	Send digital values to another DX9200(-U), LON NAE, LON NCM, or third-party device.

Password Protection

The controller has an optional feature to prevent unauthorized access to its application software configuration. When the configuration is loaded by the Graphic Configuration Tool with a user-defined password, it cannot be uploaded by another tool unless the password is entered.

This feature has been designed to protect standard application configurations of OEM (Original Equipment Manufacturer) users.

Networking Capabilities

As powerful as the DX-9200 controller is by itself or with extension modules, your facility will benefit even more when controllers are connected to a LONWORKS network to make use of the peer-to-peer communication feature, enabling the controllers to share and pass data with other LONMARK compliant controllers on the network.

However, further benefits will be realized when the LONWORKS network is part of a larger Metasys system network. A Metasys Automation Engine (NAE) can be programmed to provide added energy management and supervisory control capabilities, such as trend log, historical data storage, electrical demand limiting and more. The NAE may communicate not only with DX-9200 controllers but also with any other LONMARK compliant devices for which standard interface files are available.

The Metasys dynamic data access networking software, available in the Network Automation Engine, makes information from each controller available throughout the facility, so that it is possible, for example, to reset the boiler or chiller discharge temperature set point based on the demand requirements of a group of terminal unit controllers. Dynamic data access also makes sensor values, operating status, and other parameters in the controller available to operators anywhere in your facility.

Interoperability with Other LONMARK Compliant Devices

The DX-9200 controller conforms to the LONWORKS specifications for network data transmission. The input and output network variables of the DX-9200 controller for interoperable applications are shown in Tables 4, 5 and 6. These variables may be bound to network variables with the same SNVT data type in other LONMARK compliant devices using a third party LONWORKS network configuration tool.

These variables also represent the data that can be monitored by a supervisory system such as the Metasys system network. Access to all of the internal operating and configuration data of the controller is available using the Graphic Configuration Tool.

Further information about compatibility and interoperability with other LONMARK devices may be requested from your local Johnson Controls office.

HVAC Control with Flexibility

The DX-9200 controller represents the best way to fully optimize the operation of your HVAC or lighting equipment control applications. It can be used as a member of the fully integrated Metasys system, as a device on a LONWORKS network, or as a standalone controller, with or without the optional display unit. It combines ease of setup and operation, flexibility of application, and precise control for comfort and energy management.

Specifications

DX-9200 LONWORKS Digital Controller

Product Codes	*DX-9200 LONWORKS Digital Controller* DX-9200-8454-x Controller with LED Display and Keyboard DX-9200-8004-x "Black Box" Controller (x defines LONWORKS interface option, A, D or U) DX-9200-8996 Cabinet Door Mounting Frame DX-9200-8997 Panel Mounting Base
Physical Inputs and Outputs	See Table 1
LonWorks Communication	Neuron®3150 microprocessor and FTT10a transceiver See Tables 4, 5 and 6 for LONMARK network interface variables
Microprocessor and Memory: (Firmware Version 3.5 and later)	Microprocessor: Hitachi Type: H8S/2350 16 bit RAM: 32 Kbytes EEPROM: 8 Kbytes Flash: 256 Kbytes
Power Requirements	24 VAC ± 15 %, 10 VA (at 24 VAC), 50/60 Hz
Ambient Operating Conditions	0° to 40°C / 32° to 100°F 10 to 90% RH Noncondensing
Ambient Storage Conditions	-20° to 70°C / 0° to 160°F 5 to 95% RH Noncondensing
Dimensions (H x W x D)	
Controller with Cabinet Door Mounting Frame	164 x 200 x 114mm / 6.5 x 7.9 x 4.5 in.
Controller with Panel Mounting Base	200 x 184 x 95 mm / 7.9 x 7.3 x 3.8 in. Allow minimum of 160 mm / 6.3 in. depth for hinged door clearance.
Black Box Controller with Panel Mounting Base	200 x 184 x 87mm / 7.9 x 7.3 x 3.5 in
DT-9100, Black Box Controller and Panel Mounting Base	200 x 184 x 135mm / 7.9 x 7.3 x 5.4 in. Allow minimum of 20mm / 0.8 in clearance on each side for DT mounting clips.
Shipping Weight	Controller: 1.8 kg / 4 lb. 0 oz Panel Mounting Base: 0.8 kg / 1 lb. 12 oz Cabinet Door Mounting Frame: 0.8 kg / 1 lb. 12 oz
Agency Listings	CE Directive 89/336/EEC EN50081-1 / EN61000-6-3 and EN50082-2 / EN61000-6-2 UL Listed, CSA Certified, FCC Compliant

DT-9100 Display Unit

Product Codes	DT-9100-8204 Display Unit with Panel Mounting Kit DT-9100-8902 Wall Mounting Kit DT-9100-8901 12 VDC Power Supply for 230 VAC Source DT-9100-6802 Serial communications flat cable 2m long
Communication	RS-232-C (spiral cable provided)
Power Requirements	24 VAC +15%/-10%, 4 VA (at 24 VAC) *or* 9 to 18 VDC, 2 VA
Dimensions (H x W x D)	150 x 180 x 47 mm / 5.9 x 7.1 x 1.9 in.
Shipping Weight	0.8 kg / 1 lb. 12 oz
Agency Listings	CE Directive 89/336/EEC EN50081-1 / EN61000-6-3 and EN50082-1 / EN61000-6-1 UL Listed, CSA Certified, FCC Compliant

Extension and Expansion Modules

Product Codes	*XT and XP Modules without Manual Override*		
	XT-9100	Extension Module	5.5 VA
	XP-9102	6 Analog Inputs, 2 Analog Outputs	4 VA
	XP-9103	8 Digital (Binary) Outputs (triacs)	-
	XP-9104	4 Digital (Binary) Inputs, 4 Digital Outputs (triacs)	1 VA
	XP-9105	8 Digital (Binary) Inputs	2 VA
	XP-9106	4 Digital (Binary) Outputs (relay) (European Model)	6 VA
	XP-9107	4 Digital (Binary) Outputs (relay) (North American Model)	6 VA
		(See Table 1 for module point configurations)	
Product Codes	*XTM and XPx Expansion Modules with Manual Override Option on Outputs*		
	XTM-905	Extension Module	5.5 VA
	XPA-421	4 Analog Inputs	4 VA
	XPA-442	4 Analog Outputs	6 VA
	XPA-821	6 Analog Inputs, 2 Analog Outputs	4 VA
	XPB-821	8 Binary Inputs	3 VA
	XPM-401	4 Binary Inputs, 2 Momentary Relay Binary Outputs	4 VA
	XPL-401	4 Binary Inputs, 3 Latching Relay Binary Outputs	5 VA
	XPE-401	4 Binary Inputs, 3 Electrically Latching Relay Binary Outputs	5 VA
	XPE-404	4 Binary Inputs, 4 Electrically Latching Relay Binary Outputs	6 VA
	XPT-401	4 Binary Inputs, 4 Binary Outputs (Triacs)	2 VA
	XPT-861	8 Binary Outputs (Triacs) (Manual Override not available.)	-
		(See Table 1 for module point configurations)	
Agency Listing	All modules: CE Directive 89/336/EEC EN50081-1 / EN61000-6-3 and EN50082-1 / EN61000-6-1 XPM, XPL and XPE only: CE Directive 73/23/EEC EN 60730 All modules, except XPA-4xx-x: UL Listed, CSA Certified, FCC Compliant		
Power Requirements			
Extension Module	24 VAC +10% / -15 %, 50/60 Hz, 5.5 VA at 24 VAC		
Expansion Modules	24 VAC +10% / -15 %, 50/60 Hz, see above for VA ratings at 24 VAC		
Transformer Module	230 VAC, 50/60 Hz, up to 12 VA		
Dimensions (H x W x D) (1 Module)	118 x 70 x 57 mm / 4.7 x 2.8 x 2.3 in.		
Shipping Weight	Extension Module: 0.15 kg / 5.3 oz Expansion Module: 0.12 - 0.25 kg / 4.2 - 8.8 oz, depending on module type Transformer Module: 0.47 kg / 1 lb. 1 oz		

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, and reserves the right to change or supplement the contents of this publication.

JOHNSON CONTROLS

Johnson Controls International
Westendhof 3
45143 Essen
Germany

www.johnsoncontrols.com
Metasys European Sales Resource Manual