LN Series Controllers Overview

Product Bulletin

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The complete line of LN Series, LONWORKS® based devices includes programmable controllers, application-specific controllers, displays, schedulers, and programmable thermostats. This product line is easily integrated into the Metasys® system when coupled with a LONWORKS enabled Network Automation Engine (NAE).

The complete family of LN Series controllers is designed for use with any LONWORKS network open and interoperable system.

Figure 1: LN Series Controllers

Table 1: Features and Benefits

Features	Benefits
LONWORKS Network Compliant and Certified	Complies with LONMARK® Interoperability Guidelines, Version 3.3 for application-specific controllers; Version 3.4 for programmable units. The controllers are based on the LONWORKS technology for peer-to-peer communication between controllers.
Programmable via LNS® Plug-in	Allows all controllers, whether configurable or programmable, to be engineered from a common tool environment.
Integration to the Metasys System	Allows all components of the LN Series line to be used with the Metasys system via a LONWORKS integration to an NAE.

Johnson Controls

Programmable Controllers

The LN Series Free Programmable Controllers are designed to be applied in a variety of building applications (Figure 2). You can control equipment, such as roof top units, fan coils, heat pumps, ventilator units, and terminal units. The LN Series Free Programmable Controller line can be programmed using the LN-Free Programming Plug-in or the LN Graphical Programming Interface (GPI) Plug-in with LN-Builder software.

Figure 2: LN Series Free Programmable Controllers

Application Free VAV and VVT Programmable Controllers

The Application Free Variable Air Volume (VAV) and Variable Volume Temperature (VVT) programmable controllers provide programming flexibility when the application demands more than an application-specific controller (Figure 3).

Figure 3: LN Series VAV Controller

Application Specific Controllers

These controllers are designed for the more common HVAC applications found on equipment such as fan coils, rooftop equipment, heat pumps, and unit ventilators. The controllers can be configured through any LNS compliant software with an easy-to-use plug-in. The plug-in is designed to simplify complex programming and sequencing methods by prompting the user for the necessary configuration data.

Figure 4: Rooftop Application Specific Controller

Fan Coil Unit (FCU) Controller

The Fan Coil Unit controller supports a wide range of sensors and actuators and is used in the following applications:

- two-pipe coil shared cooling and heating and four-pipe coil cooling and heating
- fan-coil applications including cooling only, heating only, and cooling and heating
- up to three stages of cooling or heating
- digital, floating, or modulating valves application

Rooftop Unit (RTU) Controller

The Rooftop Unit controller supports a wide range of sensors and actuators and is used in the following applications:

- most rooftop applications including mechanical stages, modulating valves, and floating outputs
- up to four stages of cooling or heating
- management for humidity control devices

Heat Pump Unit (HPU) Controller

The Heat Pump Unit controller supports a wide range of sensors and actuators and is used in the following applications:

- requirements met for most heat pump unit applications including dual mode heat pumps, modulating valves, and water to refrigerant heat pumps
- up to four stages of cooling or heating
- defrost cycle for system maintenance
- dehumidification cycle

Scheduler and Display

The LN Series of programmable and application specific controllers are complimented by the Display and Scheduler that help manage facility events and provide a straightforward user interface where authorized building occupants can interact with building systems.

The LN Series Scheduler is a LONWORKS based node capable of storing and managing up to 16 schedules. The Scheduler is initially configured through an LNS plug-in to any LNS Network Management software, including LN Builder (Figure 5).

Figure 5: LN Series Scheduler

The LN Series Display is an extension of the Scheduler. The Display node provides the scheduling capabilities of the Scheduler, and also incorporates an integral display and buttons to serve as a local user interface to your Metasys system. The Display is capable of displaying and providing the ability to manipulate many variables associated with the operation of your facility.

Network Configurable Thermostat with Liquid Crystal Display (LCD)

The LN Series thermostat family is specifically designed for single and multistage control of heating/cooling equipment such as rooftop and heat pumps (Figure 6). The LCD allows occupants in the space to see their space conditions, and to adjust it as required. The complete family of LN Series controllers is designed for use with any LONWORKS network open and interoperable system.

Figure 6: Metasys System LN Series Network Configurable Thermostat

LN Series Sensors

The LN Series analog wall sensor family is specifically designed to interface with fan coil, heat pump, roof top, and other terminal units, building automation controls (Figure 7). The units provide precise indoor local temperature sensing. Local setpoint adjustment with various scales is available as well.

Figure 7: LN Series Sensor

LN Series Communicating Sensors

Designed to interface with LN Free Programmable Controllers (LN-PRGxxx-12 models only), the LN Series Communicating Sensor line consists of two models (LN-SVSEN-0 and LN-SVSENH-0). Each provides precision local temperature sensing, system status information, and a variety of control functions.You can view the temperature, adjust the setpoint, and apply occupancy overrides. In addition, with the LN-SVSENH-0 model, you can monitor humidity level (Figure 8).

You can also use the LN Series Communicating Sensors to configure applications in LN-VAVCF-12 controllers.

Figure 8: LN Series Communicating Sensor

Wireless Option LN Series Controllers and Wireless Receivers

The LN Series Wireless Receiver Module enables LN Series controllers to receive input signals from wireless sensors and switches. The LN Series Wireless Receiver Module uses the EnOcean® protocol for communication on either an 868 MHz or 315 MHz frequency.

You can install the Wireless Receiver Module in multiple ways: double-sided tape allows you to mount the controller on any type of surface while maintaining close proximity to the controller. If the controller is in an metal enclosure, you can mount the Wireless Receiver on the enclosure's exterior using a 1/2 NPT hub.

In building retrofits, the Wireless Receiver Module allows you to use wireless sensors and switches. This solution minimizes the impact on building structure and preserves architecture and materials. When you use the LN Series Wireless Receiver Module, you can avoid wiring complexities and correct any initial design errors. Because the Wireless Receiver Module can connect directly to wireless-option controllers, you can easily expand input counts, enabling you to implement field upgrades with ease.

Figure 9: LN Series Wireless Receiver

Related Documentation

Refer to the following product bulletins for information on LONMARK objects and network variables, and technical specifications.

- *LN Series Free Programmable LN-PRG203-12 Controller Product Bulletin (LIT-12011776)*
- *LN Series Free Programmable LN-PRG300-12 Controller Product Bulletin (LIT-12011777)*
- *LN Series Free Programmable LN-PRG4x0-12 Controller Product Bulletin (LIT-12011778)*
- *LN Series Free Programmable LN-PRG6x0-12 Controllers and LN Series Input/Output (I/O) Extension Modules Product Bulletin (LIT-12011800)*
- *LN Series Variable Air Volume (VAV) LN-VAVCF-12 Controller Product Bulletin (LIT-1201807)*
- *LN Series Scheduler Product Bulletin (LIT-12011805)*
- *LN Series Display Product Bulletin (LIT-12011806)*
- *LN Series Remote Input/Output (I/O) Modules Product Bulletin (LIT-12011316)*
- *LN Series Variable Air Volume (VAV) and Variable Air Volume and Temperature (VVT) Controllers Product Bulletin (LIT-12011298)*
- *LN Series Application Specific Controllers Product Bulletin (LIT-1201915)*
- *LN Series Powered Fan Coil Unit (PFCU) Controller Product Bulletin (LIT-12011315)*
- *LN Series LN-VSTAT and LN-PSTAT Sensors Product Bulletin (LIT-12011300)*
- *LN Series Communicating Sensors Product Bulletin (LIT-12011779)*
- *LN Series Sensors Product Bulletin (LIT-1201874)*
- *LN Series Wireless Solution Guide Technical Bulletin (LIT-12011628)*

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