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NION-ENV

Network or Stand-Alone HVAC Monitor

Section: Network Systems

GENERAL

The NION-ENV is a programmable, intelligent device capable of monitoring and controlling a two-stage, packaged air-conditioning and heating unit. The NION-ENV incorporates embedded microprocessor technology and nonvolatile memory to input, store, and process configurations for HVAC operation based on data supplied by integral temperature and humidity sensors. It also monitors and controls inputs and outputs for alarm and trouble annunciation.

The NION-ENV can also communicate with UniNet™ integrated facilities monitoring network and the Building Communications Interface (BCI) product lines. All UniNet™ system components are based on LonWorks™ technologies.

The NION-ENV is a single motherboard, manufactured using surface-mount technology. Additionally, a separate temperature and humidity sensor board is provided for mounting remotely from the NION. All connections are made using plug-in screw terminals, except for the serial communications port and temperature/humidity sensor, which use RJ12 connectors.

The NION-ENV employs several methods of protection. All of the terminals are transient-protected. The UniNet™ connection is transformer isolated. This offers a highly reliable system and reduces spare parts inventory.

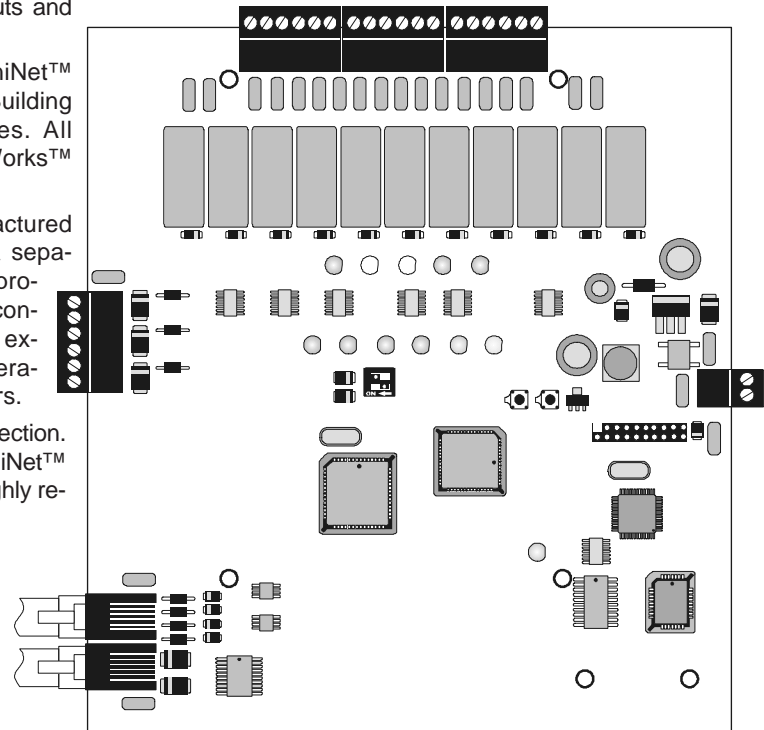
The NION-ENV can run in stand-alone or network modes. Alarm outputs can be used to activate annunciation devices and, when running on the UniNet™ network, report to UniNet™'s graphical monitoring workstations.

Configuration is performed using simple DOS-style menu commands from either a terminal or laptop connected to the serial port, or from the UniNet™ workstation.



California State Fire Marshal

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NION-ENV Board Layout

FEATURES

- Stand-alone or network operation.
- Automated control of two-stage operation.
- Supports reheat and economizer modes.
- Remote temperature and humidity sensor.
- UL Listed to Standard 916.
- Can be configured using DOS-based commands and menus from a terminal or laptop.
- Powered from the monitored HVAC unit or auxiliary UL-Listed power supply.
- Low current consumption.
- Alarm, diagnostic, operation, and I/O LEDs.
- Three dry-contact alarm inputs and eleven control-relay outputs for alarms and HVAC unit operation.
- Transformer-coupled network connection.
- Transient protection on all terminals.
- Standard wall-mount enclosure (**NISCAB-4**).

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This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472



Made in the U.S.A.

APPLICATIONS

The NION-ENV is used with the UniNet™ integrated facilities monitoring network and Building Communications Interface (BCI) products, or it can run as a stand-alone unit. The NION-ENV monitors and controls packaged two-stage heating and cooling units. Whether running stand-alone or as a component on the UniNet™, the NION-ENV is an independent control unit which maintains and executes a complete set of configurable parameters for an HVAC unit.

The NION-ENV can be used anywhere localized, automated control is needed for a packaged HVAC unit. It can also be networked to provide the same control for several nodes at a single site, or across an entire campus or for multiple sites. All alarm information can be reported and each unit's configuration can be controlled from either a central station or multiple workstations.

INSTALLATION

The NION-ENV is mounted in a standard wall-mount enclosure in the same location as the HVAC unit being controlled. Sensor connections are made using five conductor-wire or RJ12 connectors. The sensor module can be mounted 30 feet (9.144 m) or more from the NION; the sensor location must be well ventilated but not directly in the path of the HVAC supply. Two connections are required to enable the NION-ENV to establish network communication: the UniNet™ and 24 VAC power. The power comes from an auxiliary UL-Listed power supply. The EIA-232 connection for laptop configuration is made via an RJ12 connector.

SPECIFICATIONS

- **UL Listed** to Standard 916.
- Can operate and be configured in **network or stand-alone mode**.
- **Transient protection** on all terminals.
- **Transformer-coupled** network connection.
- **Communicates** on LonWorks™-based network operating at 78.5 K baud over twisted-pair wire or multimode fiber.
- **Network connections** via standard screw terminals, EIA-232 connections via RJ12 connectors.
- **Operating temperature range:** 0°C to 49°C (32°F to 120°F).
- **Storage temperature range:** -40°C to +80°C (-40°F to 176°F).
- **Mounts** in a standard locking wall enclosure (**NISCAB-4**), 9.25" (23.495 cm) wide x 12.25" (31.115 cm) high x 2.75" (6.985 cm) deep.
- **LEDs:** alarm, operation, and diagnostic.
- **Powered from** monitored HVAC unit or UL-Listed auxiliary power supply.
- **Power requirements:** 24 VAC @ 0.4 A.
- **Monitors the following alarm points:**
 - Differential Pressure (for dirty filter)
 - Loss of Cooling (for compressor failure)
 - Airflow (for fan failure)

- **Controls the following alarm outputs** with dry-contact relays rated at 24 VDC/120 VAC @ 3 A:
 - High Temperature
 - Low Temperature
 - High Humidity
 - Low Humidity
 - Differential Pressure
 - HVAC Failure
- **Controls the following HVAC functions** with dry-contact relays rated at 120 VAC @ 3 A:
 - Unit Fan
 - First Stage Heating
 - Second Stage Heating
 - First Stage Cooling
 - Second Stage Cooling
- **Supports** Reheat and Economizer modes.
- **Temperature and humidity sensors (TEMPRH)** mounted on remote board in ventilated, wall-mounted enclosure.

ORDERING INFORMATION

When ordering the NION-ENV, select one SMX transceiver (FTXC, S7FTXC, FOXC, or DFXC) and one interface protocol (EP-ENV-FT or EP-ENV-DF).

NION-ENV: network or stand-alone HVAC monitor.

FTXC: SMX transceiver, network media interface for NION, for wire-based FT-10 topology.

S7FTXC: Style 7, free-topology, UniNet™ 2000 Echelon®-based transceiver. *Order with EP-ENV-FT.*

FOXC: SMX transceiver, network media interface for NION, for fiber-optic-based FT-10 topology.

DFXC: SMX transceiver, network media interface for NION, for bidirectional fiber-optic-based FO-10 topology.

EP-ENV-FT: NION-ENV interface protocol for FT-10 and point-to-point fiber-optic media.

EP-ENV-DF: NION-ENV interface protocol for bidirectional fiber-optic media.

NISCAB-4: 16-gauge sheet metal enclosure 9.25" (23.495 cm) wide x 12.25" (31.115 cm) high x 2.75" (6.985 cm) deep; *order separately.*