The ECL-VAV series are microprocessor-based programmable variable air volume (VAV) controllers designed to control any variable air volume box. Each controller uses the LonTalk® communication protocol and is LonMark certified as an SCC VAV.

This series contains five models as follows: ECL-VAVS-O, ECL-VAVS, ECL-VAV, ECL-VVTS, and ECL-VAV-N. Models with inputs support various measurement types including resistance, voltage, and digital-based ones. All models provide digital, floating, pulse width modulation, and proportional control outputs for valves, heating elements, fans, and lighting applications. In particular, the ECL-VAVS-O, ECL-VAVS, ECL-VAV, and ECL-VAV-N models have an on-board air flow sensor with a range of 0-2 inches of water column (500 Pascal) and the ECL-VAVS-O, ECL-VAVS, ECL-VAV, and ECL-VVTS models have a built-in brushless actuator for precise damper positioning for loads requiring up to 35 inch-pounds (4 Newton-meters) of torque.

All controller models work with the Allure™ EC-Smart-Vue sensor series of communicating sensors that feature a backlit-display and graphical menus. These sensors are used for indoor temperature measurement, setpoint adjustment, and occupancy state override. An Allure EC-Smart-Vue sensor can be used to perform system air balancing without requiring an onsite controls engineer and to commission and troubleshoot the system. In addition, all controller models are Open-to-Wireless™ ready, and when paired with the Wireless Receiver, they work with a variety of wireless battery-less sensors and switches.

The ECL-VAV model supports a range of Smart Room Control modules that expand the controller’s range of control to include lighting and shades/sunblinds. This controller also supports the EC-Multi-Sensor ceiling-mounted sensor and its associated EC-Remote remote control.

Factory preloaded applications allow these controllers, straight out of the box, to operate standard VAV equipment with a proven energy-efficient sequence of operation thereby eliminating the need for programming. The preloaded application can be selected using an Allure EC-Smart-Vue sensor even before the network has been installed for rapid deployment or through the EC-NetAX™ solution using Distech Controls’ dcgfxApplications. Or use EC-gfxProgram through either EC-NetAX™ Pro, which is powered by the NiagaraAX® Framework® or through any LNS®-based software such as Distech Controls’ Lonwatcher 3. These same controllers are fully programmable to allow you to easily create your own control sequences capable of meeting the most demanding requirements of any engineering specification.

Applications

- Meets the requirements of VAV zone applications, including:
  - Cooling Only VAV Boxes
  - Cooling with Reheat VAV Boxes
  - Parallel Fan VAV Boxes
  - Series Fan VAV Boxes
  - Dual-Duct VAV Systems

- Improves energy efficiency when combined with:
  - Motion detectors to automatically adjust a zone’s occupancy mode from standby to occupied when presence is detected
  - CO₂ sensors as part of a demand-controlled ventilation strategy that adjusts the amount of fresh air intake according to the number of building occupants
  - Light switches to control both lighting and a room’s HVAC occupancy / standby mode setting
  - Works with a wide range of wireless battery-less sensors
  - The ECL-VAV model is expandable with ECx-Light and ECx-Blind series control modules to create an end-to-end system for the control of HVAC room terminal equipment, Lighting, and Shades/Sunblind.

Features & Benefits

- Preloaded VAV box applications save setup time: one technician can locally configure and troubleshoot the VAV with an Allure EC-Smart-Vue sensor without any need for a programming interface.

- Integrated VAV Performance Assessment Control Charts (VPACC) control sequences, provides a means of automatically detecting when the VAV is operating outside of its design parameters including: persistent High / Low Space Temperature, Persistent High / Low Discharge Temperature, Persistent High / Low Air Flow, and Unstable Air Flow.

- LonMark SCC VAV certified, guaranteeing interoperability with other manufacturers’ LonMark certified controllers.

- Accurate on-board air flow sensor for precise air flow monitoring and control at low and high air flow rates, permitting you to design for maximum energy efficiency while maintaining an optimal comfort level (except ECL-VVTS models).
**Features & Benefits (continued)**

- Built-in actuator with a brushless motor and integrated position feedback system eliminates periodic damper re-initialization and ensures worry-free operation, providing increased occupant comfort and extended service life (except ECL-VAV-N models).
- Optimized air balancing process saves time during commissioning: the flow sensor requires no zero flow calibration, and its variable-speed motor goes to minimum and maximum flow settings in half the time of typical VAV actuators.
- Available with an optional Wireless Receiver that supports up to 18 wireless inputs, letting you create wire-free installations and use various wireless battery-less sensors and switches. With up to 4 software configurable universal inputs and up to 6 software configurable outputs, this controller series covers all industry-standard VAV applications.
- Highly accurate universal inputs support thermistors and resistance temperature detectors (RTDs) that range from 0 Ohms to 350 000 Ohms, giving you the freedom to use your preferred or engineer-specified sensors, in addition to any existing ones.
- Rugged hardware Inputs and Outputs eliminate need for external protection components, such as diodes for 12V DC relays.

---

### ECL-VAV Series Controllers

<table>
<thead>
<tr>
<th>Model</th>
<th>ECL-VAVS-O</th>
<th>ECL-VAVS</th>
<th>ECL-VAV</th>
<th>ECL-VVTS</th>
<th>ECL-VAV-N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>5-Point VAV</td>
<td>7- Point VAV</td>
<td>12- Point VAV</td>
<td>6- Point VVT</td>
<td>11- Point VAV</td>
</tr>
<tr>
<td>Universal hardware inputs</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Built-in flow sensor</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Wireless inputs</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>15 Vdc Power Supply</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Universal output</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Digital (triac) outputs</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Built-in Actuator</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Compatibility for optional subnet devices:</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>- Allure EC-Smart-Vue sensor</td>
<td>4²</td>
<td>4²</td>
<td>4²</td>
<td>4²</td>
<td>4²</td>
</tr>
<tr>
<td>- Allure EC-Smart-Vue sensor and EC-Multi-Sensor series</td>
<td>Up to 4³</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>- ECx-Light-4 / ECx-Light-4D</td>
<td>Up to 2¹</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>- ECx-Blind-4 / ECx-Blind-4LV</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

1. All controllers are Open-to-Wireless ready. Available when an optional Wireless Receiver is connected to the controller. Some wireless sensors may use more than one wireless input from the controller.
2. A controller can support a maximum of two Allure EC-Smart-Vue sensor models equipped with a CO₂ sensor. The remaining connected Allure EC-Smart-Vue sensor models must be without a CO₂ sensor.
3. For supported quantities, see the VAV-Smart Room Control Device Calculator.xlsm spreadsheet file available for download from SmartSource.
To reduce the cost of installation, and minimize the impact on existing partition walls, the Wireless Receiver enables these controllers to communicate with a line of wireless battery-less room sensors and switches. For supported frequencies in your area, refer to the Open-to-Wireless Solution Guide.

**Recommended Applications**

<table>
<thead>
<tr>
<th>Model</th>
<th>ECL-VAVS-O</th>
<th>ECL-VAVS</th>
<th>ECL-VAV</th>
<th>ECL-VVTS</th>
<th>ECL-VAV-N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling Only VAV Box</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling w/ Reheat VAV Box &amp; Perimeter Heating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel Fan VAV Box</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Series Fan VAV Box</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual Duct VAV Box¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Damper VAV Box²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Damper Actuator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room Pressurization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart Room Control support for HVAC, light, and shades/sunblinds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Two controllers are required or one controller with an external flow sensor and actuator.
2. Requiring More Than 35 in-lb (4 Nm) Actuator Torque.
3. This configuration is not supported by factory preloaded applications. Programming is required.
EC-NetAX Solution

The EC-NetAX® multi-protocol integration solution is web-enabled and powered by the Niagara AX® Framework, establishing a fully Internet-enabled, distributed architecture for real-time access, automation and control of devices. The EC-NetAX® open framework solution creates a common development and management environment for integration of LONWORKS®, BACnet® and other protocols. Regardless of manufacturer and protocol, the EC-NetAX® system provides a unified modeling of diverse systems and data, providing one common platform for development, management and enterprise applications.

LonWORKS Network Services (LNS)

The LNS® client-server platform allows multiple users, running different LNS-compatible applications, to access a common source for directory, installation, management, monitoring and control services for the network system being managed. Distech Controls’ Lonwatcher is an example of a LNS-based network management tool that can use Plug-Ins to configure and monitor controllers and devices in the control system.

EC-NetAX Wizards

EC-NetAX® Px Graphics Page Support for Preloaded Applications with EC-NetAX® dc gfxApplications

In the EC-NetAX® solution, dc gfxApplications provide ready-to-use Px graphics pages for the ECB/ECL-VAV series of factory preloaded controllers. Once the controller is online, select any one of the standard VAV pre-configured controller applications to use. This provides a proven energy-efficient sequence of operation without any need for programming.

The graphics on the Px graphics page automatically update to show the currently selected controller application, the current VAV box’s operational parameters with the ability to configure and override operation.

Supported Platforms

EC-NetAX® Wizards

EC-NetAX® Px Graphics Page Support for Preloaded Applications with EC-NetAX® dc gfxApplications

In the EC-NetAX® solution, dc gfxApplications provide ready-to-use Px graphics pages for the ECB/ECL-VAV series of factory preloaded controllers. Once the controller is online, select any one of the standard VAV pre-configured controller applications to use. This provides a proven energy-efficient sequence of operation without any need for programming.

The graphics on the Px graphics page automatically update to show the currently selected controller application, the current VAV box’s operational parameters with the ability to configure and override operation.

EC-NetAX® Scheduling / EC-Schedule LNS Plugin / EC-gfxProgram EC-Schedule

Distech Controls’ EC-gfxProgram is a programming tool that allows you to quickly create control sequences by ‘dragging and dropping’ block objects and then linking the objects with a simple “click, select and release”. Select objects from an extensive library of over 100 commonly used functions as well as create your own custom blocks. With a user-friendly interface and intuitive programming environment, HVAC programming could not be easier. Refer to the EC-gfxProgram datasheet for more information.

- Program both ECP and ECL Series LonWorks and ECB Series BACnet controllers with the same tool.
- Supplied as freeware – there are no associated licensing costs.
- Live debugging allows user to view code execution, input/output values and to detect errors in real-time.
- A code library for managing your favorite or most commonly used code or code sections or use gfxApplications which allows you to fine-tune the code to meet engineering-specific requirements, while providing full integration of ready-to-use Px graphics pages from dc gfxApplications.

Configure the controller’s built-in schedules and holidays from the EC-NetAX® solution (ECB and ECL series controllers), or directly from within EC-gfxProgram (ECB and ECL series controllers) with an easy-to-use point, drag, and click interface. It features a weekly schedule for regular, repeating, events by “time-of-day” and “day-of-week”, while a holiday schedule is available to define events for specific days.

- Easily configure schedules using a graphical slider.
- Allows you to easily copy and paste entries. Duplicate a schedule entry for Monday to Friday.
- Special events allow you to set exceptions such as holidays to a schedule.
- Holidays can be set for recurring events such as the 9th day, or the 3rd Thursday of a given month.
- A schedule has an effective period during which it is active.
- Schedule provides Next State and Time to Next State that are ideal for use with programming functions such as Optimum Start or Morning Warm Up.
Complementary Products

**ECx-Light/Blind Series**
Line of lighting and shades/sunblinds expansion modules: On/Off lights, dimmable lights, mains-powered shades/sunblinds, 24 VDC shades/sunblinds, and more. Compatible with the ECL-VAV model only.

**Allure EC-Smart-Vue Sensor Series**
Line of communicating room temperature sensors with communication jack, a backlit-display and configurable graphic menus that allow occupants to set occupancy, setpoint adjustment, fan speed, or any other system parameters. Models are available with any combination of the following options: humidity sensor, motion sensor, and CO$_2$ sensor. The ECO-Vue™ icon (🔧) shows how environmentally-friendly the zone’s energy consumption is in real time.

**Allure EC-Sensor Series**
Line of discrete temperature sensors. Models are available with the following options: communication jack, occupancy override button, setpoint adjustment, and fan speed selection.

**Allure Wireless Battery-less ECW-Sensor Series**
Line of wireless, battery-less room temperature sensors. Models are available with the following options: occupancy override button, setpoint adjustment, and fan speed selection. The controller must be equipped with a Wireless Receiver.

**EC-Multi-Sensor Series and EC-Remote Series**
Line of wireless, battery-less room temperature sensors. Models are available with the following options: occupancy override button, setpoint adjustment, and fan speed selection. The controller must be equipped with a Wireless Receiver.

**Wireless Sensors and Switches**
A wide range of self-powered wireless sensors and switches, including the following: motion detector and light sensor, 2-/4-channel wireless light switches (North American and European models), outdoor temperature sensor, surface temperature contact sensor, duct temperature sensor, and more. The controller must be equipped with a Wireless Receiver.

For more information about the available wireless sensors and switches, refer to the [Open-to-Wireless Solution Guide](#) which can be found on our web site.

**Other**
A VAV Terminal Block Cover designed to conceal the wire terminals. Required to meet local safety regulations in certain jurisdictions.

For more information on these or other Distech Controls products, please refer to our web site.
## Product Specifications

### Power
- **Voltage**: 24VAC; ±15%; 50/60Hz; Class 2
- **Protection**: 2.0A user-replaceable fuse
  - 3.0A user-replaceable fuse for triacs when using the internal power supply
- **Power Consumption**: 10 VA typical plus all external loads<sup>1</sup>
  - 85 VA maximum (including powered triac outputs)

### Interoperability
- **Communication**: LonTalk protocol
- **Transceiver**: FT 5000 Free Topology Smart Transceiver
- **LonMark Interoperability Guidelines**: Version 3.4

### Device Class
- **LonMark Functional Profile**: SCC VAV

### Hardware
- **Processor**: STM32 (ARM Cortex™ M3) MCU, 32 bit
- **CPU Speed**: 68 MHz
- **Memory**: 384 kB Non-volatile Flash (applications)
  - 1 MB Non-volatile Flash (storage)
  - 64 kB RAM
- **Real Time Clock (RTC)**: Built-in Real Time Clock without battery
  - Network time synchronization is required at each power-up cycle before the RTC becomes available
- **Status Indicator**: Green LEDS: power status & LAN Tx
  - Orange LEDS: controller status & LAN Rx

### Environmental
- **Operating Temperature**: 32ºF to 122ºF; 0ºC to 50ºC
- **Storage Temperature**: -4ºF to 122ºF; -20ºC to 50ºC
- **Relative Humidity**: 0 to 90% Non-condensing

### Inputs
- **Input Types**: Universal; software configurable
  - **-Voltage**: 0 to 10VDC (40kΩ input impedance)
  - **-Current**: 0 to 5VDC (high input impedance)
  - **-Digital**: Dry contact
  - **-Pulse**: Dry contact; 500ms minimum ON/OFF
  - **-Resistor**: 0 to 350 KΩ. All thermistor types that operate in this range are supported. The following temperature sensors are pre-configured:
    - **Thermistor**: 10KΩ Type 2, 3 (10KΩ @ 77ºF; 25ºC)
    - **Platinum**: Pt1000 (1KΩ @ 32ºF; 0ºC)
    - **Nickel**: RTD Ni1000 (1KΩ @ 32ºF; 0ºC)
    - **RTD Ni1000**: (1KΩ @ 69.8ºF; 21ºC)
- **Input Resolution**: 16-bit analog / digital converter
- **Differential Pressure**: 0 to 2.0 in. W.C. (0 to 500 Pa)
- **-Input Resolution**: 0.00007 in. W.C. (0.0167 Pa)
- **-Air Flow Accuracy**: ±4.0% @ > 0.05 in. W.C. (12.5 Pa)
- **-Air Flow Accuracy**: ±1.5% once calibrated through air flow balancing
  - @ > 0.05 in. W.C. (12.5 Pa)
- **Power Supply Output**: 15VDC; maximum 80mA (4 inputs x 20mA each)<sup>2</sup>

### Outputs
- **Digital**: 24 VAC Triac, digital (on/off), PWM, or floating; software configurable
  - - 0.5A continuous
  - - 1A @ 15% duty cycle for a 10-minute period
  - - PWM control: adjustable period from 2 to 65sec.
  - - Floating control:
    - - Min pulse on/off: 500msec.
    - - Adjustable drive time period
- **External or internal power supply (jumper selectable)**

---
<sup>1</sup> Including powered triac outputs (when applicable).<br>
<sup>2</sup> Maximum current per output. Total output current will vary depending on the load(s) connected.
## Outputs (continued)

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal</td>
<td>Linear (0 to 10VDC) Digital (on/off), PWM, or floating (0 - 12VDC); software configurable. Built-in snubbing diode to protect against back EMF, for example when used with a 12VDC relay. -PWM control: Adjustable period from 2 to 65sec. -Floating control: -Min pulse on/off: 500msec. -Adjustable drive time period -20mA maximum @ 12VDC(^2) -Minimum load resistance 600Ω</td>
</tr>
<tr>
<td>Universal</td>
<td>10-bit digital / analog converter</td>
</tr>
</tbody>
</table>

### Enclosure

<table>
<thead>
<tr>
<th>Material</th>
<th>FR/ABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Black &amp; blue casing &amp; grey connectors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions (with Screws)</th>
<th>- ECL-VAV-N: 4.8 W x 5.9 H x 2.5” D (122.7 x 149.1 x 63.0mm) - Other models: 4.8 W x 8.4 H x 2.5” D (122.7 x 214.3 x 63.0mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Weight</td>
<td>- ECL-VAV-N: 0.92lbs (0.42kg) - Other models: 2.30lbs (1.05kg)</td>
</tr>
</tbody>
</table>

### Standards and Regulation

<table>
<thead>
<tr>
<th>CE - Emission</th>
<th>EN61000-6-3: 2007; Generic standards for residential, commercial and light-industrial environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE - Immunity</td>
<td>EN61000-6-1: 2007; Generic standards for residential, commercial and light-industrial environments</td>
</tr>
<tr>
<td>FCC</td>
<td>This device complies with FCC rules part 15, subpart B, class A</td>
</tr>
</tbody>
</table>

| UL Listed (CDN & US) | UL916 Energy management equipment Plastic housing, UL94-SVB flammability rating Plenum rating per UL1995 |

### Integrated Damper Actuator

| Motor | Bellimo LMZS-H brushless DC motor |
| Torque | 35 in-lb, 4 Nm |
| Degrees of Rotation | 95º adjustable |
| Fits Shaft Diameter | 5/16 to 3/4”; 6.5 to 18.2mm |
| Acoustic Noise Level | < 35 dB (A) @ 95º rotation in 95 seconds |

### Wireless Receiver\(^2\)

| Communication | EnOcean wireless standard |
| Number of wireless inputs | 18 |
| Supported wireless receivers | Refer to the Open-to-Wireless Solution Guide |
| Cable | Telephone cord 4P4C modular jack |
| Length (maximum) | 6.5ft; 2m |

### Subnetwork

| Communication | RS-485 |
| Number of sensors per controller | - Non ECL-VAV model: Allure EC-Smart-Vue sensor: 4\(^5\) - ECL-VAV model: Allure EC-Smart-Vue sensor and EC-Multi-Sensor series: Up to 4\(^6\) ECx-Light-4 / ECx-Light-4D: Up to 2\(^6\) ECx-Blind-4 / ECx-Blind-4LV: Up to 2\(^6\) |
| Connector | RJ-45 |
| Connection Topology | Daisy-chain configuration |

### Communication Protocols

- **encean**
- **LONMARK**

---

1. External loads must include the power consumption of any connected modules such as an Allure EC Smart Vue sensor. Refer to the respective module’s datasheet for related power consumption information. For the ECL-VAV model, see the VAV-Smart Room Control Room Device Calculator.xlsm spreadsheet file available for download from SmartSource.
2. Relays equipped with coil that consume between 20 and 35mA can be used with up to 2 Universal Outputs when the 15V Power Supply Output is de-rated to supply 50mA maximum current.
3. Available when an optional external Wireless Receiver module is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
4. Some wireless modules may use more than one wireless input from the controller.
5. A controller can support a maximum of two Allure EC-Smart-Vue sensor models equipped with a CO\(_2\) sensor. The remaining connected Allure EC-Smart-Vue sensor models must be without a CO\(_2\) sensor.
6. For supported quantities, see the VAV-Smart Room Control Device Calculator.xlsm spreadsheet file available for download from SmartSource.
7. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.
8. California Energy Commission's Appliance Efficiency Program: The manufacturer has certified this product to the California Energy Commission in accordance with California law.
The image contains a functional profile for ECL-VAVS-O, ECL-VAVS, ECL-VAV-N, and ECL-VVTS systems. The page includes various configuration properties, mandatory and optional network variables, and configuration diagrams for different object types.

The page also highlights the following:

- **Mandatory Configuration Properties**
  - Network Variable Usage (SCPTnvUsage)
  - Minimum Send Time (SCPTminSendTime)
  - Maximum Send Time (SCPTmaxSendTime)
  - Maximum Network Variable Length (SCPTmaxNVLength)
  - Network Variable Type (SCPTdefInput)

- **Optional Configuration Properties**
  - Minimum Send Time (SCPTMinSendTime)
  - Maximum Receive Time (SCPTmaxRcvTime)
  - Maximum Network Variable Length (SCPTmaxNVLength)

- **Network Variable Details**
  - Manufacturer Network Variables
  - Manufacturer Configuration Properties
  - Manufacturer Network Variables
  - Optional Configuration Properties
  - Manufacturer Configuration Properties

- **Configuration Diagrams**
  - Diagrams for ECL-VAVS-O, ECL-VAVS, ECL-VAV-N, and ECL-VVTS models
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)

- **Open-Loop Actuator Object Configuration Properties**
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)

- **Open-Loop Sensor Object Configuration Properties**
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)
  - Object Major Version (SCPTobjMajVer)

- **Motion Object Type #0**
  - Motion Object Configuration Properties
  - Motion Object Configuration Properties
  - Motion Object Configuration Properties
  - Motion Object Configuration Properties

- **Node Object Type #9**
  - Node Object Configuration Properties
  - Node Object Configuration Properties
  - Node Object Configuration Properties
  - Node Object Configuration Properties

- **Schedules Object Type #12**
  - Schedules Object Configuration Properties
  - Schedules Object Configuration Properties
  - Schedules Object Configuration Properties
  - Schedules Object Configuration Properties

The page also mentions the availability of Factory configured nviFPs and the possibility of reassigning them as needed. It highlights the importance of calculating optimal operating points in application systems to determine the best conditions for the building's performance.