Product Specifications – NES Series 8000 Garage Ventilation Controllers

Overview
The NES Series 8000 controllers integrate Carrier's AppController (OPN-APP) or Carrier's UC Open Controller (OPN-UC) based on the HVAC control prerequisites and parameters of a given project. Both continuously monitor and regulate HVAC mechanical equipment with reliability and precision while supporting the NES demand-control ventilation (DCV) system's proven ability to optimize performance and maximize energy efficiency.

Both controllers feature native BACnet communications and plug-and-play connectivity to the Carrier i-Vu Building Automation System.

The 8000 Series is designed to serve as a "stand-alone" demand-control ventilation (DCV) system for small- to medium-sized garages requiring anywhere between two and 25 devices (sensors, VFDs, IOs), but it delivers a high degree of functionality and value-added features, including:

- √ The built-in capability to interface with VFD technology for the purpose(s) of monitoring – in real time – and reporting on energy consumption/savings.
- √ Scalability to comport with Energy Management Systems (EMS) and Building Management Systems (BMS) programming protocols.
- √ Internet accessibility and alarm alerts.
- √ It can be configured to control a single ventilation zone or multiple zones, as well as multiple garage fan motors and VFDs.

Key Features:
- Optional 10" panel-mounted display
- Surpasses strict code requirements for enclosed garage ventilation
- BACnet MS/TP & BACnet/IP* compatible
- Modbus TCP/IP and DHCP compatible
- Battery-backed real timeclock keeps time in the event of power failure

SPECIFICATIONS

Protection
- Incoming power and network connections are protected by non-replaceable internal solid-state polyswitches which reset themselves when the condition that causes a fault returns to normal. The power, network, input and output connections also are protected against voltage transient and surge events.

Real Time Clock
- Battery-backed real time clock keeps track of time in event of power failure.

Battery
- 10-year Lithium CR2032 battery provides a minimum of 10,000 hours of trend data and time retention during power outages.

Status Indicators
- LED status indicators for communications, run status, error, power, and all digital outputs.

Listed by
UL-916 (PAZX), cUL-916 (PAZX7), FCC Part 15-Subpart B-Class A, CE EN50082-1997.

NES Sequence of Operation

- The NES system utilizes an innovative, smart-control logic that detects and measures vehicle fumes in the garage and then modulates garage fan speeds to prevent carbon monoxide (CO) and nitrogen dioxide (NO_2) levels from exceeding predefined set points (measured in parts per million) for an extended period of time.
- Our patented system incorporates variable frequency drive (VFD) technology, syncing it with our digital garage ventilation controllers and CO (and NO_2) sensors such that it:
  - Enables the motors to run continuously at low speeds – when CO (and NO_2) levels are de minimis – while adhering to code / design ventilation rate requirements;
  - Creates a reservoir of fresh air in the garage such that CO (and NO_2) concentrations are prevented from exceeding pre-defined sensor trip points for an extended period of time, thereby minimizing the number of times the motor(s) must ramp to “flush out” the garage; and finally
  - Incrementally increases fan motor speed(s), i.e., the ventilation rate, whenever CO (and/or NO_2) concentrations broach pre-set trip points. Said another way, the motors don’t instantaneously ramp from low to high speed(s), but rise proportionally (in speed) to counter CO (and NO_2) concentrations with an equivalent amount of fresh air.
- The result is to enable property owners to continuously ventilate their garages in an exceedingly energy efficient manner while ensuring the health and safety of building occupants and visitors.

For More Information Contact:

Nagle Energy Solutions, LLC
Ph.: (617) 674-6220 (East Coast) | (650) 830-0109 (West Coast)
Email: sales@nagle-energy.com

www.nagle-energy.com