

Product Specifications – NES TR25, TR50 & TR100 Garage Ventilation Controller(s)

Overview

The NES TR25, TR50 and TR100 are built on Tridium’s powerful and durable JACE controller utilizing Niagara programming.

Each is designed to provide optimum functionality and system features, including scalability, i.e., they can be custom designed according to customer requirements, and an “open” communications platform that comports with any BMS and/or EMS communication protocol. Furthermore, they distinguish themselves by their ability to interface with variable frequency drive (VFD) technology to track real-time energy consumption/savings.

The three versions of the NES Tridium JACE controller are configured as follows:

- **NES TR25:** Relies on the Tridium J-300E. Configurable to serve up to 25 devices (sensors & VFDs) when incorporating an energy monitoring capability and up to 50 devices without the energy monitoring capability.
- **NES TR50:** Relies on the Tridium J-600E. Configurable to serve up to 50 devices when incorporating an energy monitoring capability and up to 100 devices without the energy monitoring capability.
- **NES TR100:** Relies on the Tridium J-700. Configurable to serve up to 100 devices when incorporating an energy monitoring capability and up to 200 devices without the energy monitoring capability.

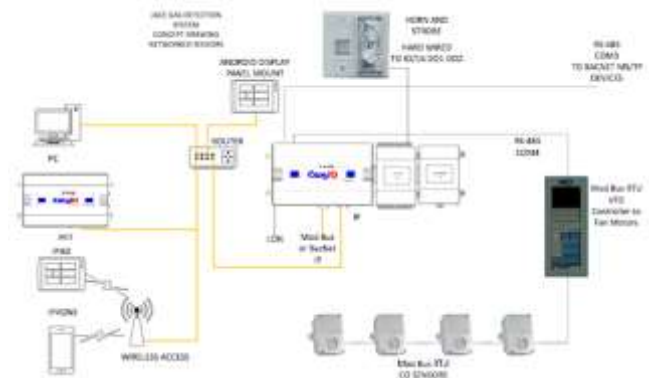
The NES TR25, TR50 and TR100 control parking garage ventilation via a 4 to 20 mA signal from Modbus-communicating, NES Series 100 & NES Series 200 Electrochemical CO & NO₂ sensors.

The NES TR25, TR50 and TR100 are Internet accessible via any Internet browser, with an optional, onboard display to facilitate trouble-free commissioning, system adjustments and troubleshooting. The controller is designed to control a single zone or multiple zones, and it can control multiple garage fan motors and VFDs.

Key Features:

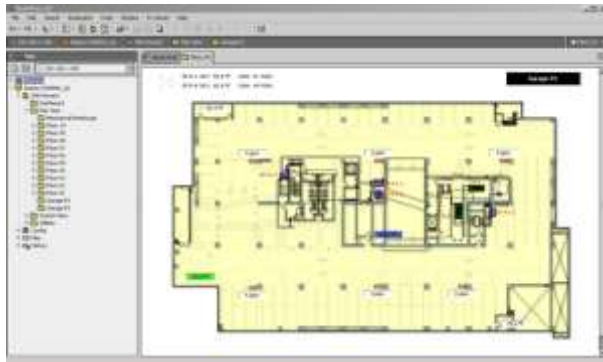
- Niagara Tridium-based controller.
- Accessible by any web browser.
- Compatible with building systems utilizing BACnet®, Modbus®, Metasys®, LonWorks® and many other communication protocols.

- Graphics module provides detailed, real-time views of system component performance, e.g., individual CO sensor readings, milliamp continuity, etc.
- NEMA 1 metal enclosure rated UL50 (file: E27567, Type 1), CSA Approved (file LL42184, Type 1) Dimensions: 20”W X 20”H X 8”D



- UL Approved, Class 2 110V to 24 VDC Power Supply integrated in enclosure.
- Adjustable occupied, unoccupied, enable and purge schedules.
- Sensor error activates strobe and is alarmed in the alarm console.
- High Level (100 ppm for more than 15 minutes) activates horn and sends out an email alert if the controller has Internet access.
- Can control multiple Modbus enabled VFD’s.
- Employs Modbus CO sensors, reducing installation and maintenance costs.
- Provides alerts for calibration and replacement of sensors.
- Provides energy usage and savings reports on screen and emailed.
- Provides critical alarm notification via emailed notifications.

- Trending available for all points, and trend reports can be generated and saved as a PDF or as an excel document on your PC.
- On-call service for sites that have scheduled on call personnel.
- **Fully complies with the new CA, OR and WA code requirements for garage ventilation**, as well as other states with stricter CO and NO₂ sensor system/garage ventilation standards.



Options:

- Panel-mounted, 9-inch Android display.
- Fault indication Strobe.
- High Level Horn.
- Front panel interface to allow power and communications for laptops – when a wireless router is not employed.
- Wireless router.
- System graphics, e.g., floor plans.
- Drivers for various protocols such that this system can communicate with an existing BMS. These include, but are not limited to BACnet IP and Lon IP.

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 (NO₂) levels from exceeding predefined set points (measured in parts per million) for an extended period of time.
- Our innovative system incorporates variable frequency drive (VFD) technology, syncing it with our digital garage ventilation controllers and CO (and NO₂) sensors such that it:
 - ✓ Enables the motors to run continuously at low speeds – when CO (and NO₂) 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 NO₂) 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 NO₂) concentrations breach pre-set CO 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 NO₂) concentrations with an equivalent amount of fresh air.

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