

ECO HVLS Specification

Hunter Industrial Fan

180 Threet Industrial Road
Smyrna, TN 37167



Part 1 General

1.1 Summary of work

- A. Installation
 - 1. Installation of the fan and miscellaneous structural, electrical and mechanical work other than those specifically addressed in the installation scope of work shall be provided by others. Factory authorized installation is available through Hunter Industrial. When factory installation is chosen, the appropriate scope of installation must be reviewed, and questions should be directed to Hunter Industrial: 1-844-591-FANS (3267).

1.2 References

- A. National Fire Protection Association (NFPA)
- B. Underwriters Laboratories (UL)
- C. Restriction of Hazardous Substances (RoHS)
- D. European Community (CE)
- E. European Standards (EN)
- F. Canadian Standards Association (CSA)
- G. National Electrical Manufacturers Association (NEMA)
- H. National Electrical Code (NEC)
- I. Occupational Safety and Health Administration (OSHA)
- J. International Organization for Standardization (ISO)
- K. Air Movement and Control Association (AMCA) Certified

1.3 Submittals

- A. Installation Manual: Manufacturer will provide a copy of installation instructions and proper fan operating instructions.
- B. Product Data: Specification sheets, specifying electrical and installation requirements, weights, attachment methods, and controller information.
- C. Safety & Precautions documentation, including fan placement, maintenance, fire panel integration.
- D. CAD, .DWG or other design drawings can be provided for design considerations

1.4 Quality

- A. Certifications
 - 1. The fan shall be ETL/Intertek certified pursuant to ANSI/UL 507 and CSA C22.2 No.113 in North America.
 - 2. The fan shall be compliant with NFPA 13, NFPA 72 and NFPA 70-2011.
 - 3. Controllers shall be compliant with National Electrical Code (NEC) and Underwriters Laboratories (UL) standards and shall be labeled where required by code.
 - 4. The fan shall be tested to Air Movement and Control Association (AMCA) - ANSI/AMCA Standard 210-16 / ASHRAE 51-16
- B. Manufacturers' Qualifications
 - 1. All fans and accessories shall be supplied by Hunter Industrial.

1.5 Packaging and Delivery

- A. Delivery of product shall be shipped and delivered in undamaged, new condition.
- B. Packaging shall consist of high-quality corrugated containers with identification labels intact.
- C. Each delivery shall consist of motor, blades, VFD controller, downrod, mounting hardware, HMI controller, and installation manual.
- D. Fan and components must be stored in a safe, dry location.

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1.6 Warranty

- A. The manufacturer shall replace any components defective in material or workmanship free of charge pursuant to the complete terms and conditions of Hunter Industrial's Limited Lifetime Warranty in accordance to the

following summary:

Airfoils	Limited Lifetime**
Hub and Blade Holder	Limited Lifetime**
Gearless Motor	Limited Lifetime**
Variable Frequency Drive	10 Year (Parts)
HMI Controller	8 Years (Parts)
All other components	Limited Lifetime (Parts)**
Labor	1 Year

** "Lifetime" means components are covered for as long as the fan is operating at the original installation site or until 7 years after Hunter Industrial discontinues manufacturing the fan model.

- B. Product must be registered within 90 days.

Part 2 Product

2.1 Manufacturer

- A. Hunter Industrial, 180 Threet Industrial Road, Suite 120
Smyrna, TN 37167
B. Phone: (844) 591- FANS (3267)
C. Website: www.industrialfans.hunterfan.com

2.2 High Volume, Low Speed Fans – ECO 7.32m, ECO 6.10m, ECO 5.49m, ECO 4.88m, ECO 4.27m, ECO 3.66m, ECO 3.05m, ECO 2.44m

- A. Complete Unit
1. Regulatory Requirements: The fan shall be Intertek/ETL certified pursuant to ANSI/UL 507 and CSA standard 22.2 No. 113 in North America.
 2. Sustainability and Efficiency: The fan shall be designed to move an effective amount of air for cooling and destratification in a wide variety of applications. The entire fan and components shall not weigh more than 72.12 kg to reduce stress on building structure.
- B. Industrial Control Panel
1. The fan controller shall consist of a Variable Frequency Drive (VFD) enclosed in an aluminum enclosure. This enclosure is designed to contain the VFD for maximum cooling efficiency and is pre-wired through the downrod along with receptacles and electrical whip for a plug-n-play install. An external relay for integration to existing fire panels is optional.
 2. Available voltages:
200-240 VAC 1PH 50-60Hz, 200-240 VAC 3PH 50-60Hz, 380-480 VAC 3PH 50-60Hz. Continuous operation in 32° to 140° F (0° to 60°C) ambient conditions.
- C. Airfoil System

The fan shall be equipped with four (4) airfoils made from 6005A Structural Grade aluminum. The airfoils shall be connected to the hub by means of a high strength pressed bolt system.
Each airfoil shall be manufactured with a precision cut, swept style tip (instead of winglets).

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D. Hub Motor

The fan motor shall be a high torque permanent magnet motor (also referred to as a brushless DC, electronically commutated, or synchronous) rated for continuous operation at maximum speed without the use of a gearbox or other mechanical torque multiplier. The motor shall be a totally enclosed non-ventilated design with the capacity for continuous operation in 32° to 140° F (0° to 60°C) ambient conditions. The hub motor enclosure shall be precision cast A380 for low weight and maximum strength.

E. Mounting System

The mounting system shall be designed for quick, secure installation to a wide variety of ceiling structural supports. All components of the mounting system shall be made from A36 steel and ERW tubing. The downrod shall be pre-wired and pre-assembled with adjustable length capabilities. The downrod shall have a pin and sleeve connection to the motor for simple, safe and economical installation. All mounting bolts shall be SAE Grade 5 or equivalent.

F. Safety Cables

1. The fan shall be equipped with one 6.35 mm 7 x 19 Safety Cable, the length of the downrod plus six feet, composed of high-tensile ANSI 316 stainless steel. The minimum breaking strength of the cable assembly supplied is 2,154.55 kgs. Wire rope conforms to ASTM A492. In addition, three 6.35 mm malleable wire rope clamps will be included.

G. Guywires

1. The fan shall be equipped with a custom guywire system comprised of four separate components:
 - A beam clamp with a swivel for inclined application supplied with a high tensile setscrew for a secure grip on both parallel and tapered flanges.
 - Turnbuckle design to be tightened by hand with brass tip set screws to prevent loosening.
 - Gripper, a locking fastener that is wire-diameter specific, for terminating cable when bracing and suspending static and dynamic loads. After install, locking screws can be fully inserted to secure the internal wedges in place.
 - Guywire cable, 3.18 mm 7 x7 wire rope with integrated hook for quick and easy attachment to the provided beam clamp. 1 cable at 0.61 m, 1 cable at 4.57 m.

H. Digital Variable Speed Wall Control Options

1. Shall be compliant with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) The device may not cause harmful interference, and (2) The device must accept any interference received, including interference that may cause undesirable operation.
2. The controller mounting location shall meet the requirements of OSHA standard 29 CFR 1910.303(g) for accessibility minimum clearances.
3. 30.48 m of CAT5 cable shall be provided for connecting the controller to the fan's VFD and to provide power to the controller.
4. The digital controller(s) shall not require a 120 V power supply at the controller mounting location.
5. The digital controller(s) shall support continuous operation in 32° to 140° F (0° to 60°C) ambient
6. Ability to configure aspects of the fan parameters with the assistance of Hunter Industrial's Installation Management team
7. The fan must be equipped with 1 of 3 optional digital variable speed wall controllers outlined below:
 - i. 350 Series Control (optional): The fan(s) can be equipped with a digital 8.89 cm touchscreen 1:1 Controller that provides FWD/OFF/REV, Variable Speed Control function, and provides fault readout information for effortless operation. Capable of daisy chaining up to 10 fans.
 - ii. 500 Series Control (optional): The fan(s) can be equipped with a 12.70 cm Glass Projected Capacitive

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touchscreen that can provide control of up to 30 fans. This controller provides FWD/OFF/REV, Variable Speed Control function, and provides fault readout information for effortless operation. Controller also provides additional functionality such as password lockout protection, fan scheduling and zone creation.

- iii. 700E Series Control (optional): The fan(s) can be equipped with a 17.78 cm Glass Projected Capacitive touchscreen that can provide control of up to 30 fans. This controller provides FWD/OFF/REV, Variable Speed Control function, and provides fault readout information for effortless operation. Controller provides additional functionality such as password lockout protection, fan scheduling and zone creation. Controller comes with 2 temperature and relative humidity sensors that are used to automatically adjust the fan(s) operation based on the environmental conditions of the space.
- 8. Each digital controller is capable of being integrated into a building automation or building management system via an optional BACnet gateway device.

Part 3 Execution

3.1 Preparation

- A. An existing building must have a mounting structure able to support two times the hanging weight of the fan. The structure the fan is attached to shall be capable of supporting a torque load of up to 70 ft·lb (95 N·m) of torque. Hunter Fan recommends consulting a structural engineer for installation methods and applications outside Hunters' recommendation and a certification, in the form of a stamped print or letter, submitted prior to installation.
- B. Minimum Clearances
 - I. Airfoils must be at least 10 ft (3 m) above the floor.
 - II. The sweep area (horizontally and vertically) must be at least 2 ft (0.61 m) from any obstructions such as lights and cables.
 - III. The fan shall not be applied in any location where it may be subject to cross winds over 40.23 km/h or in close proximity to HVAC or radiant heat outputs.
- C. Item such as lights, cables, or any other obstacles must be relocated or removed if they do not comply with the minimum clearance requirement before installation.
- D. Dedicated branch circuit protection is required to the fans.
- E. A twist lock receptacle must be placed 1.52 m outside the sweep area. Refer to the installation manual for a list of receptacles part numbers.

3.2 Installation

- A. Any installation shall be performed in accordance with the manufacturer's installation manual. This includes acceptable structural dimensions and proper sizing and placement of all installations.
- B. In buildings equipped with ESFR sprinklers or any sprinklers, you must comply with NFPA 13 and NFPA 72 guidelines for application of these fans.