

Technical Bulletin: Blower Fan Watt Draw

Residential New Construction Program

In last month's Technical Bulletin, the RNC Program outlined measuring blower fan air flow for task 3 of HVAC grading. To continue to ensure participants get the most out of RNC Program incentives, this technical bulletin will focus on HVAC grading tasks 4, Blower Fan Watt Draw. These technical bulletins serve as guides, so raters should review [RESNET's training portal](#), procedures, and best practices for HVAC grading as outlined by RESNET.

Task 4: Evaluate Blower Fan Watt Draw

Methods: Raters can use one of four methods to measure the watt draw of the blower fan; Plug-in Watt Meter, Clamp-on Watt Meter, Analog Utility Revenue Meter and Digital Utility Revenue Meter. This technical bulletin will cover how to perform the Clamp-on Watt Meter method.

Clamp-on Watt Meter Method

1. **Determine the test location:** There are two locations to perform the clamp on watt meter method.
 - The service disconnect, a dedicated switch designed to interrupt power just to the indoor HVAC equipment.
 - The HVAC system through an access panel to electrical supply wiring.
2. **Let the HVAC system run for 10 minutes:** This can be the same time that the unit was running to perform task 3 so long as the power had not been interrupted.
3. **Set up the Clamp on Meter:** This step differs slightly depending on the nameplate voltage, but the same principle applies. The image below shows an example of a clamp meter, but the steps are below.
 - Place the clamp of the watt meter around the wire supplying power to the blower fan to measure the current, this wire is typically **black**.
 - 110 to 120 V:
 - The two leads of the watt meter will be connected to wires to measure the voltage. Connect the negative and positive leads around the **green** ground wire and connect the positive lead between the electrical power supply wire and the equipment's power supply **black** wire.
 - 200 to 240 V
 - The process is similar to the lower voltage except the negative connects to the first electrical power supply wire and the positive connects to the second power supply wire. These wires are typically referred to as "L1" or "L2" and are **red or black**.

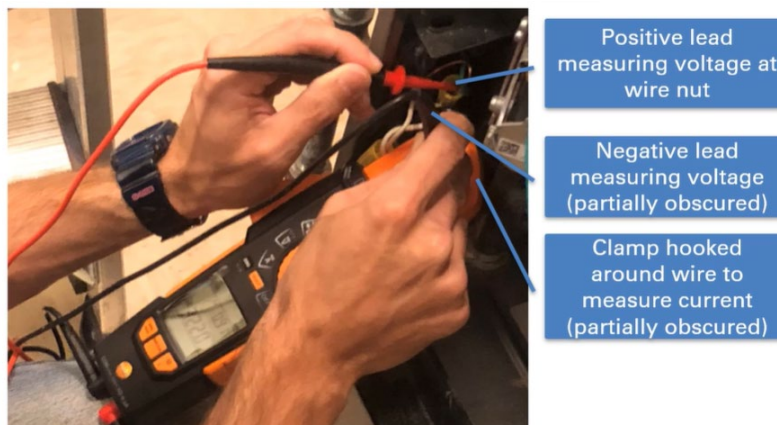


Image produced by RESNET of a manometer measuring the watt draw of a system

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4. **Measure and record:** With the clamp on meter configured the proper way, measure and record the average blower fan watt draw displayed on the clamp on meter taken over a 10 second period. Remove the clamp on watt meter and replace the access panel or service disconnect panel before moving onto the refrigerant charge test.

Notes on Safety:

- This procedure requires handling live wires, so remember to be careful. This document serves as an overview, but anyone performing testing should default to RESNET guidance on testing procedures.
- Read the clamp-on watt meter manufacturer's instructions prior to procedures.
- **Never** conduct tests at the main electrical distribution panel.
- Ensure you are permitted to access the required locations.

The steps in this document were taken from the new RESNET standard 310 and the courses at RESNET's training portal. Raters can see an overview of standard 310 in the technical bulletin from March 2021.