ventilation system 20 and unit 22 can be installed in any building or structure including, but not limited to residential units, office buildings, factories, storage units, out buildings, etc., to enable movement of air (gas, fumes, air borne particulate matter, etc.) along a flow path 24 between a first space 26 and a second space 28.

[0023] As shown in Fig. 1, the first and/or second space 26, 28 can be generally defined as the interior or exterior of a building or a room or group of rooms within a building. In some embodiments, the first and/or second space 26, 28 can be defined as a volume adjacent at least a portion of the ventilation unit 22, or more specifically as a volume extending between a portion of the ventilation unit 22 and another unit, such as a stove or shower stall. In other embodiments, the first and/or second space 26, 28 can be defined by an enclosed space, such as by a fume hood or a building ventilation conduit.

[0024] Ventilation systems 20 can have various configurations depending on the installation environment and the requirements of the system. A ventilation system 20 can include a duct arrangement 30 to provide a conduit for the air flow 24 between the first space 26 and the second space 28. The duct arrangement 30 can include ductwork with at least one straight portion 30a and/or at least one angled portion 30b. Each angled portion 30b can express any of a range of angles, though 90 to 135 degree angled portions 30b are most common. The cross-sectional shape and cross-sectional area of the duct portions 30a, 30b, as well as the material from which they are formed can vary depending on the installation environment and the requirements of the system. For example, the duct arrangement 30 can be comprised of rigid and/or flexible materials as generally known in the art. Further, a duct arrangement 30 can include one or more joint portions 30c that can connect various other portions of a duct arrangement 30 or ventilation system 20, as shown in Figs. 1 and 1A.

[**0025**] The duct arrangement 30 can be connected to a ventilation unit 22 at an end adjacent to or associated with the first space 26 and a termination fitting 32 at an end adjacent to or associated with the second space 28. In some embodiments, the termination fitting 32 can provide a moveable barrier, which can selectively allow air flow 24 from the duct arrangement 30 to exit into the second space 28. The termination fitting ~~26~~32 can

CLAIMS

What is claimed is:

1. A ventilation unit for installation in a ventilation system, the unit comprising:

a motor coupled to a fan element and a power source; and

a calibration module for adjusting ~~the performance~~ an actual air flow rate of the ventilation unit ~~based on~~ altered by at least one physical characteristic of the ventilation system, the calibration module including a power regulator coupled to the motor and configured and arranged to provide power to the motor to alter the actual flow rate through the ventilation system such that the actual flow rate corresponds to a reference flow rate based on a performance rating of the unit.

2. The ventilation unit of claim 1, wherein the calibration module includes a user interface.

3. The ventilation unit of claim 1, wherein the calibration module further includes a controller coupled to the power regulator.

4. The ventilation unit of claim 3, wherein the controller is programmed to store a look-up table.

5. The ventilation unit of claim 3, wherein the controller is programmed to compute at least one algorithm.

6. The ventilation unit of claim 1, wherein the calibration module includes a sensor.

7. The ventilation unit of claim 6, wherein the sensor is one of a voltage sensor, a current sensor, and a hall-effect sensor.

8. The ventilation unit of claim 6, wherein the sensor is one of a static pressure sensor, a fluid flow rate sensor, and a rotational motion sensor.

9. The ventilation unit of claim 1, wherein the motor is a BLAC, PMAC, or BLDC motor.

10. A method of calibrating a performance-rated ventilation unit, the method comprising:

determining at least one physical characteristic of a ventilation system; and

regulating a power supplied to a motor of the ventilation unit ~~based on the at least one characteristic of the ventilation system to satisfy~~ motor to alter an actual flow rate of the ventilation system such that the actual flow rate corresponds to a reference flow rate based on ~~the~~ a performance rating of the ventilation unit.

11. The calibration method of claim 10, wherein the at least one characteristic of the ventilation system is static pressure.

12. The calibration method of claim 11, wherein a static pressure of a ventilation system is determined by a sensor.

13. The calibration method of claim 10, and further comprising calculating a measure of one of current and voltage necessary to satisfy the performance rating of the ventilation unit.

14. The calibration method of claim 10, determining a power supply capacity of a power source, and wherein at least one of a current and voltage supply capacity is determined by a sensor.

15. The calibration method of claim 10, and further comprising executing at least one step of the method via a user interface.

16. A method of installing a performance rated ventilation unit, the method comprising:

connecting a ventilation unit including a motor and a fan to a ventilation system;

assessing at least one physical characteristic of a ventilation system;

assessing at least one of a current and voltage supply capacity of a power source; and

adjusting a power supplied to the ~~ventilation unit based on the at least one characteristic of the ventilation system determined to satisfy~~ motor to alter the actual flow rate of the ventilation system such that the actual flow rate corresponds to a reference flow rate based on ~~the~~ a performance rating of the ventilation unit.

17. The installation method of claim 16, and further comprising initiating at least one step of the method via a user interface.

18. The installation method of claim 16, and further comprising reassessing at least one characteristic of a ventilation system after adjusting the power supplied to the ventilation unit.

19. The installation method of claim 16, wherein at least one of the assessing steps is performed by a calibration module of the ventilation unit.

20. The installation method of claim 16, wherein the adjusting step is performed by a controller and one of a current and voltage regulator.