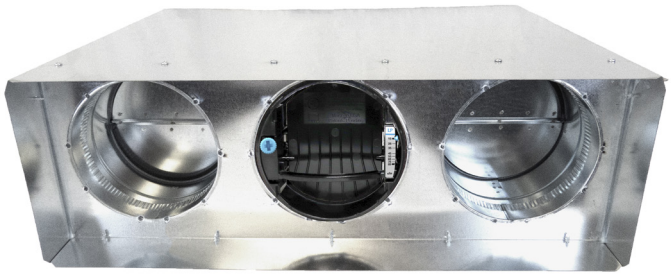
ZRT-3PDIL

THREE PARALLEL DAMPER IN-LINE ZONE TERMINALS

AIRFLOW & ZONE CONTROL



Made in USA

WARRANTY 3 YEARS

ETL CLASSIFIED Intertek

Product Description

Aldes Three Parallel Damper In-Line Zone Terminals (ZRT-3PDIL) are designed to introduce flexibility and dynamic control to central supply or exhaust ventilation systems. Used in both large and small systems, the ZRT-3PDIL regulates ventilation air without the need for individual fans or traditional VAV terminal units.

Each ZRT-3PDIL is a three-position, pressure-independent terminal with two control dampers to regulate multiple high-limit on-demand airflow controls and integral passive regulators for automatic air balancing of the minimum and maximum airflow setpoints. This unique combination provides flexible control schemes without the need for expensive pneumatic, electronic, or DDC control systems.

The ZRT-3PDIL is primarily used for combination low-flow indoor air quality ventilation or make-up air, and two on-demand high-flow spot ventilation rates using the same central exhaust or supply fan system. For example, controlling make-up air in response to a bath fan or clothes dryer, plus range hood exhaust. Airflow rates are achieved by the Constant Airflow Regulator (CAR3) by selection and availability; in the terminal end panel, and in-line with the branch duct. The maximum airflows are controlled by a series of 24 VAC or 120 VAC powered motorized damper(s) and a secondary CAR airflow controller.

With the maximum-air motorized control dampers completely closed, the factory-calibrated minimum CAR allows steady, low-continuous airflow control. (Consult the CAR specifications sheet for sizing and specifying information).

When other ZRT-3PDIL are activated for on-demand control of high flow, the unpowered ZRT-3PDIL will maintain the specified low-continuous rate through the pressure-independent CAR minimum flow control. Opening the ZRT-3PDIL's control damper adds its calibrated airflow rates to the minimum setpoint, allowing for full maximum-boost ventilation.

Construction

The ZRT-3PDIL is constructed of a heavy-gauge galvanized steel housing for durability. Units are designed to be installed in shallow plenum spaces and be connected to rigid rectangular duct in a slip-type duct connection.

The damper assembly is provided with a long-life 24 VAC or 120 VAC actuator motor with spring return. The gasketed tight-seal damper blade prevents air leakage in the closed position. A solid one-piece damper blade pivots on permanently lubricated bearings. The entire damper and flow regulators assembly can be installed or removed from below the terminal box through the screw-on access plate.

Maintenance

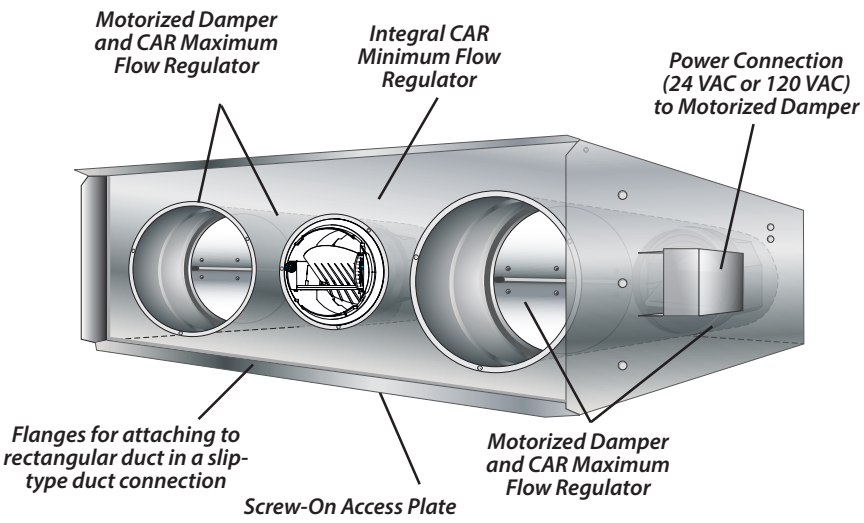
The ZRT-3PDIL needs no maintenance when used in normal conditions.

Warranty

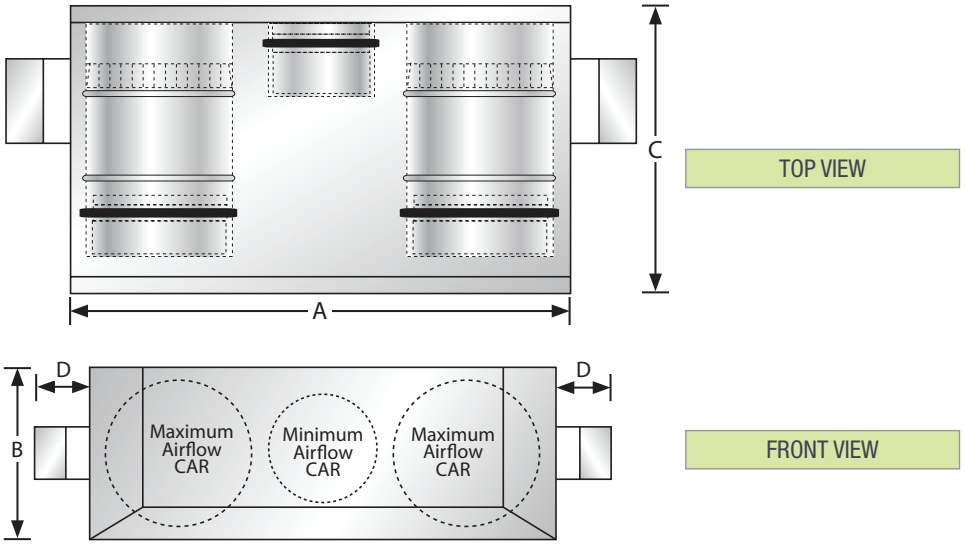
The entire unit is guaranteed for three (3) years, from date of shipment, against all manufacturing defects, provided the material has been installed and operated per manufacturer's instructions and under normal conditions. Warranty is limited to the repair or replacement of the material upon its return freight paid to our factory. This warranty is not transferable and is limited to the original end user.

U.S. Pat. No. 9,759,442

ZRT-3PDIL



ZRT-3PDIL Dimensions



SIZE (Duct) Inches / mm	CAR Diameter		A	B	C	D
	Min	Max				
28" x 10" (710 mm x 250 mm)	6" (150 mm)	(2) 8" (200 mm)	28" (710 mm)	10" (250 mm)	24-5/8" (625 mm)	3-1/8" (79 mm)
30" x 10" (760 mm x 250 mm)	8" (200 mm)	(2) 8" (200 mm)	30" (760 mm)	10" (250 mm)	24-5/8" (625 mm)	3-1/8" (79 mm)
34" x 12" (865 mm x 300 mm)	8" (200 mm)	(2) 10" (250 mm)	34" (865 mm)	12" (300 mm)	26-5/8" (675 mm)	3-1/8" (79 mm)
36" x 12" (915 mm x 300mm)	10" (250 mm)	(2) 10" (250 mm)	36" (915 mm)	12" (300 mm)	26-5/8" (675 mm)	3-1/8" (79 mm)

Model Code Example

Z3P-L-2810-120-C5-B5-6

PARENT MODEL

Z3P: Three Parallel Damper In-Line Zone Terminal

PRESSURE RANGE

L: Low-Pressure (0.12-1.2 in. w.g.)
H: High-Pressure (0.4-2.8 in. w.g.)

DUCT SIZE

2810 = 28″ x 10″
3010 = 30″ x 10″
3412 = 34″ x 12″
3612 = 36″ x 12″

MOTOR VOLTAGE

120: 120 VAC
24: 24 VAC

CONTINUOUS AIRFLOW RANGE

Low-Pressure

4:	15-85 CFM (25-144 m^3/h)	(all sizes)
5:	35-180 CFM (59-306 m^3/h)	(all sizes)
6:	45-260 CFM (76-442 m^3/h)	(all sizes)
8:	70-385 CFM (119-655 m^3/h)	(30″ x 10″ and larger)
10:	110-620 CFM (187-1054 m^3/h)	(36″ x 12″ only)

High-Pressure

4:	30-160 CFM (51-272 m^3/h)	(all sizes)
5:	55-260 CFM (93-442 m^3/h)	(all sizes)
6:	60-370 CFM (102-629 m^3/h)	(all sizes)
8:	130-630 CFM (220-1070 m^3/h)	(30″ x 10″ and larger)
10:	170-900 CFM (289-1529 m^3/h)	(36″ x 12″ only)

BOOST 1 AIRFLOW RANGE

Low-Pressure

4:	15-85 CFM (25-144 m^3/h)	(all sizes)
5:	35-180 CFM (59-306 m^3/h)	(all sizes)
6:	45-260 CFM (76-442 m^3/h)	(all sizes)
8:	70-385 CFM (119-655 m^3/h)	(all sizes)
10:	110-620 CFM (187-1054 m^3/h)	(34″ x 12″ and larger)

High-Pressure

4:	30-160 CFM (51-272 m^3/h)	(all sizes)
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6:	60-370 CFM (102-629 m^3/h)	(all sizes)
8:	130-630 CFM (220-1070 m^3/h)	(all sizes)
10:	170-900 CFM (289-1529 m^3/h)	(34″ x 12″ and larger)

BOOST 2 AIRFLOW RANGE

Low-Pressure

4:	15-85 CFM (25-144 m^3/h)	(all sizes)
5:	35-180 CFM (59-306 m^3/h)	(all sizes)
6:	45-260 CFM (76-442 m^3/h)	(all sizes)
8:	70-385 CFM (119-655 m^3/h)	(all sizes)
10:	110-620 CFM (187-1054 m^3/h)	(34″ x 12″ and larger)

High-Pressure

4:	30-160 CFM (51-272 m^3/h)	(all sizes)
5:	55-260 CFM (93-442 m^3/h)	(all sizes)
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How to Specify Aldes: ZRT-3PDIL

Step 1: Reference the part number example to aid in the selection process of the ZRT-3PDIL.

Step 2: Determine the required **DUCT SIZE.**

NOTE: The minimum duct size is dependent on the required airflow and noted with the airflow ranges.

Step 3: Select the desired **MOTOR VOLTAGE.**

Step 4: Select the desired **CONTINUOUS AIRFLOW RANGE** for the continuous ventilation rate.

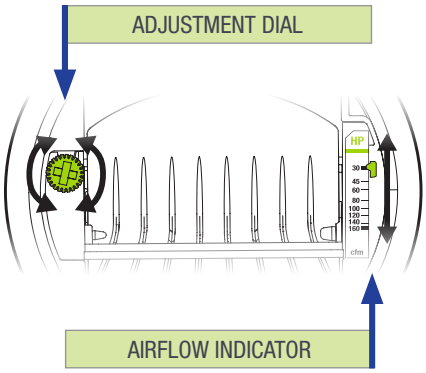
NOTE: The continuous is always active.

Step 5: Select the necessary **BOOST 1 AIRFLOW RANGE** for one of the two intermittent high-volume ventilation rates.

NOTE: The boost rate is normally OFF and powered ON. The boost rate adds to the continuous rate.
Ex. If the continuous airflow rate is set to 50 CFM and the boost is 250 CFM, when powered ON the ZRT-3PDIL will provide 300 CFM of ventilation, and 50 CFM when OFF.

Step 6: Select the necessary **BOOST 2 AIRFLOW RANGE** for the second of the two intermittent high-volume ventilation rates.

NOTE: **BOOST 1** and **BOOST 2** are not sequenced from the factory.
BOOST 1 and **BOOST 2** can be operated independently, or simultaneously depending on space needs.



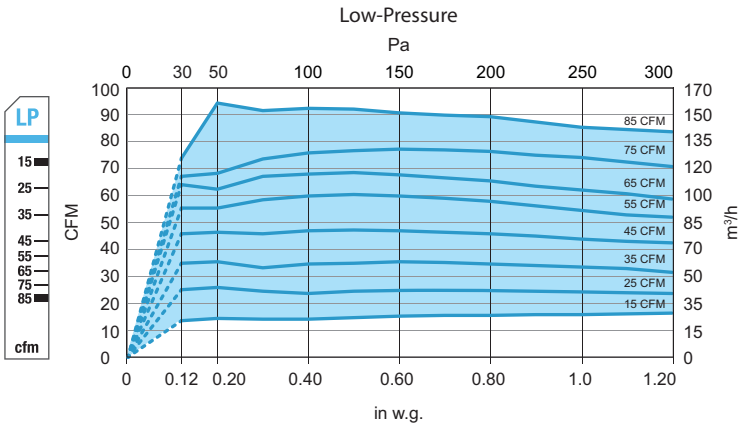
Airflow Settings & Performance Data

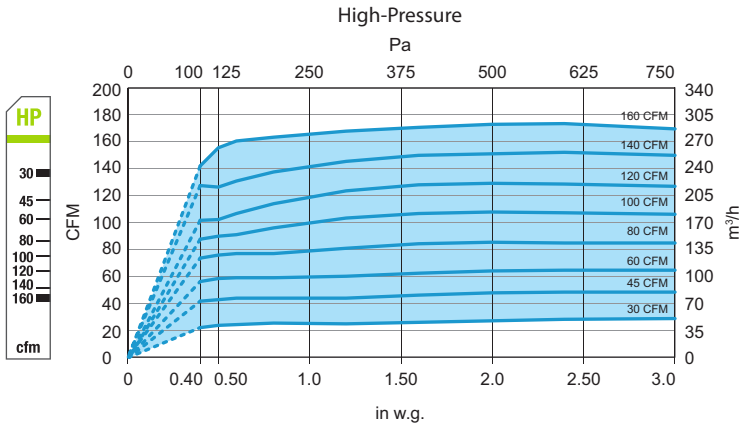
Airflow rate can be set or adjusted by rotating the dial from either side. The airflow indicator will move to show the selected CFM. The airflow label has multiple defined setpoints, but the unique adjustment mechanism of the CAR3 allows for infinite adjustability between the minimum and maximum limits.

Performance charts found in the specifications sheet reflect this data, with the available range (shaded) and marked setpoints (lines). The CAR3 will maintain the airflow accurately to within +/- 10% of the indicated lines below for each marked setpoint. At the higher airflow rates, the minimum pressure required to achieve the selected airflow may exceed 0.12 in. w.g.

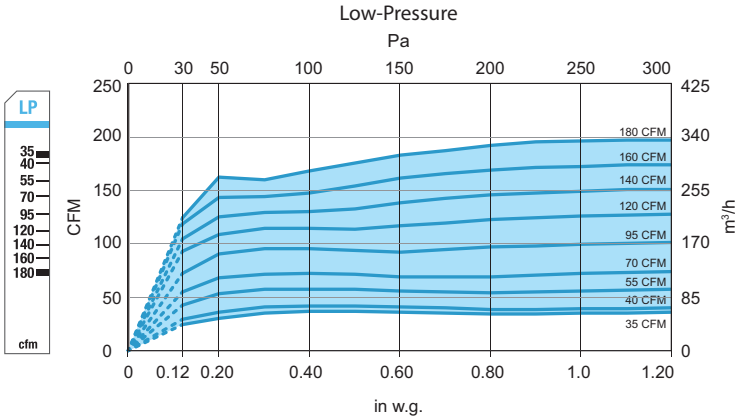
Airflow measurements taken at 68°F (20°C) at 1 atmosphere pressure.

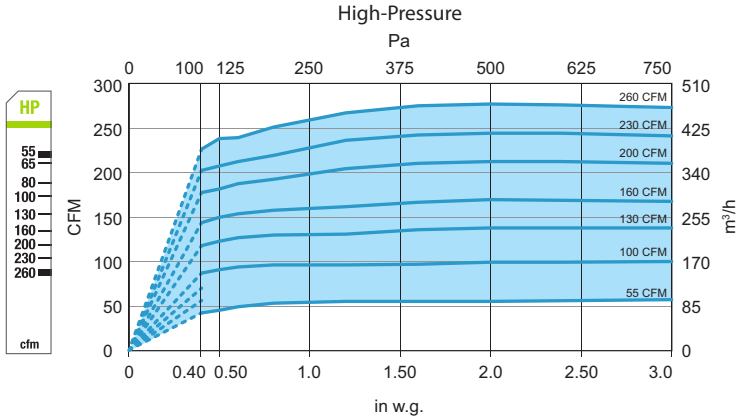
CAR3 4" DIAMETER (100 mm)





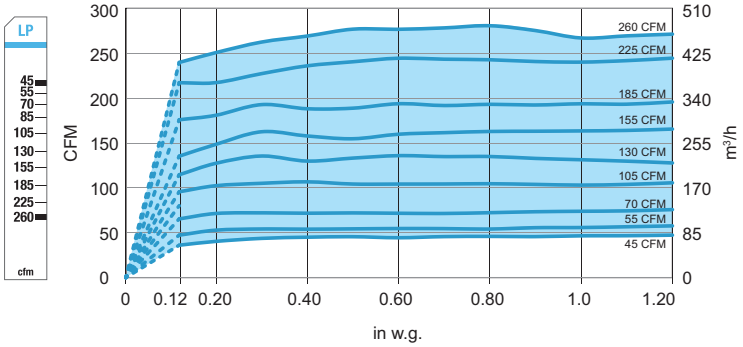
CAR3 5" DIAMETER (125 mm)



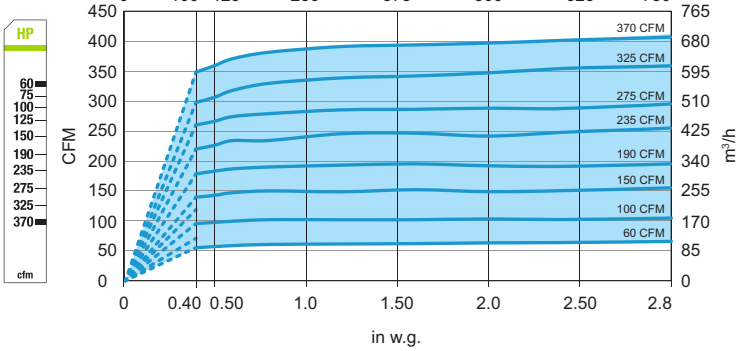


CAR3 6" DIAMETER (150 mm)

Low-Pressure

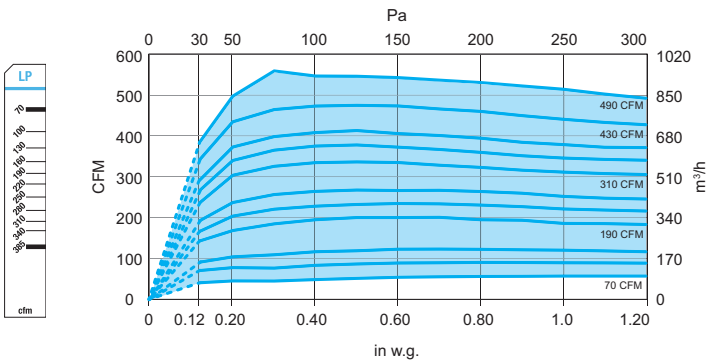


High-Pressure

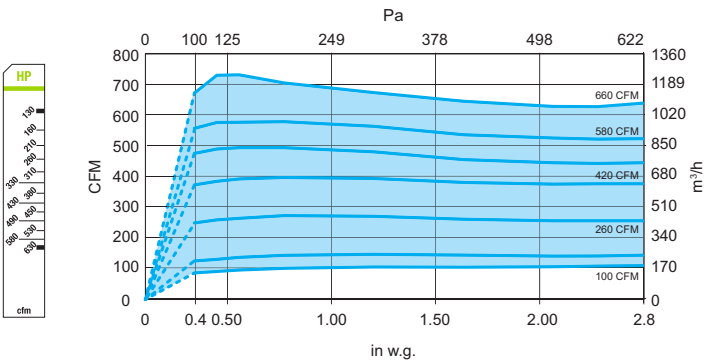


CAR3 8" DIAMETER (200 mm)

Low-Pressure

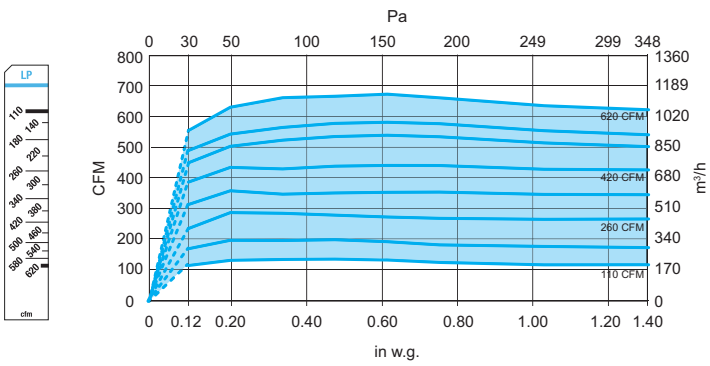


High-Pressure

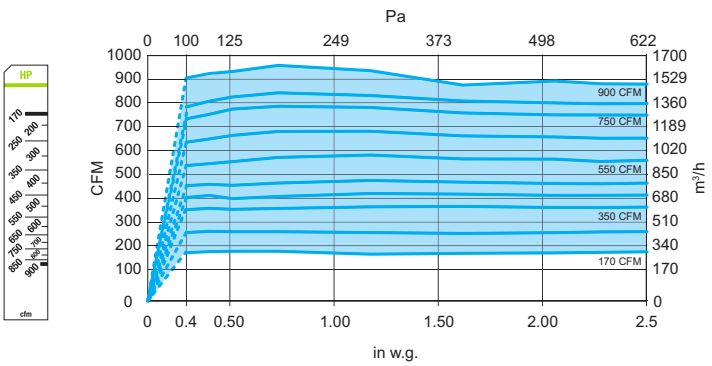


CAR3 10" DIAMETER (250 mm)

Low-Pressure



High-Pressure



Airflow measurements taken at 68°F (20°C) at 1 atmosphere pressure.

Control

The ZRT-3PDIL can be activated using a variety of control options, including on-off or timer switches, dehumidistats, occupancy sensors, or time-clock switches. Any on-off control device(s) will signal the max-flow damper to open fully, allowing for maximum ventilation control. Upon disconnecting the power, the ZRT-3PDIL's integral spring will return the blade to its normally closed position.

Airflow control for both maximum and minimum flow rates is achieved using optional, integral, dynamic Constant Airflow Regulators (CAR). The CAR is an automatic modulating orifice that regulates airflows to constant levels in response to duct pressure. They require no additional power supply and are ideally suited for use in zone-controlled systems where duct pressures can fluctuate in response to the opening and closing of dampers.

Recommended Specification

Furnish and install model ZRT-3PDIL Three Parallel Damper In-Line Zone Terminals by ALDES North America or approved equal. The terminals shall be of sizes and capacities and at locations scheduled on the drawings. The terminal casing shall be minimum 24-gauge G90 galvanized steel with duct flange that allows attachment of rectangular rigid ducting in a slip-type duct connection. Each terminal shall include a plurality of integral, pressure-independent Constant Airflow Regulators (CAR) that provide the capability of automatically regulating airflow in both a minimum and maximum setting. Each regulator shall respond to changes in duct pressure to maintain specified flow rates at a constant level.

The primary CAR minimum air volume regulator shall be factory calibrated to the specified set point and automatically control the amount of air any time the central fan is operating. The secondary CAR air volume regulator shall be factory calibrated to an airflow rate equal to the maximum specified rate minus the minimum airflow rate. The secondary CAR air regulator shall be located in series with a motorized single-blade damper operated by a long-life 24 VAC or 120 VAC synchronous-drive motor with normally closed spring-return closure. When fully open, the maximum airflow regulator will become active during central fan operation. The damper blade shall rotate on a solid one-piece damper that pivots on permanently lubricated bearings. A permanently fixed perimeter gasket seal shall be provided to prevent air noise and leakage at the closed position.

The entire damper assembly and all operable parts shall be capable of being removed from the terminal housing from below without disconnecting duct or removing the housing. Access to all regulator and damper components shall be through an integral screw-on access plate. All terminals and/or pertinent components must be listed per UL standards and carry the UL, UR or ETL mark indicating compliance. Each ZRT-3PDIL shall include all necessary mounting brackets and hardware. Installation shall be per all applicable codes and manufacturer's instructions.

ELECTRICAL SPECIFICATIONS				
MOTOR VOLTAGE	MAXIMUM AIRFLOW DAMPER OPEN (POWERED)		MAXIMUM AIRFLOW DAMPER CLOSED (NOT POWERED)	
24 VAC	0.72 A	12 W	0.00 A	0.0 W
120 VAC	0.16 A	12 W	0.00 A	0.0 W