



INSTALLATION MANUAL



This symbol on the product means the FAPV-L is Energy Star certified.



This symbol on the product means the FAPV-L is listed by Underwriters Laboratories, Inc

FRESH AIR POWER VENTILATOR LITE

Model: FAPV-L

READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION

This device **MUST** be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction. Please retain these instructions after installation.

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The Power Ventilator you have purchased has been designed to be simple to install, operate and maintain. **Read this manual before you install the power ventilator.**

This product should be installed according to local and national codes and standards.



Parts included in Power Ventilator package:



1. Power Ventilator
2. Mounting Bracket
3. Screws
4. MERV 8 Filter
5. Instruction Manual

Options and additional parts recommended:



1. Fresh Air Ventilation Control (FAVC)
2. Fresh Command Multifamily Control (FCMC)
3. Washable Filter
4. MERV 13 Filter

TABLE OF CONTENTS

Safety Considerations.....	5
Product Specifications.....	5
Dimensional Data.....	6
Control Recommendations.....	6
Power Specifications.....	6
Ventilator Location.....	7
Mounting the Ventilator.....	8
Wiring.....	9 - 11
Testing.....	12
Airflow & Adjustment.....	12
Airflow Performance.....	12
Troubleshooting.....	13
Maintenance.....	13

WARNING

1. To reduce the risk of fire or electric shock, **DO NOT** use this fan with any solid-state speed control device.
2. To reduce the risk of fire, electric shock, or injury to persons, observe the following:
 - A. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
 - B. Before servicing or cleaning the unit, turn the power off at the service panel and lock out the service panel disconnecting means to prevent power from being switched on accidentally. When a service panel without lockout handle configuration is not installed, a prominent warning device, such as a tag, can be securely fastened to the service panel.
3. To reduce the risk of fire, electric shock, or injury to persons, **DO NOT** use replacement parts that have not been recommended by the manufacturer (e.g., Parts made at home using a 3D printer.)

CAUTION

1. Read all instructions before beginning installation.
2. Improper installation may cause property damage or injury. Installation, service, and maintenance must be performed by a qualified service technician.
3. To avoid premature clogged filters, turn **OFF** the unit during construction or renovation.
4. Please read specification label on product for further information and requirements.
5. Be sure to duct air outdoor - Do not intake/exhaust air into spaces within walls or ceiling or into attics, crawl spaces, or garage.
6. Intended for residential installation only.
7. The ductwork is intended to be installed in compliance with all local and national codes that are applicable.

SPECIFICATIONS

MODEL	POWER SUPPLY	WATTS	AMPS	CONTROL VOLTAGE (OPTIONAL)	CFM @ .2 IN W.G. M8			SOUND		FILTRATION
					LOW SPEED	MEDIUM SPEED	HIGH SPEED	HIGH	LOW	
FAPV-L	120 VAC, 60 HZ	34W	0.55	24VAC	28 CFM	Variable	160 cfm	< 3 Sones	0.7 Sones	MERV-8 (Standard) Washable (Optional) MERV 13 (Optional)

DIMENSIONAL DATA

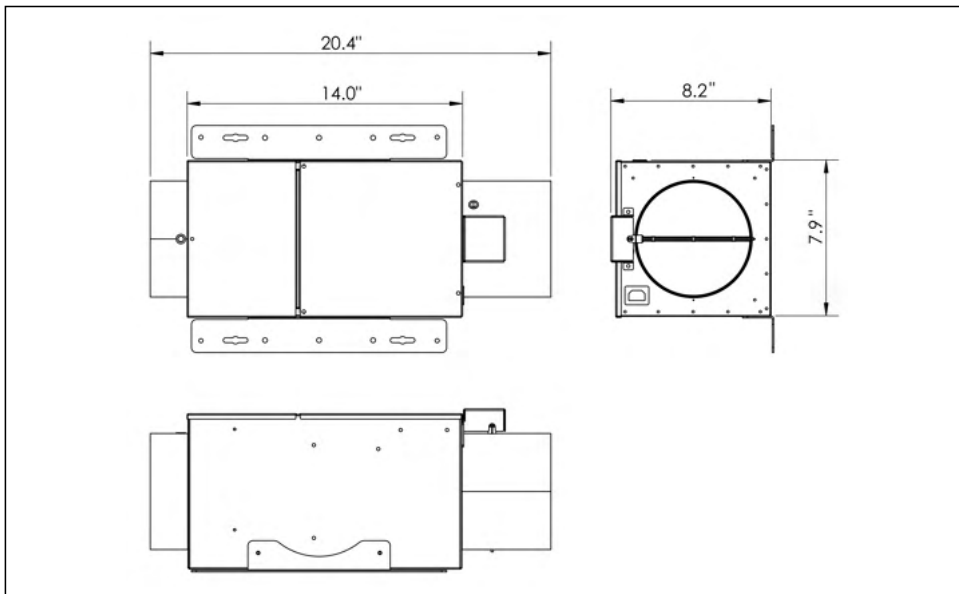


Figure 1 - FAPV-L Dimensions

CONTROL RECOMMENDATIONS

For best performance and to meet its intended use, combine ventilator with Field Controls Fresh Air Ventilation Controller (FAVC) or Field Controls Multifamily Controller (FCMC) products. When properly installed and setup using HVAC central fan control, the FAPV-L combined with either FAVC or FCMC control will meet the mechanical ventilation requirements of:

- ASHRAE Standard 62.2-2010
- ASHRAE Standard 62.2-2013 & 2016

Refer to product specific FAVC or FCMC Installation Manuals for additional HVAC central fan control wiring diagrams.

The FAPV-L can be installed to operate in several different configurations:

1. Continuous ON mode - set mode switch to CONTINUOUS, plug unit power cord into 120vac power outlet and set unit airflow. Unit will run continuously until 120vac power is de-energized.
2. Intermittent ON mode - set mode switch to INTERMITTENT, plug unit power cord into 120vac power outlet, connect 24vac control wires to turn unit power ON to T1&T2 terminals and set unit airflow. Refer to Figure 4 for wiring diagram.

There are several ways to control operation of FAPV-L while in intermittent mode:

1. Standalone Function: Use FAVC (Fresh Air Ventilation Controller) or FCMC (Fresh Command Multifamily Control) to energize (turn ON and OFF) the FAPV-L for fresh air ventilation. Refer to Figures 5 & 6 for wiring diagrams.
2. HVAC Metered Function: Use FAVC (Fresh Air Ventilation Controller) or FCMC (Fresh Command Multifamily Control) to energize (turn ON and OFF) the FAPV-L for fresh air ventilation for a specific amount of ventilation time per hour. Refer to Figures 7 & 8 for wiring diagrams.
3. HVAC Intermittent Function: Wire the FAPV-L intermittent 24vac control terminals directly to HVAC air handler fan terminal controlled by a conventional 24vac thermostat. Set the FAPV-L unit air flow. Set FAPV-L mode switch to INTERMITTENT and FAPV-L will operate whenever the air handler central fan is energized. Refer to Figure 9 for wiring diagram.

POWER SOURCE AND SPECIFICATION

ELECTRICAL OUTLET: Install a standard NEMA 5-15 receptacle suitable for the location and near where the ventilator will be installed. The ventilator comes equipped with a 6-foot power cord with a standard 3-prong plug (NEMA 5-15P).

INPUT POWER	CONTROL POWER
120 VAC, 60 Hz	24 VAC (INPUT) - INTERMITTENT MODE ONLY
34 Watts, 0.55 Amps	10 VA



VENTILATOR LOCATION AND ORIENTATION

Choose a location for the ventilator that is within 6 feet of the 120VAC dedicated electrical outlet power source where the ventilator will be plugged into.

Allow space for filter removal and service as shown in Figure 2.

The ventilator can be mounted in any orientation.

WARNING: Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.

When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

CAUTION: Mount the blower at least 3.3 feet (1.0 m) from any accessible opening of the duct.

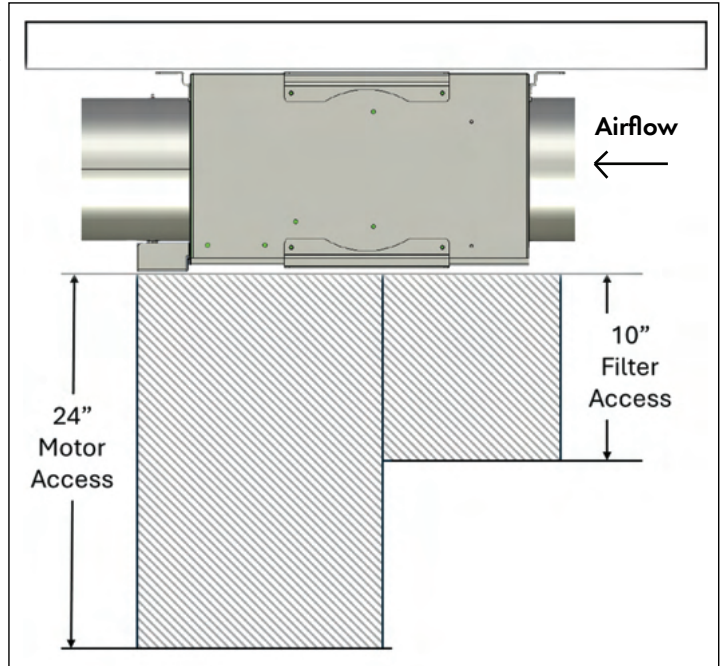


Figure 2 - FAPV-L Mounting Spacing



MOUNTING THE VENTILATOR

CAUTION: Disconnect electrical power before beginning installation.

1. Attached the mounting brackets to the FAPV-L unit in either of the two positions (main or front) shown in Figure 3, using the supplied BM4x8 triangular thread screws. The brackets must either be on opposite sides or opposite ends of the FAPV-L fan for secure mounting, as indicated by orientation main or orientation front configuration.
2. Mount the FAPV-L unit securely to the mounting surface, wall studs, joists, rafters, or trusses using appropriate fasteners.

DO NOT fasten to drywall or thin paneling alone.

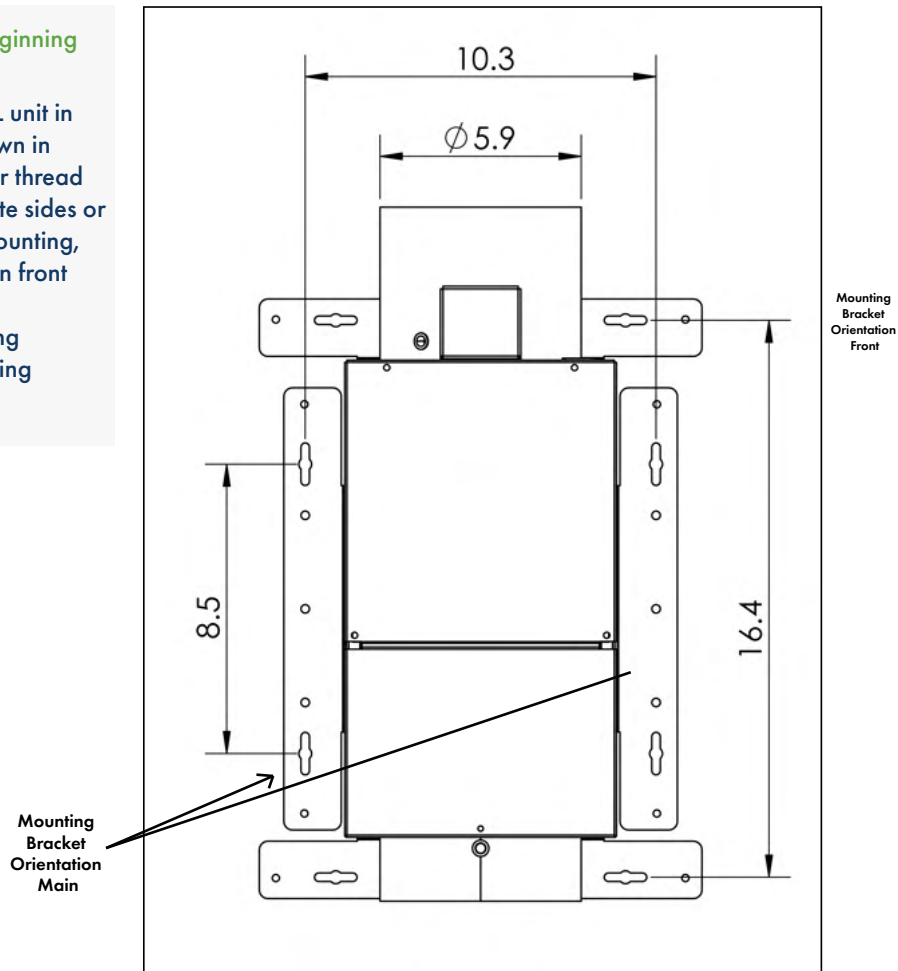


Figure 3: FAPV-L Mounting Dimensions

CONTROL
WIRING
SOLUTIONS





WIRING

The Fresh Air Power Ventilator Lite (FAPV-L) can be wired to the normally OPEN contacts of the ventilation output terminals of the Field Controls FAVC or FCMC products. Refer to the appropriate FAVC or FCMC Installation Manuals for additional specific product ventilation control information. These manuals can be found on the Field Controls website (www.fieldcontrols.com).

Refer to Figure 4 for ventilator internal wiring connections. Select the wiring diagram that corresponds to the control to be used (refer to figures 5 thru 9).

CAUTION: Do not apply line voltage to the T1-T2 Terminals on the ventilator.

The FAPV-L can be set up to run in CONTINUOUS or INTERMITTENT mode of operation. In CONTINUOUS mode, the ventilator only requires 120 VAC line power from power cord connection and the fan will operate continuously based on fan speed rotary knob setting.

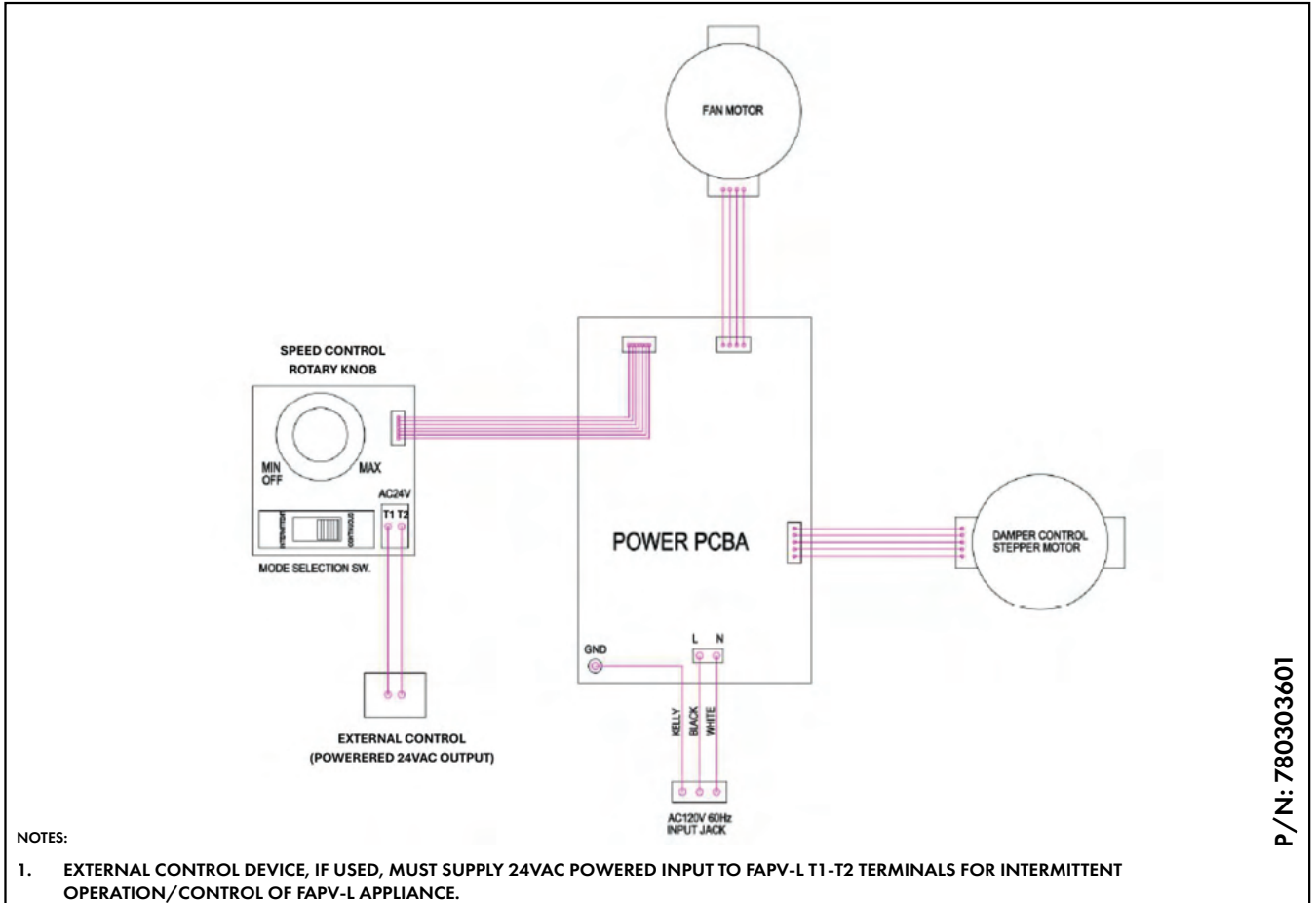
In INTERMITTENT mode of operation, the ventilator requires 120 VAC line power from power cord connection and 24 VAC input power (control low voltage) across terminals T1-T2. In INTERMITTENT mode, the fan will operate when both power inputs are present and the ventilator airflow is based on fan speed rotary knob setting.

NOTE: The FAPV-L will not respond to external controls if the ventilator is set to CONTINUOUS mode of operation.

The ventilator control terminals (T1-T2), fan speed rotary control knob, ventilator mode of operation switch and filter are located in the filter section of unit. To access this compartment, remove the thumb screw and lift off the removable filter section cover panel (refer to Figure 10).

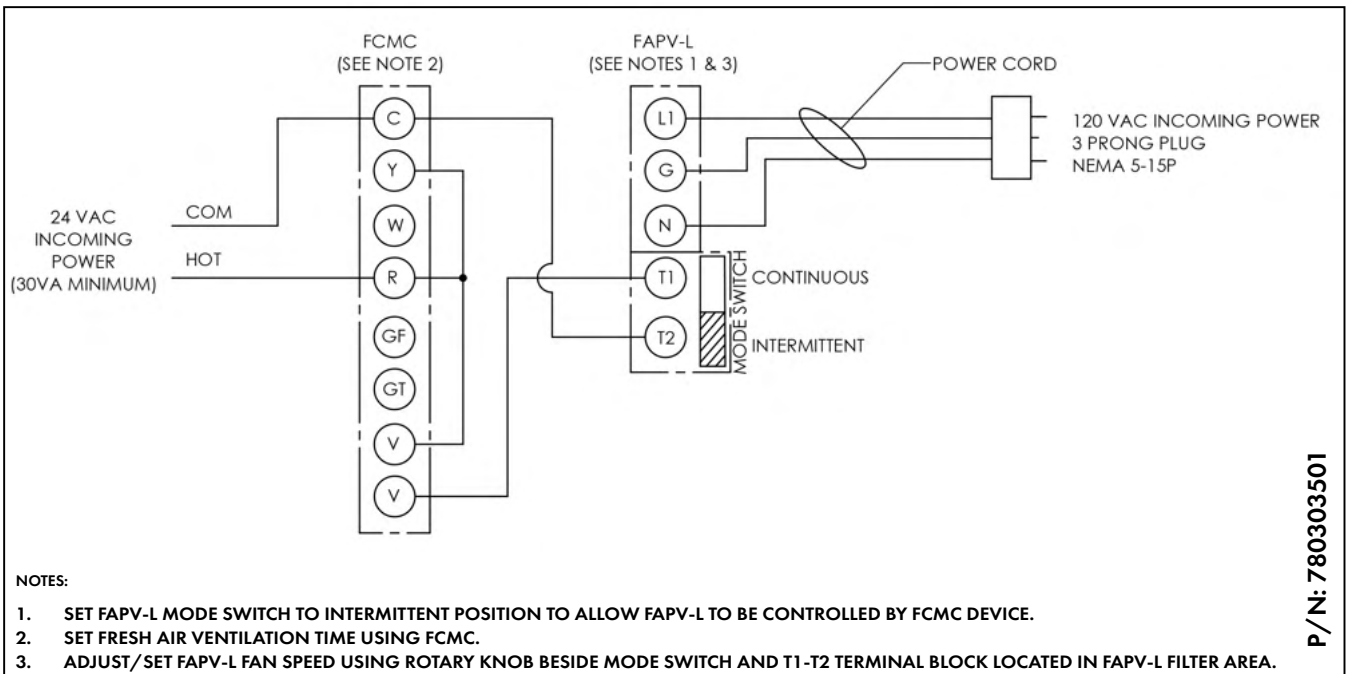


WIRING



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Figure 4: Internal Wiring Diagram

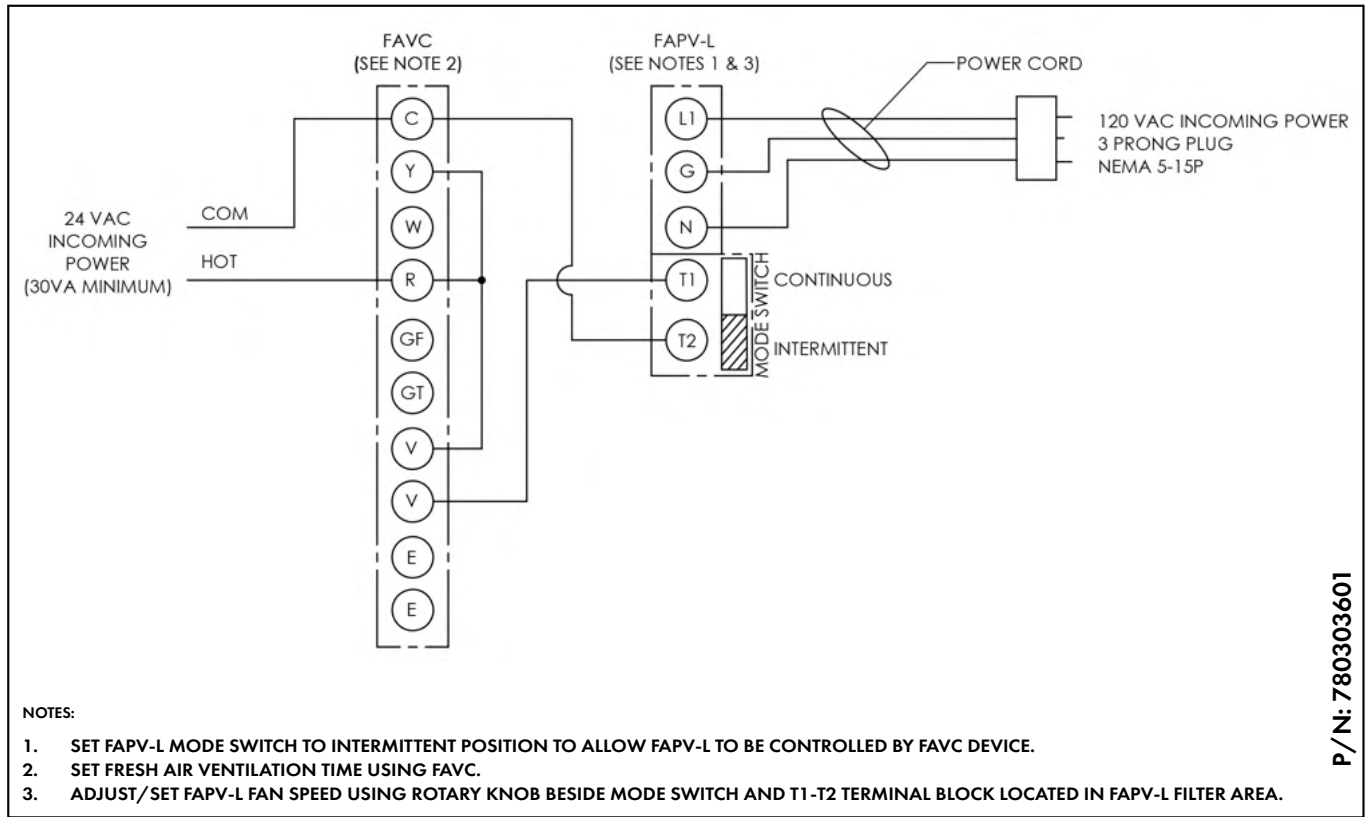


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Figure 5: Standalone FAPV-L and FCMC Wiring Diagram

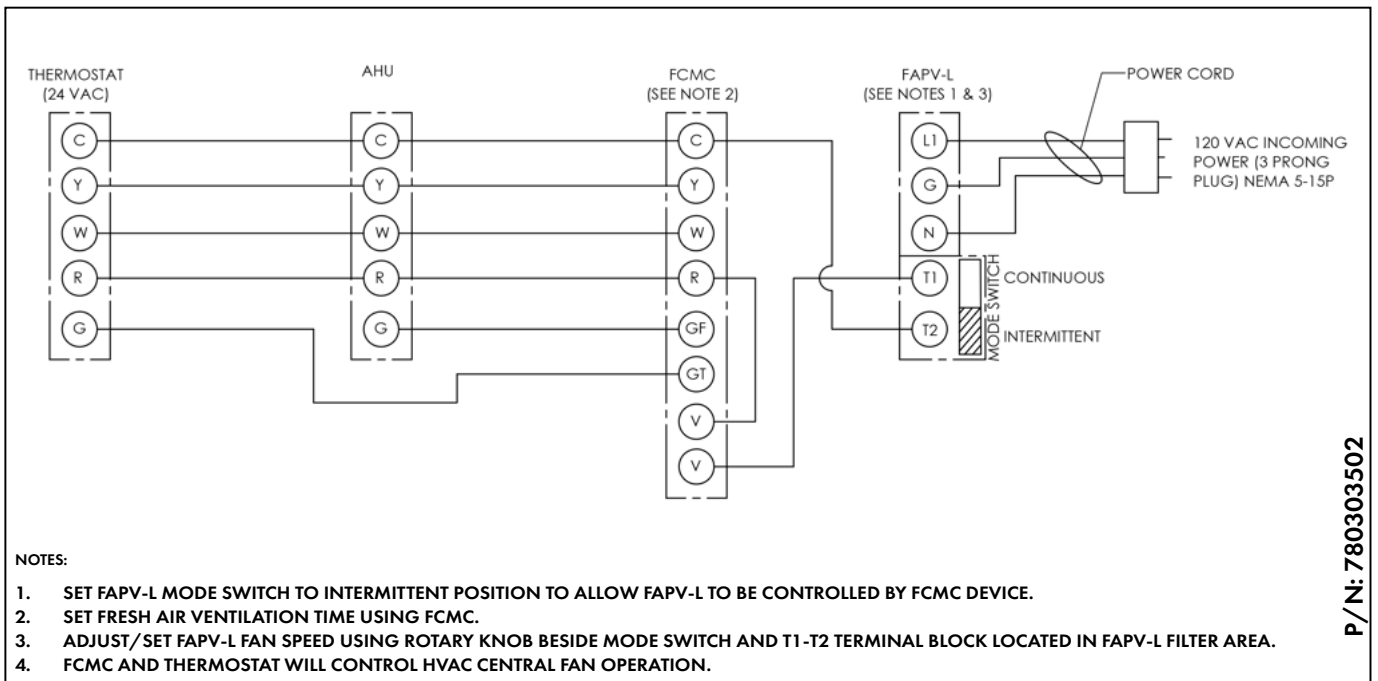


WIRING



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Figure 6: Standalone FAPV-L and FAVC Wiring Diagram

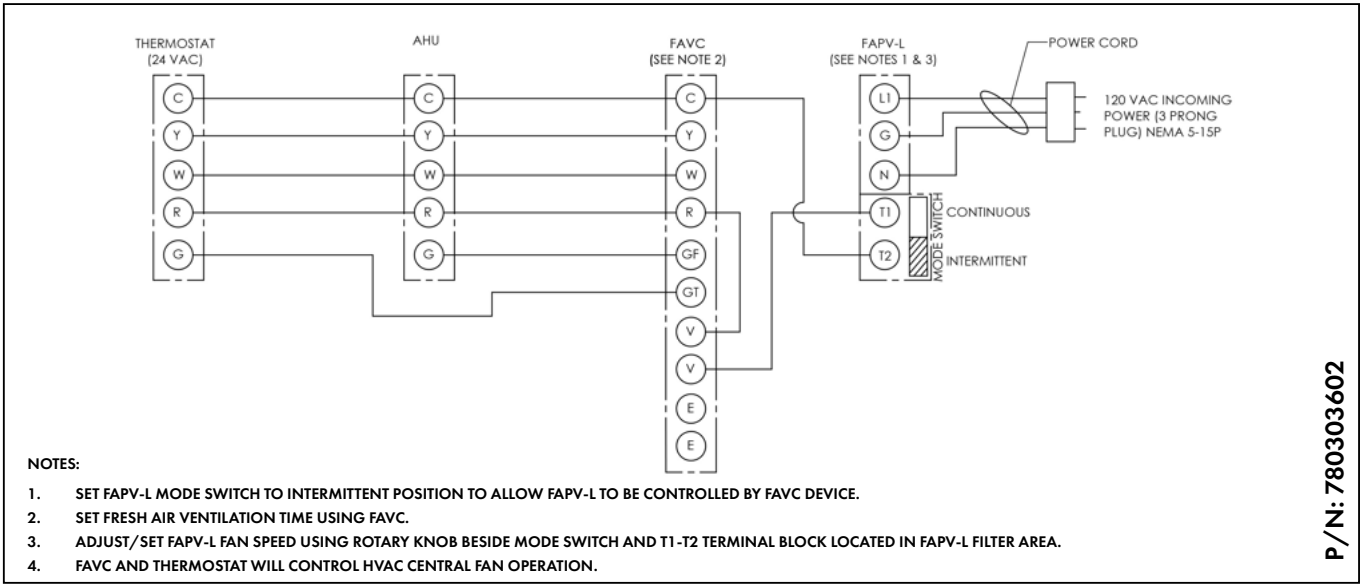


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Figure 7: FAPV-L and FCMC Using HVAC Central Air Control (Conventional HVAC System)

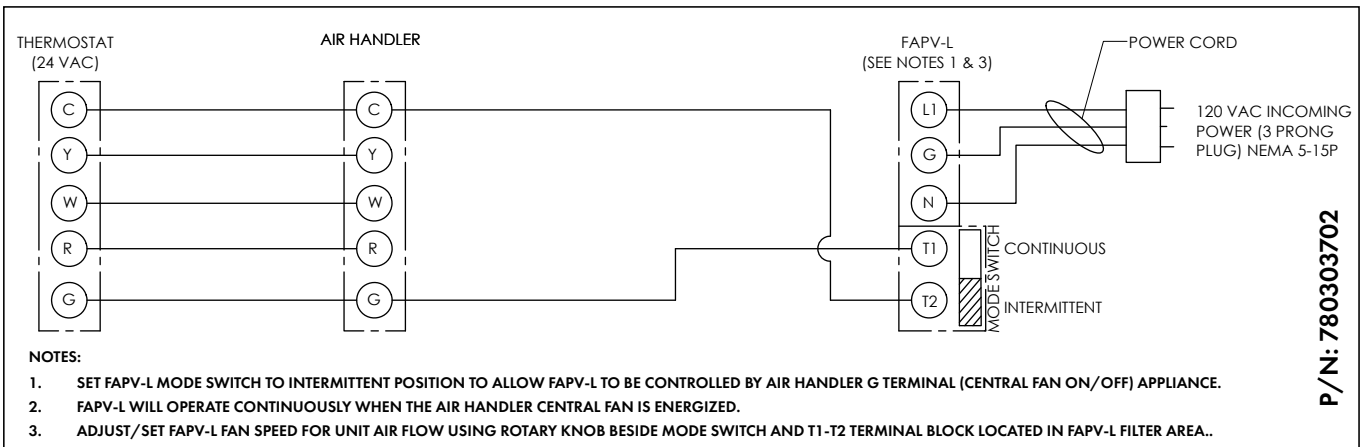


WIRING



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Figure 8: FAPV-L and FAVC Using HVAC Central Fan Control (Conventional HVAC System)



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Figure 9: FAPV-L and Conventional HVAC System (Intermittent On)

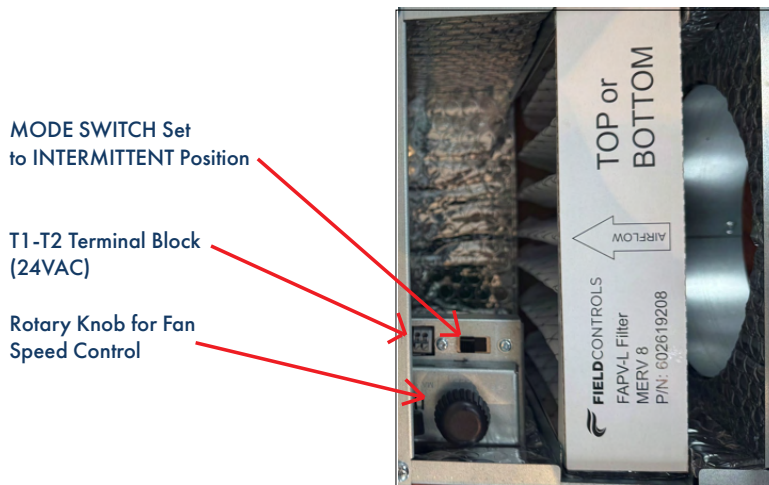


Figure 10: Filter Access Panel Removed to show MODE SWITCH, T1-T2 Terminal Block and Fan Speed Rotary Knob

TESTING

After installation of all ducting and electrical wiring connections are complete, plug the ventilator power cord into 120VAC electrical outlet (NEMA 5-15 rated).

1. Verify power is applied to 120VAC electrical outlet.
2. Verify ventilator is not turned to OFF position by rotating fan speed control knob in a clockwise rotation. The fan speed control knob is black in color and located in the filter section of the ventilator. Remove filter section access panel to see fan speed control knob.
3. Verify if operating ventilator in CONTINUOUS mode or INTERMITTENT mode of operation. The ventilator mode switch is located inside the filter section beside the T1-T2 terminal block and black fan speed control knob.

NOTE: T1 and T2 terminals are interchangeable.

- A. If in CONTINUOUS mode, the outlet damper will open once 120VAC power is applied and the ventilator should start up
 - B. If in INTERMITTENT mode, the ventilator will not start until 24VAC power is applied across T1-T2 terminal located beside the fan speed control knob in the filter section of the ventilator. Once 24VAC power is applied, the outlet damper will OPEN and fan will start.
4. Set the fan speed (ie: ventilator air flow) using the fan speed control knob.
 5. If using a ventilation controller, set the desired ventilation time to verify ventilator is set to INTERMITTENT mode of operation.

AIRFLOW RATE ADJUSTMENT

After all ducting and wiring are complete, connect power to the ventilator, and make sure the switch and/or power supplying controlling the 120VAC outlet into which the ventilator is plugged into is turned on.

1. Restore power and turn on the electrical disconnect switch if installed.
2. Engage the ventilator fan by either switching to Continuous mode or if in Intermittent, having the external control call for the ventilation.
3. Adjust the FAPV-L fan speed control knob to the Max setting.
4. Take air flow readings by the preferred methods and adjust the FAPV-L speed control knob until the desired air flow rate or inlet collar static pressure is obtained.

AIRFLOW PERFORMANCE

FILTER CONFIGURATION	FAN SPEED	CFM @ STATIC PRESSURE (INCHES WATER GAUGE)								AMPS @ 0.2 "SP	WATTS @ 0.2 "SP	EFFICIENCY @ 0.2"SP (CFM/WATT)
		0	0.1	0.15	0.2	0.25	0.3	0.4	0.5			
No Filter	MS	94	78	67	54	32	10	-	-	0.18	10	5.4
	HS	195	163	149	139	132	126	115	100	0.49	30	4.6
MERV 6 Washable	MS	89	73	60	52	29	9	-	-	0.17	10	5.2
	HS	151	140	135	128	116	108	97	85	0.48	29	4.4
MERV 8	LS	28	10	-	-	-	-	-	-	-	-	-
	MS	86	70	58	46	28	7	-	-	0.18	10	4.6
	HS	148	136	128	122	114	107	88	84	0.49	34	3.6
MERV 13	LS	21	6	-	-	-	-	-	-	-	-	-
	MS	79	63	50	37	23	8	-	-	0.17	10	3.7
	HS	135	124	116	111	106	100	88	75	0.49	36	3.1

TROUBLESHOOTING

SYMPTOM	POSSIBLE REASON	CORRECTION
FAPV-L does not turn on.	No power to the outlet which the FAPV-L is plugged in	Turn on the switch or breaker that controls power to the outlet.
	No power to the hardwire connection.	Turn on the switch or breaker that controls power to the source.
	Internal speed control set to OFF	Open unit and turn control to ON.
	No completed circuit between VENT terminals and the wall controls	Wire the control to the ventilator as shown in the wiring diagrams on page 5
Fan runs but does not blow air.	Object obstructing the inlet duct.	Check for obstruction of inlet air hood and remove.
Fan motor hums but does not run	Object obstructing fan blade	Check for obstruction of the fan blade and remove
Damper does not open	Object blocking damper gate	Open unit to determine if object obstructing gate and remove.

MAINTENANCE

Typically, the FAPV-L filter should be changed every 6 months of normal operation. It is recommended that the filter be checked after the first months following installation to determine whether more frequent unit cleaning and filter replacement will be necessary.

Filter Maintenance (6 month intervals)

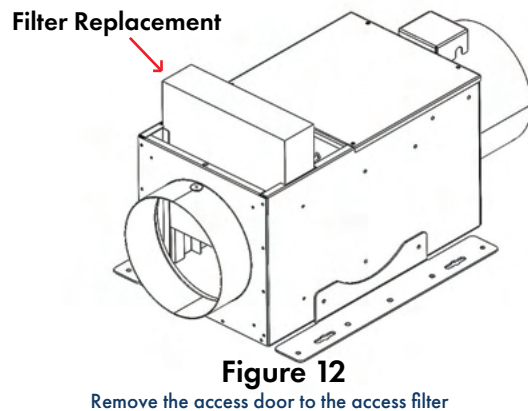
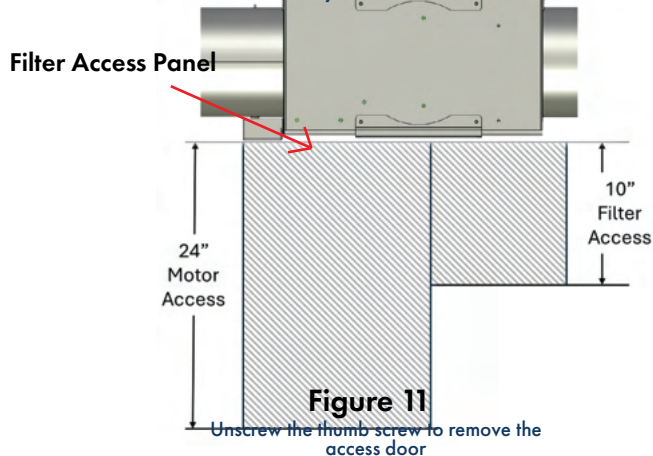
- De-energize FAPV-L from 120VAC power (unplug power cord from wall outlet)
- Remove thumb screw securing the filter access door from the FAPV-L housing (see Figure 11).
- Remove filter from ventilator (see Figure 12).
- Verify outlet damper is operating properly, correct as necessary.
 - Open when ventilator fan is in operation.
 - Closed when ventilator fan is turned OFF by fan speed rotary knob.
- IF OPTIONAL WASHABLE FILTER is installed, vacuum filter prior to use of water to rinse the filter. Shake the excess moisture off the filter and allow filter to dry prior to re-installing back into ventilator.
- Replace filter with same filter type from manufacturer. Install filter with arrow pointing towards fan section. Remove plastic from new filter prior to installing filter into filter section slots.
- Re-install filter access panel/door and secure in place with thumb screw.

Supply Air Flow Inspection (6 month intervals)

- Check the fresh air intake grill from the outside supplying fresh air to ventilator. Clean as necessary.
- Check the internal area of ductwork connected to ventilator for dirt and material build up. Clean as necessary.
- Check ductwork connections, repair as necessary.

System Air Duct Maintenance (once every 5 years)

- Clean the entire air duct system to and from the ventilator.



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This manual may be downloaded and printed from the Field Controls website (www.fieldcontrols.com)

WARRANTY

For warranty information about this or any Field Controls product, visit:
www.fieldcontrols.com/ventCool

Field Controls Technical Support
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fieldtec@fieldcontrols.com



FIELDCONTROLS

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