

**Failure To Read
Instructions Will
Void Warranty**



HPS 500 PORTABLE OR INSTALLED HEPA SYSTEM

Pure Air Systems offers a high performance, commercial grade quality, portable HEPA air filtration system that shares the same performance standards as our well-known line of high volume HEPA filtration units.

HIGH PERFORMANCE IN A SMALL PACKAGE

The HPS 500 unit is 13" square and 22" long and weighs only 34 lbs. This all-steel unit comes complete with a combination polyester ring panel prefilter/carbon media filter and a true, certified, hospital grade 99.995% at MPPS H14 HEPA filter. Each unit has a VCU air volume controller that can be set from 36 – 100%, lighted rocker on/off switch and a 10' hospital grade power cord. Every system comes with a foldable handle for easy transportation.

HIGH VOLUME PORTABLE HEPA WITH AIR FLOW CONTROL

The Model HPS 500 moves up to 500 CFM with the variable speed controller you can set the controller from 36-100% in 1% increments. The HPS 500 is the most powerful portable HEPA for its size on the market today. This unit is perfectly suited for home, office, or any small application use.



HPS 500 with extended inlet collar for attachment to HVAC or duct system.

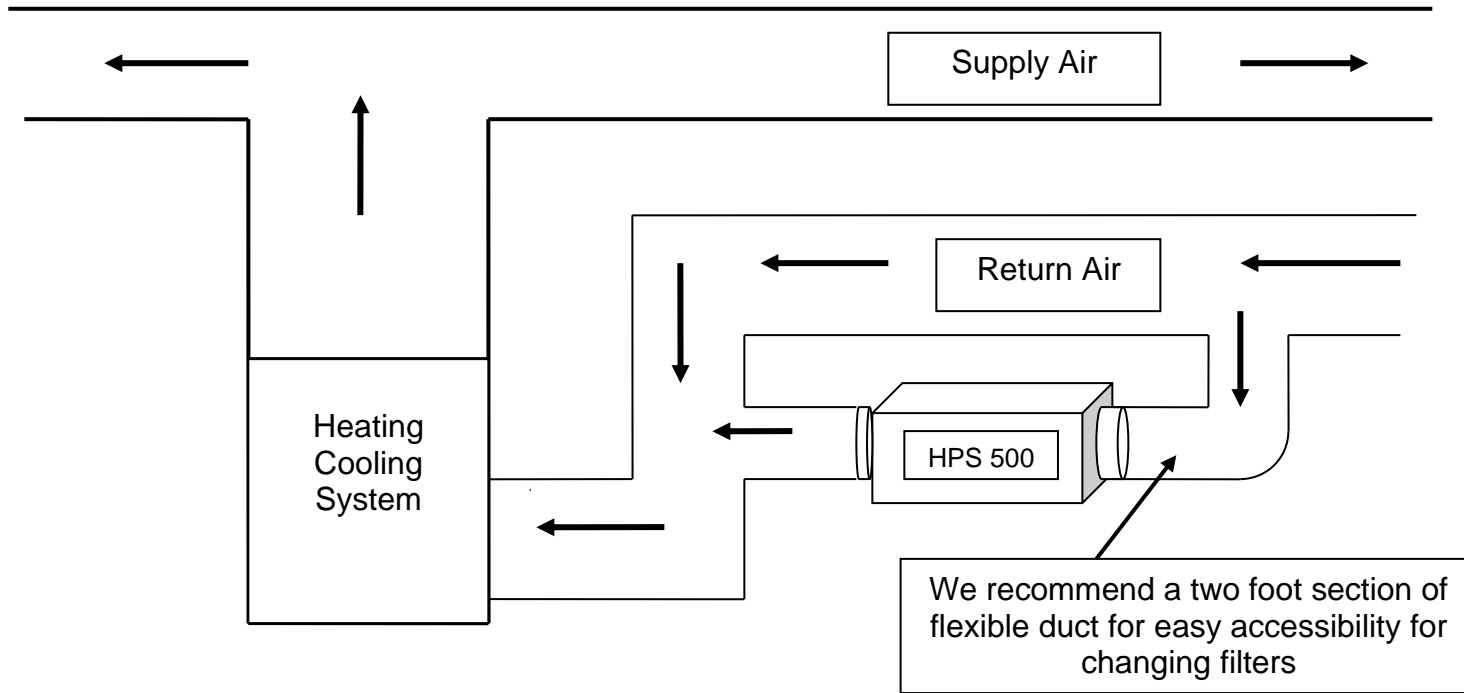


HPS 500 portable with open inlet and fan guard on the discharge.

USE AS A PORTABLE OR USE AS A CENTRAL FILTRATION SYSTEM

The unique design of the HPS series allows for use as either a true stand-alone portable unit or as a central HEPA filtration unit that is attached to the return air side of the heating/cooling system and installed in a by-pass configuration. For more information, please contact your local Pure Air Systems dealer or Pure Air Systems directly.

Installation Drawings for HPS in By-Pass Configuration



Typical Installation HPS 500
Partial By-Pass Configuration

EC Motor

Application

The EVO/ECM-VCU control allows accurate manual adjustment and monitor of EC Motors. These are high efficiency electrically commutated permanent magnet motors featuring microprocessor controlled commutation. The design provides exceptional efficiency, performance and motor life. In air moving applications, these self-regulating motors may be factory configured so the fan provides constant mass airflow.

The EVO/ECM-VCU features a 4-digit LED numerical display allowing easy locating and reading in dark spaces. Watch the display and set the flow index with a screwdriver adjust. In legacy mode, the display shows flow index. Then, the display periodically alternates between the flow index and motor RPM. Jumpers select a variety of flow index and RPM displays for other modes.

One or two motor(s) may be connected to the EVO/ECM-VCU.

The EVO/ECM-VCU is recommended for stand-alone equipment and automation systems that only turn the motor on or off. Use the EVO/ECM-ACU+ where automation also needs to control flow.

PWM or 0-10 V output options allow the VCU to be compatible with many controlled fan motors, pump motors, inverters and VFDs.

Features

- Backward compatible with VCU S1 and S2
- PWM or 0 - 10V Output
- Multiple display modes
- Connections for two motors
- Dual Motor RPM display
- Motor speed discrepancy alarm

Specifications

Power	~24V ±20% 50/60 Hz NEC Class2 ^{USA} +24V NEC Class II ^{USA} 5 W, 7 VA
Adjustment	270° rotation F Off-0-100% <i>pwm</i>
RPM	0-2000 RPM ± 2RPM



EVO/ECM-VCU-MP

Motor Control	No jumper	+15V @ 20 mA Run & PWM ¹ with Pilot Pulse ²
	With jumper	0 to 10 V @ 20 mA
Thermal Stability	>0.01%/°F	>0.018%/°C
Operating Environment	0°F to 130 °F (-18°C to 55°C)	10%-80% rh
Connections	0.250 in. / 6.35 mm Tabs	

Ordering

EVO/ECM-VCU	Control without plate
EVO/ECM-VCU-MP	Control with plate

Please use our model number as your part number or include in your order description.

Operation

EC Motors may be factory configured so an external signal controls motor output as torque, RPM, or mass flow in fan and pump applications.³

The motor's configuration data is included in the motor's profile. The profile includes a minimum output and maximum output defining the adjustment range.

Rotating a single screwdriver adjuster to modulate the PWM or 0-10V VCU output between F⁴ 0 and 100 to set the motor between the minimum and maximum output. While rotating the adjuster, the illuminated numerical display tracks the flow index setting. After adjustment, the display also shows fan RPM(s) per the jumper setting.

Refer to the equipment manufacturer's specifications, data and charts to convert the flow index to torque or mass airflow.

³ Refer to motor specs to see available control features.

⁴ F = Flow Index.

¹ Also called Go & Vspd.

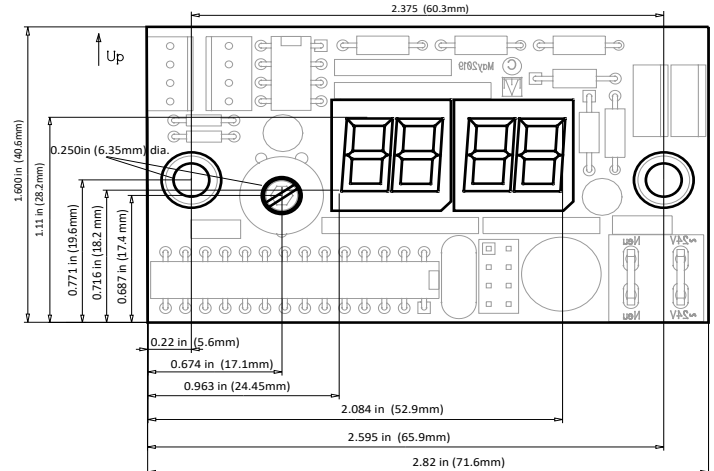
² Also called Autoswitch Function.

When the jumper setting is in Two Motor and Alarm mode, the RPM display blinks if the difference between the RPMs from the two motors are more than 200 RPM.

Motor Profile

Motor profiles are unique to each manufacturer and motor. Refer to the motor manufacturers instructions to develop the motor profile. The following are a few considerations important to operation with the VCU:

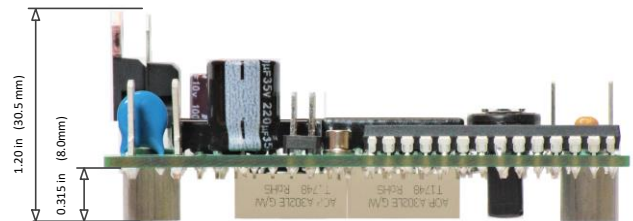
- ☑ PWM control or 0-10V.
- ☑ Status to RPM only.
- ☑ Motor start stop points if motor does not use a Run⁵ line.



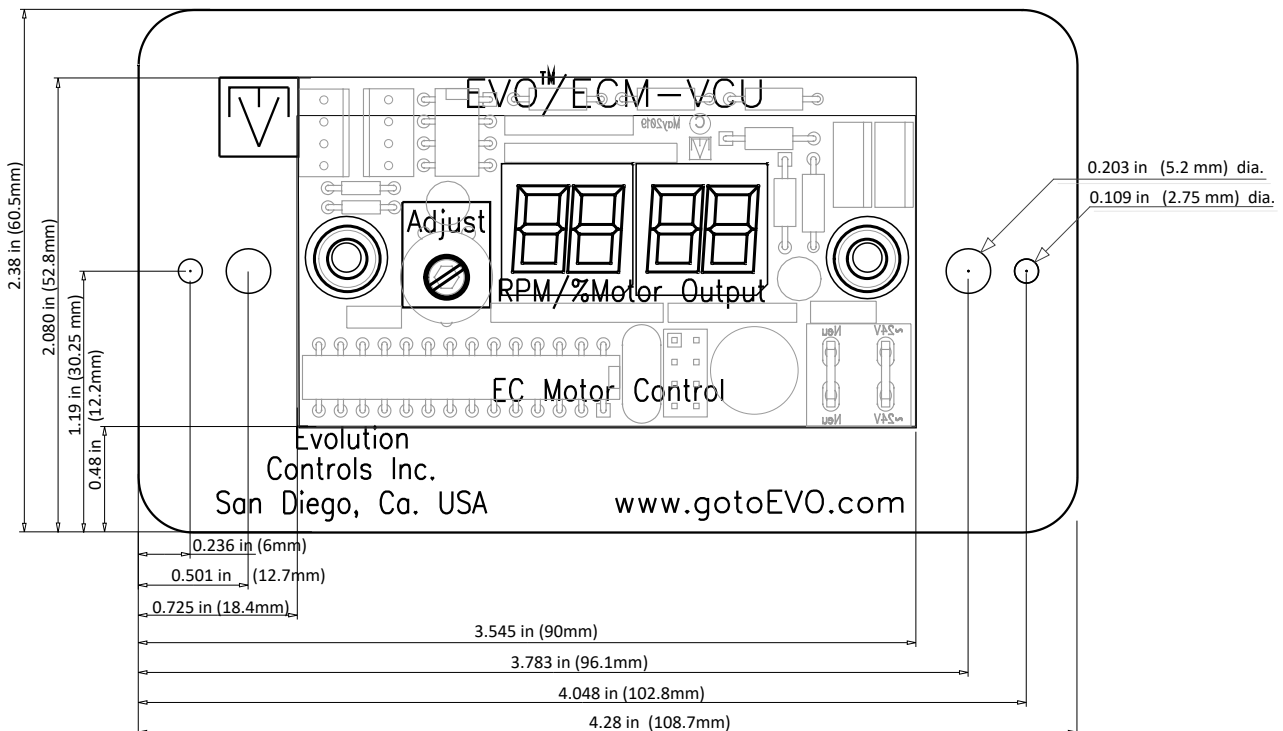
Mounting

Mount the control inside a metal control cabinet or enclosure with the display and adjuster visible through cutouts in the enclosure. Fasten the control mounting posts to a grounded metal surface.

The “MP” option provides the control mounted to a metal plate that fastens to a single gang electrical box^{USA}.



Mount the control with clearance for the ~/+24V power wires and control cable connector. The control’s motor cable connector is sized so it may be pulled through an empty 3/4” conduit.



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02-May-19

⁵ Also called Go line

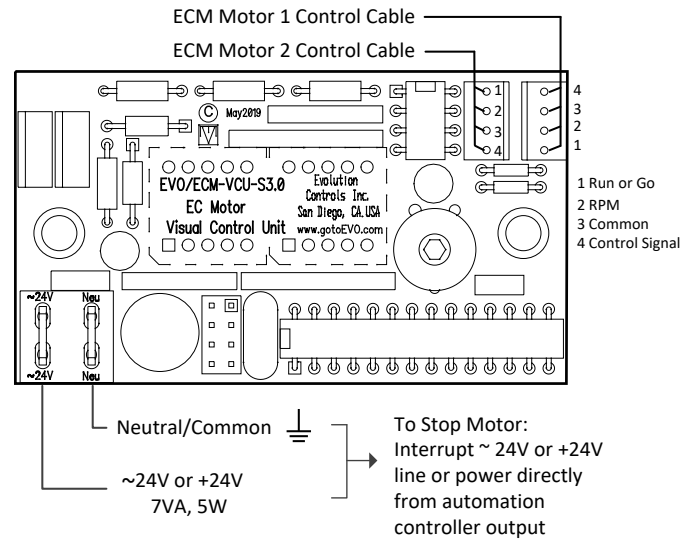
Wiring

Power the EVO/ECM-VCU control with a ~24V NEC Class 2^{USA} power source. DC voltages from +20V to +30V may also be used to power the control. Observe all code agency requirements and follow all safety practices regarding low voltage power supplies and circuits to insure a safe, reliable installation. Be sure to use removable push on connectors. Locking push on connectors required for high voltage motor connections are not required for low voltage connections to the VCU. Removing locking push on connectors often destroys the VCU when the push on must be removed to correct wiring or troubleshoot problems.

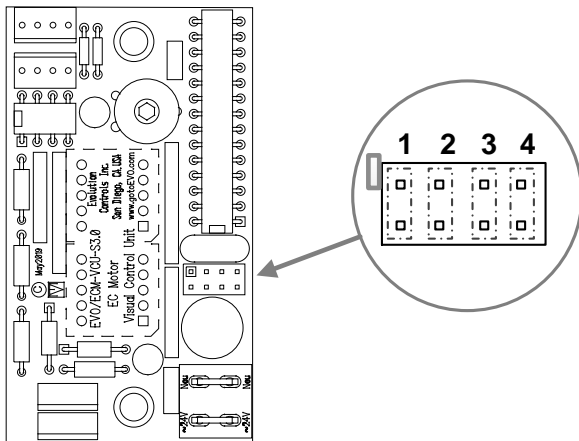
Ground one leg of the ~24V power source at the transformer. Then connect it to the VCU's neutral connection. Connect the other leg of the ~24V power source to the VCU's ~24V connection.

You may interrupt the VCU's ~24V connection to stop the EC Motor. Most automation controllers will power the control directly from an on/off output.

Connect the VCU to the motor using an EVO/ECM-CBL motor control cable. Do not route or bundle the control cable with motor power or other high voltage wiring.



Jumpers



Jumpers		Function	Description
1	2	VCU-1.0 Legacy Mode	For one or two motors. Display flow and RPM. RPM is the average with 2 motors connected.
x		Two Motors & Alarm	Display flow and RPM. RPM is the average from both motors. If the difference between the RPMs > 200, RPM display blinks, indicating alarm.
	x	Two Motors, Two RPMs	Flow and both RPMs are displayed sequentially => Flow, RPM1, RPM2
x	x	Flow display Only	No RPM display

Insert Jumper 3 to select 0 - 10 V output

Insert Jumper 4 to change tachometer from 36 PPT (Pulses Per Turn) to 18 PPT.

36 PPT Motors: EON, ECM 2.3, PerfectSpeed

18 PPT Motors: SyMAX-i56



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General Guidelines For Replacing Filters

Series	500, 600, 1200, 2000	600, 1200, 2000	500, 600, 1200, 2000
	Pre-filter	Carbon Filter	HEPA Filter
Residential	3 Months	9 Months	2.5 Years
Commercial	Monthly	4 Months	Yearly

****Chemically sensitive customers should use the Commercial guidelines****

Pure Air Systems Limited Warranty

Your Pure Air Systems product has been manufactured tested and inspected in accordance with carefully specified engineering requirements and is warranted to be free from defects and workmanship in accordance with the terms and conditions as set forth below.

Duration of Warranty and To Whom Extended

This Limited Warranty shall be for one year on the motor and three years for the other electrical components and blower. It does not cover the filters in the system as they are a standard maintenance item.

Exceptions and Exclusions from Warranty

Those products which incorporate an electrical motor are required to be used on electrical current as indicated on the rating plate. This Limited Warranty does not apply to products which have been subject to use on electrical current other than indicated on the rating sticker of the product.

This Limited Warranty does not apply to products which have been subject to improper, unreasonable or negligent use, abuse, or the use of parts or accessories which are not approved by Pure Air Systems.

If repair is done on your equipment by anyone other than those designated as authorized to perform such work, Pure Air Systems at its sole option, may determine that this Limited Warranty will not apply.

Procedure to be taken to obtain Performance of Warranty

To secure repair of the product or any warranted parts under the Limited Warranty, the following procedures shall be taken:

- Contact Pure Air Systems or the dealer that installed your system
- It is important that the model number and serial number of the system be provided to Pure Air Systems to ensure the product falls within the warranty time frame.
- The inoperative component(s) or warranted parts, together with satisfactory evidence of the purchase date, must be delivered, with shipping and delivery charges prepaid to Pure Air Systems.
- Upon compliance with the above procedure, all warranted defected parts will be repaired or replaced. Pure Air Systems will pay for return shipping and cost of replacement parts.

NO REFUND OF PURCHASE PRICE

Pure Air Systems will not, as a matter of its Warranty Policy, refund the customer's purchase price. This limited warranty gives you specific legal rights and you may also have other rights which vary from state to state.

NO CLAIMS FOR CONSEQUENTIAL OR OTHER DAMAGES WILL BE ALLOWED AND THERE ARE NO OTHER EXPRESS WARRANTIES EXCEPT THOSE EXPRESSLY STIPULATED HEREIN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THEREFORE, THE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

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