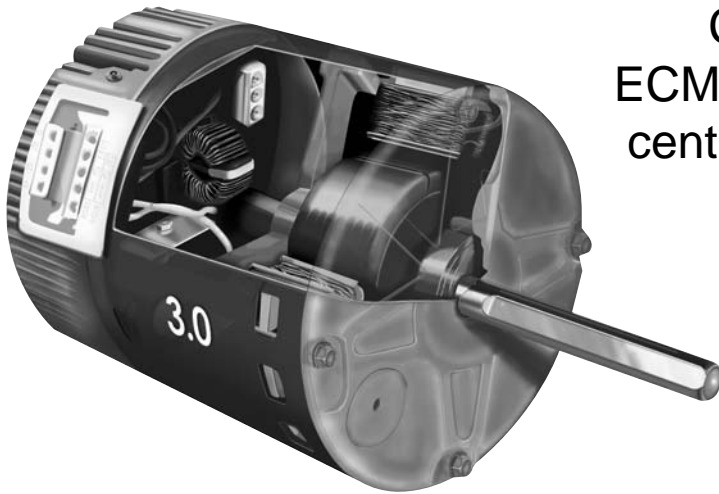


Imperial [IP] Dimensions
Metric (SI) in Parentheses

CARNES COMPANY 448 S. Main St., P. O. Box 930040, Verona, WI 53593-0040 Phone: (608)845-6411 Fax: (608)845-6504 www.carnes.com



Carnes introduces **Eco-Drive** ECM motors for rooftop and inline centrifugal fans, as well as series fan powered terminal units. **Eco-Drive** motors are highly efficient and are a perfect fit into your HVAC needs.

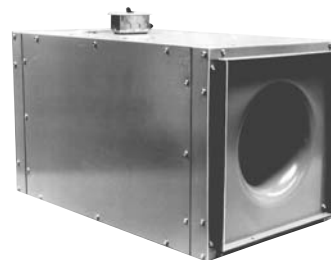
Eco-Drive (ECM) Benefits:

Verses PSC Direct Drive

- Up to 70% energy saving
- Maintain airflow + or - 5%
- Return of investment in as little as two years
- Lower sound levels than PSC motors
- Reliable Regal-Beloit motors
- Fan speed adjusted by small screw driver or by building automation system

Verses Belt Drive

- Low maintenance
- No energy loss due to belts & pulleys
- Easier setup and balancing
- More energy efficient



Example:

CFM	kWh Saved per Year	Utility Rate (\$/kWh)	Energy Savings per Year
At 1500 CFM	2500	0.10	\$255.00
		0.18	\$459.00
		0.26	\$663.00
At 1900 CFM	1400	0.10	\$140.00
		0.18	\$252.00
		0.26	\$364.00

Energy savings per year for a motor operating 6,000 hours per year

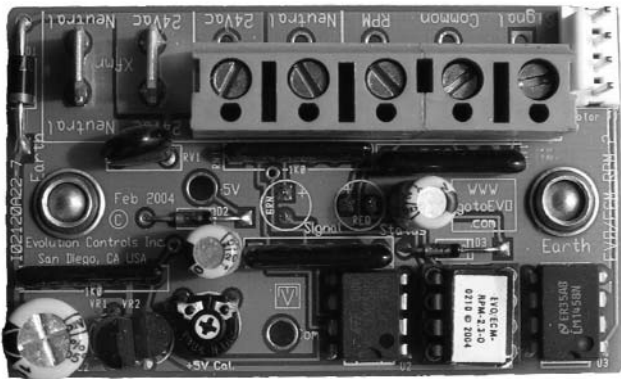
CFM	Percentage Energy Savings
1500	60%
1900	34%

Automatic Control Unit (ACU)

If digital controls are being used on the project it is possible to control the speed of the ECM motor with a 0-10V control signal using the ACU unit. The on/off signal is provided at a 24V input. Another option is to turn the motor on/off with a 0-1V signal and to use the 2-10V for speed control.

The ECM-ACU allows remote adjustment of the output from 0% to 100% of the programmed control range. A LED on the control continuously flashes out the flow index (percent of the programmed control range), so instruments are not required to read the value.

The "P" version provides ON/OFF control by switching the motor's "GO" control when the input signal drops below the 2 volt (4 mA) operating point.



The green LED continuously indicates the flow index. After a pause, the LED flashes out the tens digit, then the units digit of a number (percent) between 1 and 99. Two extra long flashes indicate a flow index of 0%. Long flashes represent the tens digit, and short flashes represent the units digit. A flow index of 23%, flashes two longs and three shorts.

Specifications:

Power	NEC Class II Only 24 Vac \pm 20% 50/60 Hz 4 W, 6 VA
Flow Index Adjustment RPM	270° rotation F Off-0-100 0-2000 RPM \pm 2%
Outputs Go & Vspd ECM 2.3	24 Vdc @ 20 mA Set for Vspd Operation Set Status Flag (7) to RPM Thermal
Stability Operating	>0.01 %/°F 0°F to 130°F (-18°C to 55°C) Environment 10-80% rh
Connections	1/4 Tabs

Visual Control Unit (VCU)

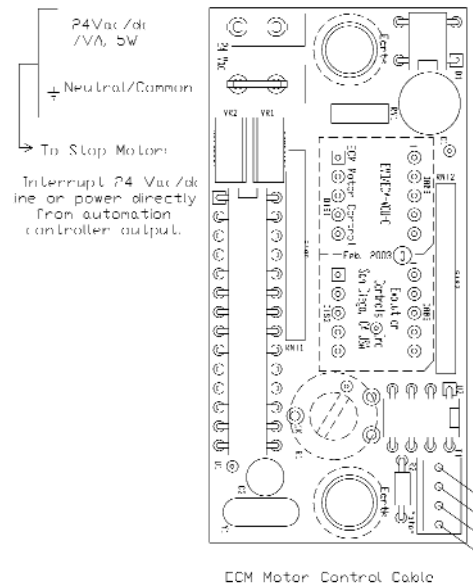
The ECM-VCU control allows accurate manual adjustment and monitor of fans using Regal-Beloit ECM Motor.

The ECM-VCU features a 4 digit LED numerical display to allow easy reading in dark spaces. Watch the display and set the flow index with a screwdriver to adjust. Twenty seconds later, the display shows the motor RPM. Then, the display periodically alternates between the flow index and motor RPM.

The ECM-VCU may also be used where automation systems only turn the fan on or off.



Front of VCU



ECM Motor Control Cable

Back of VCU Control Unit