

AirCare VariPhase™

Overview

This AC0yB14 is a “Network Only” version of the AirCare V-Series VariPhase™ line. Targeted at Fan Filter Unit (FFU) applications the unit offers 3-wire Phase-control speed conditioning along with a contact switch feedback for go/no-go fan monitoring and feedback. The AC0yB14 uses MODBUS®RTU network communication and is compatible with all the AirCare Console and System controllers.

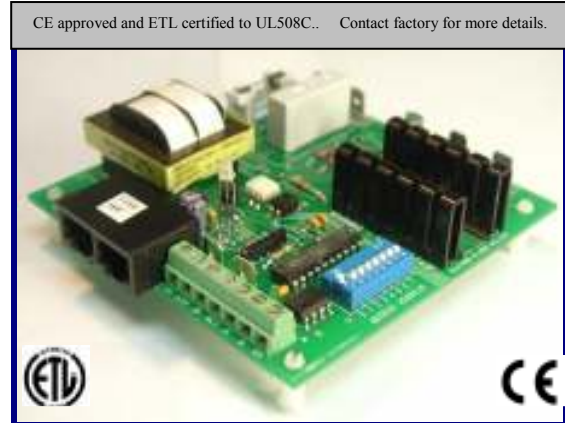
The AC0yB14 enables single-phase AC PSC motors to run at optimized speeds and reduce motor heating, energy consumption and audible noise.

Features

- Variable Voltage Phase-Control
- 115V, 230V and 277V models
- Up to 3 Amp load capability
- 3-wire option reduces motor hum and increases efficiency at lower speeds
- RS485 network connectivity (MODBUS RTU protocol) using either:
 - Twisted-pair cable.
 - RJ45 Connector
- Monitoring input for pressure switch or similar open/closed contact switch.
- Minimum Speed Set Point (register set)
- Soft-start reduces motor start current
- LED indicates board status

Specification Summary

- Automatic Selection of 50/60Hz
- Simple connections
 - ¼” Spade terminals for power
 - ¼” Spade terminals for sensor fdbk.
 - 7 way terminal block or RJ-45 contacts for communications (*optional*)
- LED diagnostics
 - Green – Board OK, valid comms link
 - Red – Fault, no comms link
- Fuse Ratings
 - 5A 250V or 3A 300V
- MODBUS RTU Protocol
 - RS485 9600,8,n,1
- Minimum speed set by MODBUS register
- Open-frame PCB
 - Mount with standard nylon standoffs
- 0-50°C operating temperature
- Low-profile design
 - 3.95” x 3.95” x 1.0”



Model Matrix

Model	Voltage Rating(AC)	Current Rating
AC01B14	115V	3.0A
AC02B14	230V	3.0A
AC03B14	277V	3.0A

Product Description

AC0yB14 is an application specific Network only version of the AirCare VariPhase™ V-Series controller. Providing Open-loop control and NC/NO sensor switch contact, this unit is targeted at baseline Fan Filter Installations. AC0yB14 is very simple to install and configure. The only necessary electrical connections are an AC supply, a motor load and RS485 wiring.

The Units MODBUS address is set from 1 to 240 using an on-board DIP switch.

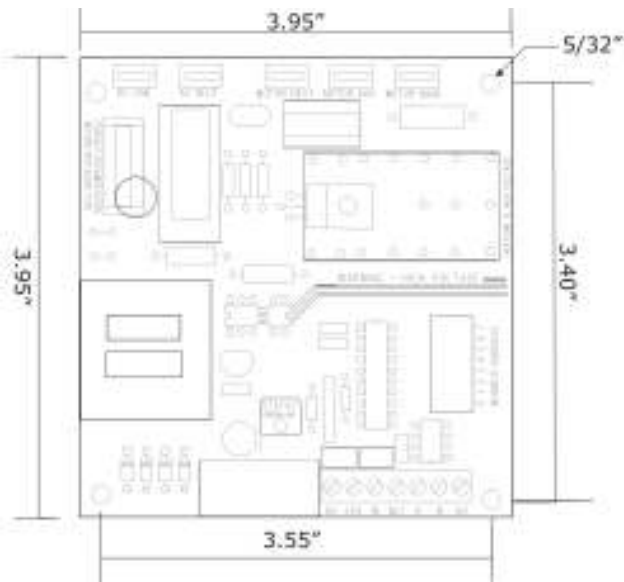
The motor load may be connected in standard two-wire mode, or with the auxiliary winding permanently powered in 3-wire mode (see wiring diagram). A dedicated spade-terminal is (AUX) provided.

AC0yB14 feedback input (IN) can be wired directly to an external contact, such as a pressure switch or a motor thermal cut-off switch. Connecting an external NO/NC contact can be done through either the 7 way terminal block or ¼” Spade terminals mounted above the 7-way.

This NO/NC input is comparable to the ANA1 input on standard VariPhase(s) units and can be used for monitoring go/no-go performance of a fan system (i.e. differential pressure switch monitoring).

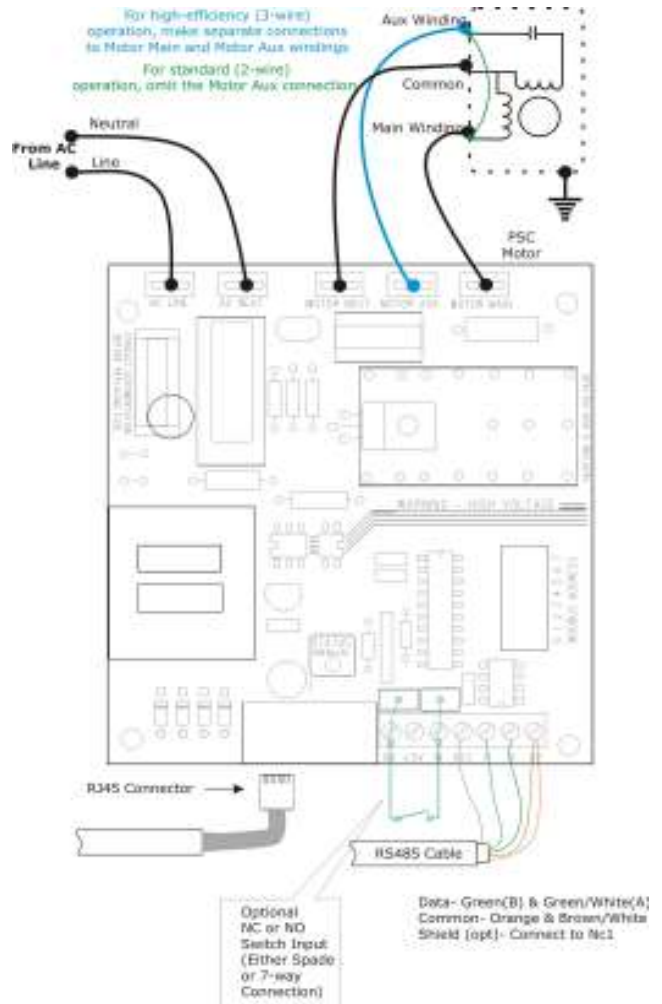
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AC0yB14 Dimensions

AC0yB14 mounts conveniently using four insulated nylon stand-offs, such as Eagle Plastic Devices part DSP375.



MODBUS Register Functions

Reg	Upper Byte	Lower Byte	Type
1		Bit 0: Start/Stop	R/W
2		Set Speed (0-100%)	R/W
7	Aux Input Level		R
8	Minimum Speed		R/W
9	Status Flags		R
10		Default Speed (0-100%)	R/W
11	Version Major	Version Minor	R
12		Actual Speed (0-100%)	
14		Bit 0: Default Start/Stop	R/W
17		Number of Good Packets	R/W
18		Number of Bad Packets	R/W
19	Reset Counter		R/W
23	Configuration Flags		R/W
100		Product ID	R

Specifications

Parameter	Value
Supply Voltage AC01B14 (115V)	85-130Vac
Supply Voltage AC02B14 (230V)	207-255Vac
Supply Voltage AC03B14 (277V)	250-305Vac
Load Current AC0_B14 (115V)	3 A _{rms}
Load Current AC02B14 (230V)	3 A _{rms}
Load Current AC03B14 (277V)	3 A _{rms}
Starting load current (115,230,277V)	4.5A for 1 min
Ambient Temperature	0-50°C
Sensor Supply Voltage	5.0Vdc 10mA
Digital Input Threshold (Vil / Vih)	0.7V / 2.6 V

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