ELECTRONICS, INC.

VEPC-2
Two Phase Coupler

Users Guide

Revision 1.1
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27525 Newhall Ranch Road Unit #1
Valencia, CA 91355
1-800-VISTA-99 PHONE
661-294-9820 PHONE
661-294-9857 FAX
www.vistaelectronics.com

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Product Overview

The Vista Two Phase Coupler provides a way of injecting a communications signal into power mains. The coupler is specifically designed to for use with Echelon's LONWORKS Power Line Transceiver-based products. The Coupler will interface a low voltage communication signal trough an isolation transformer and a capacitor to power mains operating from 0-120V, AC or DC. The Power Line Coupler can also be used as an interface to unpowered wire such as dedicated telephone lines or coaxial cable. The coupler is compatible with the following LONWORKS Power Line Transceiver channels, PL-10, PL-20, and PL-30. The coupler is also compatible with any communications transmitting within the frequency of 9kHz to 450kHz.

Coupler Installation

Low Voltage Connector

The Coupler connects to a transceiver via a low voltage BNC connector that is transformer isolated from high power mains voltages.

Power Mains Connectors

The Coupler connects to Power Mains via a three pin screw down terminal labeled 1N(phase), 2G(common), and 3H(phase).

1N **Power mains. This can be any one of up to two phases (or neutral). The maximum voltage is 120V AC or DC referenced to 2G.**

2G **Common. This is the signal return path and should be connected to either neutral or earth making sure that if neutral is selected as common then all couplers on the network must use neutral as the common and vice versa.**

3H **Power mains. This can be any one of up to two phases (or neutral). The maximum voltage is 120V AC or DC referenced to 2G.**

The center position (2G) on the power connector is the signal return path and the other two positions (1N and 3H) are phase-1 and phase-2.
There are two ways of connecting the coupler to the power mains: *common mode* and *differential*.

***Common mode* is a 2-phase configuration where the signal is transmitted through both the Neutral(1N) and Hot(3H) with signal return on Earth Ground(2G). This is the preferred way because of high impedance between Ground and Neutral/Hot.**

***Differential mode* is a 1-phase configuration. To use this coupler as a differential coupler, connect neutral to the signal return path (2G) and hot/live to either one of the phases (1N or 3H). In this configuration any load on the power mains (motor/lamp) will attenuate the signal in proportion to the load.**

Troubleshooting

- **Make sure that 2G (Common) is connected the same on all couplers across the network. For example: If 2G is connected to neutral make sure 2G is connected to neutral on all couplers on the network. Correspondingly if 2G is connected to earth, make sure 2G is connected to earth on all couplers on the network.**

If after following the above instructions you are still having problems, please contact:

Vista Electronics, Inc.
27525 Newhall Ranch Road Unit #1
Valencia, CA 91355
USA
661-294-9820 PHONE
661-294-9857 FAX
Email: support@vistaelectronics.com

Appendix A
Coupler Dimensions