

RS232 Computer/Modem Interface Reference Manual

Description

The PLI is a device to allow the PL series solar controllers to communicate with a computer. It converts the signals from the PL into a form which a computer can recognise. It also converts signals from the computer to suit the PL controller.

Power supply

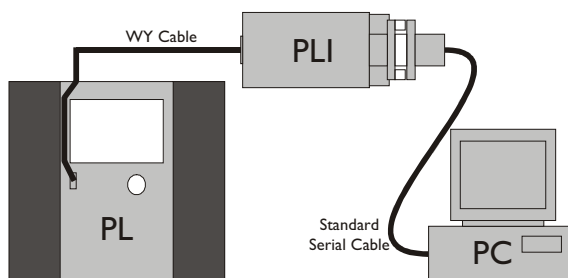
To prevent problems due to ground potential differences, the PLI uses optical coupling. This means that there is no electrical connection between the computer side and the PL side. The energy to operate the PL side is drawn from the battery bank connection of the PL controller. The energy required to operate the computer side is drawn from the computer serial port connection.

PL connection

Connection to PL20 and PL40 controllers is done by using a WY-cable, to PL60 controllers by a WZ cable.

WY: The 8 way connector plugs onto the 8 way pin header under the lid of the PL controller. Run the cable beside the display on the PL and then go out from under the lid at the cut out tab. Do not allow the cable to touch any part of the PL heatsink. On the header plug one pin is blocked up - this matches the cut off pin.

Extend (Max 100m) using standard US phone extension cables. (Use 6 way 4 wire)

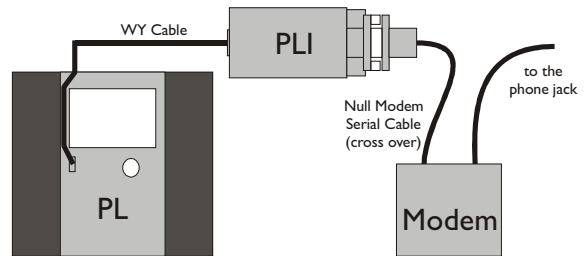


Computer connection

The PLI can be connected to a computer with a standard IBM style serial cable. The minimum connection to the computer required is three wires - TX, RX and Signal Ground.

Modem connection

If you connect the PLI to a modem for remote data transmission, also three wires TX, RX and Signal Ground are required. TX and RX have to be crossed over. Therefore a so called Null Modem cable is necessary to provide the correct connection.



Software

A Win 95/98/NT program to communicate with the PL controller is available from your dealer.

Protocol

The PLI implements an RS232 protocol. It allows serial communication at speeds of 300, 1200, 2400 and 9600 baud. The speed (baud rate) is selected by two jumpers on the circuit board. The computer (or modem) baud rate must be the same as the baud rate selected on the PLI for communication to occur. Select the fastest speed that the connection will support. Start at 9600 baud and if it does not work or has too many errors, then reduce the speed until the link works reliably.

The PL controller does not send data to the computer unless requested. The computer is the master and the PL is the slave. The computer can send commands to the PL. Some of these commands will result in the PL sending a byte of data back to the computer. There is also a loopback command which is replied to by the PLI, not by the PL controller. There is approximately a 70msec delay between the end of transmission of a command and the start of transmission of a reply.

Specifications

Line Speeds	300, 1200, 2400, 9600 Baud
RS232 Input Levels required	>+/- 5V
RS232 Drive levels	>+/-5V
Min Load Impedance	3K
Output impedance TX	300 ohm
DC Isolation	500V
Temperature range	-20 to +70 °C
Supply current	10mA (from PL supply) 1.5mA on RS232 side
Supply voltage	10 to 100V