

# PLI

## RS232 Computer Interface for PL series controllers

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. You will also need cables to connect the PLI to the PL controller.

### Description

The PLI is an RS232 interface for PL series regulators. It allows data communication between a computer and the regulator (via a modem if necessary). 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.

To prevent problems due to ground potential differences, the PLI uses optical coupling. This means that there is no electrical connection between the computer and the PL.

The energy to operate the PL side is drawn from the battery connection of the PL controller. The energy required to operate the computer side is drawn from the computer serial port. A small amount of power will be drawn from the computer's TX, RTS and DTR lines.

The interface can be powered from the TX line only (i.e. with RTS and DTR not connected to the PLI) if there is a shortage of connecting wires available.

### PL Connection

The PLI can be connected to a computer with a standard IBM serial cable. The PLI has a 9 pin female D connector (DB9). If you wish to connect a modem to the PLI you will need a null modem cable. To extend the length of an existing cable (either style) a minimum of three wires are needed :

PIN 2 (TX) at the PLI end

PIN 3 (RX) at the PLI end

PIN 5 (Signal ground) at the PLI end.

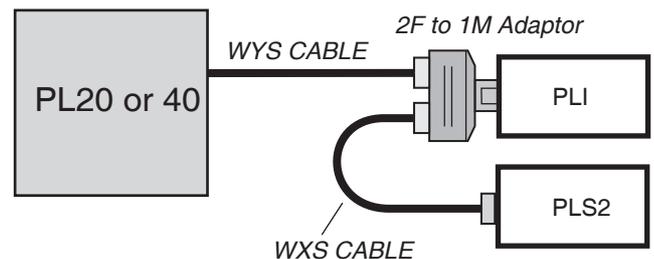
Longer runs may require lower baud rates for reliable transmission.

There are three types of cable used with PLIs (and other accessories). A "WYS" cable connects a PL20 or PL40 to a single PLI. A "WZS" cable connects a PL60 to a PLI. (A WXS cable connects one accessory to another).

When using a WYS cable the phone plug end connects to the PLI and the 8 way connector plugs onto the 8 way pin header under the lid of the PL20 or PL40 controller. Run the cable beside the display on the PL and then out from under the lid at the cut out tab. Do not allow the cable to touch any part of the PL heatsink. (One socket of the header plug is blocked up - this matches the cut off pin). The cables may be extended with shielded cable if required.

For a PL60, the WZS cable connects to the socket on the left side. (see the diagram inside the PL60 lid)

To connect two accessories to a PL controller- use a 6 pin double adaptor and a WXS cable as shown below. (For a PL60- use a WZS, a WXS and a double adaptor.)



### Software

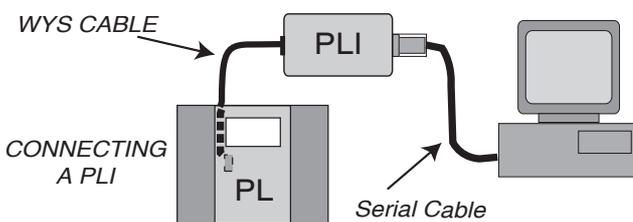
Download PLCOM from our website. This is a program to communicate with the PL controller. The website is: [www.plasmatronics.com.au](http://www.plasmatronics.com.au)

### Protocol

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.

### SPECIFICATIONS

Line Speeds (Baud)	300, 1200, 2400, 9600
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



Connecting the PLI to a PL20 or 40.  
For a PL60 use a WZS cable.