Changing Control Logic of LabPRO™ Instruments

1.0 DESCRIPTION

LabPRO™ Fluidics Instruments are equipped with discrete line control and serial communications control capabilites. Line control includes 1 or 2 line level logic (model part numbers ending in -01), 1 or 2 line pulse logic (model part numbers ending in -02), and 4 line BCD (model part numbers ending in -03). Serial control includes RS-232 (model part numbers ending in -01 and -02), and RS-485 (model part numbers ending in -03). To change among -01, -02, and -03 configured units, pins of the appropriate header on the circuit board must be connected or disconnected. A shorting jumper makes this electrical connection when inserted on the header pins. Figure 1 shows the header locations on the circuit board.

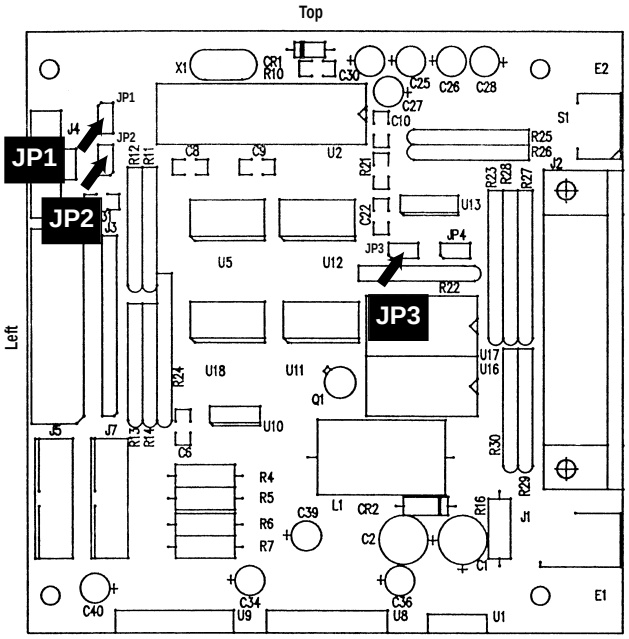

Fig. 1. Circuit board showing header locations (arrows).

2.0 IMPORTANT USE AND SAFETY NOTICE

2.1 Warning: All electrical connections must be done in an ESD (electrostatic discharge) free environment. Ensure that proper ESD devices are used prior to touching the board and making electrical connections. If proper ESD devices are not available, the chassis (metal plate connected to the back side of the circuit board) of the LabPRO unit may be used as a secondary ESD device to ground yourself prior to touching the board.

3.0 PROCEDURE

After the instrument is reconfigured, the electrical connection need not be changed back to the original configuration unless desired.

1. Unplug the LabPRO unit from the power source before installing or removing shorting jumpers.

2. Remove the screws (8 on all LabPRO units). Detach the cover of the unit to gain access to the electrical components.

3. Locate the circuit board of the LabPRO unit and the three headers labeled JP1, JP2, and JP3 (see Figure 1). Do not remove the circuit board from the instrument to install or remove shorting jumpers.

4. Use Table 1 to determine the placement or removal of a shorting jumper on header locations for the desired type of control. See Figures 3, 4, and 5 for location illustrations.

5. Each shorting jumper contains a wire inside. One end of the shorting jumper exposes the looped part of the wire, and the other exposes the two-pronged part of the wire (see Figure 2).

Table 1. Header location where shorting jumpers are installed for each LabPRO control logic configuration.

Type of Control		Header Location (JP1, JP2, JP3, or None)
Discrete Line Control	1 or 2 Line Level Logic	None
	1 or 2 Line Pulse Logic	JP2
	4 Line BCD	JP1 and JP3
Serial Control	RS-232	None
	RS-485	JP1 and JP3

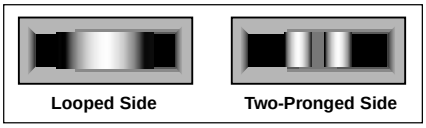

Fig. 2. Close-up view of shorting jumper.

a) To install the shorting jumper, push the looped end onto the two pins of the appropriate header. The pins should fit around the loop inside the shorting jumper. The shorting jumper is connected correctly if the two-pronged end faces out away from the circuit board. Note: If the inner wire extends out or comes out of the shorting jumper, a new shorting jumper must be used.

b) To remove the shorting jumper, hold onto the grooves in the shorting jumper and gently pull to slide the shorting jumper off the header pins.

6. After the change is made, reattach the cover and replace the screws.

7. Re-label the model part number ending, found on the back of the LabPRO module, to -01, -02, or -03, or make a note of the change in part number ending for future reference.

8. Plug the power cord back into the power source.

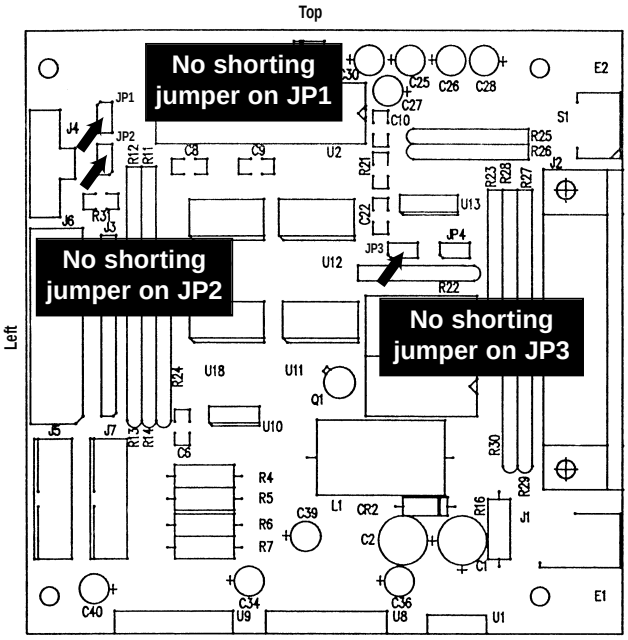

Fig. 3. -01 configuration (level logic and RS-232). No shorting jumper is needed for level logic or RS-232.

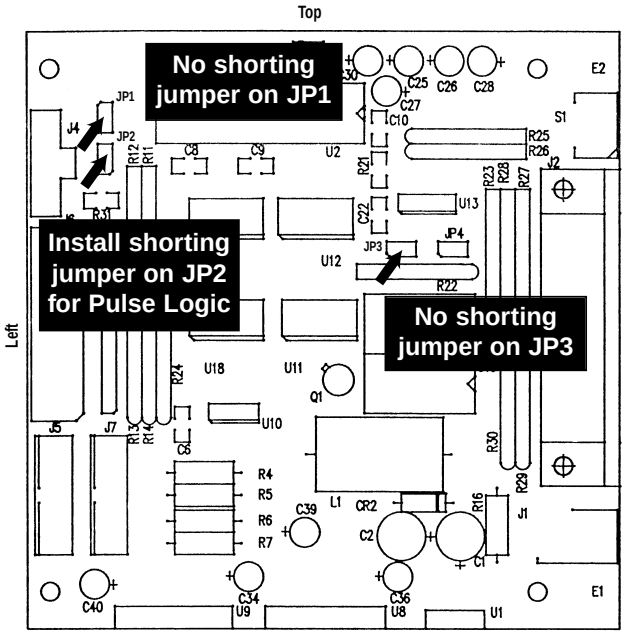

Fig. 4. -02 configuration (pulse logic and RS-232). For pulse logic, install shorting jumper on JP2. For RS-232, no shorting jumper is needed.

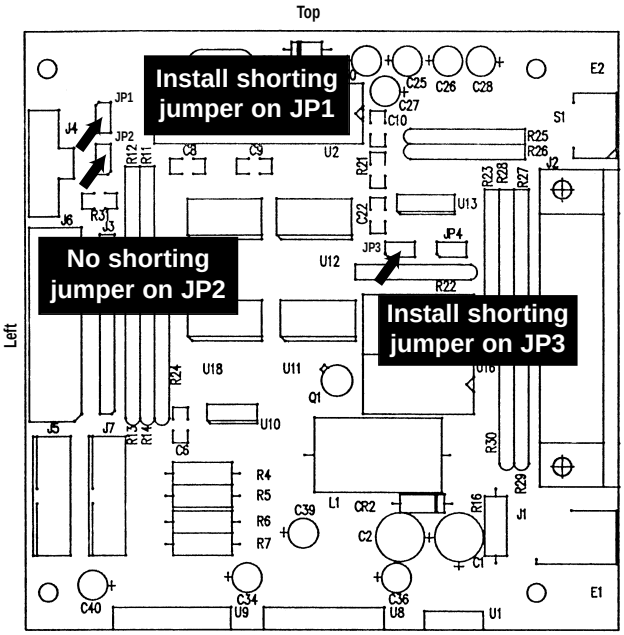

Fig. 5. -03 configuration (4 line BCD and RS-485). For 4 line BCD and for RS-485, install shorting jumper on both JP1 and JP3.

2320461A
3/99