

PC, PCR and PCD Series Pressure Controller Operation

All PC, PCR and PCD Series Controllers have a default Main Mode, a Select Menu Mode, a Control Setup Mode, a Communication Select Mode and a Manufacturer Data Mode. The device defaults to Main Mode as soon as power is applied to the controller.

PC Series Pressure Controllers are normally shipped with a 0.050" diameter valve orifice which permits flows up to 20 SLPM (with inlet pressure 20 PSI over controlled pressure). For much smaller flows, consult factory for details on specifying a smaller valve orifice. For larger flows, a PCR Series Pressure Controller is recommended. ***For additional information specific to the PCD series (dual valve controllers) see page 19.***

Main Mode

The main mode screen shows the pressure in the units specified at time of order.

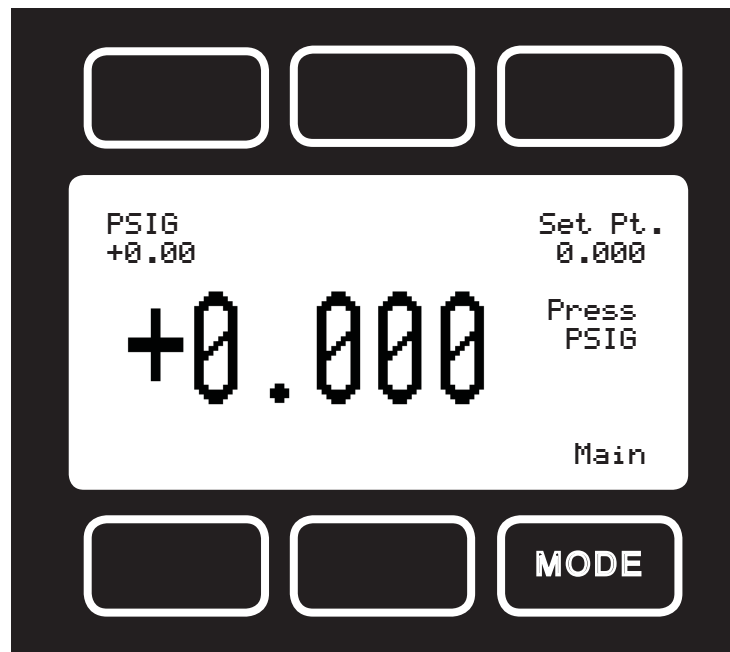


Figure 11. Main Mode Display, PC Series Pressure Controller

The “MODE” button in the lower right hand corner toggles the display between the Main Display and the Select Menu Display.

Line Pressure – Pressing the dynamically labeled PSIG button located in the upper left corner of the display will move the line gauge pressure to the primary display.

Set Pt – The set-point is shown in the upper right corner of the display. The set-point cannot be adjusted from the main mode screen. (For information on changing the set-point, see the Control Set Up Mode below.)

Flashing Error Message: Our pressure gauges and controllers display an error message (POV = pressure overrange) when the pressure exceeds the range of the sensors in the device. When the pressure reading flashes on the display, the pressure measurement is not accurate. Reducing the value of the line pressure to within specified limits will return the unit to normal operation.

Select Menu Mode

Pushing “Mode” once will bring up the “Select Menu” display (Figure 12, page 16). Push the button nearest your selection to go to the corresponding screen. Push “Mode” again to return to the Main Mode display.

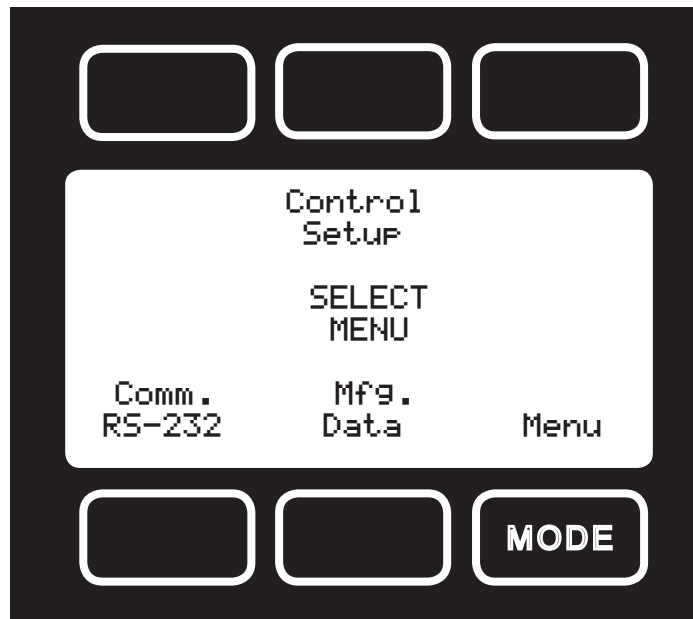


Figure 12. PC Series Select Menu Display

Control Setup Mode

The Control Setup Mode is accessed by pressing the center button above “Control Setup” on the select menu display. This mode allows the user to set up most parameters commonly associated with PID control. PC Series Pressure Controllers allow the user to select how the set-point is to be conveyed to the controller, what that set-point is if control is local, and what the Proportional and Differential terms of the PID control loop will be. The UP and DOWN buttons for adjusting variables can be held down for higher speed adjustment or pressed repeatedly for fine adjustment. *If your controller is difficult to reach or you prefer “dial up” set-point adjustment, please consider our Local Set-point Module (LSPM) described on page 33.*

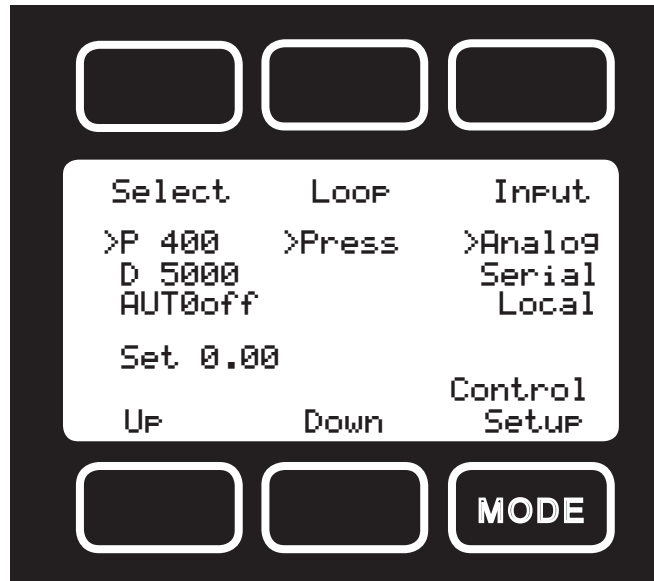


Figure 13. PC Series Control Setup Display

Input – PC Series Pressure Controllers normally ship defaulted to analog control as indicated in Figure 13 above. To change how the set-point will be conveyed to the controller push the button in the upper right hand corner just above the dynamic label “Input” until the arrow is directly in front of the desired option. The controller will ignore any set-point except that of the selected input and it will remember which input is selected even if the power is disconnected.

Analog refers to a remote analog set-point applied to Pin 4 of the Mini-DIN connector as described in the installation section of this manual. To determine what type of analog set-point your controller was ordered with, refer to the Calibration Data Sheet that was included with your controller. 0-5 Vdc is standard unless ordered otherwise. Note that if nothing is connected to Pin 4, and the controller is set for analog control, the set-point will float at some positive value.

Serial refers to a remote digital RS-232 set-point applied via a serial connection to a computer or PLC as described in the Installation and RS-232 sections of this manual.

Local refers to a set-point applied directly at the controller. For more information on changing the set-point locally refer to the heading “Select” below. Local input must be selected prior to attempting to change the set-point locally.

Loop – The PC Series is defaulted to pressure.

Select – To avoid accidental changing of the PID loop parameters or the set-point, the Control Setup mode defaults with the selector on a null position. To change the set-point or the P and D PID loop parameters, push the button in the upper left corner just above the dynamic label “Select” until the selection arrow is pointing to the parameter you wish to change. When the parameter you wish to change is selected, it may be adjusted up or down with the buttons under the display below the dynamic labels “UP” and “DOWN”. Press the buttons repeatedly to make slow adjustments or hold them down to make fast adjustments.

P refers to the Proportional term of the PID loop. Before changing this parameter, it is good practice to write down the initial value so that it can be returned to the factory settings if necessary.

D refers to the Differential term of the PID loop. Before changing this parameter, it is good practice to write down the initial value so that it can be returned to the factory settings if necessary.

Set refers to the Set-point. This parameter may only be changed if “Local” is selected as the Input. See above for information on selecting the input. Using the UP and DOWN buttons, the set-point may be adjusted between zero and the full-scale range of the controller. **CAUTION! NEVER LEAVE A CONTROLLER WITH ANY NON-ZERO SET-POINT IF NO FLOW IS AVAILABLE TO MAKE PRESSURE. THE CONTROLLER WILL APPLY FULL POWER TO THE VALVE IN AN ATTEMPT TO REACH THE SET-POINT. WHEN THERE IS NO FLOW, THIS CAN MAKE THE VALVE VERY HOT!**

Communication Select Mode

The Communication Select mode is accessed by pressing the button below “Comm. RS-232” on the Select Menu display. Please see page 13 for Communication Select mode instructions.

Manufacturer Data Mode

“Manufacturer Data” is accessed by pressing the “Mfg. Data” button on the Select Menu display (Figure 12, page 16). The “Mfg 1” display shows the name and telephone number of the manufacturer. The “Mfg 2” display shows important information about your pressure gauge including the model number, serial number, and date of manufacture (Figure 10, page 14).