



PHOTO CONDUCTIVE SENSOR APPLICATION NOTE

SETPOINT SELECTION

Photoconductive sensors are sensitive to the amount of light available at a photocell surface. The response of a Photoconductive (**PC**) sensor is inversely proportional to light level, i.e. the more light available, the lower the output of the photoconductive sensor. **PC** sensors have a fixed range and are not necessary to adjust. Each **PC** sensor style has a specific range. The following table describes the **PC** sensor range.

<u>MODEL</u>	<u>APPLICATION</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
PC1A	Indoor	6 FC	50 FC
PC5A	Outdoor	2 FC	40 FC
PC5AD	Outdoor	40 FC	500 FC
PC9A	Atrium	40 FC	750 FC
PC9AD	Skylight	400 FC	3,000 FC

APPLICATION NOTES

PC Sensors provide light level input into **PLC-MULTIPOINT LC** Series controllers: **LC3X, LC8** and **LC9**.

A typical Photoconductive sensor response is shown in the following figure. At low footcandle levels the **PC** sensor is very responsive to changes in the light level. At an “elbow” in the curve, higher in the footcandle range, the sensor response becomes flat. This feature of **PC** sensors requires that a designer sufficiently separate HIGH and LOW setpoint voltages. For proper controller operation, the typical minimum HIGH and LOW setpoint differential should be at least 0.2 VDC. Looking at the response curve, the differential can provide different results.

At the low end of the **PC** sensor curve, where the slope is steep, a .2VDC differential provides ON (low) and OFF (high) setpoints of 6 and 7 FC. At the high end of the **PC** characteristic curve, where the slope is flat, a .2VDC differential provides ON (low) and OFF (high) setpoints of 30 and 46 FC. Setting a **PLC-MULTIPOINT PC-SIM** calibrator to the ON and OFF switching voltages will simulate the proper setpoints. The controller’s adjustment potentiometers are then adjusted to switch at the desired lighting level.

