

# PCDM

## Optical Train Detection Controller

For use with Photocell Sensors

### Introduction to the PCDM

The PCDM is a control module for the photocell sensors for use with signalling and any other application which requires knowing when a train is at a discrete point on a section of track. The PCDM powers and receives detection information photocell sensors based on ambient room light shading a sensor by a passing train. Up to four (4) photocell sensor groups can be connected to the PCDM. Adjustments are provided for each sensor input to fine tune sensitivity of the sensors.

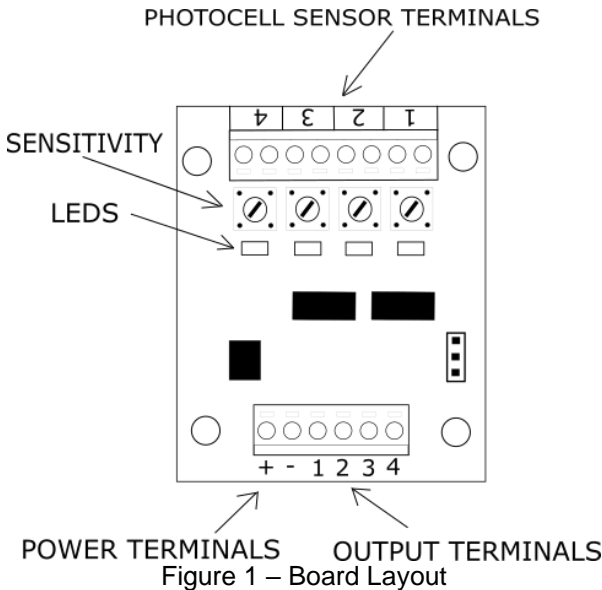


Figure 1 – Board Layout

### Installing the PCDM

Signalogic Systems recommends a good quality 12VDC accessory power supply and 20-26 AWG solid wire for connections to all devices including the PCDM. Solid wire telephone and network cabling is a cost-effective solution. Ensure that track power and the 12VDC power are off during installation and check wiring prior to turning power back on.

#### ***Power Connections***

A six (6) terminal block connector is provided to power the PCDM. The + and – terminals are used to connect 12VDC power to the PCDM. The remaining four terminals are the *detector output connections*.

## Sensor Connections

An eight (8) position terminal block is provided to connect to four sensor loops. Up to five photocell sensors may be linked in series within one loop. When any sensor is shaded in a loop, the detection output for that loop will be activated.

NOTE: If sensor terminals are not connected, the PCDM will consider the sensor input as occupied.

## Detector Output Connections

A six (6) terminal connector is provided for connecting the detector outputs to other circuits. Each output is open-drain meaning that the output will be connected to the power supply common (-) when a train is detected. The remaining two terminals are the power connections.

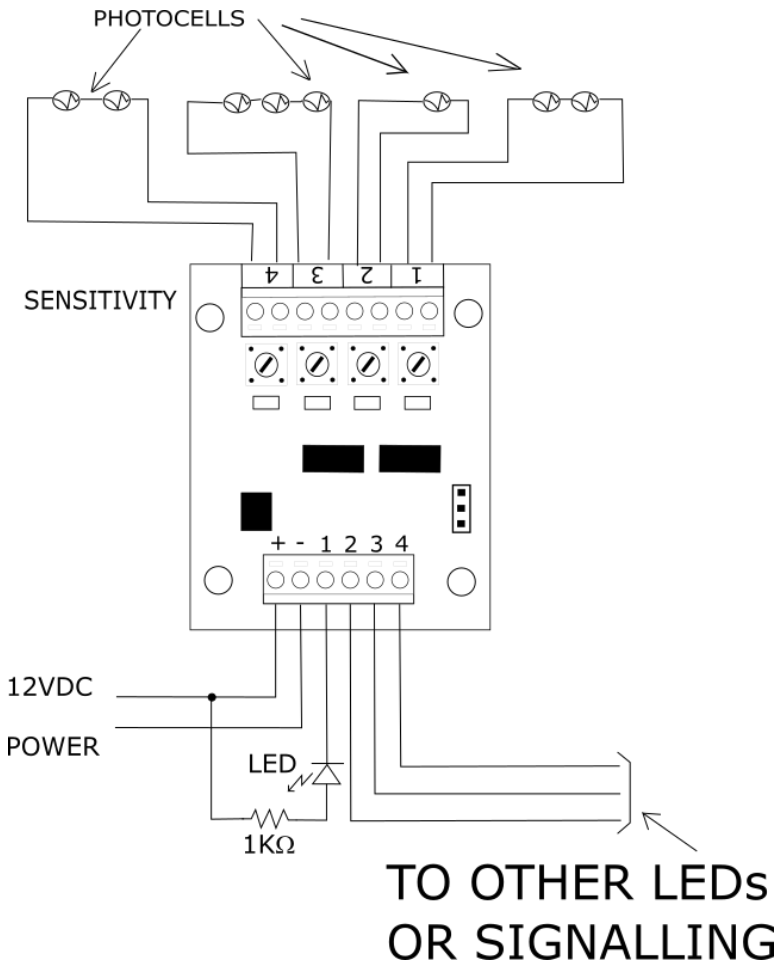


Figure 2 – Connections

# Adjustments

## *Sensitivity*

Sensitivity of the photocells is controlled via the sensitivity adjustment potentiometers. One adjustment is provided for each of the four sensor connections. Turn the adjustment clockwise for the sensors to be more sensitive to shadow and turn the adjustment counterclockwise for less sensitivity.

## *Occupancy Output*

An adjustable built-in timer keeps the output terminals in the occupied state for either zero (0), two (2) or five (5) seconds after train detection is lost. This is similar to 'Loss of Shunt' (LOS) timers used by prototype railroads and will help to keep your occupancy status realistically steady. The time duration is selectable by placing the provided jumper across different jumper pin connections.

### **Maximum Specifications**

Minimum Power Voltage	10 VDC
Maximum Power Voltage	16 VDC
Maximum Output Current per output	25 mA

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