ODX4 Assembly Instructions

Revision v2.0 02/01/2016

Introduction

    This document describes the functional blocks of the ODX4 block detector motherboard and how to assemble it.

Revision History

v1.0   01/29/2014   CC
v1.1   06/08/2014   CC
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1. ODX4 SYSTEM OVERVIEW

The Occupancy Detector Extender 4 (ODX4) provides mounting and interconnects for up to four MRCS cpOD or JLC DCCOD DCC block occupancy detectors.

Vin power can be 5v/12v for the cpOD or 12v for the DCCOD connected to the marked screw terminals, Vin, GND.

The DCC bus input is connected to the DCC IN terminal block. The DCC IN terminal block has four positions, which are bridged together. The ODX4 DCC In can be split by cutting the SPLIT trace. Only one side of the DCC bus (e.g. RAIL A) is connected to the ODX4. The track block feeders are connected to the DCC Out terminals.

Detector outputs for control logic are connected to DccOut1 to DccOut4.

The MRCS cpOD or C/MRI DCCOD are plugged into the .156" Molex headers, component side up, with the sensitivity potentiometer to the right. Figure 2 shows the orientation.
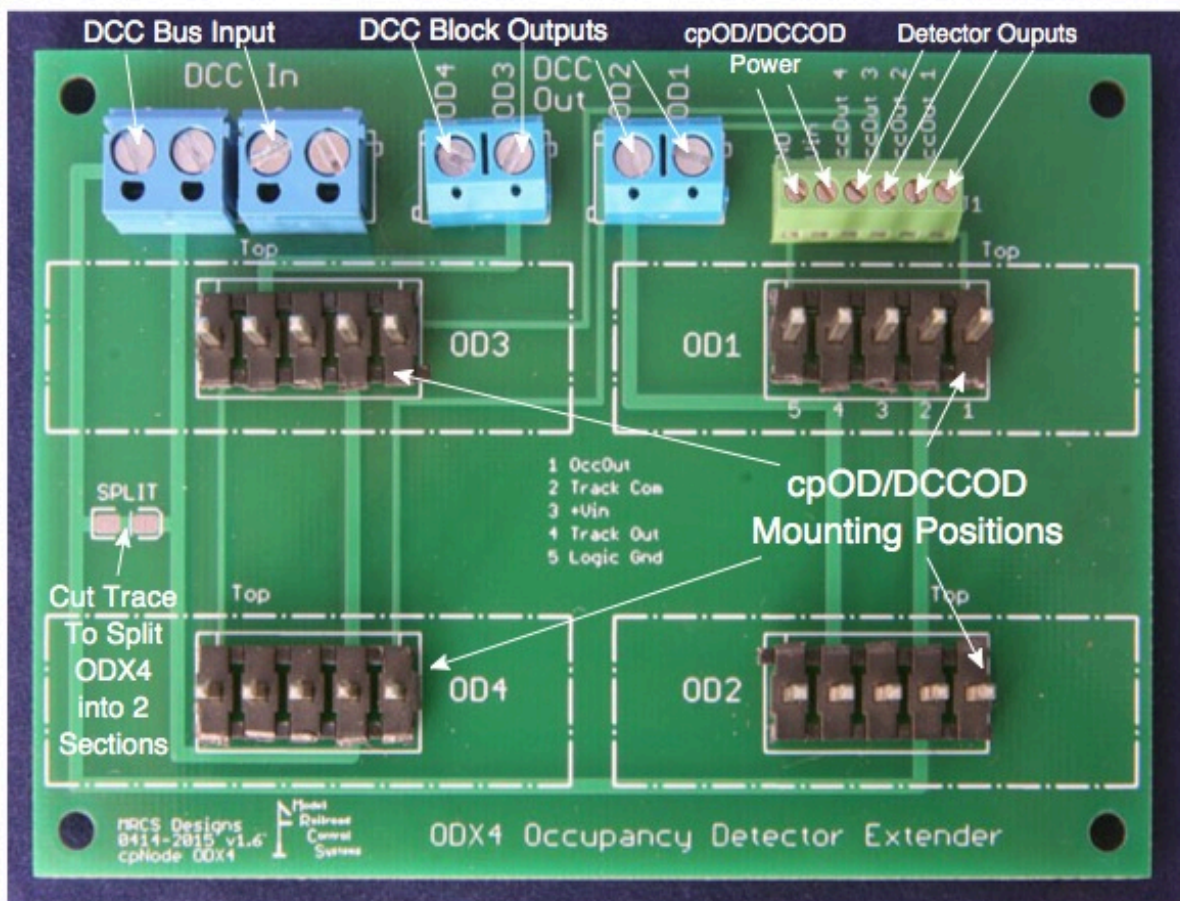

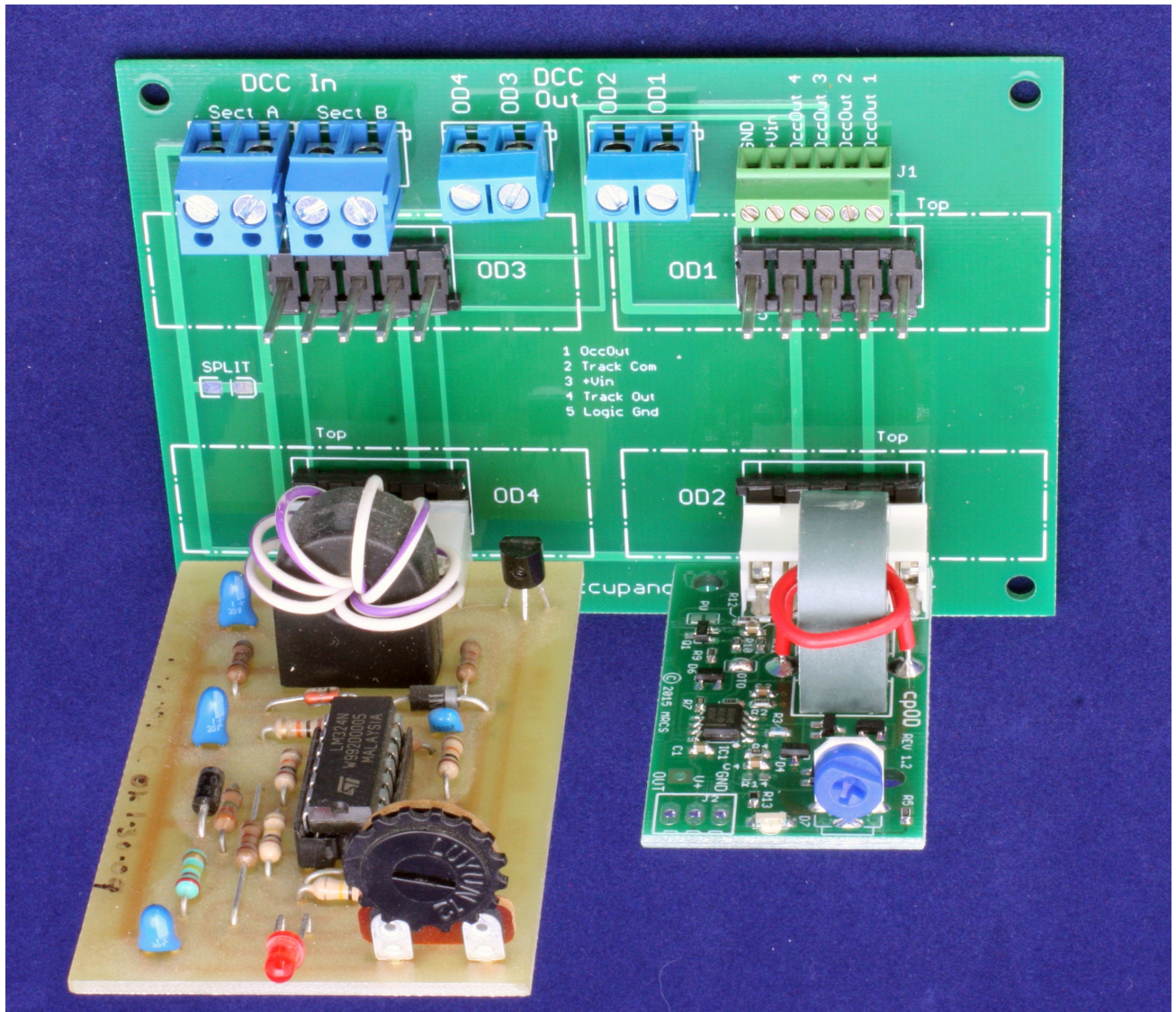**Figure 1 ODX4 Component Locations**

Figure 2   cpOD/DCCOD Mounting Orientation

To configure the ODX4 for one to four detector sections, one side of the DCC input is connected to the DCC In terminal and passes out through the same terminal block to the next ODX4. All detectors plugged into the ODX4 will feed the corresponding output track feeders from the same DCC power district.
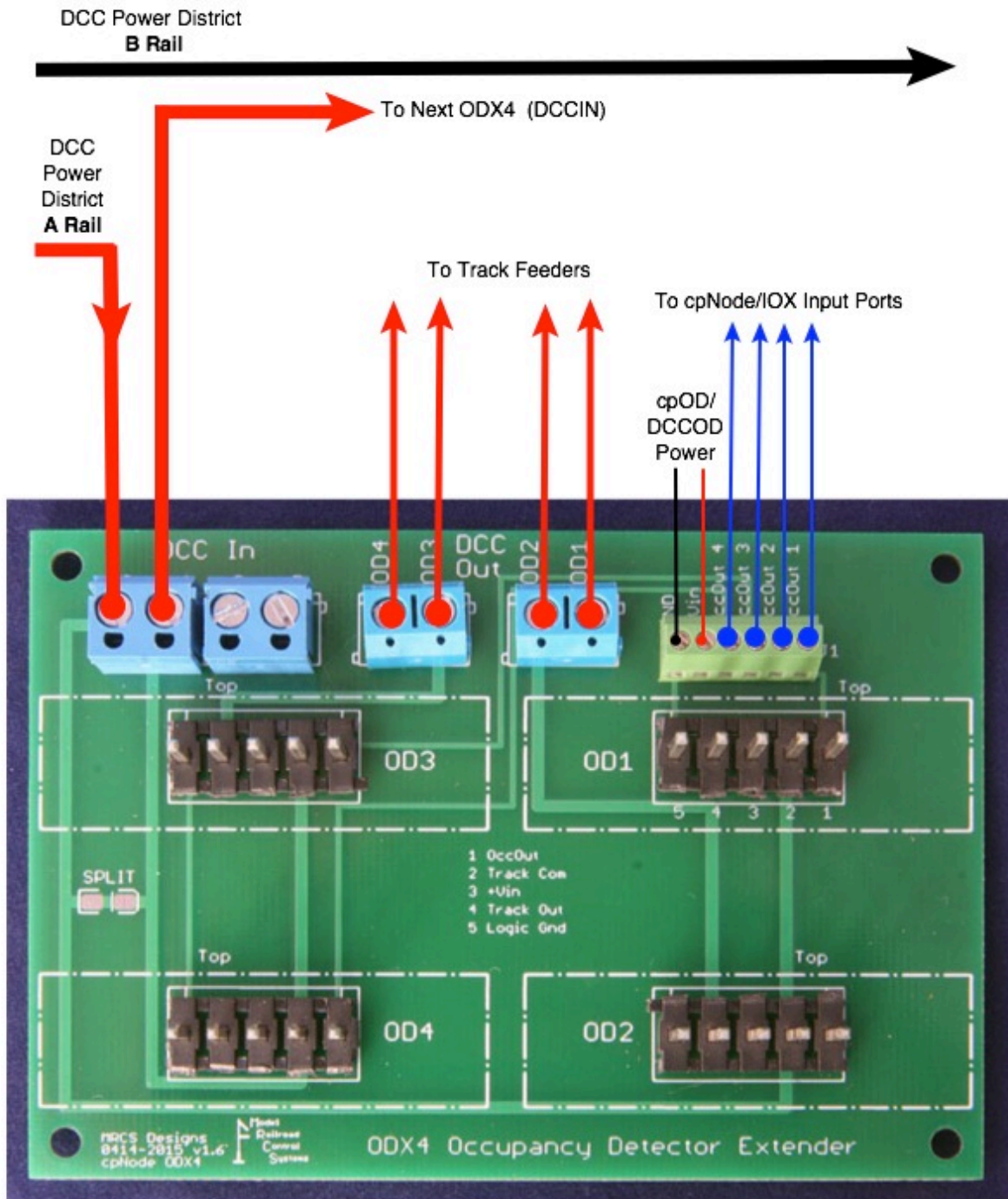

Figure 3   Track Block Connection Example

To configure the ODX4 for two separate breaker districts, cut the trace marked "SPLIT". This will divide the ODX4 into two separate sections, one servicing OD1 and OD2, the other OD3 and OD4.

The diagram shows breaker #1 connected to the left hand DCC In terminal block. OD3 and OD4 feeders are connected to the corresponding OD3,OD4 DCC Out terminal block.
Breaker #2 is connected to the right hand DCC In and OD1 and OD2 are connected to the OD1,OD2 DCC Out terminal block.
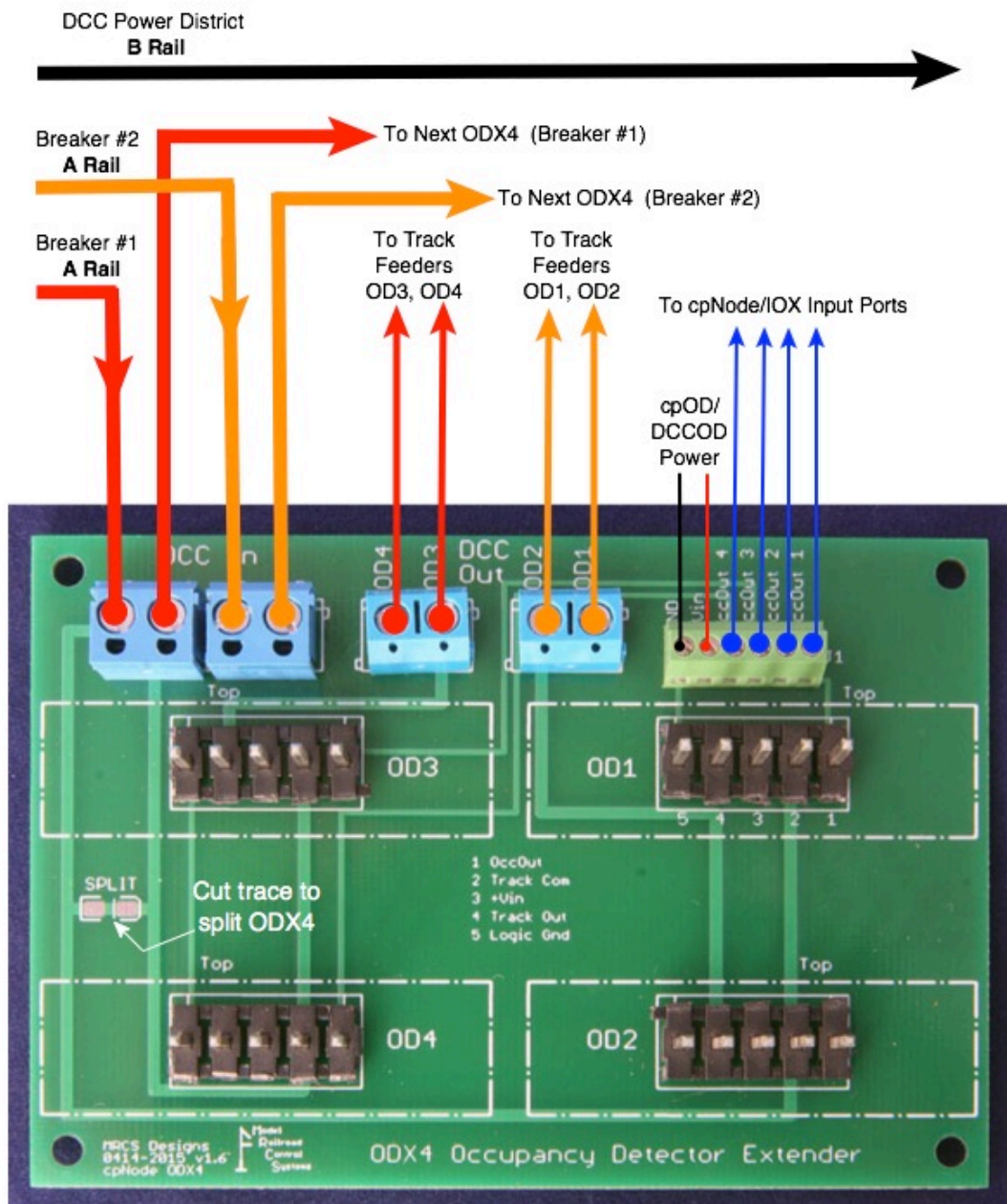

Figure 4 Two Breaker Sections (Split) Track Blocks

2. BILL OF MATERIALS

Description	Ref	Qty	Supplier	Part No.
cNode ODX4 PCB v2.0	PCB1	1	MRCS	ODX4
Male pin HDR 5 Pin .156"	OD1,OD2,OD3,OD4	4	Digikey	WM4623-ND
6 pos Screw Terminal 2.54 mm	J1	1	Electronic Salon	
2 pos Screw Terminal 5 mm	J2,J3	2	Jameco	2094485
2 pos Screw Terminal 5 mm	SECTA,SECTB	2	Jameco	2094485

3. ASSEMBLY

[ ] All of the components are through-hole technology.

[ ] Install the 5mm, two position, screw terminals (DCCIN, DCCOUT)

[ ] Install the 2.54 mm, 6 position, screw terminals (OD Power, Detector outputs 1-4)

[ ] Install the .156", 5 position Molex male headers, (OD1, OD2, OD3, OD4)