Dwarf Boards

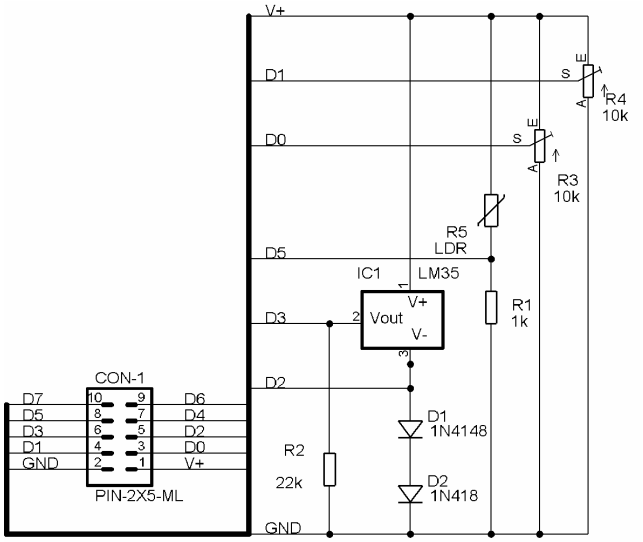
DB011 : analog inputs: potentiometers, LM35, LDR

version 1.1

Introduction

This document describes the Dwarf Board DB011. This is a peripheral board that provides 4 analog inputs for analog experiments: two potentiometers, and LM35 temperature sensor, and an LDR.

Circuit



The circuit consist of an ML10 Dwarf Bus connector CON1, two potentiometers R3 and R4, an LDR R5 and an LM35 temperature sensor.

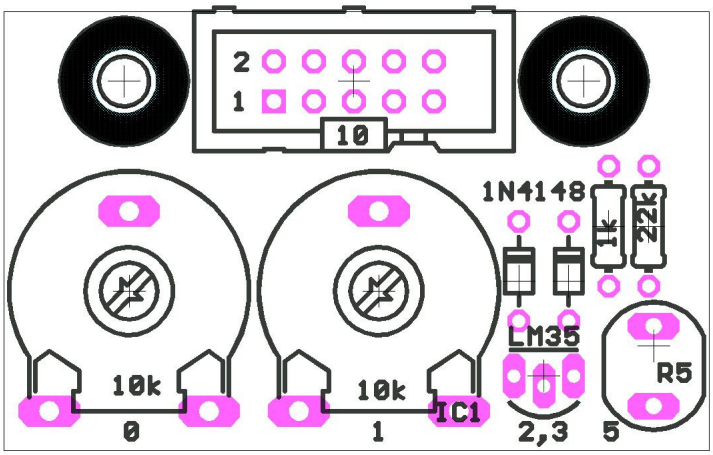
The potentiometers connect to the Dwarf Bus pins D0 and D1. The value of the potentiometers is 10kΩ, which results is a maximum source impedance of 2.5 kΩ.

The LDR R5 and the fixed resistor R1 created a voltage divisor. The voltage on pin D5 will be low in darkness are shadow, high in full light.

The diodes D1 and D2 and the resistor R2 provide a 'raised ground' for IC1, which makes it possible to measure a negative temperature.

Component Placement

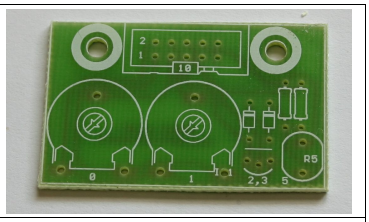
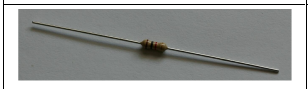
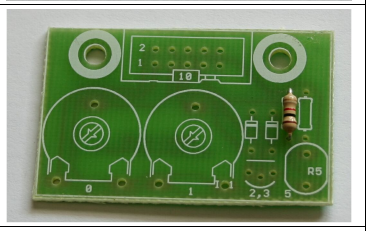
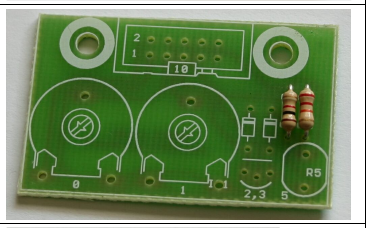
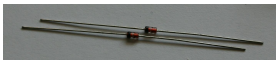
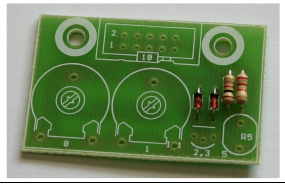
The figure below shows the placement of the components on the PCB.

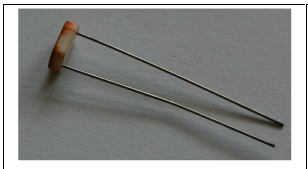
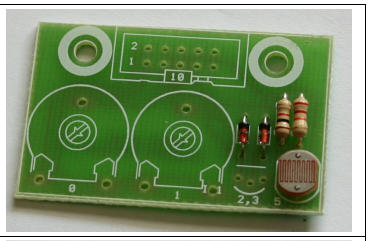
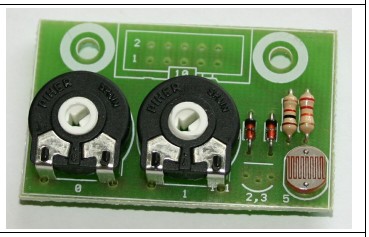
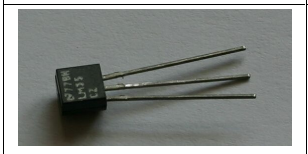
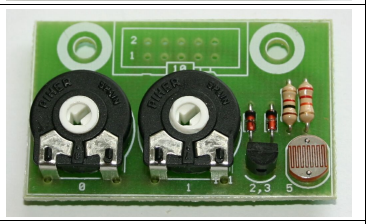
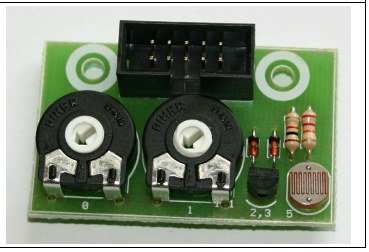


Assembly

The kit contains the PCB and all components as shown in the circuit diagram.

Assembling the kit is not difficult, no fine-pitched or SMD components are used. Just follow the instructions below carefully. Some soldering experience is recommended.

	Orient the PCB as shown on the pictures and in the previous paragraph. The silkscreen (component side) text should be readable.	
	Place and solder the 1kΩ resistor (brown black red).	
	Place and solder the 22kΩ resistor (red red orange).	
	Place and solder the 2 diodes 1N4148	

	Place and solder the LDR.	
	Place and solder the two 10kΩ potentiometers.	
	Place and solder the LM35 temperature sensor, flat edge away from the edge of the PCB.	
	Place and solder the ML10 connector, notch away from the edge of the PCB.	

Dwarf Notes

The table below lists Dwarf Notes that aplly to this board.

document	title
DN006	simple analog input on DB016
DN009	read 5 analog inputs, show on LCD, on DB016

Change notes

the latest version of this document can be downloaded from http://www.voti.nl/dwarf

version	date	notes
1.1	2004-03-30	component placement and construction added
1.0	2003-11-04	first version