

# ANALOGUE CALIBRATION BOARD

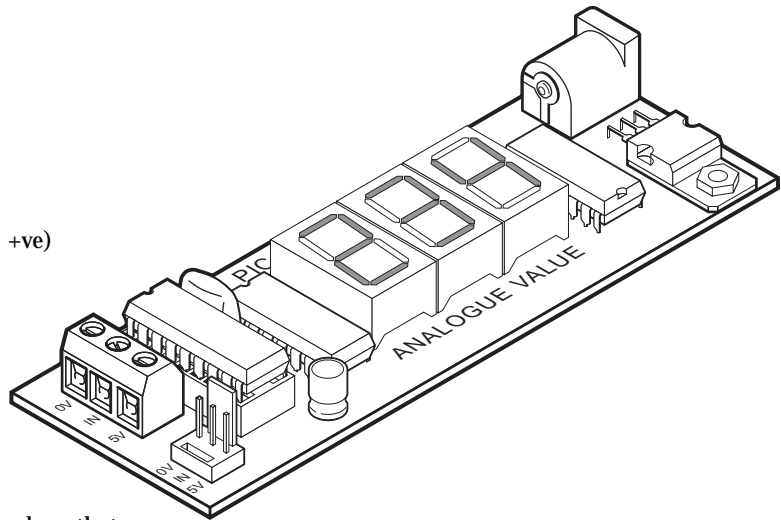
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## Contents:

- Analogue calibration board
- Self-adhesive feet

Also required:

- 9V power supply (2.1mm connector, tip +ve)  
Note that most users can use the power supply used with their PIC programmer.



## Introduction:

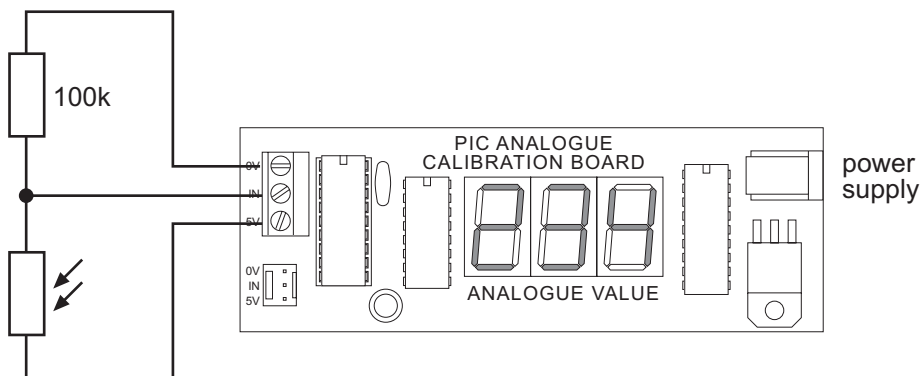
The analogue calibration board allows microcontroller users to experiment with analogue sensors to calculate the threshold values that should be used within programs (when programming microcontrollers with analogue input pins).

The display shows the value 0 to 255 when an analogue sensor is connected. By altering the input condition (e.g. light level for an LDR sensor) the value of the threshold input can be recorded.

## Connection:

The analogue sensor can be connected via the screw terminal blocks, or the 3 pin header. This 3 pin header is wired identically to the analogue header found on many of our educational products.

## Example Circuit:



## Note for users with Educational Programming Systems

A standard analogue input will provide 256 different analogue readings (0 to 255) over the full voltage range (e.g. 0 to 5V). A low-resolution analogue input, as found on the PIC12F629 and PIC16F627, will provide 16 readings over the lower two-thirds of the voltage range (e.g. 0 to 3.3V). No readings are available in the upper third of the voltage range.

To ensure consistency between standard and low-resolution analogue input readings, the low-resolution reading on these PICs will 'jump' in 16 discrete steps between the nearest standard readings, according to the table below.

Therefore when calculating threshold values for analogue sensors it should be remembered that these PICs will only generate the values given in the right-hand column of the table below.

Standard Reading Range	Low Resolution Reading
0-10	0
11-20	11
21-31	21
32-42	32
43-52	43
53-63	53
64-74	64
75-84	75
85-95	85
96-106	96
107-116	107
117-127	117
128-138	128
139-148	139
149-159	149
160-170	160
Values greater than 170 (170-255)	160