MANTECH
ELECTRONICS

International Components Distributor

TEL JHB : (011) 493-9307

www.mantech.co.za

sales@mantech.co.za

TEMPERATURE CONTROLLER KIT MEK-06-001

The **MEK06-001** is one in a sequence of controller based kits developed for a number of applications requiring some sort of input control, over one of the outputs that is either switched (ON-OFF) or PWM controlled, according to the input variable and a given function.

The **MEK06-001** is specifically designed as a temperature controller, in that the output is switched ON when a given input (temperature) is reached. And it will return to the OFF position, once the temperature or the input returns to the set value, plus the set hysteresis.

The actual sensor is an **LM35**. The LM35 is a linear temperature sensor that outputs a voltage proportional to temperature.

OPERATION

The controller requires 12VDC (10 to 14VDC), which must be connected to the +V1 and GND terminals. Polarity must be observed.

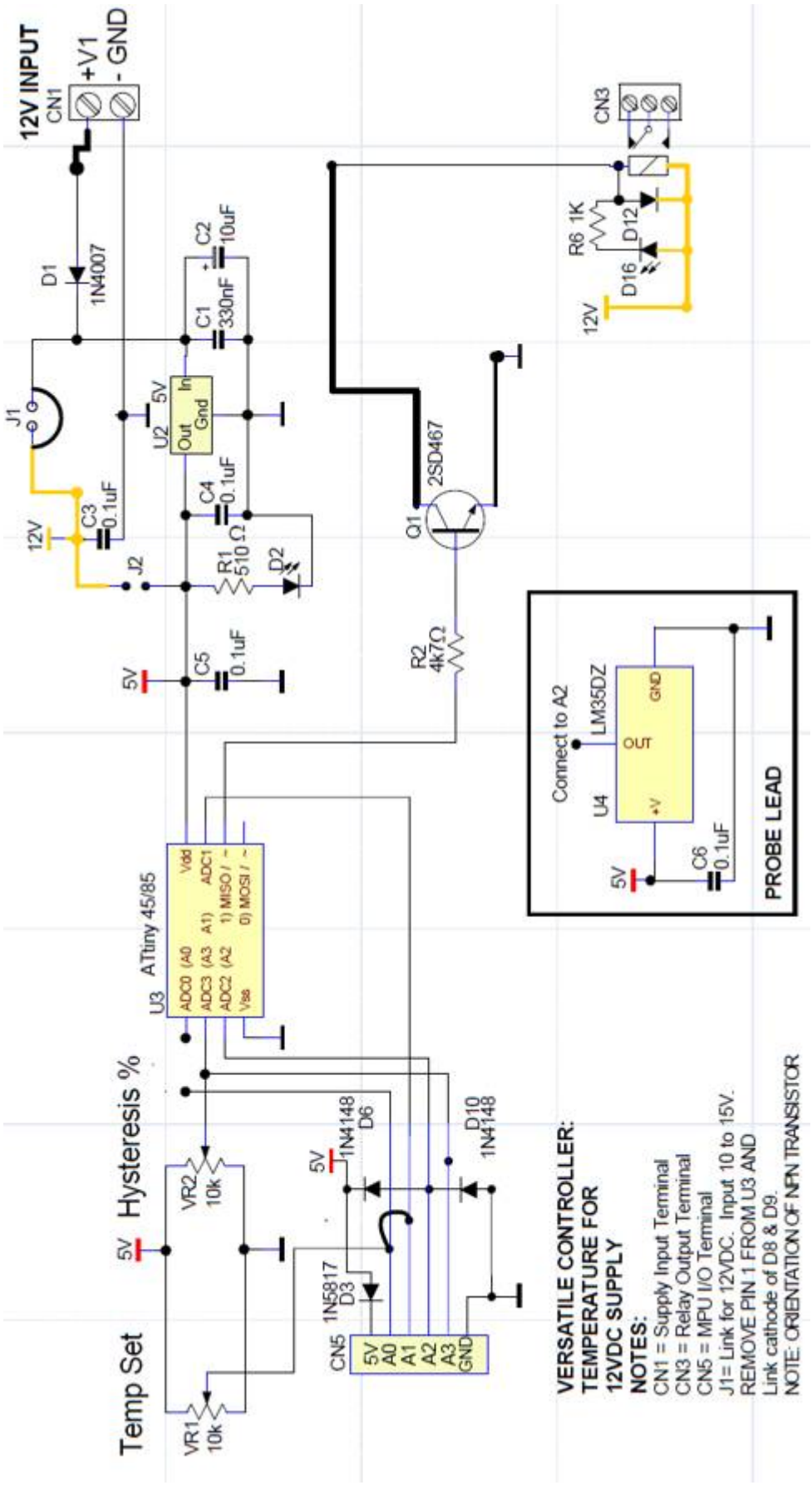
The pre-assembled sensor, cable and connector, simply plugs into CN5. The cable only plugs in, in a given orientation.

The output, is in the form of a changeover relay contact. This must be wired to the load in the desired manner.

VR1 is the temperature setting potentiometer and the 50% position equates to about 50 degrees C.

VR2 is the hysteresis setting and its 50% position equates to about 3 degrees Celsius.

There are two LEDs on the board. D2 indicates the presence of power, while D16 indicates that the temperature is above the set point.


12V INPUT
CN1
+V1
- GND
D1
1N4007
C1
330nF
C2
10uF
J1
U2
5V
In
Out
Gnd
C3
0.1uF
C4
0.1uF
12V
J2
R1
510 Ω
D2
C5
0.1uF
5V
R2
4k7Ω
Q1
2SD467
CN3
R6 1K
D12
D16
12V
Connect to A2
LM35DZ
U4
OUT
GND
+V
C6
0.1uF
5V
PROBE LEAD
U3
ATtiny 45/85
ADC0 (A0
ADC3 (A3
ADC2 (A2
Vss
Vdd
ADC1
1) MISO
0) MOSI
Hysteresis %
VR2
10k
5V
1N4148
D6
D10
1N4148
1N5817
D3
CN5
5V
A0
A1
A2
A3
GND
Temp Set
VR1
10k
VERSATILE CONTROLLER:
TEMPERATURE FOR
12VDC SUPPLY
NOTES:
CN1 = Supply Input Terminal
CN3 = Relay Output Terminal
CN5 = MPU I/O Terminal
J1= Link for 12VDC. Input 10 to 15V.
REMOVE PIN 1 FROM U3 AND
Link cathode of D8 & D9.
NOTE: ORIENTATION OF NPN TRANSISTOR