

Digital Thermostat and Display V1.1

The circuit can either be wired-up on stripboard or you can make your own double-sided pcb as shown here.

PCB design

PCB dimensions are 64.750mm x 41.878mm

It should print at the correct size if your printer is set to 100% scale. (untick any "fit to page" etc. settings)

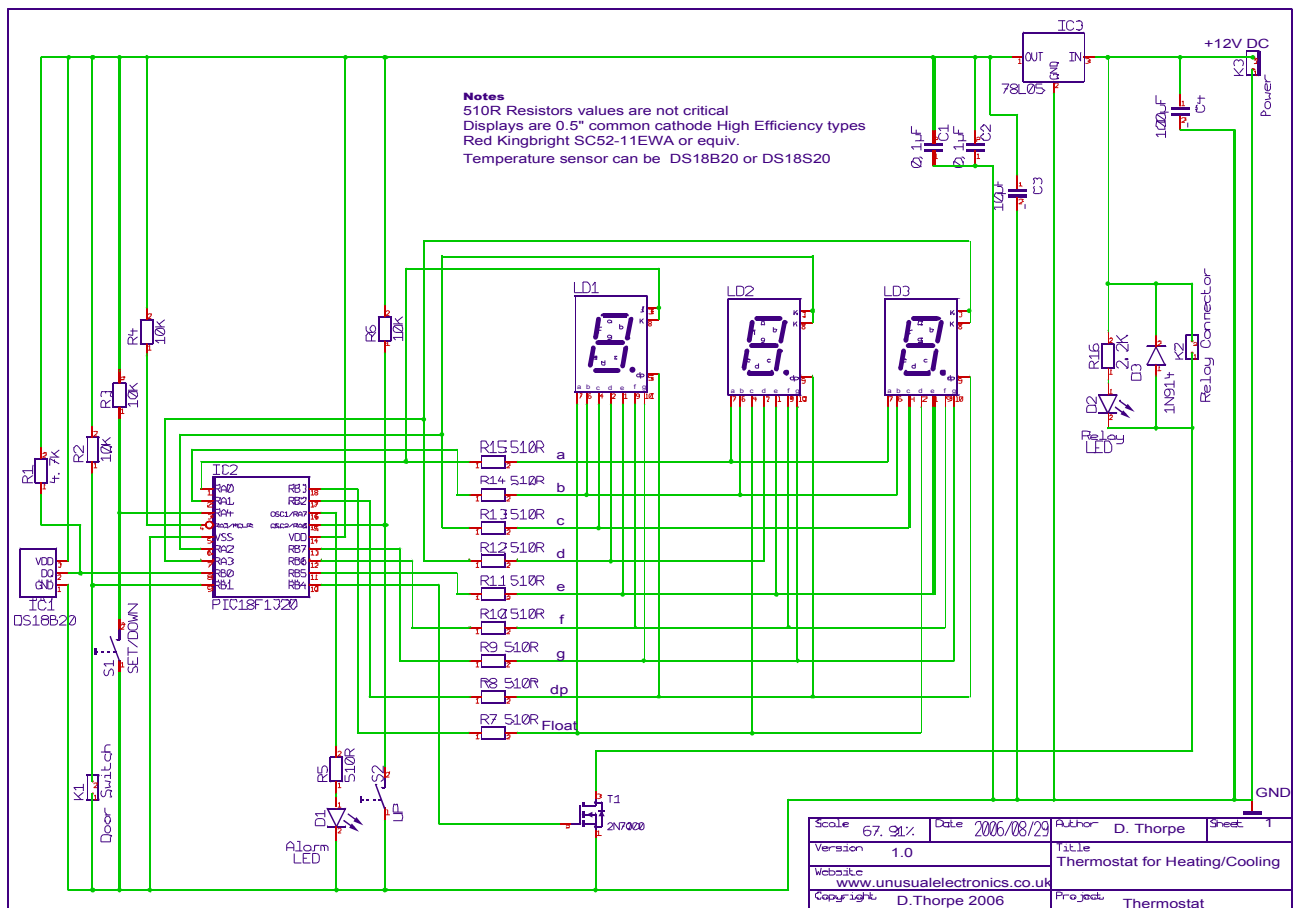
(The "target" marks on the artwork are used to assist with aligning the top and underside sheets together as well as mounting holes)

Most component drill holes are 0.8mm dia.

The board can be made by printing the layouts on laser printer and using the "toner transfer" method.

(many guides for doing this are found on the web).

There are about 9 vias - link the layers with short lengths of wire soldered in the via pads.

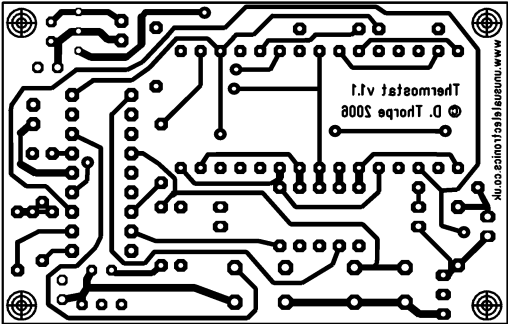


Circuit/PCB version history

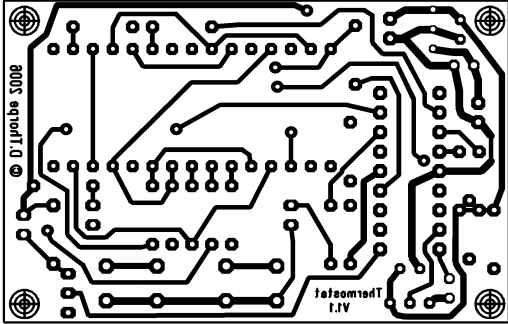
v1.0 Original version

v1.1 Fixed incorrect pcb connections for Tactile Pushbuttons (S1+S2)

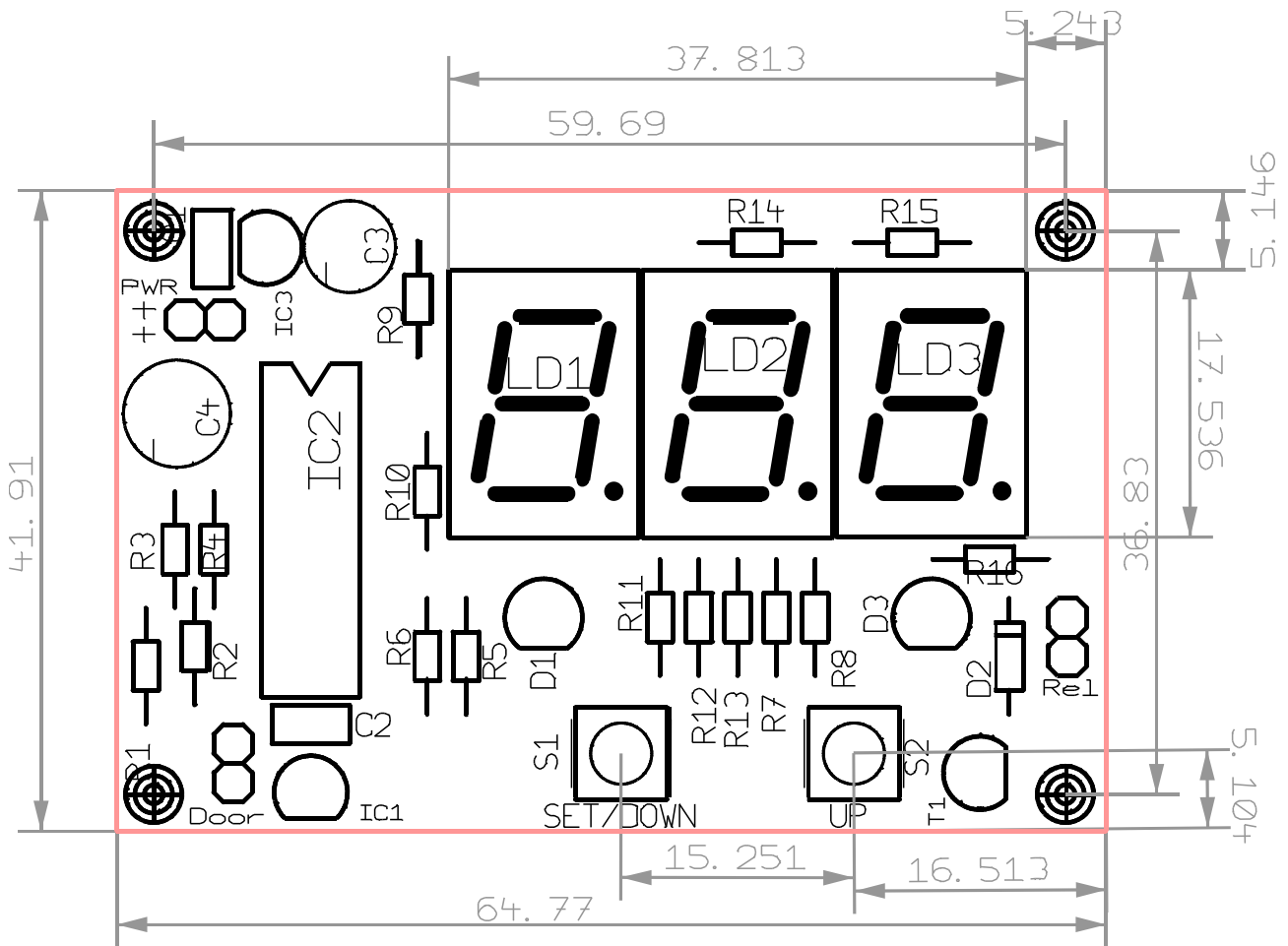
Underside (64.750mm x 41.878mm)



Topside (mirrored ready for printing)



Component Layout (dimensions are in mm)
 Sockets are used for the Microcontroller and Displays.



When mounting components – note that as there is no through plating, many component leads will require soldering on both sides of the board.
 The microcontroller and display sockets should be spaced about 1mm above the board to enable access to solder some pins to pads on the top side.
 You should check for continuity/short circuits after soldering.

Disclaimer

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COMPONENTS LIST

<u>Name</u>	<u>Value</u>	<u>Notes</u>
C1	0,1 μ F	50v
C2	0,1 μ F	50v
C3	10 μ F	25v
C4	100 μ F	25v
D1	Red LED	3mm
D2	Green LED	3mm
D3	1N914	
IC1	DS18B20	or DS18S20
IC2	PIC18F1320	
IC3	78L05	
K1	Door Switch	Connector
K2	Relay Connector	
K3	Power	Connector
LD1	SL1110	Kingbright Red CC
LD2	SL1110	0.5 inch
LD3	SL1110	High Efficiency
R1	4.7k	
R2	10k	
R3	10k	
R4	10k	
R5	510R	
R6	10k	
R7	510R	
R8	510R	
R9	510R	
R10	510R	
R11	510R	
R12	510R	
R13	510R	
R14	510R	
R15	510R	
R16	2.2K	
S1	SET/DOWN	Tactile 6mmX6mm
S2	UP	(or panel mount)
T1	2N7000	

Notes.