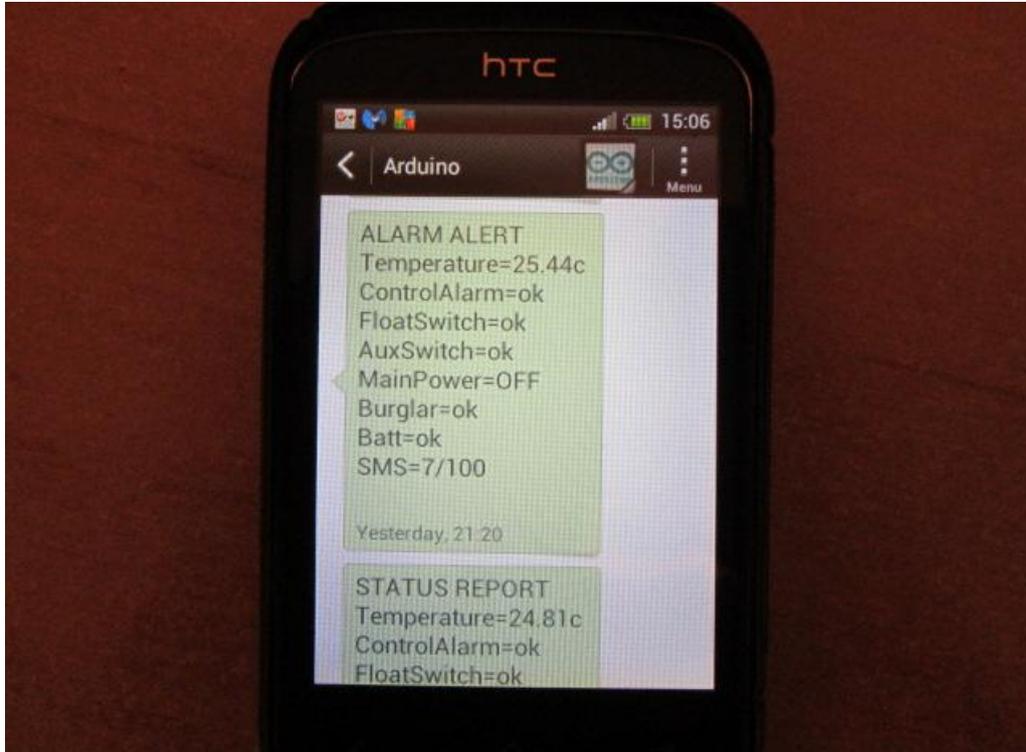


ARDUINO SMS CONTROLLER

For Aquariums, GreenHouses and similar.



The these few pages give a general view of the complete project for this diy Arduino based sms controller.

I have had mine running without problems on my tank, but must stress that it is a diy project for your development and I cannot guarantee the software and hardware design is 100% perfect

Construction

The construction method is left to the individual as you could use all stackable boards or some form of back board as I have done.

Apart from the SMS board, Arduino and PSU module there are only a few components that need soldering together.

You may also prefer to do your own pcb and mount each board on that as the stackable pins could lead to long term problems with oxidization and movement.

All parts are readily available, cheaper if you buy them online / from the far east, though some UK suppliers do have good prices if you can find them

There are three parts that must meet certain values otherwise the things might not work as expected.

The SMS board can peak at 2 amps when transmitting, so the main capacitor C1 should not be less than 1000uf 16v.

Also your main power supply / wall pack needs to be rated at 1A to meet that surge.

I have not yet tested lower current wall packs, they might work ?

Diode D2 should be a Schottky type to avoid a too large voltage drop from the battery.

Note that this design uses the Sim900 module on a Arduino form pcb, they are expensive in the UK but a lot cheaper from the Far East.

There is a cheaper Sim900A module but that is not suitable with a lot of modification.

The Report ON and EEprom Switches are only needed if you want those features.

I have just use jumper links instead of panel mounted switches.

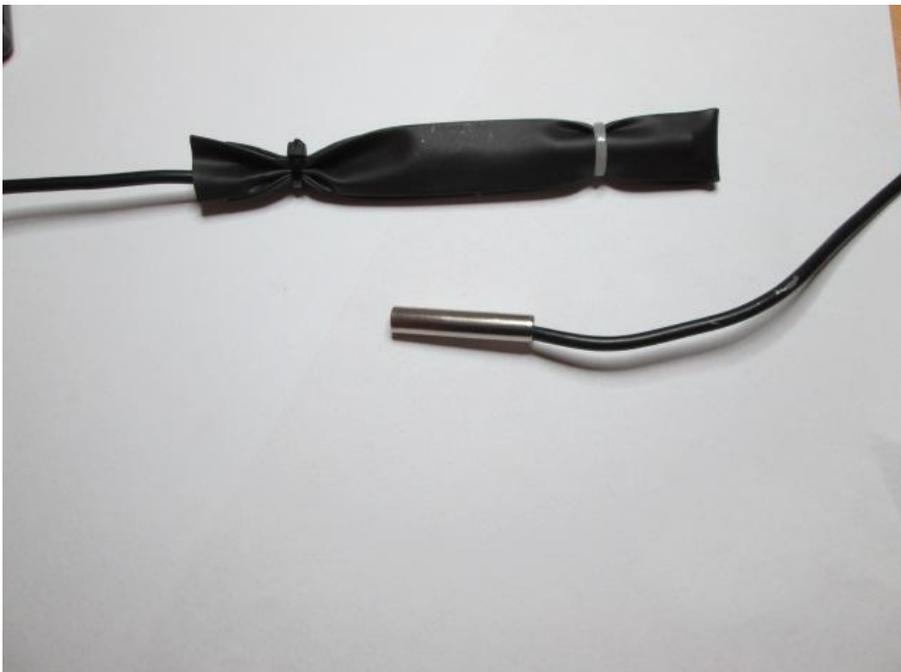
The led is only needed when the boards are stacked otherwise you could use led13.

Temperature Sensor

The Ds18B20 sensor can be bought on its own, but is much more useful to buy the ones already in a metal sleeve with a 1 or 3 mtr cable and connector.

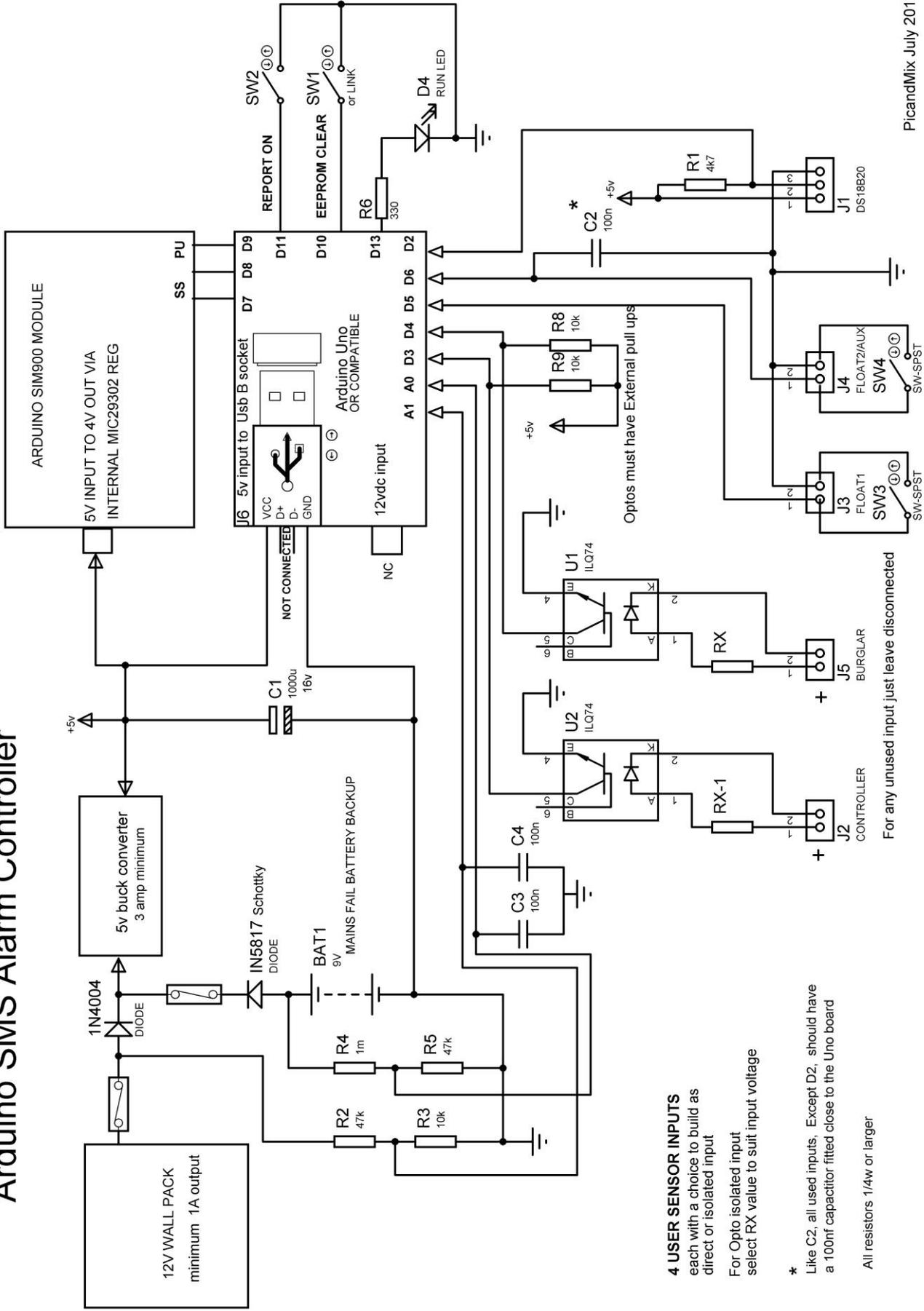
While they are said to be stainless steel, for use in a tank I always place them in a folded length of heatshrink to keep them dry.

Please note that while its suggested you fit 100nf to each input device that does not include the DS18B20 sensor, it must have the 4k7 resistor, but nothing else.



The following page shows the full circuit diagram with detailed components

Arduino SMS Alarm Controller



4 USER SENSOR INPUTS
each with a choice to build as direct or isolated input

For Opto isolated input select RX value to suit input voltage

* Like C2, all used inputs, Except D2, should have a 100nf capacitor fitted close to the Uno board

All resistors 1/4w or larger

For any unused input just leave disconnected

Optos must have External pull ups

Software.

The full .ino file is included along with the two libraries needed.

It works with both ID v1.00 and 1.50 but has only been tested on the Uno board.

You may find the code very simple and therefore quiet inefficient, but I am new to C++ programming and this is my first project .

The code has extensive comments so hopefully you can follow the program flow.

Please do read all the comments as they show all the user adjustable values and how the program is intended to operate the alarms.