

Re: Tank Depth

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Hello James,

... I would like to also be able to determine the amount remaining in the system if it isn't all pumped in the time allotted.

Now that's more luxury than you mentioned at first. Some ideas that might or might not work in your case:

- a. A gas gauge mechanism from a car. Might corrode out over time.
- b. Sound transducers (old piezos, whatever) fastened to the side of the barrel at equal distances. You could use a uC such as the MSP430, a version with enough ADC muxes to excite and then scan them sequentially. This could also calculate the approximate contents and report in gallons, liters, jars, buckets, number of remaining toilet flushes or whatever is preferred.
- c. PVC pipe with end cap, must be absolutely water tight. Copper pipe in the middle that has an OD almost as large as the ID of the PVC pipe. Connect oscillator circuit to it. This forms a capacitor where the capacitance changes with the water level. This in turn changes the frequency but it won't be linear. Follow with a little F/V detection and you'd have a nice analog readout. Add a comparator that shuts off the pump below a chosen threshold.
- d. Stainless contacts inside, equidistant, with the lowest being the level where you want to pump to cut out. Connect to a stack of comparators a la LM339 and then to a row of LED. The lowest one deactivates the pump when the contact goes open.

Of course, some of this depends on your water and other things.

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Regards, Joerg

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