

# LIQUID SENSING AND CONTROL

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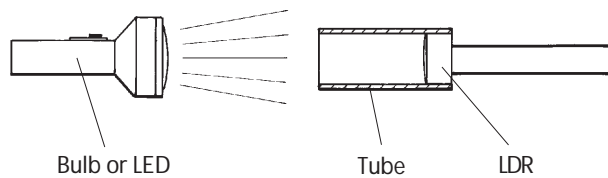
To control the level of a liquid in a container, you need to think about all of the stages in the system. This means the input, process and output.

It is important that each stage matches the others.

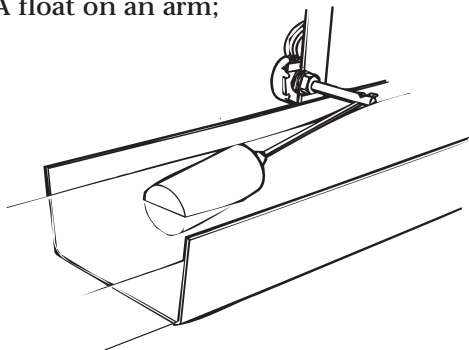
There are three sensors that you could use:

## INPUT: SELECTING A SENSOR

1. A light beam or IR beam;

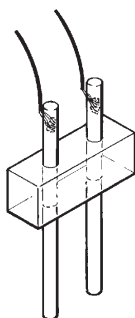


2. A float on an arm;



As the level changes the potentiometer rotates which changes the output voltage.

3. Electrical contacts.

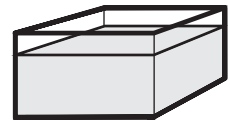


Two rods held in an electrical insulator

The one you select depends on the situation.



closed container



open container

Which sensor would be the most useful in each case?

It might depend on:

- The amount of space.
- How clean the environment is.

Do you need to:

- Measure the level?
- Know when it reaches a certain level?
- Know if it is above or below a set level?

**Input: The rest of the input stage**

Make sure you consider all the factors before you select the sensor.

When you have selected the sensor, you need to consider the rest of the input stage.

The light sensor needs to be used as part of a potential divider. The potentiometer can be used on its own.

**Output**

You now need to think carefully about what output you need.

Do you need to:

- Control the level of the liquid?
- Know when it has reached a certain level?
- Switch off a pump or close a valve when the liquid reaches a certain level?
- Have an indicator that tells you if the level is too low or too high?
- Measure and display the liquid level?

The answers to these questions will also determine which **process** you use.