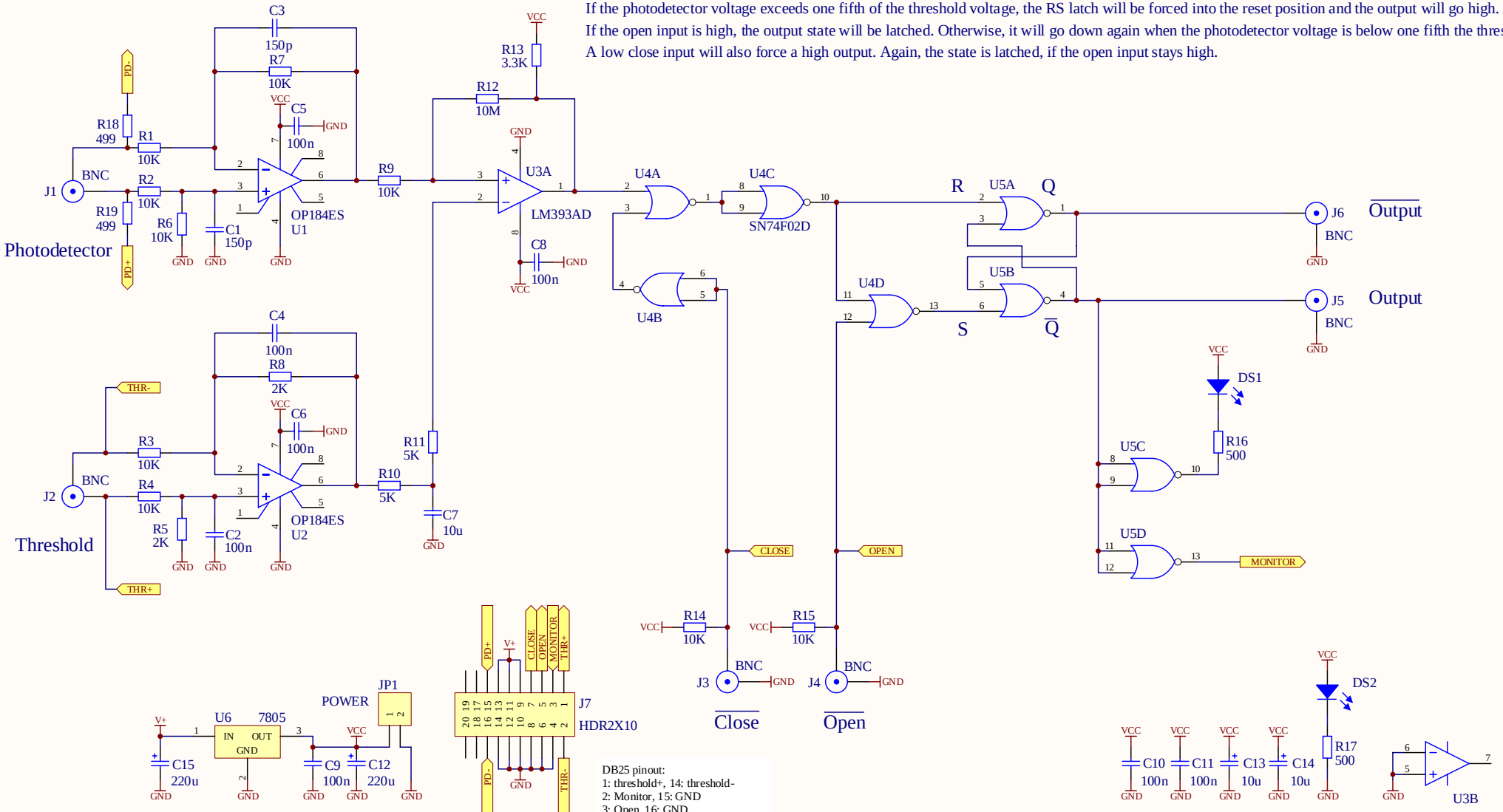
Theory of operations:

If the photodetector voltage exceeds one fifth of the threshold voltage, the RS latch will be forced into the reset position and the output will go high.
If the open input is high, the output state will be latched. Otherwise, it will go down again when the photodetector voltage is below one fifth the threshold.
A low close input will also force a high output. Again, the state is latched, if the open input stays high.



Comments:

Use TTL for 74F02 and not CMOS.
Connect GND to AC ground; Drive 'close' and 'open' through opto-isolated open collector stages; Sense 'monitor' thorugh an opto-isolator; isolate photodetector from table.

Title: **Shutter Logic**		
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File: C:\User\..\ShutterLogicSheet1.SchDoc		Drawn By: Daniel Sigg