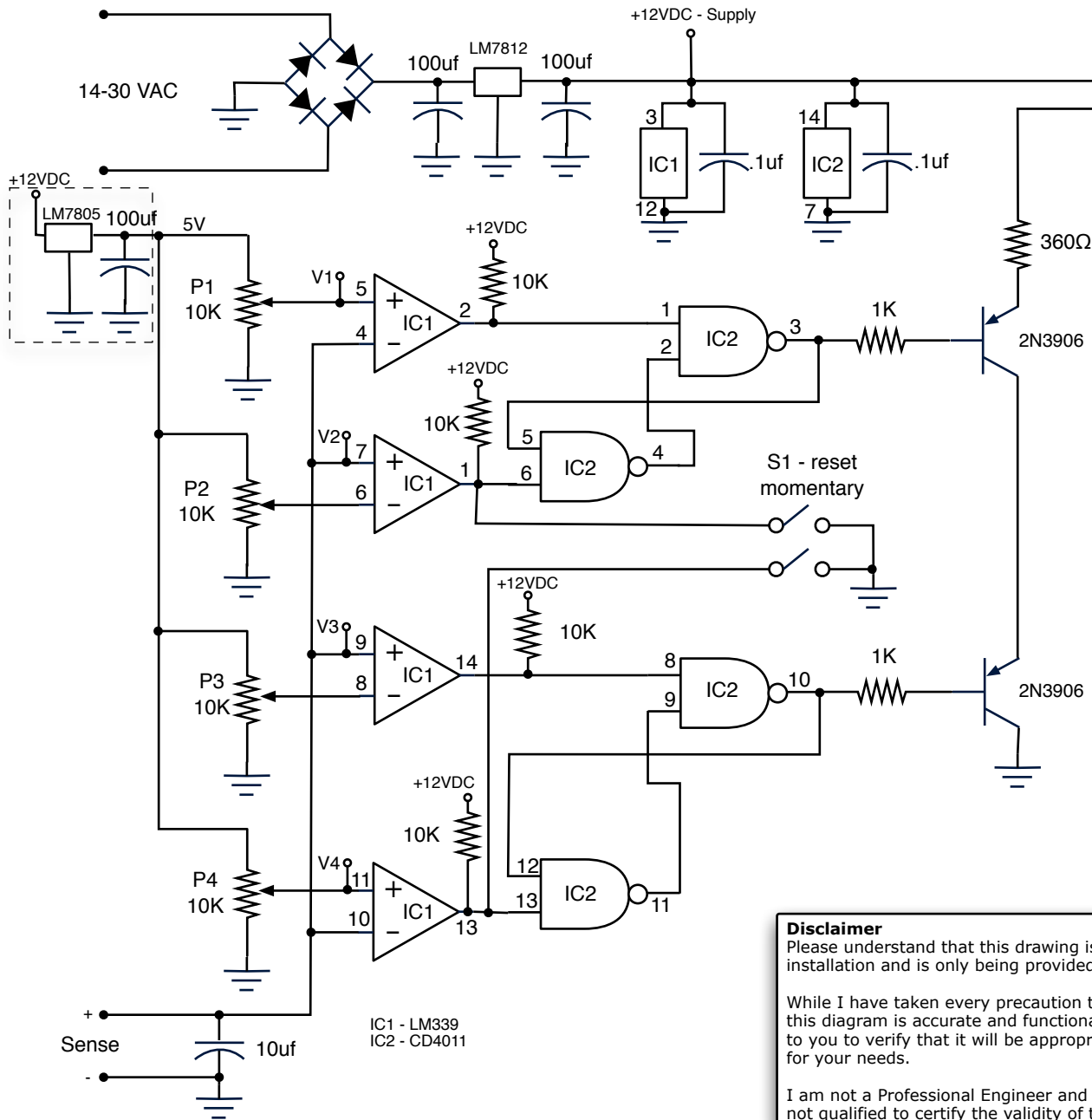


Over-Under Voltage Cut-off Circuit



V1 - Maximum voltage -- set using P1. When the sensed voltage is at or above this voltage, the relay is turned off.

V2 - Maximum voltage hysteresis -- set using P2. When the sensed voltage is at or below this voltage, the relay is turned back on. This prevents the relay from oscillating or buzzing when maximum voltage is reached.

V3 - Minimum voltage -- set using P3. When the sensed voltage is at or below this voltage, the relay is turned off. This can be used for discharging batteries and also as a safety measure to shut off the relay if the sense lines should be disconnected.

V4 - Minimum voltage hysteresis -- set using P4. When the sensed voltage is at or above this level the relay is turned back on.

S1 is to force the relay to turn on if the sensed voltage is between V1 and V2 or between V3 and V4.

Voltage settings used when top balancing CALB batteries...

V1 - 3.60v (max charging voltage specified by CALB)

V2 - 3.40v

V3 - 2.50v

V4 - 3.00v

This circuit can be used for to cut-off either a charging or discharging circuit -- the settings will be the same.

The advantage of having both in one circuit is the added protection of shutting off the main relay when the detected voltage is out of range. For example if a sense lead falls off while charging.

Disclaimer

Please understand that this drawing is for my own installation and is only being provided for reference.

While I have taken every precaution to make sure this diagram is accurate and functional -- it is up to you to verify that it will be appropriate and safe for your needs.

I am not a Professional Engineer and therefore am not qualified to certify the validity of this diagram.

Over Under Voltage Cut-off
for battery charging / discharging

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