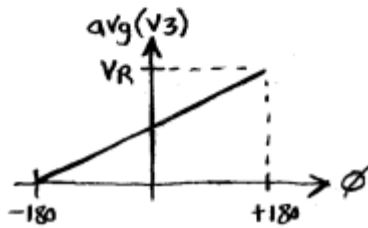
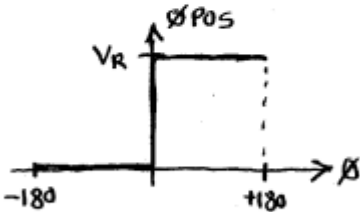
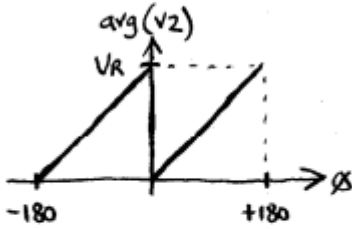
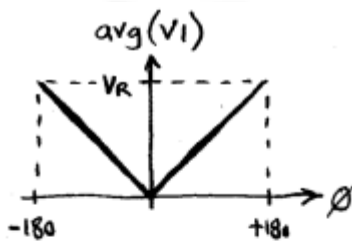
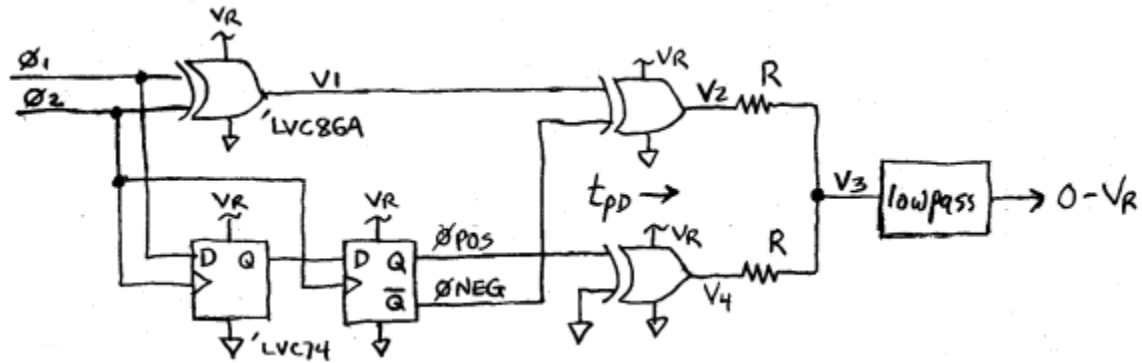


Signed Phase Measurement

G. Barrere – Exality Corporation



Provides linear voltage 0 to V_R for phase = -180° to $+180^\circ$.

Phase voltage is continuous and accurate through 0 regardless of flip flop timing: near 0 the average voltage of V_1 ($\text{avg}(V_1)$) is appx 0V so V_2 and V_4 will be in opposite states regardless of ϕ_{POS} / ϕ_{NEG} switching. XOR gate on V_4 ensures simultaneous switching at V_2 and V_4 to balance V_3 .