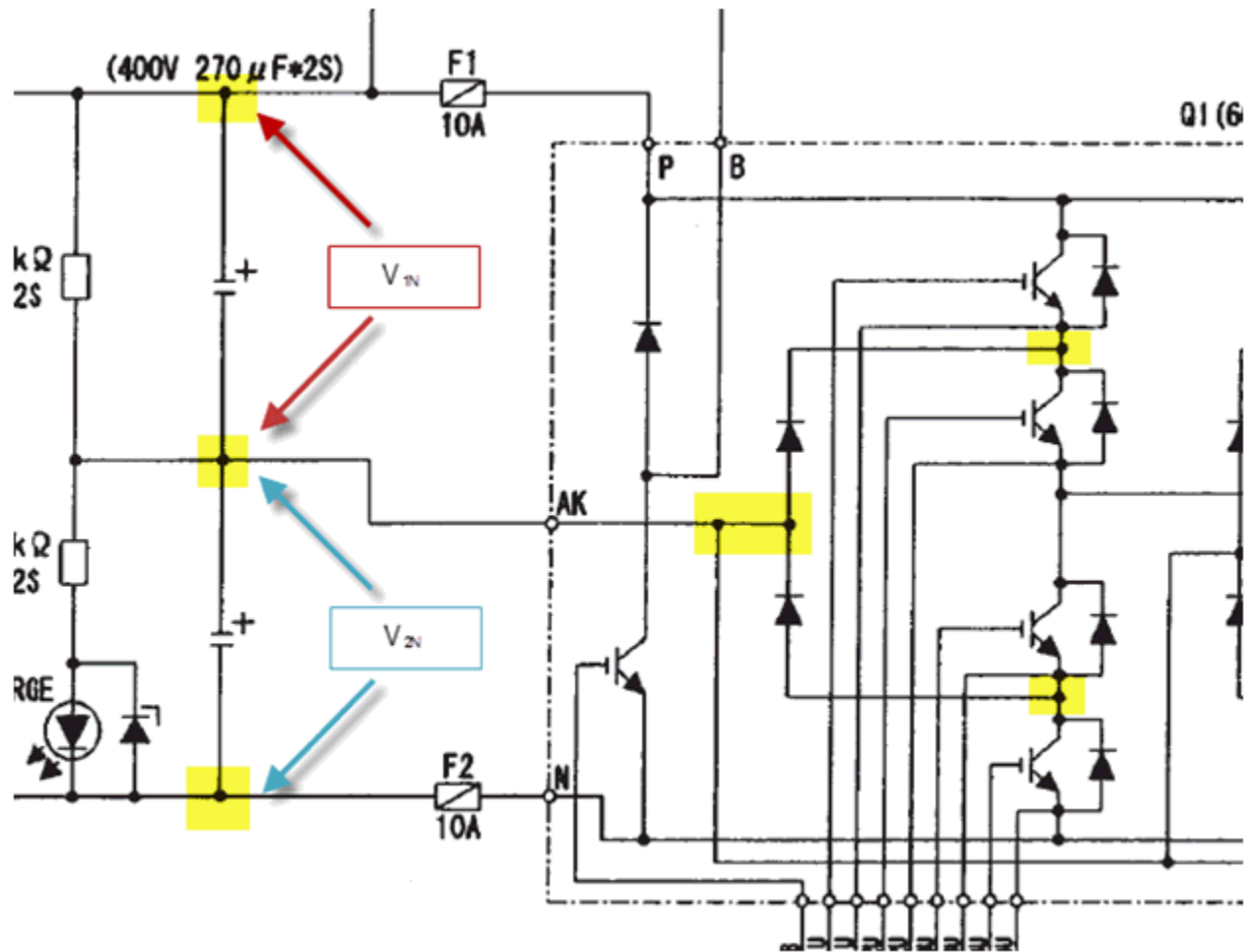


Since this G7 drives are 3 Level Inverters, it utilizes the voltage in between the DC bus capacitors. This voltage is also used on the Collector and the emitter end of the primary output transistors and the secondary output transistors. If the potential on the collector and emitter end is beyond a threshold, the transistor will never operate. It is, therefore, necessary to monitor this voltage and alarm if the voltage difference between the capacitors is beyond a threshold, the alarm is activated. It is important to look at the converse statement, in this case, what would occur if VCF was not a fault. In this converse case, a low voltage condition would occur between the Collector and emitter of the transistor when the drive should be firing this transistor. We would create a low half pulse portion of the PWM and proper movement of the motor, or cogging, may not continue.



These VCF conditions can occur for 3 main reasons:

1) Noise

a. The two voltages (E1N and E2N) are prone to noise as well as the signal represented on the gate driver card. Please be sure to Ground your drives properly.

2) Carrier Frequency

a. If the carrier frequency is significantly low, less than 1 kHz, the voltage drop during acceleration may cause VCF.

3) Incoming Voltage

a. Similar to PF, if the DC Bus ripple is large, the potential between V1N and V2N will cause the VCF alarm.