

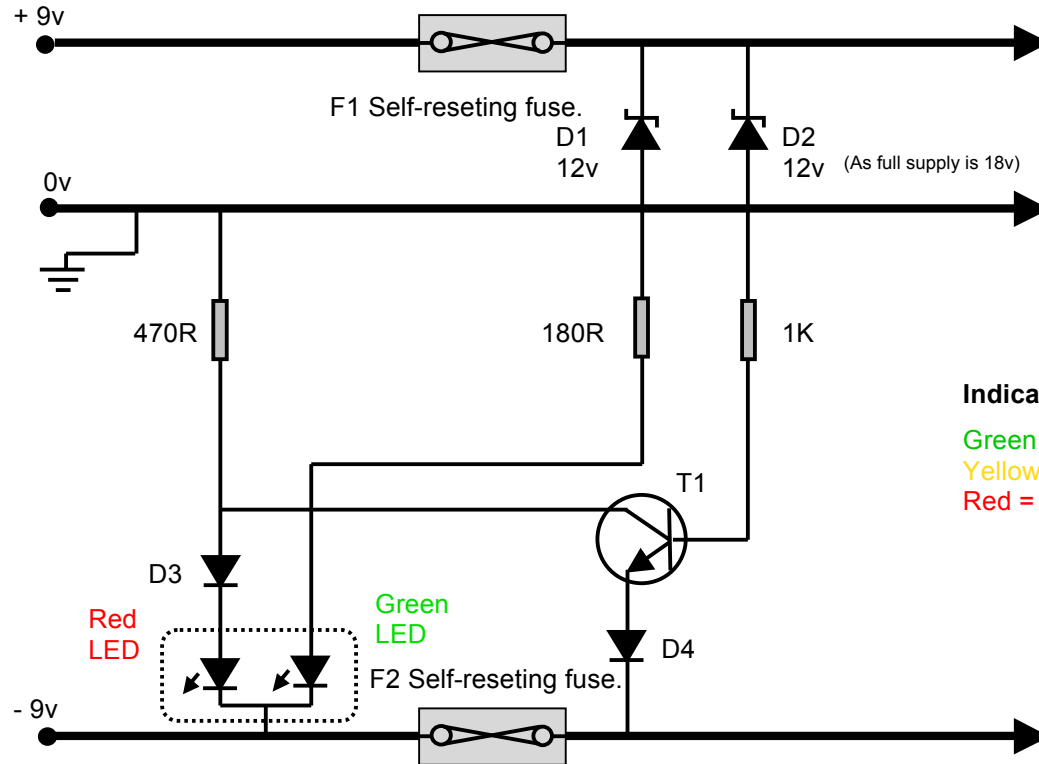
FUSE CONDITION INDICATOR FOR SPLIT RAIL DC SUPPLY

What Is Desired To Be Achieved

1. Protection in the event of a short circuit with auto reset.
2. Indication of the state of two supply rails.

Benefits Of This Circuit

1. A single indicator for both supply rails.
2. States indicated by different colours.
3. Modest cost.



Indicated Colours

Green = Both supplies good.

Yellow = -9v interrupted

Red = +9v or both supplies interrupted.

How The Circuit Works

1. **Fuses Have Not Operated** The full 18v supply flows through D1 lighting the Green LED and through D2 turning off the Red LED.
2. **F1 Operated** This is the converse of condition 1 and the Red LED is lit through D3. The Green LED has no power.
3. **F2 Operated** The Green & Red LEDs are lit through D1 & D3. T1 is switched off because the -9v rail is now at 0v and reversed D4. Indicator looks yellow.
4. **F1 & F2 Operated** Only the Red LED is lit through D3.

Sources Of Components

1. **Resettable Fuses** May also be known as Circuit Breakers. Available in many sizes. Most NOT for mains. Eg Maplin ~£1.50ea.
2. **LED** Any three terminal bi-colour LED. Avoid a two terminal "back-to-back" type as these cannot indicate red and green at same time.
3. **Transistor** T1 may be any standard low current NPN type eg BC108.
4. **Diodes** May be any small signal silicon type eg 100mA