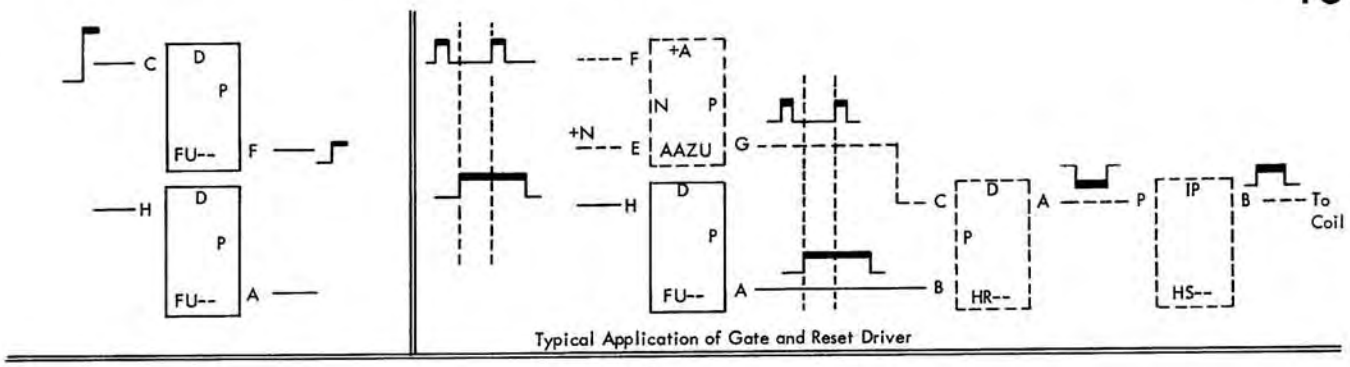
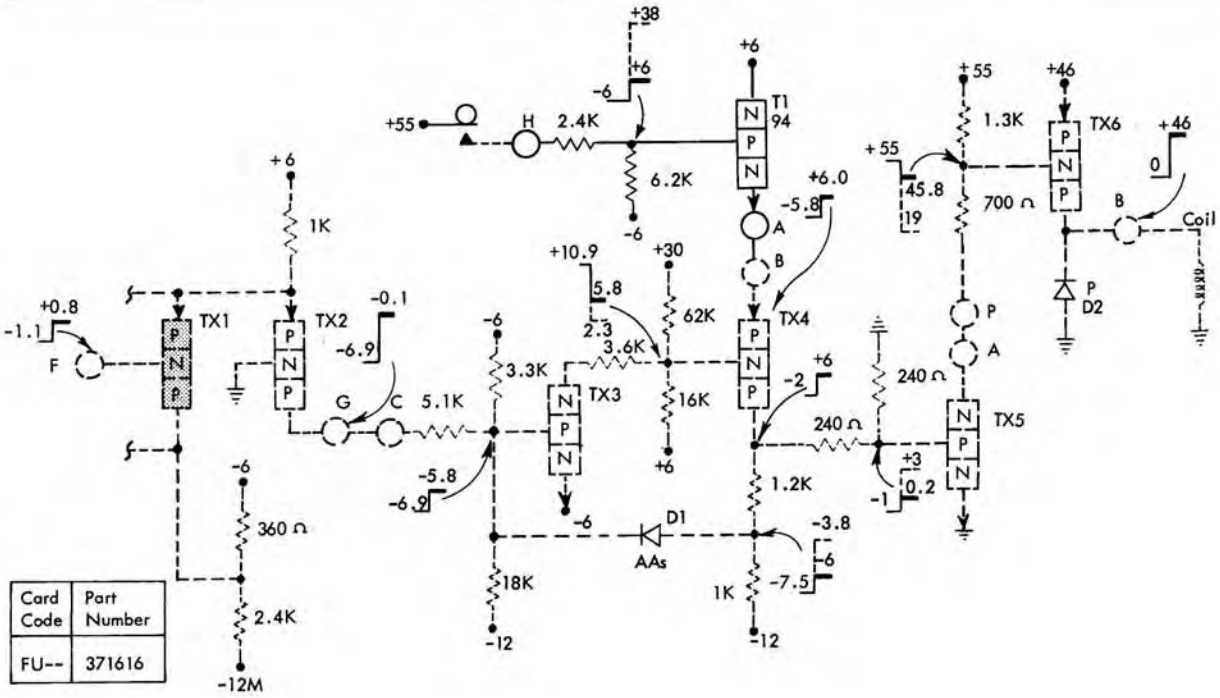


Typical Application of Gate and Reset Driver



Card Code	Part Number
FU--	371616

Current Mode, Coil Driver Gate and Reset Driver

The FU - - card is designed to work with the HR - - coil driver latch circuit. It accepts a +55v input and provides a +6v output to gate the HR - - card (see logic application above). The FU - - card is presented here as a part of a multicard coil driver circuit so over-all function and purpose are better visualized. Driver HR - - develops a negative output when it recognizes a coincidence of plus inputs. Once picked, it latches for the duration of the gate signal fed to its input B. Note that its output pulse length is equal to the remainder of the gate signal fed to input B. Thus, the function of the FU - - driver is to gate HR - - and to drop it out when required. The HS - - card is a power inverter which, when impulsed by HR - -, develops a +46v output and provides enough current to pick a coil.

Circuit Description

As shown, TX1 is forward-biased and TX2 is reverse-biased. Tx3, TX4, and TX5 are reverse-biased because divider currents have established their base levels as shown. T1 and TX6 are reverse-biased by their base return potential. The output of TX6 is 0v and the coil is not picked.

When the CB closes, the base divider of T1 attempts to rise to +38v, but its collector-to-base is forward-biased and the base clamps to +6v. The emitter of T1 follows its base upward so the emitter of TX4 is now gated to receive an input to its base. When the input to TX1 rises, TX2 is forward-biased and TX1 is cut off. Current flow from −12v through 18K, 5.1K, and TX2 to +6v raises the base potential of TX3 and it conducts. Current flow from −6v through TX3, 3.6K and 62K to +30v attempts to lower the base of TX4 to +2.3v which forward-biases TX4. Current flow from −12v through 1K, 1.2K, TX4 and T1 to +6v raises the base level of TX5 and it conducts. The drop across the 1K resistor attempts to raise the anode of D1 to −3.8v which forward-biases D1. Current flows from −12v through 18K, D1, 1.2K, TX4 and T1 to +6v. Thus, the base of TX3 remains forward-biased after TX2 is cut off because TX3 is now latched by D1. This latch is maintained until the +55v CB source is removed. Current flow through TX6 to +55v lowers the base level of TX6 and it conducts. Current flows through the coil and TX6 to +46v and the coil picks. D2 absorbs the coil voltage on dropout.

The circuit is dropped out by opening the CB which lowers the base and emitter potential of T1 to −6v which drops out TX4 and T1. With TX4 cut off, D1, TX3, TX5, and TX6 cut off.