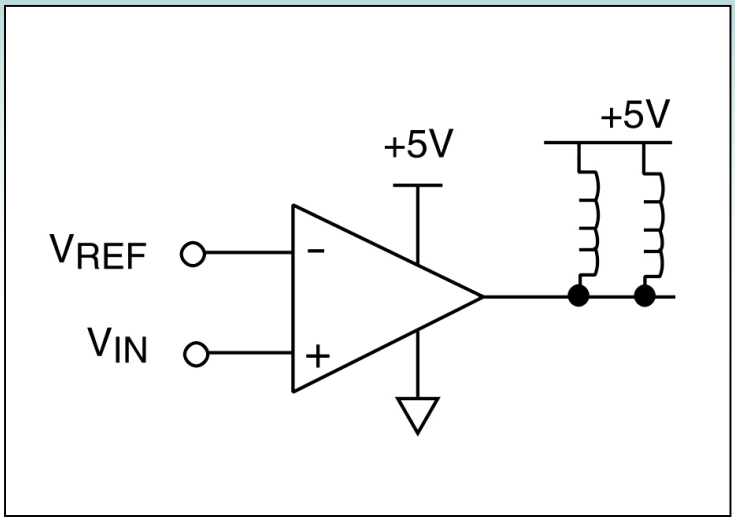
Category: Comparator & Detector **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. cd_23005.0

Multiple Relay Drive



Description

This circuit is a classic voltage comparator function, with a comparator reference voltage input VREF and an input voltage level VIN. VIN is compared to VREF and the output goes low whenever VIN exceeds VREF, turning on the load. The output of the comparator can easily drive multiple loads, which can include, in this example, two separate relays. The loading can easily be replace with a combination of other types of loads such as, for example, an inductor plus a capacitor and a resistor in addition to a control gate and a LED indicator. Note that this circuit works with either open-drain or push-pull types of comparator output. If the inductive kick generated by the relay coil is excessive, a reverse biased diode across the relay coil can be added to limit it. There are also relays with diode built-in available on the market. In this case a pull-up resistor is not required even with an open drain output comparator. Alternatively, push-pull outputs can actively pull-up the output to shutdown the load. In either case an output resistor is not needed and its associated power consumption is eliminated.

Recommended Components

½ ALD2301 or ½ ALD2303 for open-drain outputs
½ ALD2302 for push-pull outputs
½ ALD2321 for high precision applications

Other Related Circuit Ideas

Schematic no. cd_23004.0 Zero Crossing Detector