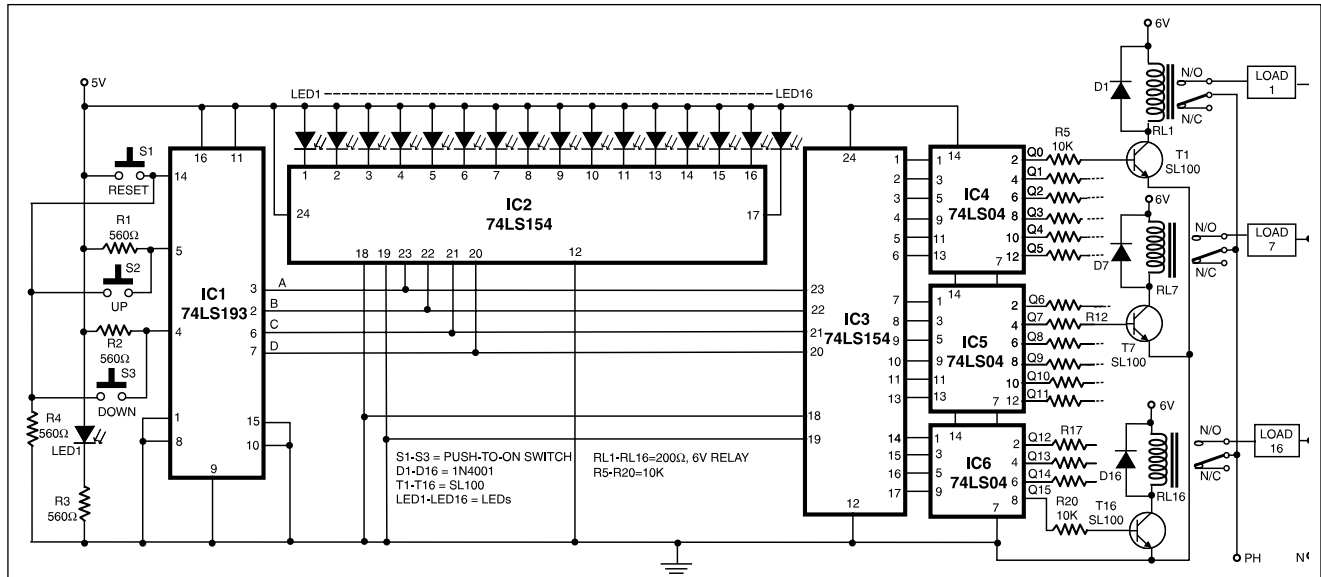


DIGITAL SWITCHING SYSTEM

This circuit can control any one out of 16 devices with the help of two push-to-on switches. An up/down

Before using the circuit, press switch S1 to reset the circuit. Now the circuit is ready to receive the input clock. By press-

ing on the appropriate triac and the corresponding LED to indicate the selected channel.



counter acts as a master-controller for the system. A visual indication in the form of LEDs is also available.

IC1 (74LS193) is a presetable up/down counter. IC2 and IC3 (74LS154) (1 of 16 decoder/demultiplexer) perform different functions, i.e. IC2 is used to indicate the channel number while IC3 switches on the selected channel.

ing switch S2 once, the counter advances by one count. Thus, each pressing of switch S2 enables the counter to advance by one count. Likewise, by pressing switch S3 the counter counts downwards.

The counter provides BCD output. This BCD output is used as address input for IC2 and IC3 to switch one (desired channel) out of sixteen channels by turn-

The outputs of IC3 are passed through inverter gates (IC4 through IC6) because IC3 provides negative going pulses while for driving the triacs we need positive-going pulses. The high output of inverter gates turn on the npn transistors to drive the triacs. Diodes connected in series with triac gates serve to provide unidirectional current for the gate-drive.