

SOLID STATE RELAYS

"SOLID STATE" MEANS NO MOVING PARTS. A "RELAY" IS A TYPE OF SWITCH WHEREBY ELECTRICITY IS USED TO SWITCH ELECTRICITY (TURN IT OFF & ON).

A SOLID STATE RELAY (SSR) IS ONE OF MANY TYPES OF RELAYS.

ITS ADVANTAGES: - FAST
 - RELIABLE
 - EASY TO USE

DISADVANTAGES: - EXPENSIVE (\$5-\$15 SURPLUS)
 - USUALLY CAN SWITCH AC (ALTERNATING CURRENT)

IN THIS CLASS WE WILL USE SSR'S TO TURN ON HEAVY DUTY AC STUFF (LIGHT BULBS, MOTORS, PICKLES ETC.) WITH A PUNY LITTLE CURRENT (SIGNAL) SUCH AS A PULSE FROM A 555. ANYTIME YOU CAN TURN AN LED OFF & ON YOU CAN TURN A SSR, AND ∴ MANY OTHER THINGS OFF AND ON. HERE'S WHY: THE SSR'S WE'RE USING HAVE 4 PINS. ATTACHED TO THE FIRST 2 PINS (LABELLED 3-32VDC, AND CALLED "CONTROL" OR "INPUT") IS AN LED, ENCASED INSIDE A HUNK OF PLASTIC ALONG WITH EVERYTHING ELSE. WHEN YOU LIGHT UP THE LED, ITS LIGHT ACTIVATES A LIGHT SENSITIVE DEVICE CALLED A TRIAC. WHEN THE TRIAC IS ON, IT IS CAPABLE OF HANDLING SEVERAL AMPS OF 120 VOLT AC (HOUSEHOLD CURRENT) SINCE IT IS LIGHT ACTIVATED, THE CHIP IS "OPTICALLY ISOLATED" FROM THE HIGH VOLTAGE. THIS MEANS THAT NO AC CAN GET IN YOUR CHIP & BLOW IT UP, UNLESS YOU SPILL YOUR COFFEE ALL OVER YOUR CIRCUIT.

HERE'S AN EASY WAY TO HOOK IT UP (BE CAREFUL!):

