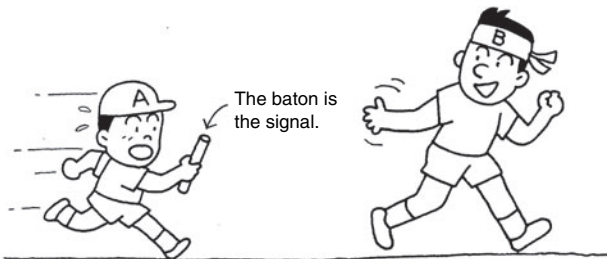


## Overview of General-purpose Relays

### ■ What Are Relays?

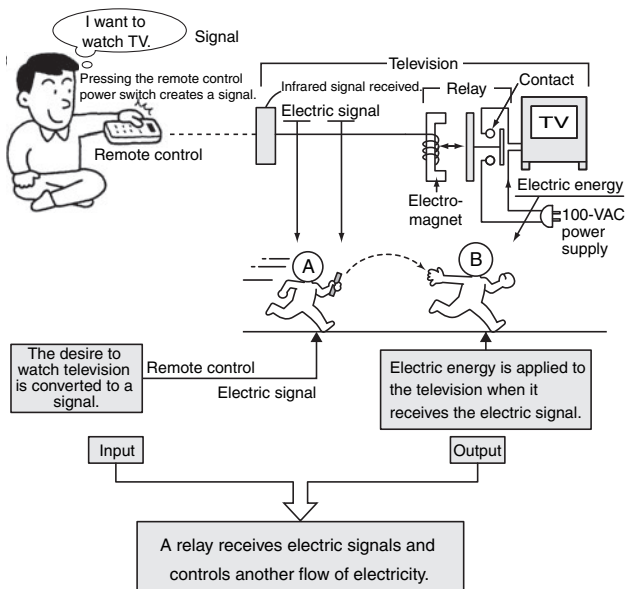
To get an idea of what relays are, think of a children's athletic carnival.



Little A holds on tightly to the baton and passes it to the Big B. This is a relay.

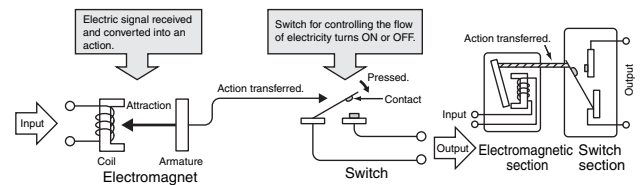
Now let's look at a more technical example.

Think of turning on a television with a remote control.



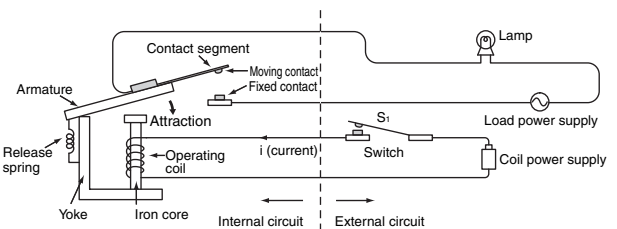
### ■ Structure and Principle of Relays

A relay consists of an electromagnet that receives an electric signal and converts it to a mechanical action and a switch that opens and closes the electric circuit.



### Schematic Diagram Showing the Principle of Relays

#### General Relays



#### Principle of Operation

In this example, we will turn ON a lamp using switch  $S_1$  and a relay.

1. Press  $S_1$  to turn it ON.
2. Current  $i$  flows to the operating coil and magnetizes the core.
3. The armature is drawn to the core by the electromagnetic force.
4. When the armature reaches the core, the moving and fixed contacts make contact and the lamp lights.
5. When  $S_1$  is released to turn it OFF, current no longer flows to the operating coil, the electromagnetic force no longer exists, and the armature returns to its original position by the force of the release spring.
6. When the armature has returned to its original state, the contacts become separated and the lamp turns OFF.