

# RELAYS : GENERAL TECHNICAL INFORMATION

## BASICALLY - What is an electric relay ?

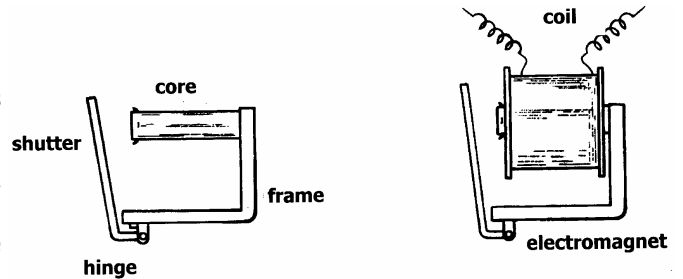
### A/ THE MAGNETIC FORCE :

In a relay, the magnetic force is obtained with circulation of current around an iron core.

This small core being magnetized only during the passage of the current, it is possible to attract or release an iron part while sending or shutting off the current around this core. A « domesticated » magnetic force is thus obtained.

On this basis, to build the electromagnet which will be included in a relay, we must create a usable articulation. We will thus assemble a core in a part forming half of a hinge (frame) in order to attract towards the core the other half of this hinge.

At least, to actuate this assembly, we put a coil around the core.



### B/ WHAT IS A RELAY :

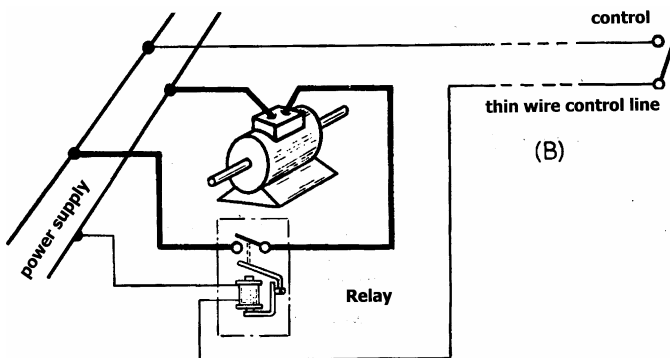
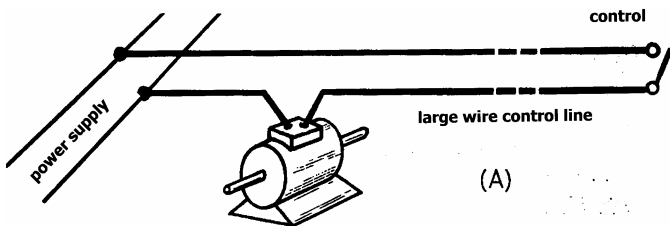
Now that we have at our disposal a driving force, let us see how to draw part from it, particularly in the transport of the electrical current.

For the transport of the current, the diameter of the wire varies according to the intensity which is transported. Moreover, there are two kinds of current (direct and alternative) and these currents can have different voltages.

Therefore, if we wish to actuate an engine remotely, we must have a control line with an enough large wire to feed it and plan the cut of this current at the control point. If it is a large engine and that the distance is long, the length and the diameter of the wire can be considerable (see diagram A).

We thus have to very limit the length of this control line by causing the cut of current very close to the engine.

If we take again the electromagnet and that we hang a switch on the shutter, we see that it is then possible to actuate this switch by sending current in the coil. **We have just built a relay whose control will be made at the selected point.** (see diagram B).



In practice, the switch (or switchgear) is assembled directly on the shutter, in the form of pins provided with metal flakes which come into contact with a part of the same metal fixed on the frame.

**The relay is thus an equipment which can, starting from a low power (only the one necessary to call the shutter) control -or relay- a much higher power.**

Being understood that the coil of the relay is independant of the contacts, the currents of control and execution can be completely different, thus with a flashlight battery (for example) it is possible to control, via a relay, the operation of an engine..

**The control of a relay requiring only a very low power, it is thus possible to actuate with it very large machines. And that is one of its major qualities.**

You can thus imagine the infinite number of possible uses of the relays !

## RELAYS : GENERAL TECHNICAL INFORMATION

### THE DIFFERENT TYPES OF RELAYS SOLD BY TEC AUTOMATISMES

In our catalogue, you will find TEC and MTI relays of the following types :

<b><u>TYPE OF RELAYS</u></b>	<b><u>AVAILABLE MODELS</u></b>	<b><u>CORRESPONDING SOCKETS</u></b>
⇒ INSTANTANEOUS RELAYS	2, 3, 4, 5 contacts and 1 solid state model	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ LOW LEVEL RELAYS	4 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ LATCHING RELAYS	2, 3 and 4 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ TIMER RELAYS	1, 2, 3 and 4 contacts and timer modules	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ FLASHING RELAYS	1,2 and 4 contacts and 2 solid state models	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ IMPULSE RELAYS	1, 2 and 4 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ SELECTOR RELAYS	2 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ MULTIFONCTION RELAYS	1 and 2 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>
⇒ VOLTAGE SENSOR RELAYS	2, 3 and 4 contacts	<ul style="list-style-type: none"> <li>• Front wiring with screw terminals</li> <li>• Front wiring with clips</li> <li>• Rear wiring with clips or to be soldered</li> <li>• Mounting on printed circuit board</li> </ul>