

85.36 - Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, sockets, lamp-holders and other connectors, junction boxes), for a voltage not exceeding 1,000 volts; connectors for optical fibres, optical fibre bundles or cables.

8536.10 - Fuses

8536.20 - Automatic circuit breakers

8536.30 - Other apparatus for protecting electrical circuits

- Relays :

8536.41 -- For a voltage not exceeding 60 V

8536.49 -- Other

8536.50 - Other switches

- Lamp-holders, plugs and sockets :

8536.61 -- Lamp-holders

8536.69 -- Other

8536.70 - Connectors for optical fibres, optical fibre bundles or cables

8536.90 - Other apparatus

This heading covers electrical apparatus for a voltage not exceeding 1,000 volts generally used for dwellings or industrial equipment. However, **heading 85.35** covers the apparatus described below for a voltage exceeding 1,000 volts. This heading also covers connectors for optical fibres, optical fibre bundles or cables.

The heading includes :

(I) APPARATUS FOR SWITCHING ELECTRICAL CIRCUITS

These apparatus consist essentially of devices for making or breaking one or more circuits in which they are connected, or for switching from one circuit to another; they may be known as single pole, double pole, triple pole, etc., according to the number of switch circuits incorporated. This group also includes change-over switches and relays.

- (A) The **switches** of this heading include small switches for use in radio apparatus, electrical instruments, etc., switches of a kind used in domestic electrical wiring (e.g., tumbler switches, lever operated switches, rotary switches, pendant switches, push button switches) and switches for industrial application (such as, limit switches, cam switches, microswitches and proximity switches).

Switches operated by the opening or closing of a door and automatic thermo-electric switches (starters) for starting fluorescent lamps are classified here.

Other examples classified here include electronic AC switches consisting of optically coupled input and output circuits (insulated thyristor AC switches); electronic switches, including temperature protected electronic switches, consisting of a transistor and a logic chip (chip-on-chip technology) for a voltage not exceeding 1,000 volts; and electro-mechanical snap-action switches for a current not exceeding 11 amps (toggle switch).

Electronic switches which operate by contactless means, using semiconductor components (e.g., for transistors, thyristors, integrated circuits).

Door locks which themselves incorporate a switch are **excluded** (heading 83.01).

- (B) **Change-over switches** are used to connect one or more lines to one or more other lines.

In the simplest type one line is connected to a central point which, by means of a moving arm, can be connected to any one of the other lines. More complicated apparatus of this type includes starting switches for electric motors, and control gear for electric vehicles. These often include not only the switching gear, but also a number of resistors to be switched in or out of the circuit as required (see Explanatory Note to heading 85.33).

The heading also covers complicated switching-units used in radio or television sets, etc.

- (C) **Relays** are electrical devices by means of which the circuit is automatically controlled by a change in the same or another circuit. They are used, for example, in telecommunication apparatus, road or rail signalling apparatus, for the control or protection of machine-tools, etc.

The various types can be distinguished by, for example :

- (1) **The electrical means of control used** : electromagnetic relays, permanent magnet relays, thermo-electric relays, induction relays, electro-static relays, photoelectric relays, electronic relays, etc.
- (2) **The predetermined conditions on which they operate** : maximum current relays, maximum or minimum voltage relays, differential relays, fast acting cut-out relays, time delay relays, etc.

Contactors, which are also considered as relays, are devices for making and breaking electrical circuits, which automatically reset without a mechanical locking device or hand operation. They are generally operated and maintained in an active state by an electric current.

(II) APPARATUS FOR PROTECTING ELECTRICAL CIRCUITS

The heading includes **fuses**. These normally consist of a device in which a length of fuse wire is incorporated (or can be incorporated) so that, when they are inserted in the circuit, the fuse wire will melt and so break the circuit if the current increases dangerously. They vary considerably in design according to the type of circuit and current for which they are intended. Cartridge fuses consist of a tube containing the fuse wire in contact with metal caps at the ends; other fuses consist of a base or socket (for incorporation in the line), and a connecting piece (which may be screwed into the socket or pushed in between spring contacts) on which the fuse wire is mounted. The heading covers the complete fuse, with or without wire. Sockets and connecting pieces presented separately are also classified here **except** those wholly of insulating material (apart from any minor components of metal incorporated during moulding solely for purposes of assembly) (**heading 85.47**). Fuse wire is classified according to its constituent material, but short lengths of fuse wire with loops or other means of connection so as to be ready for use remain in this heading.

The heading includes other devices for preventing overload of circuits (e.g., electro-magnetic devices which automatically break the circuit when the current exceeds a certain value).

The heading also **excludes** constant voltage transformers (**heading 85.04**) and automatic voltage regulators (**heading 90.32**).

(III) APPARATUS FOR MAKING CONNECTIONS TO OR IN ELECTRICAL CIRCUITS

This apparatus is used to connect together the various parts of an electrical circuit. It includes :

- (A) **Plugs, sockets and other contacts** for connecting a movable lead or apparatus to an installation which is usually fixed. This category includes :
 - (1) **Plugs and sockets** (including those for connecting two movable leads). A plug may have one or more pins or side contacts which match corresponding holes or contacts in the socket. The rim or one of the pins may be used for earthing purposes.
 - (2) **Sliding contacts** such as brushes for motors and current-collectors for electric traction vehicles, lifting appliances, etc. (overhead or third rail collectors, etc.) **other than** such articles of "carbon" or graphite (**heading 85.45**). They may consist of block metal, wire cloth or laminated strip, and remain in this heading even when coated with an **external** lubricating layer of graphite.
 - (3) **Lamp or valve sockets and lamp-holders**. Certain lamp-holders are in the form of candles for mounting in candelabra or are designed to form a bracket against a wall; these remain classified here **provided** their main function is to act as lamp-holders.

Plugs and sockets, etc., assembled with a length of wire are **excluded** (**heading 85.44**).

- (B) **Other connectors, terminals, terminal strips, etc.** These include small squares of insulating material fitted with electrical connectors (dominoes), terminals which are metal parts intended for the reception of conductors, and small metal parts designed to be fitted on the end of electrical wiring to facilitate electrical connection (spade terminals, crocodile clips, etc.).

Terminal strips consist of strips of insulating material fitted with a number of metal terminals or connectors to which electrical wiring can be fixed. The heading also covers tag strips or panels; these consist of a number of metal tags set in insulating material so that electrical wires can be soldered to them. Tag strips are used in radio or other electrical apparatus.

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- (C) **Junction boxes.** These consist of boxes fitted internally with terminals or other devices for connecting together electrical wires. Boxes not fitted with means of electrical connection or provisions therefor, are **excluded** and are classified according to their constituent material.

(IV) CONNECTORS FOR OPTICAL FIBRES, OPTICAL FIBRE BUNDLES OR CABLES

For the purpose of heading 85.36, "connectors for optical fibres, optical fibre bundles or cables" means connectors that simply mechanically align optical fibres end to end in a digital line system. They perform no other function, such as the amplification, regeneration or modification of a signal. Connectors for optical fibres, without cables, remain classified in this heading but those connectors for optical fibres with cables are **excluded** (heading 85.44 or 90.01).

PARTS

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), parts of the apparatus of this heading are classified in heading 85.38.

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The heading also **excludes** :

- (a) Non-linear voltage resistors (varistors/VDR) used as voltage controllers (heading 85.33).
- (b) Assemblies (**other than** simple switch assemblies) of the apparatus mentioned above (heading 85.37).
- (c) Semiconductor diodes used as voltage controllers (heading 85.41).