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SIGNAL DEVICE PROTECTOR

The present invention relates to a procedure and a device for protecting the signal devices of an elevator.

The signal devices of an elevator are protected by covering them with a piece of plastic film or paper, attached by means of tape. Sometimes signal devices are protected by attaching a piece of plasticine on them. Boxes made of plywood may also be used to protect signal devices. However, these solutions have certain drawbacks. A plywood case does not protect the push button itself, or a closed case blocks access to the buttons themselves. A piece of plastic film or paper does not protect the signal devices from physical damage and scratching and it does not always stay in position, though such protection does permit access to the push buttons.

The object of the present invention is to eliminate the drawbacks referred to above. The signal device protector of the invention is characterized by what is presented in the characterization part of claim 1. Other embodiments of the invention are characterized by what is presented in the other claims and the device of the invention is characterized by what is presented in the characterization part of claim 6.

Advantages of the solution of the invention:

- protects the signal devices from dust, litter, blows and paint
- transparent (buttons can be seen through the protector)
- buttons can be pressed through the protector
- flexible part directly over the buttons, achieved by making a fly in the signal device protector
- fixed in position by friction, mounting claws, clasps or other fixing elements

- made of hard plastic or flexible plastic that yields in the inward direction when required
- the design can be applied in the case of planar buttons as well as buttons protruding from a plane
- easy to remove, signal devices look like new ones
- can be used multiple times
- usable also as protection against vandalism at other times
- protects the electronics of the signal device.

In the following, the invention is described by the aid of a few examples of its embodiments by referring to the attached drawings, in which

Fig. 1a and 1b present a signal device protector for two push-buttons in lateral view and in front view,
 Fig. 2a and 2b present a signal device protector for one push-button in lateral view and in front view, and
 Fig. 3a and 3b present a signal device protector for a push-button and a display.

Fig. 1a shows the protector frame, i.e. the signal device protector 1 in front view. The signal device protector 1 is a rectangular part made of acrylic plastic and shaped to fit onto the signal device. It has oblique surfaces at its bottom end (at the end where the screw 8 is located) and sides, a lower bevel 3 and side bevels 4. The upper end of the signal device protector 1 is also an oblique surface, upper bevel 5, which is longer and gentler than the bevels at the other edges. The oblique surfaces have extensions perpendicular to the mounting surface, these extensions having a height of 1 cm. The surfaces perpendicular to the mounting surface form end edges 6 and side edges 11, whereby the signal device protector 1 is fastened onto the signal device using friction, mounting claws, clasps or other fixing elements. The signal device protector 1 is manufactured to tolerances tight enough to keep it in position on the signal device. The signal de-

vices can also be flush-mounted so that they do not protrude from the mounting surface. In this case the signal device protector 1 can be of a lower construction, consisting only of a rectangular part with bevelled mounting edges about 1 cm high. The signal device protector 1 is provided with two identical flexible controlling elements or flies 7, which can be pressed down towards the push buttons 10 to activate the latter when the signal device protector 1 has been mounted. This fly 7 has been produced by making a protruding part in the signal device protector and partly cutting it out, leaving it connected to the signal device protector 1 by one edge, the holding edge of the fly being the one facing towards the upper part of the signal device protector 1. When a pressure is applied to this fly, it bends inwards and presses the push button under it, thus activating it. There may be a number of flies 7, depending on the number of push buttons, and they may be of different sizes, or the protector may be implemented without any flies at all, as in the case of signal device protectors for floor indicators. Instead of a fly 7, it is also possible to make the flexible controlling element 7 thinner in the area over the push buttons 10. The fly 7 is smaller in size than the push button 10 (as shown in the figures), so the edges of the push button are covered by the signal device protector 1. The fly can also have a square shape. The signal device protector 1 also forms an air gap between itself and the device to be protected, thus providing ventilation to remove any humidity. The signal device protector 1 can be implemented in different colours for visibility.

Fig. 1b presents a signal device protector 1 in side view. Seen from the left, it has a perpendicular edge 6 which continues horizontally through about 1 cm and rises as a gentle upper bevel 5 through about 2 cm, continuing as a smooth horizontal surface to the other end, where there is a lower bevel 3 extending through about 1 cm in

the downward direction, finally continuing as an edge 6 perpendicular to the mounting surface. Edges 6 and 11 are provided with small bevels 9. The flies 7 are in a horizontal position, so they cannot be seen in a lateral view. Signal device protectors 1 like this can also be used during installation to provide protection against vandalism and other influences and they can be stored as spare parts with maintenance personnel and caretakers, who can thus replace the signal device protector 1 when necessary.

Fig. 2a and 2b present a signal device protector 35 for a single push button 37 in front view and in side view. The signal device protector 35 has only one fly 12, placed near the lower edge of the signal device protector. The signal device protector 35 has also oblique surfaces, an upper bevel 13, side bevels 14 and a lower bevel 15 with a protuberance 16 for a screw 38, as well as end edges 17 and side edges 18 with small bevels 19 in them. The fly 38 only covers the middle area of the push button 37, so that the edges of the push button remain covered by the signal device protector 35.

Fig. 3a and 3b present a signal device protector 36 for push buttons and displays, in front view and in side view. This signal device protector 36 has a longer and narrower structure than those presented above. It has an upper bevel 20 and side bevels 21 as well as end edges 23 and side edges with small bevels 25. The signal device protector 36 has in its front side three flies 26 covering push buttons 29, and two protuberances 27 covering displays 30. The signal device protector 36 fits the shape of the displays 30 as illustrated by Fig. 3b. A screw 28 is provided in the lower part, i.e. in the lower bevel 22 of the signal device protector 36. The screw 28 is used to secure the signal device protector 36 in position.

It is obvious to a person skilled in the art that the invention is not restricted to the examples described above, but that the embodiment of the invention may instead be varied in the scope of the claims presented below. The signal device protector may be of a different design and it may have several flaps or no flaps at all. It can also be made of various materials, such as fairly stiff rubber etc. The bevels may have more acute or more obtuse bevel angles depending on the design and size of the signal devices. The signal device protectors can also be manufactured in different sizes and designs. The fixing elements may also consist of sticker or glue attachment.

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CLAIMS

1. Device for protecting the signal devices of an elevator, designed to be fitted onto the signal device, **characterized** in that the device comprises a frame (1) so shaped that it can be fitted onto a signal device, and that the frame (1) is held in position by the agency of friction and that the frame (1) is provided with at least one controlling element (7,38,26), by means of which the functions of the signal device can be utilized.
2. Device for protecting the signal devices of an elevator according to claim 1, said signal device comprising at least one push button (10), **characterized** in that the frame (1) has a thinner or flexible controlling element (7) formed in the area over the push button (10), so that pressing on the controlling element (7) activates the push button (10).
3. Device for protecting the signal devices of an elevator according to claim 2, **characterized** in that the controlling element (7) in the frame (1) consists of a thinned part which yields when pressed on.
4. Device for protecting the signal devices of an elevator according to claim 3, **characterized** in that the frame (1) is at least partially transparent.
5. Device for protecting the signal devices of an elevator according to claim 4, **characterized** in that the frame (1) has an upper bevel (5), side bevels (4) and a more gentle-sloped lower bevel (3) at the lower end of the frame and edges (6) and (11) at the ends and sides of the frame, said edges being perpendicular to the mounting surface, and the frame (1) has in its front part at least one controlling element (7) which has been partly cut out from the frame (1) and is flexible in the direction of pressure applied on it.



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6. Device for protecting the signal devices of an elevator according to any one of the preceding claims, **characterized** in that it uses fixing elements such as friction, mounting claws, clasps or other fixing elements.

7. Procedure for protecting and operating the signal devices of an elevator, **characterized** in that a signal device protector (1) is mounted on the signal devices and the signal device is operated by means of controlling elements (7) comprised in the signal device protector (1).

8. Procedure for protecting signal devices according to claim 7, **characterized** in that the controlling element (7) is formed in the shape of a projection by cutting the controlling element (7) out from the frame (1) on three sides, so that the controlling element (7) can be moved towards a push button (10).

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