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Electrical installation unitDescription

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The invention relates to an electrical installation unit in accordance with the precharacterizing clause of Claim 1. The invention can be used for concealed installation units.

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Electrical installation units in electrical installation engineering generally comprise a functional insert - for example a switch insert, a plug socket insert, a communication appliance insert etc. - which can be installed in a concealed socket in a wall, a central cover for this functional insert and a frame (cover frame) which covers, in particular, the mounting element (the support frame) for the functional insert. The central cover and the frame are produced in various designs, while the functional inserts can be used universally for various designs.

The functional insert and the central cover are fastened to one another using screws or using clamp straps. The central cover mounted on the functional insert presses onto the underlaid or interposed frame, which is supported against the wall. For the spacing between the central cover and the functional insert, it is necessary to take into account tolerances, resulting from inconstancies during production of the individual parts or from subsequent wallpapering over the functional insert's mounting element. These inconstancies in spacing are compensated for by means of the screw or the screw fastening or the clamp strap. These mount the central cover on the fixed functional insert variably - within certain limits.

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A disadvantage in this context is that the tolerance compensation means that the spacing between the central cover and the functional insert does not remain constant but varies within the inconstancies in
5 spacing. In addition, when a screw is used, a drawback is that this screw is visible from the outside.

The invention is based on the object of specifying an installation unit of the type mentioned in the
10 introduction in which the spacing between the central cover and the functional insert is always the same, irrespective of inconstancies in spacing.

The invention achieves this object by the features
15 specified in the characterizing part of Claim 1, in conjunction with the features of the precharacterizing clause.

The advantages which can be achieved using the
20 invention are, in particular, that the spacing between the central cover and the functional insert is constant irrespective of the tolerance compensation required, and hence of inconstancies in spacing, i.e. the central cover is always in the same position with respect to
25 the functional insert. This spacing is standardized in plug sockets, for example, and is easy to adhere to using the proposed installation unit. The tolerances, for example resulting from inconstancies during production of the individual parts or from subsequent
30 wallpapering over the functional insert's mounting element, are compensated for without screws visible from the outside. The central cover covers the functional insert completely.

35 Further advantages can be found in the description below.

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Advantageous refinements of the invention are characterized in the dependent claims.

5 The invention is explained below with the aid of the illustrative embodiments shown in the drawing, in which:

Figure 1 shows a section through an installation unit in a first position,

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Figure 2 shows a section through an installation unit in a second position.

Figure 1 shows a section through an installation unit in a first position. It shows an electrical installation unit, installed in the concealed socket in a wall 8, comprising a functional insert 3 having a mounting element 7 (support frame) seated on the wall 8, a central cover 1 and an outer frame 6. The plate-like central cover 1 has at least two mutually opposite front bent portions 9, which point towards the wall and have latching hooks 2 integrally formed on them. These latching hooks 2 engage with undercuts 4 which are integrally formed in the manner of a collar on the section of the functional insert 3 which protrudes from the wall.

The central cover 1 has at least two mutually opposite spring elements 5 pointing towards the wall 8, preferably four integrally injection-moulded plastic springs. These spring elements 5 press the frame 6 against the wall 8. The spring elements 5 are designed such that they can produce a prescribed degree, at least 2 mm, of tolerance compensation. Appropriate shaping of the spring elements 5 enables a greater level of tolerance compensation to the desired extent.

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To install the installation unit, the electrical connections are first made by anchoring the functional insert 3 in the concealed socket in the wall 8 using its mounting element. Next, the frame 6 is positioned.

5 The central cover 1 and the functional insert 3 are then connected to one another by snapping the latching hooks 2 into the undercuts 4. For removal, the latching hooks 2 are designed such that they can be released by applying a particular force in the opposite direction

10 to that for installation.

Figure 2 shows a section through an installation unit in a second position. The individual components of the structure are again numbered as described for Figure 1.

15 Whereas, in the embodiment shown in Figure 1, the mounting element 7 rests on the wall 8, the mounting element 7 and the wall 8 are flush in the embodiment shown in Figure 2. Since the frame 6 rests against the wall 8 in both embodiments, the central cover 1 is

20 somewhat lower in the frame 6 in the embodiment shown in Figure 2. The two figures show the range of possible and permitted inconstancies in spacing and show the tolerance compensation.

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Patent Claims

1. Electrical installation unit having a functional
insert (3), a central cover (1) and a frame (6),
5 where mounting the central cover (1) on the
functional unit (3) results in the interposed
frame (6) being mounted, characterized in that the
functional insert (3) is provided with at least
two opposite undercuts (4) and the central cover
10 (1) is provided with at least two latching hooks
(2) corresponding to said undercuts, the result
being a releasable latch connection between the
functional insert (3) and the central cover (1),
and in that the central cover (1) has at least two
15 mutually opposite spring elements (5) which press
against the frame (6).
2. Installation unit according to Claim 1,
characterized in that the spring elements (5) are
20 in the form of integrally injection-moulded
plastic springs.