

ELECTRICAL SWITCH

DESCRIPTION

The present invention relates to an electrical switch capable of closing or switching electrical contacts, of the type comprising a button, movable in relation to a main body, and a switching mechanism, housed within the main body and configured in such a way as to control the opening and closing of an electrical contact as a result of the movement of the button.

The invention relates in particular to an electrical switch with axial control, hereinafter sometimes simply referred to as an electrical switch or switch.

In the technical field of civil and industrial electrical installations, electro-mechanical type switches are commonly used for closing or switching electrical contacts, e.g. for switching lighting points on or off.

In one of their most common configurations, switches include a switching mechanism, actuatable by a manual pressure action, which moves a movable anchor. The movable anchor comprises a flexible conductive foil that is taken from a first position, wherein an electrical contact is open, to a second position, wherein the contact is closed.

The interface by which a user interacts with the switching mechanism of switches generally comprises a button.

In a switching mechanism for an electrical switch with axial control, the switching occurs by the axial movement of the button, which, by means of appropriate returns, causes the rotation of the contact-holder anchor. An example of such a switching mechanism is disclosed in the European Patent EP2672498 and the International Patent Application WO2021130720A1.

Generally, the switching mechanisms of switches with axial controls provide for an element, between the button and the movable contact-holder anchor, that transforms the axial movement of the button into a rotary movement of the anchor.

For example, EP2187414A1 discloses a switch comprising a push-button movable between a rest position and an inserted position and elastic return elements suitable for returning the push-button to the rest position.

Generally, a compression switching mechanism is used, which, although widespread, is still susceptible to be improved in terms of reliability, cost-effectiveness, ease of implementation, and the like.

The button actuation stroke of a switch with axial control may be too high and require a certain amount of force to actuate the button, giving a feeling of heaviness to the entire mechanism and causing an unpleasant actuation for the user.

Furthermore, a typical problem of a switch with axial control is that it can be actuated by pressing

said button at any point. This can cause a poor feedback for a user who may sometimes be not sure whether the button for carrying out the switching has been properly pressed.

Another typical problem with switches with axial control is related to poor lighting conditions, as the button for this type of switch is usually substantially flat, and therefore does not provide a tactile feedback so as to distinguish it from other elements placed next to it.

The technical problem underlying the present invention is therefore to make available an electrical switch that is structurally and functionally designed to solve, at least partially, one or more of the drawbacks reported with reference to the aforementioned prior art.

In the context of this problem, an object of the present invention is to provide an electrical switch that is particularly reliable and easy to be operated by the user.

Another object of the present invention is to provide an electrical switch that improves the ergonomics and reliability by which the user can actuate the switching mechanism.

A further object of the present invention is to provide an electrical switch that offers a tactile feedback such that a user can easily verify whether he or she has properly pressed the button of such switch.

Another object of the present invention is to provide an electrical switch having a switching mechanism requiring a small actuation force.

A further object of the present invention is to provide an electrical switch that is easily detectable in poor lighting conditions.

This problem is solved and these objects are achieved by the invention by means of an electrical switch according to one or more of the attached claims.

The electrical switch with axial control that is the object of the invention preferably includes a main body, a button, a switching mechanism, and a covering device.

Preferably, the button is connected to the main body in a movable manner between a rest position and an operating position. Advantageously, said movement occurs along an axial direction substantially perpendicular to an upper surface of the button.

Advantageously, the switching mechanism is housed inside the main body. Preferably, the switching mechanism is configured in such a way as to control the opening or closing of an electrical contact when the button is moved from the rest to the operating position.

Advantageously, the electrical switch comprises a return mechanism suitable for returning the button from the operating position to the rest position.

Preferably, the covering device comprises a body and a coupling system. Advantageously, the coupling system comprises coupling elements suitable for connecting the covering device to the button.

Preferably, the body of the covering device comprises an actuation portion and a support portion which are opposite to each other.

Advantageously, said support portion comprises abutment elements suitable for abutting the main body of the switch when a pressure is applied to the support portion, so that said pressure does not cause a movement of the button into the operating position.

Advantageously, said actuation portion is shaped in such a way that, when the button is in the rest position, said actuation portion protrudes to a greater extent than the support portion along the axial direction and in the opposite direction with respect to the button. Preferably, the button may be moved from the rest position to the operating position by means of a pressure exerted on the actuation portion towards the main body of the switch.

Therefore, the button may only be moved from the rest position to the operating position by means of a pressure applied to the actuation portion of the covering device, whereas a pressure applied to the support portion of the covering device does not cause a movement of the button from the rest position to the operating position.

The switch that is the object of the invention thus provides a tactile feedback that is substantially similar to that of a rocker button. This allows a user to easily check whether the button has been properly pressed. Moreover, since the actuation portion is protruding, a user may easily be able to spot it even in poor lighting conditions.

Preferably, in the rest position, the button is more distant in the axial direction from the main body of the switch than when it is in the operating position.

Advantageously, the main body extends along a longitudinal direction, a transverse direction and said axial direction. The axial direction is advantageously perpendicular to said longitudinal direction and transverse direction. Advantageously, the main body is substantially box-shaped.

Preferably, the body of the covering device comprises a lower surface that faces the upper surface of the button. Advantageously, said body comprises a framework extending along the perimeter of said lower surface towards the button. Preferably, said framework has a lower edge contained in a first plane. Advantageously, said first plane is substantially parallel, when the button is in the rest position, to a second plane identified by the longitudinal direction and transverse direction.

Advantageously, when the button moves from the rest position to the operating position, the actuation portion moves closer to the main body of the switch, so that there is a certain angle between the first plane and the second plane. Once the pressure is stopped, the button returns to the rest position wherein the first and second planes are advantageously parallel to each other.

The electrical switch may advantageously be configured as an electrical module that can be connected to a support frame for wall-mountable electrical modules. Said support frame preferably

comprises a plurality of insertion slots to which respective electrical modules can be connected. An electrical module can advantageously be identified by an electrical apparatus such as, for example, a button, a switch, a push-button, a switching device, a diverter, a surge protector, a light source, a voltage regulator, a timer, an actuator, an electrical socket, a telephone and/or data transmission socket, or a coaxial socket, whether or not provided with wireless technology, or by a so-called hole cover. It is possible that there are electrical modules connected to said support frame and placed next to the electrical switch that is the object of the invention, which is also connected to said support frame. As in the rest position said first and second planes are advantageously parallel to each other, the body of the covering device of the electrical switch is advantageously aligned with a possible body of the covering device of another electrical module connected to the same support frame to which the electrical switch object of the invention is connected. In poor visibility conditions, a user will be able to easily locate the electrical switch that is the object of the invention thanks to the tactile feedback provided by the actuation portion of said switch, which protrudes in an axial direction.

Preferably, when the button moves from the rest position to the operating position, the support portion undergoes a slight movement towards the main body. Advantageously, such movement is interrupted when the abutment elements abut on said main body. Advantageously, said movement is much smaller than the movement of the operating portion when the button moves from the rest position to the operating position.

Preferably, the framework comprises two longitudinal components opposite to each other, a first transverse component and a second transverse component opposite to each other.

Preferably, the actuation portion is comprised in a first half of the body of the covering device and the support portion is comprised in a second half of the body of the covering device. Advantageously, the first half extends from the first transverse component towards a centre of the body of the covering device and the second half extends from the second transverse component towards the centre of the body of the covering device. Said first and second halves are advantageously opposite to each other.

Preferably, the first transverse component has a greater extension than the second transverse component. Said extension is understood to be along the axial direction when the button is in the rest position.

Preferably, the covering device is integrally connected to the button, so that a pressure applied to the covering device results in a corresponding pressure applied to the button. Advantageously, a movement of the covering device due to such pressure leads to a corresponding movement of the button.

When no pressure is applied to the covering device, the button remains in the rest position. Advantageously, the button in the rest position does not interact with the switching mechanism. Preferably, the button in the operating position interacts with the switching mechanism. Once the pressure on the covering device is stopped, the button tends to return to its rest position due to the return mechanism. Examples of a switching mechanism and a return mechanism, both for an electrical switch with axial control, are advantageously disclosed in the European Patent EP2672498 and International Patent Application WO2021130720A1.

Advantageously, the body of the covering device comprises an outer surface. Advantageously, the body of the covering device comprises an upper surface and a front surface. Preferably, the outer surface comprises the upper surface and the front surface. Preferably, the upper surface has a curved shape in the actuation portion. Advantageously, said upper surface has a substantially plane shape in the support portion. Advantageously, the front surface is comprised in the first transverse component.

Preferably, the main body of the electrical switch comprises fastening portions arranged for connecting the electrical switch to a wall-mountable support frame. Advantageously, when the switch is mounted on the wall, the actuation portion faces downwards. This enhances the ergonomics of the switch, as it makes it easier for a user to apply a pressure to the covering device and thus to the button if the actuation portion faces downwards.

Preferably, the coupling elements of the coupling system are positioned near a perimeter of the lower surface so as to be opposite to each other. Preferably, each coupling element is shaped so as to allow coupling with a respective connecting element of the button.

It is thereby possible to obtain a particularly reliable connection between the covering device and the button. Moreover, this type of connection allows to easily remove the covering device from the button.

In a preferred embodiment, the coupling elements are placed close to the longitudinal components of the framework. Advantageously, said coupling elements extend from the lower surface of the covering device body. Preferably, said coupling elements may be inserted into respective connecting elements of the button. Advantageously, there are two coupling elements placed in the actuation portion and opposite to each other.

Preferably, a connecting element can protrude from the framework, which can be inserted into a respective groove of the button.

Examples of connection between the covering device and button that can be used for the switch that is the object of the invention are disclosed in the Italian Patent Application number 102020000032282.

Preferably, the body of the covering device comprises a housing suitable for housing a signalling unit. Advantageously, said signalling unit may receive a light beam from a light source. Preferably, said light source is placed in the main body of the switch.

The presence of a signalling unit makes it possible to more easily identify the position of the switch in poor lighting conditions.

Advantageously, the housing is delimited by the first transverse component and the two longitudinal components of the framework. Preferably, the housing has a greater extension in the axial direction near the first transverse component of the framework.

Preferably, the light source may be inserted in a central opening of the button. Advantageously, said light source comprises a LED.

Advantageously, the signalling unit may comprise coupling elements of the coupling system.

This makes it advantageously possible to replace the signalling unit with another signalling unit having a different type of coupling elements. This makes it possible to connect the covering device on which the other signalling unit is mounted to a button having receiving elements compatible with said coupling elements of a different type.

Preferably, the signalling unit comprises a light guide and an illuminable element. Advantageously, the light guide is suitable for directing the light beam towards the illuminable element. Preferably, the illuminable element is placed on the outer surface of the body of the covering device.

Once the illuminable element receives the light beam, it lights up and thus allows to guide a user towards the electrical switch in poor lighting conditions.

Preferably the illuminable element is placed in the actuation portion. This allows to direct the light beam towards that portion, making it even easier for the user to find said actuation portion.

Advantageously, the light guide comprises a guide body and deflecting elements. The guide body is advantageously in contact with the lower surface of the body of the covering device. Advantageously, the guide body is glued or connected by interference to the covering device. Preferably, the guide body is at least partially transparent. Advantageously, the deflecting elements are suitable for deflecting the light beam towards the illuminable element. In a preferred embodiment, the deflecting elements protrude from the guide body along the axial direction. In another preferred embodiment, preferably, the deflecting elements are shaped as knurls. Advantageously, the deflecting elements have a curvilinear or rectilinear shape.

Preferably, additional deflecting elements may be comprised in the body of the covering device. Preferably, said additional deflecting elements protrude from the lower surface of the body of the covering device along the axial direction.

Preferably, the illuminable element is placed in the actuation portion on an upper surface or on a front surface of the body of the covering device.

If the illuminable element is placed on the upper surface, it is possible to illuminate the covering device directly, making it easier to detect it.

If the illuminable element is placed on the front surface, it is possible to illuminate the surrounding environment in a certain direction. In a preferred embodiment, when the switch is mounted on the wall, the actuation portion faces downwards. In this case, the illuminable element is advantageously placed on the first transverse component. This makes it possible to direct the light beam downwards and thus also illuminate the floor, making it easier to reach the switch.

In some embodiments, an illuminable element may be present on both the upper surface and the front surface of the body of the covering device. The advantages of both solutions are thereby integrated.

In some embodiments, the illuminable element may advantageously be positioned on a side and/or rear surface of the body of the covering device. Preferably, the second transverse component comprises the rear surface. Advantageously, the side surface is included in the longitudinal components.

Preferably, the illuminable element is in the form of a through opening and/or as a sign.

Advantageously, the through opening is in the form of a slit. Preferably, said slit mainly extends along the transverse direction.

Preferably, the sign is in the form of a lighting device, e.g. a light bulb.

Preferably, the abutment elements of the support portion of the covering device are configured as protuberances projecting from the lower surface of the covering device. Advantageously, said protuberances are spaced apart from and opposite to each other.

The support portion thereby abuts the main body of the switch in a particularly stable manner.

The abutment elements abut the main body of the switch preferably near the abutment portions.

Preferably, the support portion of the covering device comprises a support element suitable for abutting the upper surface of the button.

The support element thereby substantially acts as a fulcrum around which the rotation of the covering device, and thus of the button attached to it, occurs due to the pressure applied to the actuation portion.

Preferably, the support element extends from the lower surface of the covering device towards the button. This makes it possible to maintain a certain distance between the lower surface of the covering device and the upper surface of the button.

Advantageously, the support element is formed as a bar. Preferably, the support element extends

mainly in the transverse direction.

Preferably, the coupling elements are suitable for removably connecting the covering device to the button. Advantageously, each coupling element may be elastically deformed. This makes it possible to easily remove the covering device, e.g. in case it needs to be replaced.

The features and advantages of the invention will become clearer from the detailed description of an embodiment shown, by way of non-limiting example, with reference to the appended drawings wherein:

figure 1 is a perspective view of the electrical switch with axial control with the button in the rest position;

figures 2, 3 and 4 are a side view, a bottom view and a perspective view of the covering device respectively;

figure 5 is a perspective view of the axially controlled electrical switch with axial control, in which the covering device is removed from said switch; and

figures 6 and 7 are respectively two embodiments of the signalling unit of the covering device.

With reference to the figures, an electrical switch with axial control is globally referred to by reference number 1.

The electrical switch with axial control 1 preferably includes a main body 2, a button 3, a switching mechanism, a return mechanism and a covering device 4.

Advantageously, the main body 2 extends along a longitudinal direction X, a transverse direction Y and an axial direction Z. Advantageously, the main body 2 has a substantially box-like shape.

Preferably, the button 3 is connected to said main body 2 in a movable manner between a rest position and an operating position.

Advantageously, the switching mechanism is housed inside the main body 2. Preferably, the switching mechanism is configured in such a way as to control the opening or closing of an electrical contact when the button is moved from the rest to the operating position.

Advantageously, the return mechanism is suitable for returning the button 3 from the operating position to the rest position.

Preferably, the covering device 4 comprises a body 5 and a coupling system 6. Advantageously, the coupling system 6 being suitable for removably connecting the covering device 4 to the button 3. Preferably, the body 5 of the covering device 4 comprises a lower surface 50 facing an upper surface 30 of the button 3. Advantageously, said body 5 comprises a framework 51 extending along a perimeter P of said lower surface 50 towards the button 3. Preferably, said framework 51 has a lower edge 52 contained in a first plane A. Advantageously, said first plane A is substantially parallel, when the button 3 is in the rest position, to a second plane B identified by the longitudinal

direction X and the transverse direction Y.

Preferably, the body 5 of the covering device 4 comprises an actuation portion 41 and a support portion 42 opposite to each other.

Advantageously, said support portion 42 comprising abutment elements 43 suitable for abutting the main body 2 of the switch 1 when a pressure is applied to the support portion 42, so that said pressure does not cause the switch 3 to move to its operating position.

Advantageously, said actuation portion 41 is shaped in such a way that, when the button 3 is in the rest position, said actuation portion 41 protrudes to a greater extent than the support portion 42 along the axial direction Z and in the opposite direction to the button 3. Preferably, the button 3 may be moved from the rest position to the operating position by means of pressure applied to the actuation portion 41 towards main body 2 of the switch 1.

Therefore, the button 3 may only be moved from the rest position to the operating position by a pressure advantageously applied to the actuation portion 41 of the covering device 4. Preferably, a pressure applied to the support portion 42 of the covering device 4 does not cause a movement of the button 3 from the rest to the operating position.

Preferably, in the rest position, the button 3 is more distant in the axial direction Z from the main body 2 of switch 1 than when it is in the operating position.

Advantageously, when the button 3 is moved from the rest position to the operating position, the actuation portion 41 moves closer to the main body 2 of the switch 1, so that there is a certain angle between the first plane A and the second plane B. Once the pressure is stopped, the button 3 returns, thanks to the return mechanism, to the rest position in which the first plane A and second plane B are advantageously parallel to each other.

Preferably, during the movement of the button 3 from the rest position to the operating position, the support portion 42 undergoes a slight movement towards the main body 2. Advantageously, such movement is interrupted when the abutment elements 43 abut on said main body 2. Advantageously, said movement is much less than the movement of the operating portion 41 during the movement of the button 3 from the rest position to the operating position.

Preferably, the framework 51 comprises two longitudinal components 23 opposite to each other, a first transverse component 21 and a second transverse component 22 opposite to each other.

Preferably, the actuation portion 41 is included in a first half of the body 5 of the covering device 4 and the support portion 42 is included in a second half of the body 5 of the covering device 4. Advantageously, the first half extends from the first transverse component 21 towards a centre C of the body 5 of the covering device 4 and the second half extends from the second transverse component 22 towards the centre C of the body 5 of the covering device 4. Said first and second

halves are advantageously opposite to each other.

Preferably, the first transverse component 21 has a greater extension than the second transverse component 22. Said extension is understood to be along the axial direction Z when the button 3 is in the rest position.

Preferably, the covering device 4 is integrally connected with the button 3, so that a pressure applied to the covering device 4 results in a corresponding pressure applied to the button 3. Advantageously, a movement of the covering device 4 due to such a pressure results in a corresponding movement of the button 3.

When no pressure is applied to the covering device 4, the button 3 remains in the rest position. Advantageously, the button 3 in the rest position does not interact with the switching mechanism. Preferably, the button 3 in the operating position, interacts with the switching mechanism. Once the pressure on the covering device 4 has stopped, the button 3 tends to return to the rest position due to the return mechanism.

Advantageously, the body 5 of the covering device 4 comprises an outer surface 54. Advantageously, the body 5 of the covering device 4 comprises an upper surface 56 and a front surface 55. Preferably, the outer surface 54 comprises the upper surface 56 and the front surface 55. Preferably, the upper surface 56 has a curved shape in the actuation portion 41. Advantageously, said upper surface 56 has a substantially plane shape in the support portion 42. Advantageously, the front surface 55 is comprised in the first transverse component 21.

Preferably, the main body 2 of the electrical switch 1 comprises fastening portions 24 arranged for connecting the electrical switch 1 to a wall-mountable support frame. Advantageously, when the switch 1 is mounted on the wall, the actuation portion 41 faces downwards.

Preferably, the coupling elements 60 of the coupling system 6 are positioned near the perimeter P of the lower surface 50 so as to be opposite to each other. Advantageously, each coupling element 60 is shaped so as to allow coupling with a respective connecting element 31 of the button 3.

In the embodiment shown in the figures, the coupling elements 60 are placed near the longitudinal components 23 of the framework 51. Advantageously, said coupling elements 60 extend from the lower surface 50 of the body 5 of the covering device 4. Preferably, said coupling elements 60 can be inserted into respective connecting elements 31 of the button 3. Advantageously, there are two coupling elements 60 placed in the actuation portion 41 and opposite to each other.

Preferably, a connecting element 61 can protrude from the framework 51 and be inserted into a respective slot 32 of the button 3.

In the figures it is shown an example of a connection between the covering device 4 and the button 3, disclosed in the Italian Patent Application number 102020000032282, with particular reference

to Figures 5 to 8 of said Italian Patent Application.

Preferably, the body 5 of the covering device 4 comprises a housing 53 suitable for housing a signalling unit 7. Advantageously, said signalling unit 7 may receive a light beam from a light source. Preferably, said light source is placed in the main body 2 of the switch 1.

Advantageously, the housing 53 is delimited by the first transverse component 21 and the two longitudinal components 23 of the framework 51. Preferably, the housing 53 has a greater extension in the axial direction Z near the first transverse component 21 of the framework 51.

Preferably, the light source may be inserted in a central opening 33 of the button 3. Advantageously, said light source comprises a LED.

Advantageously, the signalling unit 7 may comprise coupling elements 60 of the coupling system 6.

In Figure 6 an embodiment of a signalling unit 7 is shown wherein two coupling elements 60 opposite to each other are integrated.

Preferably, the signalling unit 7 comprises a light guide 70 and an illuminable element 71. Advantageously, the light guide 70 is suitable for directing the light beam towards the illuminable element 71. Preferably, the illuminable element 71 is placed on the outer surface 54 of the body 5 of the covering device 4.

Preferably the illuminable element 71 is placed in the actuation portion 41.

Advantageously, the light guide 70 comprises a guide body 74 and deflecting elements 72. The guide body 74 is advantageously in contact with the lower surface 50 of the body 5 of the covering device 4. Advantageously, the guide body 74 is glued or connected by interference to the covering device 4. Preferably, the guide body 74 is at least partially transparent. Advantageously, the deflecting elements 72 are suitable for deflecting the light beam towards the illuminable element 71. Advantageously, the deflecting elements 72 have a curvilinear or rectilinear shape.

Preferably, additional deflecting elements 73 may be included in the body 5 of the covering device 4. Preferably, said additional deflecting elements 73 protrude from the lower surface 50 of the body 5 of the covering device along the axial direction Z.

In the embodiment of the signalling unit 70 shown in Figures 1, 5 and 6, the illuminable element 71 is advantageously placed in the actuation portion 41 on the upper surface 56 of the body 5 of the covering device 4. The illuminable element 71 is advantageously shaped as a sign. Preferably, said sign represents a light bulb. Advantageously, the guide body 74 has a square shape. Preferably, the guide body 74 extends along the transverse direction Y so as to abut both longitudinal components 73 of the framework 51. Preferably, the deflecting elements 72 of the light guide 70 protrude from the guide body 74 along the axial direction Z. Advantageously, the deflecting

elements 72 have a curved shape. Advantageously, the deflecting elements 72 are placed at the sign.

In the embodiment of the signalling unit 70 shown in Figure 7, the illuminable element 71 is advantageously placed in the actuation portion 41 on a front surface 55 of the body 5 of the covering device 4. The illuminable element 71 is advantageously shaped as a through opening obtained on the first transverse component 21 of the framework 51. Advantageously, said through opening 71 is in the form of a slit. Preferably, said slit mainly extends along the transverse direction Y. Preferably, the guide body 74 has an extension in the transverse direction Y substantially corresponding to the extension of the through opening 71 in the transverse direction Y. Advantageously, the deflecting elements 72 are integrated into the guide body 74. Preferably, the deflecting elements 72 are shaped as knurls located at the centre C of the body 5 of the covering device 4. Advantageously, the knurls are shaped in a straight line and in concentric semicircles. Advantageously, the additional deflecting elements 73 are arranged around the guide body 74.

Preferably, the abutment elements 43 of the support portion 42 of the covering device 4 are configured as protuberances which project from the lower surface 50 of the covering device 4. Advantageously, said protuberances are spaced apart from and opposite to each other.

The abutment elements 43 abut the main body 2 of the switch 1 preferably near the fastening portions 24.

Preferably, the support portion 42 of the covering device 4 comprises a support element 44 suitable for abutting the upper surface 30 of the button 3.

Preferably, the support element 44 extends from the lower surface 50 of the covering device 4 towards the button 3. Advantageously, the support element 44 is configured as a bar. Preferably, the support element 44 mainly extends in the transverse direction Y.

CLAIMS

1. An electrical switch (1) with axial control including:
 - a main body (2);
 - a button (3) which is connected to said main body (2) in a movable manner between a rest position and an operating position along an axial direction (Z) which is substantially perpendicular to an upper surface (30) of the button (3);
 - a switching mechanism which is housed inside said main body (2) and which is configured so as to control the opening or closing of an electrical contact when the button (3) is moved from the rest position to the operating position;
 - a covering device (4) which comprises a body (5) and a coupling system (6),
 - said coupling system (6) comprising coupling elements (60) suitable for connecting the covering device (4) to the button (3),
 - the body (5) of the covering device (4) further comprising an actuation portion (41) and a support portion (42) which are opposite each other,
 - the button (3) being movable from the rest position to the operating position by means of a pressure applied to the actuation portion (41) towards the main body (2) of the switch (1),
 - characterised in that said support portion (42) comprises abutment elements (43) suitable for abutting the main body (2) of the switch (1) when a pressure is applied to the support portion (42) so that said pressure does not cause a movement of the button (3) in the operating position,
 - said actuation portion (41) being formed in such a manner that, when the button (3) is in the rest position, said actuation portion (41) projects to a greater extent than the support portion (42) in the axial direction (Z) and in the opposite direction with respect to the button (3).
2. An electrical switch (1) with axial control according to the preceding claim, wherein the coupling elements (60) of the coupling system (6) are positioned near a perimeter (P) of the lower surface (50) so as to be opposite each other, each coupling element (60) being formed so as to allow the connection to a respective connection element (31) of the button (3).
3. An electrical switch (1) with axial control according to any one of the preceding claims, wherein the body (5) of the covering device (4) comprises a housing (53) which houses a signalling unit (7) which can receive a light beam from a light source which is placed in the main body (2) of the switch (1).

4. An electrical switch (1) with axial control according to the preceding claim, wherein the signalling unit (7) comprises coupling elements (60) of the coupling system (6).
5. An electrical switch (1) with axial control according to claim 3 or 4, wherein the signalling unit (7) comprises a light guide (70) and an illuminable element (71), wherein the light guide (70) is suitable for directing the light beam towards the illuminable element (71) which is placed on an external surface (54) of the body (5) of the covering device (4).
6. An electrical switch (1) with axial control according to the preceding claim, wherein the illuminable element (71) is placed in the actuation portion (41) on a front surface (55) of the body (5) of the covering device (4).
7. An electrical switch (1) with axial control according to claim 5 or 6, wherein the illuminable element (71) is placed in the actuation portion (41) on an upper surface (56) of the body (5) of the covering device (4).
8. An electrical switch (1) with axial control according to claim 5 or 6 or 7, wherein the illuminable element (71) is in the form of a through-opening and/or a sign.
9. An electrical switch (1) with axial control according to any one of the preceding claims, wherein the abutment elements (43) of the support portion (42) of the covering device (4) are configured as protuberances which project from the lower surface (50) of the covering device (4) which are spaced apart from and opposite to each other.
10. An electrical switch (1) with axial control according to any one of the preceding claims, wherein the support portion (42) of the covering device (4) comprises a support element (44) suitable for abutting the upper surface (30) of the button (3).
11. An electrical switch (1) with axial control according to any one of the preceding claims, wherein said main body (2) extends along a longitudinal direction (X), a transverse direction (Y) and said axial direction (Z), said axial direction being perpendicular to said longitudinal direction (X) and to said transverse direction (Y), wherein said body (5) comprising a lower surface (50) which faces an upper surface (30) of the button (3), the body (5) comprises a framework (51) which extends along the perimeter (P) of said lower surface (50) towards the button (3), said framework (51) having a lower edge (52) which is contained in a first plane (A), said first plane (A) being substantially parallel, when the button (3) is in the rest position, with a second plane (B) which is defined by the longitudinal direction (X) and the transverse direction (Y).
12. An electrical switch (1) with axial control according to the preceding claim, wherein the coupling elements (60) are placed near the longitudinal components (23) of the framework (51).

13. An electrical switch (1) with axial control according to any one of the preceding claims, wherein said coupling elements (60) are suitable for connecting the covering device (4) to the button (3) in a removable manner.
14. An electrical switch (1) with axial control according to any one of the preceding claims, wherein there are two coupling elements (60) placed in the actuation portion (41) and opposite to each other.
15. An electrical switch (1) with axial control according to any one of the preceding claims, comprising a return mechanism suitable for returning the button (3) from the operating position to the rest position.