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ECONOMICAL INDICATOR LAMP

The present invention relates to an indicator lamp which may find numerous applications in systems for
20 controlling and checking electric and electronic installations or apparatus. In such installations, for indicating the circuits which are live, the correct operations or the appearance of faults, it is often necessary to provide economical indicator lights which
25 may be readily connected in positions where space is limited, which may be seen from a distance, whose operating voltages may be different while using standardized lamps, and whose lamps, well ventilated naturally to ensure a long lifespan, may nevertheless be
30 readily replaced without dismantling.

The indicator light of the invention answers such requirements very well. Its cost is very much reduced because of the small number of parts which form it and because of its ease of assembly; the lifespan of
35 such a lamp is ensured by good ventilation and its replacement, when necessary is very easy.

According to the present invention there is provided an indicator light comprising :

(i) a body including a barrel having internal ribs thereon and ventilation openings therein, an external collar to serve as a stop, and a bottom wall extended externally by terminal housings,

(ii) first and second electrical connectors passing from the interior of the barrel through said bottom wall into a respective terminal housing,

(iii) a lamp base fixed in said barrel and including a socket held in position by said ribs, said socket being formed in one piece with a first of said electrical connectors, said lamp base having a resilient contact electrically connected with the second of said electrical connectors,

(iv) a transparent cap on said body and abutting said collar.

Embodiments are described hereafter by way of non-limitative examples with reference to the accompanying drawings in which :

Figure 1 is an axial section of a first embodiment of indicator light of the invention;

Figure 2 is an elevation, viewed from the right-hand side in Figure 1, showing the rear part of the indicator light of Figure 1;

Figure 3 is a section, taken through the plane SS' of the indicator light and viewed from the left-hand side in Figure 1;

Figure 4 is a partial axial section taken through planes Q and R, indicated in Figure 2, of the indicator light of Figure 1;

Figure 5 is a detail section, taken through the plane pp' indicated in Figure 2, showing the socket and a part of the electrical connection for the indicator light of Figure 1;

05 Figure 6 is a detail from Figure 2 showing the electrical and mechanical connection of a dropping resistor incorporated in the indicator light; and

 Figure 7 is a sectional view, taken through plane SS', of a second embodiment of indicator light constructed
10 without a dropping resistor.

 Such as shown in Figure 1, the indicator light comprises in particular :

- a body 2,
- a transparent cap 10, coloured or not, preferably
15 screwed onto body 2,
- a base 11, for an incandescent lamp, having a resilient contact,
- a fixing nut 6, and
- a dropping resistor 31.

20 The body 2, of revolution about an axis 1, comprises:

- a tubular barrel 4 partially threaded at 5 on each side of a collar 3 for receiving the cap 10, and the nut 6 for fixing the indicator light in an opening 7 in the panel 8,
25 - the collar 3 situated near one end of barrel 4 serving as stop abutting both the panel 8 and the cap 10;
- a series of openings 12 and 13, 15 and 16, 17 and 18, formed in the barrel 4, in pairs opposite each other in the plane pp' for example, the openings 15, 16, 17 and 18 not
30 being visible in the Figure 1 and being placed in line with the base 11 for ventilating it, openings 12 and 13 being placed facing the lamp itself for ventilating it directly;
- a bottom wall 49; and
- internal ribs which will be described with reference
35 to the other Figures.

Barrel 4 is extended, at its end 20, by internal dividing walls 21, 22 and 23 which converge towards axis 1, as shown in Figure 2, and define two axially and radially open housings 24 and 26 placed symmetrically with respect to the plane PP' and in each of which is placed a connecting terminal 27 and 28.

The dividing walls 22 and 23 define a third radially open housing 25, through which the plane PP' passes and which is extended by an opening 30 into the barrel 4.

The lamp base 11 includes:

- a cylindrical socket, with bayonet or Edison fitting 45, made from a conducting material, a generatrix of which is extended by a blade 46 suitably bent and stamped for passing through the bottom wall 49 and serving as a support for terminal 28 in the housing 26, as shown in Figures 3 and 4; during positioning, and as shown in Figure 3, socket 45 comes to bear axially on two ribs 51 and 52 extending from the bottom 49 of barrel 4 and is held laterally by two other ribs 53 and 54 extending from the walls of barrel 4 and oriented towards its centre;

- a central resilient contact 38, shown in detail in Figure 5, itself formed of a solid or hollow rivet 41 with double shoulder 39 and 44, sliding in a hole pierced in a first part of a bent two-arm member 43, and a spring 42 surrounding rivet 41 and bearing on the member 43 for pushing back the shoulder 44, the shoulder 39 coming into abutment against the member 43 to prevent the rivet 41 from leaving said member 43.

The second arm 33 of the member 43, parallel to axis 1, is disposed in a longitudinal groove 50 formed in the bottom 37 of the housing 25.

When the lamp is positioned, since the resilient contact is pushed back, shoulder 39 of rivet 41 penetrates into a central housing 40 formed in the junction of the dividing walls 21, 22 and 23.

In this same Figure 3, the ventilation openings 15 and 16, and 17 and 18, for cooling the lamp base appear more clearly.

05 The dropping resistor 31, placed in housing 25 as shown in Figure 1, is connected by its connection 32 to the second arm 33 of the member 43 and by its connection 34, inside the barrel 4, to one end of a blade 35, as shown in Figure 4.

10 This blade 35, suitably stamped, is fixed in the bottom wall 49 of barrel 4 and passes therethrough. Its other end 48 is thus located in housing 24 and receives the connection terminal 27.

In the case where it is not necessary to reduce the supply voltage for the lamp, the dropping resistor 31 may be omitted.

15 Figure 7 shows an embodiment of the indicator light in a configuration without the dropping resistor.

In this configuration, the resilient contact 38 of the lamp base 11 is formed so as to provide the electrical connection with terminal 27 directly.

20 For this, a bent two-arm member 60 is used, the first arm of this member, pierced for receiving the sliding rivet 41 is extended and the second arm of said member, suitably stamped, passes through the bottom wall 49 of barrel 4 through a slit 58, the end of this second arm then being
25 located in housing 24 and receiving the connection terminal 27.

CLAIMS

1. An indicator light comprising :

05 (i) a body including a barrel having internal ribs thereon and ventilation openings therein, an external collar to serve as a stop, and a bottom wall extended externally by terminal housings,

(ii) first and second electrical connectors passing from the interior of the barrel through said bottom wall into a respective terminal housing,

10 (iii) a lamp base fixed in said barrel and including a socket held in position by said ribs, said socket being formed in one piece with a first of said electrical connectors, said lamp base having a resilient contact electrically connected with the second of said electrical connectors,

15 (iv) a transparent cap on said body and abutting said collar.

2. An indicator light, as claimed in claim 1, wherein said ventilation openings are disposed to ventilate a lamp, when in said lamp base, and said lamp base.

3. An indicator light, as claimed in either of claims 1 and 2, wherein said ventilation openings are disposed parallel to the axis of the barrel and are arranged in pairs.

25 4. An indicator light, as claimed in any one of claims 1 to 3, wherein said resilient contact comprises a two-armed member having a first arm extending through the bottom wall of the barrel and forming said second electrical connector, said two-armed member having a second arm formed with an opening receiving slidably therein a rivet with a shoulder at each end, a compression spring being seated between a shoulder of said rivet and said second arm.



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5. An indicator light, as claimed in any one of claims 1 to 3, wherein a dropping resistor is included in the electrical connection of the resilient contact with its respective electrical connector.

05 6. An indicator light, as claimed in claim 5, wherein
said lamp base comprises a socket made of an electrically
conductive material and abutting axially on two said ribs
projecting inwardly from said bottom wall of the barrel and
abutting radially on two other of said ribs projecting
10 inwardly from the barrel, a generatrix of said socket being
extended as a blade passing through the bottom wall and
forming said first electrical connector, said resilient
contact comprising a two-armed member having its first arm
engaged into a channel of T-shaped cross-section formed in
15 said bottom wall, a rivet having a shoulder at each end
engaged slidably in an opening formed in the second arm of
said member, and a compression spring seated between a
shoulder of said rivet and said second arm, said dropping
resistor being connected to said two-armed member and to
20 said second electrical connector.

7. An indicator light, as claimed in either of claims 5 and 6, wherein dividing walls on said barrel define two housings for said electrical connectors and a housing for said dropping resistor.

25 8. An indicator light substantially as described herein with reference to Figures 1 to 6 or Figure 7 of the accompanying drawings.

