

**ADAPTABLE REMOTE CONTROL FOR ELECTRICAL APPLIANCES
HAVING SEVERAL FUNCTIONS TO BE CONTROLLED**

The subject of the present invention is an adaptable remote control for electrical appliances
5 having several functions to be controlled.

Numerous electrical appliances, such as televisions, video recorders or high-fidelity systems, are controlled by remote controls.

An appliance is delivered together with a
10 remote control. However, it is not uncommon for the user, through negligence or accidentally, to damage his remote control, thereby requiring the latter's replacement.

A first solution consists in obtaining a remote
15 control from the manufacturer of the relevant appliance. However, such spare remote controls are not always available in stock and are, for the user, expensive to purchase.

This is because the remote controls, using
20 infrared transmission to modify this or that function, employ a coding which is individual to each appliance, within one and the same make. A remote control is therefore specific to a particular appliance.

It is known practice, especially through
25 documents US-A-5 654 714 and EP-A-0 577 267, to produce an adaptable remote control which contains the control codes for a certain number of appliances. Access to each control code is effected by keying into the keypad of the remote control unit a specific digital or
30 alphanumeric code of at least four characters. Therefore, in order to select the control code for an appliance, one needs to employ a voluminous leaflet identifying the codes for accessing the various control codes. Apart from the difficulty in searching for and
35 selecting the codes, the loss of the leaflet renders any subsequent configuring of the remote control difficult to carry out.

The aim of the invention is to provide such a remote control, which may be configured very rapidly and very simply by the user himself, without requiring prior study of a leaflet of very complex instructions.

5 To this end, the remote control to which it relates comprises a microprocessor possessing a first memory area containing a file of the makes of the main appliances on the market, and a memory area containing the files of the codes corresponding to the various
10 appliances belonging to the various makes stored in the first file, means being provided so as to allow firstly the selecting of the make of the appliance to be controlled, then the selecting, within the files of codes of the appliances of this make, of the file
15 containing the control codes for the relevant appliance.

The configuring of the remote control so as to adapt it to a particular appliance is done firstly by selecting the make of the appliance, then by selecting,
20 within the make, the control code corresponding to the relevant appliance.

According to a characteristic of this remote control, the selecting of the make of the appliance is achieved by pressing a predetermined button and
25 simultaneously one or more other buttons successively, such as the programme numbering buttons, which each correspond to the identification of a make.

The packaging of the remote control, or the remote control's actual unit, can comprise a list of
30 the makes of the appliances which can be controlled, together with an indication opposite each make, of the button to be actuated to obtain access to the file of the microprocessor corresponding to the appliances of this make. The operation to be performed is simple,
35 since the code for selecting a make does not comprise more than two characters.

According to another characteristic of the invention, the selecting of the codes corresponding to

the type of appliance is achieved, after selecting the make, by pressing a second predetermined button and simultaneously one or more other buttons successively, such as the programme numbering buttons, until the
5 selecting of the codes of the relevant appliance is achieved.

The user firstly presses the second predetermined button, and successively one or more other buttons, until the operation of the appliance is
10 achieved.

Advantageously, after selecting a make from the file of the memory containing the makes of the main appliances on the market, the microprocessor automatically selects from the file of control codes,
15 the most frequent code for the appliances of the relevant make.

Thus, in numerous cases, the selecting merely of the make of the appliance makes it possible to get directly to the control code for the appliance. If the
20 appliance is not controlled with the most frequent control code, which has been selected automatically, the user proceeds in the manner indicated previously by pressing a function button and successively various other buttons, such as the programme numbering buttons.

25 After these procedures have been performed successively, the remote control stands configured for the control of this appliance, and the user can use the remote control by pressing the various function buttons thereof in the conventional manner.

30 In any event, the invention will be properly understood with the aid of the description which follows, with reference to the appended diagrammatic drawing whose single figure is a block diagram illustrating the working of the remote control with a
35 view to the configuring thereof.

The single figure of the appended drawing represents a first file 2 contained in the memory of a microprocessor which is included in the remote control,

this first file containing the various makes A, B, C... of the appliances whose codes have been stored in the remote control. By way of example, fifteen areas are provided, corresponding to fifteen makes of appliances.

5 The block diagram also shows a file 3 which corresponds to the transmission codes of the various appliances belonging to one and the same make. By way of example, in the block diagram represented, there are fifteen areas corresponding to fifteen series of
10 different codes, that is to say to fifteen appliances belonging to one and the same make.

There are as many files of transmission codes as there are makes of appliances stored in the file 2.

This schematic also shows a certain number of
15 other functions managed by the microprocessor, namely a module for detecting actuation of any button of the remote control 4, a module 5 for detecting actuation of the volume increase button, a module 6 for detecting the reduction in volume as well as comparison modules 7
20 and 8 associated with the modules 5 and 6. This block diagram also illustrates a module 9 for controlling the various functions of an appliance, as well as a module 10 for emitting a train of infrared pulses for control of the appliance.

25 The configuring of the remote control in respect of an appliance of make C is as follows.

The microprocessor firstly tests whether certain buttons are activated or not. If no button is activated, it is possible for the user to press the
30 function button for increasing the volume, this being detected by the module 5, monitored by the module 7, and making it possible to actuate a numerical button belonging to the remote control, in this instance the button 03 which corresponds to the appliances of make
35 C. The information on the button to be actuated is provided by a printed document, delivered together with the remote control, or fixed to the back of the remote control. The microprocessor having stored the make of

the appliance involved, it is necessary to retain the transmission code corresponding to the relevant appliance of this make.

According to one possibility, as soon as the
5 make of the appliance has been selected from the file 2
of makes, the microprocessor automatically selects from
the file 3 of control codes the control code 01, this
being the most frequent code for the appliances of the
relevant make. If the appliance cannot be controlled
10 with the aid of this code, the user then presses a
function button, such as the sound volume reduction
button, and simultaneously a programme numbering button
so as to select another control code. If no control is
obtained, the user, continuing to exert pressure on the
15 function button, exerts an action successively on the
programme numbering buttons, until the remote control
is active. As soon as the remote control is active, the
user releases the pressure exerted on the volume
reduction button and on the last numbering button for
20 the relevant programmes, the transmission code
corresponding to the appliance to be controlled then
being selected by the microprocessor and remaining
active in the latter's memory. Since the remote control
is configured to the features of the appliance to be
25 controlled, the user can act on the various functions
to be initiated or to be modified, this control being
received by the module 9 which transmits it to the
emission module 10.

As is apparent from the foregoing, the
30 invention affords a great improvement to the existing
technique by providing an adaptable remote control, of
simple structure, not requiring complicated
manipulations by the user in order to adapt it to the
type of appliance to be controlled.

35 As goes without saying, the invention is not
limited to the sole form of execution of this remote
control, described hereinabove by way of example; it
embraces on the contrary all variants thereof. Thus, in

particular, the microprocessor might not automatically select the most frequent control code, the user performing the selection of the control code from the file 3 only manually, or again the function buttons
5 might consist not of the buttons for adjusting the sound volume but of other buttons, including specific buttons, without thereby departing from the scope of the invention.

**CLAIMS**

1. Adaptable remote control for electrical appliances having several functions to be controlled, characterized in that it comprises a microprocessor
5 possessing a first memory area containing a file (2) of the makes of the main appliances on the market, and a memory area containing the files (3) of the codes corresponding to the various appliances belonging to the various makes stored in the first file, means being
10 provided so as to allow firstly the selecting of the make of the appliance to be controlled, then the selecting, within the files (3) of codes of the appliances of this make, of the file containing the control codes for the relevant appliance.
- 15 2. Adaptable remote control according to Claim 1, characterized in that the selecting of the make of the appliance is achieved by pressing a predetermined button and simultaneously one or more other buttons, such as the programme numbering buttons (1, 2, 3...),
20 which each correspond to the identification of a make.
3. Adaptable remote control according to Claim 2, characterized in that the selecting of the codes corresponding to the type of appliance is achieved, after selecting the make, by pressing a second
25 predetermined button and simultaneously one or more other buttons successively, such as the programme numbering buttons (1, 2, 3...), until the selecting of the codes of the relevant appliance is achieved.
4. Adaptable remote control according to Claim 2,
30 characterized in that after selecting a make from the file of the memory containing the makes of the main appliances on the market, the microprocessor automatically selects from the file of control codes, the most frequent code for the appliances of the
35 relevant make.