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(11)

EP 1 381 007 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

14.01.2004 Bulletin 2004/03

(51) Int Cl.7: **G08C 17/00**

(21) Application number: **03015362.1**

(22) Date of filing: **08.07.2003**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**

Designated Extension States:

AL LT LV MK

(72) Inventors:

- **Borsoi, Luigi**
31014 Colle Umberto (IT)
- **Collovini, Roberto**
31014 Colle Umberto (IT)

(30) Priority: **11.07.2002 IT VE20020024**

(74) Representative: **Piovesana, Paolo**
Corso del Popolo, 70
30172 Venezia-Mestre (IT)

(71) Applicant: **Teleco Automation S.R.L.**
31100 Treviso (IT)

(54) **Multi-user remote control device**

(57) A multi-user remote control device, characterised by comprising, within a self-powered portable container (2) provided with at least one control pushbutton

(12), a plurality of different remote control transmitters (10), of which at least one is interchangeable, means (16) for selecting said transmitters (10) and means for indicating the operative transmitter.

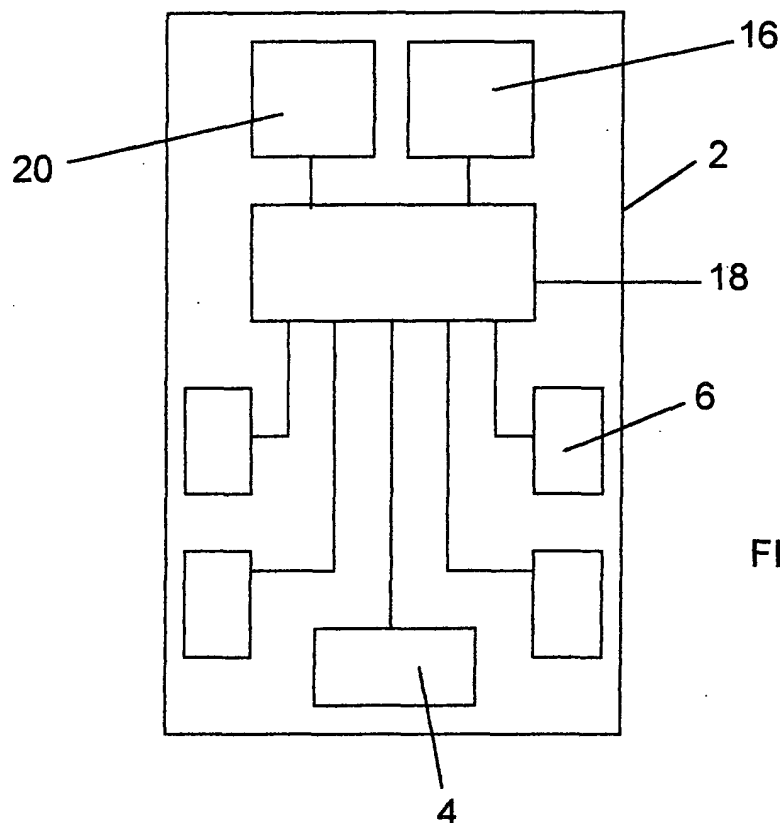


FIG. 1

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Description

[0001] This invention relates to a multi-user remote control device.

[0002] Known remote control systems for remotely activating and deactivating user means of any kind (centralized closure of automobiles, alarms, gate opening, etc.) generally comprise a receiver associated with the control unit for the particular user means, and a portable remote controller consisting of a self-powered transmitter housed in a container provided with pushbuttons for controlling the user means.

[0003] The control signal can be infrared, ultrasonic, radio, etc. and is encoded to ensure unambiguous correspondence between that transmitter and that receiver.

[0004] Multi-user remote control devices are also known, able to control several receivers and hence several user means by a single transmitter. In this case the transmitter is generally provided with several pushbuttons corresponding to different transmission channels and usable to remotely transmit the different encoded signals to different receivers, and hence to control different user means.

[0005] These known multi-user remote control devices have proved extremely effective, in that under certain conditions they enable several user means to be controlled by a single portable element which is simple to use and of small overall size. However, with the increasingly widespread use of remote control systems, mostly installed at different times and manufactured by different manufacturers, and hence using different communication protocols and different frequencies, it is not always possible to use a single multi-channel remote controller to control different user means, given their substantial incompatibility. If for example a remote-controlled alarm system is installed in a house, after which a mechanized gate opening system is installed or the existing system is replaced by another, the remote control transmitter of the alarm system is rarely compatible with the receiver of the control unit for the mechanized gate opening system, the user therefore requiring two different transmitters for the two different functions.

[0006] An object of the invention is to provide a multi-user remote control device which with a single portable unit is able to control a plurality of user means, independently of the characteristics of the communication system of each user means used.

[0007] This and further objects which will be apparent from the ensuing description are attained, according to the invention, by a multi-user remote control device as described in claim 1.

[0008] A preferred embodiment of the invention is described in detail with reference to the accompanying drawings, in which:

Figure 1 shows schematically a multi-user remote control device of the invention, and

Figure 2 shows schematically a remote control card

for a user means.

[0009] As can be seen from the figures, the multi-user remote control device of the invention consists essentially of a container 2, preferably of parallelepiped form, housing a battery 4 together with a plurality of connectors 6 for a like number of electronic cards 8, each forming an independent remote controller with a transmitter 10 operating on its own frequency, a microcontroller 12 provided with a memory, and a connector 14 for connection to the connector 6 of the container 2.

[0010] In the illustrated embodiment, the front of the container 2 is provided with one or more pushbuttons 16 for controlling the different user means in the two senses (for example activation and deactivation, opening and closure, ascending and descending), a mechanical selector 18 for connecting the desired card to the power supply 4 and to the pushbuttons 16, and a further pushbutton 20 for switching from remote controller programming to operation.

[0011] The multi-user remote control device operates in the following manner:

depending on the particular user means to be controlled, the operator sets the device to that particular user means by selector 18 i.e. he connects the electronic card corresponding to that user means to the power supply and to the pushbuttons 16, 20.

[0012] At this point the device is ready to operate either for programming, i.e. to memorize in the receiver memory for that user means the code of the transmitter 8, and for operation, i.e. to use the two pushbuttons 16 to control the user means in the required sense. As both the programming criteria and the operating criteria are traditional, these do not require further explanation.

[0013] To add or replace a user means, the card 8 corresponding to that user means can be added to or replaced in the container, to adapt the device to changing user requirements.

[0014] Because of increasing miniaturization of electronic components, a number of user means sufficient for usual practical requirements can be included in a container 2 of small dimensions compatible with easy portability.

[0015] In a variant, not shown in the drawings, the mechanical selector for the user means can be advantageously replaced by an electronic selector, comprising a cyclic selection pushbutton for the user means, a display showing the user means selected at any time, and a logic circuit for controlling the selection. The selected user display can be in the form of a small display in which each user means is indicated by a progressive number or a symbol, or can consist of a plurality of LEDs associated with the various user means. In this case several pushbuttons or several pairs of pushbuttons associated with the various LEDs can be used, to directly guide the operator in using the pushbutton or pushbuttons asso-

ciated with the LED activated at that moment, to control the corresponding user means.

[0016] In a different embodiment of the invention, also not shown in the drawings, the container 2 houses both fixed remote control cards and interchangeable cards. In the simplest case one fixed card and one connector for an interchangeable card are provided.

10. A device as claimed in claim 1, **characterised by** comprising at least one control pushbutton (12) associated with each transmitter.

11. A device as claimed in claims 9 and 10, **characterised by** comprising an LED associated with said at least one control pushbuttons (12).

Claims

1. A multi-user remote control device, **characterised by** comprising, within a self-powered portable container (2) provided with at least one control pushbutton (12), a plurality of different remote control transmitters (10), of which at least one is interchangeable, means (16) for selecting said transmitters (10) and means for indicating the operative transmitter. 10
2. A device as claimed in claim 1, **characterised in that** the container (2) is provided with a plurality of connectors (8) for a like number of interchangeable remote control transmitters. 15
3. A device as claimed in claim 1, **characterised in that** the container (2) comprises at least one fixed transmitter and at least one connector (8) for an interchangeable transmitter. 20
4. A device as claimed in claim 1, **characterised in that** each transmitter (10) consists of an electronic card. 25
5. A device as claimed in claim 1, **characterised by** comprising a mechanical selector (16) for connecting each transmitter (10) to the power supply and to the control pushbuttons (12). 30
6. A device as claimed in claim 5, **characterised in that** the means for indicating the operative transmitter consist of the position of the mechanical selector (16). 35
7. A device as claimed in claim 1, **characterised by** comprising an electronic selector with a pushbutton for cyclic selection of the different user means and with a logic circuit for controlling said selection. 40
8. A device as claimed in claim 1, **characterised in that** the means for indicating the operative transmitter are a display in which different symbols are associated with the different transmitters. 45
9. A device as claimed in claim 1, **characterised in that** the means for indicating the operative transmitter are a plurality of LEDs associated with the different transmitters. 50

