

**Voice-control**

Order No. 0535 00

**IR-Voice-control**

Order No. 0536 00

## Fields of Application

Thanks to modern technology, physically handicapped persons are now able to cope on their own with most everyday situations.

The many different ways of operating modern devices, however, means that the handicapped person has not only frequently to rethink but often enough has to change control units.

Voice-control is a mobile device for controlling and operating numerous appliances and equipment designed specifically for the handicapped, as well as for household technology, communication and entertainment electronics.

Voice-control converts spoken commands into signals to control equipment designed specially for this purpose. The signals are output by:

- Infrared transmitter, e.g. for television, video recorder, hi-fi equipment, telephone, and lighting

### *only for Order No. 0535 00*

- Radio transmitter, e.g. for house doors, elevators, intercom and alarm equipment
- Wired interfaces, e.g. for electrically operated wheel chairs and motorized adjustable beds

Voice-control can be operated as an installed device from the mains (the power supply unit is also the accumulator charger) or as a portable device with accumulators/batteries.

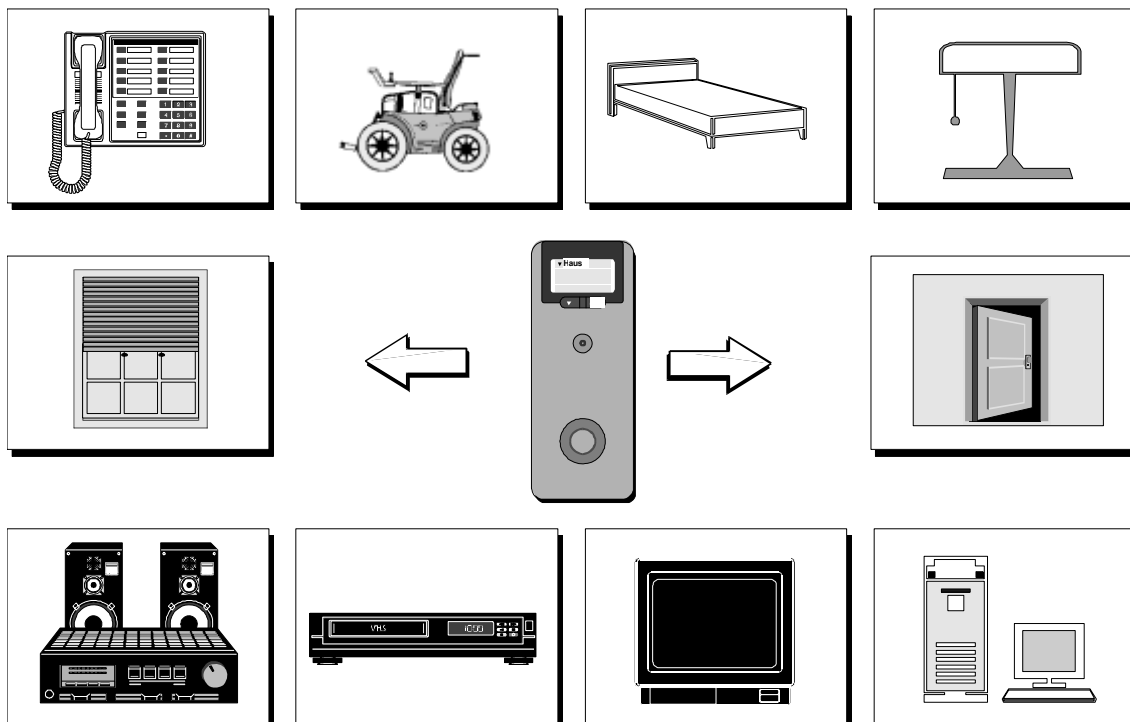


Fig. 1: Fields of application

## Overview of Functions

With the Voice-control, up to 64 different commands can be stored. Simple commands such as "on", "off", "left", "right" etc. can be added to any other command and can therefore be used more than once in combination. The Voice-control sends commands like "Turn on TV" automatically via the selected interface to the desired device. Each command can initiate actions on various devices at the same time. For example, as soon as the phone rings, the volume on radio and TV are turned down. The range of the Voice-control functions depends on the configuration of the device. The Voice-control is configured using PC software supplied with it.

Configuration consists of:

- Defining the menu structure  
Choosing the menu items, branches and actions
- Setting the parameters for actions  
Transmission type and value
- Training the voice pattern

Having copied the configuration data into the Voice-control, the device can be operated entirely without PC. The commands are given by speaking, using the voice pattern recognition. If there are problems of recognition in operation, it is possible to retrain every command word on the pilot. Nurses can operate the Voice-control per control keys.

All menu items and actions are shown on the display and can also be output in plain text on a loudspeaker.

## Operating the Voice-control

### Operation by Spoken Commands

Voice-control is normally operated by means of spoken commands. The user speaks the commands of the menu tree one after the other to achieve the desired action. The figure below shows the chain of commands necessary to dim a lamp defined as light number four.

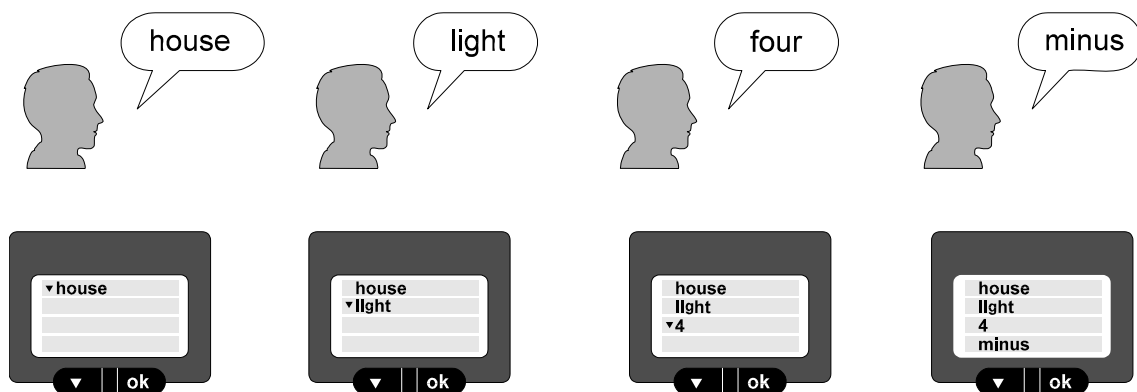
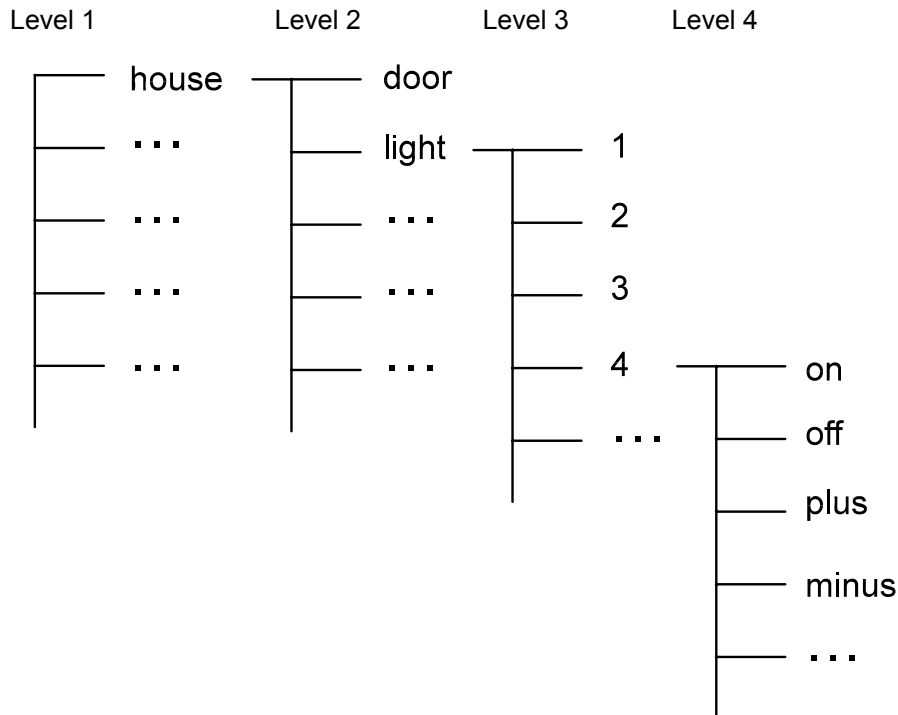


Fig. 2: Chain of commands and display

The menu tree for this might be:



Although the user needs four commands to dim the lamp, the menu structure allows many actions using only a few command words. The plus/minus pair of commands, for instance, can change the volume on hi-fi equipment or the angle of inclination of the back of a chair. With command words 0-9, telephone numbers can be composed, socket-outlets can be numbered, or television channels can be chosen.

### Operation by Command Keys

Because the Voice-control is trained to recognize the individual voice pattern, operation by a third person is only possible by means of command keys. Speaking a command is the same as selecting a command with the scroll key and confirming it with the OK key on the pilot or on an external keyboard. By connecting special operating peripherals ( suck/blow switch, foot switch, head switch,...) to the keyboard interface, the Voice-control can also be operated by people with a speech impediment.

### Configuration Software

The Voice-control is delivered together with configuration software, allowing the Voice-control to be adjusted to suit the individual. The software can be run on a standard PC under MS-Windows. (CPU Intel 80386 or higher, RAM 4 MB, MS-Windows V3.1 or higher)

## Menu Configuration

The structure of the command menu is pictured graphically on the computer screen.

A maximum number of four menu levels is available. The individual commands can be chosen from a word list.

The vocabulary in the word list is contained in the pilot for the speech output function. When a command initiates an action (i.e. the output of control signals), the data must be parameterized in a screen.

## Training the Voice Pattern

The selected commands are trained on the PC with the help of the Voice-control. Each word is spoken several times so that a common voice pattern can be analyzed. The voice pattern of the word is part of a neural network that allows speech to be recognized in operation. The voice patterns are stored in the pilot. Individual words can be retrained on the Voice-control even without a PC and configuration software.

## Interfaces and Technical Data

### Infrared transmitter

Mode: carrier or pulse  
Carrier frequency: up to 1.9 Mhz  
Impulse rate: resolution 362 ns [(1/11 Mhz)\*4]  
Modulation rate: resolution 1.08 µs [(1/11 Mhz)\*12]  
Transmission patterns (pulse rate / modulation / coding) can be set as required

### Radio transmitter (*only for Order No. 0535 00*)

Mid-frequency: 433.92 Mhz  
Modulation: FM/FSK  
Transmission power: max. 1 mW  
Transmission pattern (coding) can be set as required

### Serial interface (*only for Order No. 0535 00*)

An RS232 serial interface permits communication between the Voice-control and the configuration PC

Electrical features:  
PCTxD: RS232 output  
PCRxD: RS232 input  
Asynchronous serial interface  
Format: 8 data bits/even parity/1 stop bit (SW-configurable)  
Transmission rate: 9600 bit/s (SW-configurable)

### Parallel interface (*only for Order No. 0535 00*)

The parallel interface can be used for controlling with binary signals and to control PLCs.

Electrical features of the parallel outputs:

Open drain outputs  
Continuous current: max. 250 mA  
Pulse current: max. 2 A  
Reverse voltage: max. 45V  
Reverse current: max. 5 µA

The 8 outputs can be switched on and off as required.

Electrical features of the parallel inputs:

CMOS input; 100 k $\Omega$  pull up at 5 V; 1 k $\Omega$  serial resistance;

Protection diode against chassis

Input voltage: min. -0.3 V; max. 40 V

Input current: typ. -40  $\mu$ A

Peak: min. 3 V Trough: max. 0.4 V

### Keyboard interface

External operating elements can be connected through the keyboard interface.

Jack 2.5 mm X54

### Loudspeaker and microphone sockets

An external loudspeaker can be connected at this interface. In addition, the integrated microphone can be replaced by an external microphone at this interface. A headset can also be connected at this interface.

Jacks 3.5 mm, X54

### Display

LCD character display with 4 lines of 20 characters each, background lighting LED green

### Power supply

The Voice-control can be powered by batteries, accumulators, or from the mains.

2 x AA (Mignon) cells, alkaline manganese batteries or NiCd accumulators (600 mAh). The power supply unit serves simultaneously as a charger when using NiCd accumulators, without having to remove the accumulators. During battery operation, charging is blocked by a switch.

### Dimensions, weight

Height x width x depth 184 x 72 x 44 mm

Weight: 270 g

### Scope of Delivery and Accessories

#### Scope of delivery

- ◆ Remote control SICARE pilot
- ◆ Charger holder with base
- ◆ Plug-in power supply unit
- ◆ Cable for connection to PC
- ◆ Configuration software on a floppy disk
- ◆ Operating manual

#### Accessories (not supplied with the above)

- ◆ Tripod
- ◆ Infrared scanner
- ◆ External keyboard
- ◆ External microphone
- ◆ External loudspeaker
- ◆ Headset (headphones with microphone)
- ◆ Suck/blow switch
- ◆ Relay box AC (4x)
- ◆ Relay box DC (10x)
- Socket-outlet box (4x)

## Acceptance of guarantee

We accept the guarantee in accordance with the corresponding legal provisions.

**Please return the unit postage paid to our central service department giving a brief description of the fault:**

Gira  
Giersiepen GmbH & Co. KG  
**Service Center**  
Dahlienstrasse 12  
D-42477 Radevormwald



The CE sign is a free trade sign addressed exclusively to the authorities and does not include any warranty of any properties.

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