Project Manual

If you can see it, you can control it

Hall telephone, Doors, Lifts, Alarm, Wall outlets, Windows, TV, Radio, Stereo, Security telephone, Ceiling Lighting

Gewa AB

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Doc: EPROJ412. Ver:D. Date: 2001-09-14

This manual is for installation contractors, consultants and personnel within county councils and local authorities, who plan and project home equipment and service apartments for the disabled.

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1 General Description of GewaLink

The GewaLink system works with infrared (IR) light which is invisible to the eye. In principle IR light behaves in the same way as visible light i e IR light doesn´t pass through solid objects, like walls, but passes through glass and is reflected by light objects (figure 1).

In the GewaLink system there are different transmitters and receivers. The receivers have relays and control units for door openers, lifts, alarms, speech communication, lighting appliances and wall outlets, all described in this manual.

The transmitter in the GewaLink system is a battery-operated unit which the disabled person carries with him, for example in his wheel-chair. The transmitter is available in different versions to suit the individual needs of control properties, the number of functions etc. Within the GewaLink system, "128 channels" are available. The range of the GewaLink system is 10-30 metres when the view is clear. Indoors the light impulses from the transmitter are reflected by walls and ceilings, eliminating the need to point the transmitter in the direction of the receiver. Each transmitter ”channel” sends a special digital code to which the receiver must be programmed in order to react.

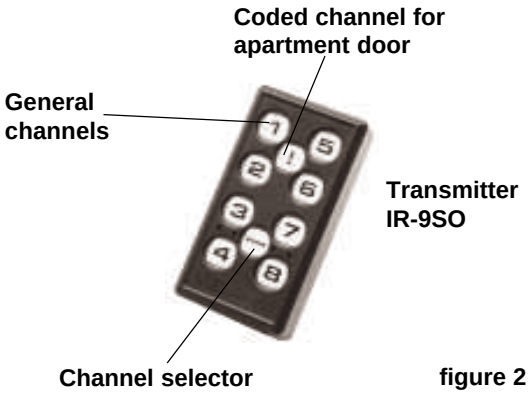


figure 2

The receiver is a permanently connected unit and is usually powered by 12V-24V DC or 24V AC. There are receivers for two, four, eight or sixteen channels. To set the correct channel for each relay the receiver must be programmed. To program the receiver a programming button is pressed on the receiver at the same time as a channel is sent on the transmitter. Each relay can also be progammed to work monostable or bistable. The relay switches are normally rated for 7A/24V. Some receivers have relay switches for higher voltages and currents, for example 230V AC (See separate product description). The receiver consists of a detector and a decoder/relay unit and has the facility for connecting an extra external detector (figure 3). The additional detector is used, for instance, when a door without glass has to be controlled from both sides or when reception will have to take place from two different rooms. The GewaLink system utilizes advanced digital techno-logy which makes the receivers resistant to inter-ference. However, for the longest possible range outdoors, the receivers

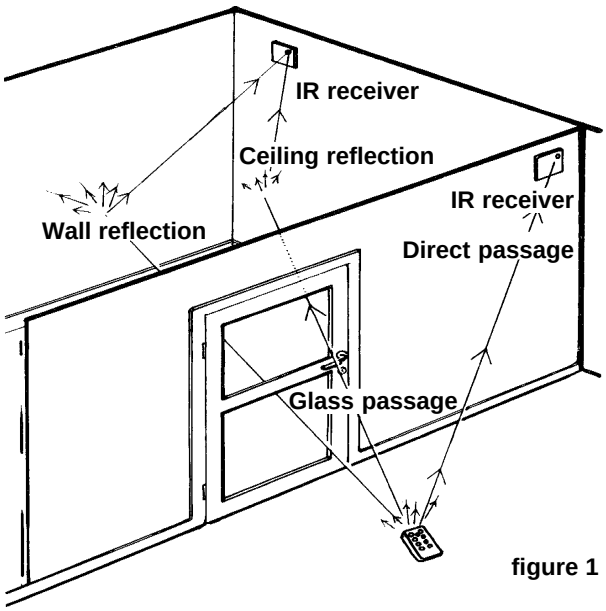


figure 1

should be protected against direct sunlight.

Thus the GewaLink system makes it possible to control a great number of functions which, independently of each other, can be controlled by the same transmitter. Common functions in entrances, lifts, assembly halls, garages etc. can be controlled by all transmitters. Different functions within each room of an apartment can also be controlled by the same transmitter. For unlocking the apartment door a coded channel is used. This channel is individually programmed for each tenant, in order to prevent other transmitter owners from opening any apartment door. The coded channel has 4096 different code combinations. Thus the GewaLink system offers comprehensive solutions to most control problems.

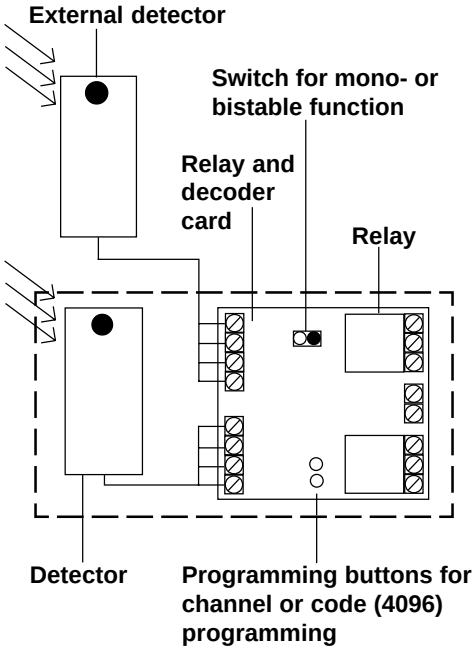


figure 3

2 Automatic Door Openers

2.1 ”Public” Doors

Public doors are doors which all tenants with GewaLink transmitters must be able to open. A difference has to be made between solid ”opaque” doors and glass doors or doors with a glass section beside the door (figures 4/5).

It is common that the entrance door in apartment houses is made of glass or that there is a glass section beside it. In these cases a GewaLink receiver is preferably mounted in such way that it can be ”seen” from the outside. If the glass is ribbed, the receiver should be placed as close to the glass as possible since the range is usually reduced to 5 - 10 metres, still quite sufficient for a person in a wheelchair.

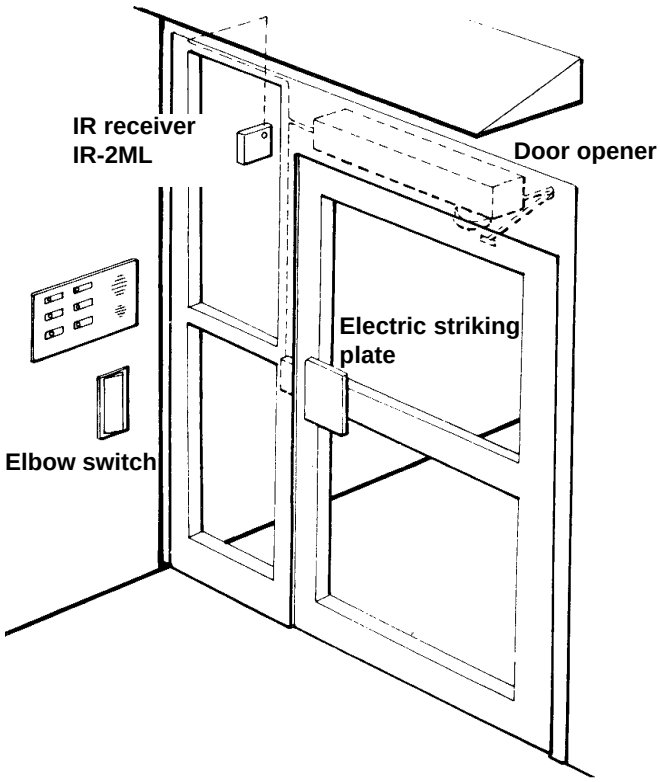


figure 4

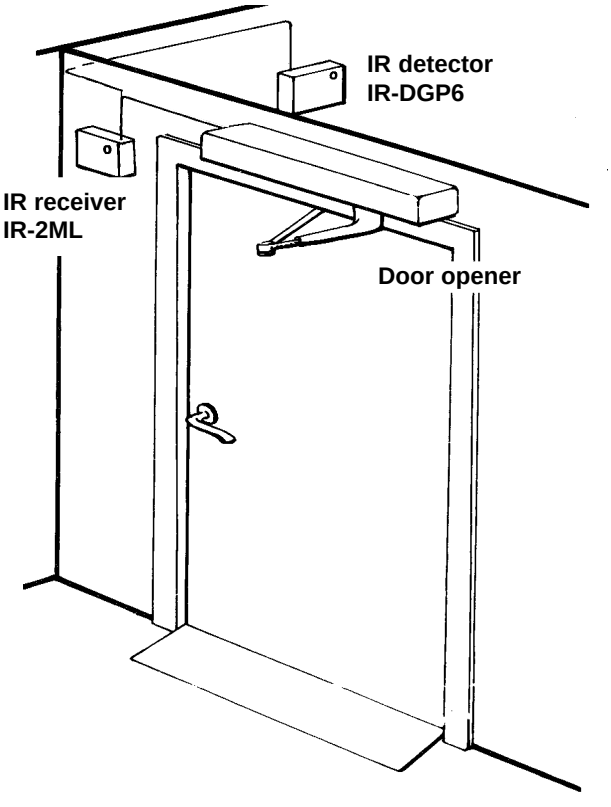


figure 5

For solid doors a receiver on the inside and an additional detector on the outside are required. This applies for instance to garage doors, storage-room doors and hallway doors without glass section. To avoid tampering with the receiver by unauthorized people who want to open the door, the receiver should always be on the locked side. The receiver is powered from the door opener. The relay unit of the receiver is wired to the connection block of the door opener for the opening impulse.

2.2 Apartment Doors

Apartment doors are often solid "opaque" doors and therefore require IR receivers on the inside and extra detectors on the outside (figure 6). Since apartment doors also require strict access control, the receiver is programmed with the coded channel on the transmitter. The equipment is powered from the door opener. The relay unit of the receiver is wired to the connection block of the door opener for the opening impulse.

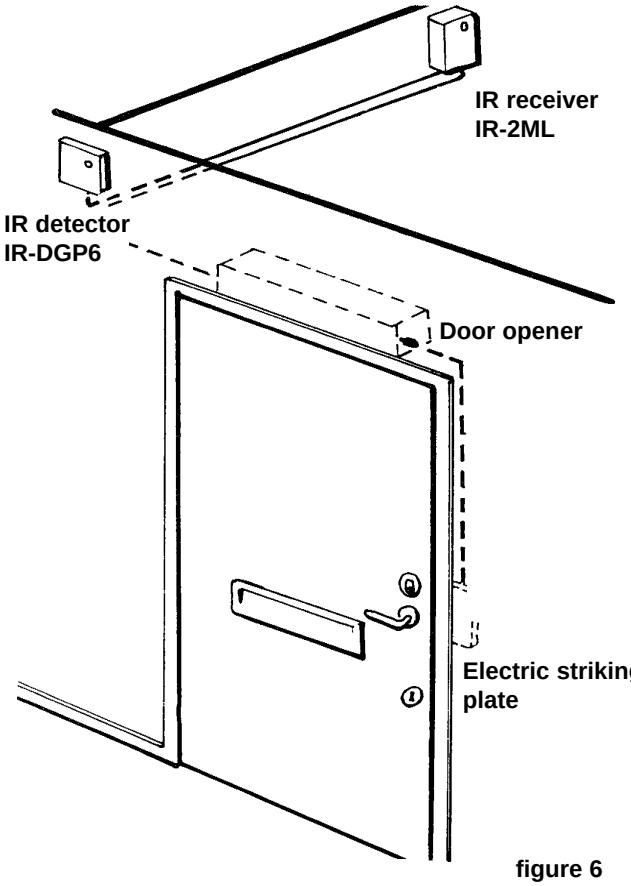


figure 6

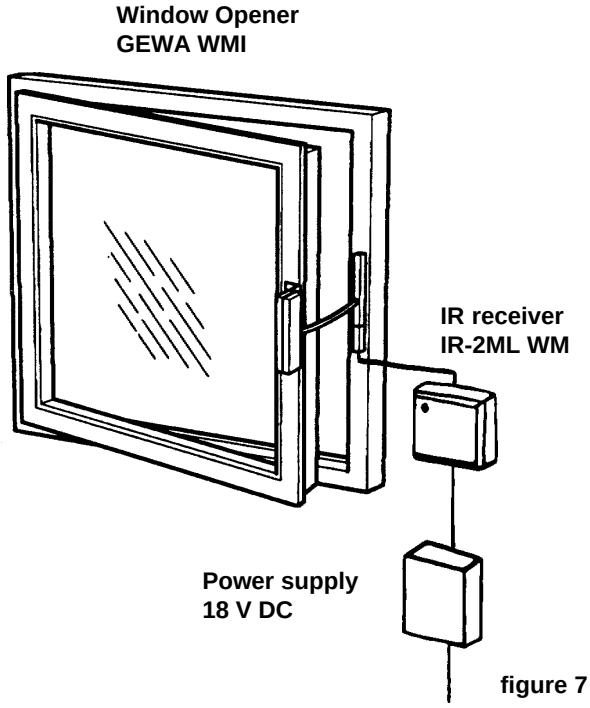


figure 7

3 Window Openers

The window opener GEWA WMI/WMU makes it possible to open and close a window by means of an IR transmitter. The opener fits most windows, windows that open inwards as well as outwards. The opener can be mounted either on the frame or on the sash (figure 7). The maximum length of the frame on which the motor is mounted is 140 cm. The maximum area of the window must not exceed 2 m²

The opening of the window is continuously adjustable up to 15 cm. A non-corrosive ”cog-link” keeps the window in place and makes it impossible to open from the outside when it is closed. The window can easily be disconnected from the cog-link to enable ordinary opening and closing of the window.

The IR receiver is delivered connected to the window opener. Two functions/channels are required for the opening and closing functions. The window opener and the IR receiver are powered by a direct current supply (18V DC) which is included in the delivery.

4 Lifts

4.1 Call for Lifts with Automatic Sliding Doors

A GewaLink receiver can be installed on each floor to which the lift is to be called. The IR receiver, for instance IR-2ML, is placed above the lift door. When the receiver is activated the lift is called and the automatic sliding doors are opened. If the lift is already on that floor level, the doors are opened. (Figure 8).

Voltage is supplied to the IR receivers by a protective transformer (24V AC/DC), which is common for all floor levels and preferably placed in the lift machine room.

4.2 Call for Lifts with Side Hung Doors

If the lift has a side hung door, a motor-driven door opener and a two channel IR receiver, for instance IR-2ML, are required. In this case two relay functions are used, one to call for the lift and the other for the opening impulse to the door opener.

Here too, voltage is supplied from a common protective transformer (24V AC/DC).

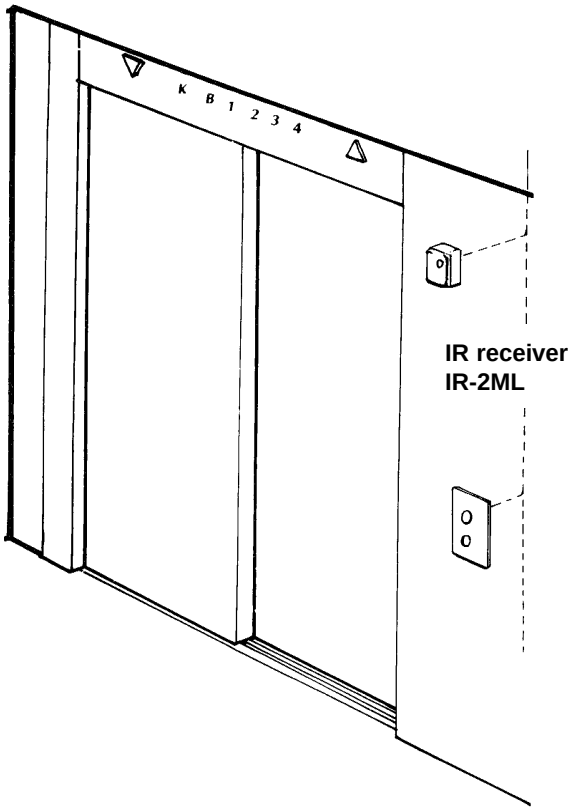


figure 8

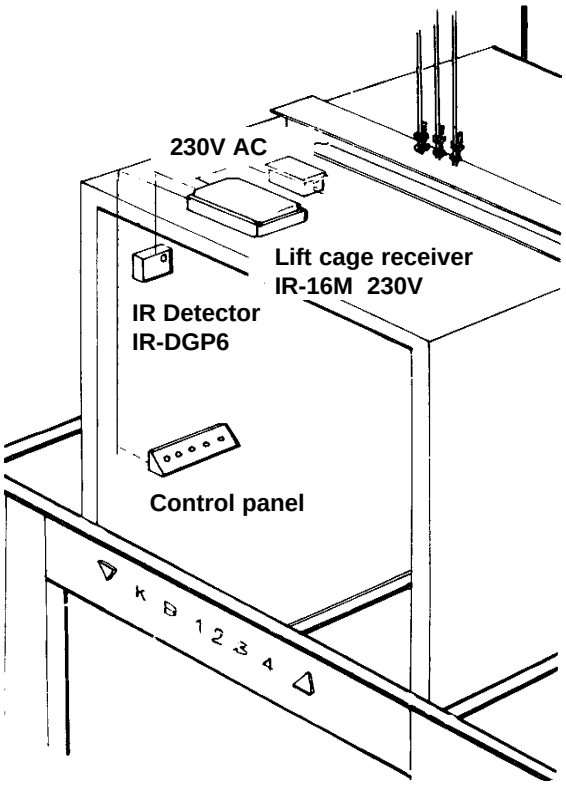


figure 9

4.3 Choice of Floor Level

In the GewaLink system, a special IR receiver is used for connection to the control system of the lift cage. This IR receiver, IR-16M 230V, has 16-channels and is connected to a separate detector placed inside the lift cage, preferably in the ceiling. The receiver unit is placed on the lift cage roof for connection to the lift control system. IR-16M 230V has 16 normaly open/ closed relay switches. The operating voltage of the receiver is 230V AC (figure 9).

For control of the lift the making relay functions are connected in parallel to the regular making control switches of the lift cage. This means that via the GewaLink system the lift can be directed to 14 optional floor levels. Relay 15 and 16 are used for distress signal and emergency stop. Lifts with a separate control function for opening of a side hung door require a channel for this function which means that a maximum of 13 floor levels are available.

4.4 Choice of Floor Level by scanning

If more than 14 floor levels are to be reached, several lift cage receivers can be connected in parallel. Instead of a separate IR detector the IR-LIFT SC is used. The IR-LIFT SC has a built-in display where each floor level is selected by scanning. This system makes it possible to reach every floor level by using any GewaLink key on any GewaLink transmitter.

5 Apartment Functions

By providing the apartment with GewaLink receivers at strategic places, different electrical functions can be controlled via GewaLink transmitters. Examples of such functions are alarm/security telephone, hall telephone, electric striking plate, window/door openers, ceiling lighting, wall outlets, telephone, electric beds etc. (figure 10).

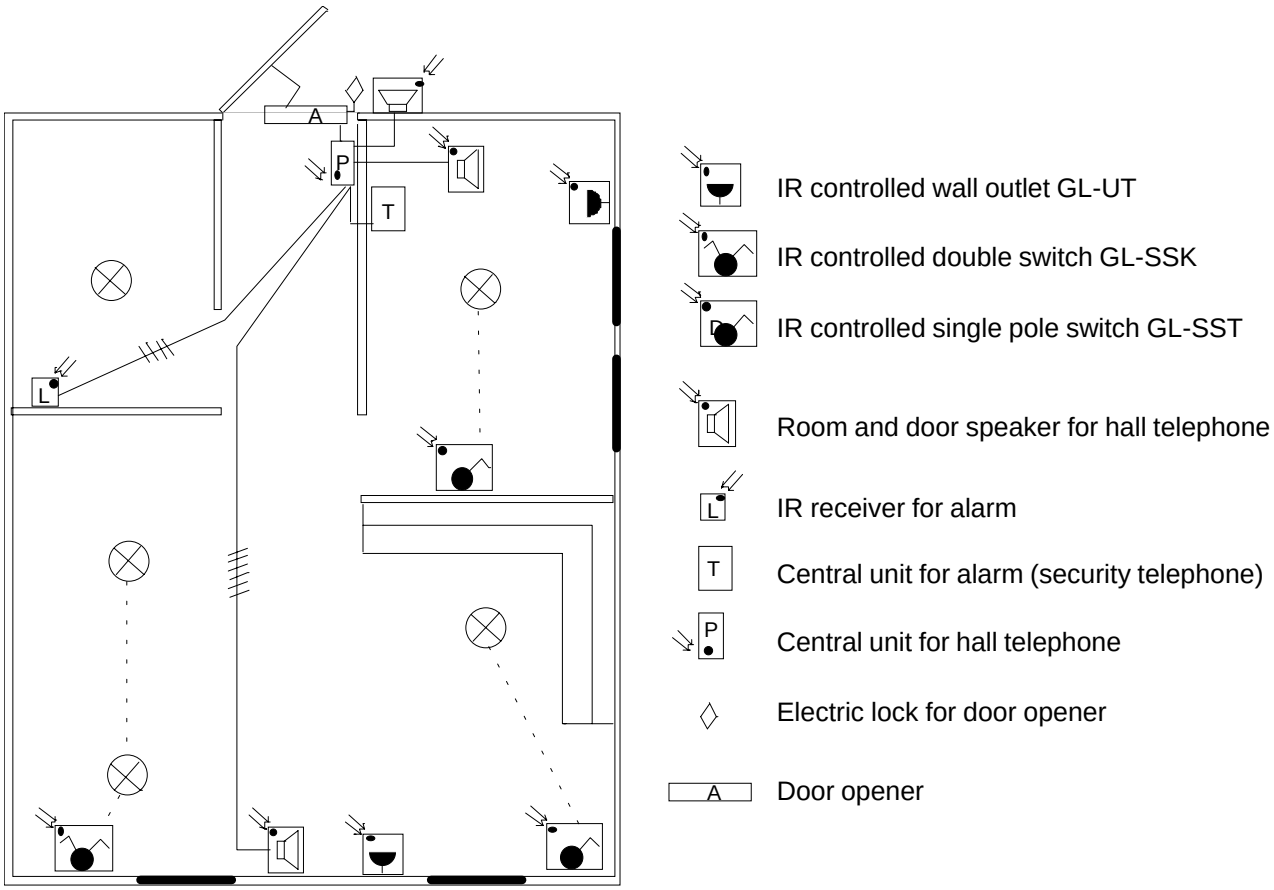


figure 10

5.1 Hall Telephone

GEWA Duocom makes it possible for severely disabled people and people with speech defects to identify a visitor and open the door. The system consists of a hall loudspeaker, a central unit, a room speaker and an electric lock. The room speakers have built-in IR receivers for control by means of an IR transmitter. Two channels are needed for the most elementary control. DuoCom has an automatic duplex function which makes it easy to communicate with visitors. To make it easier for persons with speech defects simple sentences like: Who is it? Come in! and No visitors please! can be recorded when the hall telephone is installed. Thanks to the recorded messages, the disabled person does not have to be close to the DuoCom, but can be anywhere in the room. DuoCom kan also be used as a loudspeaker telephone between different rooms.

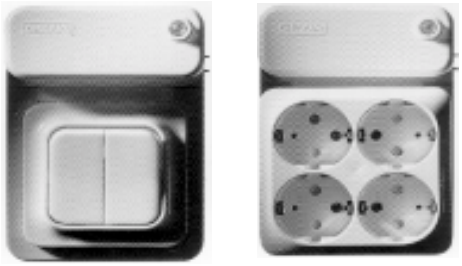
DuoCom is powered by 24V DC and delivers 24V DC to an electric striking plate. Alternatively, it has a potential free making switch for a door opener for instance. DuoCom can also control the door opener directly when the disabled person wants to go in or out through the door by himself.
Alarm can also be controlled by DuoComs different room speakers.
The wire between DuoComs different units requires 6 conducturs, twisted with the area 0,20 mm²

5.2 Lighting and Wall Outlets

For control of lighting appliances etc, the GewaLink receivers conveniently replaces the existing wall outlets and switches with IR control (figure 11). The regular switch or wall outlet is removed and replaced with a GewaLink receiver in which IR receivers are integrated with switches/wall outlets. The GewaLink receiver has a built-in power supply eliminating the need for a separate low voltage source. If there are no recessed boxes rim mounting is possible. The GewaLink system is CE-marked for Europe. Maximum resistive load 10 A (no fluorescent tubes)

5.3 Other Functions

In service apartments for the severely disabled, electrical lifting devices, electrically adjustable beds, special telephone aids, TV, radio etc are used. All this equipment can also be controlled via the GewaLink system.



GL-SSK GL-UTJ

figure 11

6 GewaLink Transmitters

GewaLink transmitters are available with 1, 4, 6, 10 and 18 buttons. All transmitters are equipped with easy-to-operate push buttons suitable for the disabled. Required operating force is approximately 1.0 - 1.5 N (100-150 g). The buttons are recessed to prevent the user from pressing a button by mistake. On 6, 10 and 18 button transmitters there is an individually adjustable code to open the apartment door and a switch which increases the number of public channels 4 times (figure 2, page 3). Some of these transmitters can also learn channels/codes from ordinary remote controls for TV, Stereo, Video etc. which makes it possible to control these units as well.

For people with a considerably reduced hand function there are scanning GewaLink transmitters which are controlled by a single one-function switch. This type of transmitter is available in different versions, some of which can be programmed to function as ordinary remote controls for TV, stereo, VCR etc. This enables the severely disabled to control these devices as well.

In the GEWA assortment there are also a number of various switches and mounting accessories (see sep-arate information), which makes it possible to adapt the GewaLink system to practically any physical handicap.

7 Example of how the channels are used in an apartment

The following is an example of how different channels can be used in an ordinary block of service apartments for the elderly and disabled.

Channel 1 is used for control of the door opener for the entrance doors. The same channel can be used if several entrances are situated more than approximately 10 metres apart. The lifts are equipped with the GewaLink system. You call for the lift by activating channel 5. Inside the lift you choose the different floor levels by means of the transmitter (channel 1-4). On each level there are three apartments where each apartment door has a door opener with an individually coded channel. Doors to assembly-rooms and wheel chair storage-rooms are on channels 2 and 3.

Example of how the channels are used in an apartment

1	hall telephone	(start)
!	"	(lock opening)
2	wall outlet	(table lamp)
3	"	(table lamp)
4	"	(radio)
5	ceiling lighting appliance	
6-7	window	
8	alarm	(activation of security telephone)
9	telephone	(open line)
10-12	"	(abbreviated number)
13	bed	(head up)
14	"	(head down)
15	"	(foot up)
16	"	(foot down)

As you can see the GewaLink system offers comprehensive solutions, which is very important when it comes to making normal housing possible with preserved security and mobility. Especially the most profoundly disabled benefit from a uniform and comprehensive control and communication system. The GewaLink offers them this possibility!