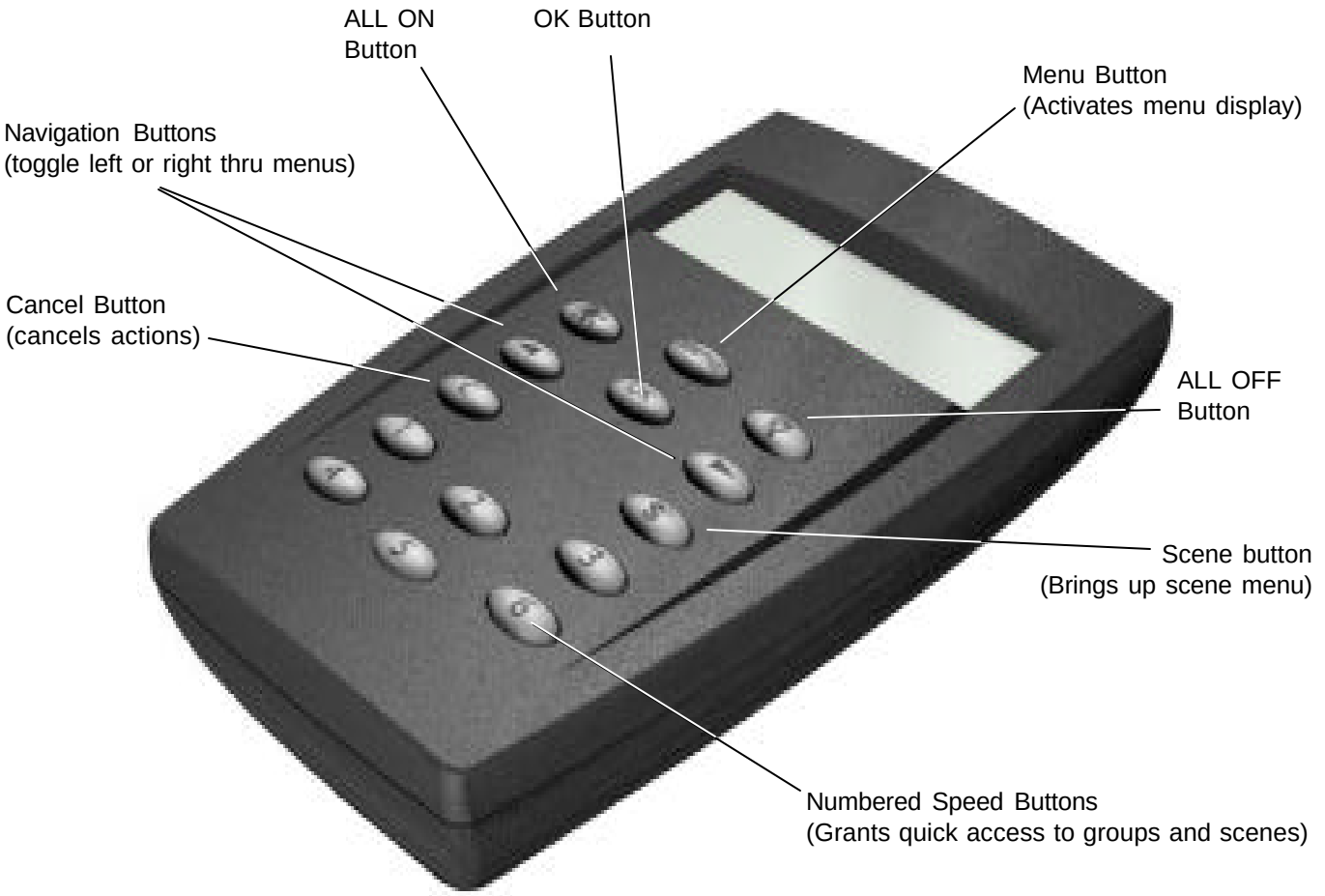
HomePro
RF Home Automation

ZTH100

Programmable Radio Frequency Control
Remote Transmitter
Operating Instructions



BEFORE YOU BEGIN...

READ ALL INSTRUCTIONS

Remove battery cover on rear of transmitter. Install two (2) AA alkaline batteries (included).

There are no field repairable assemblies on this unit. It is covered by a two year limited warranty. If service is needed, the unit must be returned where purchased.

BUTTON LAYOUT

MENU	**- ACTIVATES THE MENU DISPLAY.**
OK	**- ACCEPTS CHOICES ON THE DISPLAY.**
"LIGHT BULB" ON	**- ALL GROUPS ON.**
"LIGHT BULB OFF"	**- ALL GROUPS OFF.**
LEFT ARROW	**- MENU NAVIGATION BUTTON, LEFT.**
RIGHT ARROW	**- MENU NAVIGATION BUTTON, RIGHT.**
C	**- CLEAR. CANCELS ACTIONS.**
S	**- SCENE BUTTON. TURNS SCENES ON/OFF (PREDETERMINED GROUPS OF APPLIANCE AND LAMP MODULES AND WALL SWITCHES).**
"1" TO "6"	**- SPEED BUTTONS. GRANTS QUICK ACCESS TO USER DEFINED GROUPS AND SCENES.**

Table of Contents

1. INTRODUCTION

1.1 GETTING STARTED

Congratulations on your purchase of the ZTH100 and other HomePro components. This manual will guide you in understaning the full capabilities of the HomePro Sytem and operation of the Remote Transmitter.

2. HOMEPRO RF PRODUCTS

2.1 OTHER HOMEPRO LIGHTING AND APPLIANCE PRODUCTS

The remote is designed to work with HomePro lamp and appliance controls, and thus control the following products:

ZDP100	RF Lamp Module	Plug-in, 300W, 120VAC
ZDW100	RF Wall Mounted Dimmer	Wall-mount, 500W, 120VAC
ZRP100	RF Appliance Module	Plug-in, 15A, 120VAC
ZRW100	RF Wall Switch	Wall-mount, 15A, 120VAC

Z-Wave modules of other types can be added to the system and will also act as repeaters if they support this functionality. However they cannot be controlled with this controller.

3. GENERAL OPERATION

3.1 SYSTEM DESCRIPTION

The HomePro product line from Advanced Control Technologies includes several products that are intended to work together to provide convenient control of all of your home lighting and appliances. By using the ZTH100 remote control transmitter, all of these HomePro devices are linked by a state of the art wireless communications network featuring patented Z-Wave technology. This technology insures that the commands that you give through the remote transmitter are reliably communicated by radio to the intended HomePro device.

The remote transmitter controls up to 64 HomePro devices, which include both plug-in and wall mounted dimmers and switches. The remote transmitter finds a way to route your commands to the intended device through other HomePro dimmers and switches. This is possible because each of these devices are designed to retransmit the commands that are sent thru them to adjacent devices that might otherwise be out of range of the remote transmitter. The Z-Wave system provides that a command can be routed if necessary through as many as three different devices in route to the intended device.

Communications with devices employing Z-Wave technology is bi-directional. That is, when a command is sent from a remote transmitter, an acknowledgement is sent back to it by the affected devices to confirm that the command was received. In the unusual situation in which a command is not properly received, a message will appear on the remote transmitter's display to inform the User.

3.2 REMOTE TRANSMITTER SOFTWARE FEATURES.

- Provides user level control for 64 modules.
- Allows configuring of 64 groups with up to 64 modules in each.
- Allows configuring of 32 scenes with up to 64 modules in each.
- Eight (8) timers are available to the user. Each timer can be used to control any one of the existing groups.
- Burglar deterrent mode that randomly turns individual modules ON/OFF in the network.
- Displays the time in 12 hour AM/PM format
- Allows multiple remote transmitters (one master and two or more secondary ones) in various locations for convenience.

3.3 POWER DOWN AND DISPLAY TIME-OUT

The ZTH100 goies into a power saving mode after a period of inactivity in order to conserve battery life. pressing any key will cause the unit to "wake up" and process any of your commands. The display is blank in the power down mode.

1. HOW TO USE THE ZTH100 FEATURES

4.1 MENU NAVIGATION AND SELECTION

Pushing the “Menu” button will activate the menu display.:

a.  and  keys are used to navigate through the menu. All menu levels wrap around.

b.  activates the currently selected menu item.

c.  (or Clear) cancels the currently selected item and will in most instances step back to the previously selected menu level. If used from top menu level the Remote will return to clock display.

The top menu level behaves like this: Using the right and left arrow buttons you can toggle right or left through the menu selections of : GROUPS
SCENES
TIMER
CHILD PROTECTION
BURGLAR DETERRENT
SETUP

Top level menus wrap around, so arrow buttons in any direction will repeat menu selections.

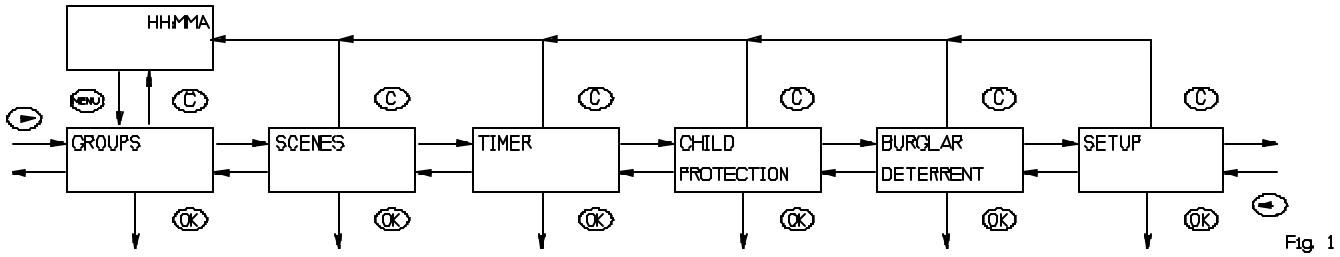


Fig. 1

Select any one by pressing OK. Follow instructions to set up that function (explained in following paragraphs). Using the Clear button (C) at any time will take you back to the Time (which will auto-off after 10 seconds)

4.2 GROUPS/SCENES

The layout and behavior of the “groups” and “scenes” menus are very similar. Where they are identical, “groups” is used as an example.

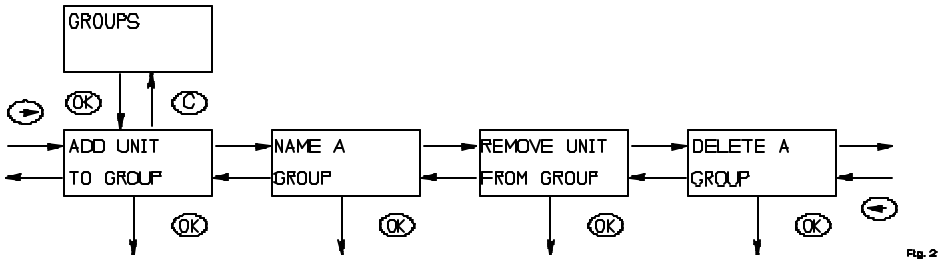


Fig. 2

4.2.1 ADD MODULE TO GROUP

Adding a module to a group using the menu is done this way:

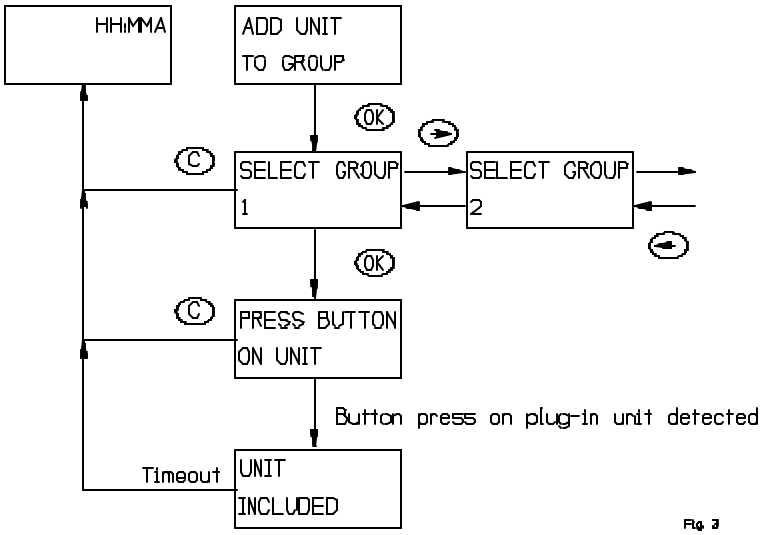


Fig. 3

Alternatively if the group has been named, the name shows up instead of the number. To add more units repeat the procedure “ADD UNIT TO GROUP”

4.2.2 ADD MODULE TO SCENE.

Adding a module to a scene is done this way:

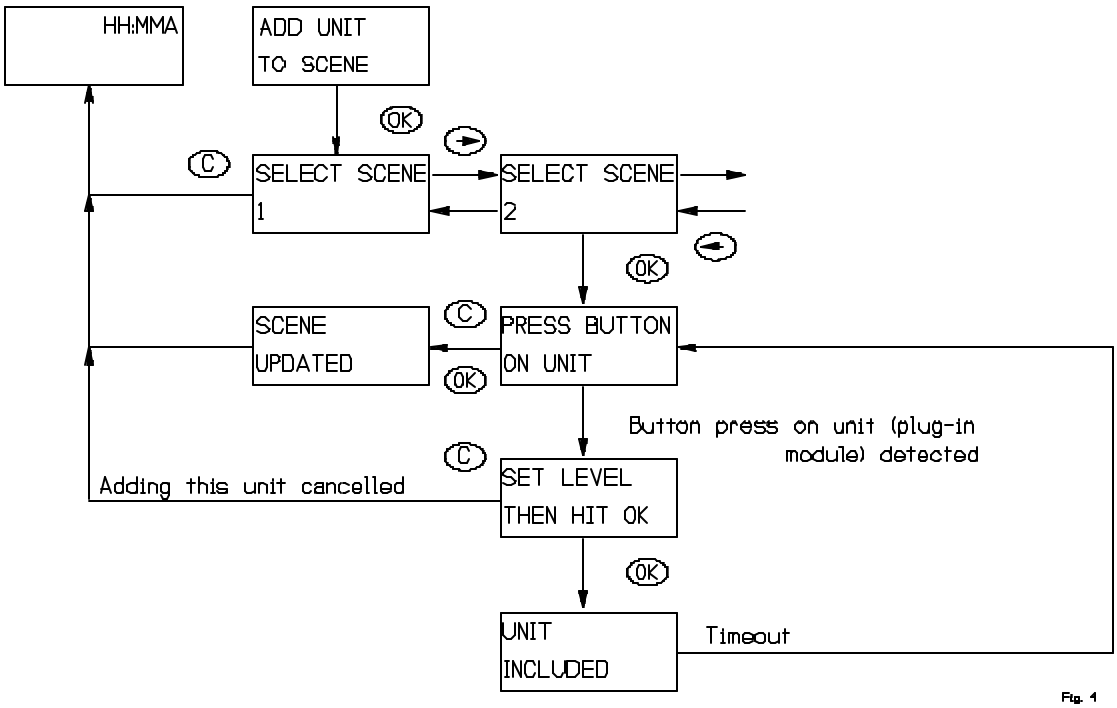


Fig. 4

Note that hitting “C” will not clear units that already have been stored in the selected scene. A module is stored when “Switch included” is shown in the display.

4.2.3 EXCEEDING NODE LIMIT.

This application supports up to 64 modules. If the user tries to add more than 64 modules to a group or scene this message will be displayed:

However the module will be given a valid ID and it will be used as a repeater if it supports this functionality, but it cannot be directly controlled by this remote.

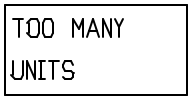


Fig. 5

4.2.4 ADDING UNSUPPORTED DEVICE TYPES TO THE NETWORK

As mentioned elsewhere devices of other types than multilevel and binary switches can be included into the network and will be used by the protocol; they cannot be controlled by this application. If the user adds an unknown device to the network this information will be displayed:

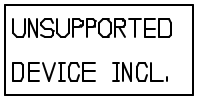


Fig. 6

4.2.5 NAME A GROUP/SCENE

To name a group or scene enter the relevant menu. Then select the group/scene name to be edited.
In order to delete a name, just select the group/scene and clear the old name using “C”.

Note: Shaded area indicates “blinking” cursor.

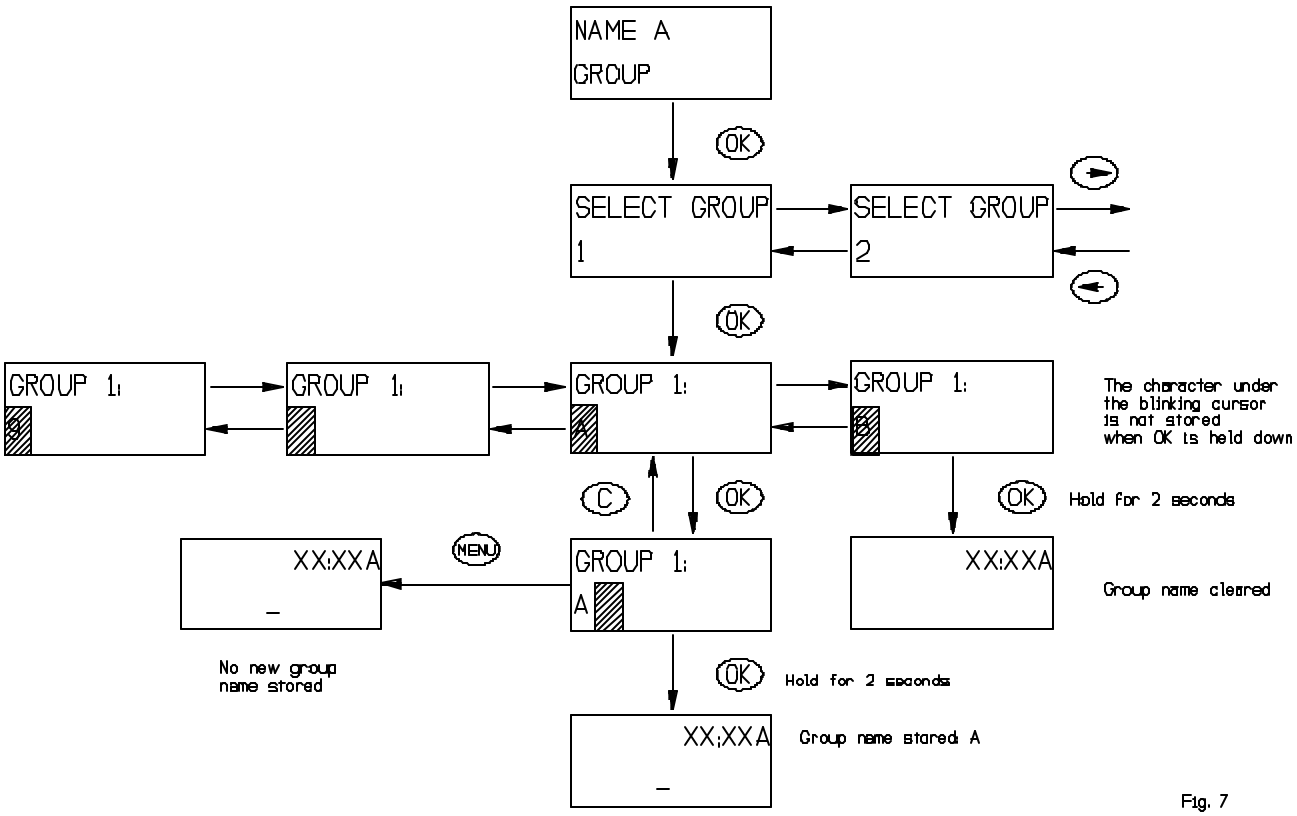


Fig. 7

4.2.5.1 CHARACTER SET.

The characters available for naming are: ‘A’,’B’,’C’,’D’,..,’Z’, and ’0’,’1’,’2’,..,’9’,’ ‘
Note that no lower case letters are available to the user.

4.2.6 REMOVE MODULES FROM GROUP/SCENE.

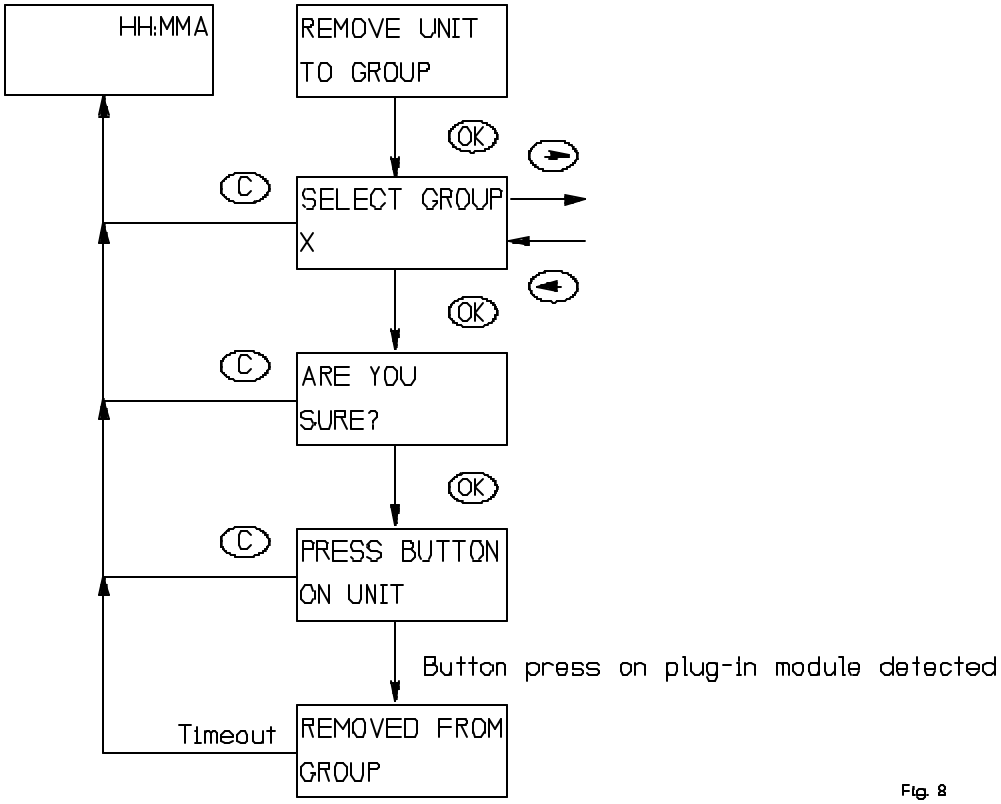
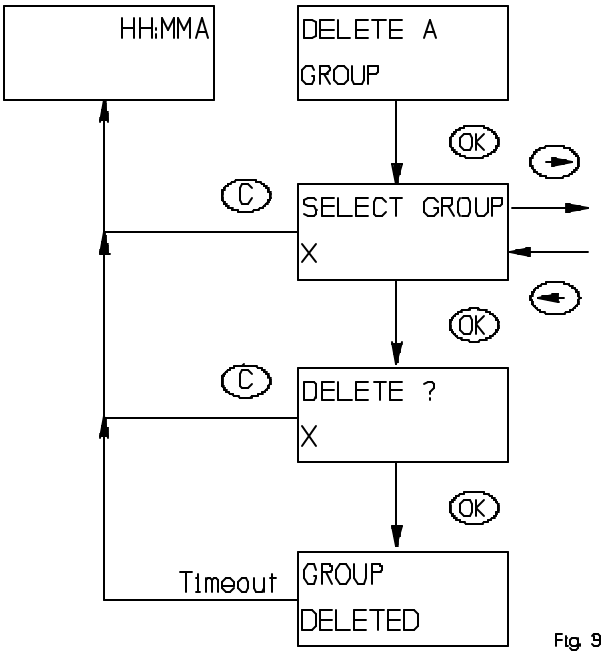


Fig. 8

Clear cancels the current selection. Navigation keys only work if more than one group or scene exists.

4.2.7 DELETE GROUP/SCENE



Scroll left or right to find scene.

Fig. 9

If no active groups or scenes exists the following occurs:

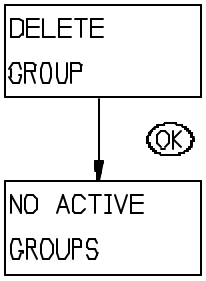


Fig. 10

4.3 TIMER

The timer menu consists of the following menus:

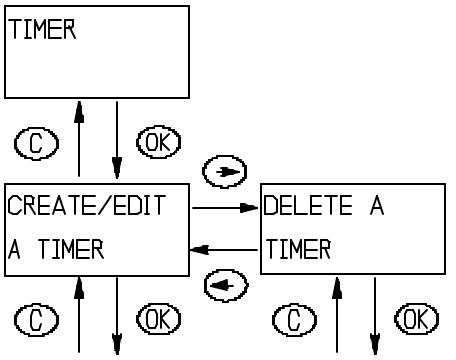


Fig. 11

Timer information is stored in the remote transmitter – not in the plug-in module.

4.3.1 CREATE/EDIT A TIMER

There are eight timers available for the user. Each timer controls one of the existing groups as chosen by the user.

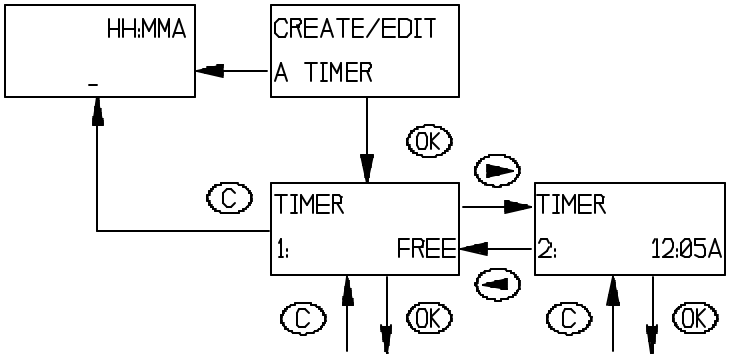


Fig. 12

If an existing timer is selected that timer will be edited. Pressing the clear button will cancel the editing and leave the timer as it was. The time indicated when selecting a timer is the start time of that timer.

Once a timer has been selected the following flow is executed when creating/editing a timer:

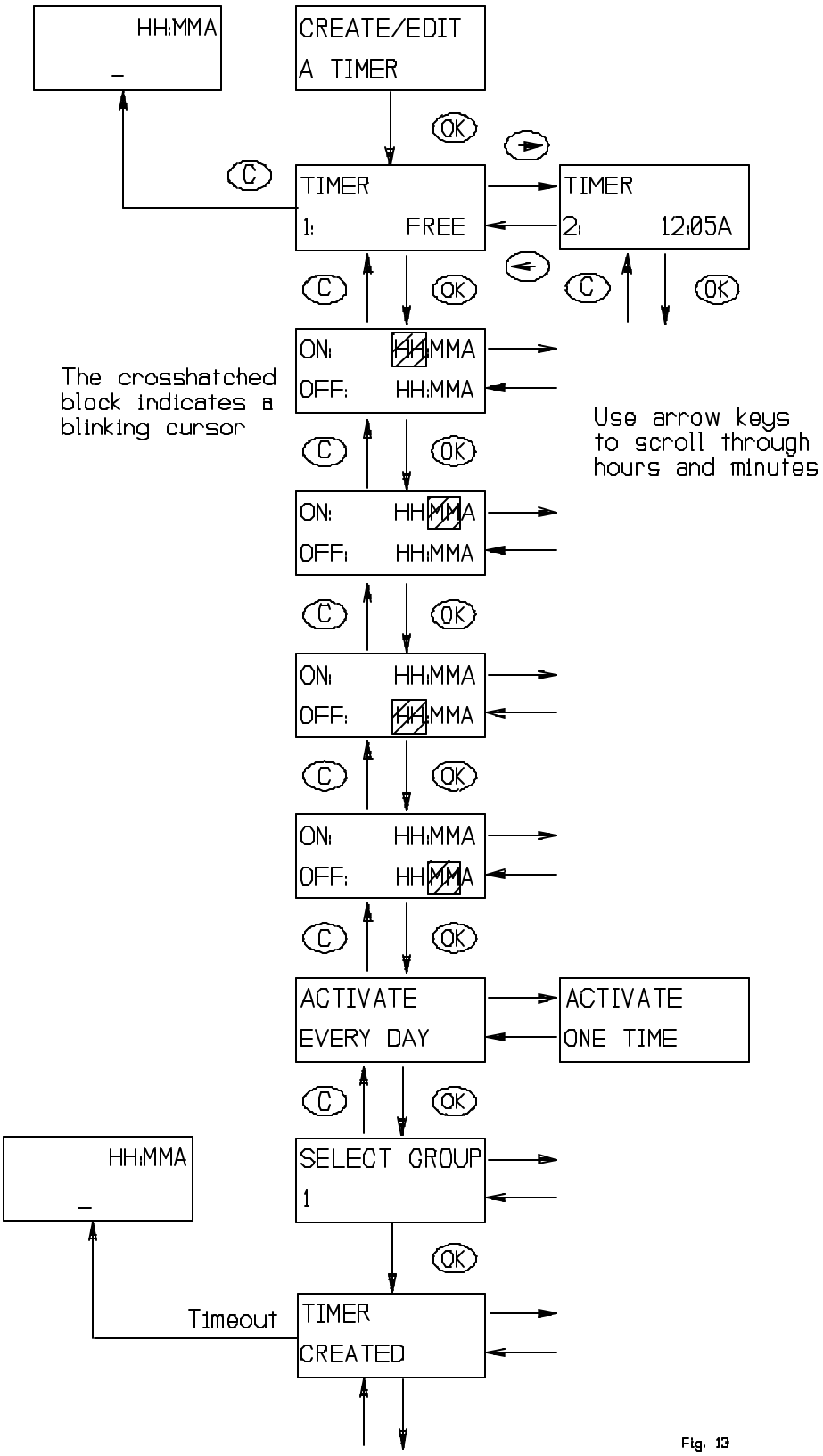


Fig. 13

If a group is named the group name will be shown.

4.3.2 DELETE TIMER

When a timer is no longer needed it can be deleted using “Delete a timer” menu.

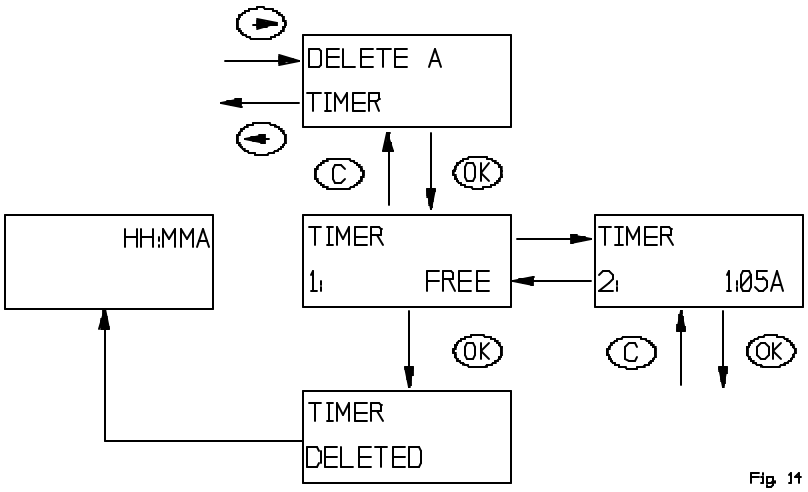


Fig. 14

4.4 CHILD PROTECTION

Child protection is a feature that protects against unintended use of a module. For this feature to work the module must support it.

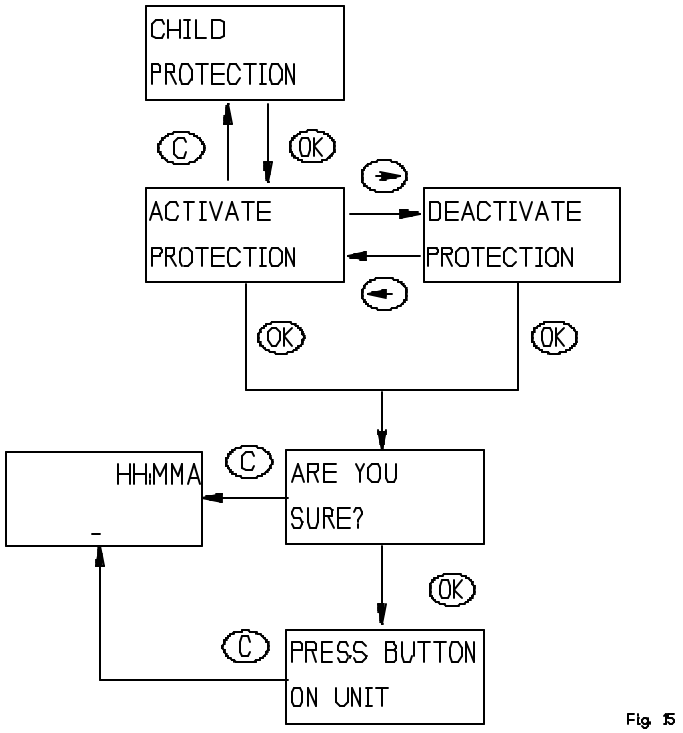


Fig. 15

If a module button is pressed you will get:

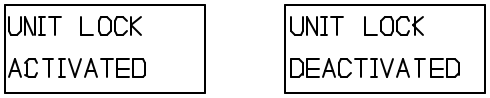


Fig. 15A

depending on which of the two options you selected.

4.5 BURGLAR DETERRENT

When in burglar deterrent mode the remote will randomly turn module on and off in the time interval set by the user in the “customize time” menu. By default no modules are included in the burglar deterrent mode. So the first step the user should perform, is to include the units that should be used during burglar deterrent. See **section 4.5.3** for information about how to include units in burglar deterrent.

The following issues should be noted:

1. When the burglar deterrent period expires or is exited by the user, the remote will turn off all the modules it currently has marked as activated. This may include units that already were ON before burglar deterrent was started.
2. Because of the randomness involved the actual start time when burglar deterrent activates the first module will vary from the start time with +/-15 minutes.
3. After burglar deterrent has activated the first module it will make sure that at least <u>one</u> module is on during the burglar deterrent period.
4. If only one module is included in burglar deterrent this module will be turned on when burglar deterrent activates the first time and not be turned off until burglar deterrent ends. Refer to paragraph 3.
5. When the end time is reached it will take from 0 to 59 minutes before it turns off the modules it activated.
6. Burglar deterrent information is only stored in the remote.

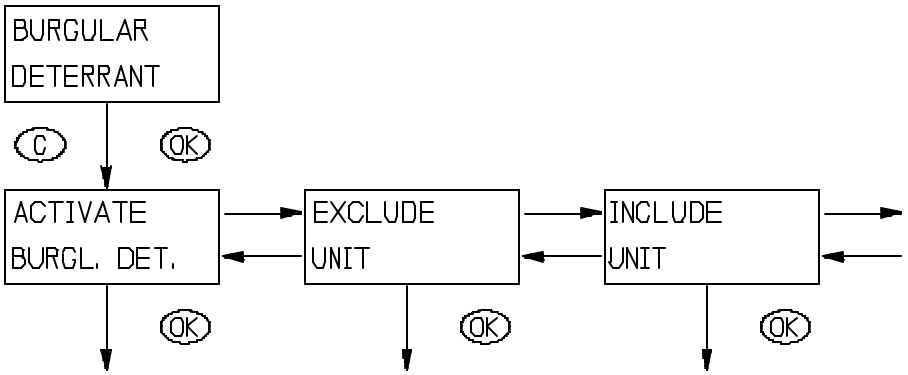


Fig. 16

4.5.1 ACTIVATE BURGLAR DETERRENT

Activating burglar deterrent will will take the user through a time period customization and put the remote into a special mode where it will stay until burgular deterrent is cancelled.

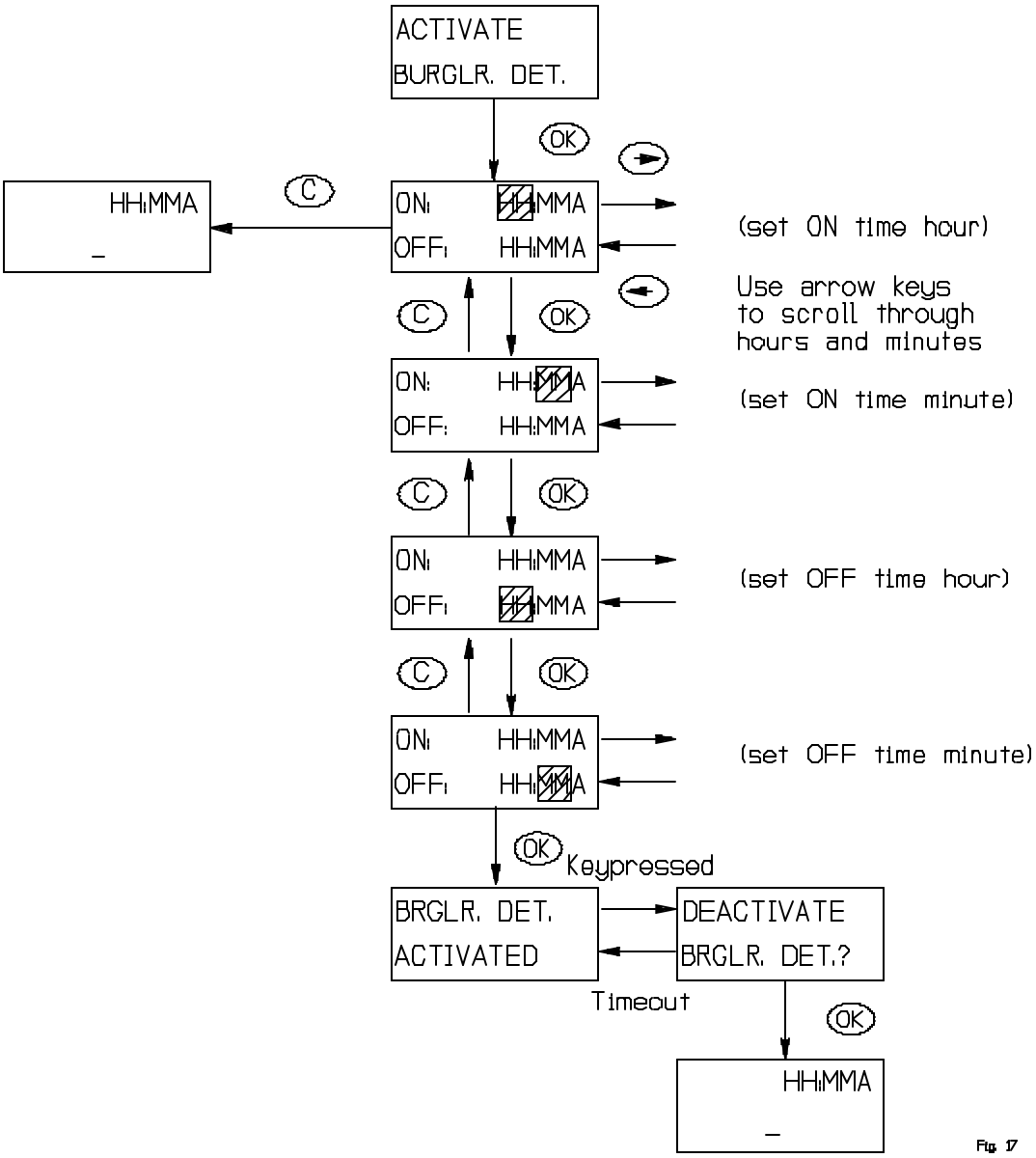


Fig. 17

By default no units are included in burglar deterrent. This message will be shown when the user tries to activate burglar deterrent:

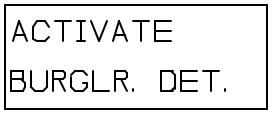


Fig. 18

4.5.2 EXCLUDE UNIT

An included module can be excluded once again using this menu. Note that by default no modules are included in the burglar deterrent mode.

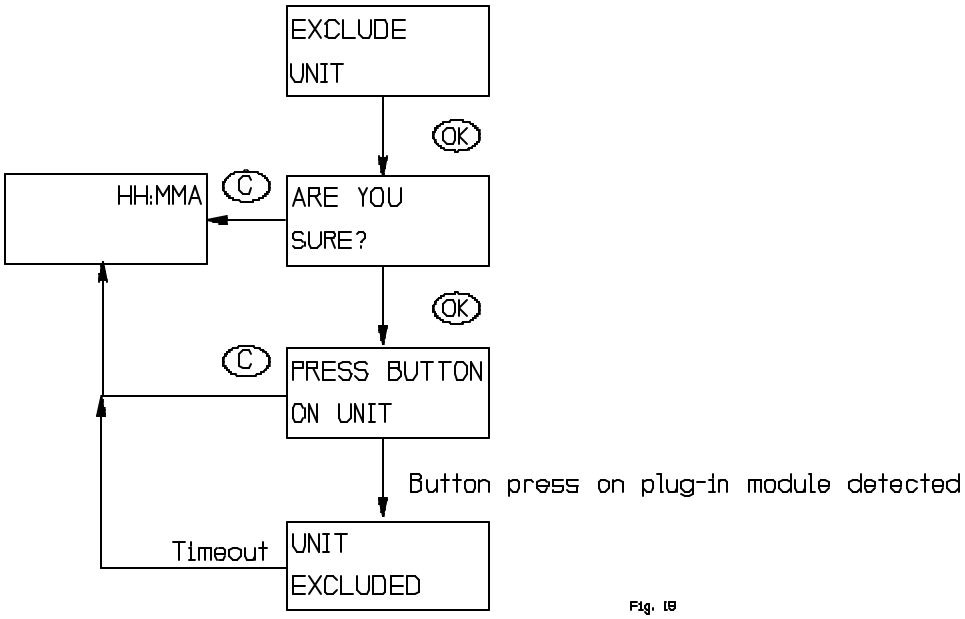


Fig. 19

4.5.3 INCLUDE UNIT

When first activating burglar deterrent the modules that the user wants to use should be included using this menu. In addition an excluded module can be included once again using this menu.

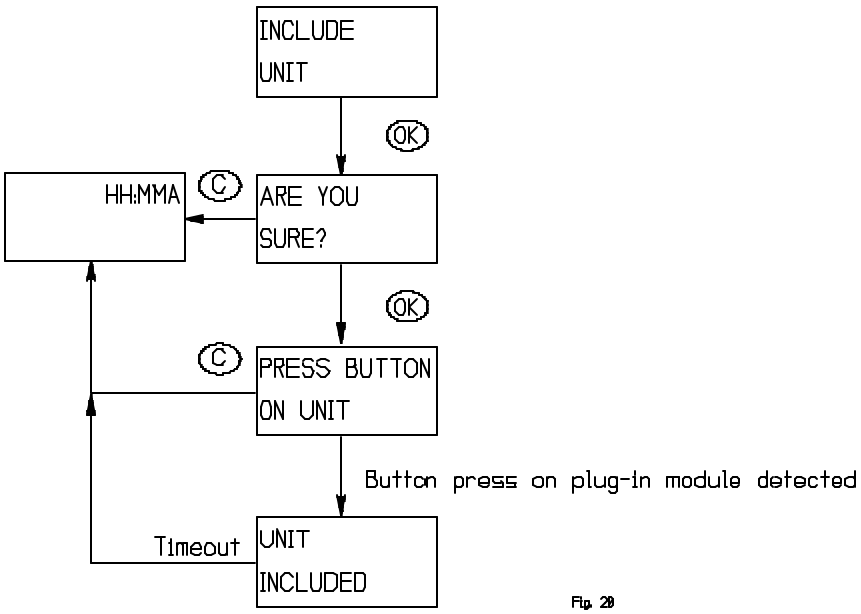


Fig. 20

4.6 SETUP

The setup menu is used to access system functions. The layout is as follows:

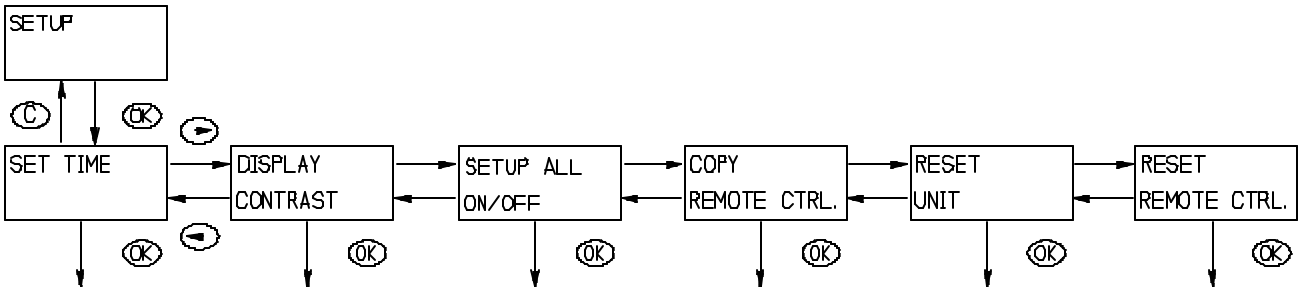


Fig. 21

4.6.1 SET TIME

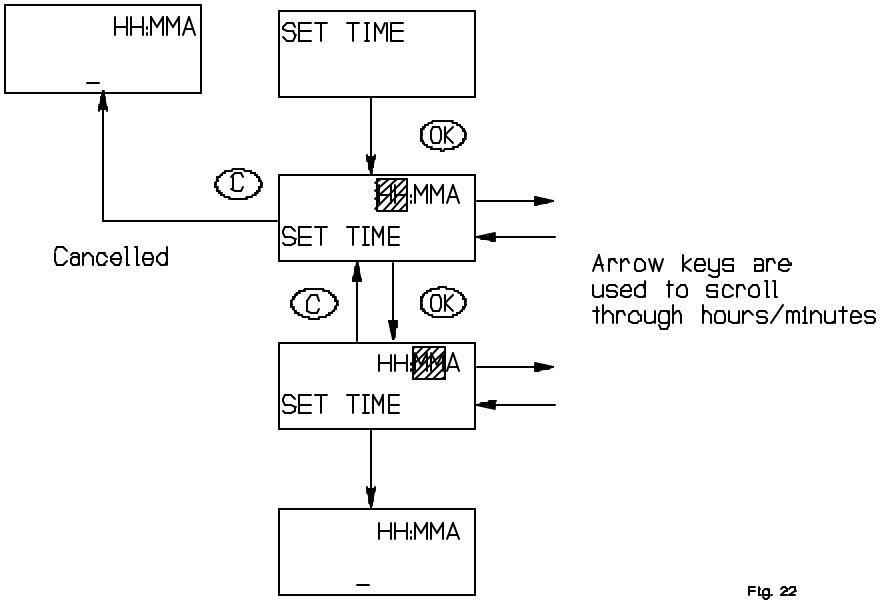


Fig. 22

4.6.2 DISPLAY CONTRAST

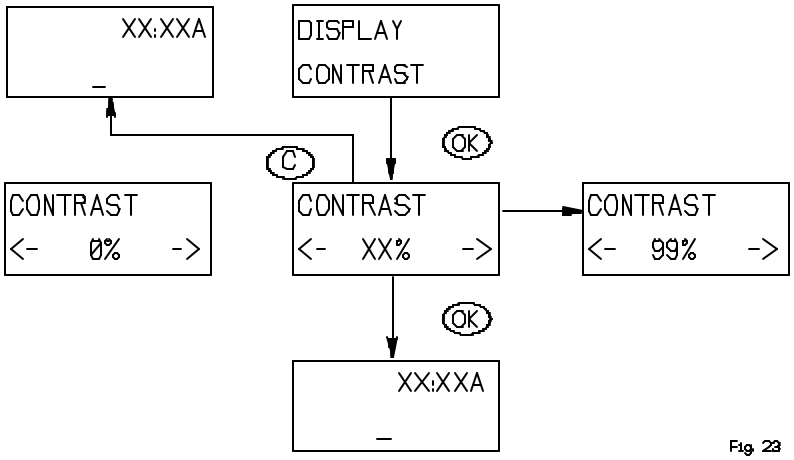


Fig. 23

"C" cancels the contrast adjustment and returns to idle. Default contrast is 50% which is restored whenever the batteries have been removed.

4.6.3 SETUP ALL ON/OFF

Using this menu it is possible to customize the way All on/off works. Units can be included or excluded from all on/off commands (units are included first time they are added to the network).

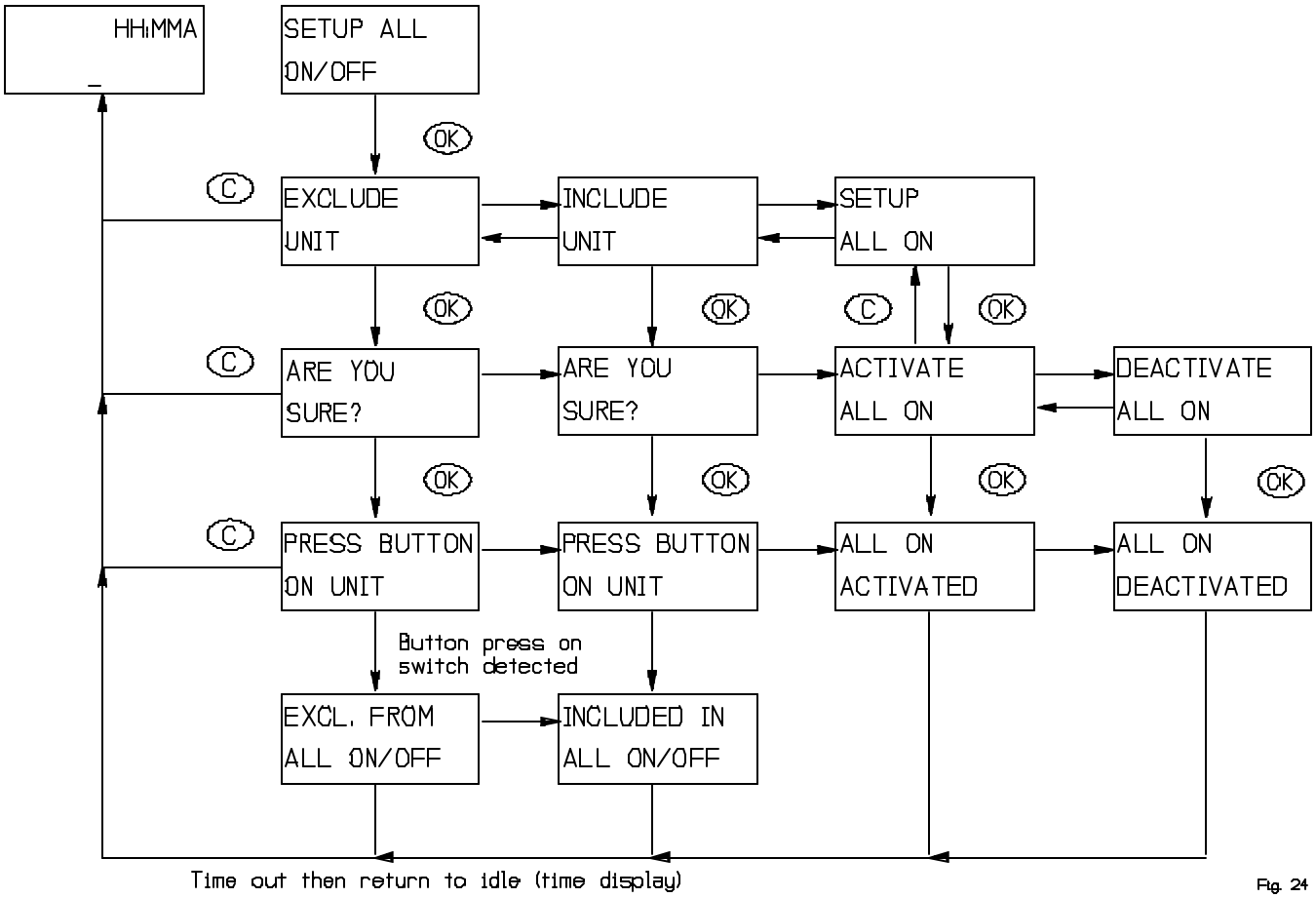


Fig. 24

4.6.4 COPY REMOTE TRANSMITTER.

This menu is used to copy information from the Master Remote A master remote **must** be used to include new modules to the network and to reset modules. Transmitter to other remote transmitters, so that they may control units known by the Master Remote Transmitter.

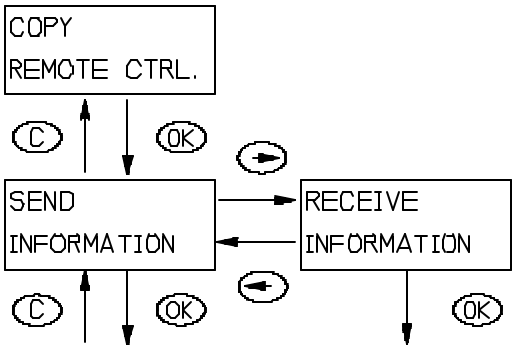


Fig. 25

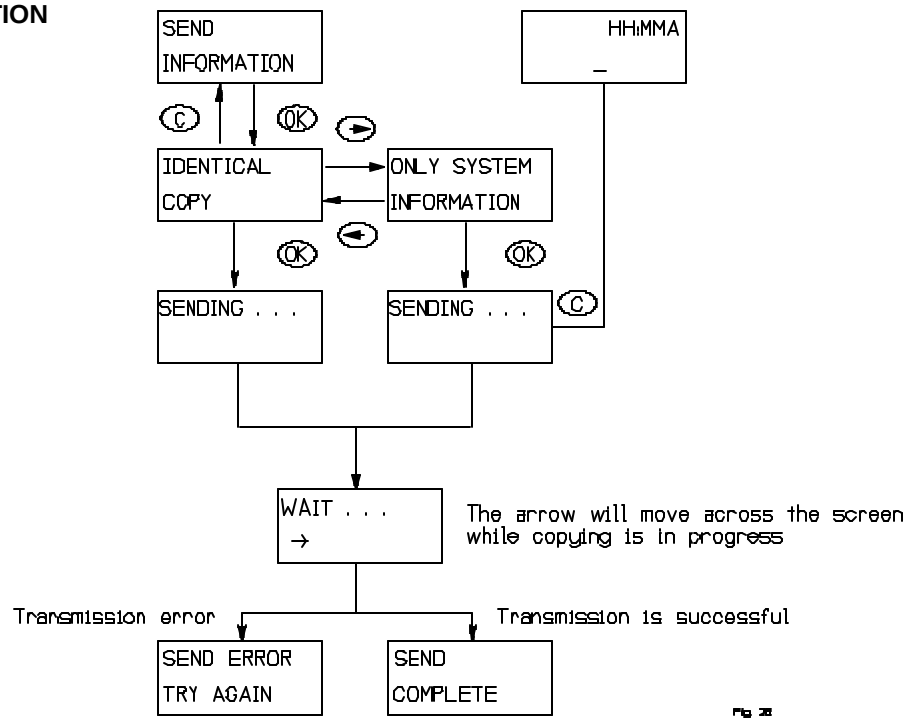
A replication of a remote is done as follows:

1. Select “Receive information” on the remote which should **receive** the information (i.e. the Secondary Remote)
2. Select “Send information” and either “Identical copy” or “Only system information” on the remote that is to **send** the information (i.e. the Master Remote).
3. Wait until transmission is completed and both the remote transmitters return to clock display.
4. If a transmission error occur. Please repeat from 1.

Considerations:

1. It is important to note that all information on the receiving remote will be deleted **before** any information is received.
2. Burglar deterrent and timer information is not copied to the secondary remote.
3. Slave remote transmitters **can not** be used to add newly acquired or reset modules to the network
4. If a secondary remote is added as one of the first 64 units, it will take up a node ID thus limiting the number of units that can be controlled from the master remote.
5. If modules are moved physically it should be done as mentioned in 4.6.5 and the replication should be repeated
6. New modules added to the network are not automatically known by the secondary remote transmitters. They have to be transferred from the Master Remote by the replication process, or by adding the new node to a group or scene on the secondary remote before it is known by the Master Remote.

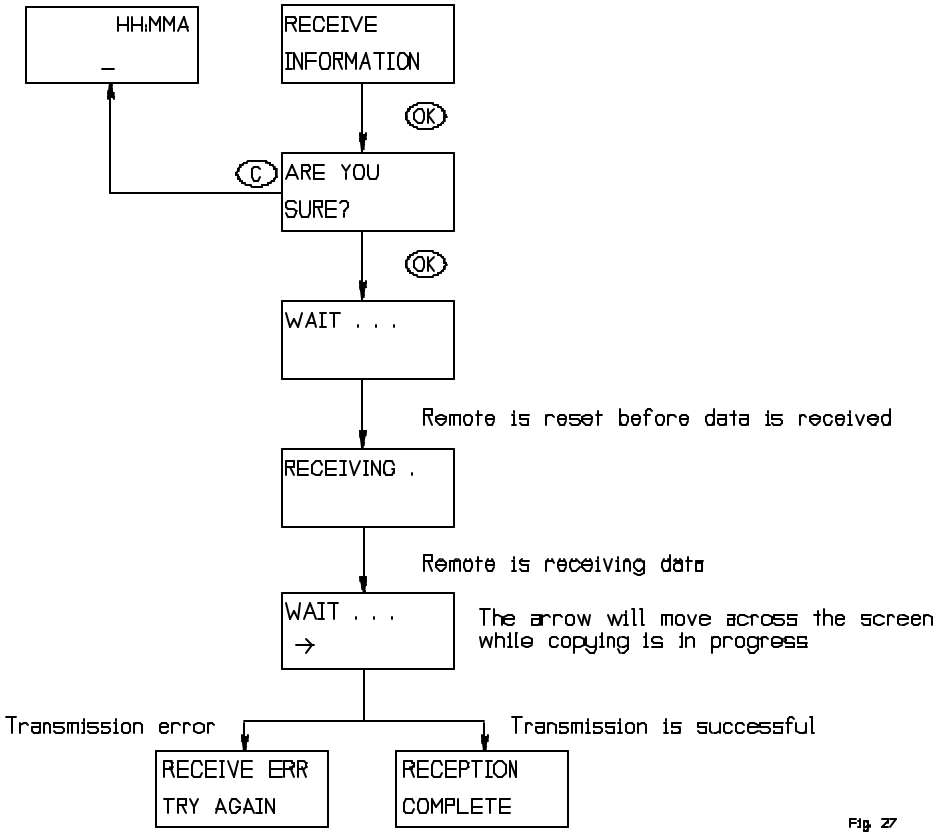
4.6.4.1 SEND INFORMATION



There are two options. If the user wants an exact copy of the master remote including groups, scenes, names and so forth “Identical copy” should be selected. If the user wants to create groups, scenes and names from scratch “Only system information” should be selected. When sending is activated the master remote will wait for a secondary remote to respond to its node information broadcast.

4.6.4.2 RECEIVE INFORMATION

The flow of the “Receive information” menu is shown below.



4.6.5 RESETTING LAMP AND APPLIANCE MODULES (INCLUDES PLUG IN AND WALL MOUNT)

If a switch is to be moved to a new position or added to a new network, it has to be reset before doing so. This is done using this menu.

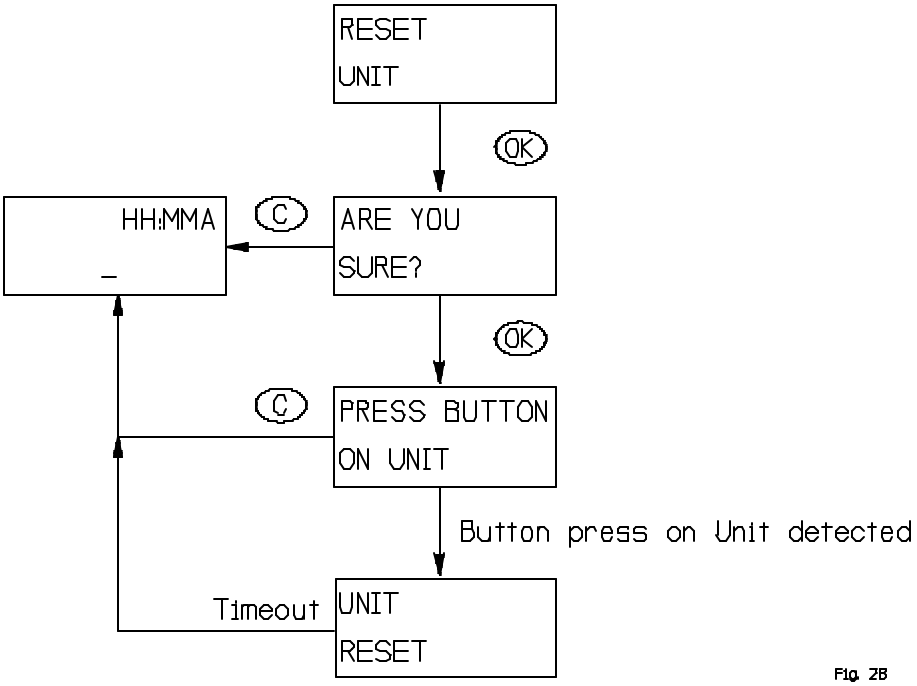


Fig. 28

4.6.6 RESET REMOTE TRANSMITTER

The remote transmitter can be reset in two different ways. User data only and factory default. User data only, will only reset groups, scenes and names. The Remote Transmitter will still information about the modules that have been added to the network. Factory default will clear the remote of all information, and it will clear groups, scenes, names and will delete all modules from the network. A factory default reset should be used with extreme care.

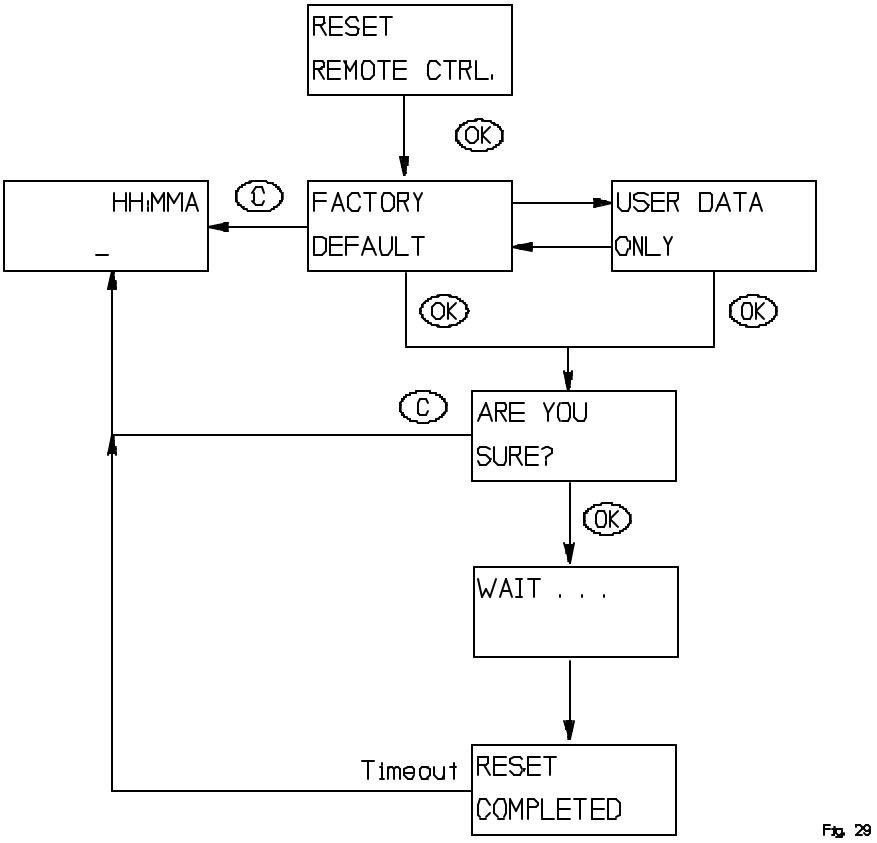


Fig. 29

5. OPERATION MODE

5.1 OPERATION DISPLAY

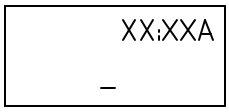


Fig. 30

When the clock is displayed the remote control is in operation mode. It is from this mode the known units can be controlled through either groups or scenes.

5.1.1 SLAVE REMOTE INDICATION

Fig. 31

When an underscore is shown in the left bottom corner the remote transmitteris a secondary remote with the limitations mentioned in these instructions.

5.1.2 SCENE INDICATION.

From the operation mode press the scene prefix button “S”. The display will change to:

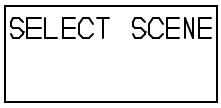


Fig. 32

This indicates that the next key press will be used to control a scene (if any available).

5.1.3 LOW BATTERY INDICATION.

This message indicates that it is time to replace the batteries. It will go away when the batteries have been replaced.

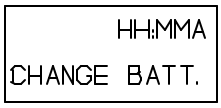


Fig. 33

5.2 USING OPERATION MODE

Operation mode is the mode where the following display is indicated:

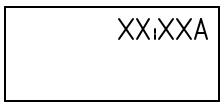


Fig. 34

This mode is also the idle mode to which the remote returns after performing operations.

In this chapter the functions available in operation mode will be described.

5.2.1 CONTROLLING GROUPS USING SPEED BUTTONS.

Groups are controlled by either using the keys 1 through 6 or by using the navigation keys (‘<‘ or ‘>’) to select the group that is to be controlled. Note that dimming a group never displays any failures that might have happened during transmission as does an ON/OFF command.

5.2.1.1 PRESSING A SPEED BUTTON BRIEFLY.

The buttons marked 1 through 6 are used for speed access to the first 6 groups or scenes. Pressing the number button briefly will toggle the selected group on or off. Even if the remote is powered down (display is off) a key press on a speed button will toggle the group. The display will show the following message:

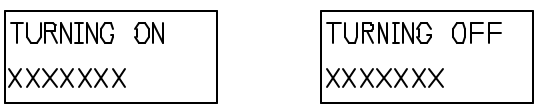


Fig. 35

Alternatively, if the group is named, the name will be displayed:

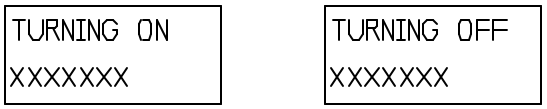


Fig. 36

The text is displayed for a few seconds or until transmission is complete depending on which of these actions occurs last.

If no group of the selected number is defined, the following message will be shown for a few seconds:

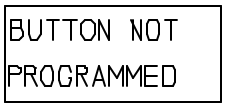


Fig. 37

If for some reason the transmission fails, the following message will be shown until the user presses a key:

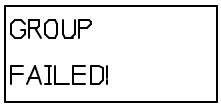


Fig. 38

5.2.1.2 HOLDING A SPEED BUTTON DOWN.

Once a group is created on a speed button, it will start dimming when the speed button is held down.

The remote will listen for node information frames while the button is held down. If it detects a node-information frame from a valid (reset/valid ID) node, it will add this node to the group being dimmed.

This figure illustrates the display during dimming:

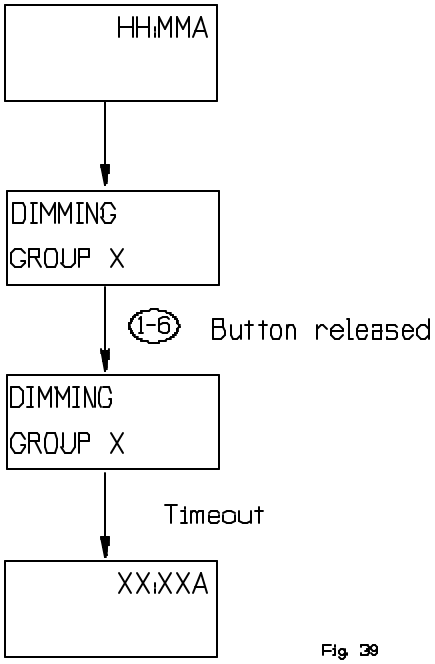


Fig. 39

Note that once a module is at maximum or minimum dim level the dimming will stop. The button must be released and held down again in order to change dim direction. If a node information frame is detected during dimming, the

sequence is as follows:

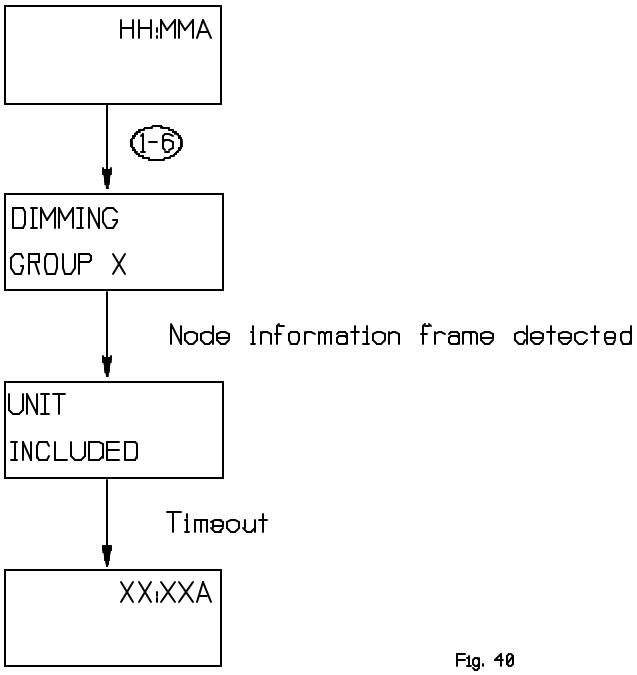


Fig. 40

NOTE: If the group on the speed button is unused the user will be presented with the option to include a module when holding down a speed button. This is done with the following display:

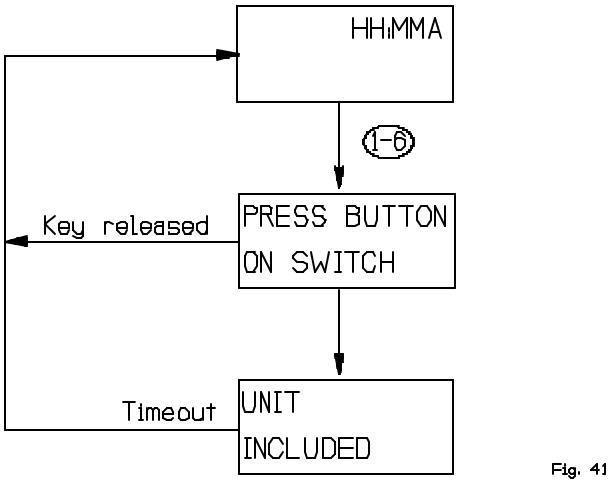


Fig. 41

5.2.2 CONTROLLING GROUPS USING NAVIGATION KEYS.

Another way to access groups is to use the navigation keys ('<','>') from operation state. This is the only way to control the groups from 7 to 64. Also note that it is only the existing groups that show up when the user toggles through the

list. If a group is named the name will be shown instead of the number. In order to switch a group ON or OFF the “OK” button is pressed briefly. If the “OK” button is held down the group will be dimmed and it will be possible to add module to the group being dimmed like mentioned in 5.2.1.2

It looks like this:

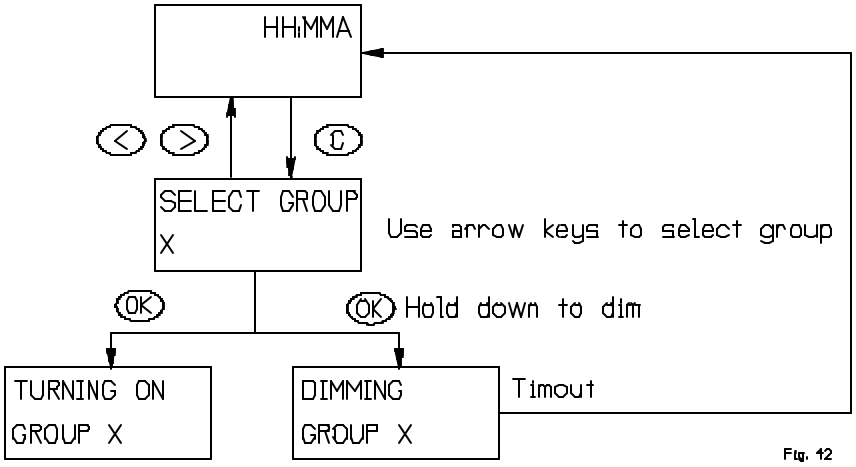


Fig. 12

If a node information frame is detected the flow is like this:

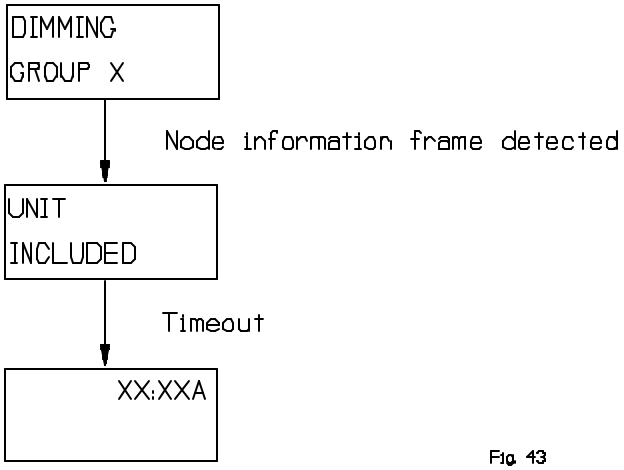


Fig. 13

5.2.3 CONTROLLING SCENES

Scenes are accessed through the scene prefix button (“S”). The remote transmitter will indicate that it is in scene selecting mode by the display shown in **5.1.2.**

When in this mode the arrow or number keys can be used to select a scene as mentioned in **5.2.1** except for the fact that scenes will be activated. Once a scene has been activated the remote returns to group mode. Note that scenes can only be activated, not dimmed or deactivated.

However they can include switched off modules and also note that setting a scene will never return a failure message.

5.2.4 ALL ON/ALL OFF

Hitting “all on” button  will show this display

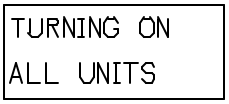


Fig. 44

and “all off” button  will result in

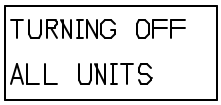


Fig. 45

This display will be shown for the duration of the transmission, which for larger setups can be a while.

If the transmission fails either

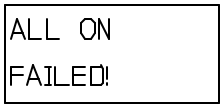


Fig. 46

or

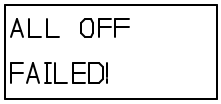


Fig. 47

will be shown until the user presses a key.

6. OTHER INFORMATION

The remote transmitter supports 64 modules. If the user adds Z-Wave devices other than HomePro to the network, those modules will use one of these modules identification, if they are assigned as one of the first 64 modules.

However since the protocol supports up to 232 modules it is possible to create a setup with 64 modules and numerous modules of other types. The modules must be added to the network before other types of modules are included. The remote application will ignore the modules that are added after the 64th, but the protocol will make sure that they get a valid home/module identification and that they are used as repeaters if they support this functionality.

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Advanced Control Technologies, Inc. expressly disclaims all liability and responsibility for any special, indirect or consequential damages or any further loss of any kind whatsoever resulting from the use of our product. The Customer’s sole and exclusive remedy and the limit of Advanced Control Technologies, Inc.’s liability for any loss whatsoever, shall not exceed the purchase price paid by the Customer for the product to which a claim is made.

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2. Advanced Control Technologies, Inc. will correct any defects in material or workmanship which appear within one (1) year from the date of purchase. Advanced Control Technologies, Inc. will repair or replace, at our option, any defective products, provided that our inspection discloses that such defects developed under normal and proper use. This warranty does not extend to goods subjected to misuse, neglect, accident or improper installation, or to maintenance or repair of products which have been altered or repaired by anyone except Advanced Control Technologies, Inc. unless otherwise stated in writing.
3. An appropriate charge (50% of product list price) will be made for testing, repairs, replacement and shipping for returned product which is not defective or found to be defective as the result of improper use, maintenance or neglect.
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FCC NOTICE

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.