AMBIFLEX MF626 - USER GUIDE

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PRODUCT OVERVIEW

The MF626 is a freely programmable controller with features normally available only in much more expensive systems.

It has been designed with override and adjustment facilities for the non technical user.

The front panel has a keypad and display that can show temperatures, alarms and generally what is happening with the system at the two 'User' levels and can be used for commissioning at the two 'Engineer' levels. All levels except the lowest user level are password protected. This guide introduces the two user levels

A modem may be used on some controllers, allowing automatic dial-out of alarm messages to a PC or standard off the shelf fax machine. Alternatively the controllers can utilise an existing intranet system by communicating via an Ethernet device.

For systems requiring greater capacity than that provided by the MF626, please contact the Ambiflex office (details on the back of this booklet).

FEATURES

As a freely programmable controller the MF626 is capable of sophisticated levels of integrated and demand based control. These would typically include:

Optimisation

Compensation

Boiler sequencing

Pump run on

Integrated heating and cooling control

Independent zone control

Multiple stage frost protection

Economy settings including high limits for room and outside air

Hot water services control including anti-legionella boost

Lighting control

Meter reading

Alarm handling

Automatic BST/GMT changeover

STANDBY DISPLAY

With the MF626 in its normal 'locked' mode, the display reverts to standby mode whenever the 'escape' key is pressed [∗] or approximately 20 minutes after the last keystroke by the user. The following information is shown in the standby mode.

Machine Type   Time, Date & Day

```
 ∗ MF626∗              10:14  15/07/02   Monday

    [0] = Info      [#0] = Adjust        [#∗]  = Unlock

```

Quick Keys

Machine Type   Machine type and revision number.

Time, Date, Day Time is in 24 hour format.
                     The date is always displayed in the Day/Month/Year
                     format.

Quick Keys   The keys to press (shown in brackets) which will take
                     the user directly to that part of the program.

USER FACILITIES

In addition to the standby display three additional facilities are available to the User in the locked mode. These are:

Display   Where temperature values and system status conditions may be displayed.

User Adjusts   Where preprogrammed controlled temperature adjustments may be made.

Override Actions Where pre-programmed override actions may be selectively implemented.

These are carried out by pressing any of the four black user override buttons:

(1) (2) (3) (4)

Alternatively further overrides may have been programmed using quick keys as itemised on the standby display in place of the 'unlock' prompt.

Words describing the specific override function will appear in the display window when the quick key is pressed.

STATUS DISPLAY MODE

A wider range of information regarding the status of the MF626 can be displayed in more detail whilst the machine is locked. This is very straightforward – only three keys are used: [0] [5] and [#]

The [0] key is pressed to access User Display from the standby display.

The [5] key is pressed to scroll down the menu from Measured Temps.

The [#] key is pressed to view the items contained in the menu.

MEASURED TEMPERATURES

Press [0] from the standby display and the screen below will appear.

```
 User          Display        Measured temperatures

[#] = view     [5] = Channel status    [*] = escape
```

From here each of the measured temperatures in °C can be displayed by pressing [#] to view. These appear on the bottom line with the name on the left, and the value on the right, e.g.:

Room 1   **21.3**

To view the next temperature, press [#] again and so on. With the cursor flashing on 'M' of Measured temperatures, other status information can be selected for display by pressing [5]

Alternatively, to escape to the default display press [*]

TIME CHANNEL INFORMATION

Key ⌷5⌷ from measured temperatures and the display will change to:

> User   Display   Time channel info
>
> [#] = view [5] = Current status [✱] = escape

From here information concerning each of the time channels can be displayed by repeatedly pressing ⌷#⌷

These appear on the display and tell the user which time channel it is, whether it is on or off and whether it is in an occupancy period. e.g.

Heating   **On   Occupancy**
                                    [#]=nxtChn

With the cursor flashing on 'T' of Time channel info. other status information can be selected for display by pressing ⌷5⌷

Alternatively, to escape to the default display press ⌷✱⌷

WHAT IS HAPPENING NOW?

Key ⌊ 5 ⌋ from time channel info and the display will change to:

User	Display	What is happening now?
[#] = view	[5] = Fault reports	[✱] = escape

From here the user can see anything which may be affecting the normal control status by repeatedly pressing ⌊ # ⌋ Anything which appears in this section is not a problem but is something which may be holding the boilers/pumps on or off. For example, high outside air temperature holding the heating off as an economy feature.

These appear on the bottom line e.g.

Heating OFF hi room

If there is nothing happening the display reads 'no news'.

With the cursor flashing on 'W' of What is happening now? Other status information can be selected for display by pressing ⌊ 5 ⌋

Alternatively to escape to the default display press ⌊ ✱ ⌋

ANY PROBLEMS?

Key ⌷5⌷ from what is happening now and the display will change to:

```
User        Display        Any problems?

[#] = view  [5] = Temperatures   [✱] = escape
```

From here the user can see whether there are any problems that should be reported by repeatedly pressing ⌷#⌷ If anything appears within this section, contact your maintenance provider. This controller will not show every possible problem that could affect your heating and hot water, however, it may give an early warning. Serious problems will also appear within the Alarm/Event list – see page 14.

These appear on the bottom line e.g.

Room 1 sensor FAULT

If there is nothing within this menu the display reads 'no probs'.

With the cursor flashing on 'A' of Any problems? the next status information menu Measured temperatures can be accessed by pressing key ⌷5⌷

Alternatively, to escape to the default display, press ⌷✱⌷

USER ADJUSTS

From the default display press ⌗ hold and press ⓪ These keys pressed together will take the user directly to this screen.

```
User          Adjust              Room day target

21.0          [9]=change   [5]=nxtAdj
```

To change this press ⑨ and the bottom line of the display changes to:

21.0   [2=Up   5=Down   0=Reset   #ok]

② takes the temperature up by half a degree.

⑤ takes the temperature down by half degree.

⓪ takes the temperature to the default programmed in.

⌗ accepts the changes made.

⌗ again to return to normal display.

When the cursor is flashing over User Adjust 1 e.g. Room day target ⑤ will move the cursor to the next setpoint, if one is available.

Alternatively, to escape to the default display, press ＊

OVERRIDE ACTIONS – DEDICATED PUSHBUTTONS

These override actions are accessed via black pushbuttons. The four pushbuttons are normally used for:

Heating day extension	PB Switch	①
Hot water day extension	PB Switch	②
Summer mode	PB Switch	③
Holiday mode	PB Switch	④

The name of the programmed override function will be shown in the top left hand side of the display screen. Press ① and the display will show:

        override name   user action required

Extend heating by   Switch 1 to action
exb 00:30   now/No

       current override status

Where 'Switch 1 to action' means press pushbutton ① to increment day heating extension times by 30 min. When ① is pressed once, '**nowNO**' will change to '**nowYes**' and '**Switch 1 to action**' will change to '**Switch 1 steptime**'

① again and '**+00:30**' changes to '**+01:00**'

① again and '**+01:00**' changes to '**+01:30**'

The green LED will come on to show that the extension has been programmed, this will then start to flash when the timer has started to 'run back' at the end of normal occupancy. The extension can be programmed in at any time during the day and it will operate once the normal occupancy period has finished.

The override action can be cancelled at any time by pressing (1) to access the override from the standby display and then holding (1) down for a minimum of 3 seconds. The '**nowYES**' will change to '**nowNO**' and the green LED will go off.

(2) Is normally used to extend the Hot Water On time and the operation is identical to (1)

(3) The display will normally show:

> Summer - heating OFF   Switch 3 to action
>
> now NO

Press (3) again and '**nowNO'** changes to '**nowYES'** and the green light alongside flashes. All heating will be switched off but not hot water. This is a manual switch and the effect is immediate, it will also stay active until it is cancelled.

The override action can be cancelled at any time by pressing (3) to access the override from the standby display and then pressing (3) again. The '**nowYES**' will change to '**nowNO**' and the green LED will go off.

(4) Is used as a Holiday – all OFF switch and the operation is identical to (3)

N.B.   During summer and holiday shutdown frost protection remains active.

OVERRIDE ACTIONS – KEYPAD

Other override actions may have been programmed into your controller – if there are any more then there will be a prompt from the standby display as below:

```
MF626          10:14  15/07/02      Monday

[0] = Info      [#0] = Adjust        [9] = Override
```

In the above example an override has been programmed. Press Key [9] and typically the display below may appear:

```
User            Action          Maintenance Override

[#=YES]                          nowNO
```

Normally this is for emergency maintenance use – when activated the controller will force everything on for a maximum of thirty minutes as a default setting.

ALARMS/EVENT LIST

If critical alarms are being monitored by the controller they may either:

Bring on the alarm red light

Operate the inbuilt sounder

Send out an alarm message via a modem or Ethernet device.

or any combination of all three.

To silence the alarm sounder, or stop the red light flashing, the entire list must be reviewed:

(A) Press the red alarm push button. The display will show the current alarm or event , for example:

```
  1]   Node # 35  General Plant fault

A  _   on @  09:12   16/03
```

A maximum of 24 alarms/events can be stored on the list.

Node # nn is the internal condition number assigned to that alarm, for Ambiflex engineering use only.

If the alarm condition had cleared, the bottom line would read:

A _ on @ 09:12 16/03 clr @ 14:10 16/03

Where **clr @ hh:mm dd/mm** indicates the time and date at which the alarm condition cleared.

Keep pressing (A) and the display will step through the alarm list until the last event has been displayed and the screen will show:

Alarm review   –   No more incidents

Press [Alarm] to accept

You **must** now press (A) again to accept and return to the default display. Once accepted the sounder will mute and the red flashing light will become steady. The red light itself will not disappear until the alarm has not only been reviewed but has also cleared. Please contact your service/maintenance provider if the red light has not cleared.

USER LEVEL

At this level the user may be allowed access to:

1. More user information including engineering information and meter readings.
2. More user adjusts.
3. Optimisation times recorded by the controller.
4. Change the on/off time in an existing time table line.
5. Change existing diary events (holiday dates).

From the default display press [#] hold and press [*] These keys pressed together will take the user directly to this screen.

```
 Access          Unlock

 ??????  locked            Key [9] to open
```
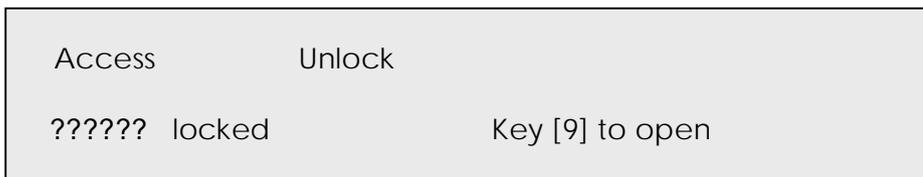
Follow the prompts on the display and press key [9] Then enter the low level password: [1] [2] [1] [2] [1] [2]

To accept the password press [#] hold and press [0]

These keys pressed together correctly will pull up this screen.

```
 Access          Unlock

 ??????  open, user
```
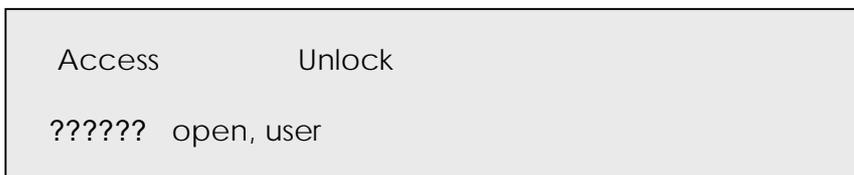
If the bottom line still reads '**locked**' then either the password has been entered incorrectly or the [#] and [0] keys have not been pressed together correctly.

Press [*] key to return to the standby display.

FURTHER USER INFORMATION

From the standby display press ⎡0⎤ for information, then press ⎡5⎤ to scroll down the User Display menu until **Info for engineers** is reached. Typically diagnostic information will be stored here. Press ⎡#⎤ to view. If key ⎡5⎤ is pressed again then **Accumulator values** should appear. Press ⎡#⎤ to view. Any meter readings will be here as well as boiler run hours, pump run hours etc.

Press the ⎡✱⎤ key to return to the standby display.

FURTHER USER ADJUSTS

From the standby display press ⎡#⎤ hold and press ⎡0⎤ These keys pressed together correctly should pull up the User Adjust screen automatically. Navigate down from User Adjust Setpoint 1 by pressing key ⎡5⎤

Further user adjusts may appear. Edit these by following the prompts on the display (see Page 10).

Press the ⎡✱⎤ key to return to the standby display.

OPTIMISATION TIMES

From the standby display press ⎡#⎤ hold and press ⎡0⎤ These keys pressed together correctly should pull up the User Adjust screen automatically. Move the cursor from the first setpoint to Adjust by pressing key ⎡1⎤ then navigate down through the menu to Optimes by pressing key ⎡5⎤ Press ⎡#⎤ to view. A log will appear showing when the system has optimised on and off with a date stamp. Any day which does not appear means that there was no optimisation on that day.

Press the ⎡✱⎤ key to return to the standby display.

TIME TABLE SCHEDULING

For most day to day operation it is not necessary to make changes to the Time Schedule settings. This is because override facilities are provided by the 4 black pushbuttons. When the controller has been unlocked to User Level as previously described (See Page 16) then the on/off times of an existing time table line may be altered.

It does not allow the user to:

a.   Add new switching times.

b.   Delete existing time switching commands.

Please ask your service engineer about adding and deleting time commands.

From the standby display position press [#] + [2] together and the display changes to:

```
TimeTabl    Review      chnl 1   Any day

Heating     [#] = view   [5] = nxt chn
```

[#]   View the time table for channel 1 on every day of the week e.g.

```
TimeTabl       [time ch: Channel 1       ]

Chn 1      Opsrt      12345 . . 07:30
```

Therefore on Channel 1 there is an optimised start on Monday to Friday at 7:30 in the morning.

A cursor appears on the bottom line and this can be moved by using the cursor keys on the keypad [2] is up, [5] is down, [1] is left and [3] is right. As the cursor is moved an expanded description appears on the top line.

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For example, if the cursor is under the command section 'Opsrt', the upper line will read:

TimeTabl [command: Optimised START]

Where a dot '.' appears it means that the same command is set for the same time for the day where the dot is positioned, i.e. a dot in position 3 would mean the same command is set for Wednesday. A dash '_' means the command is not set for that day.

Repeat pressing ⌗ to view all command lines for channel 1. Then ⎡5⎤ to move the cursor from Chnl 1 to Chnl 2 to view other existing time channels.

To change the on/off time of a command line first select the required Time Channel, then carry out the review procedure for that channel for 'Any day' by pressing ⌗ until the line to be changed appears on the bottom line of the display, move the cursor over the time by pressing key ⎡3⎤ then key ⎡9⎤ to edit.

If the controller is not already unlocked this option will change the display to the Access Menu for the password to be entered. When this has been done, the controller will automatically revert the screen back to the event to be altered.

⎡9⎤ And the cursor will move to the left hand digit of the time currently set. ⎡h⎤ ⎡h⎤ ⎡m⎤ ⎡m⎤ to enter the new switching time.

e.g. ⎡0⎤ ⎡7⎤ ⎡4⎤ ⎡5⎤ would set a time of 07:45 (24 hour format).

Once the correct time has been set, it can be entered into the system by ⌗ + ⎡0⎤ together once. Then keep pressing ⌗ until 'no more' appears on the bottom line.

To make changes to other time channels, select the required channel by scrolling (⎡5⎤ or ⎡2⎤) whilst the cursor is on the top line next to 'chnl'.

Press the ✱ key to return to the standby display.

DIARY - CALENDAR SCHEDULING

At USER level access, existing dates for suspending and restoring daily time schedules may be changed.

CHANGING EXISTING DIARY DATES

As a standard convention, all MF626 controllers are programmed to the following statement:

The holiday dates make all channels inactive i.e. suspend all daily time programmes. The holiday dates are inclusive **i.e. normal operation resumes the day after the last date entered.**

From the standby display position press $\boxed{\#}$ + $\boxed{3}$ together and the display will show typically:
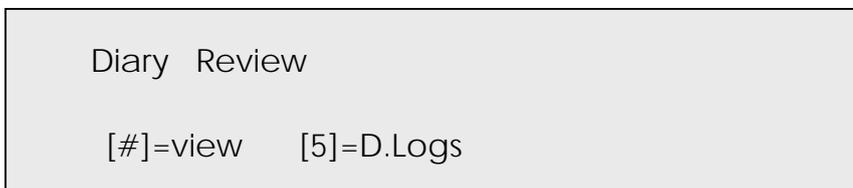
```
   Diary   Review

    [#]=view     [5]=D.Logs
```

Move the cursor from Diary to Review by pressing key $\boxed{3}$ and press $\boxed{\#}$ to view the default Diary Event, which appears as:

Holiday Cal: all OFF 25/12/xx to 26/12

After reviewing existing dates, review again until the first date to be changed is displayed then Key $\boxed{9}$ to edit, if the controller if not already unlocked this option will change the display to the Access Menu for the password to be entered. When this has been done, the controller will automatically revert the screen back to the event to be altered.

| 9 | then select event required i.e. Holiday

| # | + | 0 | to accept. Then key in the start date, this is in Date/Month/Year format. If only the Date and Month are entered then this event will occur every year, otherwise if a specific year is entered, the event will be deleted once it has occurred.

| # | + | 0 | to accept. Then key in the date for the last day of holiday operation e.g. A holiday like Christmas Day and Boxing Day occurring every year could be entered as:

Holiday call: all OFF 25/12/xx to 26/12

| # | + | 0 | to accept.

| # | to move to the next event to be edited. Carry on until all dates have been reviewed, changed and accepted.

**N.B.   CALENDAR DATES IN THE DIARY CAN ROLL CONTINUOUSLY OR
         BE YEAR SPECIFIC.**

Inserting and deleting calendar dates can only be done at higher levels of access, please ask your service and maintenance engineer for further information.

BRITISH SUMMER TIME (BST)

The default for the BST **start** date is set with the month only, e.g. 00/03 for March the MF626 will change from Winter to Summer Time automatically at 02:00 on the **last Sunday** in March, every year. The GMT **start** date is also set with the month only, e.g. 00/10

Occasionally this will be wrong for a period of 1 week only in some years when the time change takes place on the Sunday before the last Sunday in the month.

Specific dates can be entered into the controller if required from Service level access and above.

ACCESS LOCK

From the default display press $\boxed{\#}$ hold and press $\boxed{*}$ These keys pressed together will take the user directly to this screen.

```
Access          Unlock

??????   open, user
```

Press key $\boxed{1}$ to move the cursor to Unlock then key $\boxed{5}$ to change to Lock. Follow the prompts on the display and press key $\boxed{9}$ Then change the setting to locked by pressing key $\boxed{5}$ and update the controller by pressing the $\boxed{\#}$ and $\boxed{0}$ keys together.

Press the $\boxed{*}$ key to return to the standby display.

MF626 Menu Map

```
User ──────▶ Action ──────── Programmed Action

             Display ──────── Measured temperatures
                      ──────── Time channel info.
                      ──────── What is happening now?
                      ──────── Any problems?
                      - - - - - - - - - - - - - -
                      ──────── Info for engineers.
                      ──────── Accumulator Values

             Adjust ──────── Room day target etc
             - - - - - - -
             OpTimes

Access ──────── Lock

               Unlock

TimeTabl ──────── Review ──────── Heating etc ──────── Anyday
                 - - - - - -
                 DLinkStat

CalSched ──────── Review
                 - - - - - -
                 Status

Datalogs ──────── View ──────── #1 Daily etc

Timekeep ──────── Clockset
```
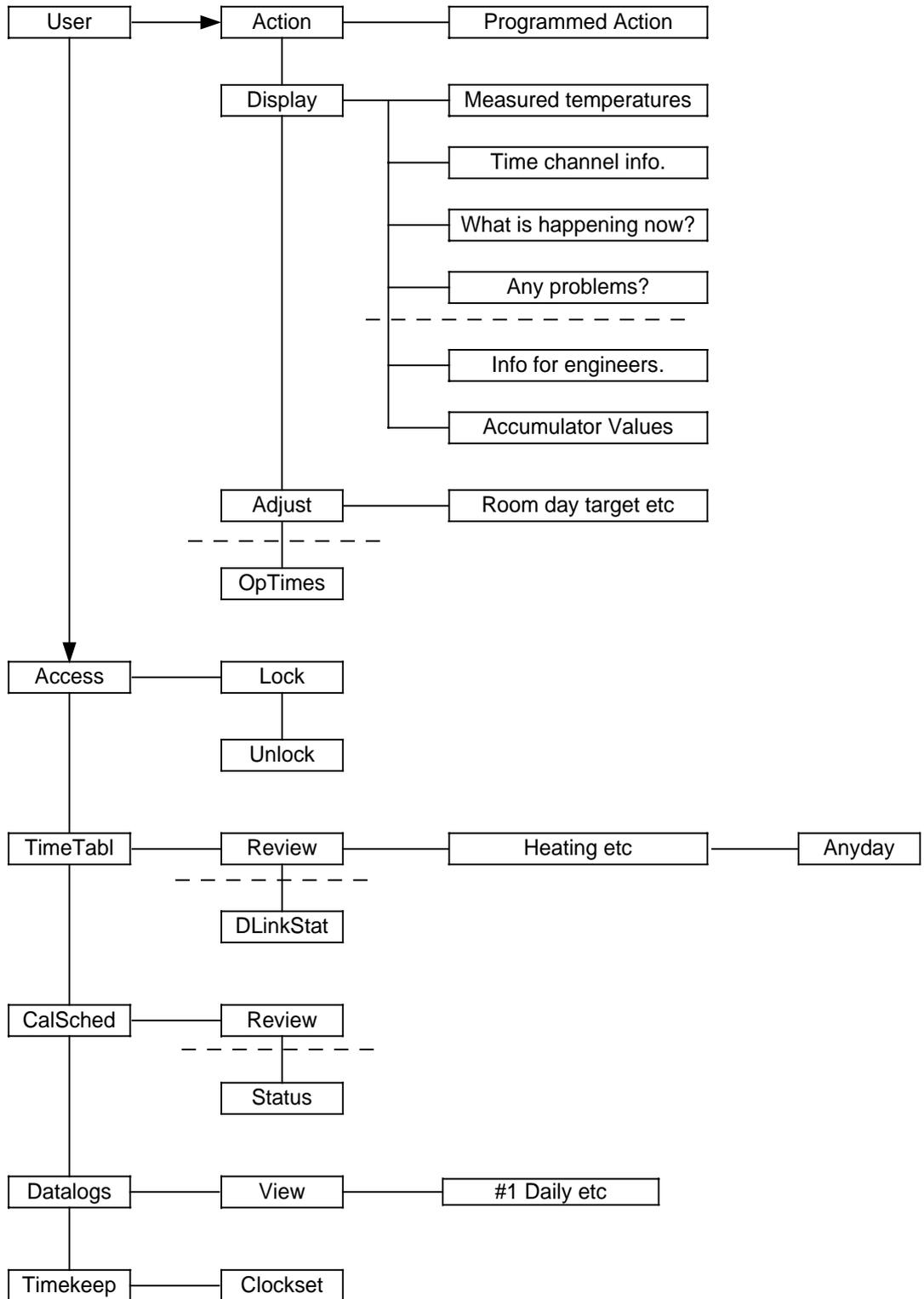
The above is for free access and
USER level access.