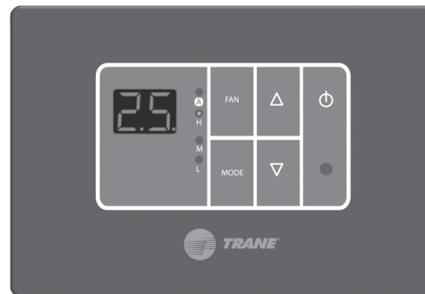




Owner & Installation Manual

LCD Control Series Touch Control Series



LCD Control Series

- ACYSTAT110AA (Wired, Cooling only)
- ACYSTAT120AA (Wireless, Cooling only)
- ACYSTAT210AA (Wired, Cooling & Heating)
- ACYSTAT220AA (Wireless, Cooling & Heating)

Touch Control Series

- ACYSTAT160AA (Wired, Cooling only)
- ACYSTAT170AA (Wireless, Cooling only)
- ACYSTAT260AA (Wired, Cooling & Heating)
- ACYSTAT270AA (Wireless, Cooling & Heating)

LCD Chilled Water Control

- ACYSTAT410AA
- ACYSTAT420AA

Touch Chilled Water Control

- ACYSTAT460AA
- ACYSTAT470AA

August 2010

ACYSTAT-IOM-EN

General System Appearance

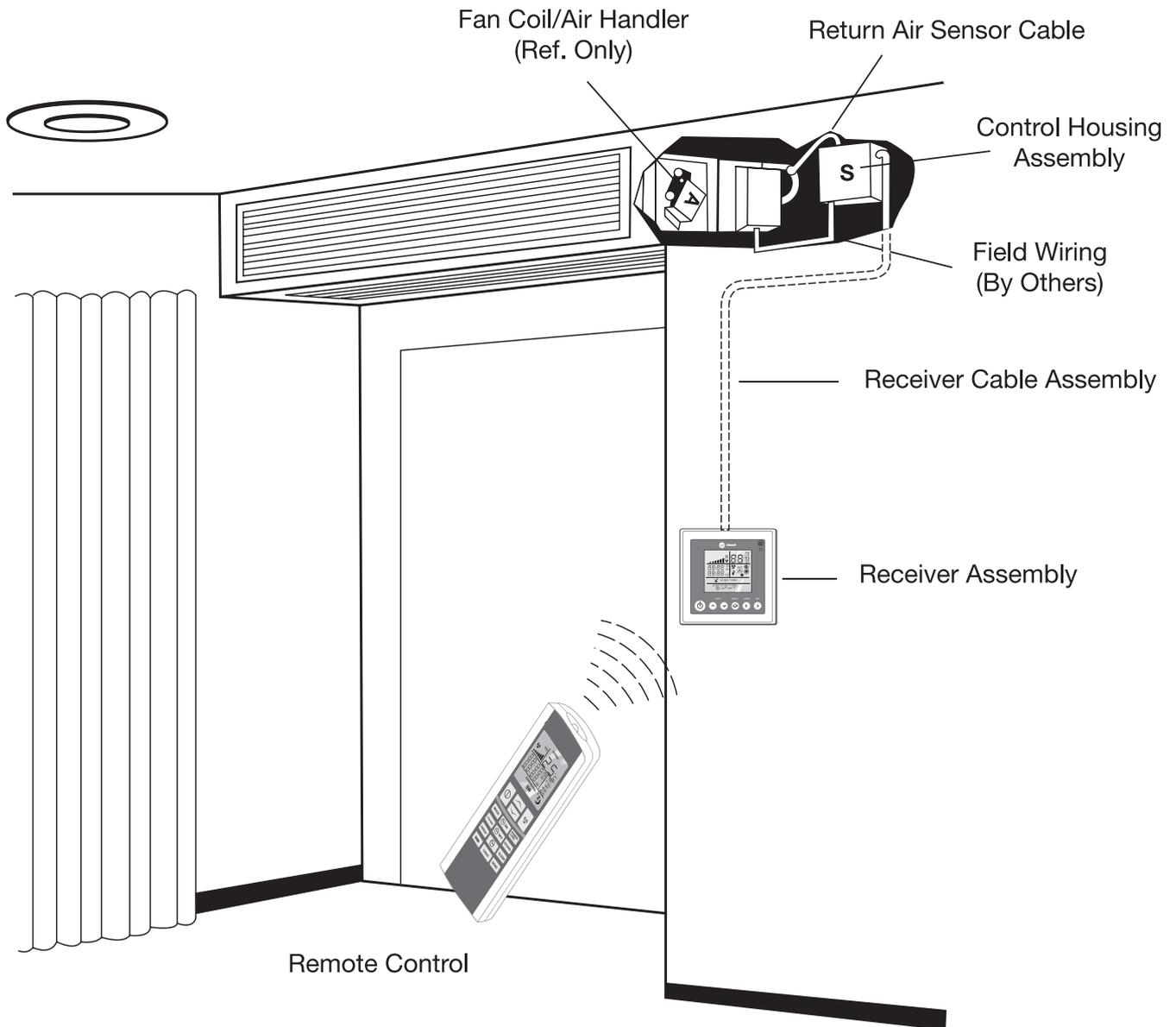


Figure 1

Contents

General System Appearance	2
General Information	4
Wireless Remote Control	6
Display Unit and Receiver Board	
LCD Control series	7
Touch Wired Control	12
Handheld Remote Control	16
Installation	22
Remote Control Installation	24
Electrical Installation	25
Wiring Diagram	26
Outline Dimention	30



General Information

Congratulations on your selection of Trane Digital Thermostat Control. These systems have been carefully designed and manufactured under strict Trane Worldwide Quality Standards. Each model of Digital Thermostat includes all of those operating features most desired by today's discriminating consumer and latest state-of-the-art electronic technology in design and materials.

Installation procedures should be performed in the sequence that they appear in this manual. Additionally, the services be employed, through a maintenance contract with a reputable service company.

Also, This manual is a user guide to operate and maintain the digital thermostat.

Please read this manually carefully before installing and using this thermostat.

About This Manual

Cautions appear at appropriate places in this instruction manual. Your personal safety and the proper operation of this machine require that you follow them carefully. The Trane Company assumes no liability for inappropriate use of the unit.

About The Unit

The Trane ACYSTAT is typically used with room air conditioning systems using concealed type indoor units. These series offer digital thermostat control with LCD wireless remote or wired control. Provide convenient and precise control of both Cooling only and Cooling/Heating concealed type chilled water fan coil or direct expansion air handling units.

The typical system wiring schematics are generic by necessity and do not apply to all possible indoor unit configurations and control requirements. If you have any question relating to proper application or installation of these thermostats, please contact your nearest Trane Dealer.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage of the unit on the delivery note, and send a registered awithin 72 hours of delivery. Notify the dealer at the same time.

The unit should be totally inspected within 7 days of delivery. If any concealed damage is discovered, send a registered letter of protest to the carrier within 7 days of delivery and notify the dealer.

Warning

Warnings are provided at appropriate places in this manual to indicate to installers, operators and service personnel of potentially hazardous situations which, if not avoided, COULD result in death or serious injury.

Caution

Cautions are provided at appropriate places in this manual to indicate to installers, operators, and service personnel of potentially hazardous situations which, if not avoided, MAY result in minor or moderate injury or malfunction of the unit.

Your personal safety and the proper operation of this unit require that you follow them carefully. The Trane Company assumes no liability for installations or servicing performed by unqualified personnel.

General Information

Warranty

Warranty is based on the general terms and conditions by country. The warranty is void if the equipment is modified or repaired without the written approval of The Trane Company, if the operating limits are exceeded or if the control system or the electrical wiring is modified.

Damage due to misuse, lack of maintenance or failure to comply with the manufacturer's instructions, is not covered by the warranty obligation. If the user does not follow the instructions in the Owner Manual, it may entail cancellation of warranty and liabilities by The Trane Company.

Important

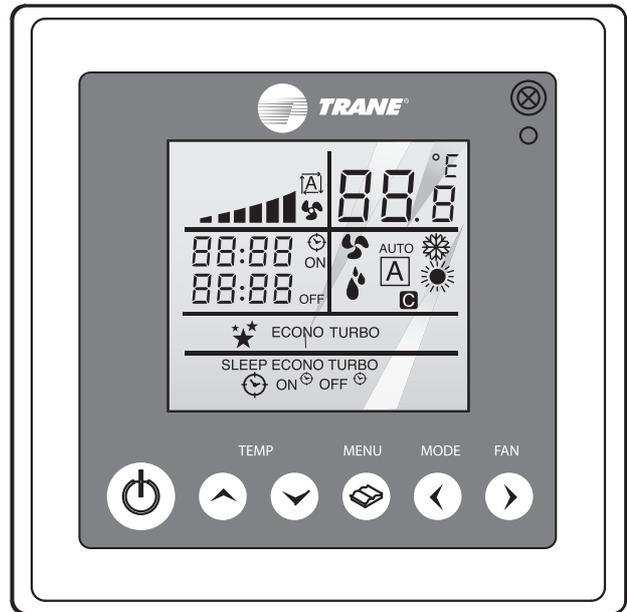
These instructions do not cover all variations in systems, nor do they provide for every possible contingency to be met. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to your authorized Trane dealer.

Wireless Remote Control

There are four major components of the Wireless Remote Control system as follows:

- (1) Control Box Assembly
- (2) Display Unit and Receiver Board
(LCD or Touch wired control)
- (3) Hand Held Remote Controller
- (4) Cable (standard assembly length
4 meters)

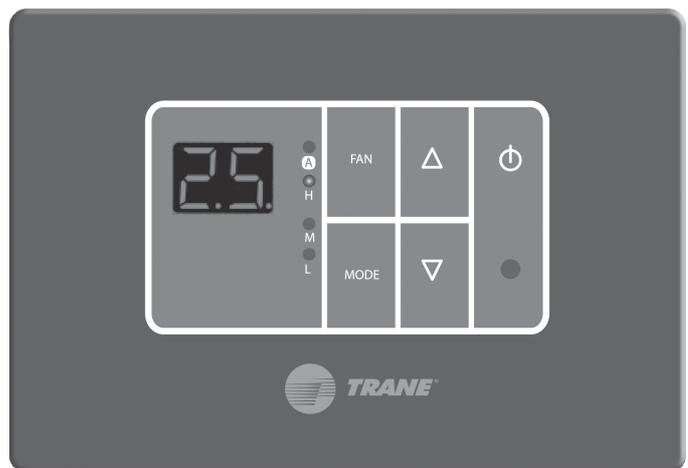
Components (1) and (4), along with the system fan coil or air handler are concealed in the building structure and do not require access by the system operator. The visible and accessible components are components (2) and (3) as shown below.



Display Unit and Receiver Board
Figure 2 - LCD Wired Control



Handheld Remote Controller
Figure 4



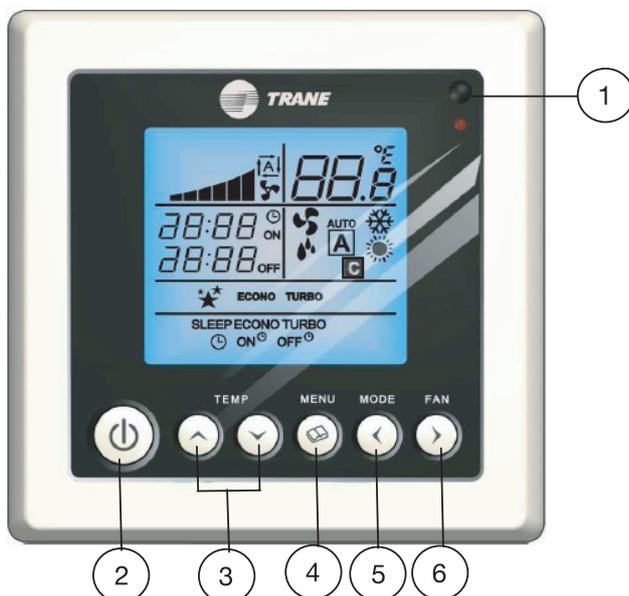
Display Unit and Receiver Board
Figure 3 - Touch Wired Control

Display Unit and Receiver Board LCD Wired Control

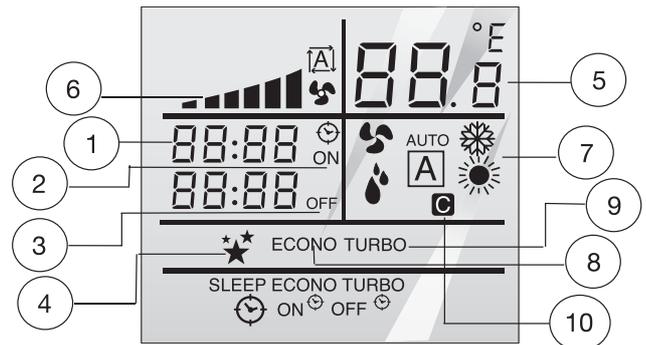
LCD Wired Control

Name and function of buttons

1. **Infrared Signal Receiver**
Receives the signal from handheld remote control and transmits the signal to indoor unit.
2. **POWER Button**
Press this button to start unit operation.
Press this button again to stop unit operation.
3. **Temperature Setting Button**
TEMP \wedge : Press this button to increase the set temperature.
TEMP \vee : Press this button to decrease the set temperature.
4. **MENU Button**
Press this button to select modes or functions in the menu.
5. **MODE Button**
Press this button to select system operation mode.
In cooling only system, a mode is selected in sequence as FAN, COOL, DRY, and back to FAN. In cooling and heating system, a mode is selected in sequence as FAN, COOL, DRY, HEAT, AUTO, and back to FAN.
6. **FAN SPEED Button**
Press this button to select fan speed.



Indicators on LCD Wired Control



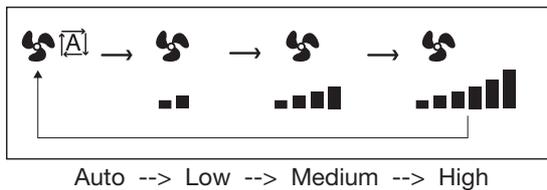
1. **CLOCK**
Displays present time.
2. **ON TIMER**
Displays ON TIMER when ON TIMER is set.
3. **OFF TIMER**
Displays OFF TIMER when OFF TIMER is set.
4. **SLEEP Mode**
Displays sleep symbol after activating SLEEP mode.
5. **Room & Set Temperature**
 - Displays the room temperature. When FAN or TURBO mode is selected, the room temperature will be disappeared until FAN or TURBO mode is cancelled or complete.
 - Displays the set temperature (15°C to 30°C) when either \wedge or \vee button is pressed.
6. **FAN Speed**
Displays the selected fan speed level: auto, low, medium, or high.
7. **Operation Mode**
Displays the current operation mode: FAN, COOL, or DRY in cooling only system; FAN, COOL, DRY, HEAT, or AUTO in cooling and heating systems.
8. **ECONO Mode**
Displays "ECONO" when ECONO mode is activated.
9. **TURBO Mode**
Displays "TURBO" when TURBO mode is activated.
10. **Compressor/Valve Status Indicator**
Displays compressor/valve status.

Display Unit and Receiver Board LCD Wired Control

Operation Mode

FAN Mode

- Press MODE button to select the operation mode.
-  will be shown on the display when FAN mode is selected.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.

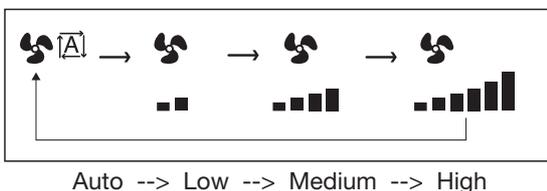


Note:

- In FAN mode, the LCD display will not show set temperature and can not adjust set temperature, SLEEP, ECONO, and TURBO mode.

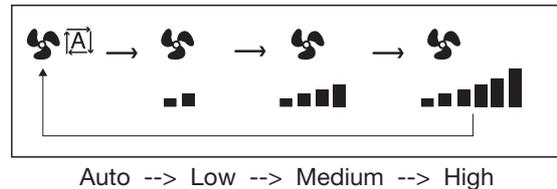
COOL Mode

- Press MODE button to select the operation mode.
-  will be shown on the display when COOL mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



DRY Mode

- Press MODE button to select the operation mode.
-  will be shown on the display when DRY mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.

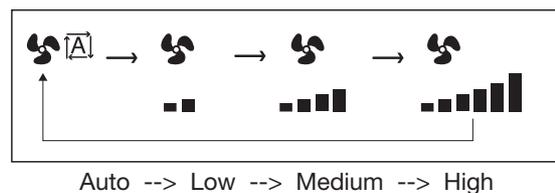


Note:

- In DRY mode, if the compressor/valve stops working, fan motor and SWEEP function will be stopped; fan motor and SWEEP function will operate when compressor/valve operates.
- ECONO mode can not be activated during DRY mode operation.

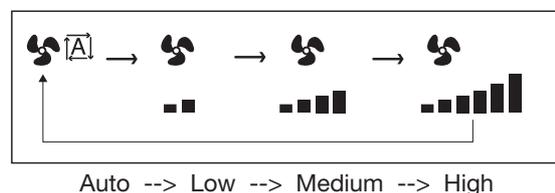
HEAT Mode

- Press MODE button to select the operation mode.
-  will be shown on the display when HEAT mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



AUTO Mode

- Press MODE button to select the operation mode.
-  will be shown on the display when AUTO mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



Display Unit and Receiver Board LCD Wired Control

Note:

- In AUTO mode, the system will automatically switch between COOL mode and HEAT mode to maintain equally room temperature and set temperature.

CLOCK Setting

- Press MENU button and select CLOCK setting by pressing either > or < .
- Press MENU button again to set clock and ⌚ will be shown on the display with blinking hour number.
- Press either ^ or v button to set the clock to the present hour.
- Press MENU button again to confirm hour setting and minute number will be blinking.
- Press either ^ or v button to set the clock to the present minute.
- Press MENU button again to confirm minute setting; hour and minute number will stop blinking and the set time will be shown on the display.

Note:

- If there are no other buttons pressed within 15 second, clock setting will be cancelled.

Timer Operation

Once you select the timer operation, the settings are saved in the control. Thereafter, the air conditioner will start operating under the same conditions when you simply push the POWER button on the control.

ON TIMER Setting

You can set ON TIMER to start the unit automatically at any desired time up to 24 hours as real time.

- Press MENU button and select ON TIMER setting by pressing either > or < .
- Press MENU button again to set ON TIMER and ON symbol will be shown on the display with blinking hour number.
- Press either ^ or v button to set the desired hour.
- Press MENU button again to confirm hour setting and minute number will be blinking.
- Press either ^ or v button to set the desired minute.
- Press MENU button again to confirm minute setting. Hour and minute number will stop blinking. The unit is now standby for starting air-conditioner automatically at the set time.

- To cancel ON TIMER, select ON TIMER setting and press MENU button again.

Note:

- If there are no other buttons pressed within 15 seconds, ON TIMER will be cancelled, and the LCD display will return to show clock.
- After selecting ON TIMER setting, the LCD display will show the last on timer set by user with blinking hour number.
- When ON/OFF TIMER is set, the present time is not displayed.
- In case of power failure, ON TIMER will be automatically cancelled as there is no electricity in the air-conditioner.

OFF TIMER Setting

You can set OFF TIMER to stop the unit automatically at any desired time up to 24 hours as real time.

- Press MENU button and select OFF TIMER setting by pressing either > or < .
- Press MENU button again to set OFF TIMER and OFF symbol will be shown on the display with blinking hour number.
- Press either ^ or v button to set the desired hour.
- Press MENU button again to confirm hour setting and minute number will be blinking.
- Press either ^ or v button to set the desired minute.
- Press MENU button again to confirm minute setting. Hour and minute number will stop blinking. The unit is now standby for starting air-conditioner automatically at the set time.
- To cancel OFF TIMER, select OFF TIMER setting and press MENU button again.

Note:

- If there are no other buttons pressed within 15 seconds, OFF TIMER will be cancelled, and the LCD display will return to show clock.
- After selecting OFF TIMER setting, the LCD display will show the last off timer set by user with blinking hour number.
- When ON/OFF TIMER is set, the present time is not displayed.
- In case of power failure, OFF TIMER will be automatically cancelled as there is no electricity in the air-conditioner.

Display Unit and Receiver Board LCD Wired Control

TURBO Mode

TURBO mode rapidly maximizes the cooling capacity in COOL or DRY mode. With this simply mode, the user can easily get the maximum cooling capacity and comfort.

- Press MENU button and select TURBO mode setting by pressing either > or < .
- The air-conditioner will accelerate capacity up totally 20 minutes or until room temperature is lower than 18°C.
- When TURBO mode completely operates or is cancelled, "TURBO" will be disappeared from the display and return to the former settings before TURBO mode.
- To cancel TURBO mode, either press MODE button or select TURBO mode and press MENU button again.

Note:

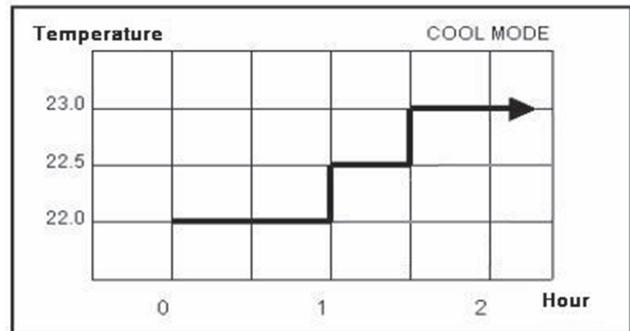
- The LCD display will not show fan speed and set temperature.
- Fan speed and set temperature can not be changed while TURBO mode is selected.
- In case of power failure, TURBO mode will be automatically cancelled.

SLEEP Mode

SLEEP mode automatically and gradually adjusts room temperature to provide great comfort during your rest.

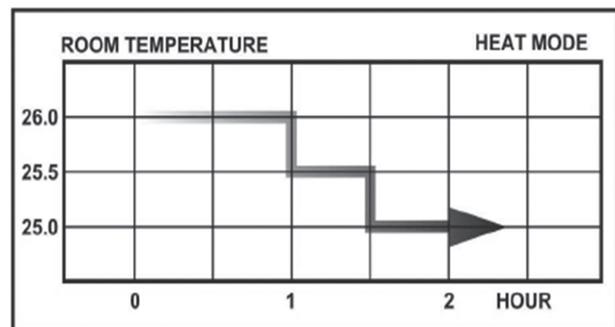
Cooling

- Press MENU button and select SLEEP mode by pressing either > or < .
- Press MENU button again to confirm SLEEP mode. ★★ will be shown on the display.
- After one hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C.
- After one and half hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C again and ★★ on the display will disappear.
- To cancel SLEEP mode, either press MODE button or select SLEEP mode and press MENU button again.



Heating

- Press MENU button and select SLEEP mode by pressing either > or < .
- Press MENU button again to confirm SLEEP mode. ★★ will be shown on the display.
- After one hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C.
- After one and half hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C again and ★★ on the display will disappear.
- To cancel SLEEP mode, either press MODE button or select SLEEP mode and press MENU button again.



Note:

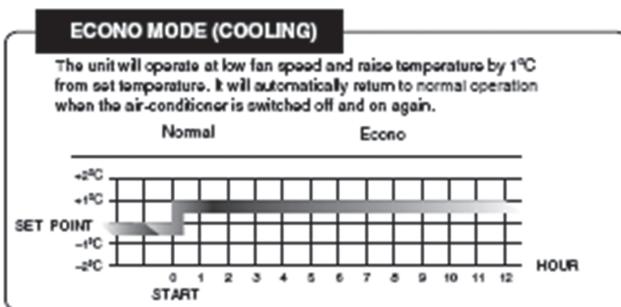
- Set temperature shown on the display still show the setting without 1°C added/reduced but it will plus/minus 1°C in the memory.
- ★★ will disappear from the LCD display when SLEEP mode completely operates, after one and half hours, or is cancelled.
- In case of power failure, SLEEP mode will be automatically cancelled.

Display Unit and Receiver Board LCD Wired Control

ECONO Mode

ECONO mode drastically saves energy with high efficient cooling capacity in COOL mode by reducing power consumption. With this simply mode, the user can easily get energy saving and comfort.

- Press MENU button and select ECONO mode by pressing either > or < .
- Press MENU button again to confirm ECONO mode. "ECONO" will be shown on the display.
- The air-conditioner will operates at low fan speed and raise temperature by 1°C from set temperature.
- To cancel ECONO mode, either press MODE button or select ECONO mode and press MENU button again.



Note:

- ECONO mode operates only in COOL mode and automatically operates when air-conditioner is closed without exiting or canceling ECONO mode.
- Fan speed can not be changed while ECONO mode is selected.

°C/ °F Toggle

The optional feature offers you to change the temperature display from °C to °F or from °F to °C.

- Press and hold both ^ and v button for 5 seconds to change temperature display.

System Features

1. Watchdog

There is a circuit in the system to watch the operation of the microprocessor.

2. Compressor Delay Protection*

There is a time delay for restarting the compressor.

3. Compressor Minimum on Time*

Once the compressor starts, it will operate at least 24 seconds.

4. Non-Volatile Memory (Auto Restart)

If there is a power interruption or failure and back to normal, the control will automatically resume its operation with the same setting parameters except those related to time.

5. Pre-heat/Post-heat (Heat Mode)

This feature prevents the fan coil blowing cold draught when the indoor coil temperature is low.

6. Freeze Function

To prevent the indoor coil freezing, this feature will stop compressor when the indoor coil temperature is below 0°C.

7. Defrost Function

This feature will protect the system operating in heat mode under very low ambient temperature.

8. Compressor/Valve Status Indicator

This feature is the basic detection of compressor/valve status by showing **C** on the display while compressor/valve is operating.

Error Code & Display

Error code	Description	LED blinking
Er : 01	Freeze protection	yes
Er : 02	Defrost function	yes
Er : 03	Compressor overload protection	yes
Er : 04	Anti overheat protection	yes
Er : 05	Low ambient protection	yes
Er : 10	Room sensor error	yes
Er : 11	Deice sensor error	yes
Er : 12	Freeze sensor error	yes

Note: *These features are not available for chilled water control.

Display Unit and Receiver Board Touch Wired Control

Touch Wired Control

Name and function of buttons

1. Infrared Signal Receiver

Receives the signal from handheld remote control and transmits the signal to indoor unit.

2. POWER button

Touch this button to start unit operation.

Touch this button again to stop unit operation.

3. Temperature Setting Button

TEMP \triangle : Touch this button to increase the set temperature.

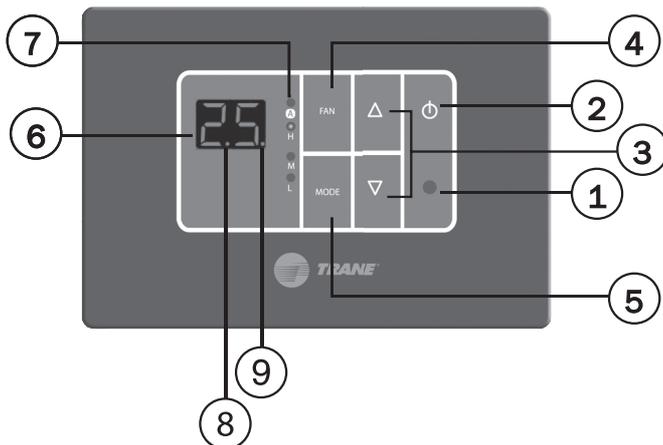
TEMP ∇ : Touch this button to decrease the set temperature.

4. FAN SPEED Button

Touch this button to select fan speed.

5. MODE Button

Touch this button to select system operation mode. In cooling only system, a mode is selected in sequence as FAN, COOL, DRY, and back to FAN. In cooling and heating system, a mode is selected in sequence as FAN, COOL, DRY, HEAT, AUTO, and back to FAN.



Indicators on Touch Wired Control

6. Status Display

6.1 Room & Set Temperature

- Displays the room temperature. When FAN or POWERCOOL mode is selected, the room temperature will be disappeared until FAN or POWERCOOL mode is cancelled or complete.
- Displays the set temperature (15°C to 30°C) when either \triangle or ∇ button is pressed.

6.2 Operation Mode

- Displays the current operation mode: FAN, COOL, or DRY in cooling only system; FAN, COOL, DRY, HEAT, or AUTO in cooling and heating systems for 5 seconds when MODE button is pressed.

6.3 ECONO Mode

- Displays “ E_C ” when ECONO mode is activated.

6.4 POWERCOOL Mode

- Displays “ P_C ” when POWERCOOL mode is activated.

6.5 SLEEP Mode

- Displays “ S_L ” when SLEEP mode is activated.

6.6 Error Code

- Displays error code when an error occurs.

7. FAN Speed

- Displays the selected fan speed level: Auto, Low, Medium, or High.

8. Standby Status

- When lit, the dot LED after the first digit of the 7 segment display indicates the standby status.

9. Compressor/Valve Status

- When lit, the dot LED after the second digit of the 7 segment display indicates the compressor/valve is on.

Operation Mode

FAN Mode

- Touch MODE button to select the operation mode.
- F_C will be shown on the status display when FAN mode is selected.
- Touch FAN SPEED button to select the desired fan speed level and the display will show Low (L), Medium (M), High (H), and Auto (A) respectively.

Note:

- In FAN mode, the status display will show room temperature but can not adjust set temperature, POWERCOOL, SLEEP, and ECONO mode.

COOL Modes

- Touch MODE button to select the operation mode.
- C_C will be shown on the status display when COOL mode is selected.
- Touch either \triangle or ∇ button to set the desired temperature between 15°C to 30°C.

Display Unit and Receiver Board Touch Wired Control

- Touch FAN SPEED button to select the desired fan speed level and the display will show Low (L), Medium (M), High (H), and Auto (A) respectively.

DRY Mode (Available when using with remote control)

- Press MODE button in remote control to select the operation mode.
- DR will be shown on the status display when DRY mode is selected.
- Touch either \triangle or ∇ button to set the desired temperature between 15°C to 30°C.
- Touch FAN SPEED button to select the desired fan speed level and the display will show Low (L), Medium (M), High (H), and Auto (A) respectively.

Note:

- In DRY mode, if the compressor/valve stops working, fan motor will be stopped; fan motor will operate when compressor/valve operates.
- ECONO mode can not be activated during DRY mode operation.

HEAT Mode

- Touch MODE button to select the operation mode.
- HE will be shown on the status display when HEAT mode is selected.
- Touch either \triangle or ∇ button to set the desired temperature between 15°C to 30°C.
- Touch FAN SPEED button to select the desired fan speed level and the display will show Low (L), Medium (M), High (H), and Auto (A) respectively.

AUTO Mode

- Touch MODE button to select the operation mode.
- AL will be shown on the display when AUTO mode is selected.
- Touch either \triangle or ∇ button to set the desired temperature between 15°C to 30°C.
- Touch FAN SPEED button to select the desired fan speed level and the display will show Low (L), Medium (M), High (H), and Auto (A) respectively.

Note:

- In AUTO mode, the system will automatically switch between COOL mode and HEAT mode to maintain equally room temperature and set temperature.

Timer Operation (Available when using with remote control)

Once you select the timer operation, the settings are saved in the control. Thereafter, the air conditioner will start operating under the same conditions when you simply push the POWER button on the control.

ON TIMER Setting

You can set ON TIMER to start the unit operation automatically at any desired time up to 24 hours as real time.

Note:

- This function is available when using with remote control only.
- No symbol shows on the status display.

OFF TIMER Setting

You can set OFF TIMER to stop the unit operation automatically at any desired time up to 24 hours as real time.

Note:

- This function is available when using with remote control only.
- No symbol shows on the status display.

POWERCOOL Mode (Available when using with remote control)

POWERCOOL mode rapidly maximizes the cooling capacity in COOL or DRY mode. With this simply mode, the user can easily get the maximum cooling capacity and comfort.

- Press POWERCOOL button in remote control to select POWERCOOL mode.
- PC will be shown on the status display when POWERCOOL mode is selected.
- The air-conditioner will accelerate capacity up totally 20 minutes or until room temperature is lower than 18°C.
- When POWERCOOL mode completely operates or is cancelled, PC will disappear from the display and return to the former settings before POWERCOOL mode.
- To cancel POWERCOOL mode, press POWERCOOL button in remote control again.

Display Unit and Receiver Board Touch Wired Control

Note:

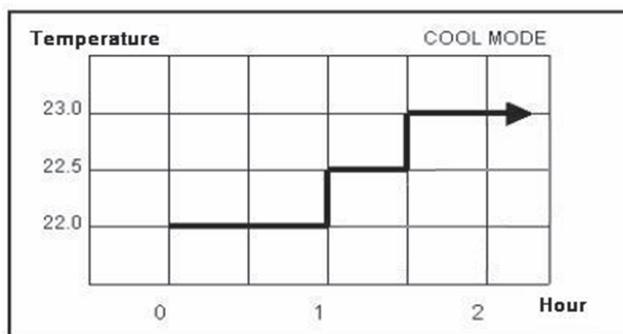
- The status display will not show fan speed and set temperature.
- Fan speed and set temperature can not be changed while POWERCOOL mode is selected.
- In case of power failure or changing operation mode, POWERCOOL mode will be automatically cancelled.

SLEEP Mode (Available when using with remote control)

SLEEP mode automatically and gradually adjusts room temperature to provide great comfort during your rest.

Cooling

- Press SLEEP button in remote control to select SLEEP mode.
- $\bar{S}L$ will be shown on the status display when SLEEP mode is selected
- After one hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C.
- After one and half hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C again.

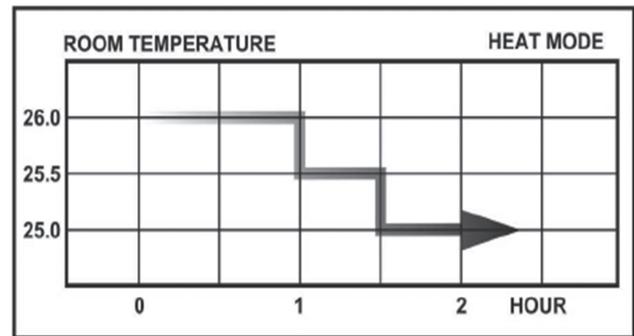


- To cancel SLEEP mode, press SLEEP button in remote control again.

Heating

- Press SLEEP button in remote control to select SLEEP mode.
- $\bar{S}L$ will be shown on the status display when SLEEP mode is selected.
- After one hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C.

- After one and half hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C again.
- To cancel SLEEP mode, press SLEEP button in remote control again.



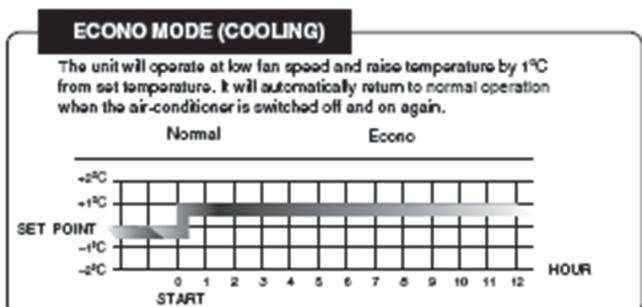
Note:

- Set temperature shown on the display still show the setting without 1°C added/reduced but it will plus/minus 1°C in the memory.
- In case of power failure or changing operation mode, SLEEP mode will be automatically cancelled.

ECONO Mode (Available when using with remote control)

ECONO mode drastically saves energy with high efficient cooling capacity in COOL mode by reducing power consumption. With this simply mode, the user can easily get energy saving and comfort.

- Press ECONO button in remote control to select ECONO mode.
- $\bar{E}C$ will be shown on the status display when ECONO mode is selected.
- The air-conditioner will operates at low fan speed and raise temperature by 1°C from set temperature.
- To cancel ECONO mode, press ECONO button in remote control again.



Display Unit and Receiver Board Touch Wired Control

Note:

- ECONO mode operates only in COOL mode and automatically operates when air-conditioner is closed without exiting or canceling ECONO mode.
- Fan speed can not be changed while ECONO mode is selected.
- In case of changing operation mode, ECONO mode will be automatically cancelled.

DIM Function

DIM function offers you to dim or restore the brightness of the display panel.

- Touch and hold both \triangle and ∇ button for 2-3 seconds to dim the brightness of the display panel.
- Touch and hold both \triangle and ∇ button or 2-3 seconds again to restore the brightness of the display panel to default setting.

Note:

- Whenever adjusting any parameter, after activating DIM function, the brightness of the display panel will be restored to default setting for 5 seconds and returned to dim setting.
- In case of power failure or switching off breaker, DIM function will be automatically restored to default setting for 15 seconds and returned to DIM setting.
- Whenever error code displays, DIM function will be automatically restored to default setting.
- If there is no any button pressed for 3 minutes, the display panel will be standby.
- During standby, press any button to activate the display panel.

°C/°F Toggle

The optional feature offers you to change the temperature display from °C to °F or from °F to °C.

- Press and hold \triangle button for 8 seconds to change temperature display.

System Features

1. Watchdog

There is a circuit in the system to watch the operation of the microprocessor.

2. Compressor Delay Protection*

There is a time delay for restarting the compressor.

3. Compressor Minimum on Time*

Once the compressor starts, it will operate at least 24 seconds.

4. Non-Volatile Memory (Auto Restart)

If there is a power interruption or failure and back to normal, the control will automatically resume its operation with the same setting parameters except those related to time.

5. Pre-heat/Post-heat (Heat Mode)

This feature prevents the fan coil blowing cold draught when the indoor coil temperature is low.

6. Freeze Function

To prevent the indoor coil freezing, this feature will stop compressor when the indoor coil temperature is below 0°C.

7. Defrost Function

This feature will protect the system operating in heat mode under very low ambient temperature.

Error Code & Display

Error code	Description
E1	Freeze protection
E2	Defrost protection
E3	Compressor overload protection
E4	Anti overheat protection
E5	Low ambient
E8	Room or freeze or deice sensor error

Note: *These features are not available for chilled water control.

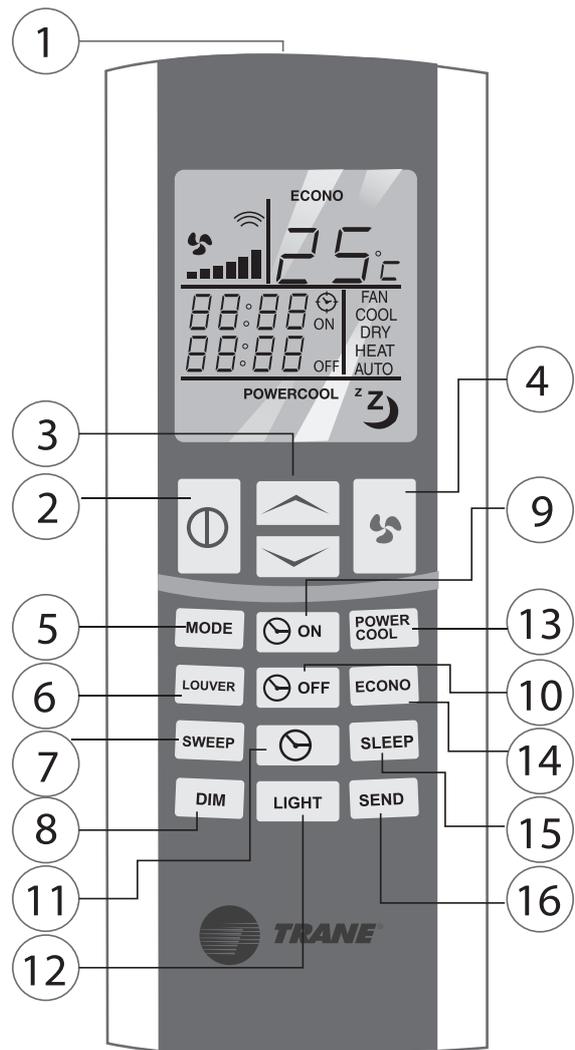
Handheld Remote Control

Infrared Remote Control

Name and function of buttons

1. **Infrared Signal Transmitter**
Transmits the signal to indoor unit.
2. **POWER Button**
Press this button to start unit operation.
Press this button again to stop unit operation.
3. **Temperature Setting Button**
TEMP \wedge : Press this button to increase the set temperature.
TEMP \vee : Press this button to decrease the set temperature.
4. **FAN SPEED Button**
Press this button to select fan speed.
5. **MODE Button**
Press this button to select system operation mode.
In cooling only system, a mode is selected in sequence as FAN, COOL, DRY, and back to FAN. In cooling and heating system, a mode is selected in sequence as FAN, COOL, DRY, HEAT, AUTO, and back to FAN.
6. **LOUVER Button**
This button has no function.
7. **SWEEP Button**
This button has no function.
8. **DIM Button**
Press this button to dim or restore the brightness of the display.
9. **ON TIMER Button**
Press this button to set the on timer of the unit operation.
10. **OFF TIMER Button**
Press this button to set the off timer of the unit operation.
11. **CLOCK Button**
Press this button to set the clock to the present time or see the present time after ON or OFF TIMER was set.
12. **LIGHT Button**
Press this button to turn on the LCD light.
13. **POWERCOOL Button**
Press this button to accelerate capacity up.

14. **ECONO Button**
Press this button to save energy.
15. **SLEEP Button**
Press this button to control temperature while sleeping and press this button again to cancel.
16. **SEND Button**
Press this button to confirm the operation of the unit according to the LCD display or press and hold for 5 seconds to toggle temperature unit between Celsius and Fahrenheit.



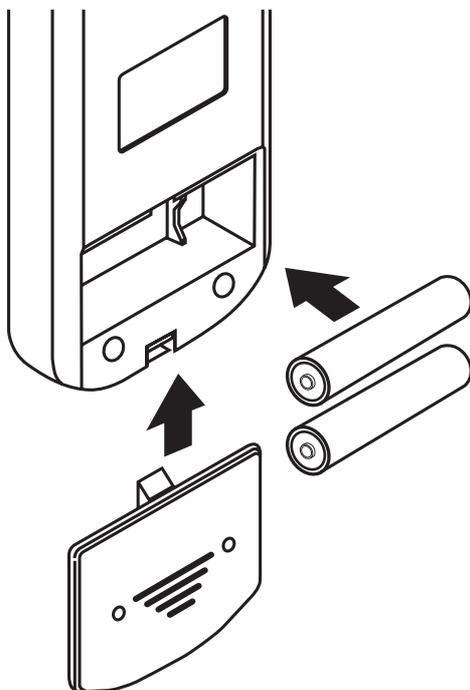
Handheld Remote Control

Installation of Batteries

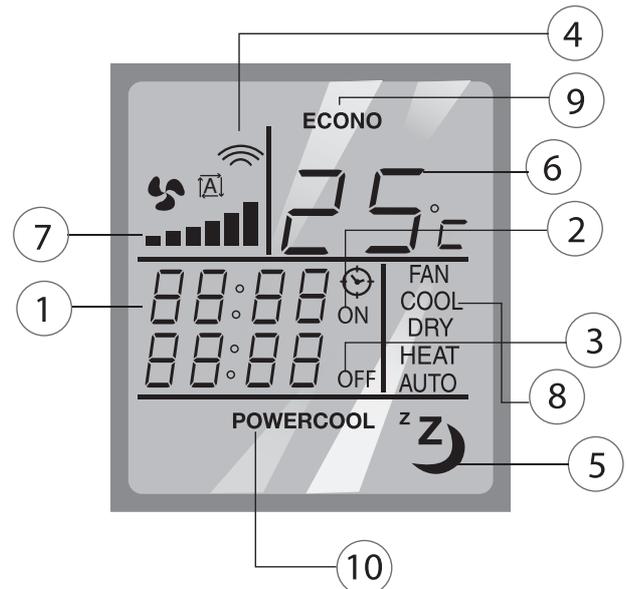
1. Slide the back cover of the remote control down to take it off.
2. Insert two dry batteries into the slot. Be sure that the + and - directions are correct.
3. Fix the back cover to the remote control as before.

Attentions

- Batteries can be used approximately for one year under normal conditions.
- Always replace an identical type of two batteries at the same time.
- Do not use manganese dry batteries since they may cause a malfunction.
- Do not use rechargeable (Ni-Cd) batteries, because such batteries may differ from standard dry cell batteries in shapes, dimensions, or performance.
- Take out all batteries if you are not going to use the air-conditioner for a long period of time.



Indicators on Infrared Remote Control



1. **CLOCK**
Displays present time.
2. **ON TIMER**
Displays ON TIMER when ON TIMER is set.
3. **OFF TIMER**
Displays OFF TIMER when OFF TIMER is set.
4. **Transmission Indicator**
The transmission indicator lights when remote control transmits signal to the indoor unit.
5. **SLEEP Mode**
Displays sleep symbol after activating SLEEP mode.
6. **Set Temperature**
Displays the set temperature (15°C to 30°C)
When FAN or POWERCOOL mode is selected, the set temperature will be disappeared until FAN or POWERCOOL mode is cancelled or complete.
7. **FAN Speed**
Displays the selected fan speed level: Auto, Low, Medium, or High.
8. **Operation Mode**
Displays the current operation mode: FAN, COOL, or DRY.
9. **ECONO Mode**
Displays "ECONO" when ECONO mode is activated.
10. **POWERCOOL Mode**
Displays "POWERCOOL" when POWERCOOL mode is activated.

Handheld Remote Control

Operation Mode

FAN Mode

- Press Mode button to select the operation mode.
- “FAN” will be shown on the display when FAN mode is selected.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



Auto --> Low --> Medium --> High

Note:

- In FAN mode, the LCD display will not show set temperature and cannot adjust set temperature, SLEEP, ECONO, and POWERCOOL mode.

COOL Mode

- Press Mode button to select the operation mode.
- “COOL” will be shown on the display when COOL mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



Auto --> Low --> Medium --> High

DRY Mode

- Press Mode button to select the operation mode.
- “DRY” will be shown on the display when DRY mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



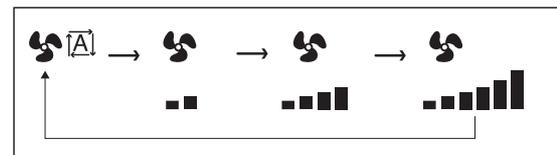
Auto --> Low --> Medium --> High

Note:

- In DRY mode, if the compressor/valve stops working, fan motor will be stopped; fan motor will operate when compressor/valve operates.
- ECONO mode cannot be activated during DRY mode operation.

HEAT Mode

- Press Mode button to select the operation mode.
- “HEAT” will be shown on the display when HEAT mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



Auto --> Low --> Medium --> High

AUTO Mode

- Press Mode button to select the operation mode.
- “AUTO” will be shown on the display when AUTO mode is selected.
- Press either \wedge or \vee button to set the desired temperature between 15°C to 30°C.
- Press FAN SPEED button to select the desired fan speed level and the display will show Auto, Low, Medium, and High respectively.



Auto --> Low --> Medium --> High

Handheld Remote Control

Note:

- In AUTO mode, the system will automatically switch between COOL mode and HEAT mode to maintain equally room temperature and set temperature.

CLOCK Setting

- Press CLOCK button to set clock and  will be shown on the display with blinking hour number.
- Press either \wedge or \vee button to set the clock to the present hour.
- Press CLOCK button again to confirm hour setting and minute number will be blinking.
- Press either \wedge or \vee button to set the clock to the present minute.
- Press CLOCK button again to confirm minute setting; hour and minute number will stop blinking and the set time will be shown on the display.

Note:

- If there are no other buttons pressed within 15 seconds, clock setting will be cancelled.
- The user can confirm CLOCK setting during CLOCK setting process by pressing SEND button.

Timer Operation

Once you select the timer operation, the settings are saved in the remote control. Thereafter, the air conditioner will start operating under the same conditions when you simply push the POWER button on the remote control.

ON TIMER Setting

You can set ON TIMER to start the unit automatically at any desired time up to 24 hours as real time.

- Press ON TIMER button. ON symbol will be shown on the display with blinking hour number.
- Press either \wedge or \vee button to set the clock to the present hour.
- Press ON TIMER button again to confirm hour setting and minute number will be blinking.
- Press either \wedge or \vee button to set the desired minute.
- Press ON TIMER button again to confirm minute setting. Hour and minute number will stop blinking. The unit is now standby for starting air-conditioner automatically at the set time.
- To cancel ON TIMER, press ON TIMER button again.

Note:

- The user can confirm ON TIMER during ON TIMER setting process by pressing SEND button.
- If there are no other buttons pressed within 15 seconds, ON TIMER will be cancelled, and the LCD display will return to show clock.
- After Pressing ON TIMER button, the LCD display will show the last on timer set by user with blinking hour number.
- When ON/OFF TIMER is set, the present time is not displayed.
- Press CLOCK button to see present time after ON/OFF TIMER was set. The LCD display will show present time about 15 seconds and return to show ON/OFF TIMER. If user press CLOCK button during the 15 seconds display of present time, the operation will be CLOCK setting and return to ON/OFF TIMER.
- In case of power failure, ON TIMER will be automatically cancelled as there is no electricity in the air-conditioner; however, the set time on the remote control is still displayed due to batteries. The user has to cancel and set ON TIMER again or press SEND button to reactivate ON TIMER when the electricity is back to normal conditions.

OFF TIMER Setting

You can set OFF TIMER to stop the unit automatically at any desired time up to 24 hours as real time.

- Press OFF TIMER button. OFF symbol will be shown on the display with blinking hour number.
- Press either \wedge or \vee button to set the desired hour.
- Press OFF TIMER button again to confirm hour setting and minute number will be blinking.
- Press either \wedge or \vee button to set the desired minute.
- Press OFF TIMER button again to confirm minute setting. Hour and minute number will stop blinking. The unit is now standby for stopping air-conditioner automatically at the set time.
- To cancel OFF TIMER, press OFF TIMER button again.

Handheld Remote Control

Note:

- The user can confirm OFF TIMER during OFF TIMER setting process by pressing SEND button.
- If there are no other buttons pressed within 15 seconds, OFF TIMER will be cancelled, and the LCD display will return to show clock.
- After Pressing OFF TIMER button, the LCD display will show the last off timer set by user with blinking hour number.
- When ON/OFF TIMER is set, the present time is not displayed.
- Press CLOCK button to see present time after ON/OFF TIMER was set. The LCD display will show present time about 15 seconds and return to show ON/OFF TIMER. If user press CLOCK button during the 15 seconds display of present time, the operation will be CLOCK setting and return to ON/OFF TIMER.
- In case of power failure, OFF TIMER will be automatically cancelled as there is no electricity in the air-conditioner; however, the set time on the remote control is still displayed due to batteries. The user has to cancel and set OFF TIMER again or press SEND button to reactivate OFF TIMER when the electricity is back to normal conditions.

POWERCOOL Mode

POWERCOOL mode rapidly maximizes the cooling capacity in COOL or DRY mode. With this simply mode, the user can easily get the maximum cooling capacity and comfort.

- Press POWERCOOL button. "POWERCOOL" will be shown on the display.
- The air-conditioner will accelerate capacity up totally 20 minutes or until room temperature is lower than 18°C.
- When POWERCOOL mode completely operates or is cancelled, "POWERCOOL" will disappear from the display and return to the former settings before POWERCOOL mode.
- To cancel POWERCOOL mode, press POWERCOOL button again.

Note:

- The LCD display will not show fan speed and set temperature.
- Fan speed and set temperature cannot be changed while POWERCOOL mode is selected.

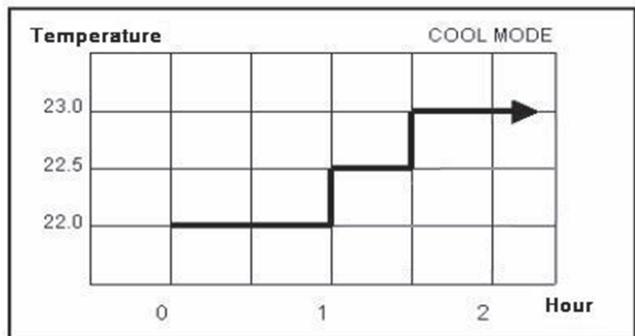
- In case of power failure or changing operation mode, POWERCOOL mode will be automatically cancelled.

SLEEP Mode

SLEEP mode automatically and gradually adjusts room temperature to provide great comfort during your rest.

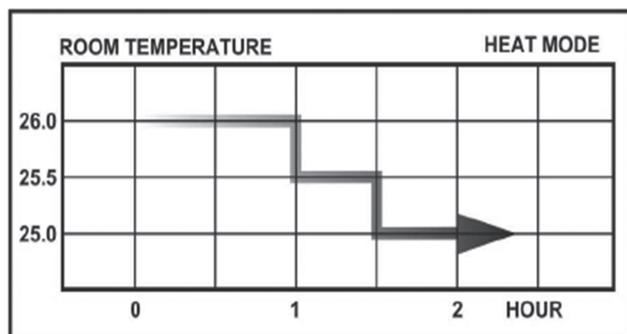
Cooling

- Press SLEEP button.  will be shown on the display.
- After one hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C.
- After one and half hour operation of SLEEP mode, the unit will automatically raise set temperature by 0.5°C again and  on the display will disappear.
- To cancel SLEEP mode, press SLEEP button again.



Heating

- Press SLEEP button.  will be shown on the display.
- After one hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C.
- After one and half hour operation of SLEEP mode, the unit will automatically reduce set temperature by 0.5°C again and  on the display will disappear.
- To cancel SLEEP mode, press SLEEP button again.



Handheld Remote Control

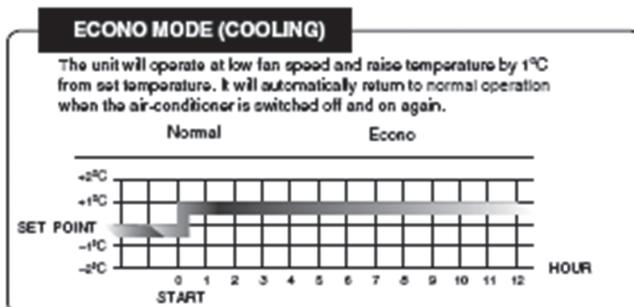
Note:

- Set temperature shown on the display still show the setting without 1°C added/reduced but it will plus/minus 1°C in the memory.
- will disappear from the LCD display when SLEEP mode completely operates, after one and half hours, or is cancelled.
- In case of power failure or changing operation mode, SLEEP mode will be automatically cancelled.

ECONO Mode

ECONO mode drastically saves energy with high efficient cooling capacity in COOL mode by reducing power consumption. With this simply mode, the user can easily get energy saving and comfort.

- Press ECONO button. "ECONO" will be shown on the display.
- The air-conditioner will operates at low fan speed and raise temperature by 1°C from set temperature.
- To cancel ECONO mode, press ECONO button again.



Note:

- ECONO mode operates only in COOL mode and automatically operates when air-conditioner is closed without exiting or canceling ECONO mode.
- Fan speed cannot be changed while ECONO mode is selected.
- In case of changing operation mode, ECONO mode will be automatically cancelled.

DIM Function (If available)

DIM function offers you to dim or restore the brightness of the wired control display.

- Press DIM button to dim the brightness of the display.
- Press DIM button again to restore the brightness of the display to default setting.

Note:

- Whenever adjusting any parameter, after activating DIM function, the brightness of the display panel will be restored to default setting for 5 seconds and returned to dim setting.
- In case of power failure or turning off breaker, DIM function will be automatically restored to default setting for 15 seconds and returned to DIM setting.
- Whenever error code displays, DIM function will be automatically restored to default setting.
- If there is no any button pressed for 3 minutes, the display panel will be standby.

LIGHT Button

LIGHT button offers you the optional feature to lighten the LCD display at any time as you desire.

- Press LIGHT button to lighten the LCD display for 5 seconds.

Note:

- Whenever you press any button from 6.00 pm to 6.00 am, the LCD display will automatically be lightened.

SEND Button

SEND button offers you the optional feature to activate or confirm the operations shown on the LCD display.

- Press SEND button to activate or confirm the operations shown on the LCD display.

°C/°F Toggle

The optional feature offers you to change the temperature display from °C to °F or from °F to °C.

- Press and hold SEND button for 5 seconds to change temperature display.



Installation

Power Supply - 220 VAC 1 Phase 50/60 Hz

ACYSTAT can be applied for MCD512-060

Maximum current ratings are as follows:

- Fan motor running current: 5 amperes (inductive)
(FH, FM, FL and F1 Terminals)
- Auxiliary and compressor control circuits current:
10 Amperes (resistive)
5 Amperes (inductive)
(C Terminals)
- Auxiliary and Heater control circuit current:
(For Cooling / Heating Model)
10 Amperes (resistive)
5 Amperes (inductive)
(H Terminals)

Control Box Assembly Location

The Control Box assembly may be located on any stable moisture-free surface adjacent to fan coil or air handler. It may be mounted in any orientation except with the housing cover inverted, However, the following caution and constraints must be observed when selecting the mounting location.

1. The Control Box must not be located more than 2 meters from the location for mounting of the return air sensor. Please ensure that return air sensor cable is sufficiently long.
2. The Control Box must be located such as it is accessible for future unscheduled inspection and that it does not hinder inspection and removal of return air filters or servicing of the fan coil or air handler.
3. Location of the Control Box must be over 14-meter length of the cable assembly. That is sufficient to reach and attach to the wall mounted receiver.

Attachment/Mounting Control Box

The Control Box attached to the mounting surface by installing a screw through each of 4 holes in the Control Box mounting flanges. The Control Box must not be mounted in the inverted position such as overhead ceiling.

Mounting the Temperature Sensor

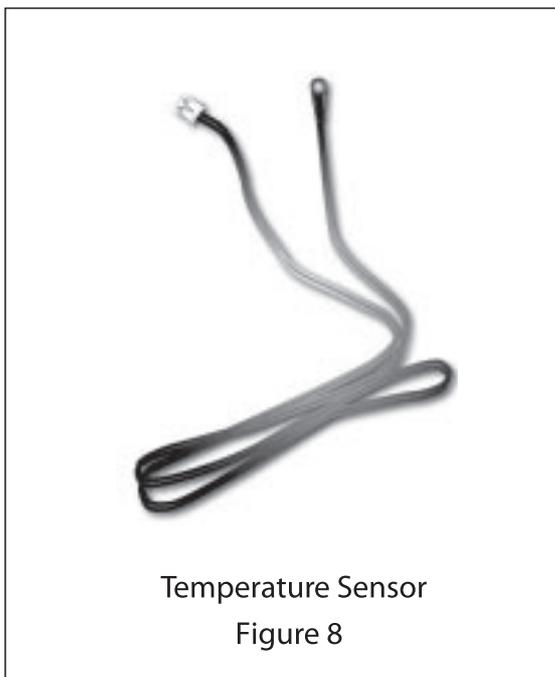
The return air sensor cable is factory installed inside the Control Box and is connected to main PCB. Remove the cover of Control Box, insert the sensor end through the wiring bushing. Pull the sensor cable until the maximum cable is outside of the Control Box.

Installation

Locating the Freeze Sensor

Locating the Temperature Sensor

Locate the return air sensor directly in the air returning to the fan coil or air handler. It should be located so as not to interfere with inspection or removal of return air filters or servicing and repair fan coil or air handler.



Locate the freeze sensor

Locate the freeze sensor close to either U bend tube.

Remote Control Installation

Remote Control Installation Location

Both of display unit and receiver can be installed within the maximum length cable of 15 meters.

- The display unit and receiver should be located on the wall approximately 150 clearly visible from most locations in the conditioning space.
- Do not place the remote control near heat sources or exposed to the direct rays of the sun.
- Do not place in a confined stream.

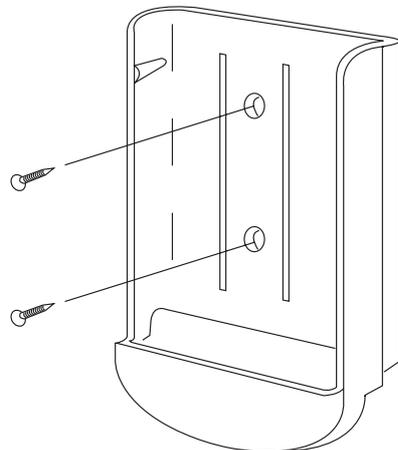
Cable Routing

- Connect either terminal to connector P10 at the printed circuit board and the other to Display unit (wall mouth).
- The cable should be installed and routed in the area that not exposed to excessively hot temperature, moisture, sharp edges and moving surface.

Install the wireless remote control and wired control as follows:

Locate and attach the wireless remote control and wired control as follows:

1. Do not place the control and the remote control near heat sources or expose to the direct rays of the sun.
2. Do not expose the control to the indoor unit's supply air stream.
3. Do not place in a confined space.
4. Attach the remote control holder as shown in Figure 10.



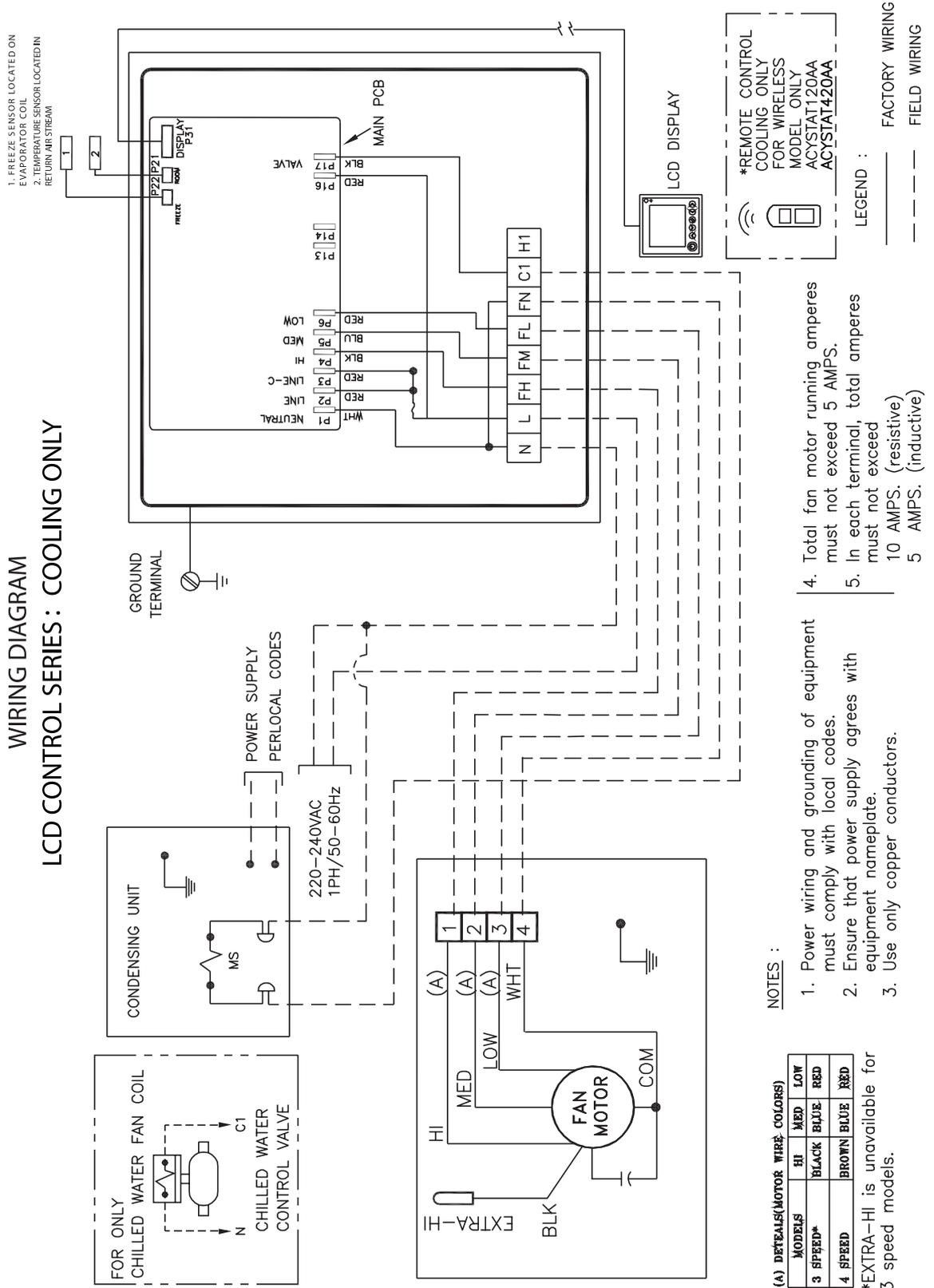
Wireless Remote Control
Figure 10

Electrical Installation

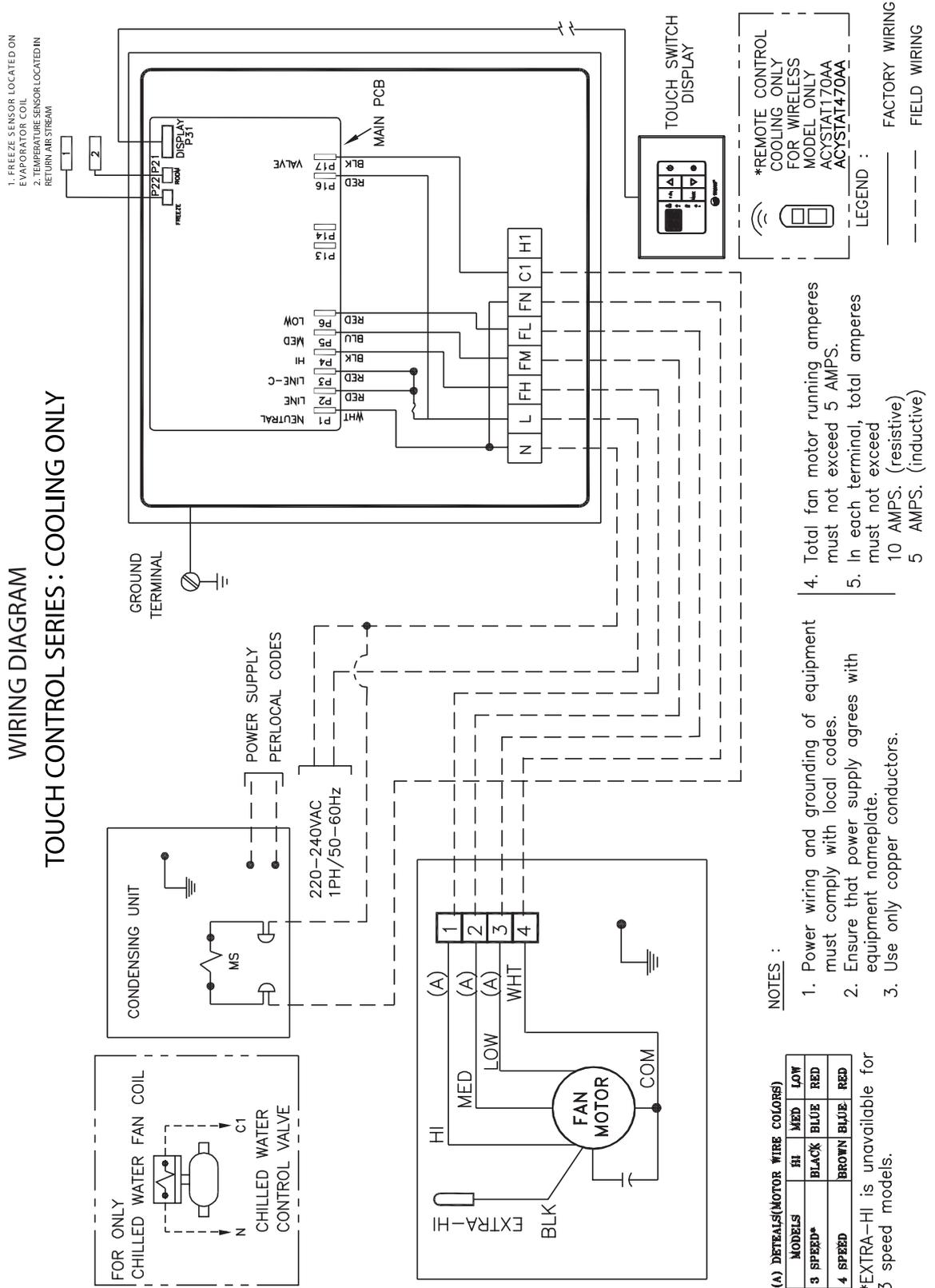
All wiring and grounding must comply with local electrical codes.

- Disconnect both indoor and outdoor power supplies before servicing.
- Remove the cover of control box to access the terminal block.
- Connect the wire terminal to the terminal block. (Connection indicated on system wiring diagram).
- Make sure all connections are tight.
- After completing the connection, re-confirm them to be in accordance with the indoor unit, outdoor unit and system wiring diagram.

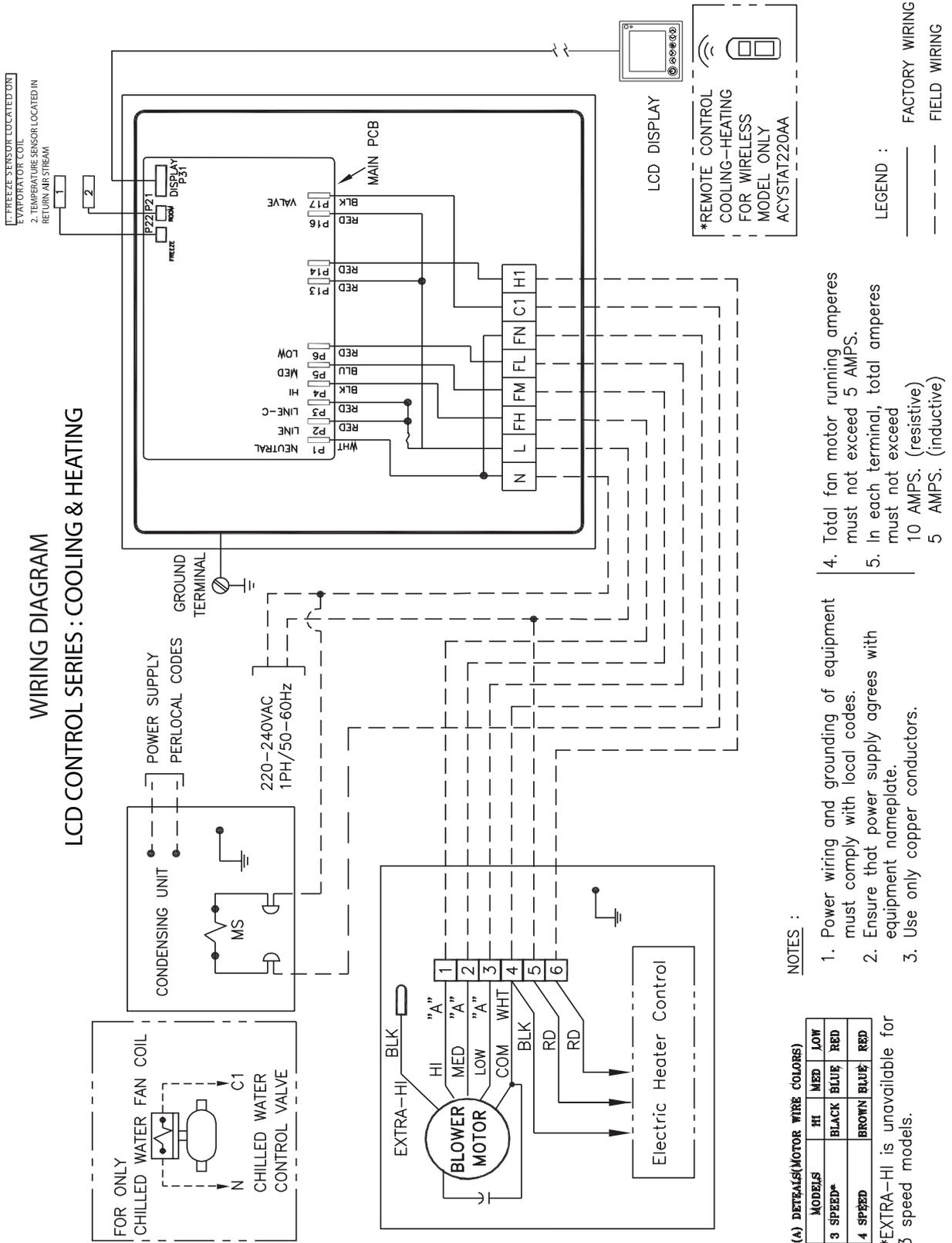
Wiring diagram



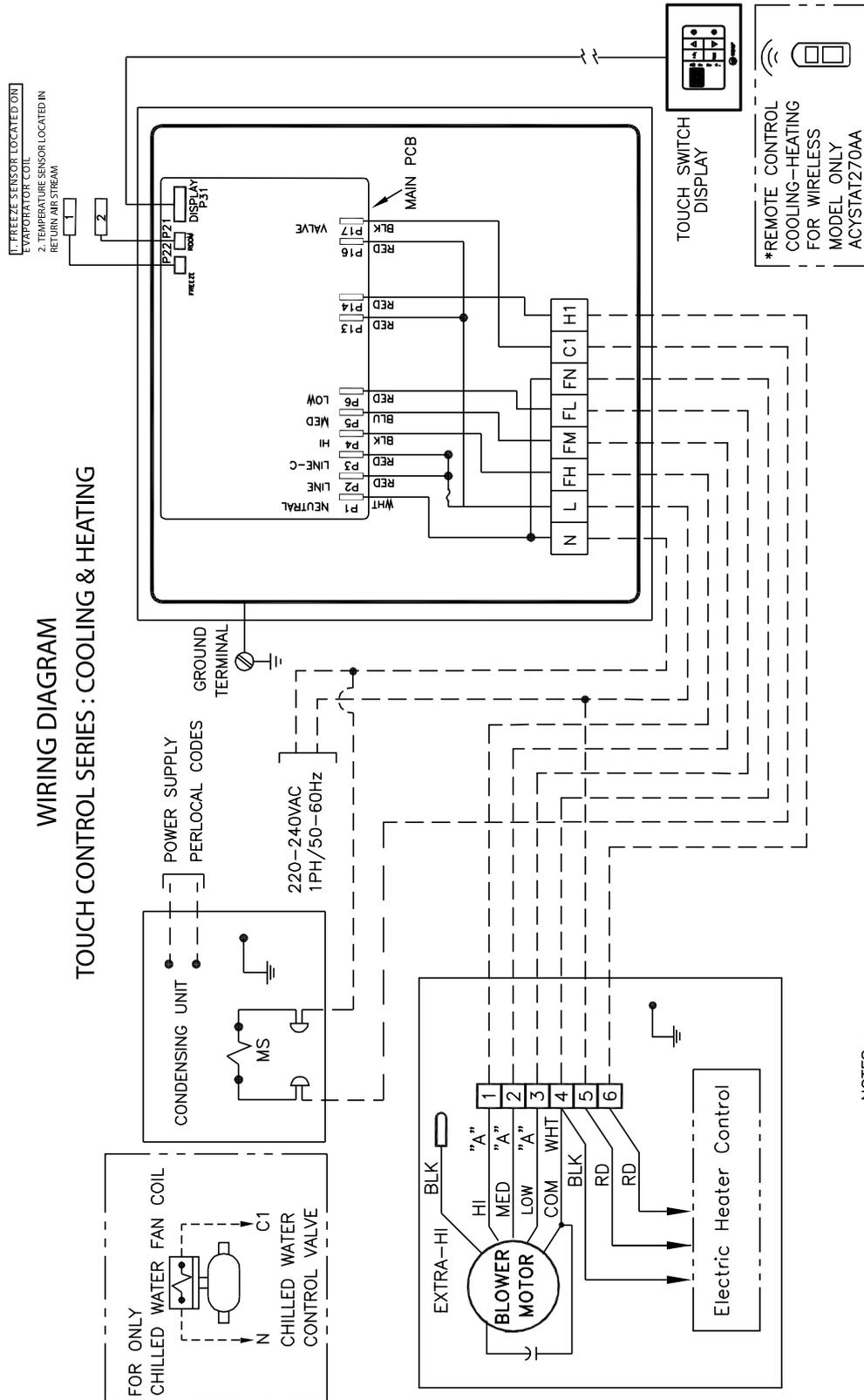
Wiring diagram



Wiring diagram

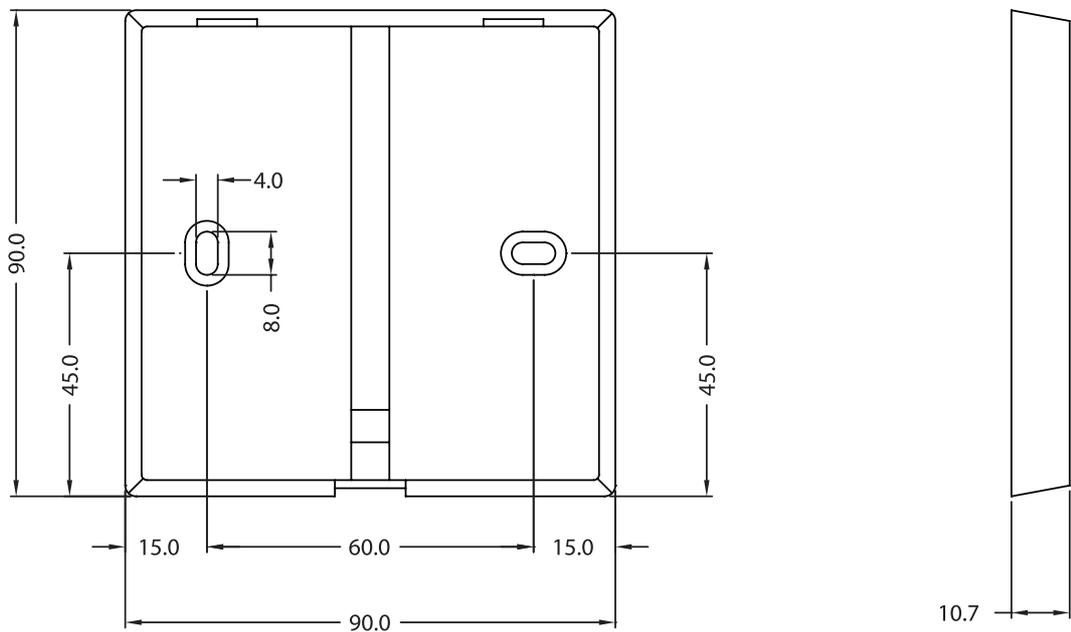
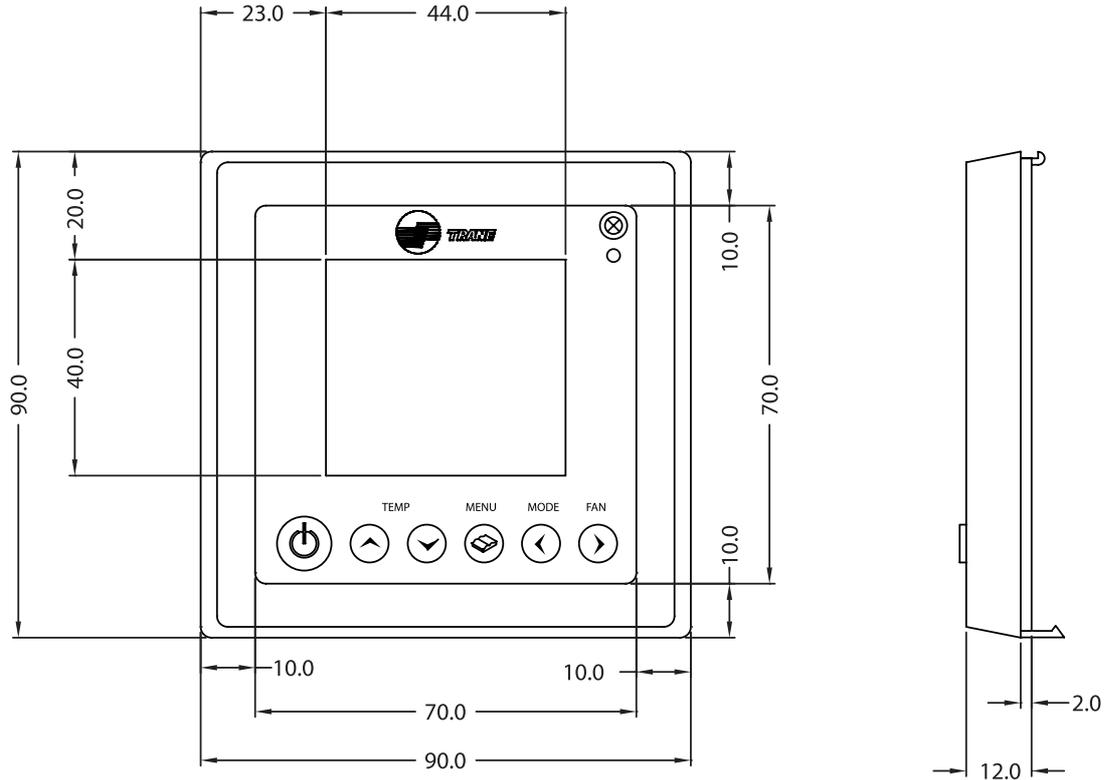


Wiring diagram



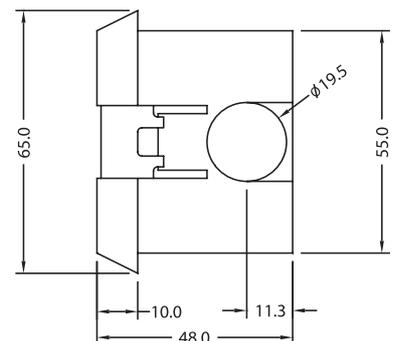
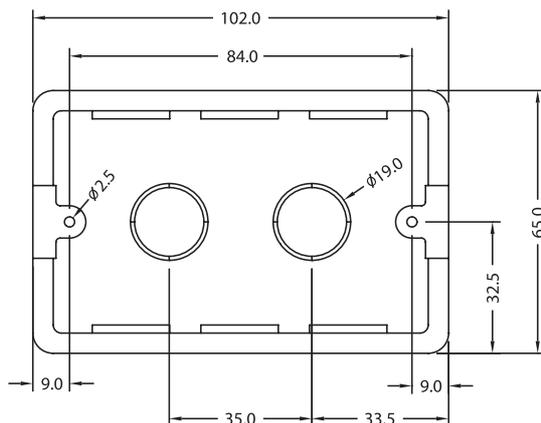
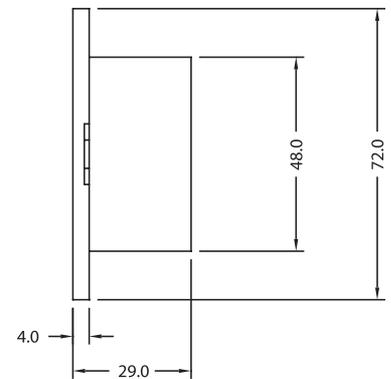
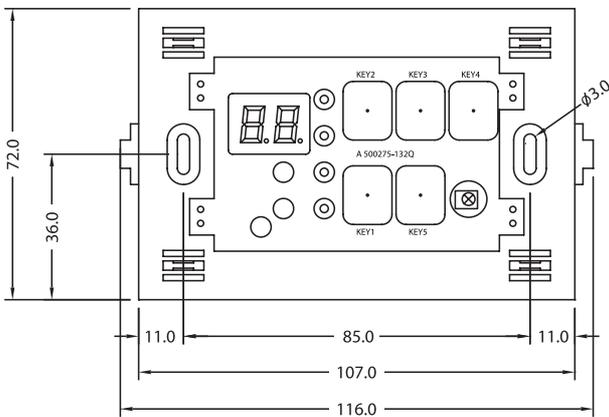
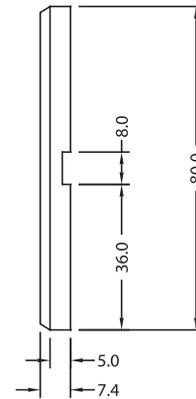
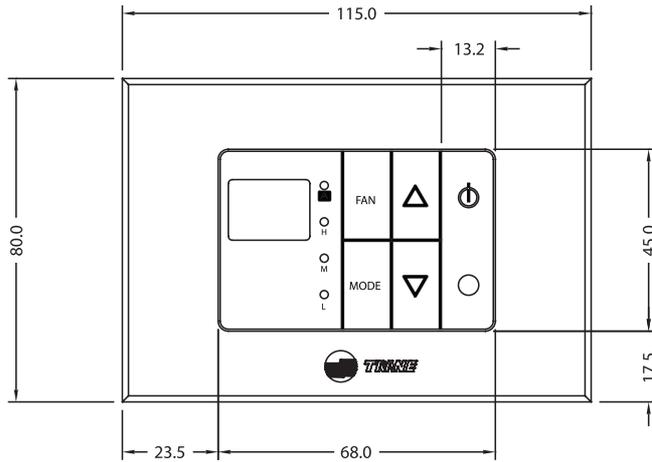
Outline Dimension

LCD Wired Control



Outline Dimension

Touch Wired Control



Note



เทรน (ประเทศไทย)
เลขที่ 1126/2 ชั้น 30-31 อาคารวานิช 2 ถ.เพชรบุรีตัดใหม่
แขวงมีนกะสิน เขตราชเทวี กรุงเทพฯ 10400

Trane
www.trane.com

For more information, contact your local
district office



Literature Order Number: ACYSTAT-IOM-EN

Date: Aug 2010

Supersedes: Nov 2009

Stocking Location: Bangkok, Thailand

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.