



**VRF**

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# USER'S MANUAL

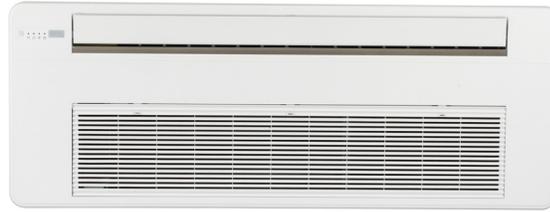
## VRF Indoor Units

**THIS MANUAL MUST BE LEFT WITH THE OWNER FOR FUTURE REFERENCE**

VRF SYSTEMS -- Indoor Units  
507922-02  
05/2019



**V22B**  
**Compact 360° Cassette**



**VOWA**  
**One-Way Cassette**



**VVCB**  
**Air Handler**



**V33B**  
**360° Cassette**



**VOSB**  
**Outside Air Unit**



**VMDB**  
**Medium-Static Concealed Duct Unit**



**VWMB**  
**Wall-Mounted Non-Ducted Unit**



**VHIB**  
**High-Static Concealed Duct Units**



**VCFB**  
**Ceiling- or Floor-Mounted Non-Ducted Unit**

## Safety Requirements

### **⚠ WARNING**

**ELECTRICAL SHOCK, FIRE, OR EXPLOSION HAZARD.**

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or death.

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer (or equivalent), or a service agency.

Any additions, changes, or conversions required in order for the appliance to satisfactorily meet the application needs must be made by a licensed professional installer (or equivalent) using factory-specified parts.

This unit must be properly grounded. The ground wire for the unit must not be connected to a gas or water pipe, a lightning conductor or a telephone ground wire.

Do not use this system if any part has been underwater. A flood-damaged appliance is extremely dangerous. Immediately call a licensed professional HVAC service technician (or equivalent) to inspect the system and to replace all controls and electrical parts that have been wet or to replace the system, if deemed necessary.

Refrigerant leaks are unlikely; however, if a refrigerant leak occurs, open a door or windows to dilute the refrigerant in the room. Turn off the unit and all other appliances that may cause a spark. Call a licensed professional HVAC technician (or equivalent) to repair the leak.

**DO NOT** spray water on the indoor unit for any reason.

Do not touch the unit or the controller if your hands are wet.

Do not replace a fuse with a fuse of a different rating. Do not use a jumper wire to replace a fuse.

Do not insert your hands, tools or any other item into the air intake or air outlet at either the indoor or outdoor unit.

Do not remove the outdoor unit fan guard for any reason.

### **⚠ CAUTION**

If outdoor unit is installed on a raised stand, check condition of stand occasionally to ensure that it remains stable.

Do **NOT** install sprinklers or soaker hoses where they can expose the outdoor unit to treated water. Prolonged exposure to treated water will corrode the surface of the steel and aluminum parts and will diminish the performance of the unit.

Do not place items which may be damaged by water under or around the indoor unit.

Ensure that the condensate drain is properly routed to a drain.

## Important Operating Instructions

### **IMPORTANT!**

System operation is controlled by either a wired remote controller or a wireless remote controller. Refer to the manual provided with the control for system operation.

To ensure comfort, make sure that temperature selection has been properly set at the unit controller or remote control.

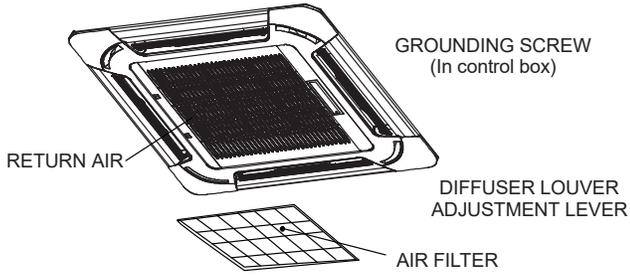
To ensure efficient operation, do not block air intake or outlet at either the indoor or outdoor unit.

Do not stand on outdoor unit or store items on top of unit. Make sure that indoor unit directional louvers are properly adjusted.

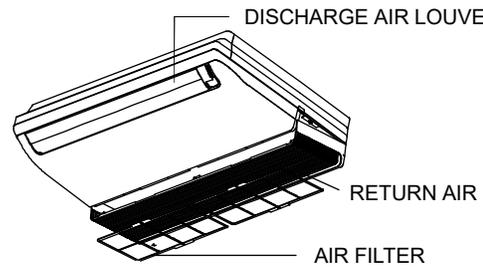
**Parts Arrangement - Non-Ducted Indoor Units**

**V22B or V33B Cassette**

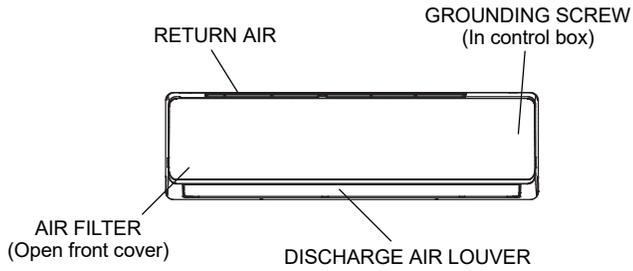
Cassette may be adjusted to provide discharge air from one, two, three or four sides.



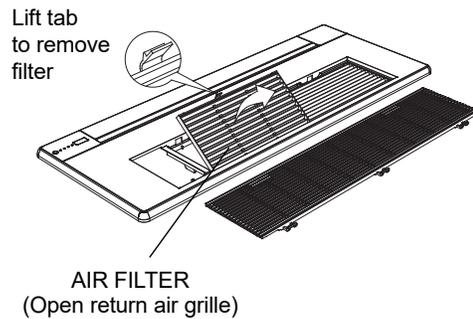
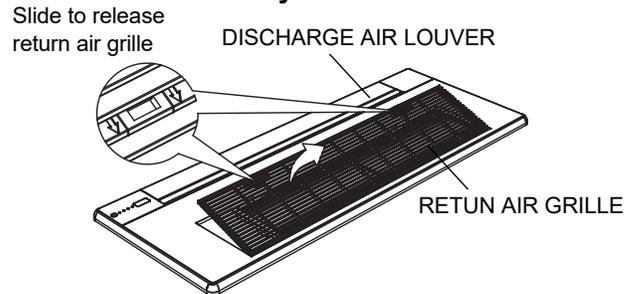
**VCFB Ceiling- or Floor-Mounted Non-Ducted Unit**



**VWMB Wall-Mounted Non-Ducted Unit**

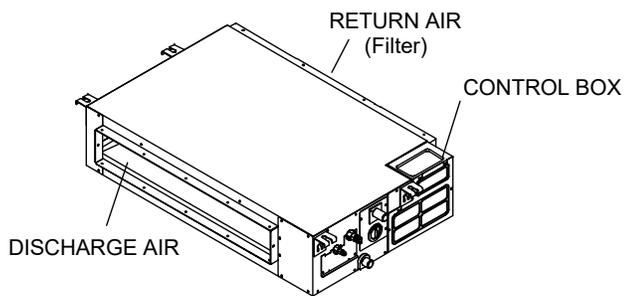


**VOWA One-Way Cassette**

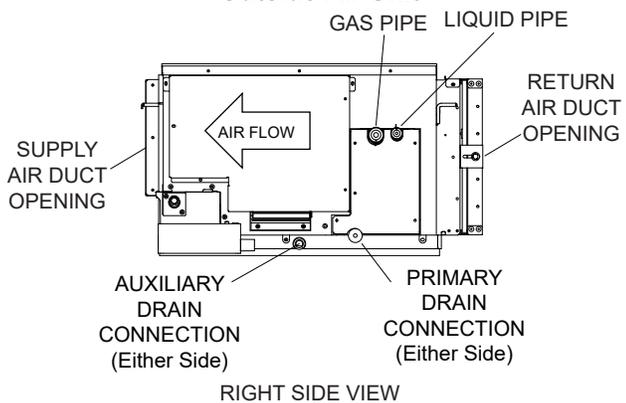


**Parts Arrangement - Ducted Indoor Units**

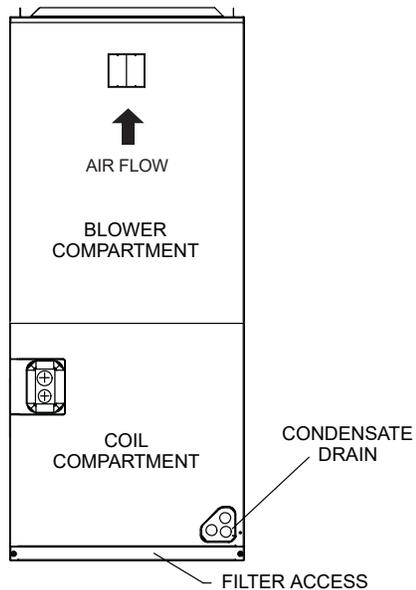
**VMDB  
Medium-Static Concealed Duct**



**VHIB  
High-Static Concealed Duct  
and  
VOSB  
Outside Air Unit**



**VVCB  
Air Handler**



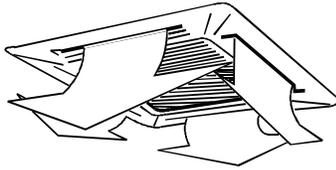
## ⚠ CAUTION

**DO NOT** adjust the louvers by hand. Louvers are adjustable only by using the wired controller or remote control.

### V22B or V33B Ceiling-Mounted Cassettes

Adjust the discharge air louvers to direct air downward during heating and outward during cooling.

**Heating operation**  
Adjust louvers downward.

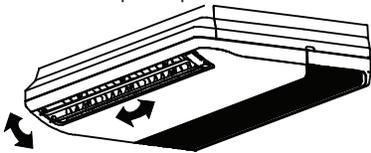


**Cooling operation**  
Adjust louvers outward.

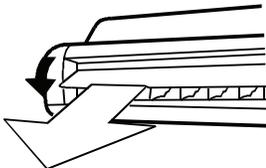
### VCFB Ceiling- or Floor-Mounted Units

Use the wired controller or the remote control to set the position of the discharge air louvers. The louvers may be set to automatically swing. In this setting, horizontal louvers will swing outward to downward and vertical louvers will swing left to right. You may also set the louvers so that they are stationary in a single position. It is always recommended to direct the horizontal discharge air louvers downward during heating and outward during cooling.

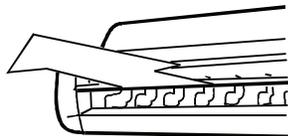
**Auto-swing operation**  
Sets louvers to pivot up and down automatically.



**Heating operation**  
Set horizontal louvers downward.



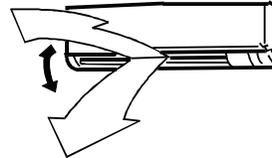
**Cooling operation**  
Set horizontal louvers outward.



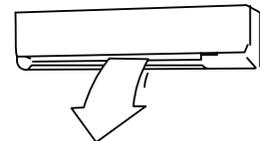
### VWMB Wall-Mounted Units

Use the wired controller or the remote control to set the position of the discharge air louvers. The louvers may be set to automatically swing between the outward and downward positions, OR you may set the louvers so that they are stationary in a single position. It is always recommended to direct the horizontal discharge air louvers downward during heating and outward during cooling.

**Auto-swing operation**  
Sets louvers to pivot up and down automatically.



**Heating operation**  
Set horizontal louvers downward.



**Cooling operation**  
Set horizontal louvers outward.



## ⚠ WARNING

**ELECTRICAL SHOCK, FIRE, OR EXPLOSION HAZARD.**  
 Before performing any maintenance, power to unit must be off at the unit disconnect switch.

## ⚠ CAUTION

Check wiring for signs of loose connections.

Use a clean, dry cloth to wipe the remote control. Never use a damp or wet cloth to clean the remote control.

Use a clean, dry cloth to wipe the indoor unit. If necessary, dampened cloth may be used.

Do not use a chemically treated dust cloth on either the indoor unit or remote control.

Do not use benzene, paint thinner, polishing powder or similar products to clean the indoor unit or control. These substances may cause the plastic surface to crack or become damaged.

### Preparing Unit for Prolonged Idle Periods

The unit must be prepared before lengthy periods of inactivity:

- Set the controller so that the indoor unit operates in the fan only mode for 8 to 12 hours.
- Thoroughly clean and replace return air filters.
- Use a clean, dry cloth to wipe cabinets.
- Turn the unit OFF at the wired controller or remote control; then, disconnect power to the unit.
- Remove batteries from the remote control.

### Returning the Unit to Operation after Prolonged Idle Periods

If the unit has been inactive for an extended period of time, it must be prepared for operation:

- Properly clean and replace return air filters.
- Use a clean, dry cloth to wipe unit front panels.
- Insert batteries into the remote control.
- If power was disconnected, reconnect power to the unit for at least 12 hours before returning the unit to operation.

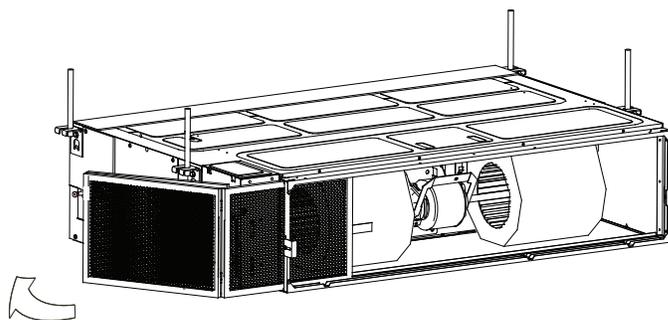
### Return Air Filters

Blocked or dirty return air filters affect system operation and efficiency. Air filters should be checked monthly in order to ensure proper air flow to the indoor unit. It may be necessary to check the filter more frequently if the unit is installed in an area with a large amount of dust.

The filter may be removed and cleaned, or it should be replaced with a filter of like kind and size if it is impossible to clean the filter. Refer to the parts arrangement illustrations to locate the filter in your indoor unit.

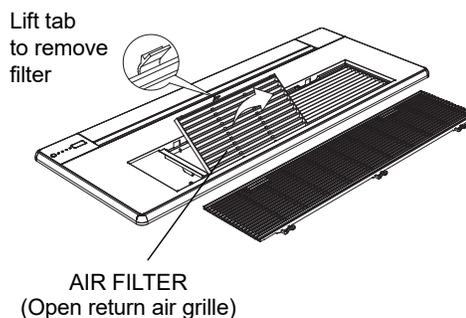
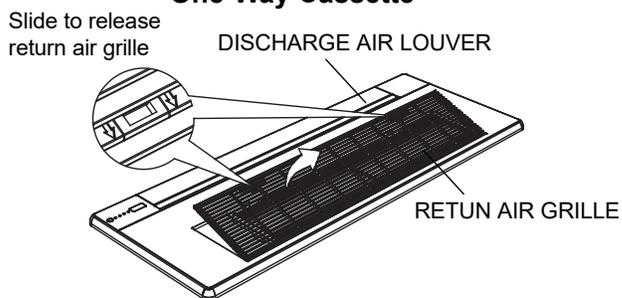
The VVCB return air filter access is shown on the parts arrangement illustration on page 3. Remove the two screws that secure the filter access cover to the unit cabinet. Remove the cover and slide the filter out of the cabinet.

The VMDB and VHIB return air filter is segmented to allow it to be removed in tight spaces.



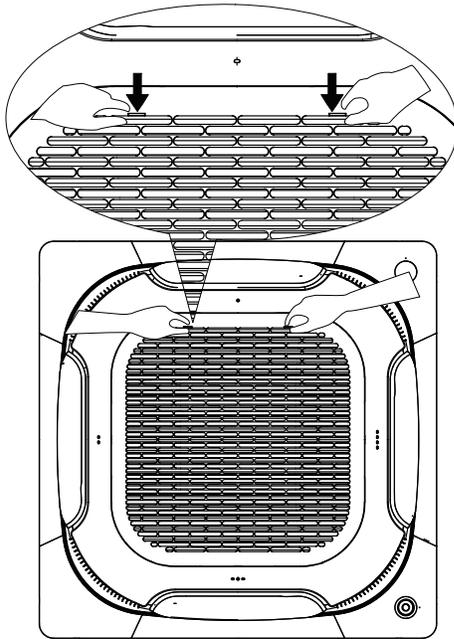
The VOWA filters are accessed through the return air grille as shown in these illustrations.

### VOWA One-Way Cassette

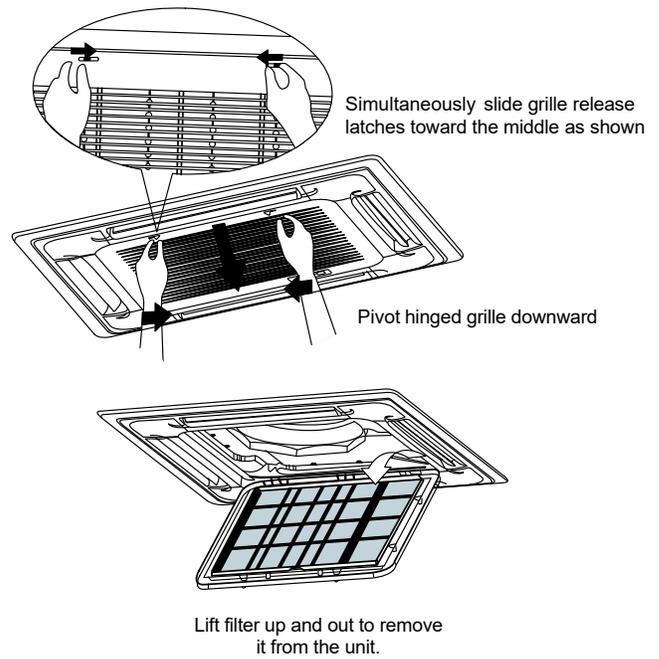


The V22B and V33B filters are accessed through the return air grille as shown in these illustrations.

### V33B Ceiling Cassettes

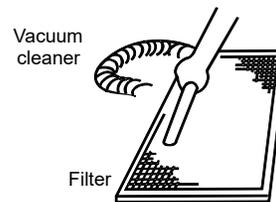


### V22B Ceiling Cassettes



### Filter Cleaning

The filter may be cleaned using either a vacuum cleaner or with clean water.

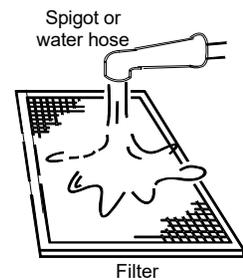


Filter should be held with the air entering side face up when using a vacuum cleaner.

The filter should be held with the air entering side face down when using clean water to wash the filter.

Filter should be set aside to air dry after cleaning. **Do not place filter in direct sunlight or use any type of heat to dry the filter.**

**NOTE** - If filter is extremely dirty, it may be necessary to use a soft brush and a mild detergent for cleaning. Filter must be thoroughly rinsed and dried.



## **⚠WARNING**

### **ELECTRICAL SHOCK, FIRE, OR EXPLOSION HAZARD.**

ever attempt to repair the indoor or outdoor unit yourself. System repairs must be performed by a licensed professional HVAC technician (or equivalent).

If any of the following conditions exist, immediately turn the system (indoor and outdoor units) off at the unit disconnect switch and call a licensed professional HVAC technician (or equivalent) for repairs:

- The system does not receive a signal from the remote control or wired controller.
- The remote control or wired controller indicate a system malfunction.
- Water is leaking into the room from the indoor unit.
- The circuit breaker trips or the fuse blows frequently.
- Water or some other liquid has been spilled on or splashed into the indoor unit.

### **NORMAL OPERATION**

If none of the above conditions exist, check the following items before calling for repairs. This can save you both time and money. The following are signs of normal system operation.

#### **System does not operate on command**

The indoor fan does not start immediately after the ON/OFF button on the remote control is pressed.

- On an initial call for cooling, the operation/run light is lit to signal normal operation. There will be a delay after a cooling demand is introduced before unit operation begins. This delay protects the unit compressor and is normal.
- When a heating demand is initiated, the operation light is lit to signal normal operation. The PRE-DEF indicator may be lit as well. The indoor unit fan will not operate until the indoor coil reaches a pre-set temperature. This prevents the delivery of cold air into the space and is normal.

#### **Indoor fan is on; compressor is off**

In certain normal operating modes, the indoor fan is on when the compressor is not operating.

- The system turns the compressor off and leaves the indoor fan on when the indoor coil falls to a preset temperature. This is normal operation and will prevent the indoor coil from freezing.
- When the indoor fan is set for continuous operation, the fan continues to run when the temperature setting is reached and the compressor is de-energized.

#### **White mist comes out of the indoor unit**

- **During cooling operation**, if the indoor relative humidity is very high and the indoor unit discharge air louvers are very dirty, the indoor coil may freeze and a white mist (frozen vapor) may appear to come from the indoor unit. **In this case, though the unit is not in need of repair, it does need to be cleaned by a licensed professional HVAC technician (or equivalent).**
- **During heating operation when the operation mode switches from defrost to heating**, moisture generated by the defrost process becomes steam and may be seen as it is blown out of the indoor unit.

#### **Sounds can be heard near the indoor unit**

During certain parts of the heating or cooling process, low swishing or groaning sounds may be heard near the unit as the system pressures equalize. This is a normal occurrence.

The table below lists possible causes and solutions to some of the most common problems. Please review this information before calling for service.

Symptom	Possible Cause	Possible Solution
Unit does not start.	<ul style="list-style-type: none"> <li>Power failure.</li> <li>Power to unit is OFF or disconnected.</li> <li>Circuit breaker may be tripped or fuse may be blown.</li> <li>Remote control batteries may have lost their charge or unit controller may have malfunctioned.</li> </ul>	<ul style="list-style-type: none"> <li>Wait for power to be restored.</li> <li>Turn on or reconnect power to the unit.</li> <li>Reset circuit breaker or replace fuse.</li> <li>Replace batteries in remote control. Check controller for proper function.</li> </ul>
Indoor fan is operating; however, air is not cool.	<ul style="list-style-type: none"> <li>Temperature not properly set at control.</li> <li>Compressor may be kept off by delay.</li> </ul>	<ul style="list-style-type: none"> <li>Check temperature setting at control.</li> <li>Wait for delay to expire.</li> </ul>
Unit cycles on and off frequently.	<ul style="list-style-type: none"> <li>Refrigerant charge is incorrect.</li> <li>Air in refrigerant circuit.</li> <li>Compressor malfunction.</li> <li>Improper voltage.</li> <li>System refrigerant circuit is blocked.</li> </ul>	<ul style="list-style-type: none"> <li>Check for refrigerant leaks and properly charge system.</li> <li>Evacuate and properly charge system.</li> <li>Check compressor and replace, if necessary.</li> <li>Check with utility company to provide proper voltage.</li> <li>Clear blockage.</li> </ul>
Unit not cooling properly.	<ul style="list-style-type: none"> <li>Indoor and/or outdoor coil are dirty.</li> <li>Air filter is dirty.</li> <li>Air flow around indoor and/or outdoor unit is obstructed.</li> <li>Doors and/or windows are open.</li> <li>Direct sunlight is affecting indoor temperature.</li> <li>Heat source inside is placing a large burden on the system.</li> <li>Suction pressure is low due to possible refrigerant leak.</li> </ul>	<ul style="list-style-type: none"> <li>Clean indoor and/or outdoor coil.</li> <li>Clean or replace air filter.</li> <li>Remove obstructions.</li> <li>Close doors and windows.</li> <li>Use curtains or blinds to block direct sunlight.</li> <li>Reduce burden of heat source.</li> <li>Check for refrigerant leaks and properly charge system.</li> </ul>
Unit not heating properly.	<ul style="list-style-type: none"> <li>Doors and/or windows are open.</li> <li>Suction pressure is low due to possible refrigerant leak.</li> </ul>	<ul style="list-style-type: none"> <li>Close doors and windows.</li> <li>Check for refrigerant leaks and properly charge system.</li> </ul>
Fan speed cannot be changed.	<ul style="list-style-type: none"> <li>Check the mode listed on the unit display. Fan speed cannot be changed in the AUTO or DRY mode.</li> </ul>	<ul style="list-style-type: none"> <li>Fan speed cannot be changed in AUTO or DRY mode. Change mode to COOL, FAN ONLY or HEAT.</li> </ul>
Remote control signal is not being transmitted, even when ON/OFF button is pressed.	<ul style="list-style-type: none"> <li>Batteries may have lost their charge.</li> </ul>	<ul style="list-style-type: none"> <li>Replace batteries.</li> </ul>
The TEMP adjustment indicator is not available.	<ul style="list-style-type: none"> <li>Check the mode listed on the unit display. Temperature cannot be adjusted in the FAN ONLY mode.</li> </ul>	<ul style="list-style-type: none"> <li>Change the mode to COOL, HEAT or DRY.</li> </ul>
Operation indicator disappears from the display after a period of time.	<ul style="list-style-type: none"> <li>Check to see if display reads TIMER OFF.</li> </ul>	<ul style="list-style-type: none"> <li>Timed operation is terminated at the end of the TIMER period.</li> </ul>
TIMER ON disappears from the display after a period of time.	<ul style="list-style-type: none"> <li>Check to see if display reads TIMER OFF.</li> </ul>	<ul style="list-style-type: none"> <li>Timed operation is terminated when time period has expired.</li> </ul>
No tones being sounded by indoor unit, even when ON/OFF button is pressed.	<ul style="list-style-type: none"> <li>Infra-red receiver must be able to see signal from remote control.</li> <li>Batteries may have lost their charge.</li> </ul>	<ul style="list-style-type: none"> <li>Aim remote control infra-red transmitter directly at receiver.</li> <li>Replace batteries.</li> </ul>

## Error Codes

Indoor units are equipped with either a small panel with four LEDs that flash to indicate system errors or a digital display that provides an error code. Refer to the appropriate table below to view the error codes. If the unit has a digital display, the error code will replace the temperature setting displayed on the front cover of the indoor unit. If more than one error has occurred, the codes will alternate so that all codes are shown. Make note of the code (E1, EE, etc.), then reset the display by pressing the ON/OFF button on the wireless remote controller. Press the ON/OFF button a second time to reapply power to system. If code is still displayed, disconnect and restore power at the unit disconnect switch or circuit breaker. If the problem was temporary, the code will not reappear. If the error code reappears after power has been broken and restored at the disconnect switch or circuit breaker, call a licensed professional HVAC service technician.



**V22B, VMDB, VHIB, VOSB VVCB**



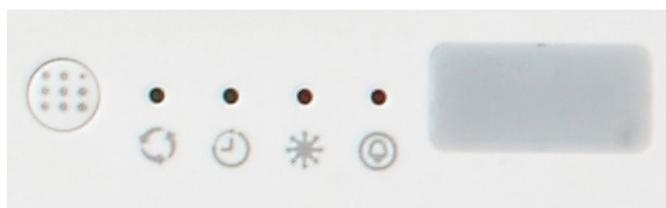
**VWMB**



**V33B**



**VCFB**



**VOWA**

**Shown on Indoor Unit Receiver (LED Display)**

<b>Flashing LED Lights</b>	<b>Description</b>
Operation LED Flashes Slowly	Fan coil in standby mode
Operation LED Is Non Active	Fan coil is in shutdown mode
Operation LED Is Active	Fan coil is in running mode
Timer LED Is Active	Fan coil is under timer control
Operation And Timer LED Flash Fast	Fan coil unit has no registered address upon receiving a power supply
Timer LED Flashes Fast	Communication error between indoor fan coil units and external condensing units
Operation LED Flashes Fast	Possible error with T1 (room sensor) T2 (middle evaporator temperature sensor) T2b (evaporator outlet temperature sensor)
Alarm LED Flashes Fast	Water level alarm error
Defrost LED Flashes Fast	Mode conflict error
Alarm LED Flashes Slowly	Outdoor unit error
Defrost LED Flashes Slowly	EEPROM ERROR

**NOTES:**

LED FLASHING SLOWLY = 1 FLASH PER SECOND

LED FLASHING FAST = 2 FLASHES PER SECOND

**Fault Code Display on Indoor Unit Receiver (Digital Display)**

<b>Error Code</b>	<b>Description</b>
FE	No address
E0	Mode conflict
E1	Communication error between indoor and main outdoor unit
E2	T1 (Room temperature sensor) malfunction
E3	T2 (Middle of evaporator sensor) malfunction
E4	T2B (Outlet of evaporator sensor) malfunction
E5	T2A (Inlet of evaporator sensor) malfunction
E6	DC fan motor error
E7	EEPROM failure
Eb	EXV malfunction
EC	TA (discharge temperature sensor) malfunction
Ed	Outdoor unit Fault
EE	High Water Alarm
A0	Emergency stop
D8	Remote off
U4	MS self-inspection error
F8	MS error

**Fault Code Display on Controller**

<b>Error Code</b>	<b>Description</b>
F0	Communication/Address error between indoor units and wired controller
F1	Communication/Wiring error between indoor units and wired controller
E2	Controller temperature sensor error

**Technical Support**

1-844-GET-VRF1

(1-844-438-8731)

[vrftechsupport@lennoxind.com](mailto:vrftechsupport@lennoxind.com)

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