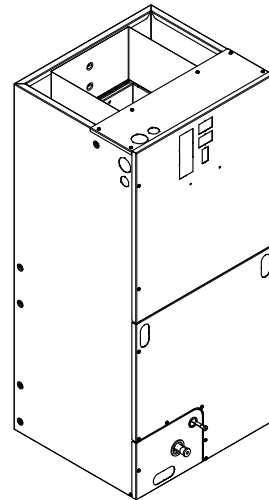


# Service Facts

## Communicating / 24 Volt control TEM8 Convertible Air Handlers

TEM8A0B24V21DA  
TEM8A0B30V31DA  
TEM8A0C36V31DA  
TEM8A0C42V41DA  
TEM8A0C48V41DA  
TEM8A0D48V41DA  
TEM8A0C60V51DA  
TEM8A0D60V51DA



*The TEM8 series air handler is designed for installation in a closet, utility room, alcove, basement, crawlspace or attic. These versatile units are applicable to air conditioning and heat pump applications. Several models are available to meet the specific requirements of the outdoor equipment. Field installed electric resistance heaters are available.*

### **▲ SAFETY WARNING**

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# SAFETY SECTION

## AIR HANDLERS

**Important:** This document contains a wiring diagram, a parts list, and service information. This is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

**Important:** These instructions do not cover all variations in systems nor provide for every possible contingency to be met in connection with the installation. 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 installing dealer or local distributor.

### ⚠ WARNING

#### HAZARDOUS VOLTAGE!

Failure to follow this Warning could result in property damage, severe personal injury, or death.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized.

### ⚠ CAUTION

#### GROUNDING REQUIRED!

Failure to inspect or use proper service tools may result in equipment damage or personal injury.

Reconnect all grounding devices. All parts of this product that are capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

### ⚠ WARNING

#### LIVE ELECTRICAL COMPONENTS!

Failure to follow this Warning could result in property damage, severe personal injury, or death.

Follow all electrical safety precautions when exposed to live electrical components. It may be necessary to work with live electrical components during installation, testing, servicing, and troubleshooting of this product.

### ⚠ WARNING

#### PRESSURIZED REFRIGERANT!

Failure to follow this Warning could result in personal injury

System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. Do not use non-approved refrigerants or refrigerant substitutes or refrigerant additives.

### ⚠ CAUTION

#### SHARP EDGE HAZARD!

Failure to follow this Caution could result in property damage or personal injury.

Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing.

### ⚠ CAUTION

#### HAZARDOUS VAPORS!

Failure to follow this caution could result in property damage or personal injury.

Equipment corrosion damage. To prevent shortening its service life, the air handler should not be used during the finishing phases of construction or remodeling. The low return air temperatures can lead to the formation of condensate. Condensate in the presence of chlorides and fluorides from paint, varnish, stains, adhesives, cleaning compounds, and cement creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components.

### ⚠ CAUTION

#### COIL IS PRESSURIZED!

- Coil is pressurized with approximately 8–12 psi dry air and factory checked for leaks.
- Carefully release the pressure by removing the rubber plug on the liquid line.
- If no pressure is released, check for leaks.

**⚠ WARNING****SAFETY HAZARD!**

Fiberglass dust and ceramic fibers are believed by the state of California to cause cancer through inhalation. Glasswool fibers may also cause respiratory, skin, or eye irritation.

**PRECAUTIONARY MEASURES**

- Avoid breathing fiberglass dust
- Use a NIOSH approved dust/mist respirator
- Avoid contact with the skin or eyes. Wear long-sleeved, loose fitting clothing, gloves, and eye protection
- Wash clothes separately from other clothing, rinse washer thoroughly
- Operations such as sawing, blowing, tear-out, and spraying may generate fiber concentrations requiring additional respiratory protection. Use the appropriate NIOSH approved respirator in these situations

**FIRST AID MEASURES**

- **EYE CONTACT:** FLUSH EYES WITH WATER TO REMOVE DUST. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.
- **SKIN CONTACT:** WASH AFFECTED AREA GENTLY WITH SOAP AND WARM WATER AFTER HANDLING.

This warning complies with state of California law, Proposition 65.

**Note:** Air handlers have been evaluated in accordance with the Code of Federal Regulations, Chapter XX, Part 3280 or the equivalent. "SUITABLE FOR MOBILE HOME USE."

**Note:** Condensation may occur on the surface of the air handler when installed in an unconditioned space. When units are installed in unconditioned spaces, verify that all electrical and refrigerant line penetrations on the air handler are sealed completely.

**Note:** The manufacturer recommends installing ONLY A.H.R.I approved, matched indoor and outdoor systems. Some of the benefits of installing approved matched indoor and outdoor split systems are maximum efficiency, optimum performance, and the best overall system reliability.

**⚠ WARNING****SAFETY HAZARD!**

This appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

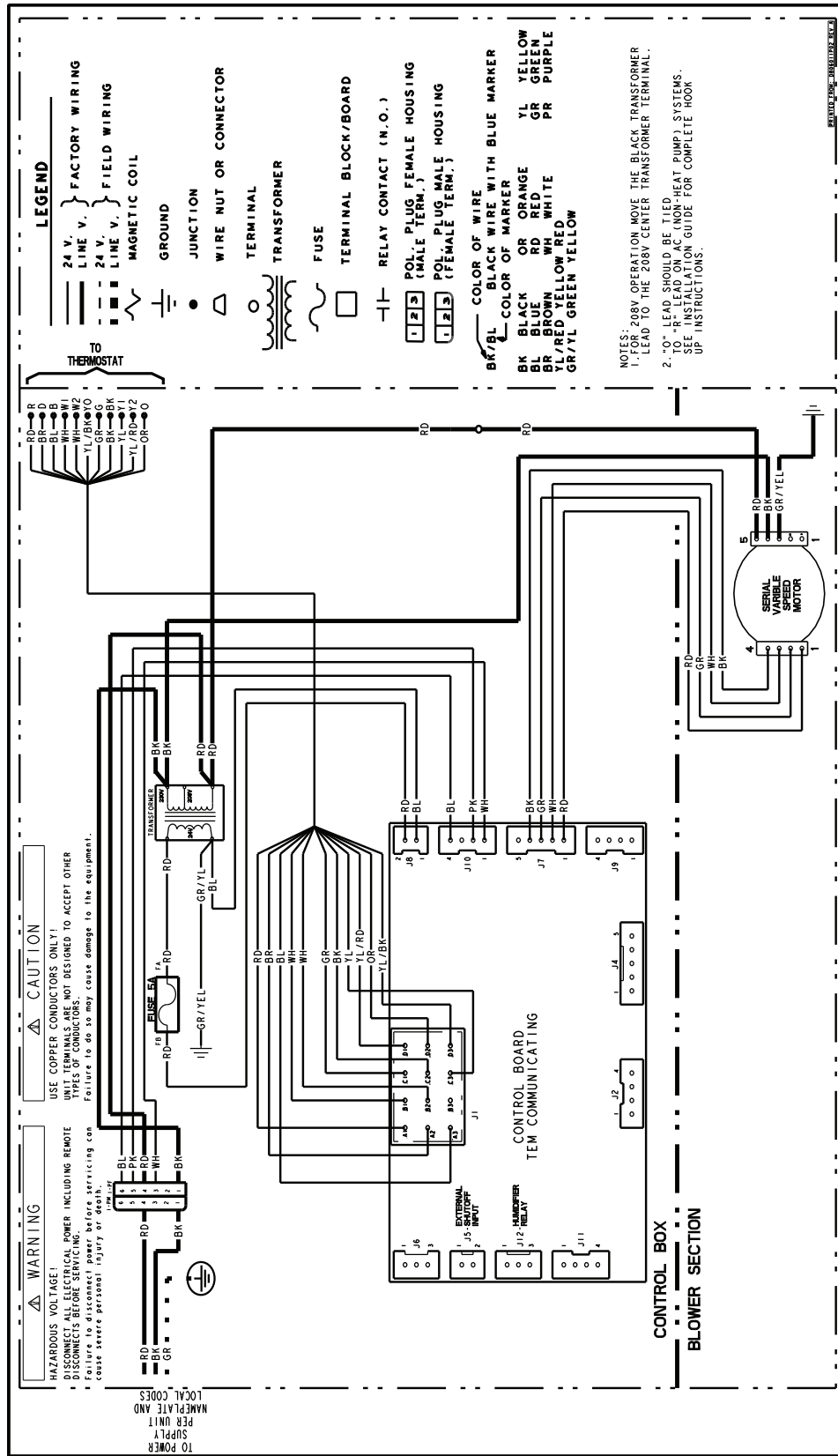
**⚠ WARNING****SAFETY HAZARD!**

Children should be supervised to ensure that they do not play with the appliance.

**Important:** Installation of this unit shall be made in accordance with the National Electric Code, NFPA No. 90A and 90B, and any other local codes or utilities requirements.

**Important:** Air handlers do not require repositioning of the coil or drain pan for upflow or horizontal left applications. See the downflow and horizontal right installation sections for application instructions.

# Wiring D806011P02revA



# Subcooling Adjustment

## Subcooling Adjustment

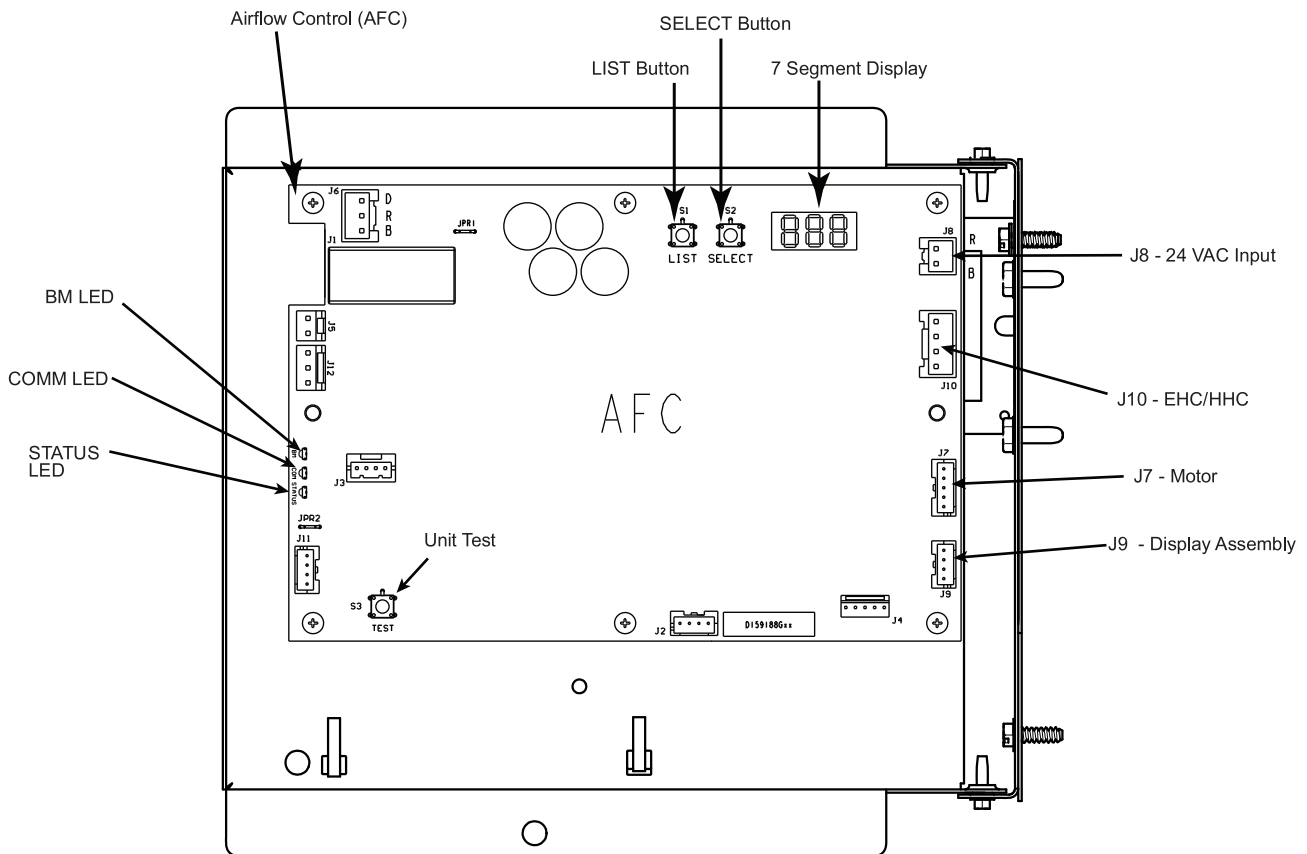
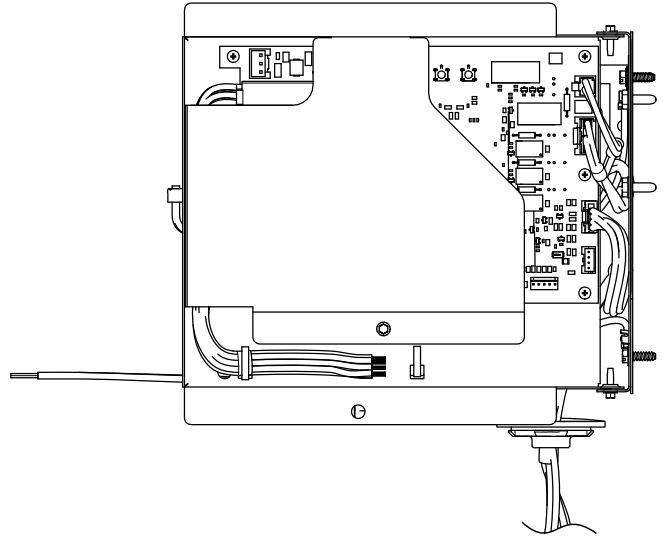
System Matched with:	Indoor Unit Model No.	Outdoor Model No.	Subcooling
16 SEER HP — 2 ton	TEM8A0C36V31	4TWR6024H1000A 4TWX6024H1000A 4A6H6024H1000A	13 Degrees
15 SEER HP — 2 ton	TEM8A0B24V21 TEM8A0B30V31	4TWR5024G1000A 4A6H5024G1000A	14 Degrees
15 SEER HP — 3 ton	TEM8A0B30V31 TEM8A0C36V31 TEM8A0C42V41	4TWR5036G1000A 4A6H5036G1000A	14 Degrees
All other matches must be charged per the nameplate charging instructions			

## Subcooling Adjustment for TEM8A0C48V41 & TEM8A0C60V51

Sub-Cooling Charge Specification For AHRI Rated Performance		
OD Equipment	Up Flow / Horizontal	Down Flow
AC UNIT	OD Name Plate	OD Name Plate
HP UNIT ≤ 3.5 Tons	OD Name Plate	OD Name Plate + 4 Degrees
HP UNIT = 4 and 5 Tons	OD Name Plate	OD Name Plate

# Air Handler Control Panel Components

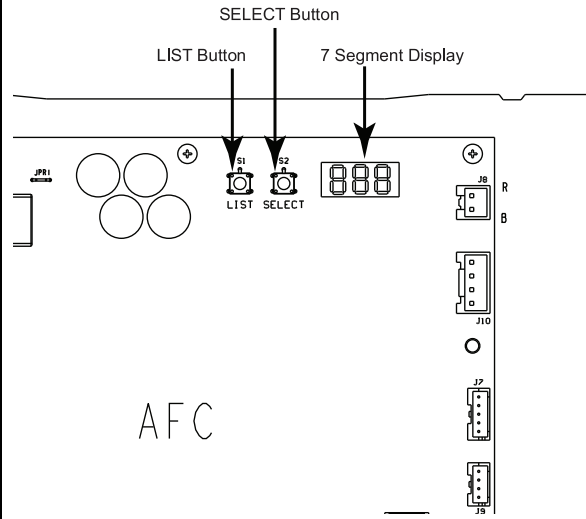
The TEM8 control board is shown to the right as attached to the unit. For the illustration below, the wiring harnesses and cover plate have been removed to see the components.



# TEM8 7-Segment Fault Code Display

Fault Codes can be read from the 7 segment display on the air handler AFC board.

**Note:** For the TAM9 air handler, all of the fault codes can be read from the CDA.



# TEM8 – Technician Menu and Configuration

## SETTING UP YOUR SYSTEM:

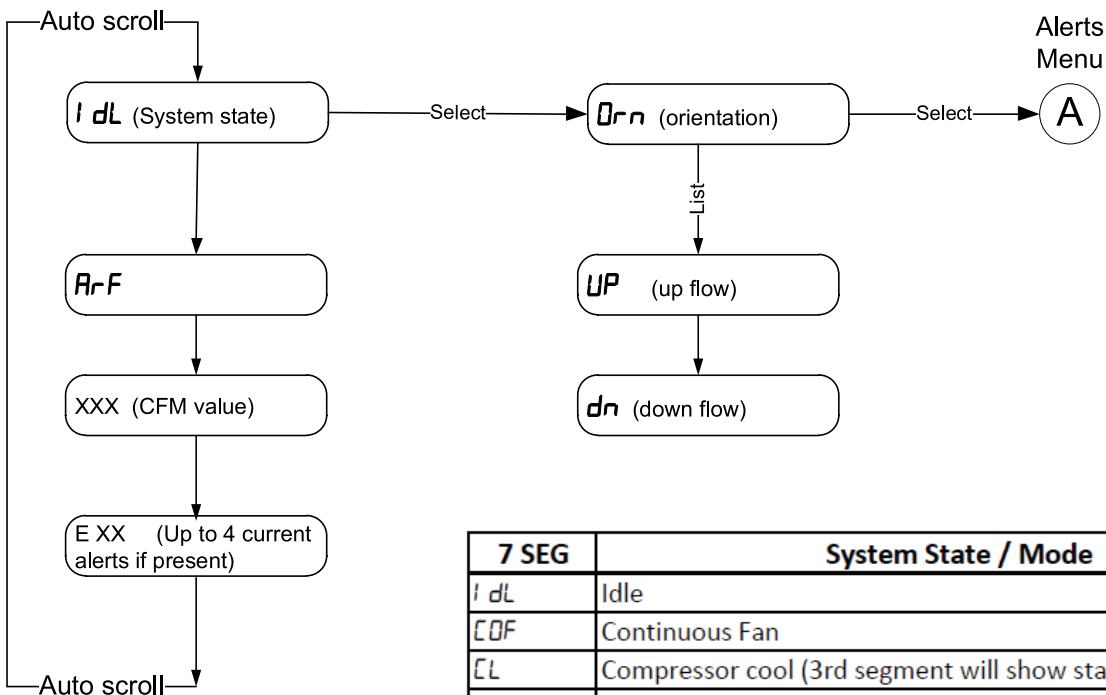
To change any factory default value, first remove any “call” from the air handler and allow fan off delays to finish (*i dL* should be seen on the display)

The List and Select buttons will provide navigation through the 7 segment display menus. The Select button is used to toggle right across the main menu options.

The List button is used to toggle down within a specific menu tree.

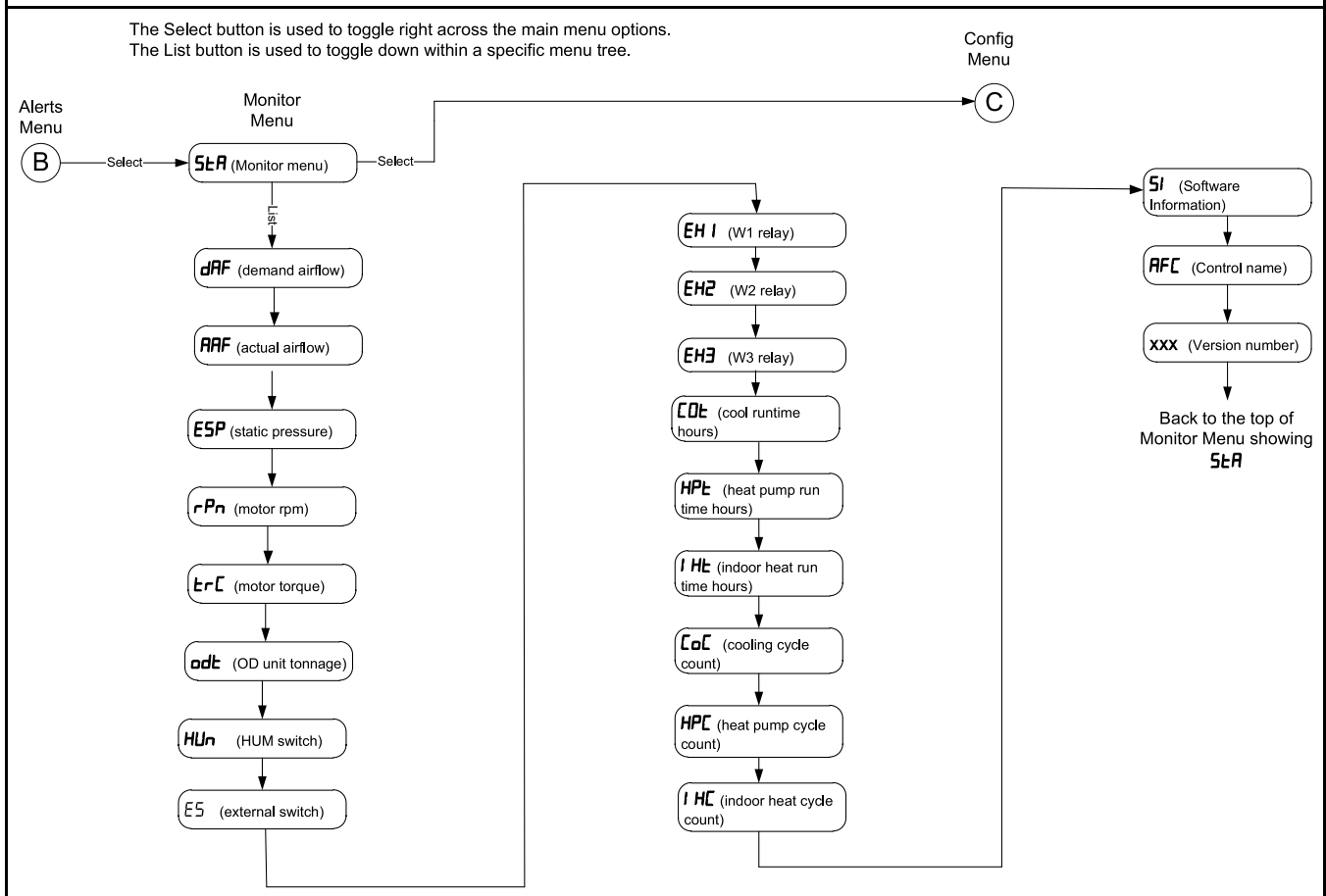
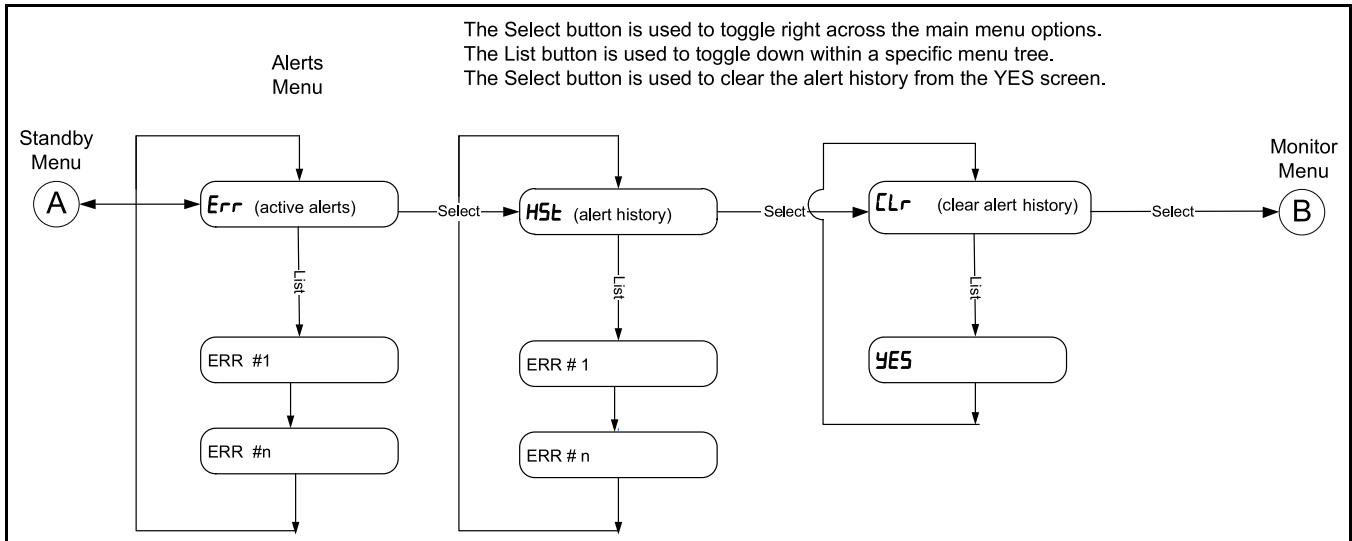
### Home Screen Standby Menu

The Home screen will auto scroll through System State, Airflow and Current Alerts if any exist. Multiply airflow (*RrF*) display by 10 for actual airflow. A display of 080 = 800 CFM. 120 = 1200 CFM

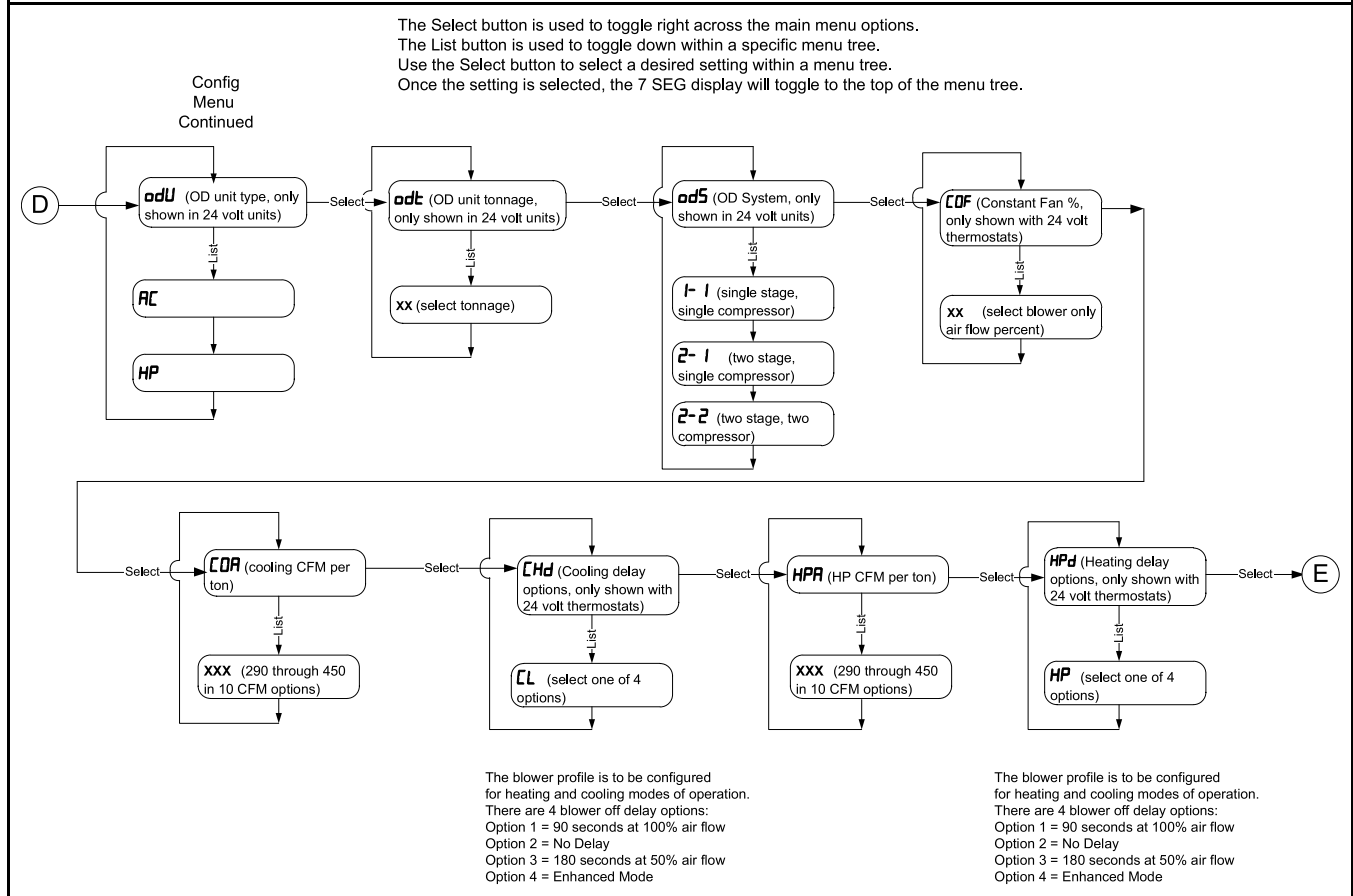
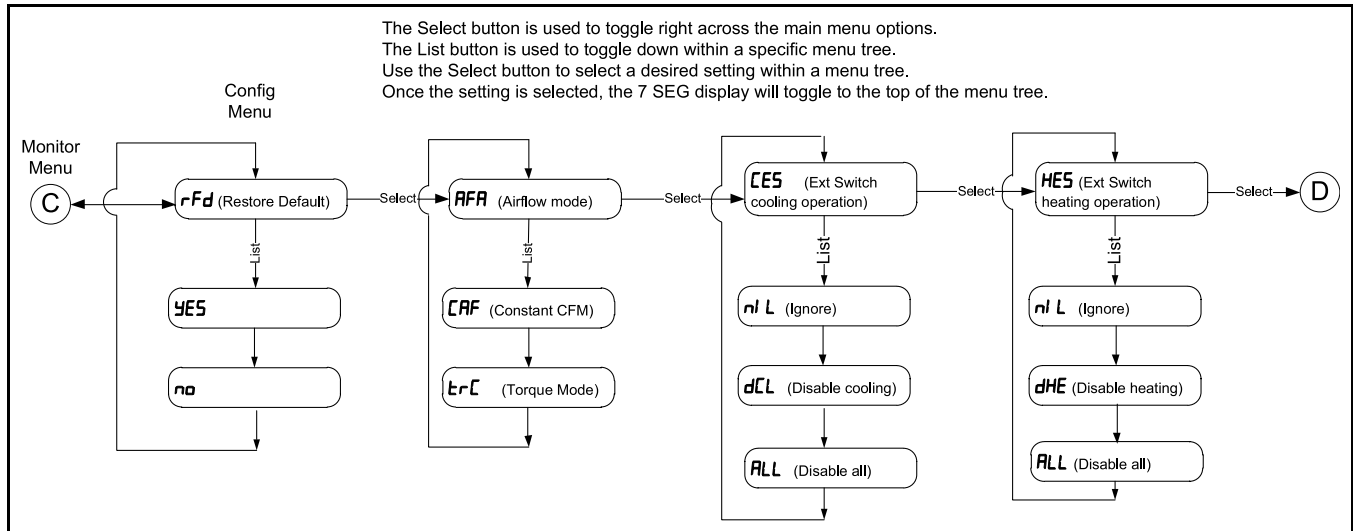


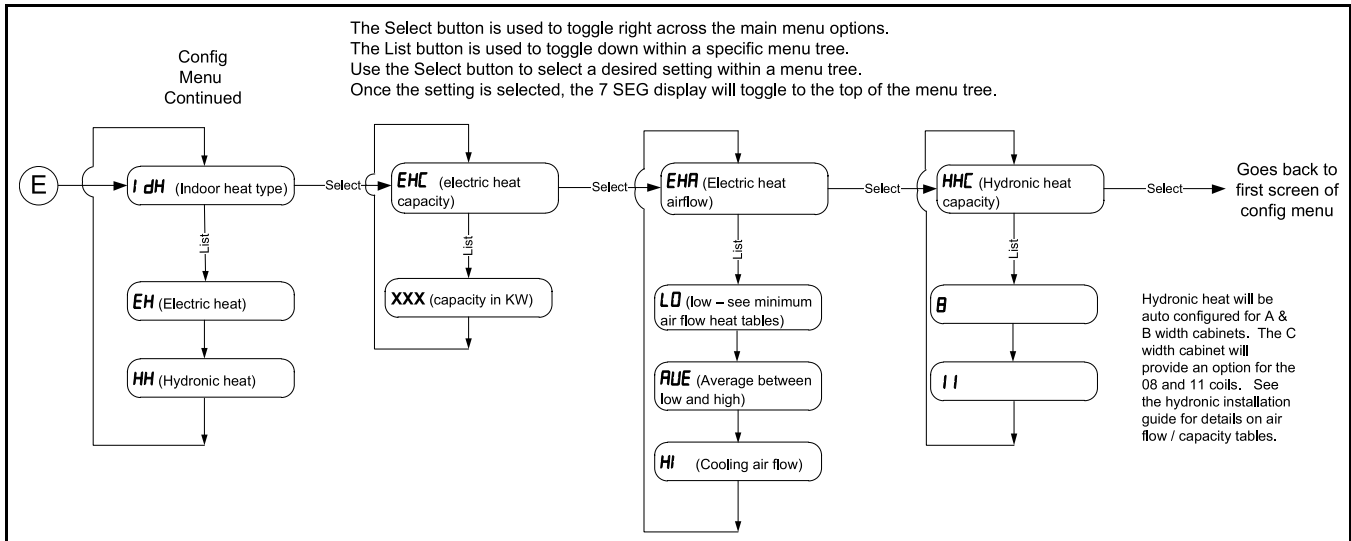
7 SEG	System State / Mode
<i>i dL</i>	Idle
<i>[CF</i>	Continuous Fan
<i>[L</i>	Compressor cool (3rd segment will show stage)
<i>HP</i>	Compressor heat (3rd segment will show stage)
<i>Ht</i>	Aux Heat (3rd segment will show stage)
<i>RU</i>	Compressor heat + Aux heat (3rd segment will show stage)
<i>rh</i>	Compressor cool + Aux heat (3rd segment will show stage)
<i>dh</i>	Defrost (3rd segment will show indoor heat stage)
<i>tSt</i>	Unit test mode





# TEM8 – Technician Menu and Configuration





### TEM8 AFC Fault Code Table

FAULT NUMBER <sup>(a)</sup>	CDA READOUT <sup>(b)</sup>	POSSIBLE CAUSES & ACTION
1.1	PM MIS INVALID	PM MISSING: ORDER REPLACEMENT PM
1.2	PM MIS VALID	PM MISSING: ORDER REPLACEMENT PM
2.1	ID MTR ERR	MOTOR NOT SUPPORTED: INSTALL OEM MOTOR
2.2	BLW COMM ERR	LOOSE/BROKEN HARNESS: MOTOR SOFTWARE FAILURE: CHECK HARNESS AND TERMINALS: REPLACE MOTOR
2.3	MTR PWR LO	MOTOR NOT SUPPORTED: INSTALL OEM MOTOR
2.4	MTR PWR HI	
3.1	NO SYS CLK	CHECK FOR SHORTED DATA LINE: ENSURE COMMUNICATION ON DATA LINE, CHECK HARNESS & TERMINALS
3.2	SYS COMM ERR	LOSS OF HEAT COOL DEMAND: CHECK THERMOSTAT WIRES
3.3	SYS COMM CRC	MIS-WIRE, ACCESSORY / UV LIGHT / EMI INTERFERENCE: DISCONNECT ACCESSORIES AND SEE IF BUS RETURNS TO NORMAL OPERATION
4.2	EVC COMM ERR	INTERNAL COMMUNICATION ERROR: CHECK HARNESS & TERMINALS
4.3	CDA COMM ERR	
4.4	AFC COMM ERR	
5.1	CNT FLT EVC	EVC HAS DETECTED FAULT CONDITION: SEE ELECTRONIC VALVE CONTROL (EVC)
5.2	CNT FLT CDA	CDA HAS DETECTED FAULT CONDITION: CHECK WIRE HARNESS & TERMINALS
6.1	EH CFG1 ERROR	AFC configured for zero stages of indoor heat and received a W call
6.2	EH CFG2 ERROR	AFC received a higher W request then the AFC was configured for
12	CNST TRQ FAIL	REPLACE BOARD
13	EXT SW OPEN	CHECK EXTERNAL SWITCH CIRCUIT AND CONFIGURATION OPTIONS
15	TWIN ERR	ILLEGAL CONFIGURATION: VARIABLE SPEED MOTORS CAN NOT BE TWINNED

<sup>(a)</sup> Displayed on 7-segment display

<sup>(b)</sup> CDA is not shipped with the TEM8; however, a CDA may be connected to the TEM8 for set-up and troubleshooting.



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We are committed to using environmentally conscious print practices.

TEM8-SF-1A-EN 03 May 2017  
Supersedes TEM8-SF-1-EN (January 2017)

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