Outdoor Unit Control 7-Segment Display and Configuration Guide

Unit Type for Outdoor Control

# of Stages	Type of Unit	Capacity	RPM
1	AC		
2	AC	18, 24, 30, 36, 42, 48 and 60	Setting 1 - 15 (RPM settings located on unit wiring diagram)
1	HP		
2	HP		

Configuration and Test Modes - Control must be in Idle Mode

Solid —	To enter configuration modes (PF, PC, Pt), outdoor fan F and forced defrost (d) tests, push and hold button until solid — appears, release button. Display will blink.
Blinking —	Push and hold button until required symbol (d, A, F, PF, PC or Pt) displays.

Display	Display and action (normal operation)	Display and action (configuration and test mode)
Power-Up	Display string displays > number of unit stages > pause > AC or HP unit >pause>unit capacity in BTUs>pause >RPM setting of outdoor fan. If 3 horizontal bars are displayed during any sequence of this string, it indicates that the specific parameter is not configured.	
-	Idle mode — decimal blinks at 1 Hertz > 0.5 second ON, 0.5 second OFF	
A	A in the display string represents the ambient temperature in °F at the outdoor sensor on the outdoor unit.	Enter A test mode: Display will string active error code(s) E, ambient A, coil c and discharge d temperature in °F at outdoor unit.
d	d - Dehumification mode string > d pause> F (Outdoor fan) RPM > pause > A (ambient temp displayed) > pause > repeat mode. IMPORTANT: On 2-stage unit R to DS link must be cut and correct RPM outdoor fan profile selected for outdoor fan to operate at lower RPM speed when EDA is active.	Enter d test mode: Forced defrost. System must be configured as HP and in heating mode. Test defrost will terminate when coil terminate temp is reached (or 10 seconds whichever is longer) or 14 minutes if coil temperature remains below terminate temp or by pushing button down for less than 2 seconds. Enter A test mode: Display will string active error codes E, ambient A, coil c and discharge d temperature in °F at outdoor unit.
d F	d F displays when system is in defrost mode - unit must be running in heating mode, outdoor ambient must be below 65°F and outdoor coil temperature must be below defrost termination temperature.	
F	F in the display string indicates RPM setting output on terminals PWM and com (used with EBM motors). RPM displayed does not apply to motor connected on ECM Y1 and ECM Y2.	Enter F test mode: Control outputs DC Voltage onto PWM and com terminals. Outdoor fan will cycle ON for 10 minutes at 490 RPM. To exit test - Push and hold button until three horizontal bars display. Release button, outdoor fan will cycle OFF. Test DOES NOT output DC voltage to ECM Y1 and ECM Y2 terminals)
H 1	Heat stage 1 string display > pause > F outdoor fan RPM displayed >pause >A (ambient temperature displayed> pause > repeat mode.	

H2	Heat stage 2 string display > pause > F outdoor fan RPM displayed > pause > A ambient temperature displayed > pause > repeat mode.
C 1	Cool stage 1 string display > pause > F outdoor fan RPM displayed > pause > A (ambient temperature displayed >pause> repeat mode.
C2	Cool stage 2 string display > pause > F outdoor fan RPM displayed >pause >A (ambient temperature displayed > pause > repeat mode.

Configuring Outdoor Fan Speed (Note - Control must be in Idle Mode)

Display	Code	Procedure
Solid	PF	Release push button — Allows user to select outdoor fan RPM profile. IMPORTANT: New control may need to be manually configured to validate outdoor unit fan RPM setting is correct for unit capacity. Refer to RPM table on unit wiring diagram.
Blinking	PF	Push and hold button — Outdoor control will display a fan RPM profile 3 seconds. When the correct fan RPM profile is displayed, release button. Selected code will flash for a 10 second period. During that period, hold push button for 3 seconds to store code. Once code is stored control will automatically exit field test mode. If 10 second period expires or push button is held less than 3 seconds, control will automatically exit field test mode and go into idle mode without storing fan RPM profile. Repeat procedure to correct.

Configuring Unit Capacity (Note - Control must be in Idle Mode)

Display	Code	Procedure
Solid	PC	Release push button — Allows user to select Unit Capacity. IMPORTANT: Field replacement control may need to be manually configured to validate outdoor unit capacity. Refer to unit nameplate model number for capacity in 1,000 of BTUs. (18, 24, 30 ,36,42 48, 60)
Blinking	PC	Push and hold button — Control will display unit capacity number 3 seconds. When the correct unit capacity number is displayed, release button. Selected code will flash for a 10 second period. During that period, hold push button for 3 seconds to store code. Once code is stored control will automatically exit Field Test Mode. If 10 second period expires or push button is held less than 3 seconds, control will automatically exit field test mode and go into idle mode without storing unit capacity Number. If this happens, configuring procedure must be repeated.

Configuring Unit Type and Stages (Note - Control must be in Idle Mode)

Display	Code	Procedure
Solid	Pt	Release push button — Allows user to select type and number of stages on outdoor unit.. IMPORTANT: Field replacement control may need to be manually configured to validate outdoor unit fan RPM setting is right for unit capacity. See RPM table on unit wiring diagram for RPM settings. Type and number of stages: 1AC, 2AC, 1HP, 2HP – AC – air conditioning and HP – Heat Pump
Blinking	Pt	Push and hold button — Control will display type and number of stages 3 seconds. When the correct type and number of stages is displayed, release button. Selected code will flash for a 10 second period. During that period, hold push button for 3 seconds to store code. Once code is stored control will automatically exit field test mode. If 10 second period expires or push button is held less than 3 seconds, control will automatically exit field test mode and go into idle mode without storing type and number of stages. If this happens, configuring procedure must be repeated.

Error Code Recall Mode (Note - control must be in idle mode)

Display	Code	Procedure
Solid	E	To enter error code recall mode, push and hold button until solid E appears, then release button. Control will display up to 10 error codes stored in memory. If E000 is displayed, there are no stored error codes.
Solid	- - -	To exit error code recall mode push and hold button until solid three horizontal bars appear, then release button. Note - Error codes are not cleared.
Solid	c	To clear error codes stored in memory, continue to hold push button while the 3 horizontal bars are displayed. Release push button when solid c is displayed.
Blinking	c	Hold push button for three seconds to confirm command to delete codes. Error codes are cleared.

Alarm Code and Description

E 105	The outdoor unit has lost communication with the rest of the system.
E 120	There is a delay in the outdoor unit responding to the system.
E 124	The icomfort Touch® thermostat has lost communication with the outdoor unit for more than 3 minutes.
E 125	There is a hardware problem with the outdoor unit control.
E 126	There is an internal communication problem with the outdoor unit control.
E 131	The outdoor unit control parameters are corrupted
E 180	The icomfort Touch® thermostat has found a problem with the outdoor unit's ambient sensor.
E409	The secondary voltage for the outdoor unit has fallen below 18VAC. If this continues for 10 minutes, the system will shut down.
E4 10	The outdoor unit pressure is below the required limit.
E4 11	The low pressure switch has opened 5 times during one cooling cycle. As a result, the system will shutdown.
E4 12	The outdoor unit pressure is above the required limit. The system will shut down.
E4 13	The high pressure or compressor thermal switch has opened 5 times during one cooling cycle. As a result, outdoor control will hard lockout unit.
E4 14	The discharge line temperature is higher than the recommended upper limit of 279ºF.
E4 15	The discharge line temperature has been consistently higher than the recommended upper limit of 279ºF.
E4 16	The outdoor coil sensor is either open, short-circuited or the temperature is out of sensor range. As a result the outdoor unit control will not perform any defrost tempering.
E4 17	The outdoor unit discharge sensor is either open, short-circuited or the temperature is out of sensor range. As a result the outdoor unit control will not perform any defrost tempering.
E4 18	There is a faulty W output circuit.
E4 19	The W output on the outdoor unit has reported more than 5 errors. As a result, the system has shutdown the outdoor unit.
E420	The heat pump defrost cycle has taken more than 20 minutes to complete.
E42 1	The W output terminal on the outdoor unit is not wired correctly.

Note: Refer to Unit Service Manual for possible causes.