

SMARTZONE-2L

BLUE TEXT APPLIES TO ONLY HEAT PUMP EQUIPMENT (DIP SWITCH #1)

DISPLAY MODES & FUNCTIONS

SEE INSIDE PAGE FOR BUTTON PRESS DISPLAY INFORMATION SEQUENCE



FAN ONLY
G



TEMP SENSOR
BLINK = NO TEMP SENSOR CONNECTED
"0" ON = SENSOR CONNECTED

IF OPTIONAL SUPPLY TEMP SENSOR (ASAS) INSTALLED, SMART-STAGING & EQUIPMENT LIMITS WILL BE ACTIVATED ON THE SMARTZONE-2L SEE "CUT IN" & "CUT OUT" BELOW



COOLING (1st STAGE)
Y1
G
O*

*NOTE: "O" WILL ENERGIZE FOR HEAT PUMP IF DIP SWITCH #2 IS SET TO "O"

CUT OUT: SUPPLY TEMP < LO TEMP

NOTE: SET "LO TEMP" AND "HI TEMP" LIMITS USING DIP SWITCHES #5 & #6. SEE INSIDE PAGE FOR DETAILS



COOLING (2nd STAGE)
Y1
Y2
G
O*



CUT IN: SUPPLY TEMP > LO TEMP + 10° (DEFAULT: 51)
• AFTER 8 MINUTES OF 1st STAGE, IF SUPPLY TEMP WARMER THAN LO TEMP + 10°
CUT OUT: SUPPLY TEMP < LO TEMP + 4° (DEFAULT: 45)
• EQUIPMENT WILL RETURN TO 1st STAGE IF SUPPLY TEMP IS COOLER THAN LO TEMP + 4°
• 2nd STAGE WILL NOT RE-ENERGIZE FOR 3 MINUTES



HEATING (1st STAGE)
GAS/ELECT
W1
G

NOTE: "G" WILL ENERGIZE IMMEDIATELY DIP #3 SET TO "ELECTRIC". SET TO "GAS" FOR 90 SEC DELAY

CUT OUT: > HI TEMP

HEAT PUMP
Y1
G
B**

** NOTE: "B" WILL ENERGIZE FOR HEAT PUMP IF DIP SWITCH #2 SET TO "B"



HEATING (2nd STAGE)
GAS/ELECT
W1
W2
G



CUT IN: < HI TEMP - 25°
AFTER 8 MINUTES OF 1st STAGE, IF SUPPLY TEMP COOLER THAN HI TEMP - 25°
CUT OUT: > HI TEMP - 10°
EQUIPMENT WILL RETURN TO 1st STAGE IF SUPPLY TEMP IS WARMER THAN HI TEMP - 10°

HEAT PUMP
Y1
Y2
G
B**



CUT IN: < HI TEMP - 15°
AFTER 4 MINUTES OF 1st STAGE, IF SUPPLY TEMP COOLER THAN HI TEMP - 15°
CUT OUT: > HI TEMP - 5°



AUXILIARY HEAT
NORMAL
Y1
Y2
W1
G
B**



CUT IN: < 90°
AFTER 2 MINUTES OF 2nd STAGE, IF SUPPLY TEMP COOLER THAN AUX HEAT CUT IN (90°)
CUT OUT: > 100°
EQUIPMENT WILL RETURN TO 2nd STAGE IF SUPPLY TEMP IS WARMER THAN 100°

DUAL FUEL
W1
G



CUT IN: < 90°
CUT OUT: > 135°
EQUIPMENT WILL CONTINUE IN DUAL FUEL UNTIL CALL(S) SATISFIED. HI TEMP LIMIT WILL BE THE GAS/ELECT "HI LIMIT" WHEN IN DUAL FUEL MODE



EMERGENCY HEAT
EH
G

- EMERGENCY HEAT CAN ONLY BE OPERATED BY A HEAT PUMP THERMOSTAT CONNECTED TO THE ZONE 1 THERMOSTAT "W" TERMINAL. WHEN ZONE 1 THERMOSTAT CALLS FOR EMER. HEAT, THE SMARTZONE SYSTEM WILL BE LOCKED INTO EMERGENCY HEAT.
- WHEN IN EMERGENCY HEAT, THE COMPRESSOR WILL NOT ENERGIZE. HEATING CALL FROM ZONE 2 WILL BE TREATED BY THE SMARTZONE SYSTEM AS EMER. HEAT TO THE EQUIPMENT (INCLUDING W OR Y FROM ZONE 2) AND COOLING CALLS FROM ZONE 2 WILL BE IGNORED
- TO UNLOCK EMER. HEAT, MAKE A CALL FOR COMPRESSOR (NORMAL) HEAT OR COOLING FROM ZONE 1 THERMOSTAT.



DELAY

AFTER THERMOSTAT CALLS FROM ALL ZONES HAVE BEEN SATISFIED, THE EQUIPMENT WILL REMAIN DE-ENERGIZED FOR 3-MINUTES BEFORE NEW THERMOSTAT CALLS WILL BE PROCESSED. DURING DELAY ALL DAMPERS OPEN.



PURGE / CHANGEOVER

CHANGEOVER FROM "HEAT TO COOL OR "COOL TO HEAT" A MAXIMUM OF 15 MIN STARTING WHEN THE OPPOSING MODE CALL IS RECEIVED BY SMARTZONE. DURING CHANGEOVER PURGE WILL DE-ENERGIZE THE EQUIPMENT AND ENERGIZE THE FAN FOR 3 MIN WITH DAMPERS REMAINING IN SAME POSITION. AFTER PURGE, "OPPOSING" MODE WILL ENERGIZE AND CORRECT DAMPERS OPEN



TEMPERATURE LIMIT

LO TEMP - COOL LIMIT (SEE DIP SWITCH 5)
FAN "G" WILL RUN BUT "Y" WILL DE-ENERGIZE FOR 3 MINUTES & UNTIL SUPPLY TEMP IS WARMER THAN LO TEMP (DEFAULT = 41°F)



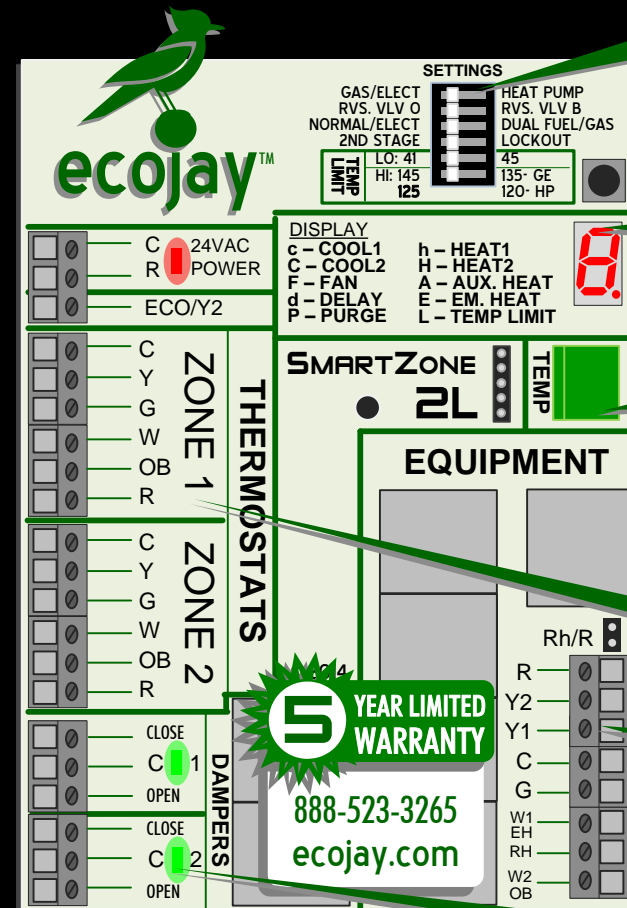
HI TEMP - HEAT LIMIT (SEE DIP SWITCH 6)
FAN "G" WILL RUN BUT "W1" WILL DE-ENERGIZE FOR 3 MINUTES AND UNTIL SUPPLY TEMP IS COOLER THAN HI TEMP (DEFAULT = 145°F)

SMARTZONE-2L

2-ZONE

UNIVERSAL CONTROL

GAS / ELECT • HEAT PUMP • DUAL FUEL
2 STAGE COOL — 3 STAGE HEAT



EASIEST EVER DIP SWITCH CONFIGURATION OF EQUIPMENT TYPE & SETTINGS

COMPREHENSIVE DISPLAY SHOWS MODES, STATUS & MORE IF ASAS INSTALLED

OPTIONAL SUPPLY TEMP SENSOR [PART# ASAS] ADDS EQUIPMENT PROTECTION & SMART-STAGING

USE ANY THERMOSTAT

CONTROL ANY SINGLE OR MULTI-STAGE EQUIPMENT

USE ANY 2 OR 3 WIRE 24VAC DAMPER GREEN = OPEN

PART# ZS2L

INSTALLATION GUIDE © 2014

POWER

CONNECT POWER AFTER ALL OTHER WIRING COMPLETED
 USE DEDICATED 24VAC TRANSFORMER (NOT INCLUDED)
 DO NOT USE EQUIPMENT TRANSFORMER
 ALWAYS USE FUSED TRANSFORMER

24VAC TRANSFORMER SIZE

# OF DAMPERS	SPRING (DS*S)	POWER (DS*P)
2-3	40 VA	40 VA
4-6	75 VA	40 VA
8-9	100 VA	40 VA
10+	SEE ZONING GUIDE	

FUSE SIZE

TRANSFORMER	FUSE SIZE
40 VA	≤2A
75 VA	≤3A
100 VA	≤4A

THERMOSTATS

ANY 24VAC THERMOSTAT MATCHING THE EQUIPMENT TYPE. USE 18 AWG SOLID WIRE.

HEAT PUMP

TERMINAL	COLOR
24VAC (COMMON)	BLUE/BLK
COMPRESSOR	YELLOW
FAN (BLOWER)	GREEN
EMERGENCY HEAT	WHITE
O/B (REVERSING VLV)	ORANGE
24VAC (HOT)	RED

ZONE 1 ONLY EM. HEAT CONTROL (SEE BACK)

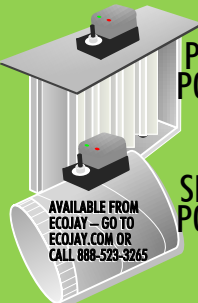
GAS/ELECTRIC

24VAC (COMMON)	COLOR
COMPRESSOR (COOLING)	YELLOW
FAN (BLOWER)	GREEN
HEAT (ELECT. OR GAS)	WHITE
24VAC (HOT)	RED

THERMOSTATS MUST MATCH EQUIPMENT TYPE
 DO NOT MIX AND MATCH THERMOSTAT TYPES

DAMPERS

2 WIRE OR 3 WIRE 24VAC DAMPER. POWER OPEN & POWER CLOSE, SPRING OPEN, OR SPRING CLOSE. USE 18 AWG SOLID WIRE.



**POWER OPEN
POWER CLOSE**



**SPRING OPEN
POWER CLOSE**



DIP SWITCH SETTINGS

OFF (LEFT)	ON (RIGHT)
EQUIPMENT: GAS / ELECTRIC (HEAT-COOL)	EQUIPMENT: HEAT PUMP
ENERGIZE REV. VALVE IN COOLING "O"	ENERGIZE REV. VALVE IN HEATING "B"
AUX HEAT = ELECTRIC HEAT STRIPS & FAN ON WITH HEAT	AUX HEAT = DUAL FUEL (NO COMP) & FAN DELAY 90 SECONDS IN HEAT
2 ND STAGE ACTIVE (WILL ACTIVATE EVEN WITH 1 ZONE)	LOCK-OUT WILL ONLY ALLOW 2 ND STAGE WHEN BOTH ZONES CALL
LO TEMP LIMIT: 41 OR 2 ND STAGE IN 8 MIN IF NO ASAS*	LO TEMP LIMIT: 45 OR 2 ND STAGE IN 16 MIN IF NO ASAS*
HI TEMP LIMIT: 145 - GAS/ELECT OR 2 ND STAGE IN 8 MIN IF NO ASAS 125 - HEAT PUMP OR 2 ND STAGE IN 4 MIN, AUX IN 6 MIN	HI TEMP LIMIT: 135 - GAS/ELECT OR 2 ND STAGE IN 16 MIN IF NO ASAS 120 - HEAT PUMP OR 2 ND STAGE IN 8 MIN, AUX IN 12MIN

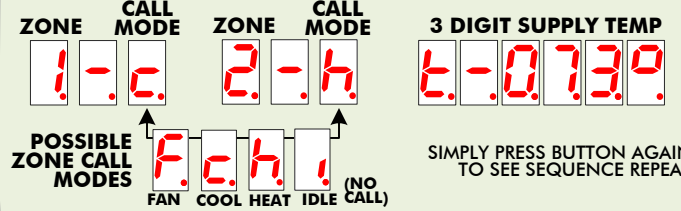
SMARTZONE[®]-2L INSTALLATION & CONFIG

NOTE: BLUE TEXT APPLIES TO HEAT PUMP APPLICATION ONLY

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PUSH BUTTON: ADDITIONAL STATUS INFORMATION

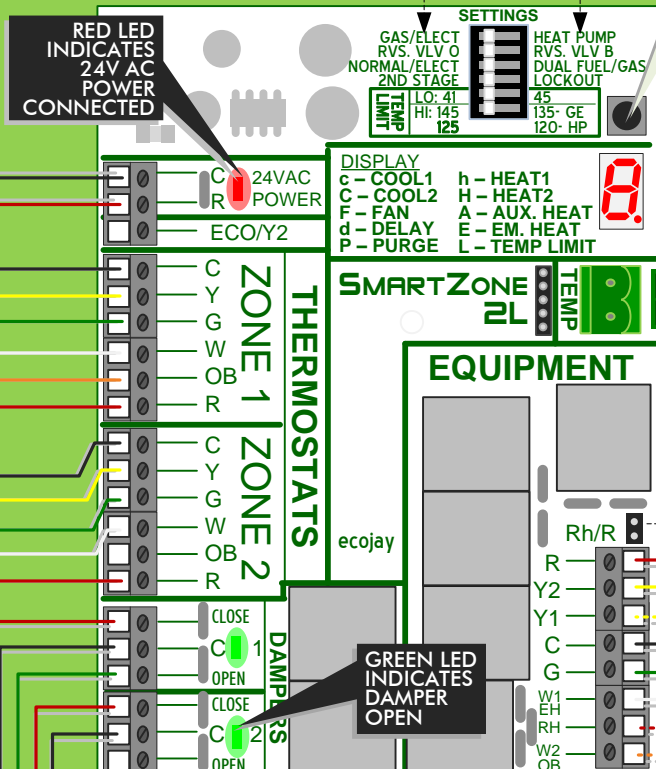
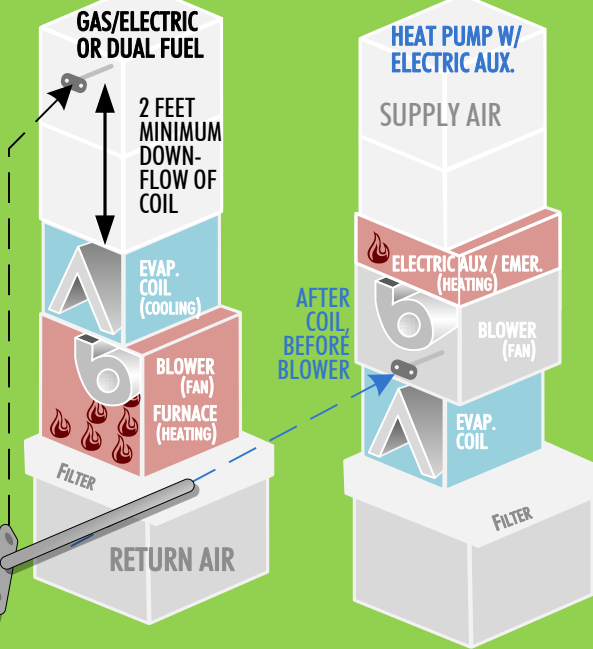
DISPLAY WILL SEQUENCE THROUGH THE BELOW INFORMATION, ZONE 1 CALL, ZONE 2 CALL, SUPPLY TEMP (IF SENSOR INSTALLED)



SIMPLY PRESS BUTTON AGAIN TO SEE SEQUENCE REPEAT

SUPPLY TEMP SENSOR

- (OPTIONAL)
- EQUIPMENT PROTECTION
 - IMPROVE EFFICIENCY OF STAGING
 - PREVENT UNNECESSARY RUN TIME
- PART #ASAS*



EQUIPMENT WIRING

RC / RH JUMPER (FACTORY INSTALLED) ONLY REMOVE IF THE HEAT AND COOL EQUIPMENT HAVE SEPARATE TRANSFORMERS

R	24VAC (R-COOLING)
Y2	2 ND STAGE COMPRESSOR
Y1	1 ST STAGE COMPRESSOR
C	24VAC (COM) EQUIPMENT
G	FAN (BLOWER)
W1	1 ST STAGE HEAT EH [EMERGENCY HEAT]
RH	24VAC (R-HEATING)
W2	2 ND STAGE HEAT OB [REVERSING VALVE]

BYPASS SIZING

BELOW CHART ASSUMES 400 CFM PER TON *USE NEXT SIZE UP ROUND BYPASS DAMPER FOR ANY SYSTEM WITH A SINGLE ZONE LESS THAN 200 CFM.

UNIT SIZE (TONS)	ROUND DAMPER SIZE (INCHES)*
2-2.5	10"
3-3.5	12"
4-4.5	14"
5	14-16"

DAMPER SIZING

ROUND SIZE	NORMAL CFM	MAX CFM
6"	100	200
7"	150	250
8"	200	300
9"	300	450
10"	400	600
12"	600	900
14"	900	1400
16"	1400	2000

RECTANGULAR CFM

*SURFACE AREA IN SQ. FT. = ("HEIGHT" X "WIDTH") / 144
 NORMAL CFM = (SURFACE AREA IN SQ. FT.) X 600 FPM
 MAX CFM = (SURFACE AREA IN SQ. FT.) X 900 FPM