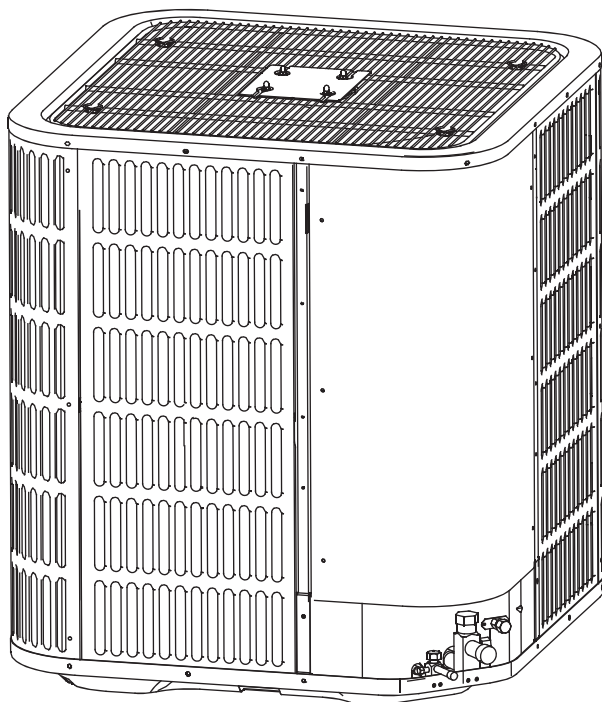




Monarch *SERIES*
EcoTemp

Product Specifications

WCH8 Series Split System Heat Pump
Up to 18 SEER
2-3-4-5 Ton Capacity R410A



NOTE: Appearance of unit may vary.

Standard Heat Pump Features

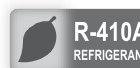
- R-410A chlorine-free refrigerant
- Load 25%-110%
- Intelligent oil return technology
- Inverter Driven Rotary Compressor
- Crankcase Heater Standard
- Compressor Sound Blanket
- Multiple System Protection:
 1. High pressure switch and low pressure transducer
 2. Compressor Liquid return protection
 3. Compressor high or low compression ratio protection
 4. Compressor high temperature Protection
 5. High / low voltage Protection and Over Current Protection
 6. IPM and electronic control board high temperature Protection
- AHRI certified; ETL listed

Cabinet Features

- Unique sound control top design
- Baked-on powder paint finish
- Wind Load compliant per Florida Building Code - 2010
- Wire fan discharge grille
- Steel louver coil guard

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Nomenclature

PRODUCT SPECIFICATIONS	Split System Heat Pump
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OUTDOOR UNIT MODEL NUMBER IDENTIFICATION GUIDE (single phase)									
Digit Position:	1,2	3	4	5,6	7	8	9	10	11
Example Part Number:	WC	H	8	2436	4	M	K	A	1
WC = Condensing Unit									
A = Air Conditioner H = Heat Pump	TYPE								
8=18SEER			SEER						
2436=2 tons - 3 tons 4860=4 tons - 5 tons			CAPACITY RANGE						
4 = R-410A			REFRIGERANT						
M = Mitsubishi Compressor					FEATURE				
K = 208/230-1-60							VOLTAGE		
Sales Code									
Extra Digit									

Product Specifications

Specifications

	2436	4860
Cooling Capacity		
Nominal Cooling (BTU/h)	34,600	57,000
Nominal Heating (BTU/h)	33,600	55,000
Decibels([dB(A)])		
Max.@100% load	77	79
Min.@min load	50	50
Compressor		
RLA	18.5	27.2
LRA	45	58.1
Condenser Fan Motor		
Horsepower (HP)	1/6	1/3
FLA	1.0	2.5
Refrigeration System		
Refrigerant Line Size ¹		
Liquid Line Size ("O.D.)	3/8"	3/8"
Suction Line Size ("O.D.)	3/4"	7/8"
Refrigerant Connection Size		
Liquid Valve Size ("O.D.)	3/8"	3/8"
Suction Line Size ("O.D.)	3/4"	7/8"
Refrigerant Charge(R-410A,oz)	121	163
Expansion Device	EEV	EEV
Maximum Line Length	100 FT	100 FT
Maximum Elevation Difference	50 FT	50 FT
Charging Specifications		
Subcooling at Service Valve	10°F (± 2°F)	8°F (± 2°F)
Electrical Data		
Voltage-Phase-Hz	208/230-1-60	208/230-1-60
Minimum Circuit Ampacity ²	24.2	36.5
Max. Overcurrent Protection ³	40	60
Min / Max Volts	187 / 253	187 / 253
Equipment Weight (lbs)	157	205
Ship Weight (lbs) ⁴	165	216

1 Tested and rated in accordance with AHRI Standard 210/240.

2 Wire size should be determined in accordance with National Electrical Codes; extensive wire runs will require larger wire sizes.

3 Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.

4 Weight values are estimated.

Notes

- Always check the rating plate for electrical data on the unit being installed.
- Unit is factory charged with refrigerant for 15' of 3/8" liquid line.
System charge must be adjusted per Installation Instructions Final Charge Procedure.

Performance Data

Outdoor Unit	Indoor Unit	Cooling Capacity (BTU/h)			Heating Capacity			CFM
	Coils/Air Handlers	Total	SEER ¹	EER ²	Hi	HSPF ³	Low	
2436	24	24000	18.5	13.0	24000	9.5	19000	800
2436	36	34600	17.5	11.6	33600	9.5	24000	1180
4860	48	47000	18.5	12.5	46500	9.5	35000	1560
4860	60	57000	17.5	11.2	55000	9.5	40000	1700

1 Seasonal Energy Efficiency Ratio; Certified per ARI 210/240

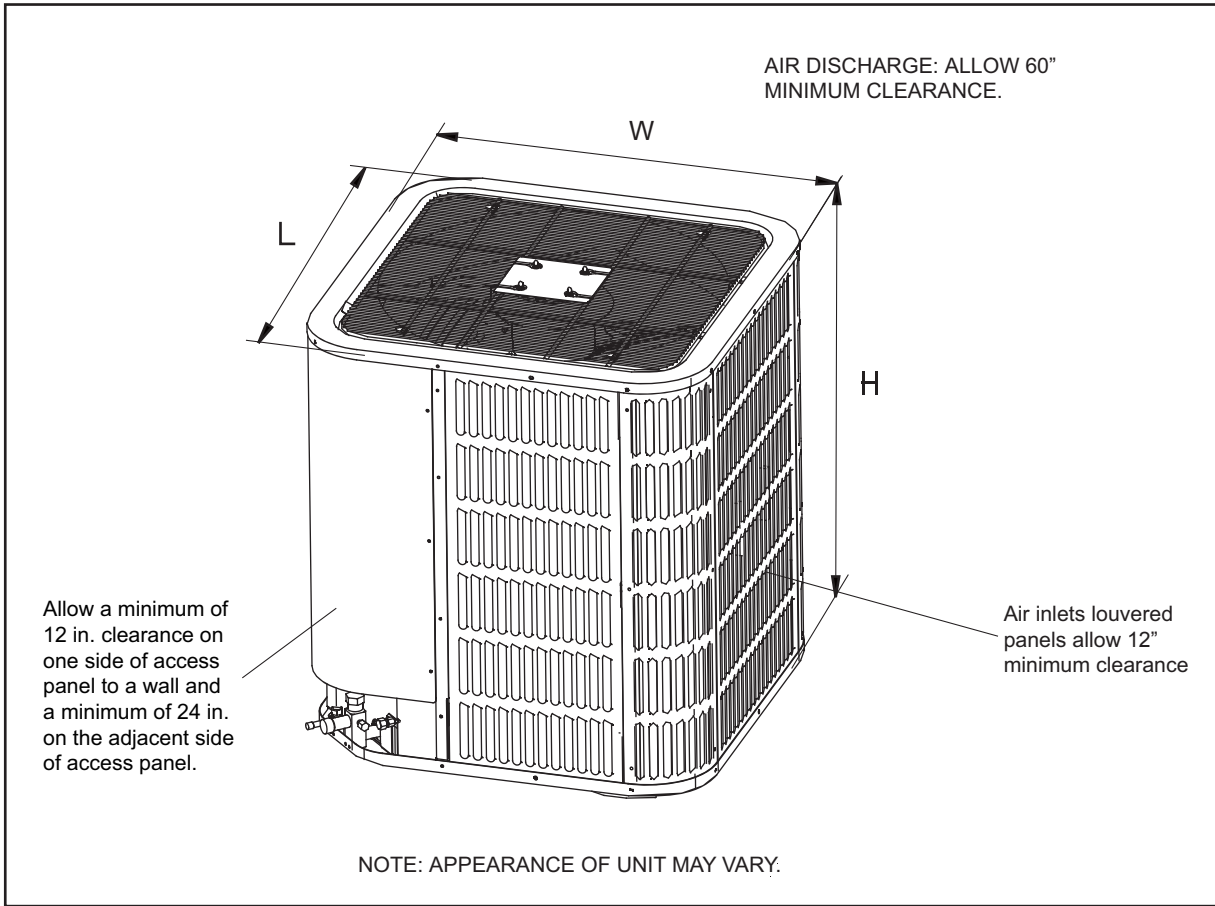
2 Energy Efficiency Ratio; Certified per ARI 210/240

3 HSPF = Heating Seasonal Performance Factor; Certified per ARI 210/240

Notes

- Always check the rating plate for electrical data on the unit being installed.
- The above data are for reference only, specific to the AHRI official inquiries shall prevail.

Dimensions



MODEL SIZE	Dimensions (Inches)		
	"H" in. [mm]	"W" in. [mm]	"L" in. [mm]
HP			
2436	24-15/16[633]	29-1/8[740]	29-1/8[740]
4860	33-3/16[843]	29-1/8[740]	29-1/8[740]

NOTES: HP: Heat Pump;

SUCTION LINE LENGTH/SIZE VS CAPACITY MULTIPLIER (R410A)

Model Size		2 Ton	3 Ton	4 Ton	5 Ton
Suction Line Connection Size		3/4" O.D.	3/4" O.D.	7/8" O.D.	7/8" O.D.
Suction Line Run - Feet		5/8 Opt.	5/8 Opt.	3/4 Opt.	3/4 Opt.
		3/4* Std.	3/4* Std.	7/8* Std.	7/8* Std.
25'	Optional	1.00	1.00	1.00	0.99
	Standard	1.00	1.00	1.00	1.00
50'	Optional	0.98	0.98	0.98	0.97
	Standard	0.99	0.99	0.99	0.98
100'	Optional	0.95	0.95	0.95	0.94
	Standard	0.96	0.97	0.97	0.96

NOTES:

* Standard size

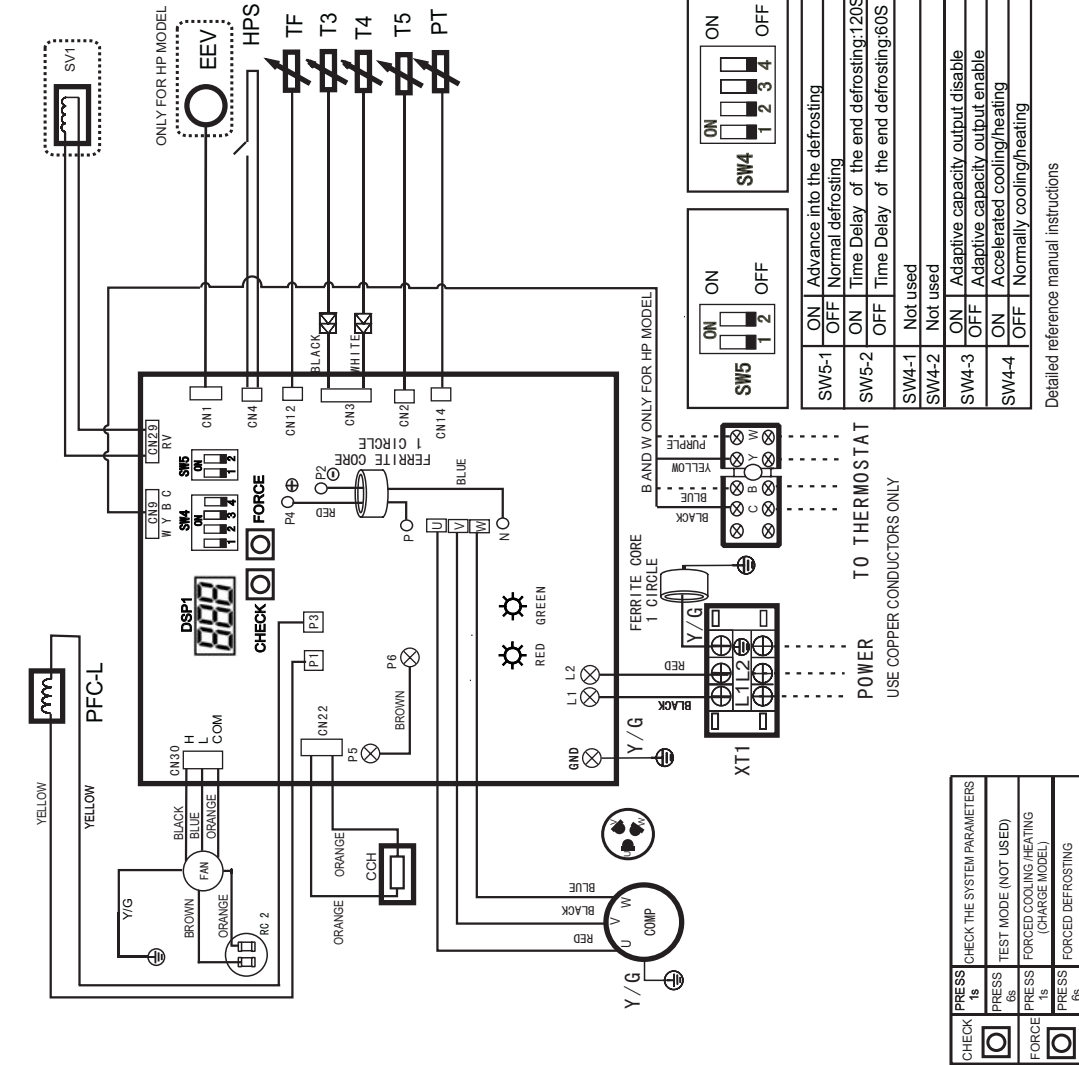
Using suction line larger than shown in chart will result in poor oil return and is not recommended.

Wiring Diagram (For 2436)

RED LED FLSAH
Communication fault
IPM module protection
Low dc voltage protection
IPM control fault
Compressor phase error
GREEN LED
FLASH:Standby
OFF:Control board fault
ON:Compressor operation

CODE	Fault description
E4	Temperature sensor fault(T3、T4、T5、TF)
E5	High/low voltage protection
E7	Compressor discharge sensor(T5) is seated fault
E9	EEPROM fault
H0	Communication fault in main control chip
H3	3 times (P3) protection in 120 minutes,system lockup.
H4	3 times (P6) protection in 60 minutes,system lockup
H5	5 times (P2) protection in 100 minutes,system lockup
H6	3 times (P4) protection in 100 minutes,system lockup
H8	Pressure transducer(PT) short or open fault
Hb	High pressure(PT) protection in Heating
HH	2 times(PH) protection in 200 minutes,system lockup
P0	The module radiator temperature (TF) protection
P1	High pressure switch (HPS) protection
P2	Low pressure(PT) Protection
P3	Compressor over current protection
P4	High compressor discharge temperature(T5) protection
P5	High condenser coil temp. (T3) protection
P6	IPM module protection
PH	Low discharge superheat protection
PC	Reversing valve fault protection
F1	High pressure switch(HPS) fault
F3	5 times (P5) protection in 180 minutes,system lockup
F4	3 times (P6) protection in 120 minutes,system lockup
F5	5 times (Hb) protection in 180 minutes,system lockup
C3	Condensor coil sensor(T3) is seated fault in cooling
C4	3 times (C3) protection in 120 minutes,system lockup
C5	2 times (E7) protection in 180 minutes,system lockup
C6	2 times (PC) protection in 180 minutes,system lockup
CE	5 times (P1) protection in 150 minutes,system lockup
LO-L9	IPM module protection or frequent power on/off
I	Indication under charge model
L	Running indication under T3 limited condition
P	Running indication under T5 limited condition
D	Running indication under compressor ratio limited condition
F	Running indication under Tf limited condition
C	Running indication under current limited condition
U	Running indication under low voltage limited condition
H	Running indication under high pressure(PT) limited condition in heating
A	Running indication under return oil model
dF	Running indication under defrost model

RC 2	CAPACITANCE
PFC-L	PFC INDUCTANCE
SV1	4-WAY VALVE
T3	CONDENSER TEMPERATURE SENSOR
T4	AMBIENT TEMPERATURE SENSOR(FOR HP SYSTEM)
T5	10K Ω RESISTANCE (FOR COOLING ONLY SYSTEM)
T5	COMP. DISCHARGE TEMPERATURE SENSOR.
PT	PRESSURE TRANSDUCER
TF	RADIATOR TEMP. SENSOR
CAP	CAPACITANCE
EEV	ELECTRIC EXPANSIVE VALVE
CCH	CRANKCASE HEATER
HPS	HIGH PRESSURE SWITCH
WARNING: CABINET MUST BE PERMANENTLY GROUNDED AND ALL WIRING TO CONFORM TO I.E.C.N.E.C.C.C.L.C.AND LOCAL CODES AS APPLICABLE REPLACEMENT WIRE MUST BE THE SAME GAUGE AND INSULATION TYPE AS ORIGINAL WIRE	
	WARNING
ELECTRIC HAZARD 380 VOL TS DC	
WAIT 2 MINUTES AFTER DISCONNECTING POWER THEN VERIFY DC VOLTAGE LESS THAN 42 VDC AT INVERTER TEST POINTS P2,P4. COMPONENTS MAY STORE A DANGEROUS ELECTRICAL POTENTIAL OF 380 VOLTS DC. FAILURE TO FLOWER THIS WARNING COULD RESULT IN PERSONAL INJURY OR DEATH	

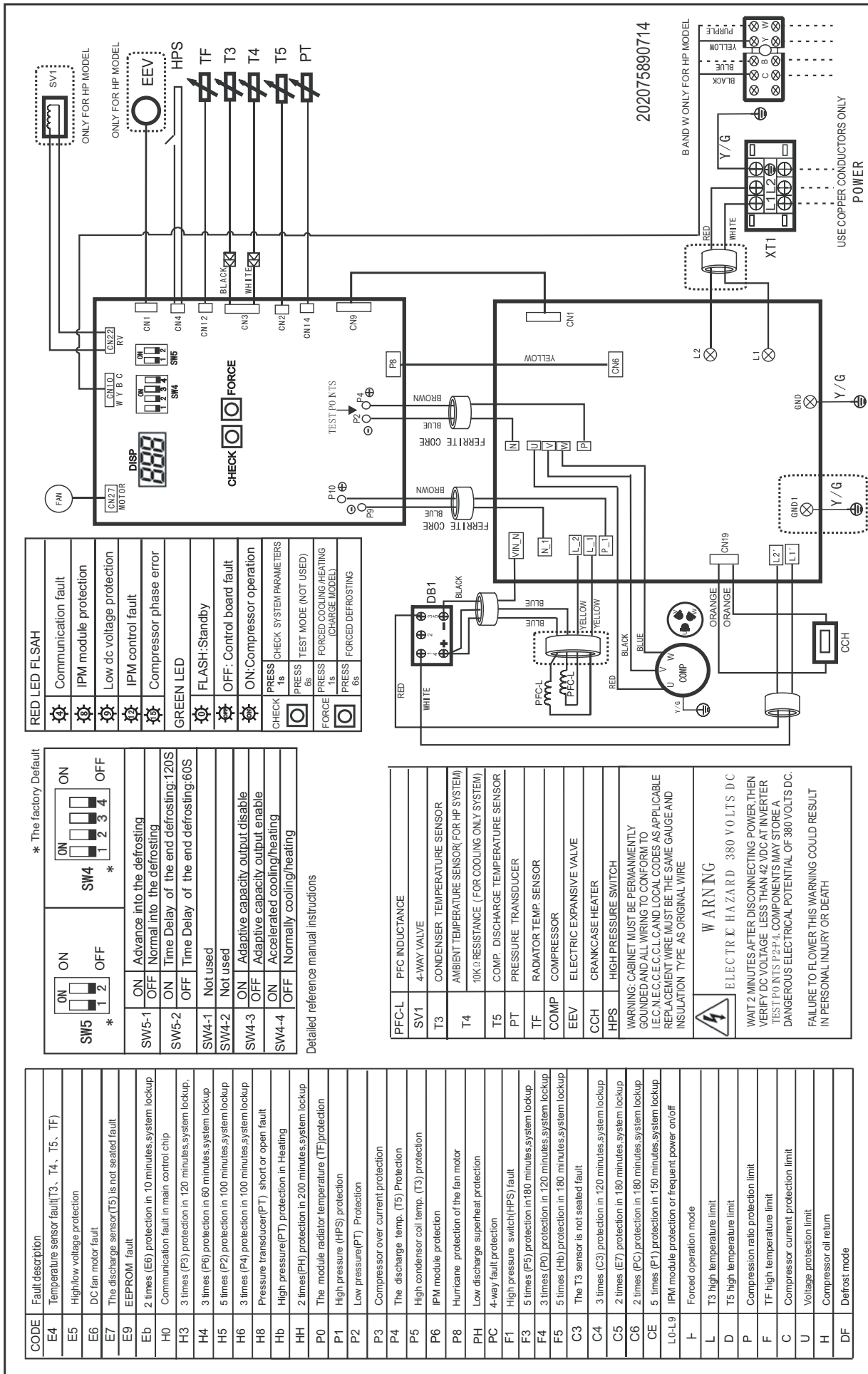


SW5-1	ON / Advance into the defrosting
SW5-2	ON / Normal defrosting
SW4-1	OFF / Time Delay of the end defrosting:120S
SW4-2	OFF / Time Delay of the end defrosting:60S
SW4-3	Not used
SW4-4	Not used
SW4-5	ON / Adaptive capacity output disable
SW4-6	OFF / Adaptive capacity output enable
SW4-7	ON / Accelerated cooling/heating
SW4-8	OFF / Normally cooling/heating

Detailed reference manual instructions

	PRESS 1s	CHECK THE SYSTEM PARAMETERS
	PRESS 6s	TEST MODE (NOT USED)
	PRESS 1s	FORCED COOLING/HEATING (CHARGE MODEL)
	PRESS 6s	FORCED DEFROSTING

Wiring Diagram (For 4860)



	Communication fault
	IPM module protection
	Low dc voltage protection
	IPM control fault
	Compressor phase error
	GREEN LED
	FLASH: Standby
	OFF: Control board fault
	ON: Compressor operation
	PRESS CHECK SYSTEM PARAMETERS
	PRESS TEST MODE (NOT USED)
	PRESS FORCED COOLING/HEATING (CHARGE MODEL)
	PRESS FORCED DEFROSTING

* The factory Default

	ON	OFF
SW5	1	2
SW4	1	2
SW4-1	1	2
SW4-2	1	2
SW4-3	1	2
SW4-4	1	2

SW5-1	ON	Advance into the defrosting
	OFF	Normal into the defrosting
SW5-2	ON	Time Delay of the end defrosting:120S
	OFF	Time Delay of the end defrosting:60S
SW4-1	Not used	
SW4-2	Not used	
SW4-3	ON	Adaptive capacity output disable
	OFF	Adaptive capacity output enable
SW4-4	ON	Accelerated cooling/heating
	OFF	Normally cooling/heating

Detailed reference manual instructions

PFC-L	PFC INDUCTANCE
SV1	4-WAY VALVE
T3	CONDENSER TEMPERATURE SENSOR
T4	AMBIENT TEMPERATURE SENSOR (FOR HP SYSTEM)
T5	10KΩ RESISTANCE (FOR COOLING ONLY SYSTEM)
PT	COMP. DISCHARGE TEMPERATURE SENSOR
TF	PRESSURE TRANSDUCER
COMP	RADIATOR TEMP. SENSOR
EEV	COMPRESSOR
CCH	ELECTRIC EXPANSIVE VALVE
HPS	CRANKCASE HEATER
	HIGH PRESSURE SWITCH

WARNING
ELECTRIC HAZARD 380 VOLTS DC

WARNING: CABINET MUST BE PERMANENTLY GROUNDED AND ALL WIRING TO CONFORM TO I.E.C. N.E.C. E.C.C. C.C. AND LOCAL CODES AS APPLICABLE. REPLACEMENT WIRE MUST BE THE SAME GAUGE AND INSULATION TYPE AS ORIGINAL WIRE.

WAIT 2 MINUTES AFTER DISCONNECTING POWER, THEN VERIFY DC VOLTAGE LESS THAN 42 VDC AT INVERTER TEST POINTS P2-P4. COMPONENTS MAY STORE A DANGEROUS ELECTRICAL POTENTIAL OF 380 VOLTS DC. FAILURE TO FLOW THIS WARNING COULD RESULT IN PERSONAL INJURY OR DEATH.

CODE	Fault description
E4	Temperature sensor fault (T3, T4, T5, TF)
E5	Highflow voltage protection
E6	DC fan motor fault
E7	The discharge sensor (T5) is not seated fault
E9	EEPROM fault
Eb	2 times (E6) protection in 10 minutes, system lockup
H0	Communication fault in main control chip
H3	3 times (P3) protection in 120 minutes, system lockup.
H4	3 times (P6) protection in 60 minutes, system lockup
H5	5 times (P2) protection in 100 minutes, system lockup
H6	3 times (P4) protection in 100 minutes, system lockup
H8	Pressure transducer (PT) short or open fault
Hb	High pressure (PH) protection in Heating
HH	2 times (PH) protection in 200 minutes, system lockup
P0	The module radiator temperature (TF) protection
P1	High pressure (HPS) protection
P2	Low pressure (PT) Protection
P3	Compressor over current protection
P4	The discharge temp. (T5) Protection
P5	High condenser coil temp. (T3) protection
P6	IPM module protection
P8	Hurricane protection of the fan motor
PH	Low discharge superheat protection
PC	4-way fault protection
F1	High pressure switch (HPS) fault
F3	5 times (P5) protection in 180 minutes, system lockup
F4	3 times (P0) protection in 120 minutes, system lockup
F5	5 times (Hb) protection in 180 minutes, system lockup
C3	The T3 sensor is not seated fault
C4	3 times (C3) protection in 120 minutes, system lockup
C5	2 times (E7) protection in 180 minutes, system lockup
C6	2 times (PC) protection in 180 minutes, system lockup
CE	5 times (P1) protection in 150 minutes, system lockup
L0-L9	IPM module protection or frequent power on/off
F	Forced operation mode
L	T3 high temperature limit
D	T5 high temperature limit
P	Compression ratio protection limit
F	TF high temperature limit
C	Compressor current protection limit
U	Voltage protection limit
H	Compressor oil return
DF	Defrost mode

