Sinclair XF Series Dual Discharge Package Heat Pump

13.4 SEER2

Cooling capacity: 24-60 kBtu/h

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Standard Features:

- Quiet horizontal discharge.
- Compatible with side and bottom air discharge
- Powder-coated galvanized steel cabinet.
- Electric heat kit available as a field-installed option: 5/7.5/10/15/20kW.
- High-efficiency compressors operate smoothly, quietly, and consistently.
- Internal safeguards protect the compressor against high and low pressure, and coil temperature.
- Aluminum tube/aluminum fin coil.
- High-efficiency ECM blower motor.
- AHRI Certified and ETL listed.
- Compliant with UL-60335 certification.
- Uses more environmentally friendly R454B refrigerant.
- Full DC variable speed condenser motor, more efficient, smarter, and quieter.

Sinclair XF Series Dual Discharge Package Heat Pump | 13.4 SEER2

1 Product lineup

Model	**PHP0242301134MSNCXFC454B** **PHP0362301134MSNCXFC454B** **PHP0482301134MSNCXFC454B** **PHP0602301134MSNCXFC454B**
Power supply	208/230V-1Ph-60Hz
Appearance	

2 Nomenclature

PHP	024	230	1	134	M	SNC	XF	C	454B
1	2	3	4	5	6	7	8	9	10

Legend		
No.	**Code**	**Remarks**
1	PHP	Line: Package Heat Pump
2	024	Capacity: 024 = 24k BTU; 036 = 36k BTU; 048 = 48k BTU; 060 = 60k BTU
3	230	Voltage: 208/230V
4	1	Phase: 1PH
5	134	Efficiency: 13.4 SEER2
6	M	Position: Multi-Position
7	SNC	Brand: Sinclair
8	XF	Model: SF
9	C	Coil: Copper
10	454B	Refrigerant: R454B

Sinclair XF Series Dual Discharge Package Heat Pump | 13.4 SEER2

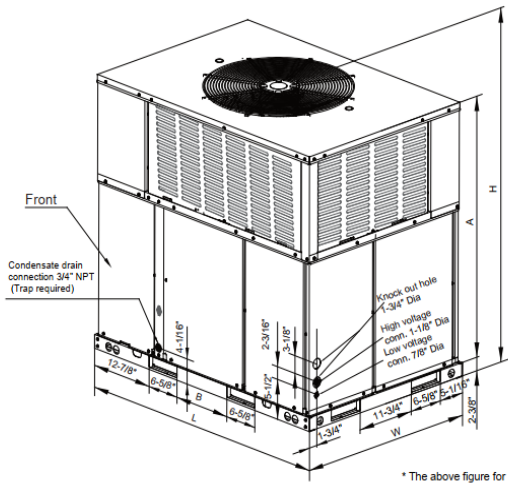
3 Specifications

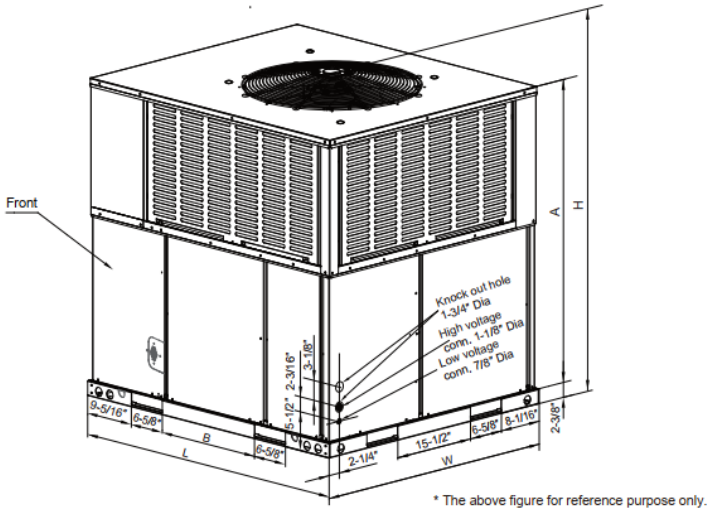
	PHP0242301134MSNCXFC454B	PHP0362301134MSNCXFC454B
NOMINAL CAPACITY		
Cooling (BTU/h)	22,800	34,000
Heating (BTU/h)	22,800	34,200
ELECTRICAL DATA		
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253
Min. Circuit Amps (MCA) (A)	17.8	27.7
Max. Overcurrent Protection (MOP) (A)	25	35
COMPRESSOR		
Type	Rotary	Rotary
Stage	Single	Single
Rated Load Amps (RLA) (A)	12	18
Locked Rotor Amps (LRA) (A)	55	72
OUTDOOR COIL		
Type	Tube & Fin	Tube & Fin
Tube Size (O.D) (in)	9/32	9/32
OUTDOOR FAN MOTOR		
Motor Type	PSC	PSC
Capacitor (uF)	6	6
Horsepower (HP)	1/12	1/6
Full Load Amps (FLA) (A)	0.8	1.0
Rated RPM	878	840
INDOOR COIL		
Type	Tube & Fin	Tube & Fin
Tube Size (O.D) (in)	9/32	9/32
INDOOR BLOWER MOTOR		
Motor Type	PSC	ECM
Capacitor (uF)	12	/
Horsepower (HP)	1/5	1/2
Full Load Amps (FLA) (A)	2	4.2
Rated RPM	908	880
REFRIGERATION SYSTEM		
Refrigerant Control	Orifice	Orifice
Refrigerant Charge (lbs. - oz.)	5 lbs. 10 oz.	6 lbs. 13 oz.
SOUND POWER (dB(A))	78	78
OPERATION RANGE		
Cooling (°C)	10~51.7	10~51.7
Cooling (°F)	50~125	50~125
Heating (°C)	-15~30	-15~30
Heating (°F)	5~86	5~86
Dimension & Weight		
Unpacking (W*H*D) mm	891 x 1190 x 1287	891 x 1190 x 1287
Unpacking (W*H*D) inch	35-1/16 x 46-13/16 x 50-11/16	35-1/16 x 46-13/16 x 50-11/16
Packing (W*H*D) mm	937 x 1256 x 1330	937 x 1256 x 1330
Packing (W*H*D) inch	36-7/8 x 49-7/16 x 52-3/8	36-7/8 x 49-7/16 x 52-3/8
Net/Gross weight kg	180/189	189/198
Net/Gross weight lb	397/416	415/435
Shipping per STD 40HQ	42	42

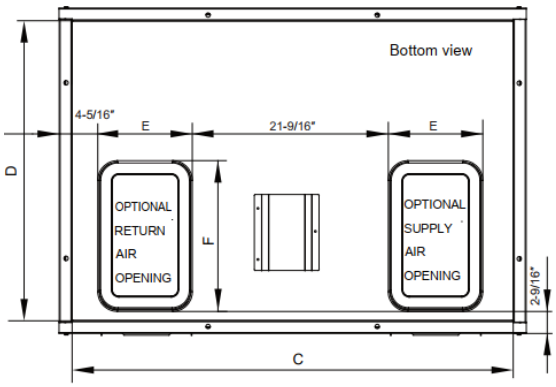
Sinclair XF Series Dual Discharge Package Heat Pump | 13.4 SEER2

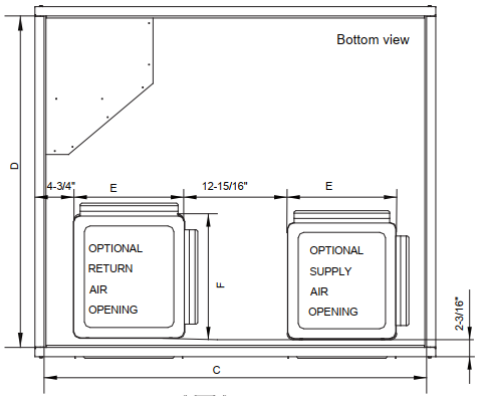
	PHP0482301134MSNCXFC454B	PHP0602301134MSNCXFC454B
NOMINAL CAPACITY		
Cooling (BTU/h)	46,500	56,500
Heating (BTU/h)	45,600	57,000
ELECTRICAL DATA		
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253
Min. Circuit Amps (MCA) (A)	33.9	42.8
Max. Overcurrent Protection (MOP) (A)	45	50
COMPRESSOR		
Type	Scroll	Scroll
Stage	Single	Single
Rated Load Amps (RLA) (A)	22	28
Locked Rotor Amps (LRA) (A)	95	125
OUTDOOR COIL		
Type	Tube & Fin	Tube & Fin
Tube Size (O.D) (in)	9/32	9/32
OUTDOOR FAN MOTOR		
Motor Type	PSC	PSC
Capacitor (uF)	15	15
Horsepower (HP)	1/3	1/3
Full Load Amps (FLA) (A)	2.1	2.1
Rated RPM	1,050	1,050
INDOOR COIL		
Type	Tube & Fin	Tube & Fin
Tube Size (O.D) (in)	9/32	9/32
INDOOR BLOWER MOTOR		
Motor Type	PSC	ECM
Capacitor (uF)	20	/
Horsepower (HP)	4/5	3/4
Full Load Amps (FLA) (A)	4.3	5.7
Rated RPM	976	950
REFRIGERATION SYSTEM		
Refrigerant Control	Orifice	Orifice
Refrigerant Charge (lbs. - oz.)	8 lbs. 3 oz.	9 lbs. 8 oz.
SOUND POWER (dB(A))	80	80
OPERATION RANGE		
Cooling (°C)	10~51.7	10~51.7
Cooling (°F)	50~125	50~125
Heating (°C)	-15~30	-15~30
Heating (°F)	5~86	5~86
Dimension & Weight		
Unpacking (W*H*D) mm	1140 x 1306 x 1310	1140 x 1306 x 1310
Unpacking (W*H*D) inch	44-13/16 x 51-7/16 x 51-9/16	44-13/16 x 51-7/16 x 51-9/16
Packing (W*H*D) mm	1164 x 1329 x 1339	1164 x 1329 x 1339
Packing (W*H*D) inch	45-5/6 x 52-1/3 x 52-5/7	45-5/6 x 52-1/3 x 52-5/7
Net/Gross weight kg	247/255	250/258
Net/Gross weight lb	544/562	551/569
Shipping per STD 40HQ	31	31

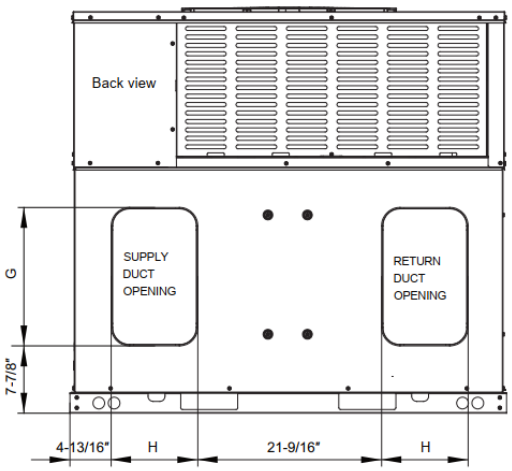
4 Dimensional Drawing

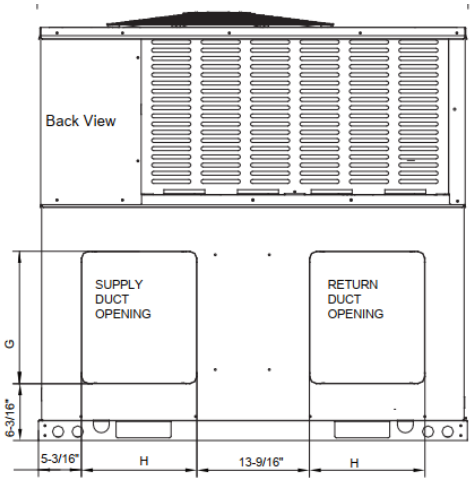












Model	“L” in.[mm]	"W" in.[mm]	"H" in.[mm]	"A" in.[mm]	"B" in.[mm]
24,36	50-11/16 [1287]	35-1/16 [891]	46-13/16 [1190]	44-1/16 [1120]	11-3/4 [298]
48,60	51-9/16 [1310]	44-13/16 [1140]	51-7/16 [1306]	47-5/16 [1202]	19-11/16 [500]

Model	"C" in.[mm]	"D" in.[mm]	"E" in.[mm]	"F" in.[mm]	"G" in.[mm]	"H" in.[mm]
24,36	47-13/16 [1215]	32-1/4 [820]	9-15/16 [252]	15-7/8 [403]	15-3/4 [400]	9-3/4 [249]
48,60	49-1/4 [1250]	42-1/2 [1080]	14-1/8 [358]	16-1/8 [409]	15-7/8 [403]	13-7/8 [352]

Electrical Heater Kit (Optional)

Electric Heater Kit Electrical Data (only Electric Heat)

Heater Kit Model Used	Air Handler Model	Electric Heat(kW)	Min. Circuit Ampacity (A)		Max. Fuse or Breaker (HACR)Ampacity (A)		Minimum Heating Blower Speed		
			240V	208V	240V	208V	1	2	3
EHK05	24	5	26	23	30	25	●	●	●
EHK07		7.5	40	34	40	35	×	●	●
EHK10		10	53	46	60	50	×	●	●
EHK05	36	5	26	23	30	25	●	●	●
EHK07		7.5	40	34	40	35	●	●	●
EHK10		10	53	46	60	50	×	●	●
EHK15		15	79	68	80	70	×	●	●
EHK05	48	5	26	23	30	25	●	●	●
EHK07		7.5	40	34	40	35	●	●	●
EHK10		10	53	46	60	50	●	●	●
EHK15		15	79	68	80	70	×	●	●
EHK20		20	105	91	110	100	×	×	●
EHK05	60	5	26	23	30	25	●	●	●
EHK07		7.5	40	34	40	35	●	●	●
EHK10		10	53	46	60	50	●	●	●
EHK15		15	79	68	80	70	×	●	●
EHK20		20	105	91	110	100	×	×	●

5 Airflow Data

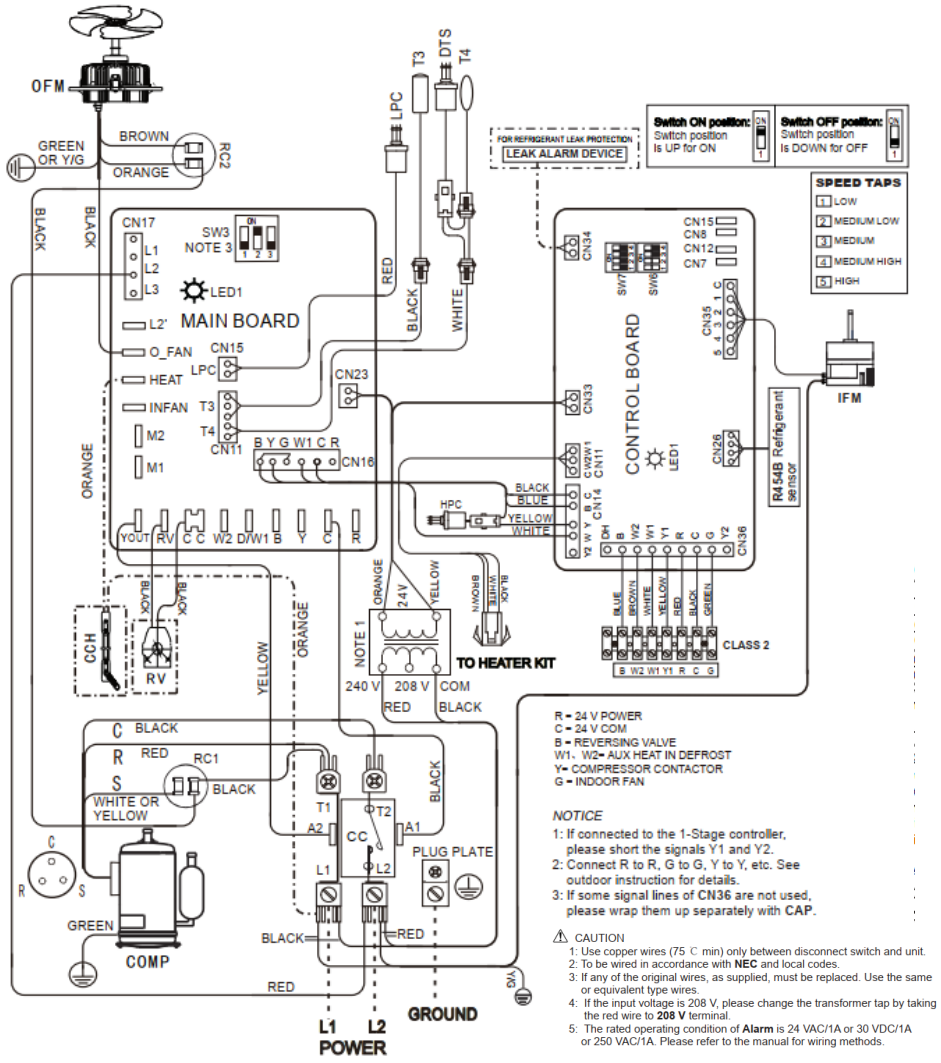
Duct Application(230V)

Model Number	Motor Speed		External Static Pressure-Inches W.C. [kPa]									
			0[0]	0.1[.02]	0.2[.05]	0.3[.07]	0.4[.10]	0.5[.12]	0.58	0.6[.15]	0.7[.17]	0.8[.20]
24	Low	CFM	941.2	839.3	782.6	729.7	638.4	552.1	479.2	464.4	386.5	326.7
		Current2/A	1.01	0	0	0	0	0	0	0	0	0
		Power2/W	231	226	222	218	213	210	207	206	200	195
	Middle-Factory	SCFM	1163.1	1045.6	989.5	933.5	873.3	821.7	723	708.2	608	502.3
		CFM	1.38	1.35	1.33	1.31	1.28	1.26	1.23	1.23	1.2	1.17
		Current2/A	315	306	301	296	289	282	273	272	266	257
	High	Power2/W	1304.5	1182.4	1107.8	1044.2	982.9	932.5	869.6	824.8	713.5	594.2
		CFM	1.66	1.6	1.58	1.55	1.53	1.5	1.48	1.46	1.43	1.4
		Current2/A	371	355	348	341	335	326	318	314	306	297
36	Low (Tap3)	CFM	1279.3	1233.8	1142	1095.8	1054.2	1006.1	969.8	959.6	887.5	821
		Current/A	2.28	2.33	2.39	2.43	2.46	2.51	2.54	2.55	2.62	2.67
		Power/W	258	260	270	280	281	290	298	300	310	317
	Middle (Tap4)	CFM	1458.9	1420.2	1376.1	1287.4	1250.4	1212.5	1179.1	1171.5	1132.4	1090.5
		Current/A	3.03	3.1	3.15	3.23	3.28	3.33	3.37	3.37	3.43	3.48
		Power/W	370	380	390	400	410	415	420	420	430	440
	High (Tap5) - Factory	CFM	1516.3	1477.6	1436.4	1344.6	1308	1270.3	1239	1230.7	1194.1	1154.8
		Current/A	3.3	3.37	3.43	3.52	3.56	3.61	3.65	3.66	3.71	3.76
		Power/W	410	420	430	445	450	460	462	464	470	480
48	Low - Factory	CFM	1989	1934	1876	1812	1737	1653	1583	1567	1476	1354
		Current/A	17.38	17.24	17.17	17.09	16.98	16.89	16.81	16.77	16.64	16.48
		Power/W	3987	3956	3937	3919	3893	3872	3855	3845	3814	3777
	Middle	CFM	2115	2048	1980	1914	1834	1739	1662	1645	1547	1427
		Current/A	17.69	17.56	17.44	17.36	17.25	17.13	17.06	17.06	16.92	16.77
		Power/W	4056	4026	3998	3979	3953	3925	3909	3910	3877	3841
	High	CFM	2242	2164	2088	2006	1921	1821	1735	1721	1614	1496
		Current/A	18.12	18.04	17.92	17.81	17.66	17.55	17.44	17.44	17.31	17.15
		Power/W	4151	4133	4105	4079	4043	4018	3992	3993	3963	3924
60	Low (Tap3)	CFM	1604.2	1550.3	1493.9	1431.4	1371.7	1311.9	1252.6	1253.4	1189.8	1126.2
		Current/A	2.52	2.58	2.66	2.73	2.8	2.87	2.93	2.95	3.03	3.11
		Power/W	290	300	310	320	330	341	350	355	370	380
	Middle (Tap4)	CFM	1934.1	1992.4	1884.3	1797	1742.7	1690.4	1653.4	1643.3	1590.5	1540.7
		Current/A	3.38	3.93	4.01	4.09	4.18	4.27	4.33	4.34	4.43	4.52
		Power/W	490	500	511	529	540	551	560	562	580	590
	High (Tap5) - Factory	CFM	2033.1	1984.5	1939	1891.9	1837.6	1788	1748.9	1739.8	1687.2	1640.2
		Current/A	4.35	4.42	4.48	4.56	4.65	4.73	4.8	4.81	4.9	4.99
		Power/W	567	575	586	599	610	620	630	634	650	660

--- Shaded boxes represent airflow outside the required 300 to 450 cfm/ton, which are not recommended

6 Wiring Diagram

36/60



CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
COMP	COMPRESSOR
DFC	DEFROST CONTROL
T4	AMBIENT TEMPERATURE SENSOR
T3	PIPE TEMPERATURE SENSOR
HPC	HIGH PRESSURE CUT-OUT CONTROL
LPC	LOW PRESSURE CUT-OUT CONTROL
DTS	DISCHARGE TEMPERATURE SWITCH
OFM	OUTDOOR FAN MOTOR
IFM	INDOOR FAN MOTOR
RC1	COMPRESSOR RUN CAPACITOR
RC2	OUTDOOR FAN MOTOR RUN CAPACITOR
RV	REVERSING VALVE
GND	GROUND CHASSIS

FACTORY STANDARD ——————
FIELD INSTALLED - - - - - - -
FACTORY OPTIONAL —·—·—·—

⚠ WARNING
CABINET MUST BE PERMANENTLY GROUNDED AND ALL WIRING TO CONFORM TO I.E.C,N.E.C, C.L.C,AND LOCAL CODES AS APPLICABLE REPLACEMENT WIRE MUST BE THE SAME GAUGE AND INSULATION TYPE AS ORIGINAL WIRE.
USE COPPER CONDUCTORS ONLY.

* FACTORY DEFAULT

SW3-1	ON	MANUAL DEFROST	
	OFF	AUTOMATIC DEFROST	*
SW3-2	ON	SINGLE-PHASE UNIT	*
	OFF	THREE-PHASE UNIT	
SW3-3	ON	DEFROSTING CYCLE:30 min	
	OFF	DEFROSTING CYCLE:60 min	*

The wiring diagram shown is for reference only, it maybe different from the actual product .

CONTROL BOARD LED (GREEN) CODE		
☼	STEADY ON	NORMAL OPERATION
✹	OFF	POWER SUPPLY FAULT
☼	KEEP FLASHING	REFRIGERANT LEAK PROTECTION
☼	3 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR FAULT
☼	4 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR COMMUNICATION FAULT
☼	8 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR OVER SERVICE LIFE

MAIN BOARD LED(RED) CODE		
☼	STEADY ON	NORMAL OPERATION
✹	OFF	DEFROST CONTROL
☼	1 FLASH	T3 SENSOR FAULT
☼	2 FLASH	T4 SENSOR FAULT OR DTS PROTECTION
☼	3 FLASH	LPC PROTECTION
☼	4 FLASH	POWER PHASE FAULT
☼	5 FLASH	CONDENSOR COIL TEMPERATURE PROTECTION IN COOLING(T3)
☼	6 FLASH	AMBIENT TEMPERATURE LIMITED(T4)

NOTICE2
1: Remove the red lead from "240 V" terminal and then connect thered lead to "208 V" terminal on the transformer for 208 volts.
2: "W2" wire is not provided in some models.
3: "SW3" is only for hot pump system.
4. "RV" is only for hot pump system; "RV" is not provided in some models.

OPTIONAL - · - · - FIELD INSTALLED - - - - - -

DETAILED REFERENCE MANUAL INSTRUCTIONS

	DIP SWITCH	Y1 OR G	W/W1/W2
SW6-1,2 FAN SPEED TAPS		2	3
	30/42 kBtu/h	3	4
		4	5
	36/60 kBtu/h	5	5

NOT USED

SW6-3,4		FACTORY DEFAULT
SW7-1,2 SW7-3,4		FACTORY DEFAULT

Sinclair XF Series Dual Discharge Package Heat Pump | 13.4 SEER2

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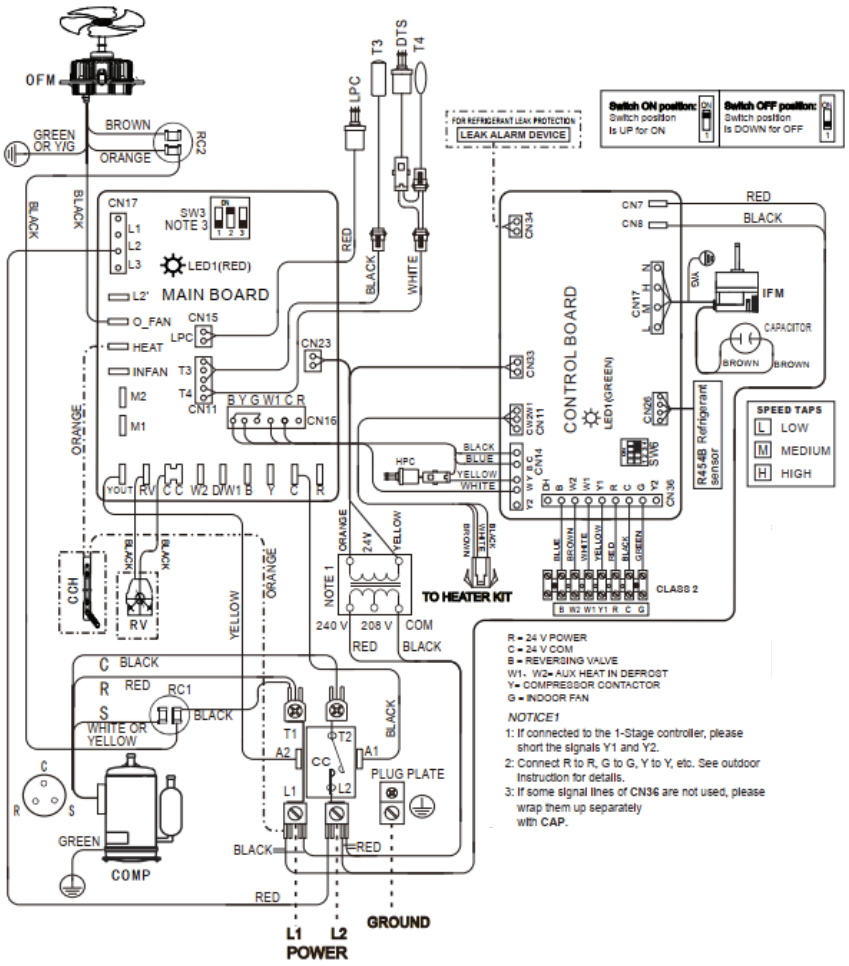

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COMP	COMPRESSOR
DFC	DEFROST CONTROL
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IFM	INDOOR FAN MOTOR
RC1	COMPRESSOR RUN CAPACITOR
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GND	GROUND CHASSIS

FACTORY STANDARD ——————
FIELD INSTALLED - - - - - - -
FACTORY OPTIONAL —·—·—·—

⚠ WARNING
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USE COPPER CONDUCTORS ONLY.

* FACTORY DEFAULT

SW3-1	ON	MANUAL DEFROST	
	OFF	AUTOMATIC DEFROST	*
SW3-2	ON	SINGLE-PHASE UNIT	*
	OFF	THREE-PHASE UNIT	
SW3-3	ON	DEFROSTING CYCLE:30 min	
	OFF	DEFROSTING CYCLE:60 min	*

The wiring diagram shown is for reference only, it maybe different from the actual product .

NOTICE2
1: Remove the red lead from "240 V" terminal and then connect the red lead to "208 V" terminal on the transformer for 208 volts.
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4. "RV" is only for hot pump system; "RV" is not provided in some models.

OPTIONAL -·-·-· FIELD INSTALLED - - - - - -

CONTROL BOARD LED (GREEN) CODE		
☼	STEADY ON	NORMAL OPERATION
✸	OFF	POWER SUPPLY FAULT
☼	KEEP FLASHING	REFRIGERANT LEAK PROTECTION
☼	3 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR FAULT
☼	4 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR COMMUNICATION FAULT
☼	8 FLASH/CYCLE	**R454B** REFRIGERANT SENSOR OVER SERVICE LIFE

MAIN BOARD LED(RED) CODE		
☼	STEADY ON	NORMAL OPERATION
✸	OFF	DEFROST CONTROL
☼	1 FLASH	T3 SENSOR FAULT
☼	2 FLASH	T4 SENSOR FAULT OR DTS PROTECTION
☼	3 FLASH	LPC PROTECTION
☼	4 FLASH	POWER PHASE FAULT
☼	5 FLASH	CONDENSOR COIL TEMPERATURE PROTECTION IN COOLING(T3)
☼	6 FLASH	AMBIENT TEMPERATURE LIMITED(T4)

DETAILED REFERENCE MANUAL INSTRUCTIONS

	DIP SWITCH	G	W/W1/W2
SW6-1,2 FAN SPEED TAPS	48 kBtu/h	L	H
		L	H
	24 kBtu/h	M	H
		H	H
SW6-3		0 S OFF-DELAY	
		90S OFF-DELAY **(FACTORY DEFAULT)**	
NOT USED			
SW6-4		**FACTORY DEFAULT**	

⚠ CAUTION
1: Use copper wires (75 ℃ min) only between disconnect switch and unit.
2: To be wired in accordance with **NEC** and local codes.
3: If any of the original wires, as supplied, must be replaced. Use the same or equivalent type wires.
4: If the input voltage is 208 V, please change the transformer tap by taking the red wire to **208V** terminal.
5. The rated operating condition of **Alarm** is 24 VAC/1A or 30 VDC/1A or 250 VAC/1A. Please refer to the manual for wiring methods.