B. Humidifier

Connect humidifier and humidistat to fan coil unit as shown in Fig. 24 and Fig. 25. The cooling lockout relay is optional.

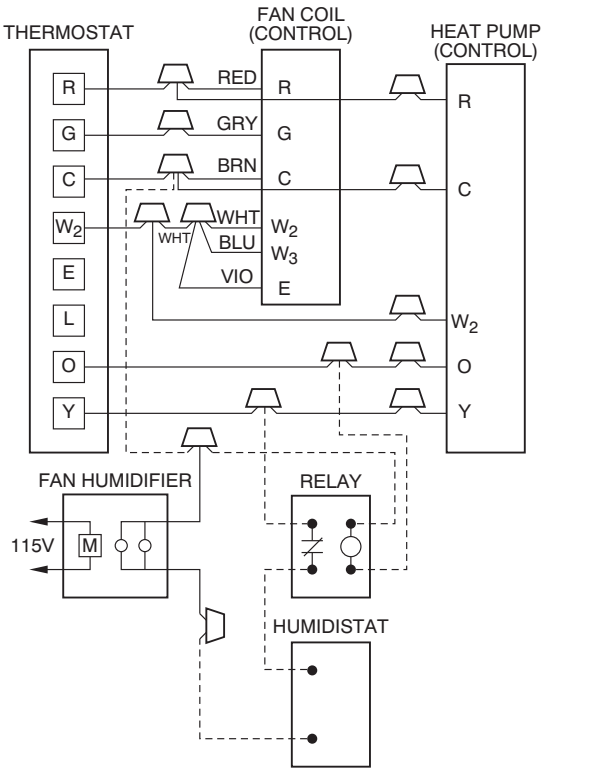

Fig. 24 - Wiring Layout of Humidifier to Heat Pump

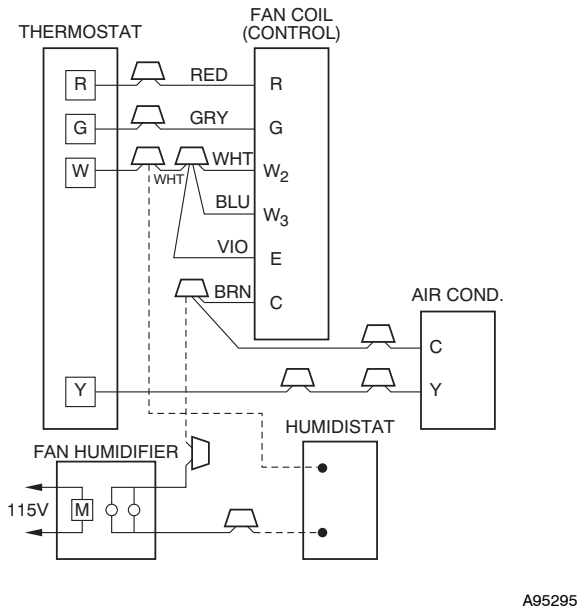

Fig. 25 - Wiring Layout of Humidifier to Fan Coil With Electric Heat

Step 9 — Sequence of Operation

A. Continuous Fan

Thermostat closes R to G. G energizes fan relay on PCB which completes circuit to indoor blower motor. When G is de-energized, there is a 90-sec delay before relay opens.

B. Cooling Mode

Thermostat energizes R to G, R to Y, and R to O (heat pump only). G energizes fan relay on PCB which completes circuit to indoor blower motor. When G is de-energized, there is a 90-sec delay before fan relay opens.

C. Heat Pump Heating with Auxiliary Electric Heat

Thermostat energizes R to G, R to Y, and R to W. G energizes fan relay on PCB which completes circuit to indoor blower motor. W energizes electric heat relay(s) which completes circuit to heater element(s). When W is de-energized, electric heat relay(s) open, turning off heater elements. When G is de-energized there is a 90-sec delay before fan relay opens.

D. Electric Heat or Emergency Heat Mode

Thermostat closes R to W. W energizes electric heat relay(s) which completes circuit to heater element(s). Blower motor is energized through normally closed contacts on fan relay. When W is de-energized, electric heat relay(s) opens.

START-UP PROCEDURES

Refer to outdoor unit Installation Instructions for system start-up instructions and refrigerant charging method details.

⚠ CAUTION

UNIT COMPONENT HAZARD

Failure to follow this caution may result in product damage.

Never operate unit without a filter. Damage to blower motor or coil may result. Factory authorized filter kits must be used when locating the filter inside the unit. For those applications where access to an internal filter is impractical, a field-supplied filter must be installed in the return duct system.

CARE AND MAINTENANCE

To continue high performance and minimize possible equipment failure, it is essential that periodic maintenance be performed on this equipment. Consult your local dealer as to the proper frequency of maintenance contract.

The ability to properly perform maintenance on this equipment requires certain mechanical skills and tools. If you do not possess these, contact your dealer for maintenance. The only consumer service recommended or required is filter replacement or cleaning on a monthly basis.

AIRFLOW PERFORMANCE TABLES

Table 1 – FB4C Airflow Performance (CFM)

MODEL & SIZE	BLOWER SPEED	0.10	0.20	0.30	0.40	0.50	0.60
FB4C 018	Tap 5	767	739	702	669	620	565
	Tap 4	614	569	534	486	436	398
	Tap 3	701	660	616	581	537	499
	Tap 2	614	569	534	486	436	398
	Tap 1	614	569	534	486	436	398
FB4C 024	Tap 5	969	936	892	835	763	676
	Tap 4	826	795	766	743	706	660
	Tap 3	826	795	766	743	706	660
	Tap 2	701	660	616	581	537	499
	Tap 1	617	592	552	507	472	420
FB4C 030	Tap 5	1108	1090	1065	1034	1009	974
	Tap 4	1026	1000	969	938	899	865
	Tap 3	1026	1000	969	938	899	865
	Tap 2	909	873	842	799	762	724
	Tap 1	825	795	757	722	674	634
FB4C 036	Tap 5	1301	1276	1245	1218	1176	1121
	Tap 4	1227	1191	1169	1143	1105	1074
	Tap 3	1227	1191	1169	1143	1105	1074
	Tap 2	1087	1062	1030	1001	966	930
	Tap 1	1026	1000	969	938	899	865
FB4C 042	Tap 5	1560	1544	1507	1464	1424	1358
	Tap 4	1419	1397	1358	1320	1279	1239
	Tap 3	1419	1397	1358	1320	1279	1239
	Tap 2	1249	1220	1184	1142	1093	1052
	Tap 1	1242	1205	1158	1110	1069	1026
FB4C 048	Tap 5	1743	1712	1679	1642	1610	1574
	Tap 4	1669	1634	1599	1564	1531	1499
	Tap 3	1669	1634	1599	1564	1531	1499
	Tap 2	1452	1413	1377	1339	1308	1271
	Tap 1	1300	1256	1221	1182	1142	1101
FB4C 060	Tap 5	1897	1867	1836	1808	1774	1736
	Tap 4	1817	1785	1757	1724	1693	1655
	Tap 3	1817	1785	1757	1724	1693	1655
	Tap 2	1657	1621	1589	1557	1518	1474
	Tap 1	1443	1412	1377	1332	1286	1243

Table 2 – FY5B Airflow Performance (CFM)

MODEL & SIZE	BLOWER SPEED	0.10		0.20		0.30		0.40		0.50		0.60	
		208V	230V	208V	230V	208V	230V	208V	230V	208V	230V	208V	230V
FY5B 018	High	742	825	707	768	642	714	568	648	466	526	403	434
	Low	541	608	480	564	417	511	357	431	299	363	n/a	304
FY5B 024	High	1041	1112	969	1030	888	936	774	791	573	654	341	438
	Low	874	1014	838	953	781	868	684	740	506	573	341	418
FY5B 030	High	1256	1327	1186	1242	1071	1132	952	1005	704	791	459	482
	Low	965	1117	949	1074	916	1019	805	902	575	637	396	447
FY5B 036	High	1306	1490	1264	1418	1207	1338	1135	1241	1043	1127	842	937
	Low	1164	1335	1144	1290	1108	1226	1052	1148	970	1048	697	855
FY5B 042	High	1723	1768	1639	1681	1544	1576	1435	1465	1309	1340	1144	1182
	Low	1387	1543	1358	1488	1311	1410	1237	1315	1137	1200	997	1047
FY5B 048	High	1902	1941	1803	1867	1706	1767	1593	1648	1472	1512	1303	1371
	Low	1671	1777	1630	1711	1563	1630	1479	1528	1370	1412	1218	1266
FY5B 060	High	2064	2128	1989	2050	1906	1965	1819	1875	1725	1778	1624	1674
	Medium	1812	1959	1756	1898	1692	1829	1619	1750	1538	1663	1449	1566
	Low	1556	1748	1521	1709	1477	1659	1422	1598	1357	1525	1283	1442

– Airflow outside 450 cfm/ton.

NOTES:

1. Airflow based upon dry coil at 230v with factory-approved filter and electric heater (2 element heater sizes 018 through 036, 3 element heater sizes 042 through 060). For FB4C models, airflow at 208 volts is approximately the same as 230 volts because the X13 motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.
2. To avoid potential for condensate blowing out of drain pan prior to making drain trap:
   Return static pressure must be less than 0.40 in. wc.
   Horizontal applications of 042 - 060 sizes must have supply static greater than 0.20 in. wc.
3. Airflow above 400 cfm/ton on 048-060 size could result in condensate blowing off coil or splashing out of drain pan.

AIRFLOW PERFORMANCE TABLES (cont.)

Table 3 – FB4C Air Delivery Performance Correction Component Pressure Drop (in. wc) at Indicated Airflow (Dry to Wet Coil)

UNIT SIZE	CFM															
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
018	0.034	0.049	0.063	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
024	0.034	0.049	0.063	0.076	0.089	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
030	– –	– –	– –	0.049	0.059	0.070	0.080	– –	– –	– –	– –	– –	– –	– –	– –	– –
036	– –	– –	– –	– –	– –	0.070	0.080	0.090	0.099	– –	– –	– –	– –	– –	– –	– –
042	– –	– –	– –	– –	– –	– –	– –	0.049	0.056	0.063	0.070	– –	– –	– –	– –	– –
048	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.063	0.070	0.076	0.083	0.090	– –	– –
060	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.049	0.054	0.059	0.065	0.070

Table 4 – FY5B Air Delivery Performance Correction Component Pressure Drop (in. wc) at Indicated Airflow (Dry to Wet Coil)

UNIT SIZE	CFM															
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
018	0.016	0.027	0.038	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
024	0.016	0.027	0.038	0.049	0.059	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
030	– –	– –	– –	0.036	0.046	0.055	0.064	– –	– –	– –	– –	– –	– –	– –	– –	– –
036	– –	– –	– –	– –	– –	0.055	0.064	0.073	0.081	– –	– –	– –	– –	– –	– –	– –
042	– –	– –	– –	– –	– –	– –	– –	0.049	0.056	0.063	0.070	– –	– –	– –	– –	– –
048	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.038	0.043	0.049	0.054	0.059	– –	– –
060	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.031	0.036	0.040	0.044	0.049

Table 5 – FB4C Electric Heater Static Pressure Drop (in. wc)

UNIT SIZE	CFM								
	400	600	800	1000	1200	1400	1600	1800	2000
018, 024	0.020	0.044	0.075	– –	– –	– –	– –	– –	– –
030, 036	– –	– –	0.048	0.072	0.100	– –	– –	– –	– –
042, 048, 060	– –	– –	– –	– –	0.070	0.092	0.120	0.152	– –

Table 6 – FY5B Electric Heater Static Pressure Drop (in. wc)

UNIT SIZE	CFM								
	400	600	800	1000	1200	1400	1600	1800	2000
018, 024	0.020	0.044	0.075	0.110	0.100	– –	– –	– –	– –
030, 036, 042	– –	– –	0.048	0.072	0.100	0.130	0.120	– –	– –
048, 060	– –	– –	– –	– –	– –	0.092	0.120	0.152	0.187

Table 7 – Electric Heater Static Pressure Drop (in. wc)

FB4C, FY5B 018 – 036			FB4C, FY5B 042 – 060		
HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION	HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION
0	0	+.02	0	0	+.04
1	3, 5	+.01	2	8, 10	+.02
2	8, 10	0	3	9, 15	0
3	9, 15	–.02	4	20	–.02
4	20	–.04	6	18, 24, 30	–.10

PURON® (R-410A) QUICK REFERENCE GUIDE

- Puron refrigerant operates at 50-70 percent higher pressures than R-22. Be sure that servicing equipment and replacement components are designed to operate with Puron refrigerant.
- Puron refrigerant cylinders are rose colored.
- Recovery cylinder service pressure rating must be 400 psig, DOT 4BA400 or DOT BW400.
- Puron refrigerant systems should be charged with liquid refrigerant. Use a commercial type metering device in the manifold hose when charging into suction line with compressor operating
- Manifold sets should be 700 psig high side and 180 psig low side with 550 psig low-side retard.
- Use hoses with 700 psig service pressure rating.
- Leak detectors should be designed to detect HFC refrigerant.
- Puron refrigerant, as with other HFCs, is only compatible with POE oils.
- Vacuum pumps will not remove moisture from oil.
- Do not use liquid-line filter driers with rated working pressures less than 600 psig.
- Do not leave Puron refrigerant suction line filter driers in line longer than 72 hours.
- Do not install a suction-line filter drier in liquid line.
- POE oils absorb moisture rapidly. Do not expose oil to atmosphere.
- POE oils may cause damage to certain plastics and roofing materials.
- Wrap all filter driers and service valves with wet cloth when brazing.
- A factory approved liquid-line filter drier is required on every unit.
- Do NOT use an R-22 TXV.
- If indoor unit is equipped with a R-22 TXV or piston metering device, it must be changed to a hard-shutoff Puron refrigerant TXV.
- Never open system to atmosphere while it is under a vacuum.
- When system must be opened for service, recover refrigerant, evacuate then break vacuum with dry nitrogen and replace filter driers. Evacuate to 500 microns prior to recharging.
- Do not vent Puron refrigerant into the atmosphere.
- Do not use capillary tube coils.
- Observe all **warnings**, **cautions**, and **bold** text.
- All indoor coils must be installed with a hard-shutoff Puron refrigerant TXV metering device.

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