P.O. Box 2758 Windsor, Nova Scotia, B0N 2T0
Ph. 902-798-2261 Fax: 902-798-2557
www.nu-airventilation.com email: nuair@nu-airventilation.com

COMPLIANT SERIES

HRV/ERV PRODUCT MANUAL
NU0820/NU2035/NU2540/NU1030

* LEAVE THIS DOCUMENT WITH THE BUILDING OWNER

Specifications, dimensions and ratings may change without notice
as a result of ongoing product development and improvements.

TABLE OF CONTENTS

1 ABOUT THE H/ERV

The heat recovery ventilator (HRV) provides fresh air to a conditioned space while exhausting an equal amount of stale air. Heat energy is transferred from one air stream to the other within a non-contact cross flow heat exchanger. ERV models transfer latent energy (moisture) from the higher to lower air stream.

A. Two fan motor sets deliver fresh air into the space and exhaust stale air from the space.

B. Incoming fresh air is filtered before flowing through the heat exchange core.

C. Stale air flows through the cross-flow heat exchanger and transfers the heat (HRV) (and moisture (ERV)) to the incoming fresh air.

D. Warm fresh air is distributed through an independent ductwork system or an existing air distribution system.

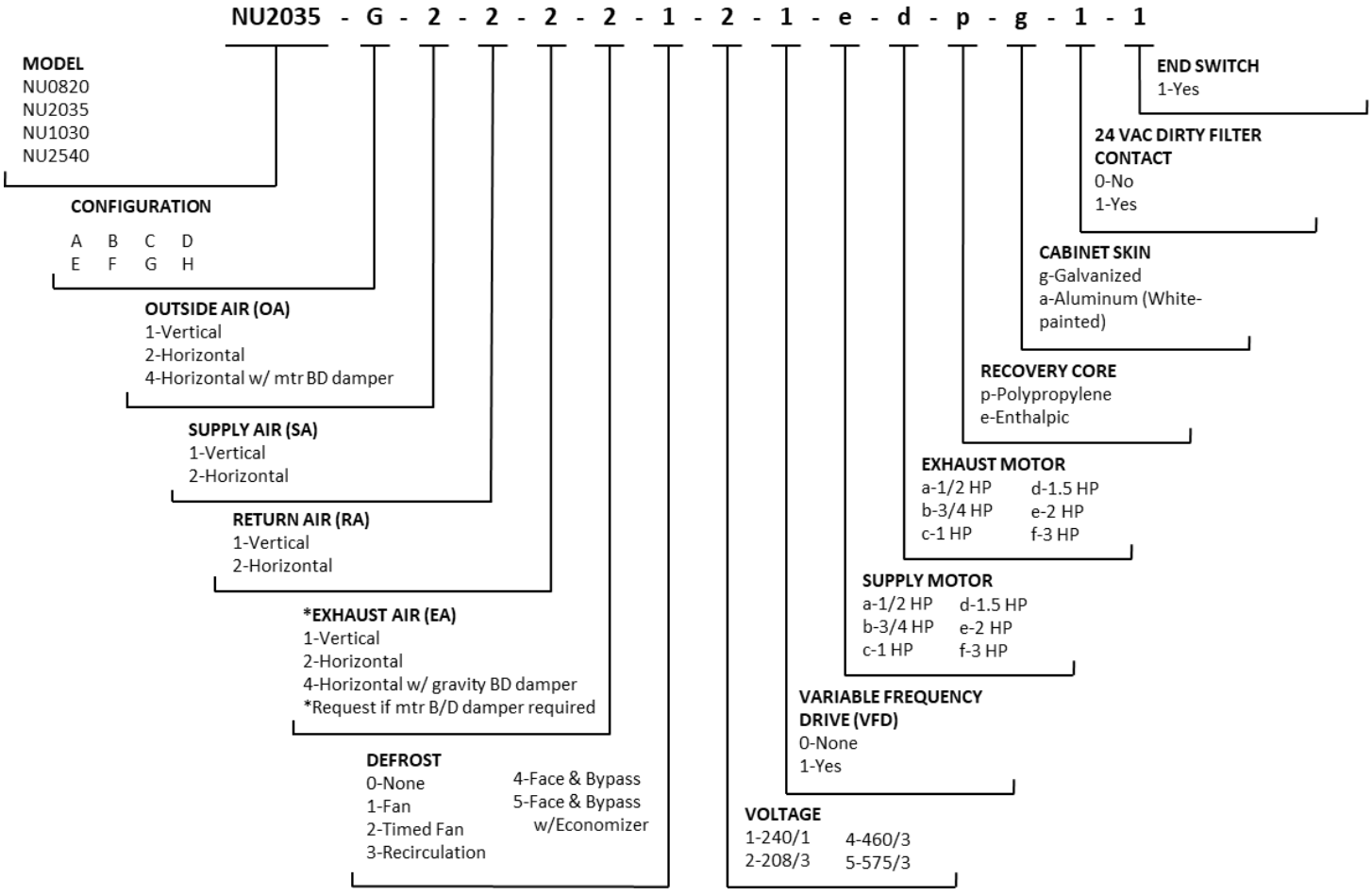
2 PRODUCT SELECTION – OPTIONS BY PRODUCT

Unit Options		NU0820	NU2035	NU1030	NU2540
Capacity (cfm range)		800 -2000	2000 -4000	1000-3000	2000 -4000
Location	Indoor	O	S		
	Outdoor	O		S	S
Defrost	None	S	S	S	S
	Exhaust Only (temp. on/off)	$$	$$	$$	$$
	Timed Exhaust (temp. on/timed off)	$$	$$	$$	$$
	Recirculation	$$		$$	$$
	Face and Bypass	$$	$$	$$	$$
	Face and Bypass with Economizer	$$	$$	$$	$$
Voltage and Speeds	230/1, 1 speed	O	O	O	O
	208/3, 1 speed	O	O	O	O
	460/3, 1 speed	O	O	O	O
	575/3, 1 speed	O	O	O	O
Motor Options HP		.5, .75, 1, 1.5	.5, .75, 1, 1.5, 2, 3	.5, .75, 1, 1.5, 2	.5, .75, 1, 1.5, 2, 3
Core	Sensible	S	S	S	S
	Enthalpy	$$	$$	$$	$$
Cabinet Finish	Galvanized Steel	S	S	S	S
	Painted Aluminum (white)	$$	$$	$$	$$
Supply Air Dampers	None	S	S	S	S
	Motorized	$$	$$	$$	$$
Exhaust Air Dampers	None	S	S	S	S
	Gravity	$$	$$	$$	$$
	Motorized	$$	$$	$$	$$
Supply Air Discharge	Horizontal (end)	S	S	S	S
	Vertical (down)	O		O	O
Return Air Intake	Horizontal (end)	S	S	S	S
	Vertical (down)	O		O	O
Filters	MERV 8	S	S	S	S
	MERV 13	$$	$$	$$	$$
ACCESSORIES					
VFD		$$	$$	$$	$$
Dirty Filter contacts		$$	$$	$$	$$
Aux. Contacts interlock		S	S	S	S
Roof Curb (inches)	(Accessory, Consult Nu-Air)	$$: 14” or 18”	N/A	$$: 14” or 18”	$$: 14” or 18”

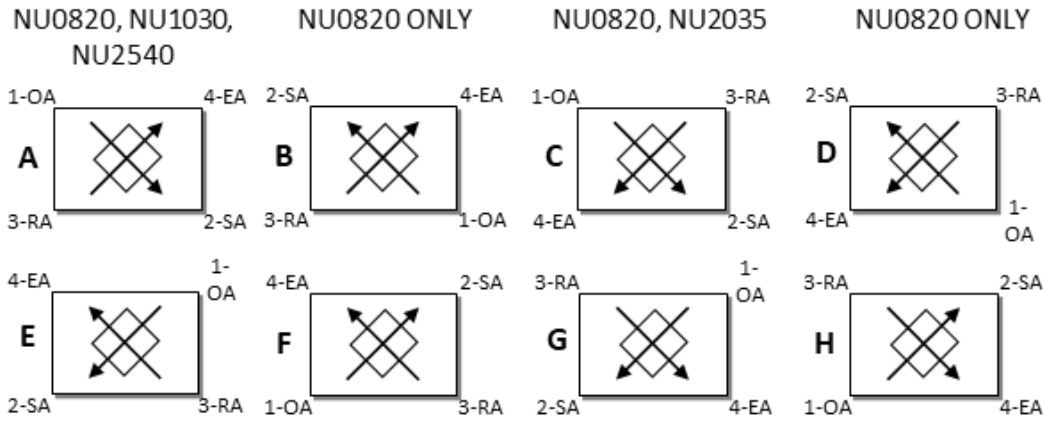
Refer to *Performance Data* section of this document for fan/motor selections.

3 NOMENCLATURE, UNIT CONFIGURATIONS, FROST CONTROL

3.1 Nomenclature – Fishbone Chart



3.2 Unit (duct) Configurations



3.3 Defrost Recommendations

TYPE	WINTER DESIGN TEMP.		FACTORY DEFAULT TIMING**	
	° C	° F	RUN	DEFROST
0 – NONE	> -5	> 23	n/a	n/a
1 – FAN SHUT-DOWN	> -10	> 14		
2 – TIMED FAN SHUT-DOWN	> -15	> 5	60 min.	10 min.
3 – RECIRCULATION	> -15	> 5	60 min.	10 min.
4 – FACE & BYPASS	Uninterrupted ventilation and free cooling.			

NOTE: defrost recommendations notwithstanding other design considerations such as building pressure, preheat, delivered air temp., etc.

**Field adjustable.

1 – Supply fan shuts off when EA 0C (32F). Normal operation resumes when EA is 8C (47F).

2 – Supply fan shuts off for defined time when OA is nominal 0C (32F).

3 – Non-negative pressure defrost when EA is nominal 0C (32F).

4 – Heat exchanger bypassed in a temperature activated cycle.

4 SAMPLE SPECIFICATION

GENERAL

System Description:

Packaged Heat (Energy) Recovery Ventilator capable of transferring sensible (sensible and latent) energy designed to be used as a standalone ventilation system or as part of an engineered HVAC system with flat plate, cross flow heat exchanger integral to the unit.

Quality Assurance

Unit shall be constructed to CSA C22.2 standards and carry the mark label of an approved certifying body. Unit shall undergo 100% functionality testing at the factory prior to shipping and be accompanied with a **Compliance Certificate**. Unit shall be **factory balanced to project-specified air flow and static pressure**. Heat exchangers shall be certified and currently listed AHRI and shall meet UL 94 flame spread and smoke generation requirements.

Storage and Handling

Unit shall not be used during construction. Unit shall be stored and handled according to the manufacturer's instructions.

Warranty

Unit shall have a 2 year warranty on all parts except the core which has a 15 year warranty (polypropylene) or 5 year warranty (enthalpy).

EQUIPMENT

Construction

The cabinet shall be double wall construction. 22 Ga. galvanized steel inner wall and 22 Ga. galvanized steel (optional 0.050 painted white aluminum) outer wall. The unit shall be insulated with 1" R6 expanded polystyrene. All serviceable components shall be accessible through a hinged front access panel. Main service door will be removable and secured with a lockable quarter-turn handle. The heat exchanger core shall be easily removable for servicing.

Blowers

Blowers shall be FC DWDI, dynamically balanced and operate at not more than 1500 rpm. Internal vibration isolation is not required. Blower housing shall be galvanized steel.

Motors

Motors shall be continuous duty, permanently lubricated with a service factor of 1.15, matched to the fan load and required voltage and phase. Motors enclosure shall be Totally Enclosed.

Electrical requirements

The unit shall have a single point power connection within a NEMA4 enclosure with integral non-fused disconnect switch.. The unit shall be c/w 24 VAC control transformer with 200 VA for internal and remote controls.

Filtration

Unit shall come complete with 2" thick MERV 8 filters (standard).
Unit shall come complete with 2" thick MERV 13 filters (optional).

Heat exchanger

Polypropylene core constructed of flame retardant material and certified and currently listed with AHRI to Standard 1060.

Enthalpy core shall be constructed of a membrane treated to resist mold and odor causing bacteria, have latent energy transfer properties, flame retardancy, and be certified and currently listed with AHRI to Standard 1060.

Defrost

1. None - the unit may be ordered without defrost ability
2. Exhaust only defrost – a temperature sensor shuts down the supply fan when the leaving exhaust air is cold enough to freeze condensate. The supply fan remains off until the leaving exhaust air has reached +8C (47 F). The defrost sensor will allow some field adjustment of the initiation temperature.
3. Timed fan defrost – a temperature sensor shuts down the supply fan when the outside air is cold enough to freeze condensate. The supply fan remains off for a set length of time. The supply fan resumes normal operation for a set length of time and the cycle repeats as long as the outside air temperature is below the set point. Both defrost and run cycles shall be field adjustable via the unit's control.
4. Recirculation Defrost – a temperature sensor initiates defrost when outside air is cold enough to freeze condensate. The exhaust fan shuts down, the recirculation damper opens, the gravity and motorized back draft dampers close. The defrost cycle occurs for a field selectable length of time followed by a field selectable time of normal operation. The cycle repeats as long as the outside air temperature warrants.
5. Face and by Pass – a temperature sensor initiates by pass mode when the leaving exhaust temperature is cold enough to freeze condensate. Heat recovery is interrupted and both fans continue to run. Heat recovery mode resumes when the leaving exhaust temperature is above +8C (47 F).
6. Economizer – Economizer controls are integrated with the face and by pass damper. Temperature sensors in the RA and OA communicate with an adjustable temperature sensing relay to enable free cooling when the conditions are suitable.

Variable frequency drive

N0. Unit comes with motor starters.
Yes. Factory shall supply VFD for each motor.

Cabinet

22 Ga. Galvanized Steel
0.050 pre-painted white aluminum

Dirty filter contact

Yes – 2 pressure switches with the unit.
No – pressure switches not supplied.

End switch

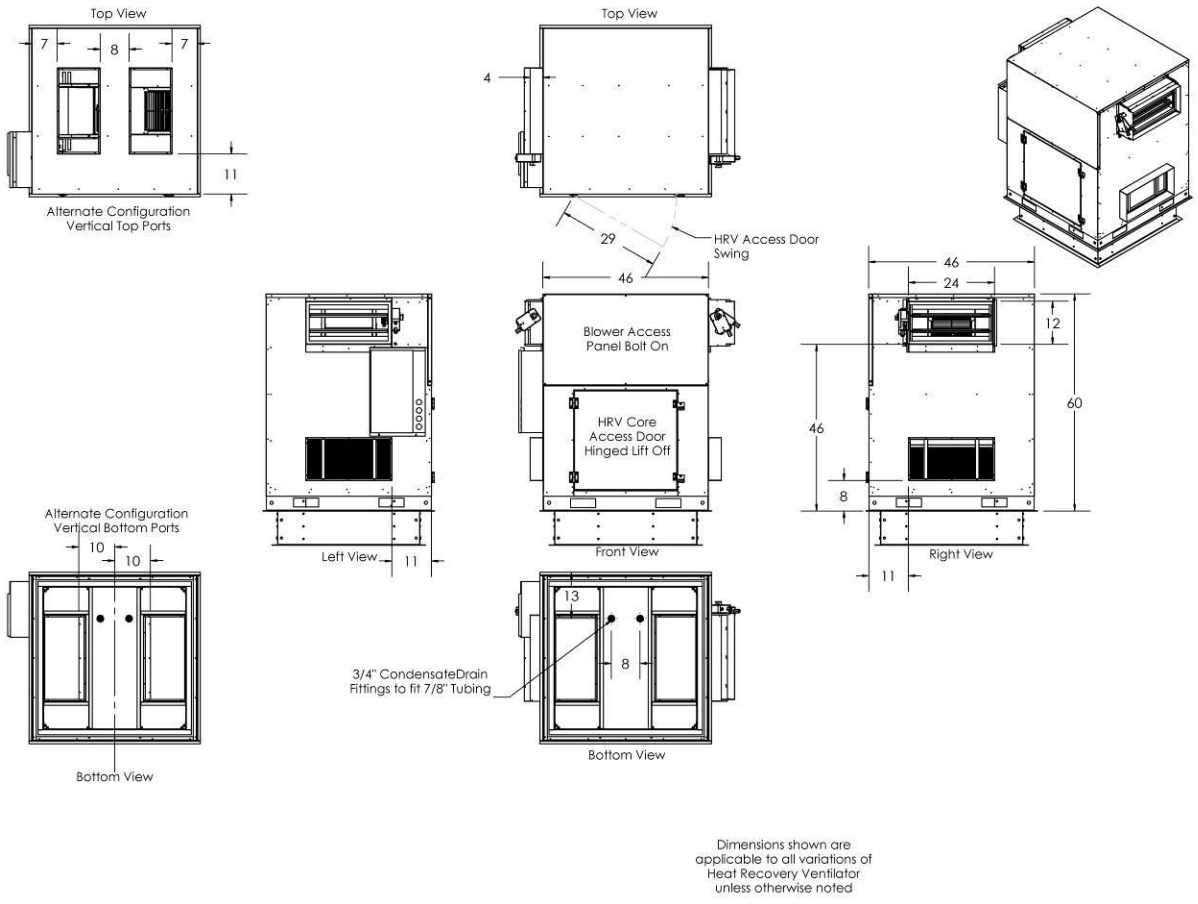
An auxiliary contact from each motor starter shall be provided. This contact is shipped dry but can be made 24VAC by moving a jumper.

Roof Curb

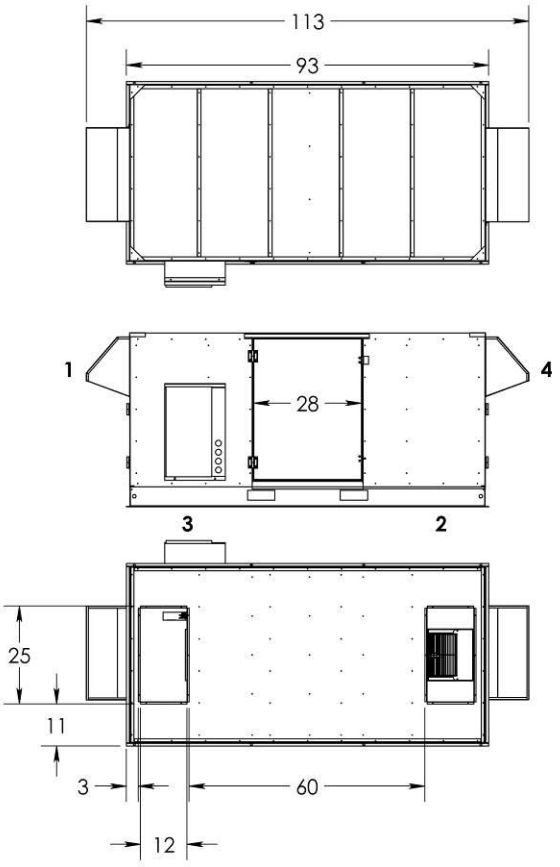
A 14” roof curb shall be supplied by the equipment manufacturer.

5 DIMENSIONAL DATA

5.1 NU0820

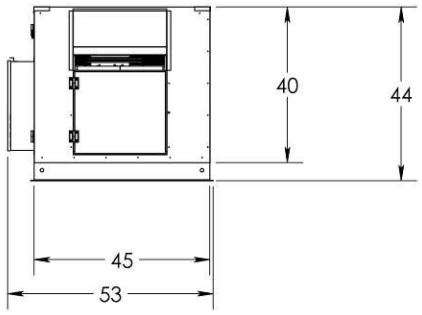


5.2 NU1030

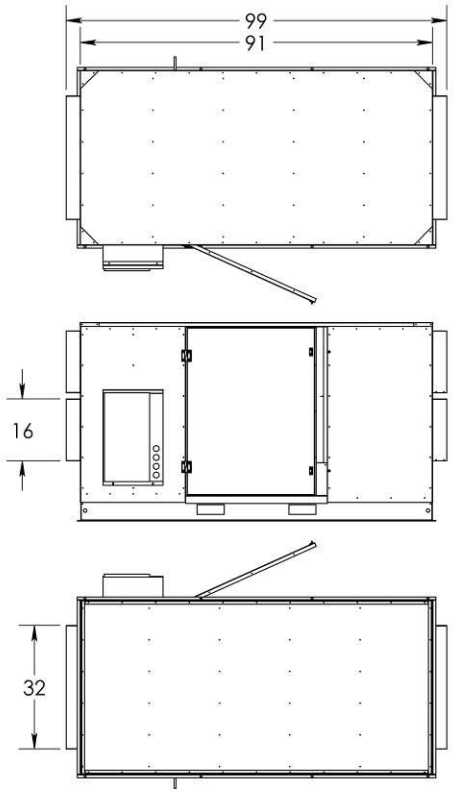


Air Stream	Designation	Location	
Standard Door Location		Standard	Option
Outside Air (OA)	1	Side	None
Supply Air (SA)	2	Bottom	Side
Return Air (RA)	3	Botton	Side*
Exhaust Air (EA)	4	Side	None
Reverse Door Location			
Outside Air (OA)	4	Side	None
Supply Air (SA)	3	Bottom	Side
Return Air (RA)	2	Bottom	Side*
Exhaust Air (EA)	1	Side	None

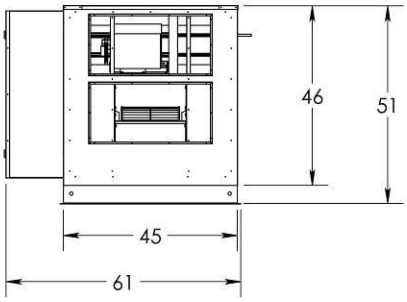
* When side port, OA hood must be field relocated to a minimun of 36" above nearest horizontal surface to avoid snow or rain entering or blocking the hood.



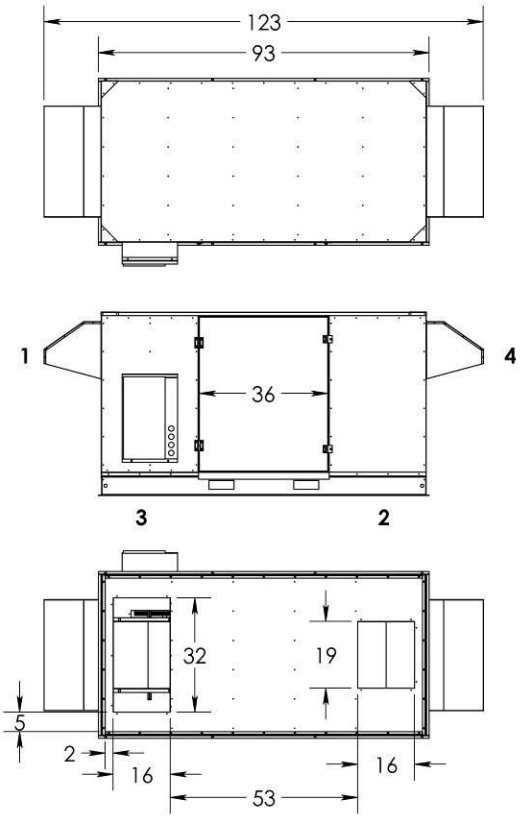
5.3 NU2035



Air Stream	Designation	Location	
Standard Door Location		Standard	Option
Outside Air (OA)	1	Side	None
Supply Air (SA)	2	Bottom	Side
Return Air (RA)	3	Bottom	Side*
Exhaust Air (EA)	4	Side	None
Reverse Door Location			
Outside Air (OA)	4	Side	None
Supply Air (SA)	3	Bottom	Side
Return Air (RA)	2	Bottom	Side*
Exhaust Air (EA)	1	Side	None

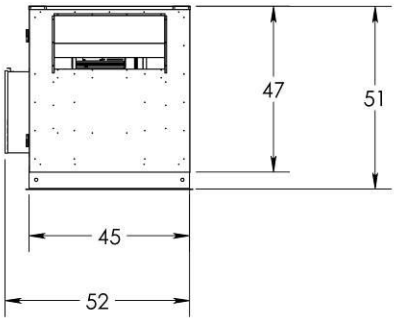


5.4 NU2540

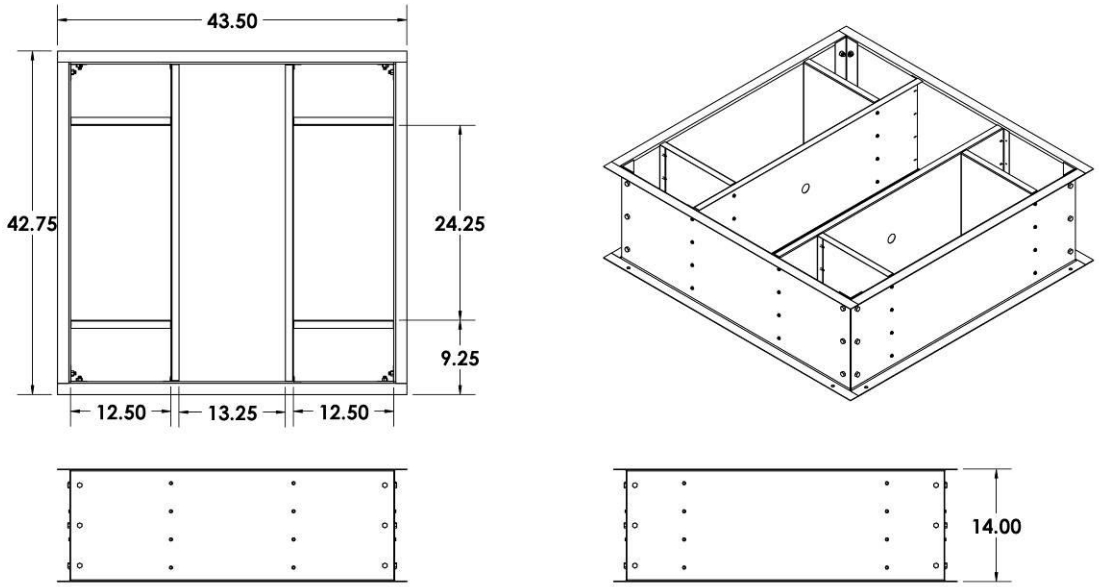


Air Stream	Designation	Location	
Standard Door Location		Standard	Option
Outside Air (OA)	1	Side	None
Supply Air (SA)	2	Bottom	Side
Return Air (RA)	3	Botton	Side*
Exhaust Air (EA)	4	Side	None
Reverse Door Location			
Outside Air (OA)	4	Side	None
Supply Air (SA)	3	Bottom	Side
Return Air (RA)	2	Bottom	Side*
Exhaust Air (EA)	1	Side	None

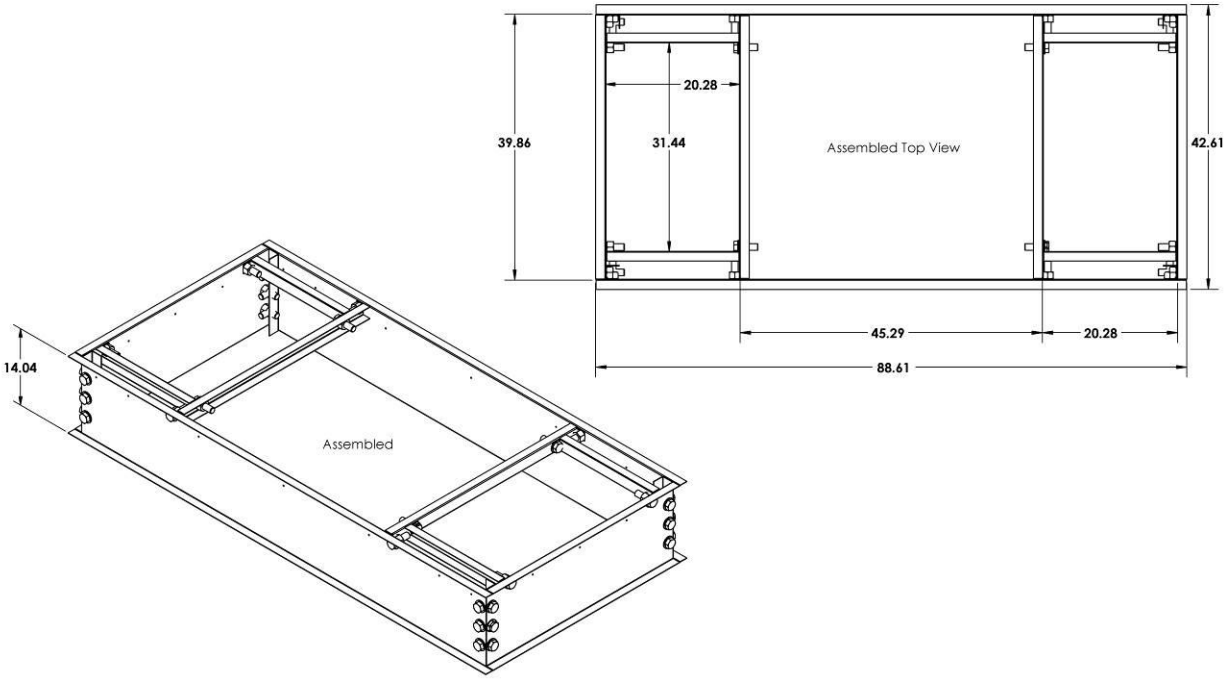
* When side port, OA hood must be field relocated to a minimun of 36" above nearest horizontal surface to avoid snow or rain entering or blocking the hood.



5.5 NU0820 Curb



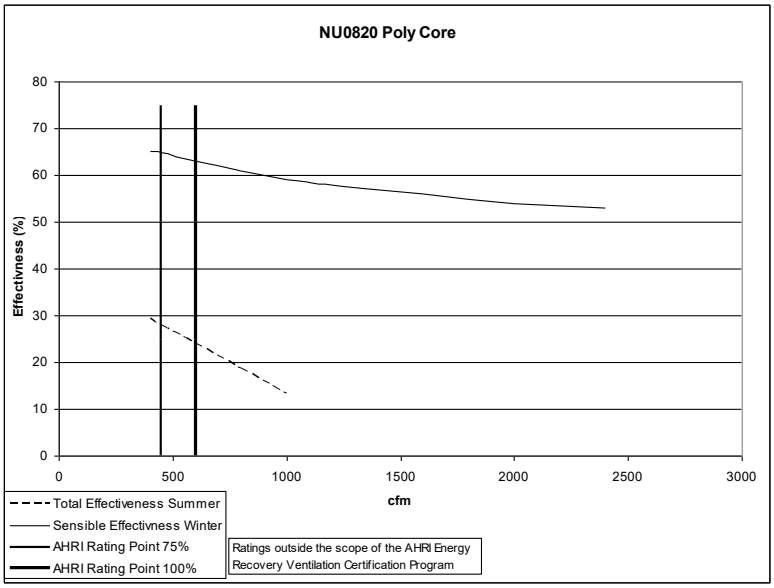
5.6 NU1030 and NU2540 Curb



6 PERFORMANCE DATA – EFFECTIVENESS

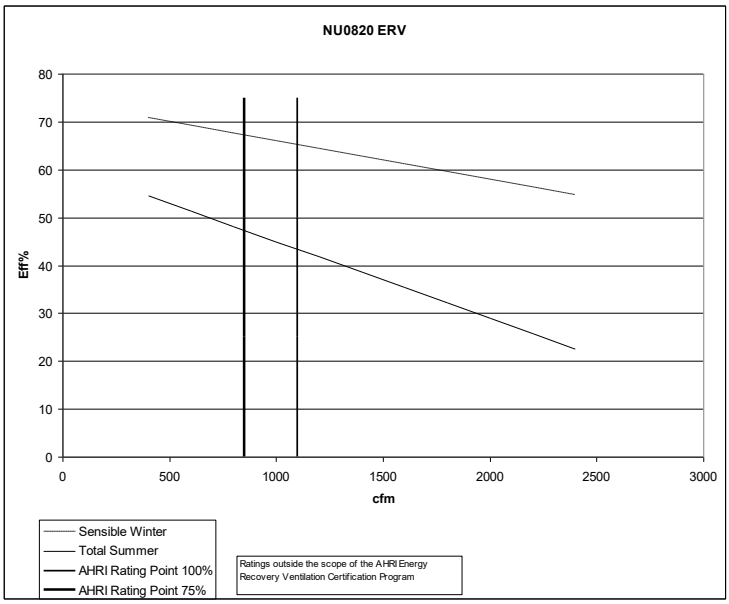
6.1 NU0820 & NU1030

6.1.1 HRV



Model no.	PC 18		
Type	Plate		
Nominal Air Flow (scfm)	300		
Pressure drop (inches)	0.07		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28

6.1.2 ERV



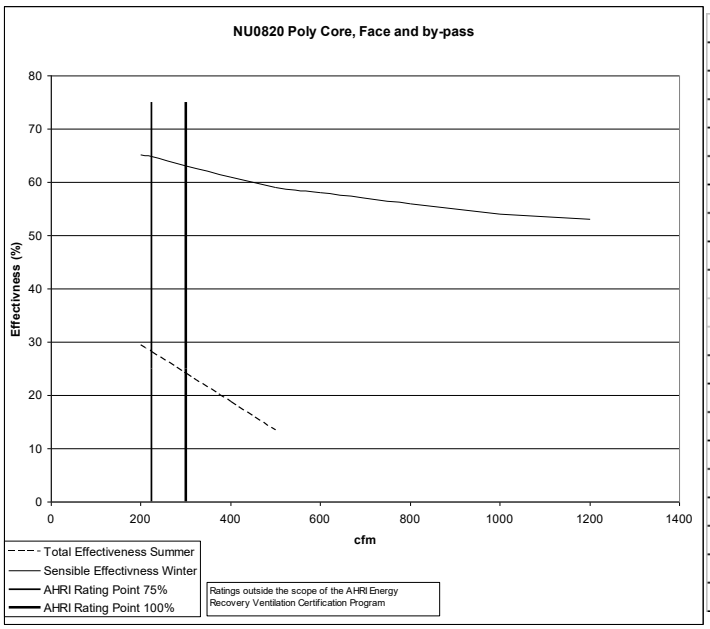
Model no.	EXC-17S-20H-250		
Type	Plate		
Nominal Air Flow (scfm)	550		
Pressure drop (inches)	0.35		
Leakage Ratings	Diff. Pressu	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00

Thermal Effectiveness Ratings at 0" Pressure Differential

	Sensible	Latent	Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49
	Net Sensib	Net Latent	Net Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49

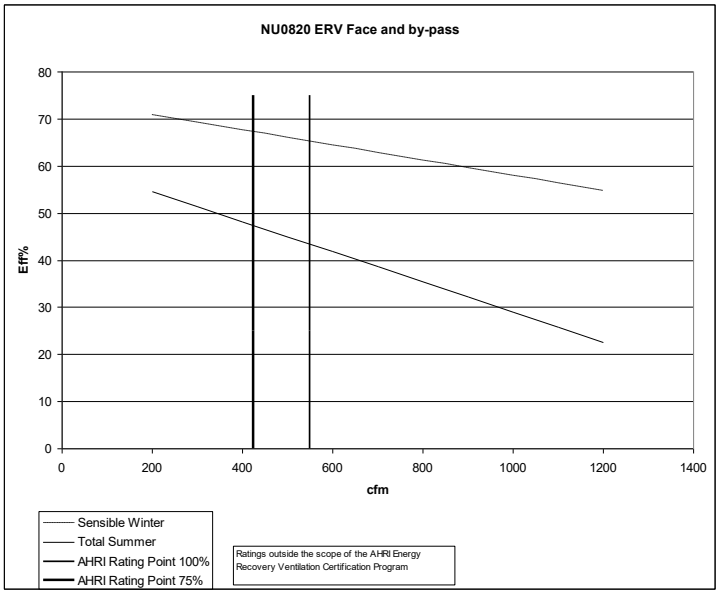
6.2 NU0820 Face and Bypass

6.2.1 HRV



Model no.	PC 18		
Type	Plate		
Nominal Air Flow (scfm)	300		
Pressure drop (inches)	0.07		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28

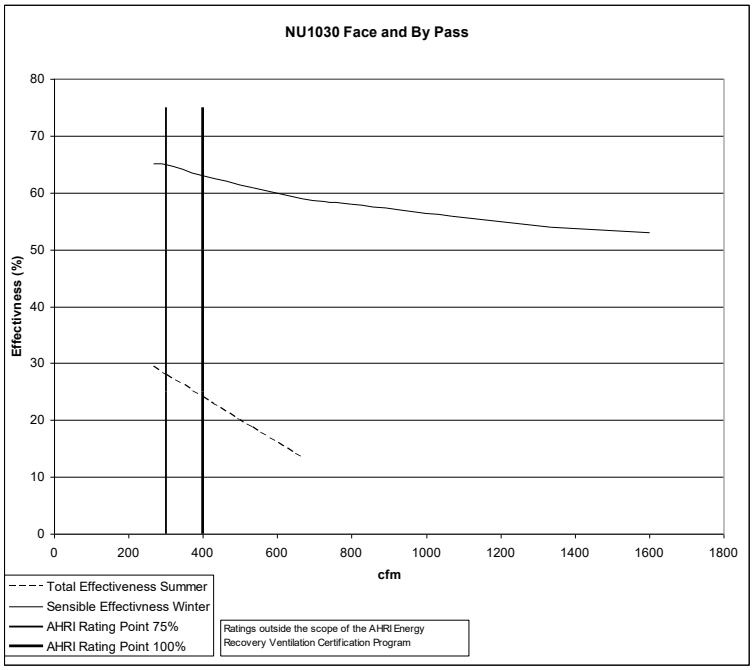
6.2.2 ERV



Model no.	EXC-17S-20H-250		
Type	Plate		
Nominal Air Flow (scfm)	550		
Pressure drop (inches)	0.35		
Leakage Ratings	Diff. Pressu	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49
	Net Sensib	Net Latent	Net Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49

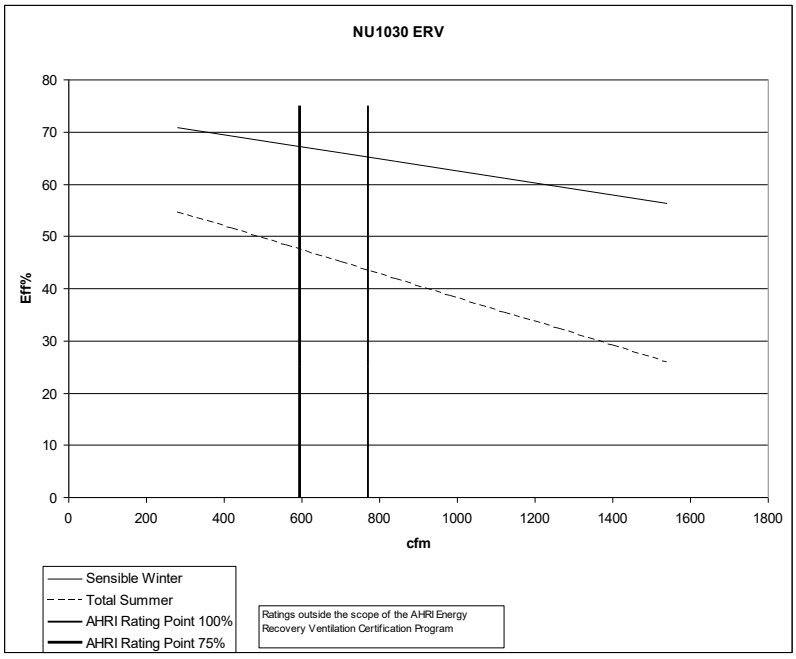
6.3 NU1030 face and Bypass

6.3.1 HRV



Model no.	PC 18		
Type	Plate		
Nominal Air Flow (scfm)	300		
Pressure drop (inches)	0.07		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	63	0	39
75% air Flow Heating	65	0	43
100% air Flow cooling	67	0	24
75% air Flow Cooling	71	0	28

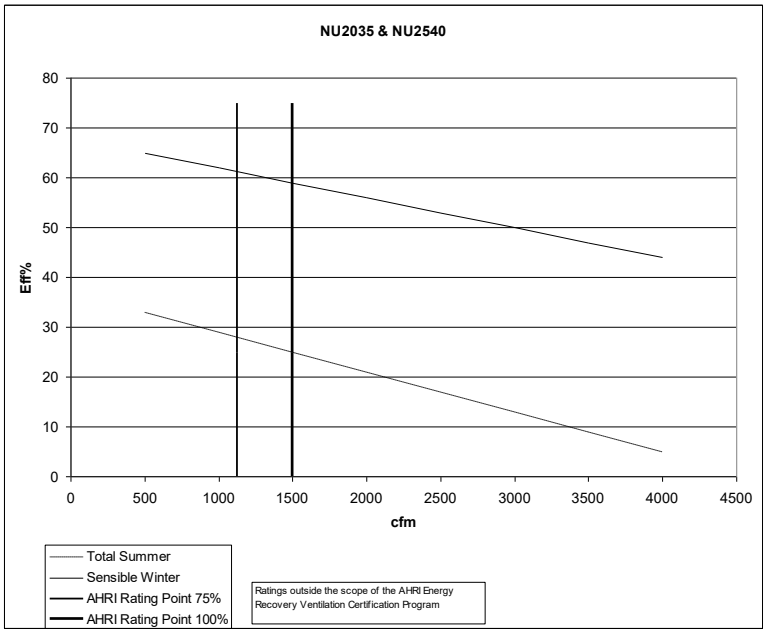
6.3.2 ERV



Model no.	EXC-17S-20H-250		
Type	Plate		
Nominal Air Flow (scfm)	550		
Pressure drop (inches)	0.35		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	66	30	54
75% air Flow Heating	68	32	56
100% air Flow cooling	80	24	45
75% air Flow Cooling	82	28	49

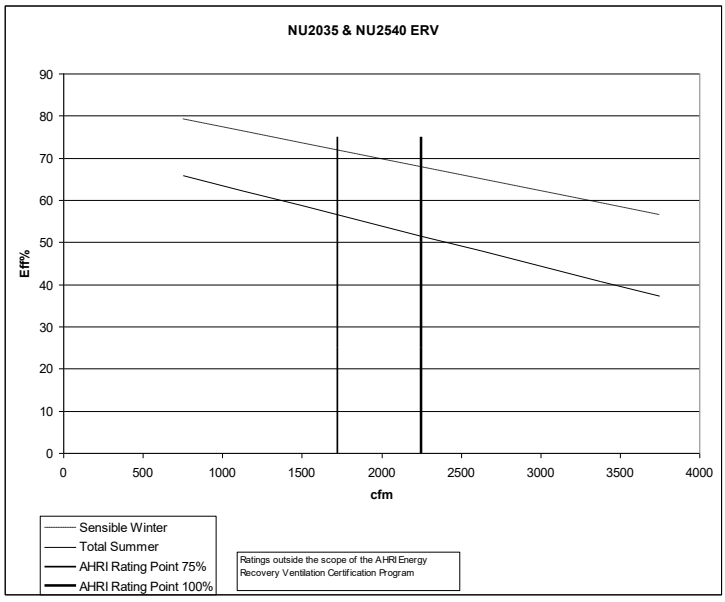
6.4 NU2035 & NU2540

6.4.1 HRV



Model no.	PC 24		
Type	Plate		
Nominal Air Flow (scfm)	500		
Pressure drop (inches)	0.18		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	59	0	38
75% air Flow Heating	62	0	42
100% air Flow cooling	60	0	25
75% air Flow Cooling	65	0	28
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	59	0	38
75% air Flow Heating	62	0	42
100% air Flow cooling	60	0	25
75% air Flow Cooling	65	0	28

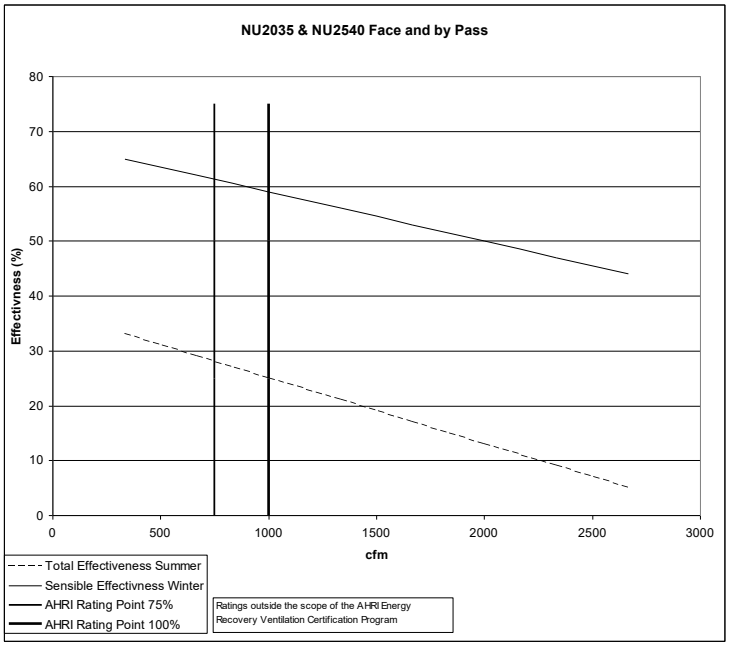
6.4.2 ERV



Model no.	EXC-24S-15H-250		
Type	Plate		
Nominal Air Flow (scfm)	750		
Pressure drop (inches)	0.63		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	68	38	58
75% air Flow Heating	72	40	61
100% air Flow cooling	81	34	52
75% air Flow Cooling	87	38	57
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	68	38	58
75% air Flow Heating	72	40	61
100% air Flow cooling	81	34	52
75% air Flow Cooling	87	38	57

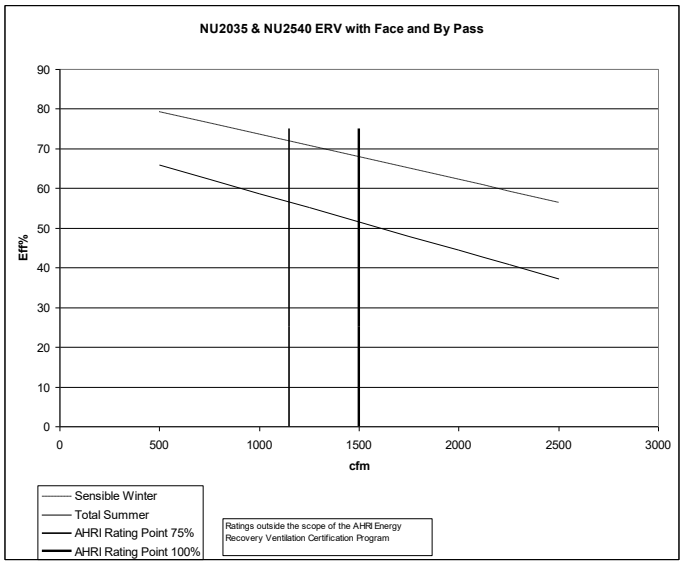
6.5 NU2035 & NU2540 Face and Bypass

6.5.1 HRV



Model no.	PC 24		
Type	Plate		
Nominal Air Flow (scfm)	500		
Pressure drop (inches)	0.18		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	59	0	38
75% air Flow Heating	62	0	42
100% air Flow cooling	60	0	25
75% air Flow Cooling	65	0	28
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	59	0	38
75% air Flow Heating	62	0	42
100% air Flow cooling	60	0	25
75% air Flow Cooling	65	0	28

6.5.2 ERV



Model no.	EXC-24S-15H-250		
Type	Plate		
Nominal Air Flow (scfm)	750		
Pressure drop (inches)	0.63		
Leakage Ratings	Diff. Pressure	EATR %	OACF
Test 1	-0.5	0.00	1.00
Test 2	0	0.00	1.00
Test 3	0.5	0.00	1.00
Thermal Effectiveness Ratings at 0" Pressure Differential			
	Sensible	Latent	Total
100% air Flow Heating	68	38	58
75% air Flow Heating	72	40	61
100% air Flow cooling	81	34	52
75% air Flow Cooling	87	38	57
	Net Sensible	Net Latent	Net Total
100% air Flow Heating	68	38	58
75% air Flow Heating	72	40	61
100% air Flow cooling	81	34	52
75% air Flow Cooling	87	38	57

7 PERFORMANCE DATA – FANS & MOTORS

7.1 NU0820 HRV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.16	723	0.23	879	0.32	1006	0.41	1115	0.5	1209	0.59	1295	3/4 HP	800
900		0.19	758	0.28	909	0.37	1035	0.47	1145	0.57	1242	0.67	1327		900
1000		0.23	796	0.33	943	0.43	1067	0.53	1175	0.64	1273	0.75	1361		1000
1100		0.27	826	0.37	969	0.48	1091	0.6	1199	0.71	1296	0.83	1385	1 HP	1100
1200		0.32	860	0.43	998	0.55	1118	0.67	1225	0.79	1322	0.92	2.06		1200
1300		0.37	886	0.49	1021	0.61	1139	0.74	1245	0.87	1342	1	1431		1300
1400		0.43	917	0.55	1047	0.68	1163	0.82	1268	0.96	1364	1.1	1452	1.5 HP	1400
1500		0.48	942	0.62	1067	0.75	1181	0.9	1285	1.04	1381	1.19	1469		1500
1600	3/4 HP	0.55	971	0.69	1092	0.83	1203	0.98	1306	1.14	1400	1.29	1488		1600
1700		0.62	1000	0.77	1116	0.92	1224	1.07	1325	1.23	1418	1.4	1506		1700
1800		0.7	1027	0.84	1135	1	1240	1.16	1340	1.33	1432	1.5	1519		1800
1900	1 HP	0.78	1057	0.93	1158	1.09	1260	1.26	1357	1.44	1449			N/A	1900
2000		0.87	1083	1.02	1177	1.18	1276	1.36	1371						2000

7.2 NU0820 HRV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.22	850	0.3	983	0.39	1095	0.48	1191	0.57	1278	0.67	1359	3/4 HP	800
900		0.27	898	0.36	1026	0.46	1137	0.56	1234	0.66	1320	0.76	1400	1 HP	900
1000		0.32	937	0.42	1062	0.53	1171	0.64	1269	0.75	1358	0.86	1437		1000
1100		0.38	979	0.49	1100	0.61	1207	0.72	1304	0.84	1392	0.96	1474		1100
1200		0.45	1018	0.57	1136	0.69	1241	0.81	1337	0.94	1424	1.07	1506	1.5 HP	1200
1300	3/4 HP	0.52	1055	0.65	1170	0.78	1273	0.91	1367	1.04	1454	1.18	1535		1300
1400		0.6	1090	0.73	1202	0.87	1303	1.01	1396	1.15	1483	1.3	1563		1400
1500		0.68	1123	0.82	1232	0.97	1332	1.11	1424	1.26	1509	1.42	1589		1500

7.3 NU0820 ERV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.18	790	0.27	932	0.35	1052	0.44	1153	0.53	1244	0.63	1327	3/4 HP	800
900		0.23	835	0.32	972	0.42	1090	0.51	1193	0.61	1283	0.71	1366		900
1000		0.28	876	0.38	1010	0.48	1125	0.59	1227	0.7	1320	0.81	1402	1 HP	1000
1100		0.33	914	0.44	1044	0.55	1157	0.67	1259	0.78	1351	0.9	1436		1100
1200		0.39	951	0.51	1077	0.62	1188	0.75	1288	0.87	1379	1	1464		1200
1300		0.45	985	0.58	1107	0.7	1217	0.83	1316	0.97	1406	1.1	1491	1.5 HP	1300
1400	3/4 HP	0.53	1022	0.66	1141	0.79	1248	0.93	1345	1.07	1435	1.22	1519		1400
1500		0.6	1053	0.74	1168	0.88	1273	1.03	1370	1.17	1459	1.33	1542		1500
1600		0.68	1083	0.82	1195	0.97	1298	1.12	1393	1.28	1481	1.44	1564		1600
1700	1 HP	0.77	1116	0.92	1224	1.07	1325	1.23	1418	1.4	1506			N/A	1700
1800		0.86	1148	1.02	1253	1.18	1351	1.35	1443						1800
1900		0.96	1175	1.12	1276	1.29	1372	1.46	1463						1900
2000	1.5 HP	1.06	1205	1.23	1303	1.41	1397								2000

7.4 NU0820 ERV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.29	963	0.38	1078	0.46	1176	0.56	1265	0.65	1346	0.75	1422	3/4 HP	800
900		0.36	1021	0.45	1133	0.55	1231	0.65	1317	0.76	1397	0.86	1472	1 HP	900
1000		0.43	1076	0.54	1183	0.65	1280	0.76	1367	0.87	1446	0.98	1519		1000
1100	3/4 HP	0.52	1131	0.64	1235	0.75	1329	0.87	1416	1	1495	1.12	1567	1.5 HP	1100
1200		0.62	1184	0.74	1284	0.87	1376	1	1461	1.13	1540	1.26	1614		1200

7.5 NU1030 HRV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1000	1/2 HP	0.24	822	0.34	964	0.44	1085	0.55	1192	0.66	1288	0.77	1374	1 HP	1000
1100		0.29	850	0.39	990	0.5	1109	0.61	1215	0.73	1311	0.85	1399		1100
1200		0.34	883	0.45	1018	0.57	1136	0.69	1241	0.81	1337	0.94	1424		1200
1300		0.39	909	0.51	1041	0.63	1157	0.76	1261	0.89	1356	1.03	1444	1 1/2 HP	1300
1400		0.44	934	0.57	1062	0.7	1176	0.84	1280	0.97	1375	1.12	1462		1400
1500		0.5	963	0.64	1086	0.78	1199	0.92	1301	1.07	1395	1.22	1483		1500
1600	3/4 HP	0.57	986	0.71	1106	0.85	1216	1	1317	1.16	1411	1.31	1498		1600
1700		0.63	1009	0.78	1125	0.93	1233	1.09	1333	1.25	1426	1.41	1512		1700
1800		0.71	1039	0.86	1148	1.02	1253	1.18	1351	1.35	1443	1.52	1529	2 HP	1800
1900	1 HP	0.8	1065	0.94	1166	1.11	1268	1.27	1365	1.45	1456	1.63	1542		1900
2000		0.89	1095	1.04	1189	1.2	1288	1.38	1382	1.56	1472	1.74	1557		2000
2100		0.98	1120	1.13	1211	1.3	1304	1.48	1396	1.67	1484	1.86	1568		2100
2200	1 1/2 HP	1.08	1149	1.24	1237	1.41	1323	1.59	1413	1.75	1499	1.98	1582		2200
2300		1.19	1174	1.35	1260	1.52	1341	1.71	1427	1.9	1511	2.11	1593	3 HP	2300
2400		1.31	1202	1.47	1286	1.65	1365	1.83	1444	2.03	1527	2.24	1607		2400
2500		1.43	1230	1.6	1311	1.78	1389	1.97	1463	2.17	1542	2.38	1620		2500
2600	2 HP	1.55	1254	1.73	1333	1.91	1409	2.1	1482	2.3	1555	2.52	1631		2600
2700		1.69	1282	1.87	1359	2.06	1433	2.26	1504	2.46	1573	2.67	1645		2700
2800		1.84	1309	2.03	1384	2.22	1456	2.42	1526	2.62	1594	2.83	1660		2800
2900		1.98	1332	2.18	1406	2.37	1477	2.58	1545	2.78	1612	3	1676		2900
3000	3 HP	2.15	1359	2.34	1431	2.54	1500	2.75	1567	2.96	1632			N/A	3000

7.6 NU1030 HRV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.19	802	0.27	943	0.36	1061	0.45	1161	0.54	1251	0.63	1334		800
900		0.23	841	0.32	977	0.42	1094	0.52	1197	0.62	1287	0.72	1369	3/4 HP	900
1000		0.28	876	0.38	1010	0.48	1125	0.59	1227	0.7	1320	0.81	1402		1000
1100		0.33	914	0.44	1044	0.55	1157	0.67	1259	0.78	1351	0.92	1445	1 HP	1100
1200		0.39	945	0.5	1072	0.62	1184	0.74	1284	0.87	1376	1	1461		1200
1300		0.44	974	0.57	1098	0.69	1208	0.82	1308	0.96	1399	1.09	1484		1300
1400	3/4 HP	0.51	1007	0.64	1127	0.78	1236	0.91	1334	1.05	1425	1.2	1509	1 1/2 HP	1400
1500		0.58	1038	0.72	1155	0.86	1261	1.01	1359	1.16	1449	1.31	1532		1500
1600		0.65	1064	0.8	1177	0.95	1282	1.1	1378	1.26	1468	1.41	1551		1600
1700		0.74	1093	0.89	1203	1.04	1305	1.2	1400	1.37	1489	1.53	1572		1700
1800	1 HP	0.82	1122	0.98	1228	1.14	1328	1.31	1421	1.48	1509	1.65	1591	2 HP	1800
1900		0.92	1149	1.08	1252	1.25	1350	1.42	1442	1.6	1528	1.78	1610		1900
2000	1 1/2 HP	1.02	1177	1.18	1276	1.36	1371	1.54	1461	1.72	1547	1.91	1628		2000

7.7 NU1030 ERV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1000	1/2 HP	0.29	899	0.39	1029	0.5	1142	0.6	1243	0.72	1334	0.83	1415	1 HP	1000
1100		0.35	937	0.46	1063	0.57	1174	0.68	1274	0.8	1365	0.92	1449		1100
1200		0.41	972	0.52	1095	0.64	1205	0.77	1303	0.89	1393	1.02	1477		1200
1300		0.47	1005	0.6	1126	0.72	1233	0.85	1331	0.99	1420	1.13	1503	1 1/2 HP	1300
1400	3/4 HP	0.54	1037	0.67	1154	0.81	1260	0.95	1357	1.09	1445	1.23	1528		1400
1500		0.62	1067	0.75	1181	0.9	1285	1.04	1381	1.19	1469	1.34	1552		1500
1600		0.69	1097	0.84	1207	0.99	1310	1.14	1404	1.3	1491	1.46	1573		1600
1700	1 HP	0.78	1129	0.94	1237	1.09	1336	1.25	1429	1.42	1516	1.59	1597	2 HP	1700
1800		0.87	1156	1.03	1261	1.2	1359	1.36	1450	1.54	1536	1.71	1617		1800
1900		0.97	1187	1.14	1288	1.31	1384	1.48	1474	1.66	1558	1.85	1638		1900
2000	1 1/2 HP	1.08	1213	1.25	1311	1.42	1404	1.6	1493	1.79	1576	1.98	1656		2000
2100		1.19	1243	1.36	1337	1.55	1428	1.73	1515	1.93	1597	2.12	1676		2100
2200		1.31	1274	1.49	1363	1.68	1451	1.87	1536	2.07	1617	2.27	1695		2200
2300		1.44	1303	1.61	1385	1.81	1471	2.01	1554	2.21	1634	2.42	1710	3 HP	2300
2400	2 HP	1.58	1334	1.75	1411	1.95	1494	2.16	1575	2.37	1653	2.58	1729		2400
2500		1.72	1364	1.91	1440	2.1	1516	2.31	1596	2.53	1672	2.75	1746		2500
2600		1.88	1397	2.07	1471	2.27	1542	2.48	1619	2.7	1694	2.93	1767		2600
2700	3 HP	2.05	1427	2.24	1498	2.44	1568	2.65	1639	2.88	1713				2700
2800		2.22	1456	2.42	1526	2.62	1594	2.83	1660					N/A	2800
2900		2.4	1485	2.6	1553	2.81	1620								2900
3000		2.59	1516	2.8	1583										3000

7.8 NU1030 ERV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.5			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
800	1/2 HP	0.24	884	0.32	1011	0.41	1119	0.5	1212	0.59	1298	0.69	1377	3/4 HP	800
900		0.29	936	0.39	1059	0.49	1166	0.59	1259	0.69	1343	0.79	1421	1 HP	900
1000		0.36	985	0.46	1103	0.57	1208	0.68	1302	0.79	1387	0.9	1464		1000
1100		0.42	1025	0.53	1140	0.65	1243	0.76	1336	0.88	1422	1.01	1501		1100
1200		0.5	1072	0.62	1184	0.74	1284	0.87	1376	1	1461	1.13	1540	1 1/2 HP	1200
1300	3/4 HP	0.58	1112	0.71	1221	0.84	1319	0.97	1410	1.11	1494	1.25	1572		1300
1400		0.67	1150	0.8	1256	0.94	1353	1.08	1442	1.23	1525	1.37	1603		1400
1500	1 HP	0.77	1190	0.91	1293	1.05	1388	1.2	1475	1.36	1558	1.51	1635		1500
1600		0.86	1224	1.01	1325	1.17	1418	1.33	1505	1.49	1586	1.65	1663	2 HP	1600
1700		0.97	1261	1.13	1359	1.29	1451	1.46	1536	1.63	1616	1.8	1692		1700
1800	1 1/2 HP	1.09	1297	1.26	1392	1.43	1482	1.6	1565	1.77	1645	1.95	1720		1800
1900		1.21	1331	1.39	1424	1.56	1511	1.74	1594	1.93	1672	2.11	1746	3 HP	1900
2000		1.35	1368	1.53	1458	1.71	1543	1.9	1625	2.09	1702	2.29	1775		2000

7.9 NU2035 HRV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
2000		0.29	544	0.41	656	0.54	753	0.66	838	0.78	914	0.90	982	1.01	1043	1.12	1099		2000
2100		0.31	553	0.44	663	0.58	759	0.70	843	0.83	918	0.95	986	1.07	1047	1.19	1104		2100
2200		0.34	563	0.47	670	0.61	765	0.75	848	0.88	922	1.01	990	1.14	1052	1.26	1109	1 1/2 HP	2200
2300	1/2 HP	0.37	572	0.50	678	0.65	770	0.79	853	0.93	927	1.07	995	1.20	1056	1.33	1113		2300
2400		0.40	581	0.54	685	0.69	776	0.84	858	0.98	931	1.13	999	1.27	1061	1.41	1118		2400
2500		0.43	591	0.58	692	0.73	782	0.89	863	1.04	936	1.19	1003	1.33	1065	1.48	1122		2500
2600		0.46	600	0.62	699	0.78	788	0.94	868	1.09	940	1.25	1007	1.40	1069	1.56	1127		2600
2700		0.50	609	0.66	707	0.82	794	0.99	872	1.15	945	1.31	1012	1.47	1074	1.63	1132		2700
2800		0.54	618	0.70	714	0.87	800	1.04	877	1.21	949	1.38	1016	1.54	1078	1.71	1136	2 HP	2800
2900	3/4 HP	0.58	628	0.74	721	0.92	805	1.09	882	1.27	954	1.44	1020	1.62	1083	1.79	1141		2900
3000		0.62	637	0.79	729	0.97	811	1.15	887	1.33	958	1.51	1025	1.69	1087	1.87	1145		3000
3100		0.66	646	0.84	736	1.02	817	1.21	892	1.39	962	1.58	1029	1.77	1091	1.95	1150		3100
3200		0.71	656	0.89	743	1.08	823	1.27	897	1.46	967	1.65	1033	1.84	1096	2.03	1155		3200
3300		0.76	665	0.94	751	1.13	829	1.33	902	1.52	971	1.72	1038	1.92	1100	2.12	1159		3300
3400		0.81	674	1.00	758	1.19	835	1.39	907	1.59	976	1.79	1042	2.00	1105	2.20	1164		3400
3500	1 HP	0.86	684	1.05	765	1.25	841	1.45	912	1.66	980	1.87	1046	2.08	1109	2.29	1168		3500
3600		0.92	693	1.11	772	1.31	846	1.52	917	1.73	985	1.94	1050	2.16	1113	2.38	1173	3 HP	3600
3700		0.98	702	1.17	780	1.37	852	1.58	922	1.80	989	2.02	1055	2.24	1118	2.47	1178		3700
3800		1.04	711	1.23	787	1.44	858	1.65	927	1.87	994	2.10	1059	2.33	1122	2.56	1182		3800
3900	1 1/2 HP	1.10	721	1.29	794	1.50	864	1.72	932	1.94	998	2.18	1063	2.41	1127	2.65	1187		3900
4000		1.16	730	1.36	802	1.57	870	1.79	937	2.02	1003	2.26	1068	2.50	1131	2.74	1191		4000

7.10 NU2035 HRV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1600		0.26	586	0.35	689	0.45	775	0.54	851	0.63	919	0.72	981	0.81	1039	0.90	1093	1 HP	1600
1700		0.29	597	0.39	699	0.49	784	0.59	860	0.69	928	0.78	990	0.88	1048	0.98	1102		1700
1800		0.32	608	0.42	709	0.54	794	0.64	869	0.74	937	0.85	999	0.95	1057	1.05	1112		1800
1900	1/2 HP	0.35	619	0.46	718	0.58	803	0.69	879	0.80	946	0.91	1009	1.02	1067	1.13	1121		1900
2000		0.39	630	0.51	728	0.63	812	0.75	888	0.86	956	0.98	1018	1.10	1076	1.21	1130	1 1/2 HP	2000
2100		0.42	641	0.55	738	0.68	822	0.80	897	0.92	965	1.05	1027	1.17	1085	1.29	1140		2100
2200		0.46	652	0.59	748	0.73	831	0.86	906	0.98	974	1.12	1036	1.25	1094	1.37	1149		2200
2300		0.50	663	0.64	758	0.78	841	0.92	915	1.05	983	1.19	1045	1.33	1103	1.46	1158		2300
2400		0.54	674	0.69	767	0.83	850	0.98	925	1.12	992	1.26	1055	1.41	1113	1.55	1167		2400
2500	3/4 HP	0.58	685	0.74	777	0.89	859	1.04	934	1.18	1001	1.34	1064	1.49	1122	1.63	1177		2500
2600		0.63	696	0.79	787	0.95	869	1.10	943	1.25	1010	1.41	1073	1.57	1131	1.72	1186	2 HP	2600
2700		0.68	707	0.84	797	1.00	878	1.17	952	1.33	1019	1.49	1082	1.66	1140	1.82	1195		2700
2800		0.73	718	0.90	807	1.06	887	1.23	961	1.40	1029	1.57	1091	1.74	1149	1.91	1205		2800
2900	1 HP	0.78	729	0.95	816	1.13	897	1.30	971	1.47	1038	1.65	1101	1.83	1159	2.00	1214	3 HP	2900
3000		0.83	740	1.01	826	1.19	906	1.37	980	1.55	1047	1.73	1110	1.92	1168	2.10	1223		3000

7.11 NU2035 ERV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
2000	1/2 HP	0.41	656	0.53	752	0.65	835	0.77	908	0.89	975	1.01	1037	1.12	1093	1.23	1147	1 1/2 HP	2000
2100		0.45	671	0.58	766	0.71	848	0.83	921	0.96	988	1.08	1049	1.20	1106	1.32	1159		2100
2200		0.49	681	0.62	776	0.76	857	0.89	930	1.02	997	1.15	1058	1.28	1115	1.41	1169		2200
2300	3/4 HP	0.53	691	0.67	785	0.81	866	0.95	939	1.09	1006	1.22	1067	1.36	1124	1.49	1178		2300
2400		0.58	705	0.73	798	0.87	878	1.01	951	1.16	1017	1.30	1078	1.45	1135	1.59	1189	2 HP	2400
2500		0.63	714	0.78	806	0.93	887	1.08	959	1.23	1025	1.38	1087	1.53	1144	1.68	1198		2500
2600		0.68	727	0.83	818	0.99	898	1.15	970	1.30	1036	1.46	1097	1.62	1154	1.77	1208		2600
2700		0.73	737	0.89	825	1.05	906	1.21	978	1.38	1044	1.54	1105	1.70	1162	1.86	1216		2700
2800	1 HP	0.78	749	0.95	837	1.12	916	1.29	988	1.46	1054	1.63	1114	1.80	1172	1.96	1225		2800
2900		0.84	759	1.01	844	1.18	923	1.36	995	1.53	1061	1.71	1122	1.88	1179	2.06	1233		2900
3000		0.90	771	1.08	855	1.26	933	1.44	1005	1.62	1070	1.80	1131	1.98	1188	2.16	1242		3000
3100		0.96	784	1.15	866	1.33	943	1.52	1014	1.71	1080	1.89	1140	2.08	1197	2.27	1251		3100
3200	1 1/2 HP	1.03	796	1.22	876	1.41	952	1.60	1023	1.80	1089	1.99	1149	2.18	1206	2.37	1259		3200
3300		1.09	806	1.28	884	1.48	959	1.68	1029	1.88	1095	2.08	1155	2.28	1212	2.48	1266	3 HP	3300
3400		1.16	819	1.36	894	1.56	968	1.77	1037	1.97	1103	2.18	1164	2.38	1220	2.59	1274		3400
3500		1.23	832	1.44	905	1.65	977	1.86	1046	2.07	1111	2.28	1172	2.49	1228	2.70	1282		3500
3600		1.31	845	1.52	916	1.74	986	1.95	1054	2.17	1119	2.38	1179	2.60	1236	2.82	1290		3600
3700		1.39	858	1.60	926	1.82	996	2.05	1062	2.27	1126	2.49	1187	2.71	1.23	2.94	1297		3700
3800		1.47	871	1.69	937	1.92	1005	2.14	1071	2.37	1134	2.60	1194	2.83	1251				3800
3900	2 HP	1.56	884	1.78	948	2.01	1014	2.24	1079	2.48	1141	2.71	1201	2.95	1258				3900
4000		1.65	897	1.87	960	2.11	1023	2.35	1087	2.59	1149	2.83	1208						4000

7.12 NU2035 ERV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1600	1/2 HP	0.38	711	0.47	795	0.56	868	0.65	934	0.74	995	0.83	1052	0.92	1106	1.02	1156	1 1/2 HP	1600
1700		0.43	729	0.52	812	0.62	884	0.72	950	0.81	1010	0.91	1067	1.00	1121	1.11	1171		1700
1800		0.47	747	0.57	829	0.68	900	0.79	965	0.89	1026	0.99	1082	1.09	1136	1.20	1185		1800
1900	3/4 HP	0.53	765	0.63	846	0.75	917	0.86	981	0.97	1041	1.08	1097	1.18	1150	1.29	1200		1900
2000		0.58	783	0.69	863	0.81	933	0.93	997	1.05	1056	1.16	1112	1.28	1165	1.39	1214		2000
2100		0.64	801	0.76	880	0.89	949	1.01	1012	1.14	1072	1.26	1127	1.37	1180	1.49	1229		2100
2200		0.70	819	0.83	897	0.96	965	1.09	1028	1.23	1087	1.35	1142	1.48	1195	1.60	1243	2 HP	2200
2300	1 HP	0.77	837	0.90	914	1.04	981	1.18	1044	1.32	1103	1.45	1157	1.58	1210	1.71	1258		2300
2400		0.84	855	0.98	930	1.12	998	1.27	1060	1.42	1118	1.55	1172	1.69	1224	1.82	1273		2400
2500		0.91	873	1.06	947	1.21	1014	1.36	1075	1.51	1133	1.66	1187	1.80	1239	1.94	1287		2500
2600		0.99	891	1.14	964	1.30	1030	1.46	1091	1.61	1149	1.76	1202	1.92	1254	2.06	1302		2600
2700	1 1/2 HP	1.07	909	1.23	981	1.39	1046	1.55	1107	1.72	1164	1.88	1217	2.03	1269	2.19	1316		2700
2800		1.15	927	1.32	998	1.49	1062	1.66	1122	1.83	1179	1.99	1232	2.16	1284	2.32	1331	3 HP	2800
2900		1.24	945	1.41	1015	1.59	1079	1.76	1138	1.94	1195	2.11	1247	2.28	1298	2.45	1345		2900
3000		1.33	963	1.51	1032	1.69	1095	1.87	1154	2.05	1210	2.23	1262	2.41	1313	2.59	1360		3000

7.13 NU2540 HRV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
2400	1 HP	0.9	896	1.05	967	1.19	1032	1.34	1092	1.48	1149	1.62	1202	1.76	1251	1.89	1299	2 HP	2400
2500		0.98	914	1.13	984	1.28	1048	1.43	1108	1.58	1164	1.73	1216	1.88	1266	2.02	1313		2500
2600	1 1/2 HP	1.06	931	1.22	1000	1.37	1063	1.53	1122	1.69	1178	1.84	1231	2	1281	2.15	1328		2600
2700		1.14	947	1.31	1015	1.47	1078	1.63	1137	1.79	1192	1.95	1245	2.12	1294	2.28	1342		2700
2800		1.23	963	1.4	1031	1.57	1093	1.73	1151	1.9	1206	2.07	1258	2.24	1308	2.41	1355	3 HP	2800
2900		1.32	979	1.49	1046	1.67	1107	1.84	1165	2.02	1220	2.19	1272	2.36	1321	2.54	1368		2900
3000		1.41	994	1.59	1060	1.77	1122	1.95	1179	2.13	1233	2.31	1285	2.49	1334	2.67	1381		3000
3100		1.5	1009	1.69	1075	1.88	1135	2.07	1193	2.25	1246	2.44	1298	2.63	1346	2.81	1393		3100
3200	2 HP	1.6	1023	1.8	1089	1.99	1149	2.18	1206	2.37	1259	2.57	1310	2.76	1359	2.95	1405		3200
3300		1.7	1037	1.9	1102	2.1	1162	2.3	1219	2.5	1272	2.7	1323	2.9	1371				3300
3400		1.82	1054	2.02	1118	2.23	1178	2.43	1233	2.64	1286	2.84	1337						3400
3500		1.93	1067	2.14	1131	2.35	1190	2.56	1246	2.77	1298	2.98	1349						3500
3600	3 HP	2.04	1080	2.26	1143	2.47	1203	2.69	1258	2.91	1310							N/A	3600
3700		2.15	1093	2.38	1156	2.6	1215	2.82	1270										3700
3800		2.27	1106	2.5	1168	2.73	1226	2.96	1282										3800
3900		2.4	1122	2.64	1182	2.87	1240												3900
4000		2.53	1134	2.77	1194														4000

7.14 NU2540 HRV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1600	1/2 HP	0.46	785	0.55	859	0.64	926	0.73	988	0.82	1045	0.91	1099	1.01	1150	1.1	1199		1600
1700	3/4 HP	0.52	809	0.62	882	0.71	948	0.81	1003	0.9	1066	1	1119	1.1	1169	1.2	1217	1 1/2 HP	1700
1800		0.58	832	0.69	904	0.79	969	0.89	1029	0.99	1085	1.09	1138	1.19	1188	1.3	1236		1800
1900		0.65	855	0.76	926	0.87	990	0.98	1049	1.08	1105	1.19	1157	1.3	1206	1.4	1254		1900
2000		0.72	877	0.84	947	0.96	1010	1.07	1069	1.18	1124	1.29	1175	1.4	1225	1.52	1271	2 HP	2000
2100	1 HP	0.8	901	0.92	969	1.05	1032	1.17	1090	1.28	1144	1.4	1195	1.52	1244	1.64	1291		2100
2200		0.87	922	1.01	989	1.14	1051	1.27	1109	1.39	1162	1.51	1213	1.64	1261	1.76	1308		2200
2300		0.95	942	1.09	1008	1.23	1070	1.37	1127	1.5	1180	1.63	1231	1.76	1278	1.88	1324		2300
2400	1 1/2 HP	1.04	962	1.18	1027	1.33	1088	1.47	1144	1.61	1198	1.75	1248	1.88	1295	2.02	1341		2400
2500		1.13	981	1.28	1045	1.43	1105	1.58	1161	1.73	1214	1.87	1264	2.01	1312	2.15	1357		2500
2600		1.22	1002	1.38	1066	1.54	1125	1.69	1180	1.85	1233	2	1282	2.15	1330	2.3	1375		2600
2700		1.32	1020	1.48	1083	1.64	1142	1.81	1197	1.97	1249	2.13	1298	2.29	1345	2.44	1390	3 HP	2700
2800		1.42	1038	1.59	1100	1.76	1158	1.92	1213	2.09	1264	2.26	1313	2.43	1360	2.59	1405		2800
2900	2 HP	1.53	1058	1.7	1119	1.88	1177	2.05	1231	2.23	1282	2.4	1330	2.57	1377	2.75	1422		2900
3000		1.63	1075	1.81	1136	2	1192	2.18	1246	2.36	1297	2.54	1345	2.72	1392	2.9	1436		3000

7.15 NU2540 ERV

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1.00		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
2400		1.08	981	1.22	1044	1.37	1104	1.51	1159	1.65	1212	1.84	1280	1.92	1308	2.05	1353		2400
2500		1.17	1002	1.32	1065	1.47	1124	1.62	1179	1.77	1231	1.92	1280	2.06	1326	2.2	1371		2500
2600	1 1/2 HP	1.27	1021	1.42	1083	1.58	1141	1.74	1195	1.89	1247	2.05	1296	2.19	1342	2.34	1387		2600
2700		1.37	1041	1.53	1102	1.7	1160	1.86	1214	2.02	1265	2.18	1313	2.34	1360	2.49	1404	3 HP	2700
2800		1.48	1061	1.65	1122	1.82	1178	1.98	1232	2.15	1282	2.32	1331	2.49	1377	2.65	1421		2800
2900		1.58	1078	1.76	1138	1.93	1194	2.11	1247	2.28	1298	2.45	1346	2.63	1392	2.8	1436		2900
3000	2 HP	1.7	1098	1.88	1157	2.06	1212	2.24	1265	2.42	1315	2.6	1362	2.78	1408	2.96	1452		3000
3100		1.82	1116	2.01	1175	2.19	1230	2.38	1282	2.57	1331	2.75	1378	2.94	1424				3100
3200		1.94	1135	2.14	1192	2.33	1247	2.52	1298	2.71	1347	2.91	1394						3200
3300		2.07	1153	2.27	1210	2.47	1264	2.67	1315	2.87	1363								3300
3400		2.2	1171	2.41	1227	2.61	1280	2.82	1331										3400
3500		2.34	1188	2.55	1244	2.76	1296	2.97	1347										3500
3600	3 HP	2.48	1205	2.7	1260	2.91	1312											N/A	3600
3700		2.63	1221	2.85	1276														3700
3800		2.77	1237																3800
3900		2.93	1253																3900
4000																			4000

7.16 NU2540 ERV Face and Bypass

		ESP = 0.25		ESP = 0.50		ESP = 0.75		ESP = 1		ESP = 1.25		ESP = 1.50		ESP = 1.75		ESP =2.00			
CFM	Motor Size	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	Motor Size	CFM
1600		0.57	876	0.66	942	0.75	1002	0.84	1059	0.94	1112	1.03	1162	1.12	1210	1.22	1256		1600
1700	3/4 HP	0.65	904	0.74	968	0.84	1027	0.93	1083	1.03	1135	1.13	1185	1.23	1232	1.33	1278	1 1/2 HP	1700
1800		0.73	931	0.83	994	0.93	1052	1.03	1107	1.13	1158	1.24	1207	1.34	1254	1.44	1299		1800
1900		0.82	960	0.93	1021	1.03	1078	1.14	1132	1.24	1183	1.35	1231	1.46	1278	1.57	1322		1900
2000	1 HP	0.92	988	1.03	1048	1.14	1104	1.25	1157	1.36	1207	1.47	1255	1.59	1300	1.7	1344	2 HP	2000
2100		1.01	1013	1.13	1072	1.25	1127	1.36	1179	1.48	1229	1.6	1276	1.72	1321	1.84	1364		2100
2200		1.11	1039	1.24	1098	1.37	1152	1.49	1203	1.61	1252	1.73	1299	1.86	1343	1.98	1386		2200
2300	1 1/2 HP	1.22	1065	1.36	1122	1.49	1176	1.62	1227	1.75	1275	1.87	1321	2	1365	2.13	1407		2300
2400		1.33	1090	1.48	1146	1.62	1200	1.75	1249	1.89	1297	2.02	1343	2.15	1386	2.29	1428		2400
2500		1.45	1114	1.6	1170	1.75	1222	1.89	1272	2.03	1319	2.17	1364	2.31	1407	2.45	1449		2500
2600		1.57	1138	1.73	1193	1.89	1245	2.04	1294	2.19	1340	2.33	1385	2.48	1428	2.62	1469	3 HP	2600
2700	2 HP	1.7	1162	1.86	1216	2.03	1267	2.19	1315	2.35	1362	2.5	1406	2.65	1448	2.8	1489		2700
2800		1.84	1187	2.01	1240	2.18	1290	2.35	1338	2.51	1384	2.67	1428	2.83	1470	2.99	1510		2800

8 ELECTRICAL DATA

8.1 Motors – all units

Mtr Data

	Voltage																			
hp	240/1										208/3									
	Stock	Type	Frame	RPM	Shaft	S.F.	Eff.	FLA	MCA	MOP	Stock	Type	Frame	RPM	Shaft	S.F.	Eff.	FLA	MCA	MOP
1/2	C612	TEFC	56	1725	5/8	1.15	67.1	3.6	9.1	15	H868	TEFC	56	1725	5/8	1.15	80.4	1.6	4.6	15
3/4	C669	TEFC	56	1725	5/8	1.15	69.3	5.2	12.7	20.0	H869	TEFC	56	1725	5/8	1.15	79.3	2.4	6.4	15
1	C683	TEFC	56	1725	5/8	1.15	71.0	7.5	17.9	25.0	H524	TEFC	56	1725	5/8	1.15	79.0	3.3	8.4	15
1.5	C693	TEFC	56	1725	5/8	1.15	72.0	7.5	17.9	25.0	H535	TEFC	56	1725	5/8	1.15	82.9	4.5	11.1	15.0
2	K200	TEFC	182T	1750	7/8	1.15		12.0	28.0	40.0	TE115	TEFC	145T	1730	7/8	1.15	86.5	5.6	13.6	20.0
3	K203	TEFC	184T	1725	7/8	1.15		16.0	37.0	55.0	TE121	TEFC	182T	1745	1 1/8	1.15	89.5	8.4	19.9	30.0

	Voltage																			
hp	460/3										575/3									
	Stock	Type	Frame	RPM	Shaft	S.F.	Eff.	FLA	MCA	MOP	Stock	Type	RPM	Frame	Shaft	S.F.	Eff.	FLA	MCA	MOP
1/2	H868	TEFC	56C	1725	5/8	1.15	80.4	0.9	3.0	15	H276	TENV	1725	56	5/8	1.15	77.0	0.7	2.6	15
3/4	H869	TEFC	56C	1725	5/8	1.15	79.3	1.2	3.7	15	H461	TENV	1725	56	5/8	1.15	82.0	0.8	2.8	15
1	H524	TEFC	56C	1725	5/8	1.15	79.0	1.7	4.8	15	H525	TEFC	1725	56	5/8	1.15	81.0	1.4	4.2	15
1.5	H535	TEFC	56HC	1725	5/8	1.15	82.9	2.2	6.0	15	TE109	TEFC	1740	145T	7/8	1.15	86.5	1.6	4.6	15
2	TE115	TEFC	145T	1730	7/8	1.15	86.5	2.5	6.6	15	TE116	TECF	1730	145T	7/8	1.15	86.5	2.2	6.0	15
3	TE121	TEFC	182T	1760	1 1/8	1.15	89.5	3.8	9.6	15	TE122	TEFC	1760	182T	1 1/8	1.15	89.5	3.1	8.0	15

MCA = **Minimum** circuit amps MOP = **Maximum** over-current protection Chose a standard sized overcurrent device equal or less than the

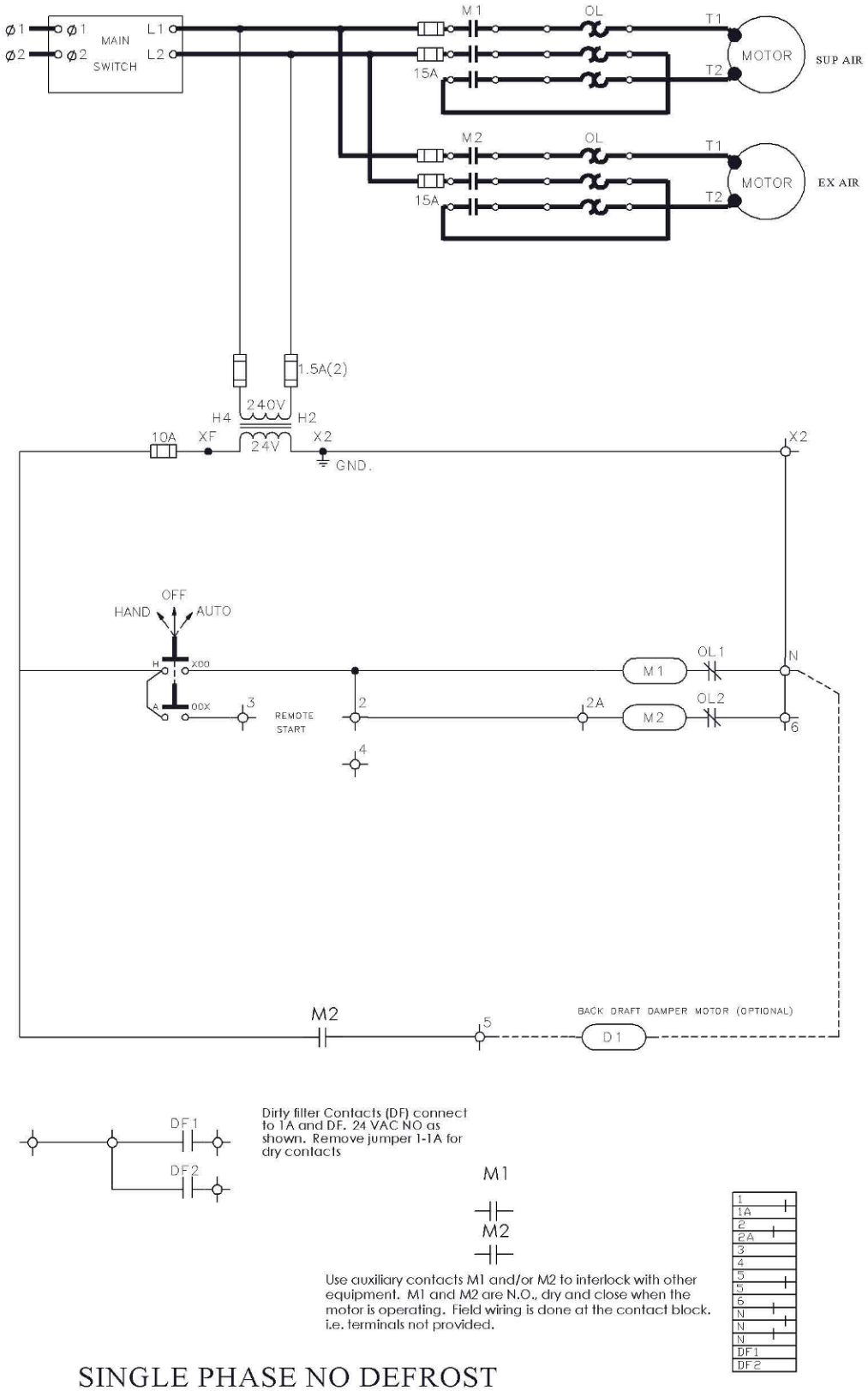
MCA = **Minimum** circuit amps MOP = **Maximum** over-current protection Chose a standard sized overcurrent device equal or less than the MOP

MCA & MOP are the HRV unit total based on both motors (supply and exhaust) being equal hp

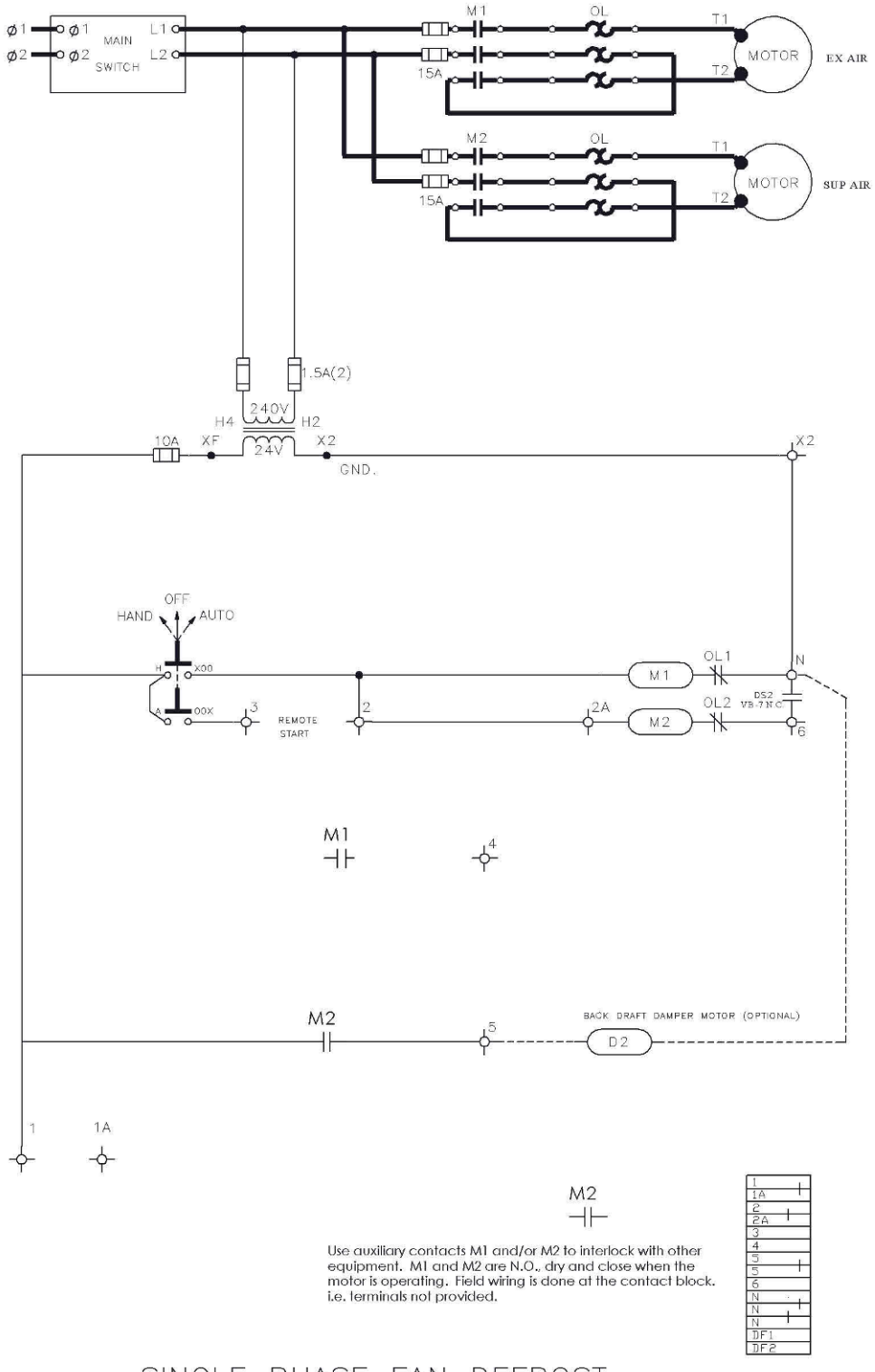
For unequal motors: MCA = FLA(larger mtr)*1.25 + FLA(smaller mtr) + 1 MOP = FLA(larger mtr)*2.25 + FLA(smaller mtr) + 1 rounded down to

8.2 Electrical Schematics

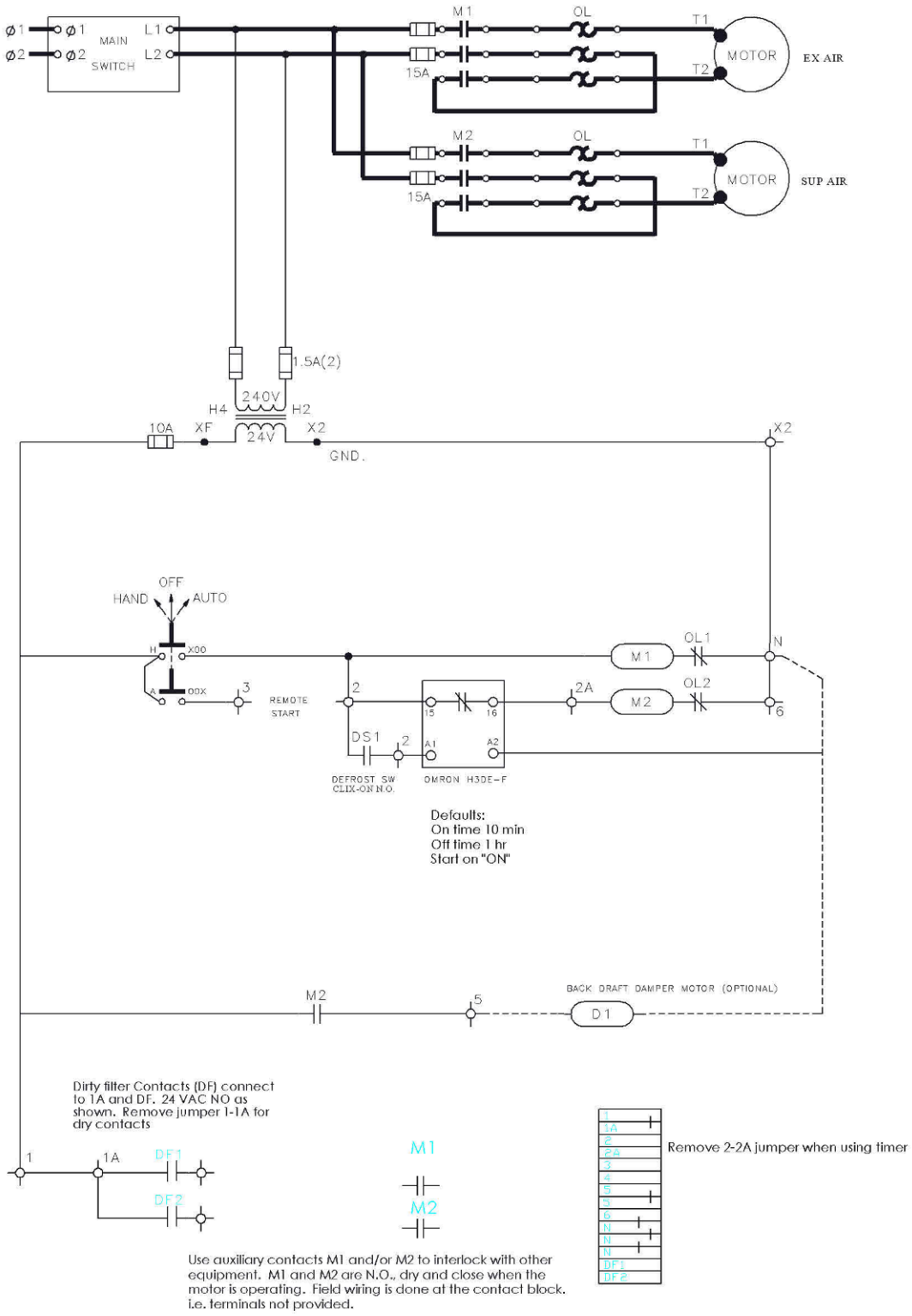
Several common electrical schematics are found in the following pages. The “as built” schematic for each unit is supplied with the equipment and is available from the factory by request.



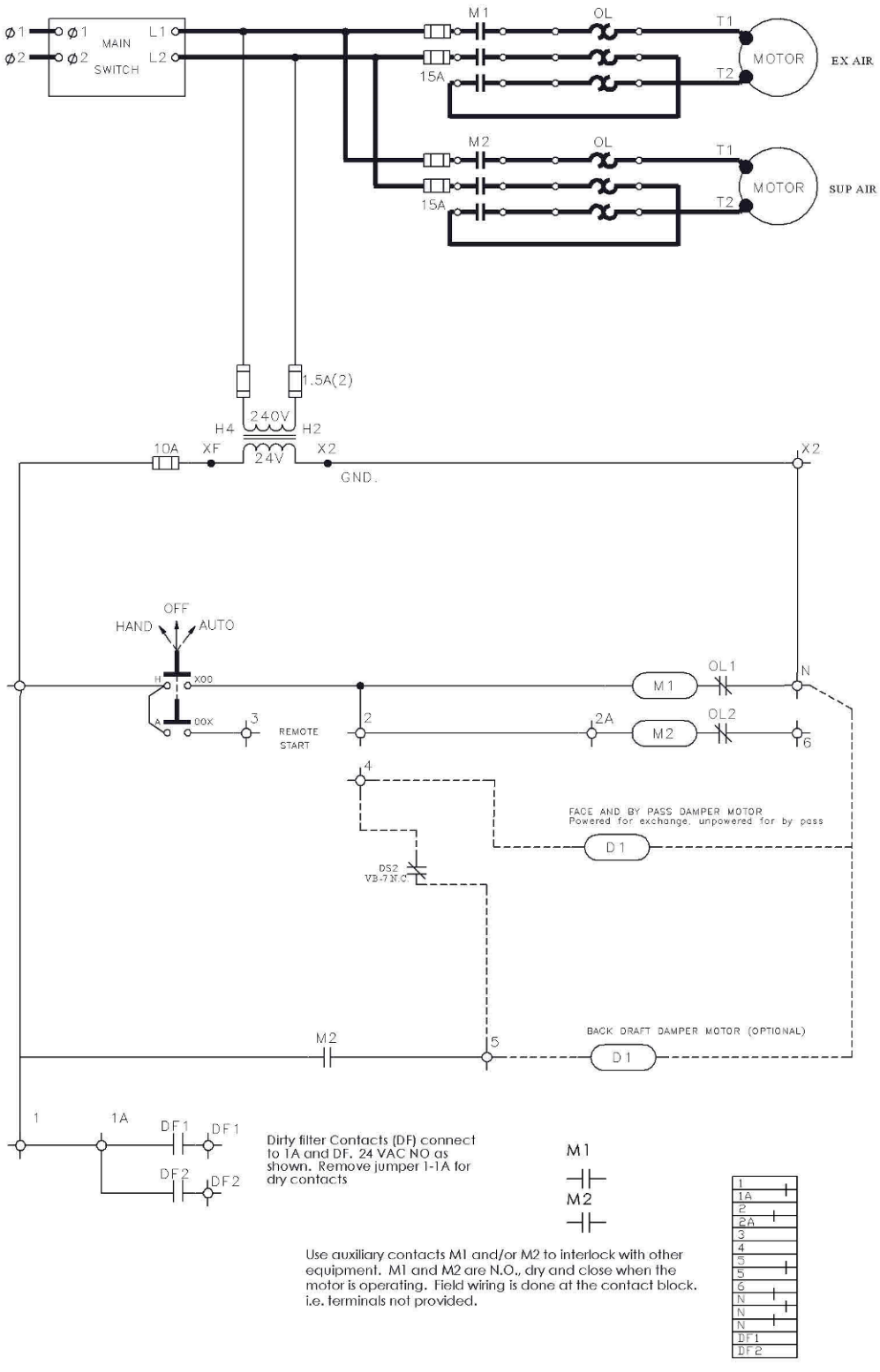
SINGLE PHASE NO DEFROST



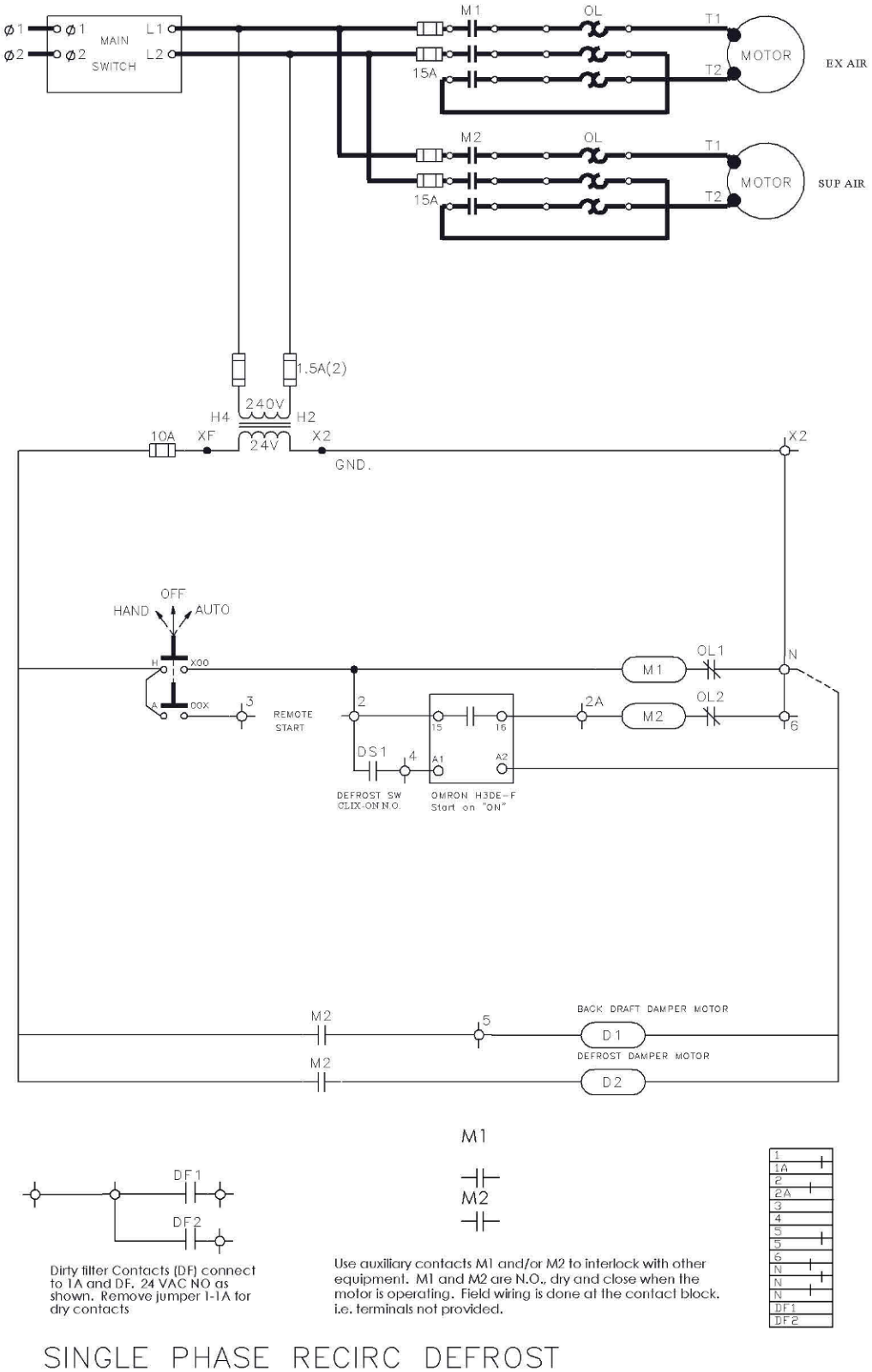
SINGLE PHASE FAN DEFROST



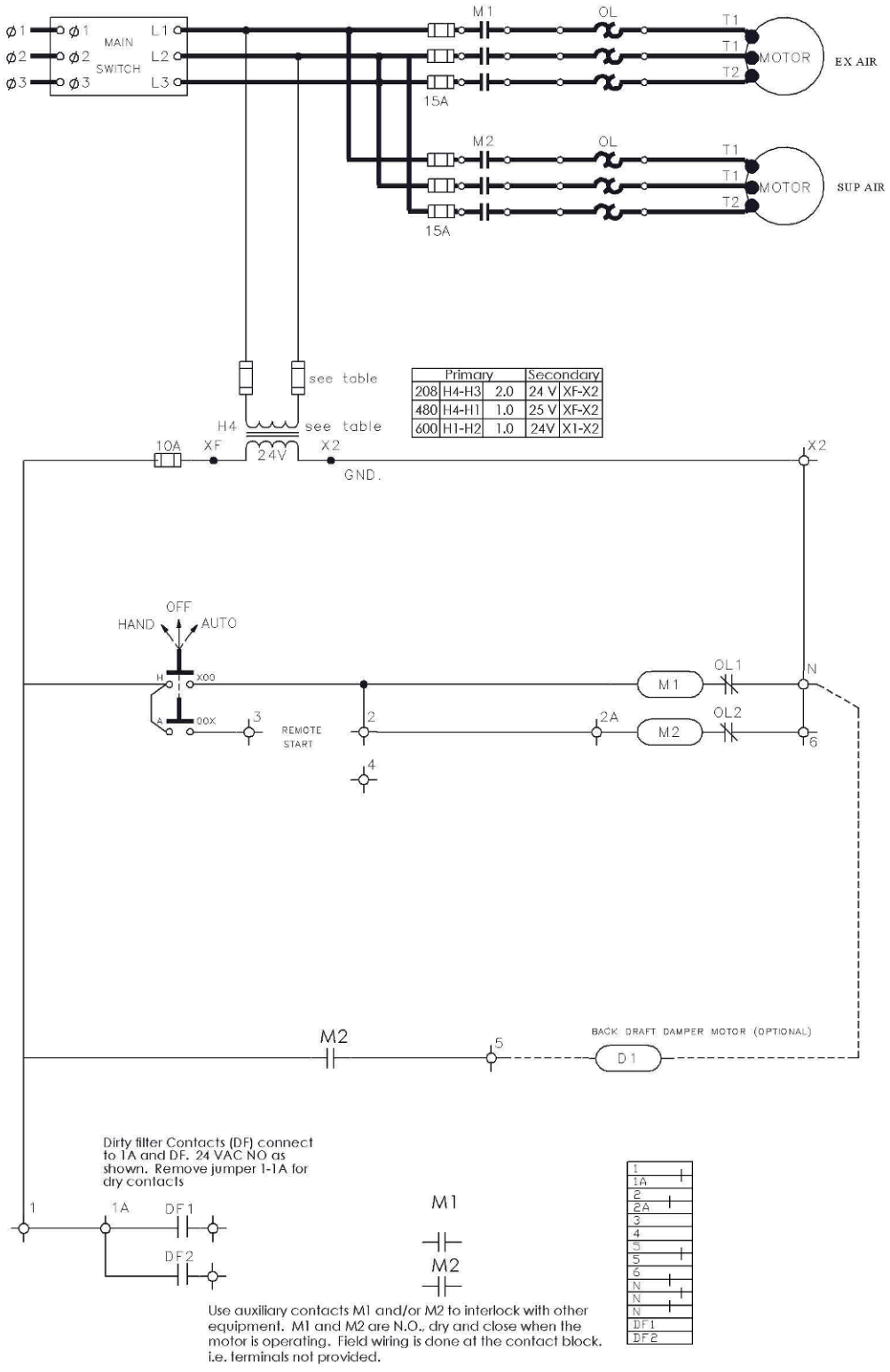
SINGLE PHASE TIMED FAN



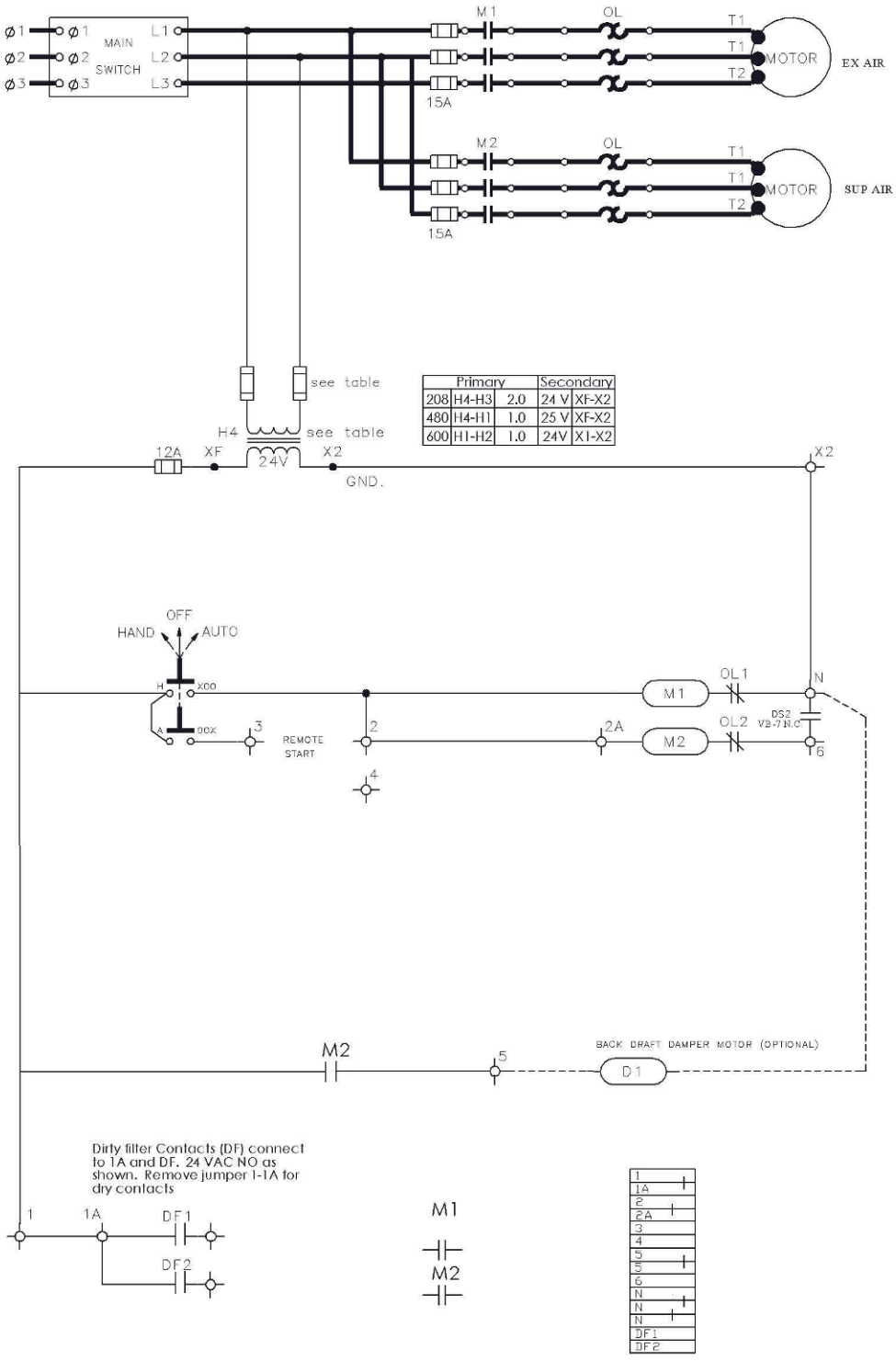
SINGLE PHASE FACE AND BY PASS



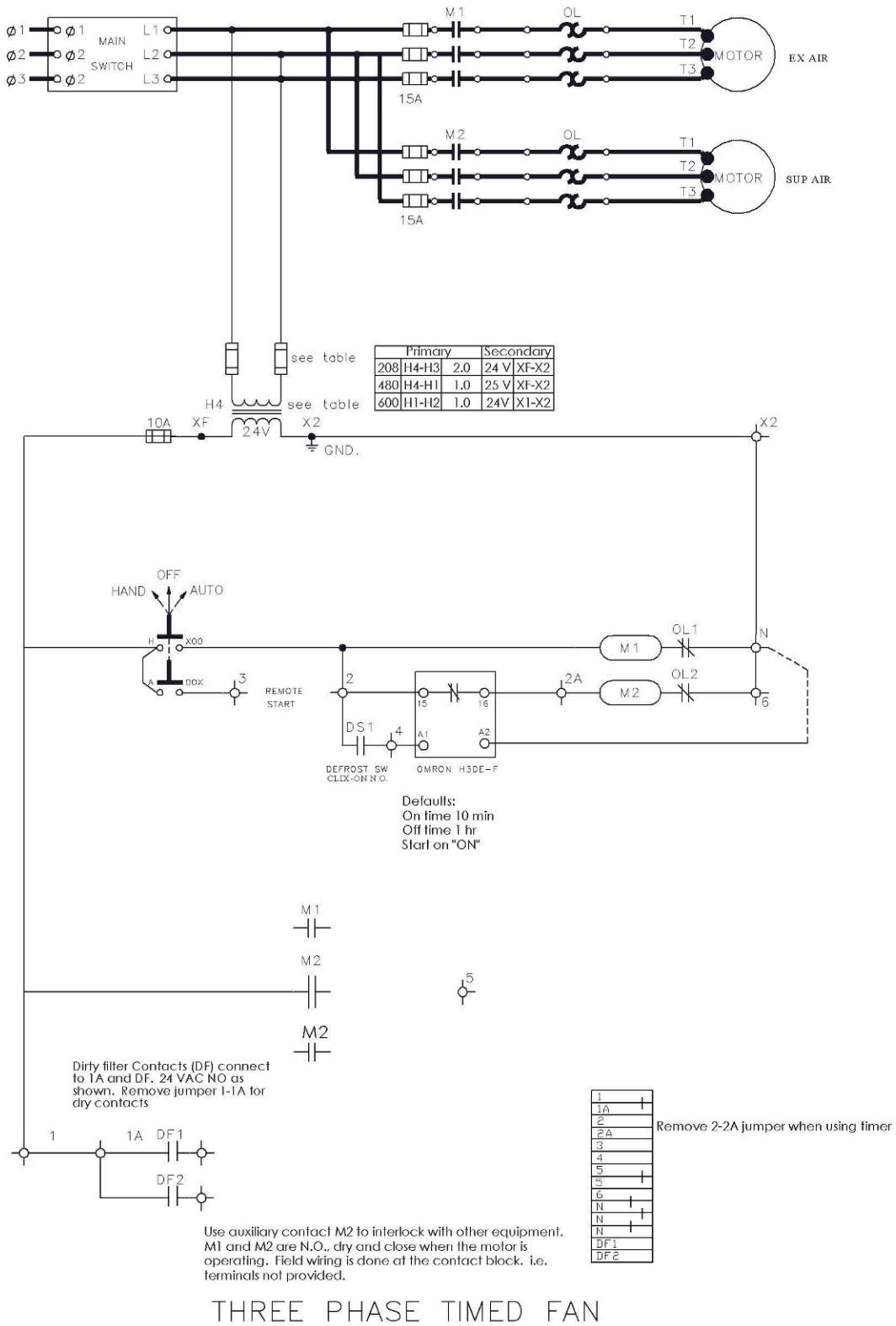
SINGLE PHASE RECIRC DEFROST



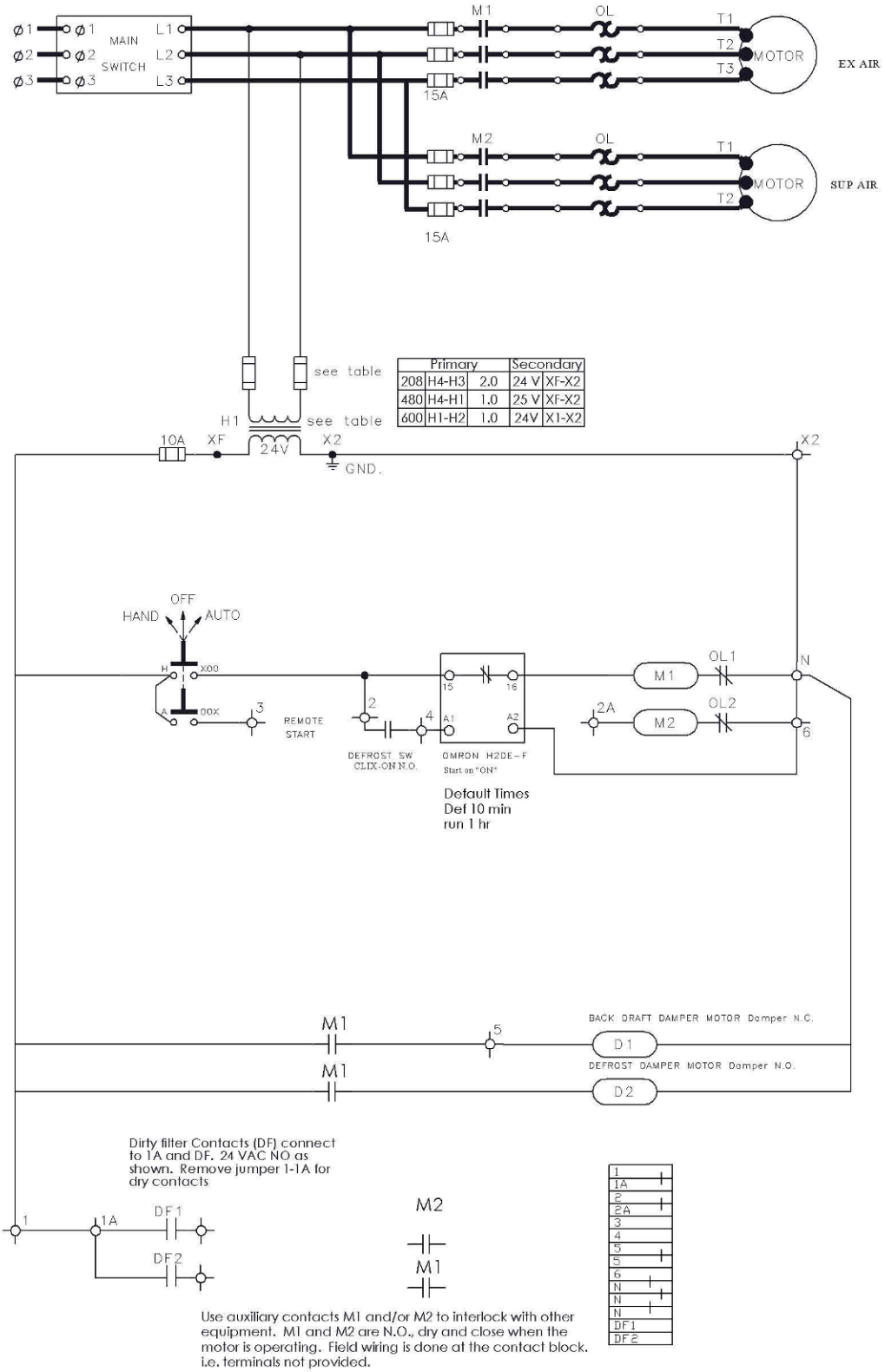
THREE PHASE NO DEFROST



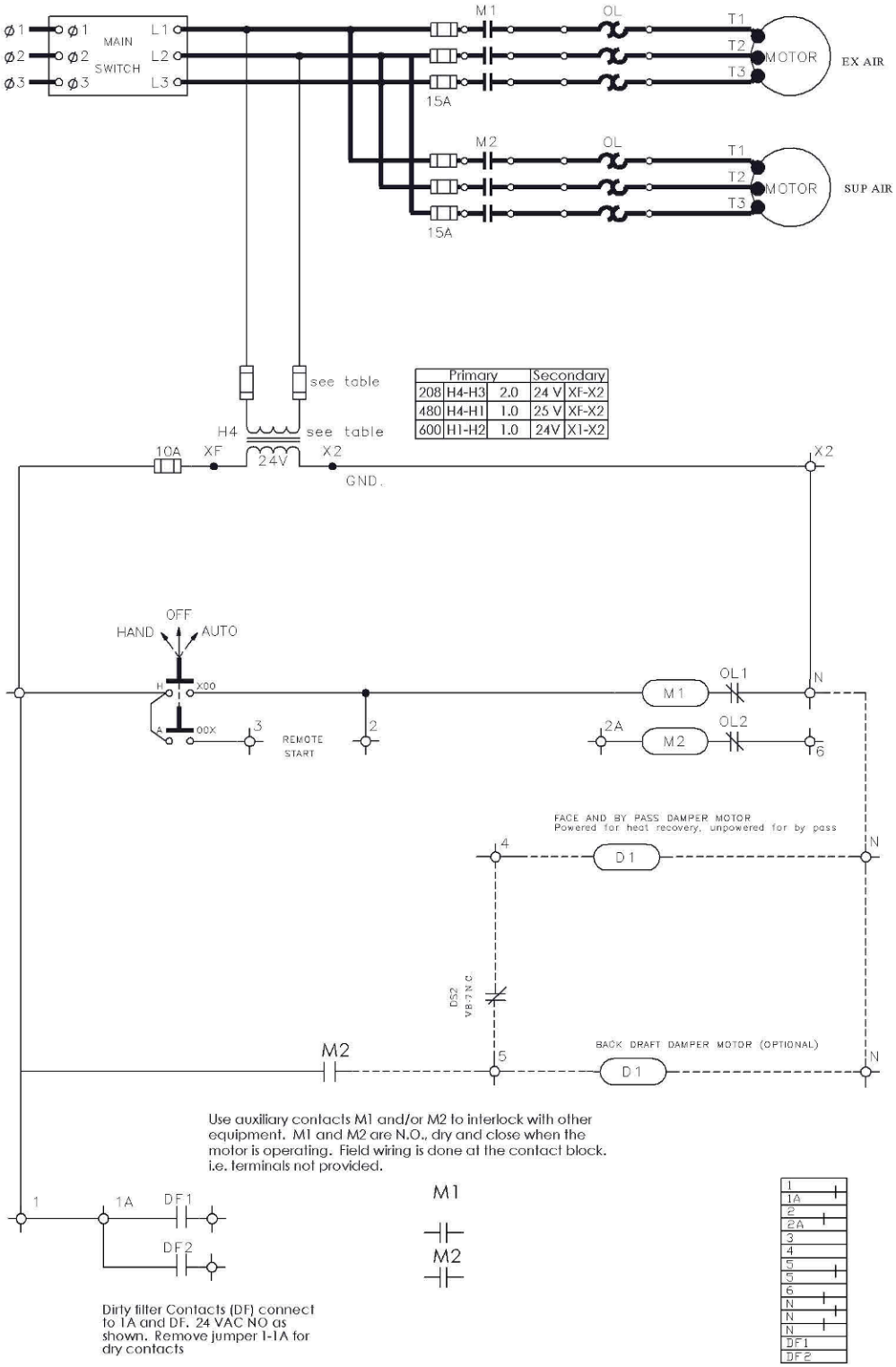
THREE PHASE FAN DEFROST



THREE PHASE TIMED FAN



THREE PHASE RECIRC DEFROST



THREE PHASE FACE AND BY PASS

9 INSTALLATION

The HRV motors are controlled and protected by a multi-starter which includes a disconnect switch. A Hand/Off/Auto selector is located on the starter for local or remote switching.

9.1 Remote Control

Any dry contact switch closure may be used. Control voltage is 24 VAC.

9.1.1 INSTALLATION INSTRUCTIONS

9.1.1.1 Installer's Responsibilities

Installers are responsible for the performance of the ventilation system and for ensuring that all codes and standards are met.

- Do not mount the fresh air supply near a source of contaminated air such as automotive exhaust, gas or propane exhaust or oil tanks.
- Combustion appliances such as furnaces and hot water heaters must not draw combustion air directly from an HRV.

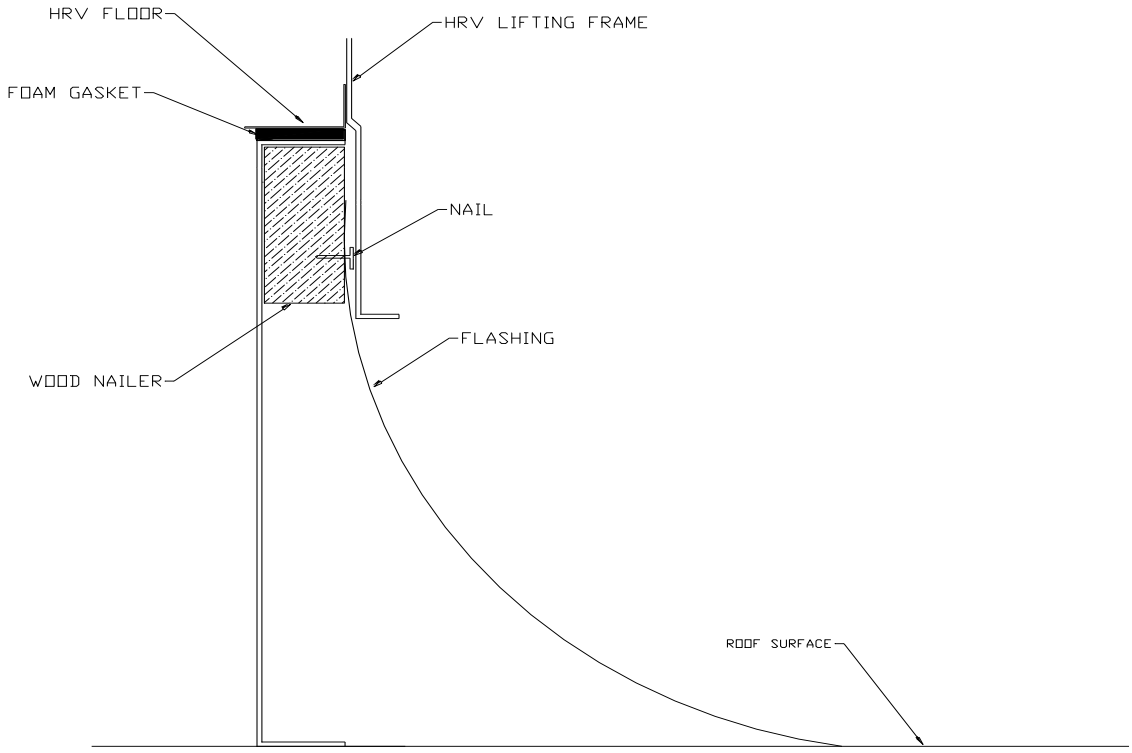
9.2 Installation Basics

ASHRAE Standard 62-99 recommends the following. Ventilation systems should be designed to prevent re-entrainment of exhaust contaminants, condensation or freeze-ups and growth of microorganisms. Make-up air inlets and exhaust air outlets shall be located to avoid contamination of the makeup air. Contaminants from sources such as cooling towers, sanitary vents, vehicular exhaust, and street traffic should be avoided.

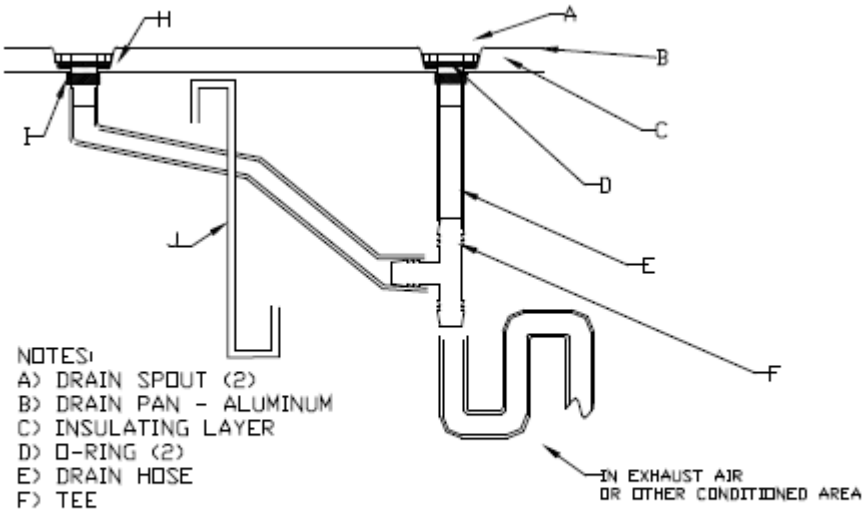
9.3 Mounting The Unit (Roof Top Units)

1. Determine where the unit is to be located on the roof
2. Refer to the unit detail drawing for roof openings and cut accordingly
3. Place the curb on the roof and ensure it is level
4. Flash the curb with roofing membrane tying in to the wood nailer. Do not attach flashing to the H/ERV.

5. Apply the foam gasket to all top flanges of the curb forming a continuous, watertight seal.
6. With the HRV lifted, connect the drain hose to the spouts from underneath, feed the fresh air hose through the center curb member and tee into the exhaust drain.
7. Lift the unit onto the curb. Do not drag on the roof.
8. Tie in the supply and return ducts, electrical wiring and run condensate drain into the conditioned space through the exhaust air duct.
9. Do not drain to the roof.



9.4 Connecting the Condensate Drain



NOTES:
A) DRAIN SPOUT (2)
B) DRAIN PAN - ALUMINUM
C) INSULATING LAYER
D) O-RING (2)
E) DRAIN HOSE
F) TEE
G) "P" TRAP
H) EMBOSS (2)
I) NUT (2)
J) CURB MEMBER

NU1030, NU2035 and NU2540 units feature 3/4 FPT fitting which can be used to connect to building drainage system.

9.5 Connecting To Other Equipment

If the HRV is used upstream of an air handler or similar equipment (e.g. fresh air into economizer section), the startup sequence must be HRV first followed by the air handler. If the air handler is started first, the HRV's fresh air fan will rotate

backward and the motor may not be able to overcome the extra load causing the motor to over amp and potentially damage the blower wheel.

9.6 Controls And Electrical Connection

A single point connection of mains power in the starter box powers the HRV. HRV must be connected to a power source of voltage and phase indicated on the starter box and according to applicable local electrical codes.

9.7 Balancing The System

Unless otherwise specified by the system designer, set up the HRV with balanced supply and exhaust air flows.

The pulleys used on the supply and exhaust motors are a split type that allows some field adjustment of the fan rpm and corresponding air flow. Adjust the pulley in ½ turn increments. **Close to increase rpm, open to decrease rpm.**
Once the HRV system is installed, do the following:

- Close all windows and doors.
- Turn off any exhaust only systems.
- To balance the HRV, set the machine on high speed.
- Make a small hole in the supply duct at least 10 feet downstream of the fan. Insert a Pitot tube in the cross sectional center of the duct.
- Measure the pressure with a digital manometer or magnehelic gauge.
- Record the value and repeat the procedure for the exhaust air stream.
- Install a balancing damper in the air stream with the greater flow and damper back until the pressure equals that of the opposite air stream.

9.8 COMMISSIONING AND START UP - COMPLIANT SERIES

Conduct a visual comparison of the HRV against the "As Built Drawing" available from the factory.

Correct air flow configuration ☐

Correct Motors Installed ☐

Correct Pulleys Installed ☐

Correct Defrost Installed ☐

Correct Belts Installed ☐ also check tension, alignment and wear.

Condensate Drain Plumbed as Required ☐

After the unit has been installed according to the plans and manual and the appropriate power supplied turn on the disconnect switch and start the HRV with the selector (e.g. hand or auto).

Verify correct fan rotation Supply Fan ☐ Exhaust Fan ☐

Fan rotation can be reversed by disconnecting the power and reversing any 2 legs of the three phase feed.

If equipped, confirm motorized dampers are operational ☐

The defrost system has been factory tested. ***Optionally during commissioning***, this can be verified by opening (VB7, capillary tube style) or jumping (Clix-on, thermal disc style) the defrost switch. ***Remember to replace or remove the test wiring.***

Checked by: _____ Date: _____
Factory Representative

Company: _____

At this point the unit is ready for final air balancing.

The fan rpm and cfm have been factory set to as near as practical to the specified level. A certified air balancer will fine tune the air flows using dampers and adjusting the motor's pulleys if needed. During the air balancing procedure, the balancer will measure the amp draw of each motor with all access covers closed and ensure it is less than the rated FLA. If the amp draw is greater than the FLA plus service factor, the fan rpm must be lowered. A final balancing report will include fan and motor rpm, individual and total motor amps, voltage on each leg, unit and branch duct cfm, external static pressure in each duct.

Commissioning is considered complete with the final air balance and report.

10 MAINTENANCE

CAUTION: ***Disconnect power before servicing***.

a. FILTERS

Dirty filters can reduce ventilation efficiency, resulting in unbalanced airflow and damage or shorten the life of the motors. Check at least every three months and replace yearly or when necessary depending on indoor and outside air conditions.

Filters	NU0820	NU2035	NU1030	NU2540
Size	17.5x14x2”	23.5x14x2”	17x14x2”	23.5x14x2”
Quantity	6	6	6	6

Nu-Air recommends a spare set of filters be ordered with the HRV for maintenance stores.

b. FANS

When cleaning the filters, take the opportunity to vacuum any interior surfaces including the fan blades.

c. MOTORS

The motors are equipped with permanently sealed and lubricated bearings

d. BELTS

Inspect belts for wear and cracks. Replace as required. Inspect belts for mis-alignment and proper tension during maintenance.

e. CONDENSATE DRAIN

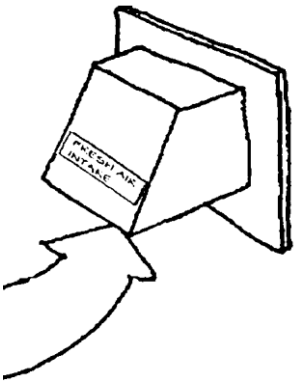
Twice per year wipe clean the condensate drain pan. Check the condensate drain and tubing to ensure they are free flowing. The tubing must have an "S" or loop that traps a quantity of water to prevent air from entering the HRV via this tubing.

f. CORE

For service, the core (heat exchanger) can be removed from the unit by sliding it (or core sections) forward on the guides. Observe proper orientation when replacing the core in the HRV. Observe the following practices for core cleaning:

- **HRV core** should be removed and cleaned at least once a year using a non-corrosive enzyme detergent in cold water.
- **ERV core** should be removed and cleaned at least once a year using a vacuum equipped with a gentle brush attachment—do not wash the ERV core(s) or use a rigid brush (e.g. hard plastic or steel bristles) as these practices will damage the core membrane material.

g. EXTERIOR HOODS



Regularly check the outside vents and clean any obstructions such as grass, leaves or other debris. Do not replace the screen with mesh smaller than 1/4" as this will restrict airflow. During winter operation, ensure snow and frost does not build up and restrict or block openings.

11 WARRANTY:

NU-AIR COMPLIANT SERIES HRV's & ERV's

Nu-Air warrants its Compliant Series HRV's and ERV's to be free from defects on all components including motors, circuit boards, transformers, and switches when subject to normal and proper use for a period of two (2) years from the date of purchase. Nu-Air warrants its Compliant Series HRV core to be free from defects for a period of 15 years. Nu-Air warrants its Compliant Series ERV core to be free from defects for a period of 5 years.

Should a manufacturing defect occur during the warranty period, Nu-Air will supply replacement parts FOB our plant at no charge. Labour costs to remove and reinstall these parts are not covered under this warranty.

This warranty is expressly in lieu of all other warranties or obligations and in no event shall Nu-Air be liable for consequential or incidental damages of any kind, including damage to the building, its contents or any person therein.

P.O. Box 2758, Windsor, Nova Scotia Canada, B0N 2T0

Phone: (902) 798 2261 Fax: (902) 798 2557

Email: nuair@nu-airventilation.com Website: www.nu-airventilation.com