

DUNHAM-BUSH®

Products That Perform...By People Who Care

Form No: MES0448A
(Supplementary to Form No: MS0446A)

Screw Compressor Air Cooled Flooded Chillers

R134a

**AFHX Series
(High Ambient)**

85 to 485 Tons

50Hz



PHYSICAL SPECIFICATIONS

MODEL AFHX	85-5SR	80T-5SR	100-5SR	100T-5SR	115-5SR	120T-5SR	125-5SR	140T-5SR	160-5SR
COMPRESSOR									
MODEL (QTY)	HISC 1709 x 1	HISC 1311 x 2	HISC 1711 x 1	HISC 1509 x 2	HISC 1811 x 1	HISC 1512 x 2	HISC 1813 x 1	HISC 1512 x 1 HISC 1709 x 1	HISC 1816 x 1
RPM	2950	2950	2950	2950	2950	2950	2950	2950	2950
NOMINAL CAPACITY TR	85.0	80.0	100.0	100.0	115.0	120.0	125.0	140.0	160.0
MIN. % UNIT CAPACITY REDUCTION	25%	12.5%	25%	12.5%	25%	12.5%	25%	12.5%	25%
EVAPORATOR									
MODEL (QTY)	C1R (1)	C1R (1)	D1R (1)	D1R (1)	D2R (1)	D2R (1)	D2R (1)	D2R (1)	J1R (1)
WATER CONNECTOR INCH	5	5	6	6	6	6	6	6	6
NOM. WATER FLOW / PRESSURE DROP GPM / FT IN WG	204 / 8.7	192 / 7.8	240 / 7.0	240 / 7.0	276 / 7.4	288 / 8.0	300 / 8.6	336 / 10.5	384 / 15.7
MIN/ MAX WATER FLOW GPM	79 / 396	79 / 396	105 / 523	105 / 523	117 / 587	117 / 587	117 / 587	117 / 587	117 / 587
MIN/ MAX WATER PRESSURE DROP FT IN WG	1.6 / 28.7	1.6 / 28.7	1.6 / 28.5	1.6 / 28.5	1.6 / 28.7	1.6 / 28.7	1.6 / 28.7	1.6 / 28.7	1.9 / 33.8
CONDENSER									
COIL ROWS DEEP/ TOTAL FA (SQ.FT)	3 / 141.2	3 / 141.2	4 / 141.2	4 / 141.2	3 / 188.2	3 / 188.2	3 / 188.2	3 / 235.3	4 / 235.3
NO. OF FAN	6	6	6	6	8	8	8	10	10
FAN DIA. MM	800	800	800	800	800	800	800	800,860	800
MOTOR HP (QTY)	1.5 (6)	1.5 (6)	1.5 (6)	1.5 (6)	1.5 (8)	1.5 (8)	1.5 (8)	1.5 (10)	1.5 (10)
FLA, AMP (QTY)	3.2 (6)	3.2 (6)	3.2 (6)	3.2 (6)	3.2 (8)	3.2 (8)	3.2 (8)	3.2 (10)	3.2 (10)
TOTAL CFM	67284	68040	73982	72765	101556	99792	99792	117180	123270
MIN. AMBIENT TEMPERATURE (°F) AT MIN. LOAD	45	45	45	45	45	45	45	45	45
ELECTRICAL									
NOM. VOLTAGE	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50
UNIT RLA (QTY) A	124 (1)	59 (2)	148 (1)	81 (2)	173 (1)	102 (2)	193 (1)	102 (1) 124 (1)	248 (1)
UNIT MAX. INRUSH A	199	175	237	213	259	290	338	314	434
GENERAL									
UNIT LENGTH INCH	149.5	149.5	149.5	149.5	191.5	191.5	210.0	233.5	251.5
UNIT WIDTH INCH	88	88	88	88	88	88	88	88	88
UNIT HEIGHT INCH	94	94	94	94	94	94	94	96	96
SHIPPING WEIGHT LBS	8845	10790	9429	11868	11595	12023	15240	16438	19915
OPERATING WEIGHT LBS	8946	10892	9563	12001	11745	12173	15540	16759	20358
OPERATING CHARGE R-22 LBS	221	208	260	260	299	312	325	364	416

PHYSICAL SPECIFICATIONS

MODEL AFHX	170T-5SR	195-5SR	230-5SR	260-5SR	320-5SR	345-5SR	410-5SR	485-5SR
COMPRESSOR								
MODEL (QTY)	HISC 1709 x 2	HISC 1711 x 2	HISC 1811 x 2	HISC 1813 x 2	HISC 1816 x 2	HISC 1811 x 3	HISC 1813 x 2 HISC 1816 x 1	HISC 1816 x 3
RPM	2950	2950	2950	2950	2950	2950	2950	2950
NOMINAL CAPACITY TR	170.0	195.0	230.0	260.0	320.0	345.0	410.0	485.0
MIN. % UNIT CAPACITY REDUCTION	12.5%	12.5%	12.5%	12.5%	12.5%	8.33%	8.33%	8.33%
EVAPORATOR								
MODEL (QTY)	K2R (1)	L2R (1)	L2 (1)	M3R (1)	U1R (1)	V2R (1)	V4 (1)	V4 (1)
WATER CONNECTOR INCH	8	8	8	8	10	12	12	12
NOM. WATER FLOW / PRESSURE DROP GPM / FT IN WG	408 / 12.8	468 / 10.3	552 / 10.0	624 / 10.4	768 / 12.5	792 / 10.3	984 / 12.8	1164 / 17.3
MIN/ MAX WATER FLOW GPM	140 / 705	180 / 904	217 / 1086	240 / 1209	265 / 1327	307 / 1530	427 / 2135	427 / 2135
MIN/ MAX WATER PRESSURE DROP FT IN WG	1.9 / 34.2	1.9 / 33.5	1.9 / 33.9	1.9 / 34.2	1.9 / 33.4	1.9 / 33.5	2.9 / 51.6	2.9 / 51.6
CONDENSER								
COIL ROWS DEEP / TOTAL FA (SQ.FT)	4/235.3	4/282.3	4/329.4	4/385.0	6/385.0	3/577.5	4/385.0 6/192.5	6/577.5
NO. OF FAN	10	12	14	12	12	18	18	18
FAN DIA. MM	800	800	800	860	860	800	860	860
MOTOR HP (QTY)	1.5 (10)	1.5 (12)	1.5 (14)	1.5 (12)	3.0 (12)	1.5 (18)	1.5 (12) 3.0 (6)	3.0 (18)
FLA, AMP (QTY)	3.2 (10)	3.2 (12)	3.2 (14)	3.2 (12)	5.5 (12)	3.2 (18)	3.2 (12) 5.5 (6)	5.5 (18)
TOTAL CFM	123270	147924	172578	173250	184590	240030	265545	276885
MIN. AMBIENT TEMPERATURE (°F) AT MIN. LOAD	45	45	45	45	45	45	45	45
ELECTRICAL								
NOM. VOLTAGE	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50
UNIT RLA (QTY) A	125 (2)	148 (2)	175 (2)	194 (2)	250 (2)	177 (3)	194 (2) 250 (1)	250 (3)
UNIT MAX. INRUSH A	392	404	453	544	718	645	861	1014
GENERAL								
UNIT LENGTH INCH	233.5	275.5	317.5	318	318	435	435	435
UNIT WIDTH INCH	88	88	88	88	88	88	88	88
UNIT HEIGHT INCH	96	96	96	120	120	120	120	120
SHIPPING WEIGHT LBS	19915	17529	21505	24282	25300	28342	31094	35009
OPERATING WEIGHT LBS	20358	17813	21833	25039	25727	28822	31702	35617
OPERATING CHARGE R-22 LBS.	442	507	598	676	832	897	1066	1261

PERFORMANCE DATA

LWT °F	MODEL AFHX	AMBIENT TEMPERATURE, °F									
		85.0		95.0		105.0		115.0		125.0	
		TR	kW	TR	kW	TR	kW	TR	kW	TR	kW
40.0	85-5SR	81.1	78.0	76.4	87.7	72.5	98.4	69.1	109.9	59.1	113.2
	80T-5SR	76.2	75.1	71.8	84.3	68.1	94.5	64.9	105.6	55.6	108.8
	100-5SR	96.5	92.7	90.9	104.2	86.2	116.8	84.2	130.8	73.1	134.7
	100T-5SR	96.2	94.8	90.6	106.5	86.0	119.4	81.9	133.4	70.1	137.4
	115-5SR	111.6	107.3	105.1	120.6	99.7	135.2	95.0	151.2	81.4	155.7
	120T-5SR	116.4	112.9	109.7	126.9	104.1	142.3	99.2	159.1	84.9	163.9
	125-5SR	121.7	117.0	114.6	131.5	108.8	147.4	103.7	164.8	88.8	169.7
	140T-5SR	137.1	132.3	129.2	148.7	122.5	166.6	116.8	186.5	100.0	192.1
	160-5SR	155.0	148.2	146.0	166.4	138.5	186.6	132.1	208.6	113.1	214.9
	170T-5SR	162.0	155.9	152.6	175.2	144.8	196.5	138.0	219.6	118.1	226.2
	195-5SR	187.6	180.3	176.7	202.5	167.7	227.0	163.6	254.3	142.1	261.9
	230-5SR	223.2	214.7	210.2	241.1	199.4	270.5	190.1	302.3	162.7	311.4
	260-5SR	248.1	238.5	233.7	268.0	221.7	300.5	211.3	335.9	180.9	346.0
	320-5SR	310.0	296.4	292.0	332.9	277.1	373.2	264.1	417.3	226.1	429.8
345-5SR	334.4	321.7	315.0	361.4	298.9	405.4	284.9	453.1	243.8	466.7	
410-5SR	395.0	378.9	372.0	425.6	353.0	477.3	336.5	533.5	288.1	549.5	
485-5SR	465.7	445.2	438.7	500.0	416.2	560.7	396.8	626.8	339.7	645.6	
42.0	85-5SR	84.8	78.4	80.0	88.0	78.0	98.7	72.6	110.4	62.1	113.7
	80T-5SR	79.7	75.3	75.2	84.5	71.4	94.8	68.2	106.1	58.4	109.3
	100-5SR	100.9	93.0	95.2	104.5	90.4	117.2	88.6	131.4	77.1	135.3
	100T-5SR	100.6	95.1	94.8	106.8	90.1	119.7	86.0	134.0	73.6	138.0
	115-5SR	116.7	107.7	110.0	120.9	104.5	135.7	99.8	151.8	85.4	156.3
	120T-5SR	121.8	113.3	114.8	127.3	109.1	142.8	104.1	159.7	89.2	164.5
	125-5SR	127.3	117.4	120.0	131.8	114.0	147.9	108.9	165.5	93.2	170.5
	140T-5SR	143.4	132.9	135.2	149.2	128.4	167.3	122.6	187.2	105.0	192.8
	160-5SR	162.1	148.7	152.9	167.0	145.2	187.4	138.7	209.6	118.8	215.9
	170T-5SR	169.5	156.5	159.8	175.7	151.8	197.1	144.9	220.5	124.1	227.1
	195-5SR	196.2	180.8	185.1	203.1	175.8	227.9	172.3	255.5	149.8	263.1
	230-5SR	233.4	215.3	220.1	241.8	209.0	271.3	199.6	303.6	170.9	312.7
	260-5SR	259.4	239.4	244.6	268.7	232.4	301.5	221.9	337.3	190.0	347.5
	320-5SR	324.3	297.3	305.8	334.0	290.5	374.7	277.4	419.1	237.5	431.7
345-5SR	349.7	322.7	329.8	362.4	313.3	406.6	299.1	454.9	256.1	468.6	
410-5SR	413.1	380.2	389.5	426.9	370.1	479.0	353.3	535.9	302.6	551.9	
485-5SR	487.1	446.6	459.3	501.7	436.4	562.9	416.7	629.6	356.8	648.5	
44.0	85-5SR	89.1	78.7	84.1	88.3	80.0	99.1	76.5	110.9	65.6	114.2
	80T-5SR	83.7	75.6	79.1	84.8	75.2	95.1	71.9	106.5	61.6	109.7
	100-5SR	106.0	93.4	100.1	104.8	95.2	117.6	99.8	132.8	90.1	136.7
	100T-5SR	105.6	95.5	99.8	107.2	94.9	120.3	90.8	134.6	77.7	138.6
	115-5SR	122.6	108.1	115.7	121.4	110.1	136.2	105.3	152.4	90.2	157.0
	120T-5SR	127.9	113.8	120.8	127.7	114.9	143.3	109.9	160.4	94.1	165.2
	125-5SR	133.7	117.9	126.2	132.4	120.1	148.5	114.9	166.2	98.4	171.2
	140T-5SR	150.6	133.4	142.2	149.8	135.3	168.0	129.4	188.0	110.9	193.7
	160-5SR	170.3	149.3	160.8	167.6	153.0	188.1	146.3	210.5	125.3	216.8
	170T-5SR	178.0	157.1	168.0	176.5	159.8	197.9	152.9	221.5	131.0	228.1
	195-5SR	206.1	181.5	194.6	203.8	185.1	228.7	194.1	258.1	175.1	265.9
	230-5SR	245.1	216.2	231.4	242.9	220.2	272.5	210.6	304.9	180.4	314.0
	260-5SR	272.5	240.3	257.3	269.8	244.8	302.7	234.1	338.8	200.6	349.0
	320-5SR	340.6	298.6	321.5	335.3	305.9	376.2	292.6	421.0	250.7	433.6
345-5SR	367.3	324.0	346.8	364.0	330.0	408.4	315.6	456.9	270.4	470.6	
410-5SR	433.9	381.7	409.6	428.6	389.7	480.8	372.8	538.3	319.3	554.4	
485-5SR	511.7	448.5	483.0	503.6	459.5	565.0	439.5	632.4	376.5	651.4	

NOTE: UNIT IS RUNNING ON PART LOAD FOR AMBIENT TEMPERATURE OF 125°F AND ABOVE DUE TO CURRENT LIMITER

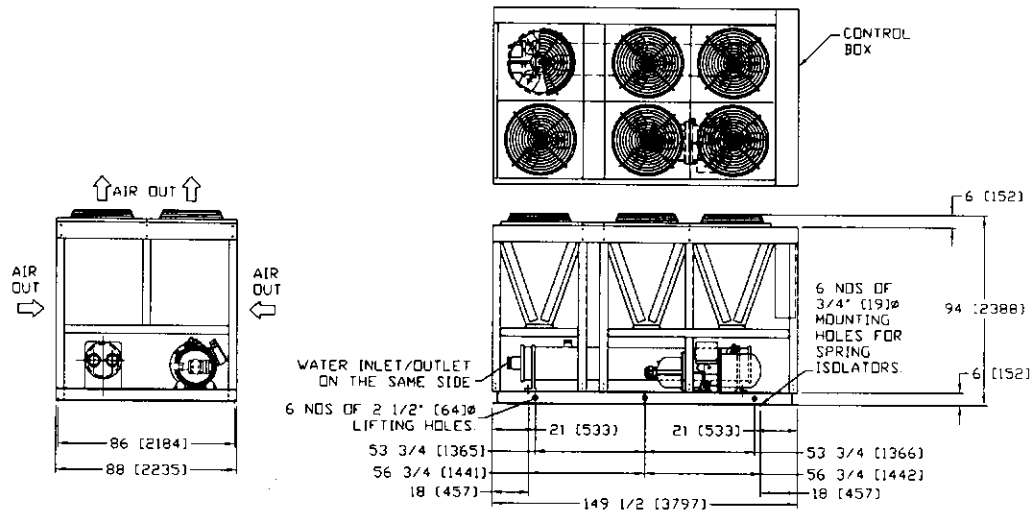
PERFORMANCE DATA

LWT °F	MODEL AFHX	AMBIENT TEMPERATURE, °F									
		85.0		95.0		105.0		115.0		125.0	
		TR	kW	TR	kW	TR	kW	TR	kW	TR	kW
46.0	85-5SR	93.3	79.0	88.2	88.6	84.0	99.4	80.5	111.3	69.0	114.6
	80T-5SR	87.7	75.9	82.9	85.1	79.0	95.5	75.7	106.9	64.9	110.1
	100-5SR	111.0	93.7	104.9	105.2	100.0	118.0	102.6	133.0	91.5	137.0
	100T-5SR	110.7	95.9	104.6	107.5	99.6	120.7	95.5	135.0	81.8	139.1
	115-5SR	128.4	108.5	121.3	121.8	115.6	136.7	110.8	153.0	94.9	157.6
	120T-5SR	134.0	114.3	126.6	128.2	120.6	143.8	115.6	161.0	99.0	165.8
	125-5SR	140.0	118.3	132.3	132.8	126.1	149.0	120.8	166.8	103.5	171.9
	140T-5SR	157.8	133.9	149.1	150.3	142.0	168.6	136.1	188.7	116.7	194.4
	160-5SR	178.4	149.9	168.6	168.2	160.6	188.7	153.9	211.3	131.9	217.6
	170T-5SR	186.5	157.7	176.2	177.1	167.8	198.6	160.8	222.3	137.9	229.0
	195-5SR	215.9	182.2	204.0	204.5	194.3	229.4	199.5	258.6	177.8	266.4
	230-5SR	256.7	217.1	242.7	243.7	231.2	273.4	221.5	306.0	189.9	315.2
	260-5SR	285.4	241.2	269.7	270.7	257.0	303.7	246.3	340.1	211.1	350.3
	320-5SR	356.8	299.8	337.1	336.4	321.2	377.4	307.8	422.6	263.8	435.2
	345-5SR	384.8	325.3	363.6	365.2	346.5	409.7	332.0	458.6	284.6	472.4
410-5SR	454.5	383.2	429.5	430.1	409.2	482.4	392.1	540.2	336.0	556.4	
485-5SR	535.9	450.3	506.4	505.4	482.5	566.9	462.3	634.7	396.2	653.8	
48.0	85-5SR	97.6	79.3	92.3	88.9	88.0	99.8	84.5	111.7	72.4	115.1
	80T-5SR	91.7	76.2	86.7	85.4	82.7	95.8	79.4	107.3	68.1	110.5
	100-5SR	116.1	94.1	109.8	105.5	104.7	118.4	105.4	133.2	92.9	137.2
	100T-5SR	115.7	96.3	109.4	107.9	104.4	121.1	100.2	135.5	85.9	139.6
	115-5SR	134.2	109.0	126.9	122.3	121.1	137.1	116.2	153.6	99.7	158.2
	120T-5SR	140.0	114.7	132.5	128.6	126.4	144.3	121.3	161.6	104.0	166.4
	125-5SR	146.4	118.8	138.5	133.3	132.1	149.5	126.8	167.5	108.7	172.5
	140T-5SR	164.9	134.4	156.0	150.8	148.8	169.2	142.8	189.4	122.4	195.1
	160-5SR	186.5	150.5	176.4	168.8	168.3	189.3	161.5	212.1	138.4	218.4
	170T-5SR	194.9	158.4	184.3	177.7	175.9	199.3	168.8	223.2	144.7	229.9
	195-5SR	225.7	183.0	213.4	205.2	203.6	230.2	204.9	259.1	180.5	268.8
	230-5SR	268.4	218.0	253.9	244.5	242.2	274.3	232.4	307.2	199.3	316.4
	260-5SR	298.4	242.2	282.2	271.6	269.2	304.7	258.4	341.3	221.5	351.5
	320-5SR	373.0	301.0	352.8	337.6	336.5	378.6	323.0	424.1	276.9	436.8
	345-5SR	402.2	326.7	380.5	366.4	363.0	411.1	348.4	460.3	298.7	474.2
410-5SR	475.1	384.7	449.4	431.5	428.7	484.0	411.4	542.2	352.8	558.5	
485-5SR	560.2	452.1	529.9	507.1	505.5	568.7	485.2	637.1	415.9	656.2	
50.0	85-5SR	101.8	79.6	96.4	89.2	92.0	100.1	88.5	113.2	76.6	116.6
	80T-5SR	95.6	76.4	90.6	85.7	86.5	96.1	83.1	108.8	72.0	112.0
	100-5SR	121.1	94.5	114.6	105.9	109.5	118.8	108.2	134.8	95.2	138.8
	100T-5SR	120.7	96.7	114.3	108.3	109.1	121.5	104.9	137.4	90.8	141.5
	115-5SR	140.0	109.4	132.6	122.7	126.6	137.6	121.7	155.7	105.4	160.3
	120T-5SR	146.1	115.1	138.3	129.1	132.1	144.8	127.0	163.8	110.0	168.7
	125-5SR	152.7	119.3	144.6	133.7	138.1	150.0	132.7	169.7	115.0	174.8
	140T-5SR	172.1	135.0	162.9	151.3	155.6	169.7	149.5	192.0	129.5	197.8
	160-5SR	194.6	151.1	184.2	169.4	175.9	189.9	169.1	214.9	146.4	221.4
	170T-5SR	203.3	159.0	192.5	178.3	183.9	199.9	176.7	226.2	153.0	233.0
	195-5SR	235.5	183.7	222.9	205.9	212.9	230.9	210.3	262.1	185.1	269.9
	230-5SR	280.0	218.9	265.1	245.3	253.2	275.2	243.4	311.3	210.8	320.7
	260-5SR	311.3	243.1	294.7	272.6	281.5	305.7	270.6	345.9	234.3	356.3
	320-5SR	389.1	302.1	368.4	338.7	351.8	379.8	338.2	429.8	292.8	442.7
	345-5SR	419.7	328.0	397.3	367.7	379.5	412.4	364.7	466.6	315.9	480.6
410-5SR	495.7	386.2	469.3	433.0	448.2	485.6	430.8	549.5	373.1	566.0	
485-5SR	584.5	453.9	553.3	508.8	528.5	570.6	508.0	645.7	439.9	665.0	

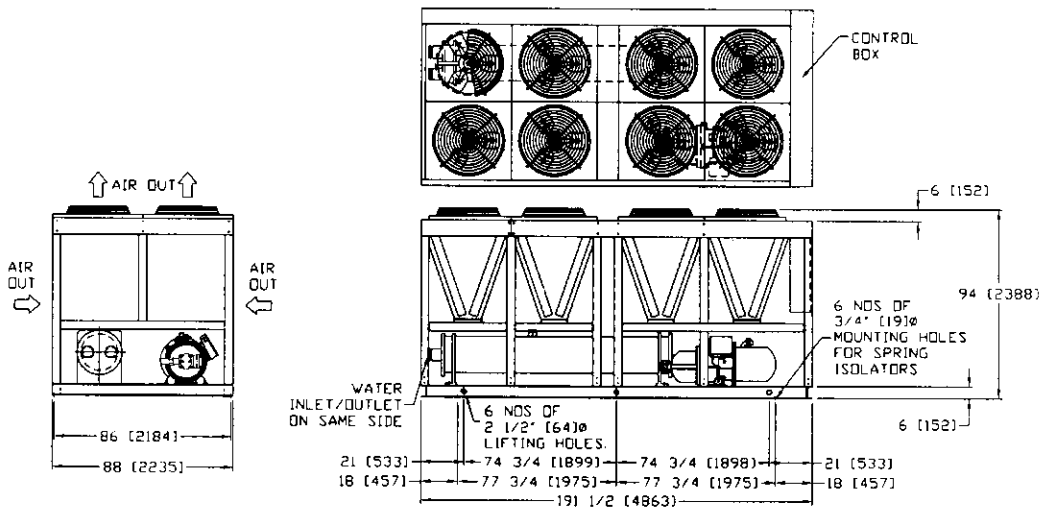
NOTE: UNIT IS RUNNING ON PART LOAD FOR AMBIENT TEMPERATURE OF 125°F AND ABOVE DUE TO CURRENT LIMITER

DIMENSIONAL DATA

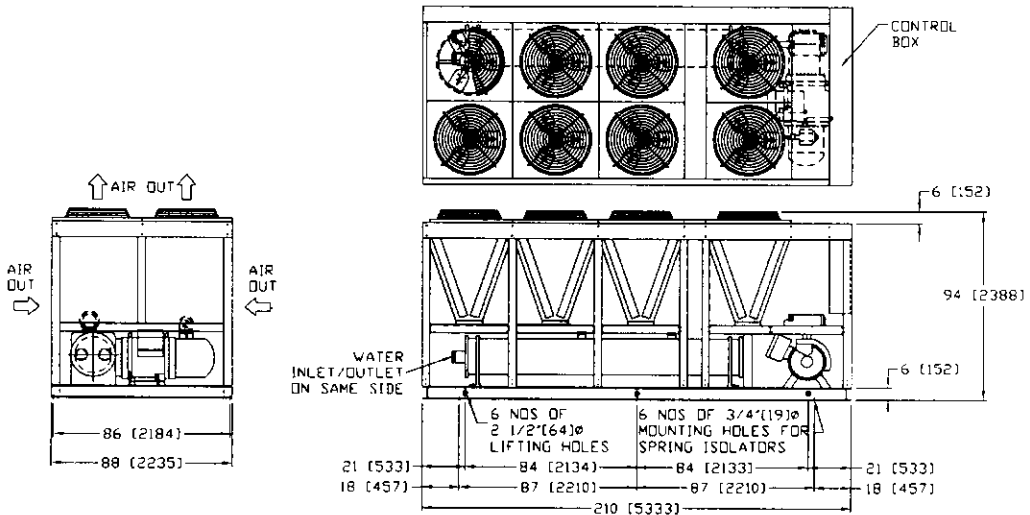
AFHX 85-5SR, 80T-5SR, 100-5SR, 100T-5SR



AFHX 115-5SR, 120T-5SR



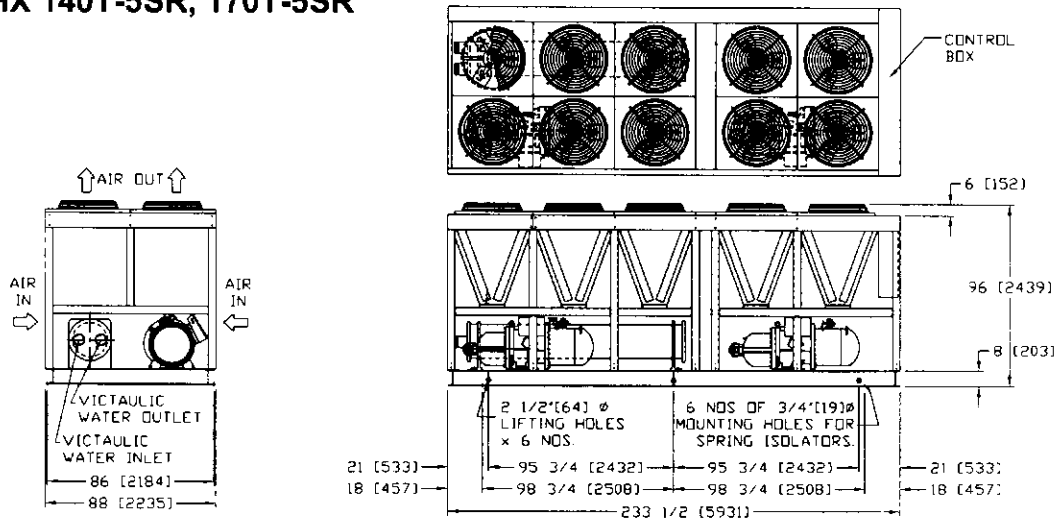
AFHX 125-5SR



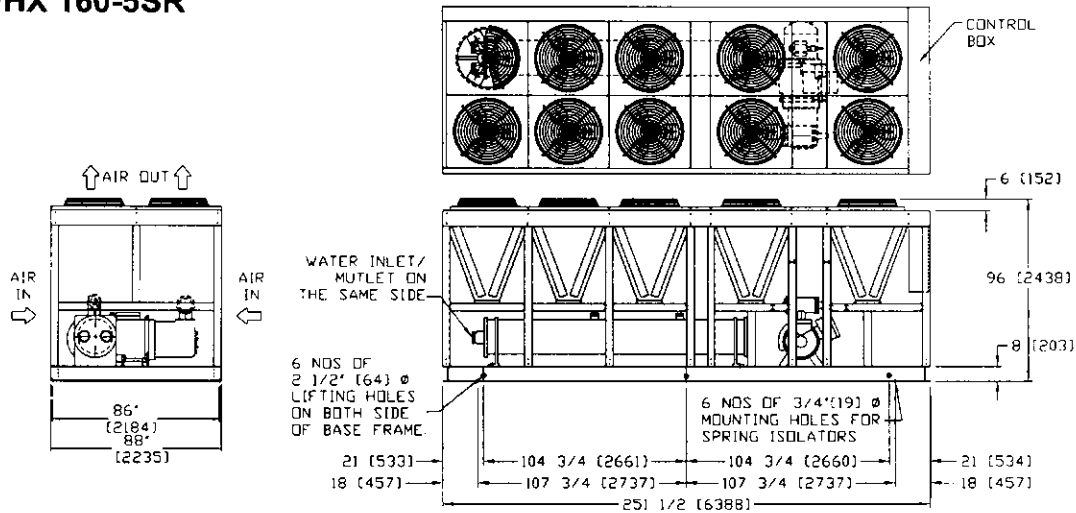
NOTE: ALL DIMENSIONS ARE IN INCHES[MM].

DIMENSIONAL DATA

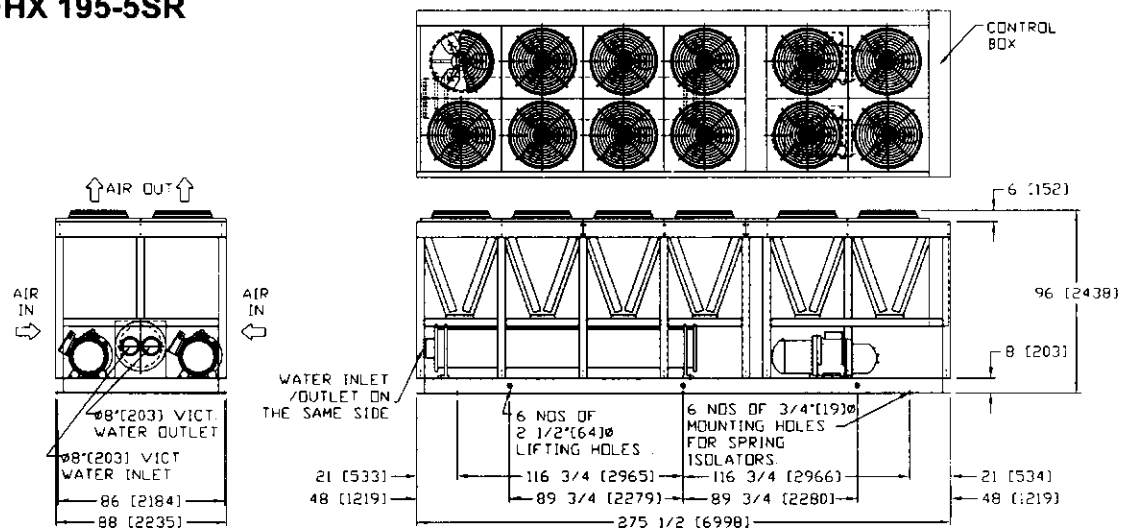
AFHX 140T-5SR, 170T-5SR



AFHX 160-5SR

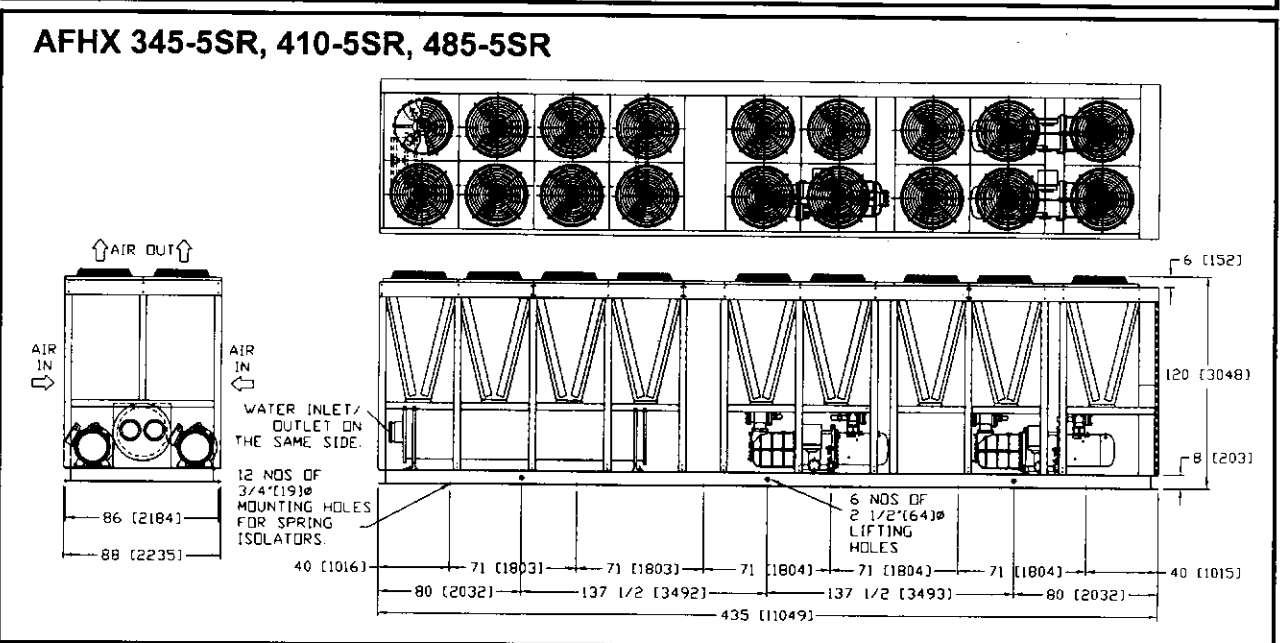
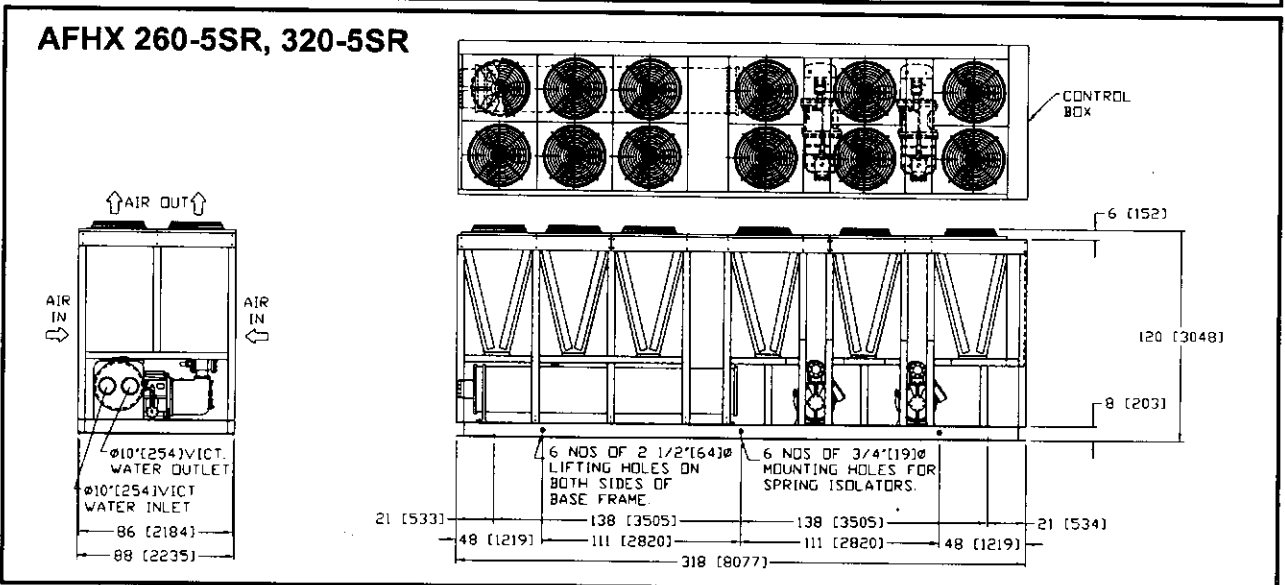
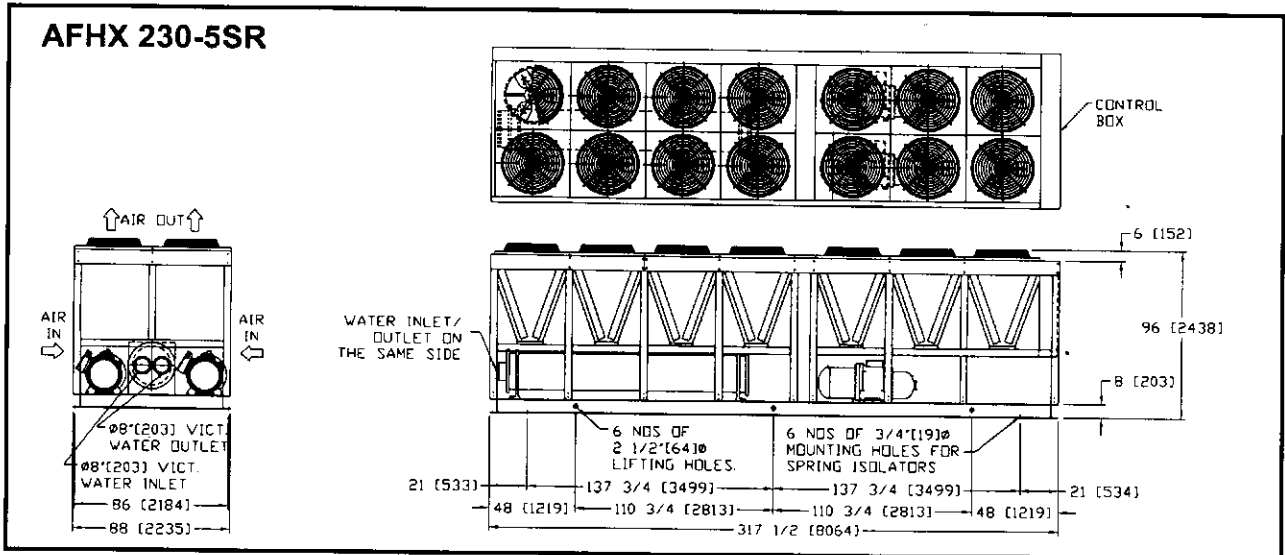


AFHX 195-5SR



NOTE: ALL DIMENSIONS ARE IN INCHES(MM).

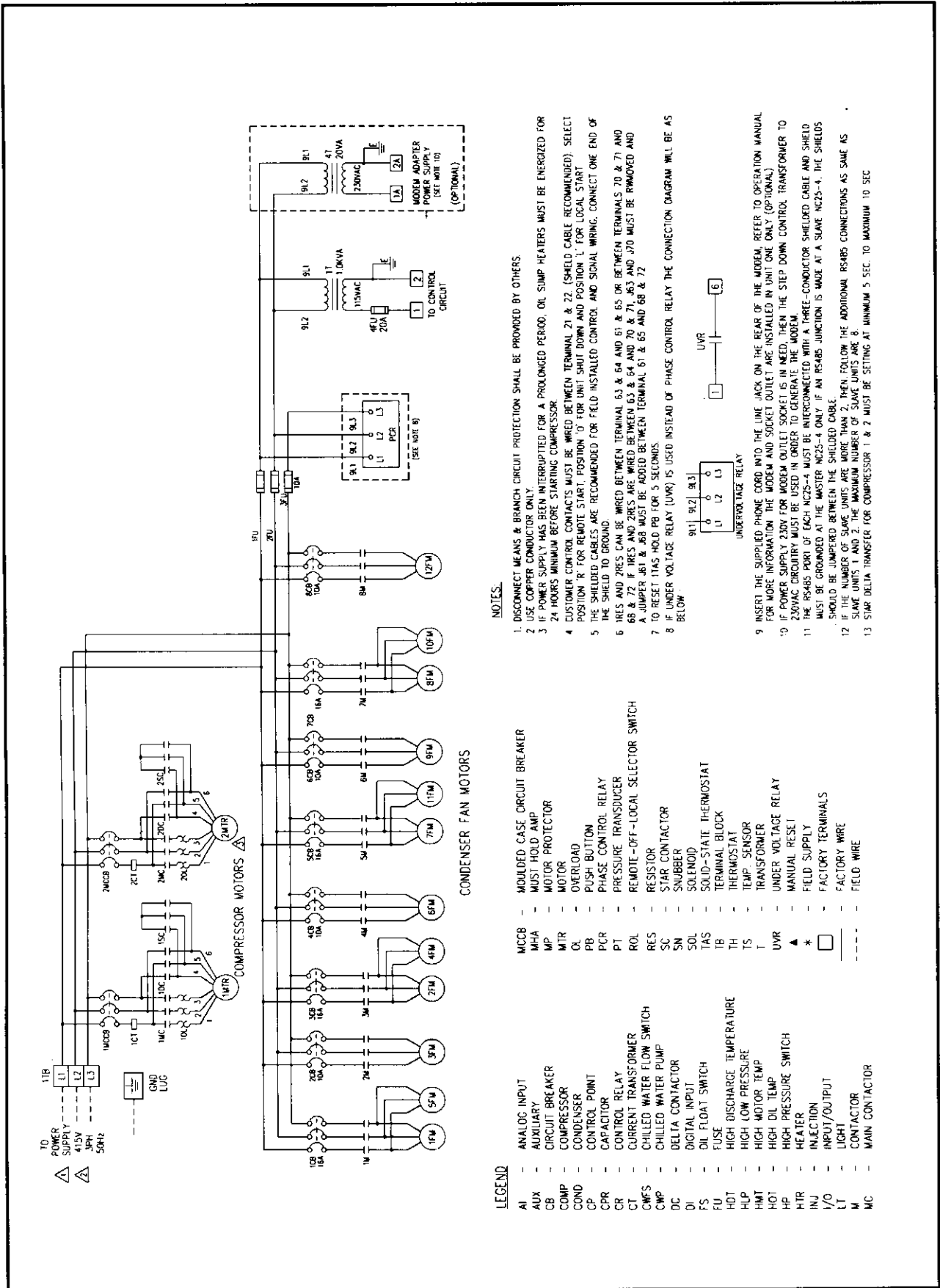
DIMENSIONAL DATA



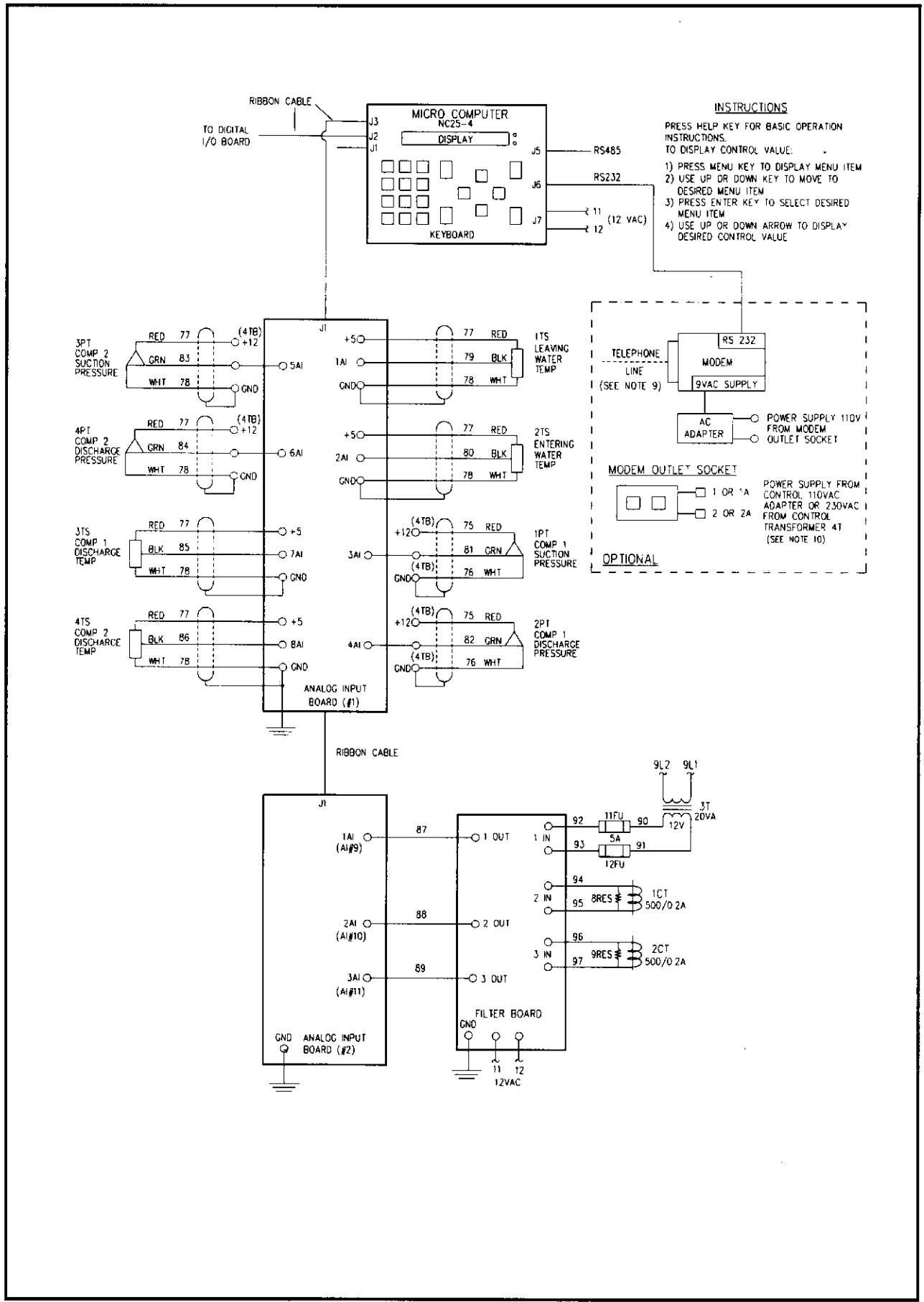
NOTE : ALL DIMENSIONS ARE IN INCHES[MM].

TYPICAL WIRING SCHEMATIC

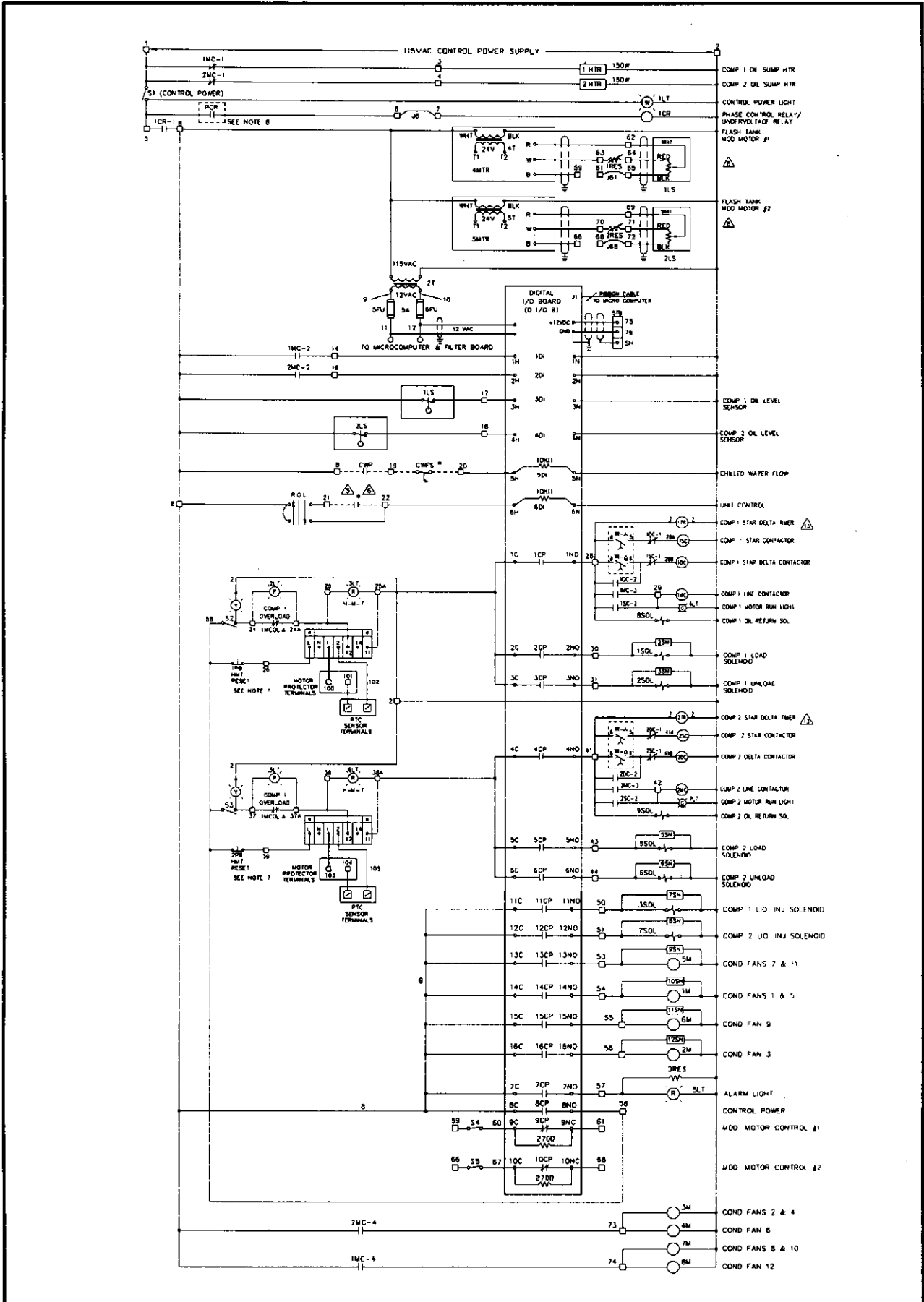
TWO COMPRESSORS UNIT



TYPICAL WIRING SCHEMATIC

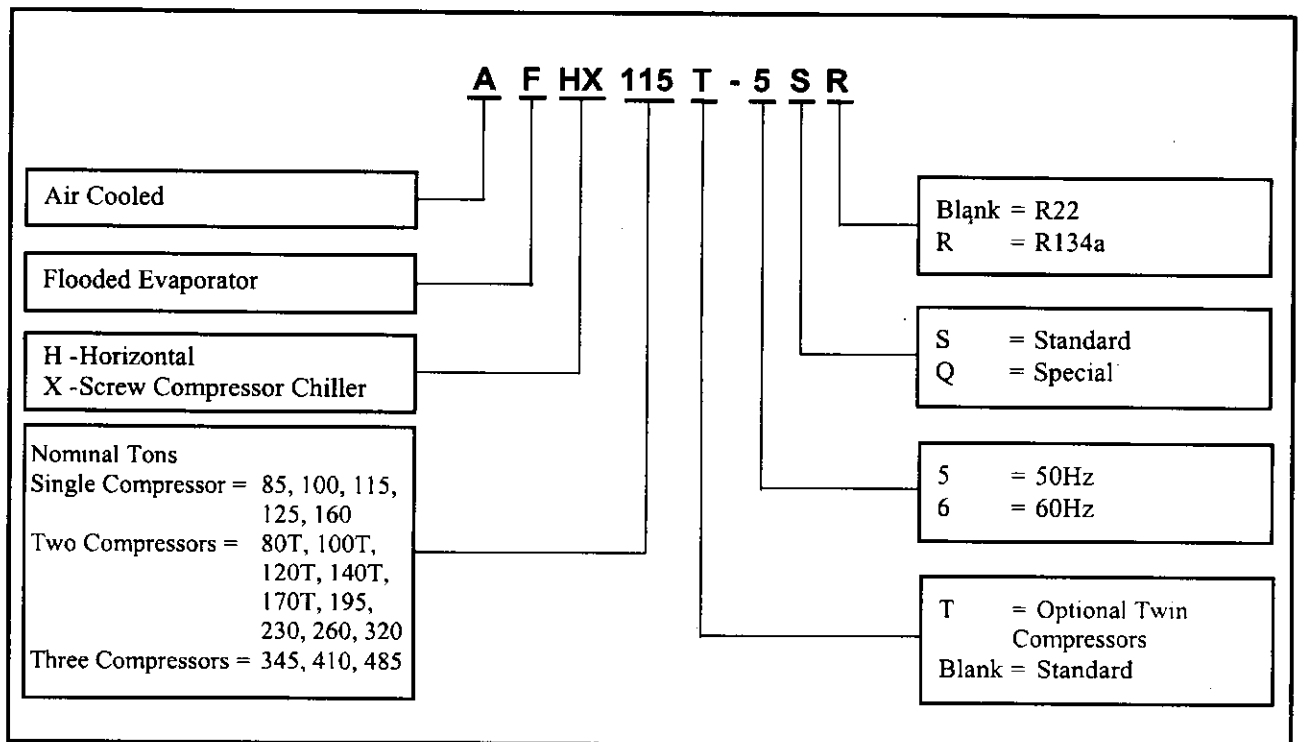
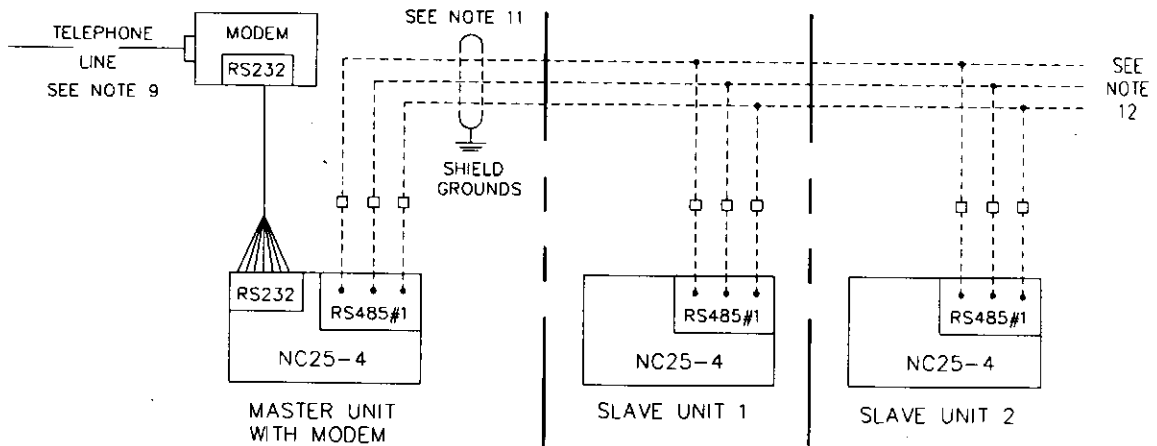


TYPICAL WIRING SCHEMATIC



TYPICAL WIRING SCHEMATIC

MODEM COMMUNICATIONS WIRING CONNECTION DIAGRAM



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