

TOPAIRE

WATER COOLED PACKAGED CHILLERS WITH HORIZONTAL SCREW COMPRESSORS

53 to 317 Tons

TAWC SERIES R22 & R407c

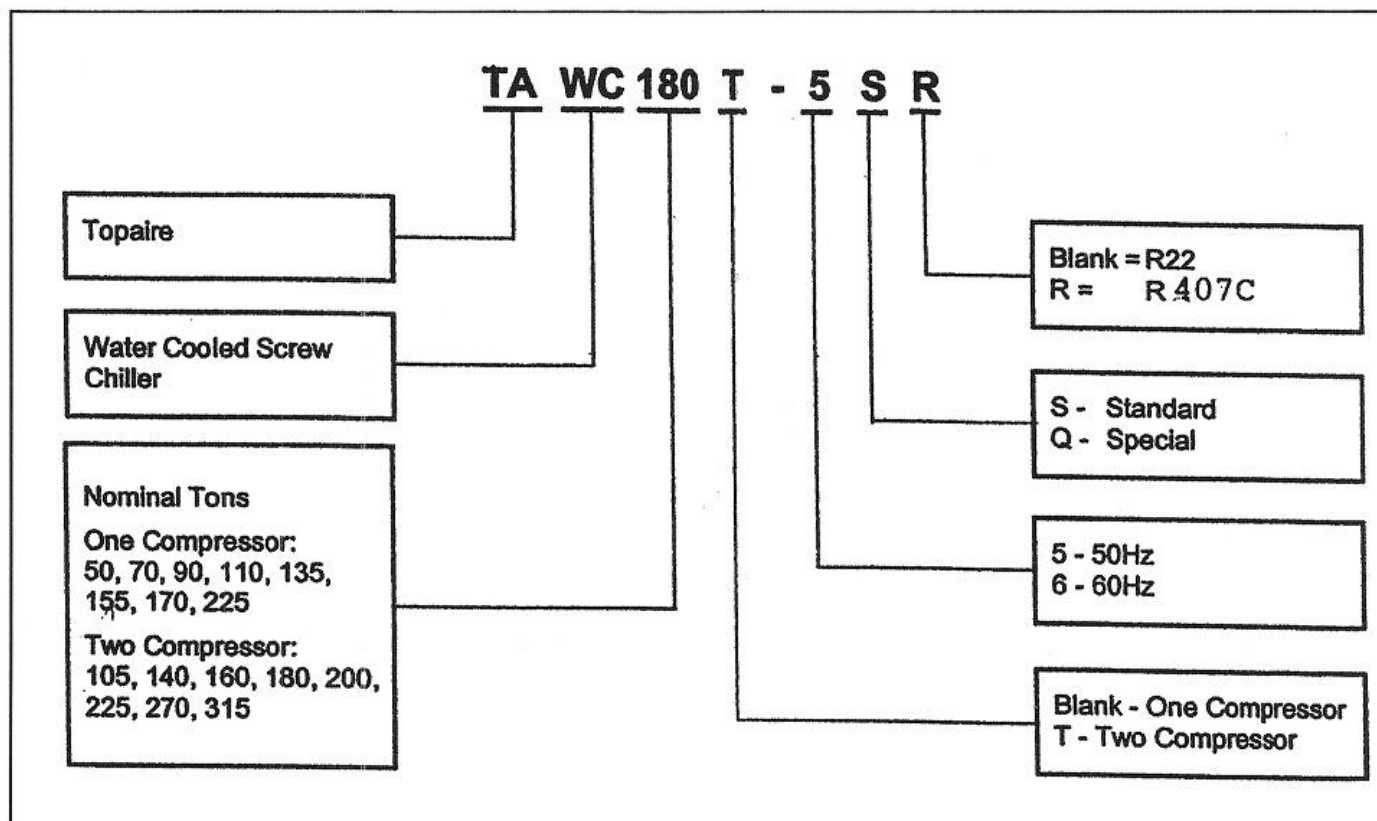
50Hz



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NOMENCLATURE



GUIDE SPECIFICATIONS

General

The unit is completely factory assembled and wired in a single package complete with horizontal screw compressors, evaporator, condenser, starting control and safety and operating controls. It is given a complete factory operating and control sequence test under load

conditions and is shipped with full operating charge of refrigerant and full oil charge.

Construction

Unit shall be constructed of heavy gauge steel, cleaned, primed with a rust inhibitor and painted.

GUIDE SPECIFICATIONS

Evaporator

The evaporator is direct expansion, shell and tube type. The shell is fabricated from carbon steel pipe, with inner-finned copper tubes, and tube sheets of carbon steel, and roller expanded tubes. The headers are constructed of carbon steel with baffles of multiple pass. The evaporator is insulated with polyethylene foam. All evaporators are designed and constructed according to current ASME Code for Unfired Pressure Vessels. The evaporators are inspected and approved by the JKCP. Shell side (water) design working pressure is 150 PSIG and tube side (refrigerant) design working pressure is 250 PSIG. The evaporators are circuited in such a way that each compressor is connected to an independent refrigerant circuit.

Condenser

Both water headers on the condenser are removable to allow cleaning of the 3/4"OD seamless, extended surface copper tubes from either end. The condenser is circuited and sized for a minimum of 10°F subcooling and full pump-down capacity. Condenser refrigerant side design pressure is 300 PSIG.

The shell side of the condenser is to be equipped with pressure relief devices, and shall be designed and constructed in accordance with the ASME Code for Unfired Pressure Vessels.

Compressor

The compressors are of semi-hermetic twin screw design. Rotors shall be the latest asymmetrical profiles to assure operation at the highest efficiencies.

Each compressor shall be provided with an integral oil separator of multi-layered mesh element to effectively separate oil from the gas stream. An oil level sight glass is also provided.

Each rotor shall be fitted with a set of anti-friction tapered roller bearings which are capable of carrying both radial and thrust loads. All housings are manufactured of high grade, low porosity, cast iron.

Capacity Control

An infinitely variable capacity control system that is capable of exactly matching the demand requirement of the system is supplied. A microprocessor based controller modulate the compressor slide valve, in response to supply water temperature, and maintains water temperature within 1/2°F of setpoint. This system is to provide precise and stable control of supply

water temperature over the complete range of operating conditions. It is capable of controlling a system capacity range from 100% to 25% at specified conditions.

Refrigerant Circuit

Each compressor is provided with an independent refrigerant circuit for maximum standby protection.

Each refrigerant circuit shall include expansion valve, sight glass, solenoid valve, replaceable core filter drier, liquid line shut off valves, charging and gauge connections and discharge line check valve.

Microcomputer Control

All packaged chillers are equipped with microcomputer control. The computer has a simple keyboard accessed input system and is complete with a two line 80 character alphanumeric display. The microcomputer continuously monitors evaporator leaving water temperature, suction and discharge pressure of each refrigerant circuit. The microcomputer is complete with all hardware and software necessary to enable remote monitoring of all data through the addition of only a simple phone modem. The microcomputer is also complete with an RS232 "local" communications port and an RS485 long distance differential communications port. The microcomputer also accepts a remote start and stop signal.

Standard Electrical Components

- Star delta starters board
- Circuit breakers for compressors
- Power / control panel
- Phase control relay.

Options

- Hot gas bypass
- Elapsed time readout
- Ground fault interrupter
- 300psig (2067 kpa) working pressure - water side on vessel
- Heat recovery auxiliary condenser
- Spring isolators
- Flow switch
- Condenser entering and leaving water temperature sensor and entering chilled water temperature sensor
- Gauges

PHYSICAL SPECIFICATIONS

One Compressor

MODEL TAWC		50-5	70-5	90-5	110-5	135-5	155-5	170-5	225-5
NOMINAL CAPACITY (TONS)		53	71	90	113	135	158	174	228
MIN% UNIT CAPACITY REDUCTION		25	25	25	25	25	25	25	25
compressor	model (Qty)	HSC1311	HSC1509	HSC1512	HSC1709	HSC1711	HSC1811	HSC1813	HSC1816
MOTOR HP (QTY)		55 (1)	70 (1)	90 (1)	120 (1)	140(1)	165 (1)	180 (1)	230 (1)
RPM		2900	2900	2900	2900	2900	2900	2900	2900
ELECTRICAL INFORMATION									
COMPR.	RLA, EACH	68	87	110	141	165	194	213	276
	LRA, EACH	430	515	705	745	940	1050	1415	1665
UNIT	MIN CIRCUIT AMPS	85	109	138	178	206	243	266	345
	MAX ALLOW. FUSE SIZE	150	200	250	300	350	400	450	600
EVAPORATOR									
MODEL		E1A	E2A	E3A	E4A	E5A	E5B	E6A	E7A
WATER CONNECTION (INCH)		4	4	4	5	6	6	8	10
NOMINAL WATER FLOW (GPM)		128	173	217	272	327	382	420	548
NOMINAL PRESSURE DROP (FT WG)		7.0	10.0	16.5	13.5	15.0	16.5	11.0	15.9
CONDENSER									
MODEL (QTY)		C1A (1)	C2A (1)	C2B (1)	C2C (1)	C3A (1)	C4A (1)	C5A (1)	C5B (1)
WATER CONNECTION (INCH)		4	4	4	4	5	6	6	6
NOMINAL WATER FLOW (GPM)		157	210	284	331	396	464	510	666
NOMINAL PRESSURE DROP (FT WG)		8.0	10.5	10.8	11.7	10.8	10.7	8.2	15.3
GENERAL INFORMATION									
UNIT LENGTH (INCH)		101	101	136 1/2	136 1/2	137 1/4	157 1/4	152 1/2	164 1/2
UNIT WIDTH (INCH)		36	36	36	36	37	37	37	40
UNIT HEIGHT (INCH)		71 1/4	77 3/4	77 3/4	78 7/8	81 1/4	84 7/8	90 1/2	96
SHIPPING WEIGHT (KG)		1118	1440	1690	1988	2470	2900	3398	3699
OPERATING WEIGHT (KG)		1210	1558	1830	2130	2673	3138	3677	4002
APPROX. R22 REF. CHARGE (KG)		48	64	81	102	122	142	157	205

Two Compressors

MODEL TAWC		105T-5	140T-5	160T-5	180T-5	200T-5	225T-5	270T-5	315T-5
NOMINAL CAPACITY (TONS)		106	143	162	180	203	226	271	317
MIN% UNIT CAPACITY REDUCTION		25	25	25	25	25	25	25	25
compressor	model (Qty)	HSC1311(2)	HSC1509(2)	HSC1509 1512	HSC1512(2)	HSC1512 1709	HSC1709(2)	HSC1711(2)	HSC1811(2)
MOTOR HP (QTY)		55 (2)	70 (2)	70 (1) 90 (1)	90 (2)	90 (1) 120 (1)	120 (2)	140(2)	165 (2)
RPM		2900	2900	2900	2900	2900	2900	2900	2900
ELECTRICAL INFORMATION									
COMPR.	RLA, EACH	68	87	87, 111	111	111, 141	141	165	194
	LRA, EACH	430	515	515, 705	705	705, 745	745	940	1050
UNIT	MIN CIRCUIT AMPS	153	196	228	250	287	317	371	437
	MAX ALLOW. FUSE SIZE	250	300	350	350	400	500	550	650
EVAPORATOR									
MODEL		E4A	E5A	E5B	E6A	E7A	E7A	E7B	E7B
WATER CONNECTION (INCH)		5	6	6	8	10	10	10	10
NOMINAL WATER FLOW (GPM)		257	345	389	435	543	543	654	783
NOMINAL PRESSURE DROP (FT WG)		12.3	16.5	17.1	12.0	14.7	15.6	17.8	23.4
CONDENSER									
MODEL (QTY)		C1A (2)	C2A (2)	C2B (2)	C2B (2)	C2C (2)	C2C (2)	C3A (2)	C4A (2)
WATER CONNECTION (INCH)		4	4	4	4	5	6	6	6
NOMINAL WATER FLOW (GPM)		314	419	473	527	595	663	793	927
NOMINAL PRESSURE DROP (FT WG)		10.6	12.1	11.1	8.7	18.0	15.2	13.9	14.0
GENERAL INFORMATION									
UNIT LENGTH (INCH)		137 1/4	137 1/4	157 1/4	152 1/2	132 1/4	132 1/4	152 1/4	152 1/4
UNIT WIDTH (INCH)		35 5/8	38 5/8	38 5/8	38 5/8	39 5/8	39 5/8	41 3/4	43 3/4
UNIT HEIGHT (INCH)		70 3/8	77 1/2	77 1/2	79 1/2	83 1/8	83 1/8	84 7/8	88 5/8
SHIPPING WEIGHT (KG)		2183	3440	4169	4376	4525	4744	5889	7283
OPERATING WEIGHT (KG)		2362	3722	4510	4734	4896	5133	6372	7880
APPROX. R22 REF. CHARGE (KG)		96	128	145	162	183	204	244	284

Notes: 1.) Nominal capacity is based on standard condition, actual capacity depends on the specified operating conditions.

2.) Evaporator and condenser models are based on standard condition and are both 2 pass. Model might change for non-standard conditions or application.

One Compressor

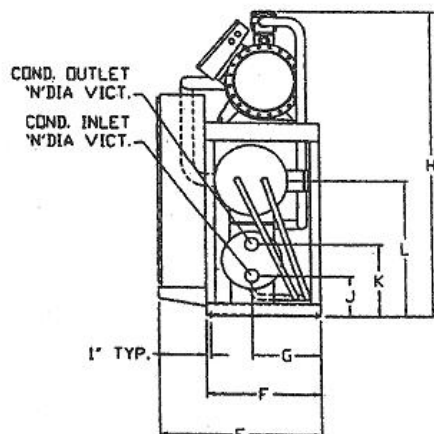
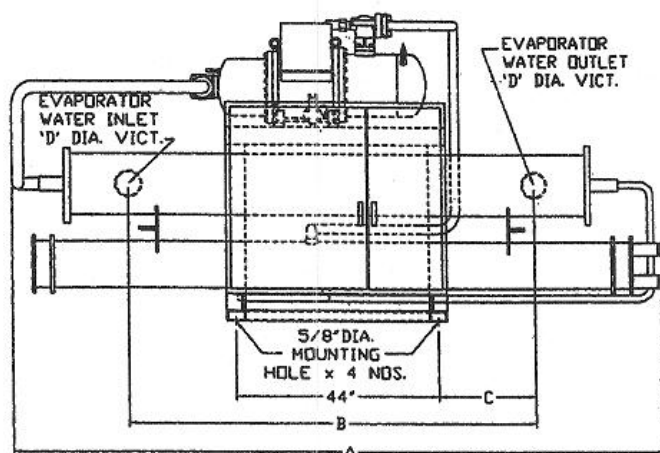
Model TAWC	Leaving Chilled Water Temp., °F	Entering Condenser Water Temperature, °F							
		75		85		90		95	
		Tons	KW	Tons	KW	Tons	KW	Tons	KW
50-5	40	51.7	37.1	49.1	40.9	47.8	43.0	46.4	45.0
	42	53.8	37.2	51.1	41.1	49.7	43.2	48.3	45.3
	44	55.9	37.4	53.4	41.3	51.7	43.4	50.2	45.5
	46	58.0	37.5	55.2	41.5	43.7	43.7	52.2	45.8
	48	60.3	37.6	57.3	41.7	55.8	43.9	54.2	46.0
	50	62.5	37.7	59.5	41.8	57.9	44.1	56.3	46.4
70-5	40	69.9	48.1	66.4	53.1	64.5	55.7	62.7	58.5
	42	72.7	48.3	69.0	53.5	67.1	56.1	65.2	58.8
	44	75.5	48.5	71.7	53.8	69.8	56.4	67.8	59.2
	46	78.4	48.7	74.5	54.0	72.5	56.8	70.5	59.5
	48	81.4	48.8	77.4	54.2	75.4	57.0	73.3	59.8
	50	84.5	48.9	80.4	54.4	78.3	57.3	76.1	60.2
90-5	40	88.0	60.4	83.5	66.6	81.2	69.9	78.9	73.3
	42	91.4	60.6	86.8	67.1	84.5	70.3	82.1	73.9
	44	95.0	60.9	90.3	67.4	87.9	70.8	85.3	74.3
	46	98.7	61.1	93.8	67.7	91.3	71.1	88.7	74.7
	48	102.5	61.2	97.4	68.0	94.9	71.5	92.2	75.1
	50	106.3	61.4	101.2	68.2	98.5	71.8	95.8	75.5
110-5	40	110.1	77.4	104.6	85.4	101.7	89.6	98.7	93.9
	42	114.5	77.7	108.7	85.9	105.8	90.1	102.7	94.6
	44	119.0	78.0	113.0	86.3	110.0	90.6	106.9	95.2
	46	123.6	78.3	117.5	86.7	114.3	91.2	111.1	95.7
	48	128.3	78.5	122.0	87.1	118.8	91.6	115.4	96.2
	50	133.1	78.7	126.7	87.4	123.3	92.0	119.9	96.7
135-5	40	132.4	90.2	125.7	99.7	122.2	104.5	118.7	109.6
	42	137.6	90.6	130.7	100.2	127.1	105.2	123.5	110.4
	44	143.0	90.9	135.9	100.7	132.9	105.8	128.4	111.0
	46	148.5	91.3	141.2	101.1	137.4	106.3	133.5	111.7
	48	154.2	91.6	146.6	101.7	142.7	106.8	138.7	112.3
	50	160.0	91.8	152.2	102.0	148.2	107.3	144.1	112.9
155-5	40	154.6	106.5	146.7	117.6	142.7	123.4	138.6	129.4
	42	160.7	106.9	152.6	118.2	148.5	124.1	144.2	130.2
	44	167.0	107.3	158.6	118.9	154.4	124.8	150.0	131.0
	46	173.4	107.7	164.8	119.4	160.4	125.5	155.9	131.8
	48	180.0	108.0	171.2	119.9	166.7	126.1	167.0	132.6
	50	186.8	108.3	177.8	120.3	173.1	126.6	168.3	133.2
170-5	40	170.2	116.9	161.5	129.1	157.1	135.4	152.6	142.0
	42	176.9	117.4	168.0	129.8	163.4	136.3	158.7	143.0
	44	183.8	117.8	174.6	130.5	169.9	137.0	165.1	143.8
	46	190.9	149.1	181.5	131.1	176.6	137.7	171.6	144.6
	48	198.2	118.6	188.5	131.6	183.5	138.4	178.3	145.4
	50	205.7	118.9	195.7	132.0	190.6	138.9	185.3	146.2
225-5	40	222.4	151.2	211.1	167.1	205.3	175.2	199.4	183.8
	42	231.2	151.9	219.5	168.0	213.6	176.2	207.4	185.0
	44	240.2	152.4	228.2	168.9	222.1	177.3	215.7	186.1
	46	249.5	153.0	237.1	169.6	230.8	178.2	224.3	187.2
	48	259.0	153.5	246.3	170.3	239.8	179.0	233.1	188.2
	50	268.8	153.8	255.7	170.9	249.0	179.8	242.1	189.1

Two Compressors

Model TAWC	Leaving Chilled Water Temp., °F	Entering Condenser Water Temperature, °F							
		75		85		90		95	
		Tons	KWl	Tons	KWl	Tons	KWl	Tons	KWl
105T-5	40	103.5	74.2	98.2	81.8	95.5	85.9	92.8	90.0
	42	107.5	74.4	102.1	82.2	99.4	86.3	96.5	90.6
	44	111.7	74.8	106.8	82.6	103.3	86.7	100.4	91.1
	46	116.1	75.0	110.3	83.0	107.4	87.3	104.3	91.7
	48	120.5	75.2	114.6	83.4	111.8	87.8	108.4	92.1
	50	125.1	75.4	119.0	83.6	115.9	88.2	112.6	92.7
140T-5	40	139.8	96.2	132.7	106.3	129.1	111.4	125.3	117.0
	42	145.3	96.6	138.0	106.9	134.3	112.3	130.4	117.6
	44	151.0	97.0	143.4	107.5	139.6	112.9	135.6	118.5
	46	156.8	97.4	149.1	107.9	145.1	113.5	141.0	119.1
	48	162.8	97.6	154.8	108.4	150.7	113.9	146.5	119.7
	50	169.0	97.9	160.8	108.8	156.5	114.5	152.2	120.3
160T-5	40	157.9	108.5	149.9	119.8	145.8	125.7	141.5	131.8
	42	164.1	108.9	155.8	120.5	151.6	126.5	147.2	132.7
	44	170.5	109.4	162.0	121.1	157.7	127.2	153.1	133.5
	46	177.1	109.8	168.3	121.6	163.8	127.8	159.2	134.2
	48	183.9	110.0	174.9	122.2	170.2	128.4	165.4	134.9
	50	190.8	110.3	181.5	122.6	176.8	129.1	171.8	135.7
180T-5	40	175.9	120.7	167.0	133.3	162.5	139.9	157.7	146.7
	42	182.9	121.1	173.7	134.1	169.0	140.7	164.1	147.7
	44	190.0	121.7	180.6	134.7	175.7	141.5	170.7	148.5
	46	197.4	122.2	187.6	135.3	182.6	142.1	177.4	149.4
	48	204.9	122.4	194.9	136.0	189.7	143.0	184.4	150.2
	50	212.7	122.8	202.3	136.4	197.0	143.6	191.5	151.0
200T-5	40	198.1	137.7	188.1	152.0	182.9	159.5	177.6	167.3
	42	205.9	138.2	195.6	153.0	190.3	160.5	184.8	168.4
	44	214.0	138.8	203.3	153.7	197.9	161.4	192.2	169.4
	46	222.2	139.4	211.3	154.4	205.6	162.2	199.8	170.4
	48	230.7	139.7	219.4	155.1	213.6	163.0	207.6	171.3
	50	239.5	140.1	227.8	155.6	221.9	163.8	215.7	172.2
225T-5	40	220.3	154.7	209.1	170.8	203.4	179.2	197.5	187.9
	42	229.0	155.3	217.5	171.8	211.6	180.3	205.5	189.1
	44	237.9	155.9	226.1	172.6	220.0	181.3	213.7	190.3
	46	247.1	156.6	234.9	173.5	228.7	182.3	222.2	191.4
	48	256.6	157.0	244.0	174.3	237.5	183.1	230.9	192.4
	50	266.3	157.4	253.3	174.9	246.7	184.0	239.8	193.4
270T-5	40	264.8	180.5	251.3	199.4	244.5	209.1	237.3	219.2
	42	275.2	181.3	261.4	200.4	254.3	210.3	246.9	220.8
	44	286.0	181.9	271.7	201.5	265.8	211.6	256.8	222.1
	46	297.0	182.5	282.3	202.3	274.8	212.6	267.0	223.3
	48	308.4	183.1	293.2	203.3	285.5	213.6	277.5	224.5
	50	320.0	183.5	304.5	203.9	296.5	214.7	288.2	225.8
315T-5	40	309.2	213.0	293.5	235.3	285.5	246.8	277.1	258.7
	42	321.4	213.8	305.2	236.5	296.9	248.2	288.4	260.4
	44	333.9	214.7	317.3	237.7	308.7	249.7	299.9	262.0
	46	346.8	215.5	329.7	238.8	320.9	250.9	311.8	263.7
	48	360.1	216.1	342.4	239.8	333.4	252.1	324.0	265.1
	50	373.7	216.5	355.5	240.6	346.2	253.2	336.6	266.4

DIMENSIONAL DATA

One Compressor

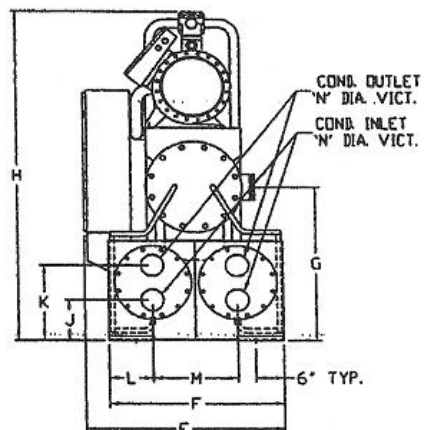
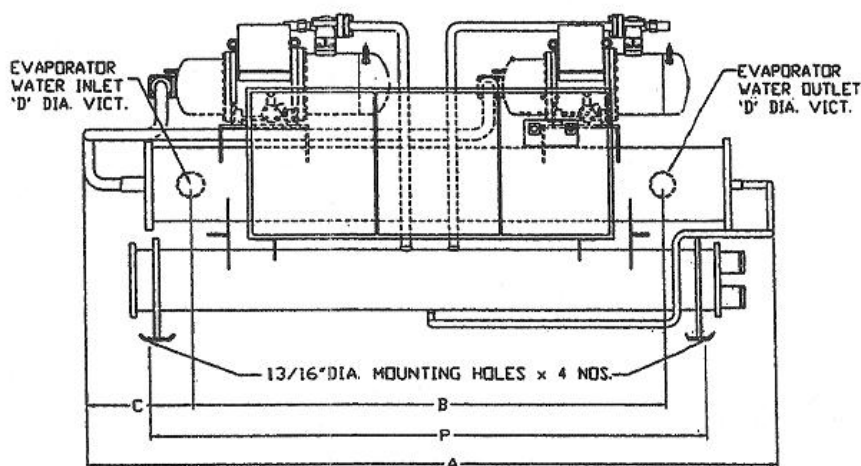


MODEL TAVC	A	B	C	D	E	F	G	H	J	K	L	N
50-5	101	53 1/2	4 3/4	3	36	25	16	71 1/4	9 1/4	16 1/2	28 3/4	2 1/2
70-5	101	53 1/2	4 3/4	3	36	25	16	77 3/4	9 1/4	18 1/2	32	4
90-5	136 1/2	91 5/8	23 7/8	4	36	25	16	77	9 1/4	18 1/2	33 5/8	4
110-5	136 1/2	90 5/8	23 3/8	5	36	25	16	78 7/8	9 1/4	18 1/2	34 1/2	5
135-5	137 1/4	89 3/4	22 7/8	6	37	26	16	81 1/4	10 1/2	18 1/2	34 1/2	6
155-5	157 1/4	109 3/4	32 7/8	6	37	26	16	84 7/8	10	19	36 1/2	6
170-5	152 1/2	109 3/4	32 7/8	6	37	26	16	90 1/2	9 7/8	21 1/8	39 1/2	6
225-5	164 1/2	105 1/2	30 3/4	8	40	29	17 1/2	96	10 7/8	22 1/8	41 1/2	6

NOTES :

1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD ON UNIT.
2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR AND CONDENSER WATER CONNECTIONS.
3. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN CONDENSER WATER AND CHILLED WATER PIPES.

Two Compressors



TAVC MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P
105T-5	136 1/2	90 5/8	22	5	36 1/8	29	30 3/4	70 3/8	7 3/4	15	6 7/8	15 1/4	4	83
140T-5	137 1/4	89 3/4	22 3/4	6	38 5/8	33	34 1/2	77 1/2	8 1/2	17 3/4	7 7/8	17 1/4	4	83
160T-5	157 1/4	109 3/4	22 3/4	6	38 5/8	33	34 1/2	77 1/2	8 1/2	17 3/4	7 7/8	17 1/4	4	105
180T-5	152 1/2	105 1/2	22 1/2	8	38 5/8	33	35 1/2	79 1/2	8 1/2	17 3/4	7 7/8	17 1/4	4	105
200T-5	132 1/4	92 7/8	18 5/8	10	39 5/8	33	36 1/2	83 1/8	8 1/2	17 3/4	7 7/8	17 1/4	5	105
225T-5	132 1/4	92 7/8	18 5/8	10	39 5/8	33	36 1/2	83 1/8	8 1/2	17 3/4	7 7/8	17 1/4	6	105
270T-5	152 1/4	102 7/8	23 5/8	10	41 3/4	35 3/4	37 1/4	84 7/8	9 1/4	17 1/4	8 1/2	18 3/4	6	105
315T-5	152 1/4	102 7/8	23 5/8	10	43 3/4	39 3/4	38 1/4	88 5/8	9 3/4	18 7/8	9 1/2	20 3/4	6	105

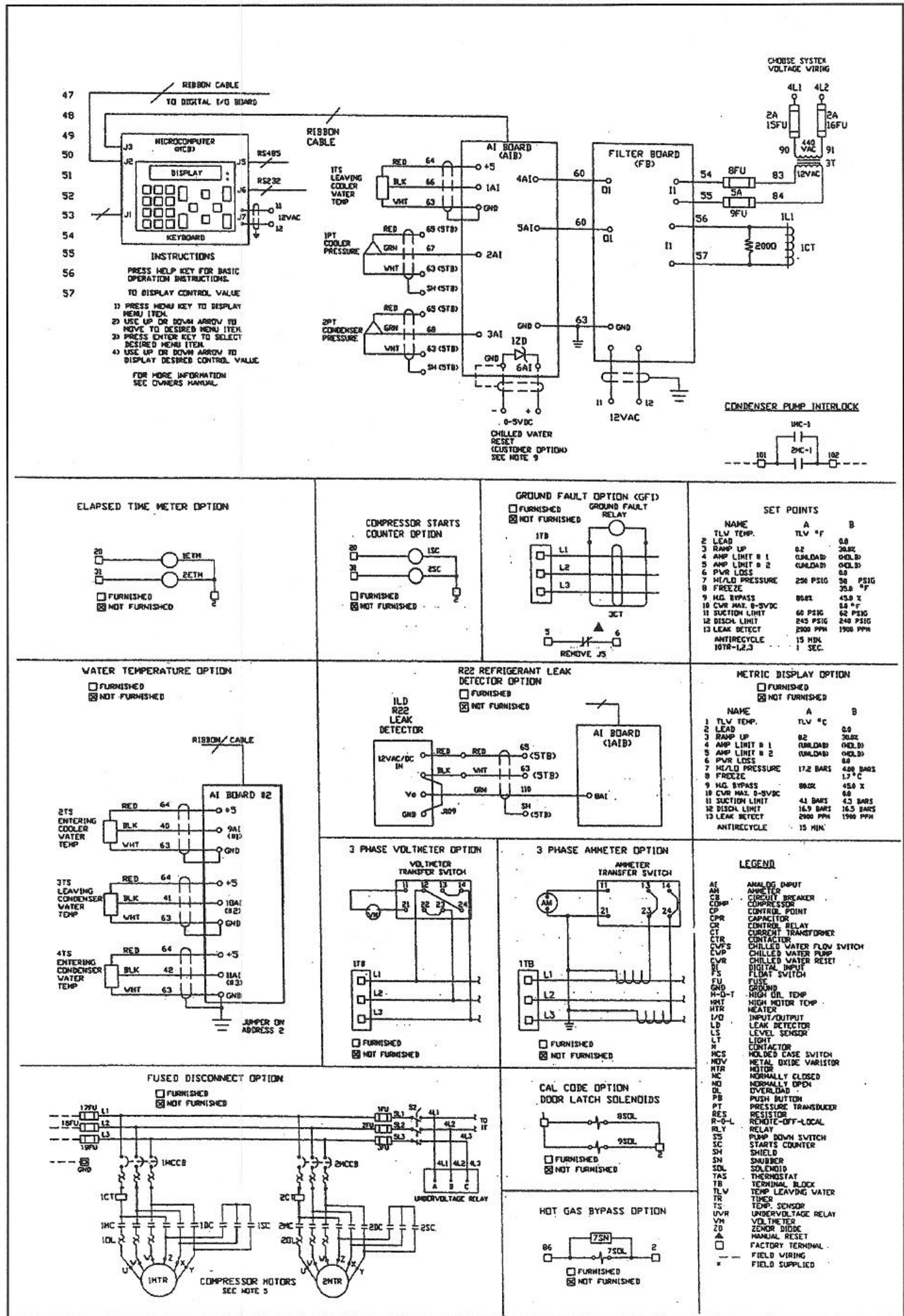
NOTES :

1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD ON UNIT.
2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR AND CONDENSER WATER CONNECTIONS.
3. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN CONDENSER WATER AND CHILLED WATER PIPES.

Note: All dimensions are in inches.

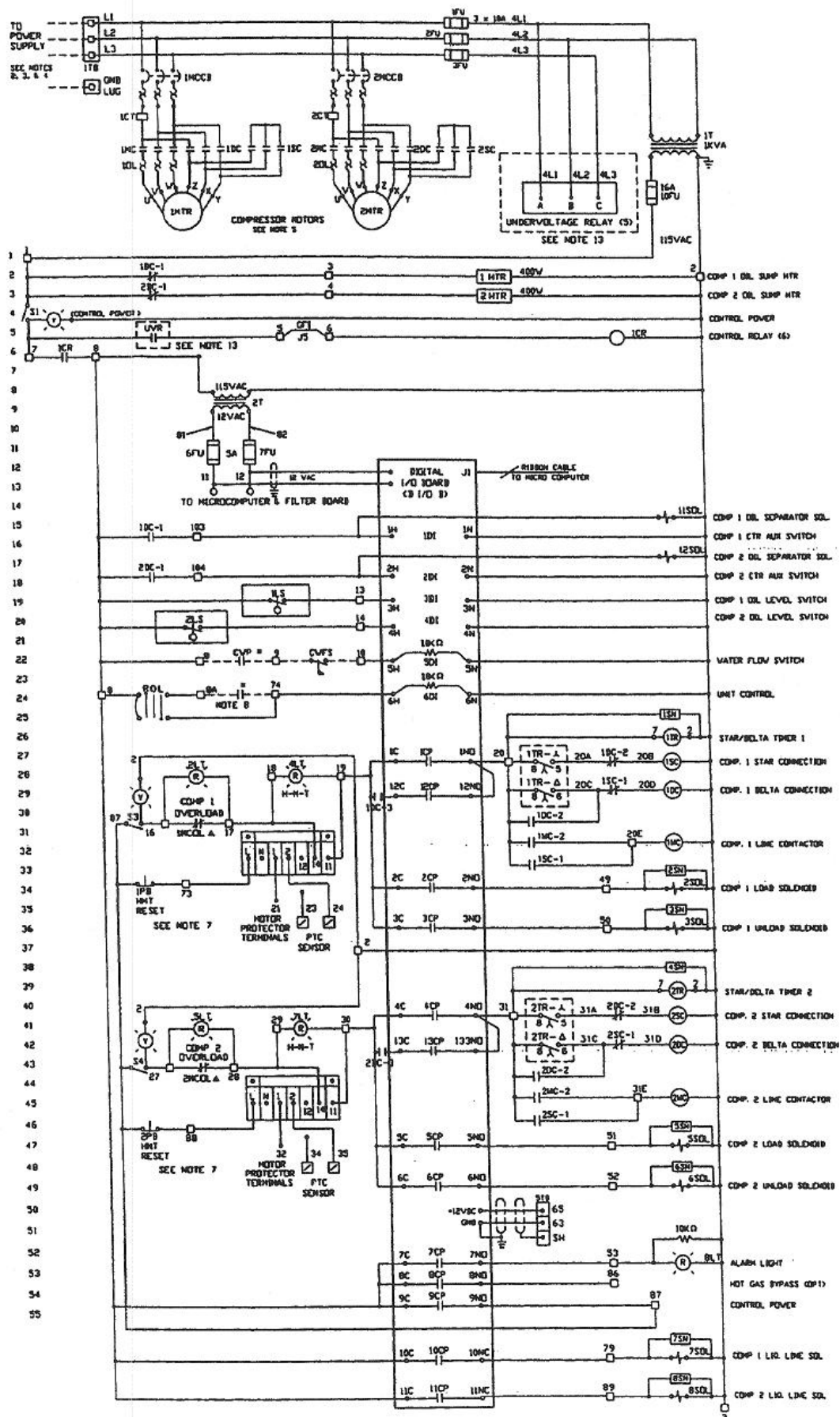
One Compressor



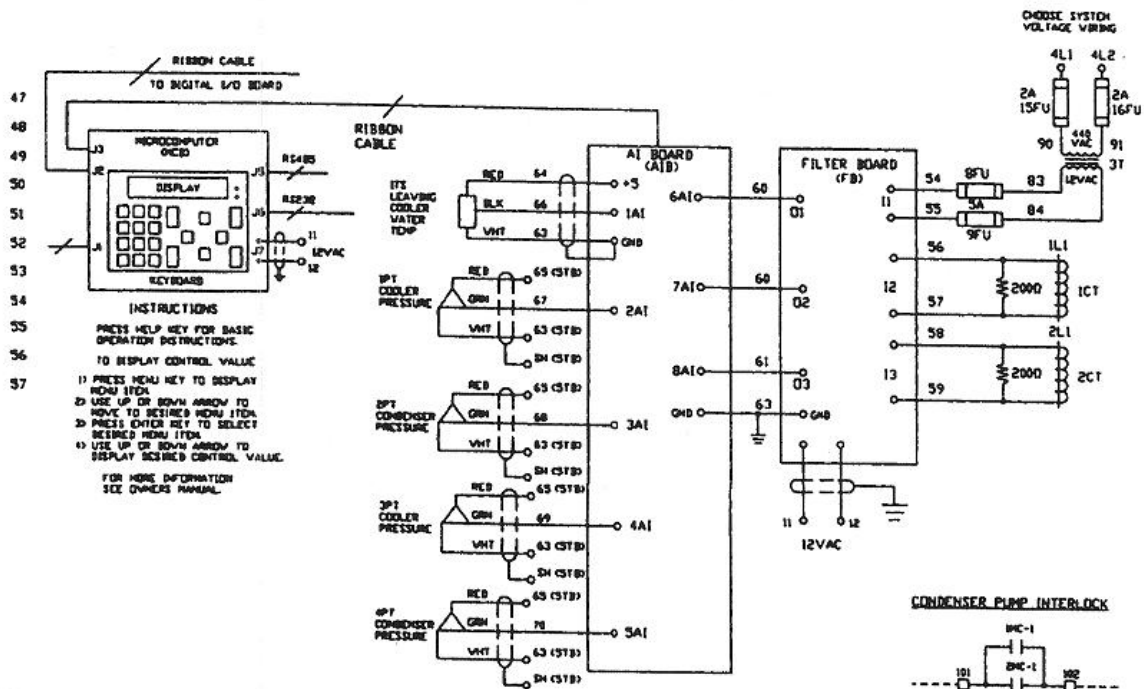


TYPICAL WIRING SCHEMATIC

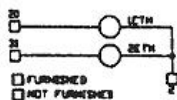
Two Compressor



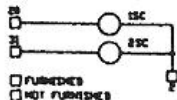
TYPICAL WIRING SCHEMATIC



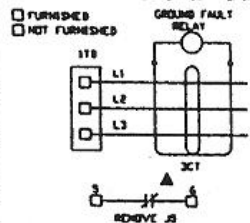
ELAPSED TIME METER OPTION



COMPRESSOR STARTS COUNTER OPTION



GROUND FAULT OPTION (GFI)

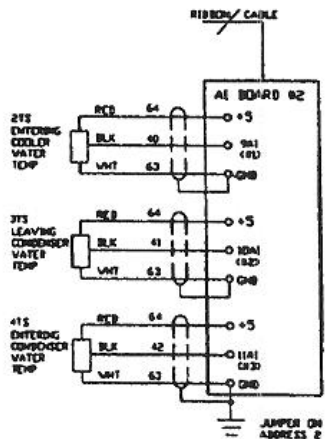


SET POINTS

NAME	A	B
1. TLV TOP	TLV °F	0.0
2. LEAD	TLV °F	30.0
3. RAMP UP	0.2	0.0
4. AMP LIMIT # 1	0.0	0.0
5. AMP LIMIT # 2	0.0	0.0
6. PWR LOSS	0.0	0.0
7. HEAT PRESSURE	250 PSIG	50 PSIG
8. FREEZE	0.0	0.0
9. H2S BYPASS	0.0	0.0
10. CWR MAX 0-5VDC	0.0	0.0
11. SUCTON LIMIT	60 PSIG	60 PSIG
12. RECHG LIMIT	240 PSIG	240 PSIG
13. LEAK DETECT	0.0	0.0
ANTIFREEZE	15 MIN	1 SEC
WTR-1,2,3		

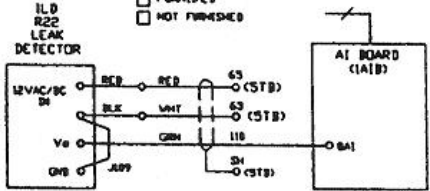
WATER TEMPERATURE OPTION

☐ FURNISHED
☐ NOT FURNISHED



R22 REFRIGERANT LEAK DETECTOR OPTION

☐ FURNISHED
☐ NOT FURNISHED

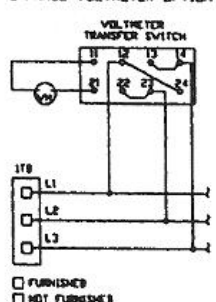


METRIC DISPLAY OPTION

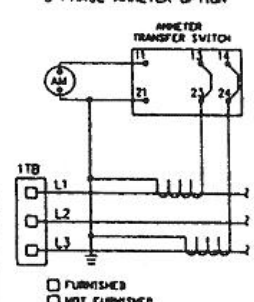
☐ FURNISHED
☐ NOT FURNISHED

NAME	A	B
1. TLV TEMP	TLV °C	0.0
2. LEAD	TLV °C	30.0
3. RAMP UP	0.2	0.0
4. AMP LIMIT # 1	0.0	0.0
5. AMP LIMIT # 2	0.0	0.0
6. PWR LOSS	0.0	0.0
7. HEAT PRESSURE	17.2 BARS	4.0 BARS
8. FREEZE	0.0	0.0
9. H2S BYPASS	0.0	0.0
10. CWR MAX 0-5VDC	0.0	0.0
11. SUCTON LIMIT	4.1 BARS	4.1 BARS
12. RECHG LIMIT	16.9 BARS	16.9 BARS
13. LEAK DETECT	0.0	0.0
ANTIFREEZE	15 MIN	1 SEC
WTR-1,2,3		

3 PHASE VOLTMETER OPTION



3 PHASE AMPHETER OPTION

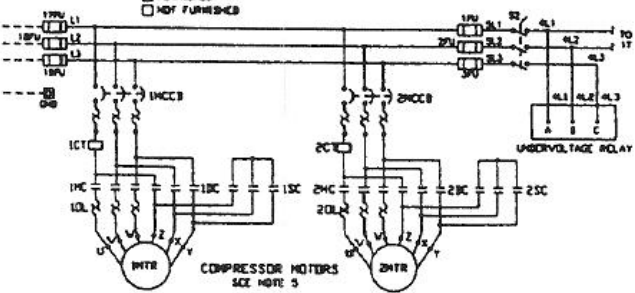


LEGEND

AI	ANALOG INPUT
AM	AMMETER
CB	CIRCUIT BREAKER
CDP	CONTROL POINT
CP	CONTROL POINT
CPR	CAPACITOR
CT	CONTACTOR
CTR	CURRENT TRANSFORMER
CUTS	CHILLED WATER FLOW SWITCH
CWP	CHILLED WATER PUMP
CWR	CHILLED WATER RESET
DS	DIGITAL SWITCH
FU	FUSE
GND	GROUND
H-0-1	HIGH ON TEMP
HMT	HIGH MOTOR TEMP
HTR	HEATER
I/O	INPUT/OUTPUT
LD	LEAK DETECTOR
LS	LEVEL SENSOR
LT	LIGHT
MC	CONTACTOR
MCS	MOLDED CASE SWITCH
MOV	METAL OXIDE VARISTOR
MC	MOTOR
MO	MANUALLY OPEN
MO	MANUALLY OPEN
OL	OVERLOAD
PS	PUSH BUTTON
PT	PRESSURE TRANSDUCER
RES	RESISTOR
R-0-L	REMOTE-OFF-LOCAL
RLY	RELAY
SS	PUMP DOWN SWITCH
SC	STARTS COUNTER
SH	SHIELD
SN	SHUTTER
SOLE	SOLENOID
TAS	TERMINAL BLOCK
TR	TEMP. LEAVING WATER
TR	TEMP. LEAVING WATER
TS	TEMP. SENSOR
UVR	UNDERVOLTAGE RELAY
VN	VOLTMETER
ZNR	ZENER DIODE
AN	ANALOG RESET
□	FACTORY TERMINAL
—	FIELD WIRING
—	FIELD SUPPLIED

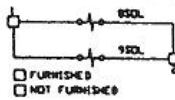
FUSED DISCONNECT OPTION

☐ FURNISHED
☐ NOT FURNISHED

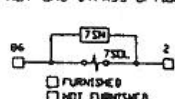


CAL CODE OPTION

☐ FURNISHED
☐ NOT FURNISHED

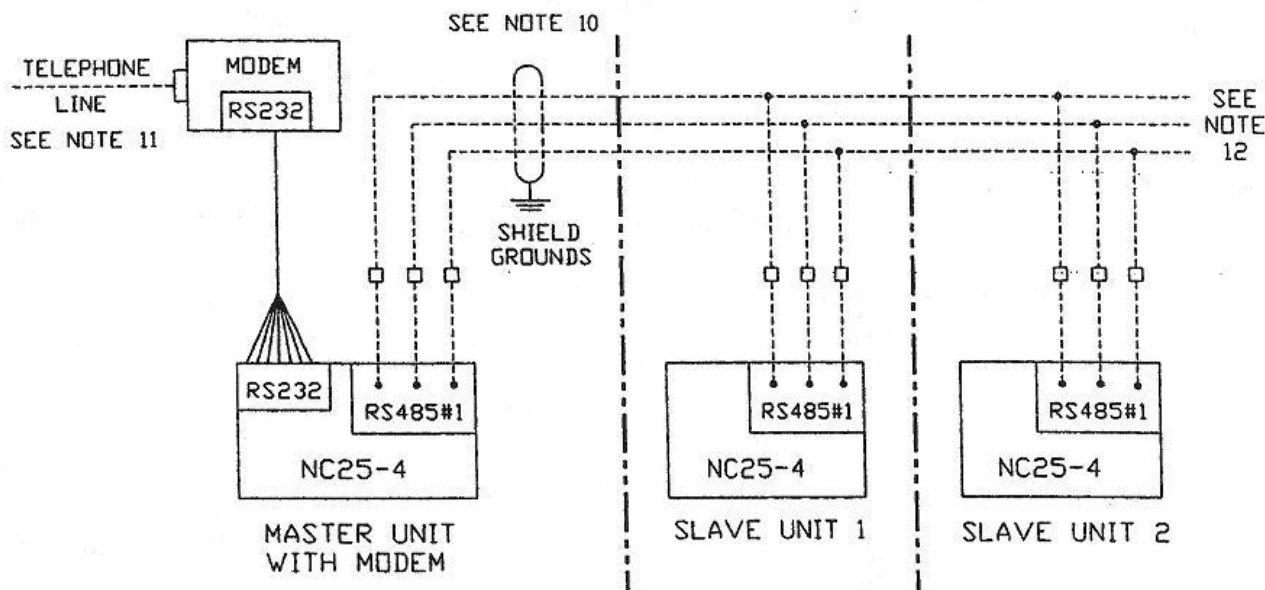


HOT GAS BYPASS OPTION



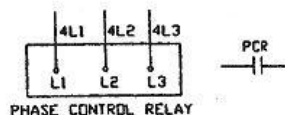
TYPICAL WIRING SCHEMATIC

MODEM COMMUNICATIONS WIRING CONNECTION DIAGRAM



NOTES

- 1- FUSES SHALL BE TIME DELAY TYPE.
- 2- ALL FIELD WIRING SHALL COMPLY WITH LOCAL, STATE AND NATIONAL CODES.
- 3- USE COPPER CONDUCTORS ONLY. CONTROL WIRING 14AWG.
- 4- DISCONNECT MEANS AND BRANCH CIRCUIT PROTECTION SHALL BE PROVIDED BY INSTALLER
- 5- IF POWER SUPPLY HAS BEEN INTERRUPTED FOR A PROLONGED PERIOD, OIL SUMP HEATER MUST BE ENERGIZED FOR 24 HOURS MINIMUM BEFORE STARTING COMPRESSOR.
- 6- DO NOT RUN CT WIRES IN WIRE BUNDLES.
- 7- TO RESET ITAS HOLD PB FOR 5 SECONDS.
- 8- CUSTOMER CONTROL CONTACTS MUST BE WIRE BETWEEN TERMINALS 8A & 74. SELECT POSITION 'R' FOR REMOTE START, POSITION 'D' FOR UNIT SHUT DOWN AND POSITION 'L' FOR LOCAL START
- 9- IF 0-5VDC CWR IS USED, SET SETPOINT 10B TO RESET DESIRED AT 5VDC INPUT.
CAUTION: DO NOT SUPPLY OVER 5.0VDC TO 74I.
- 10- THE RS485 PORT OF EACH NC25-4 MUST BE INTERCONNECTED WITH A THREE-CONDUCTOR SHIELDED CABLE AND SHIELD MUST BE GROUNDED AT THE MASTER NC25-4 ONLY. IF AN RS485 JUNCTION IS MADE AT A SLAVE NC25-4, THE SHIELDS SHOULD BE JUMPED BETWEEN THE SHIELDED CABLE.
- 11- INSERT THE SUPPLIED-PHONE CORD INTO THE LINE JACK ON THE REAR OF THE MODEM, REFER TO OPERATION MANUAL FOR MORE INFORMATION. THE MODEM & THE SOCKET OUTLET ARE INSTALLED IN THE MASTER UNIT ONLY.
- 12- IF THE NUMBER OF SLAVE UNITS ARE MORE THAN 2, THEN FOLLOW THE ADDITIONAL RS485 CONNECTIONS AS SAME AS SLAVE UNITS 1 AND 2. THE MAXIMUM NUMBER OF SLAVE UNITS ARE 8.
- 13- IF PHASE CONTROL RELAY IS USED INSTEAD OF UNDERVOLTAGE RELAY, THE CONNECTION DIAGRAM WILL BE AS BELOW:



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