Wiring Manual

Series R®
Helical Rotary Liquid Chillers

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

April 2013

RTHD-SVE01A-EN

Warnings, Cautions and Notices

Warnings, Cautions and Notices. Note that warnings, cautions and notices appear at appropriate intervals throughout this manual. Warnings are provide to alert installing contractors to potential hazards that could result in death or personal injury. Cautions are designed to alert personnel to hazardous situations that could result in personal injury, while notices indicate a situation that could result in equipment or property-damage-only accidents.

Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

Read this manual thoroughly before operating or servicing this unit.

ATTENTION: Warnings, Cautions and Notices appear at appropriate sections throughout this literature. Read these carefully:

⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE:	Indicates a situation that could result in equipment or property-damage only

Important Environmental Concerns!

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Responsible Refrigerant Practices!

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠WARNING

Proper Field Wiring and Grounding Required!

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow code could result in death or serious injury.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- **Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.**
- **If there is a risk of arc or flash, technicians MUST put on all Personal Protective Equipment (PPE) in accordance with NFPA 70E or other country-specific requirements for arc flash protection, PRIOR to servicing the unit.**

Failure to follow recommendations could result in death or serious injury.

⚠WARNING

Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN

NOTICE:

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors could result in equipment damage.

Introduction

Revision Summary

RTHD-SVE01A-EN (24 April 2013)

New manual lists RTHD wiring diagrams.

Trademarks

Table of Contents

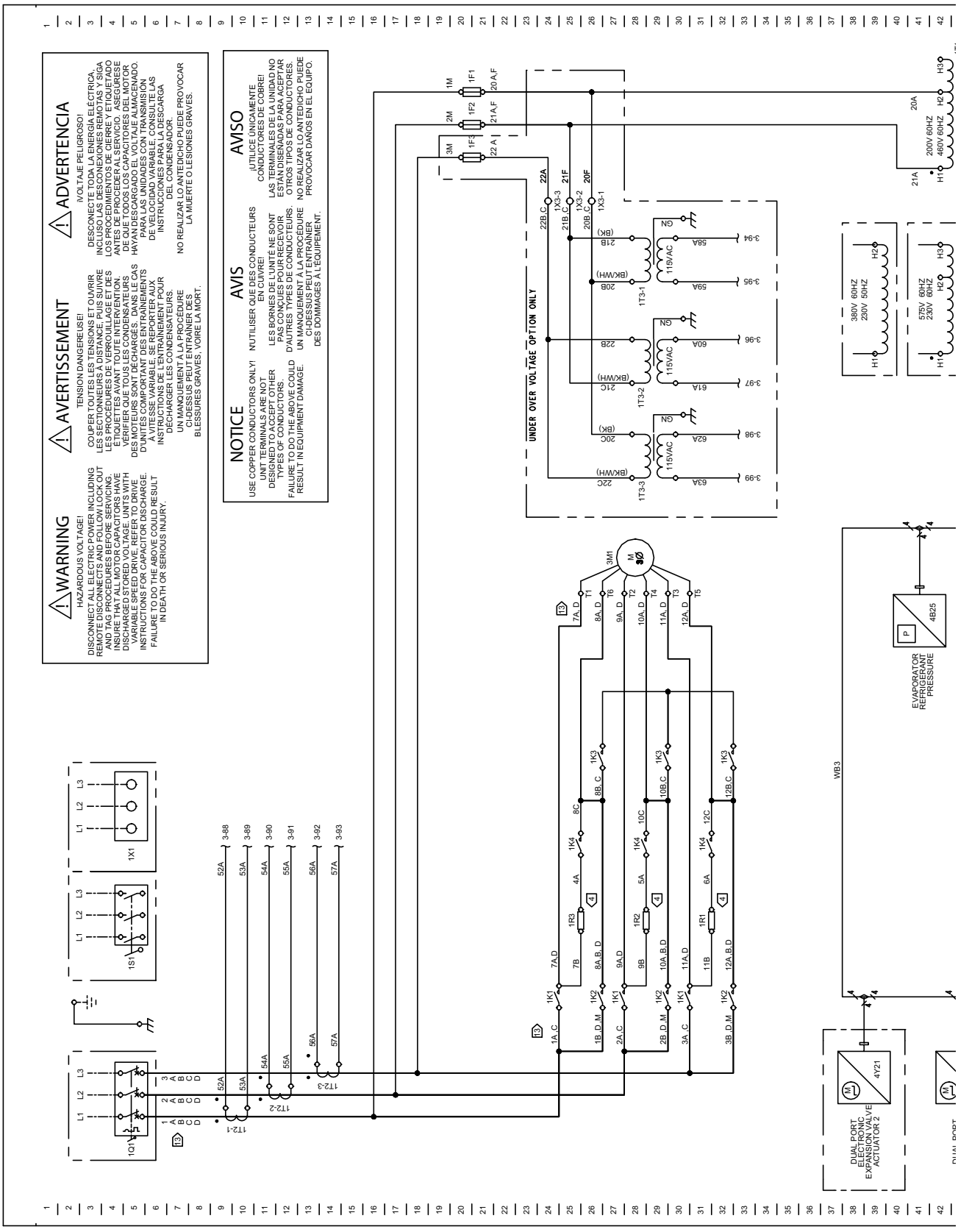
Wiring Schematics

This document provides typical field connection diagrams, electrical schematics for the RTHD units. See RTHD-SVX01*-EN for Installation, Operation and Maintenance information.

Note: *The drawings in this section are provided for reference only. These diagrams may not reflect the actual wiring of your unit. For specific electrical connection and schematic information, always refer to the wiring diagrams that were shipped with the unit.*

Unit Electrical Data

To determine the specific electrical characteristics of a particular chiller, see the nameplates mounted on the units.


WARNING
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED BEFORE TOUCHING. IF EQUIPPED WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.
AVERTISSEMENT
TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS A DISTANCE, PUIS SUIVRE LES PROCEDURES DE VERROUILLAGE ET DES ETIQUETTES AVANT TOUTE INTERVENTION. VERIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DECHARGES. DANS LE CAS D'UNITES COMPORTANT DES ENTRAÎNEMENTS A VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DECHARGER LES CONDENSATEURS. UN MANQUEMENT A LA PROCEDURE CI-DESSUS PEUT ENTRAÎNER DES BLESSURES GRAVES, VOIRE LA MORT.
ADVERTENCIA
¡VOLTAJE PELIGROSO!
DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CONDENSADORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON TRANSMISIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR LA MUERTE O LESIONES GRAVES.
NOTICE
USE COPPER CONDUCTORS ONLY! UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. FAILURE TO DO THE ABOVE COULD RESULT IN EQUIPMENT DAMAGE.
AVIS
NUTILISER QUE DES CONDUCTEURS EN CUIVRE! LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS. UN MANQUEMENT À LA PROCEDURE CI DESSUS PEUT ENTRAÎNER DES DOMMAGES À L'ÉQUIPEMENT.
AVISO
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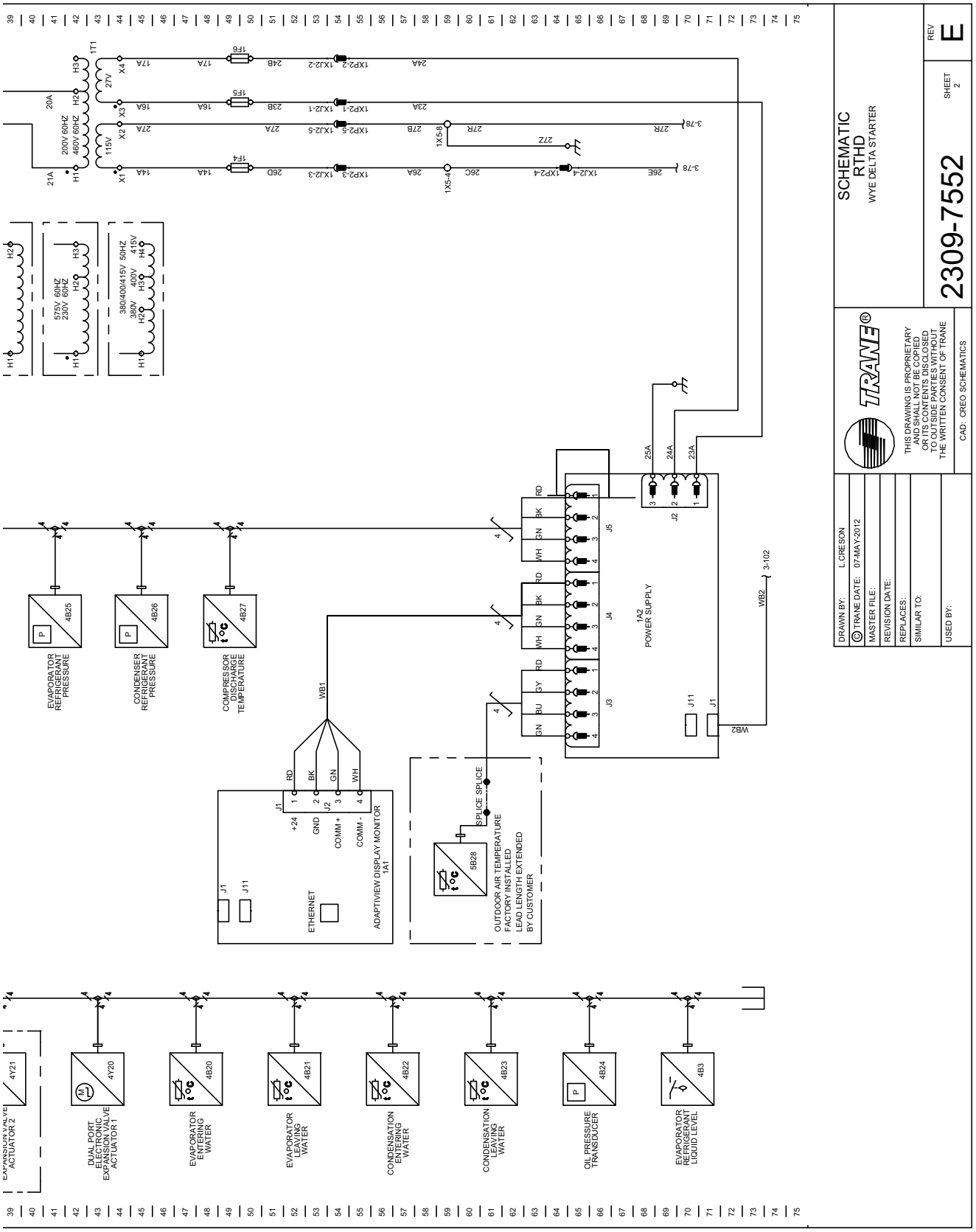
UNDER OVER VOLTAGE OPTION ONLY
1X3-1
1X3-2
1X3-3
1T3-1
1T3-2
1T3-3
1F1
1F2
1F3
1M
2M
3M
20A
380V 60HZ
230V 50HZ
575V 60HZ
230V 60HZ
460V 60HZ
200V 60HZ
EVAPORATOR REFRIGERANT PRESSURE
4B25
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 2
4Y21
WB3
1Q1
1S1
1X1
1T2-1
1T2-2
1T2-3
3M1
1K1
1K2
1K3
1K4
1R1
1R2
1R3


SCHEMATIC
RTHD
WYE DELTA STARTER
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SHEET 2
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SIMILAR TO:
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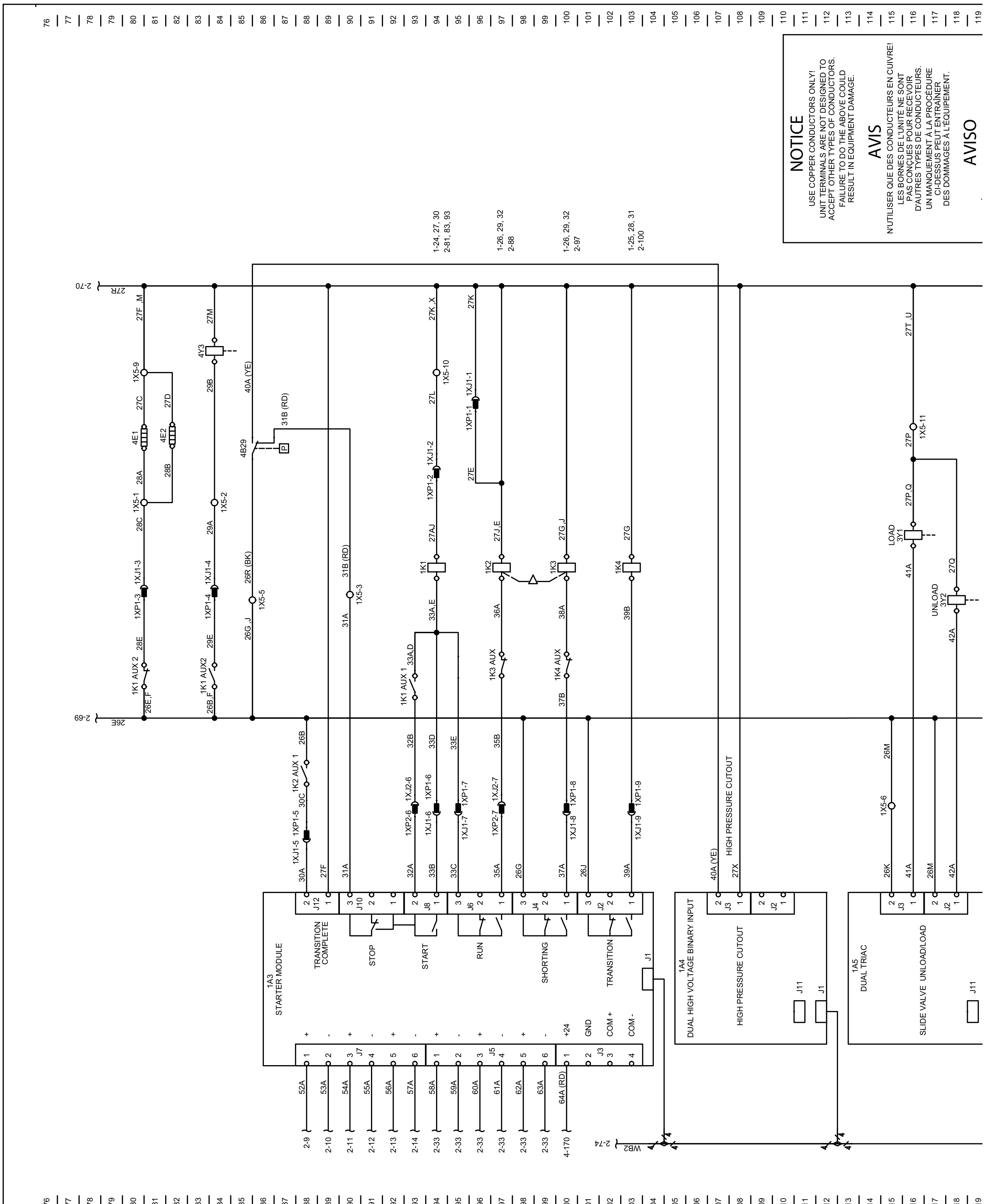
CAD: CREO SCHEMATICS
THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE PARTIES WITHOUT THE WRITTEN CONSENT OF TRANE
1A2 POWER SUPPLY
1A1 ADAPTIVIEW DISPLAY MONITOR
ETHERNET
OUTDOOR AIR TEMPERATURE FACTORY INSTALLED LEAD LENGTH EXTENDED BY CUSTOMER
SPLICE
EVAPORATOR REFRIGERANT PRESSURE
CONDENSER REFRIGERANT PRESSURE
COMPRESSOR DISCHARGE TEMPERATURE
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 1
EVAPORATOR ENTERING WATER
EVAPORATOR LEAVING WATER
CONDENSATION ENTERING WATER
CONDENSATION LEAVING WATER
OIL PRESSURE TRANSDUCER
EVAPORATOR REFRIGERANT LIQUID LEVEL
200V 60HZ
460V 60HZ
575V 60HZ
230V 60HZ
380/400/415V 50HZ
380V
400V
415V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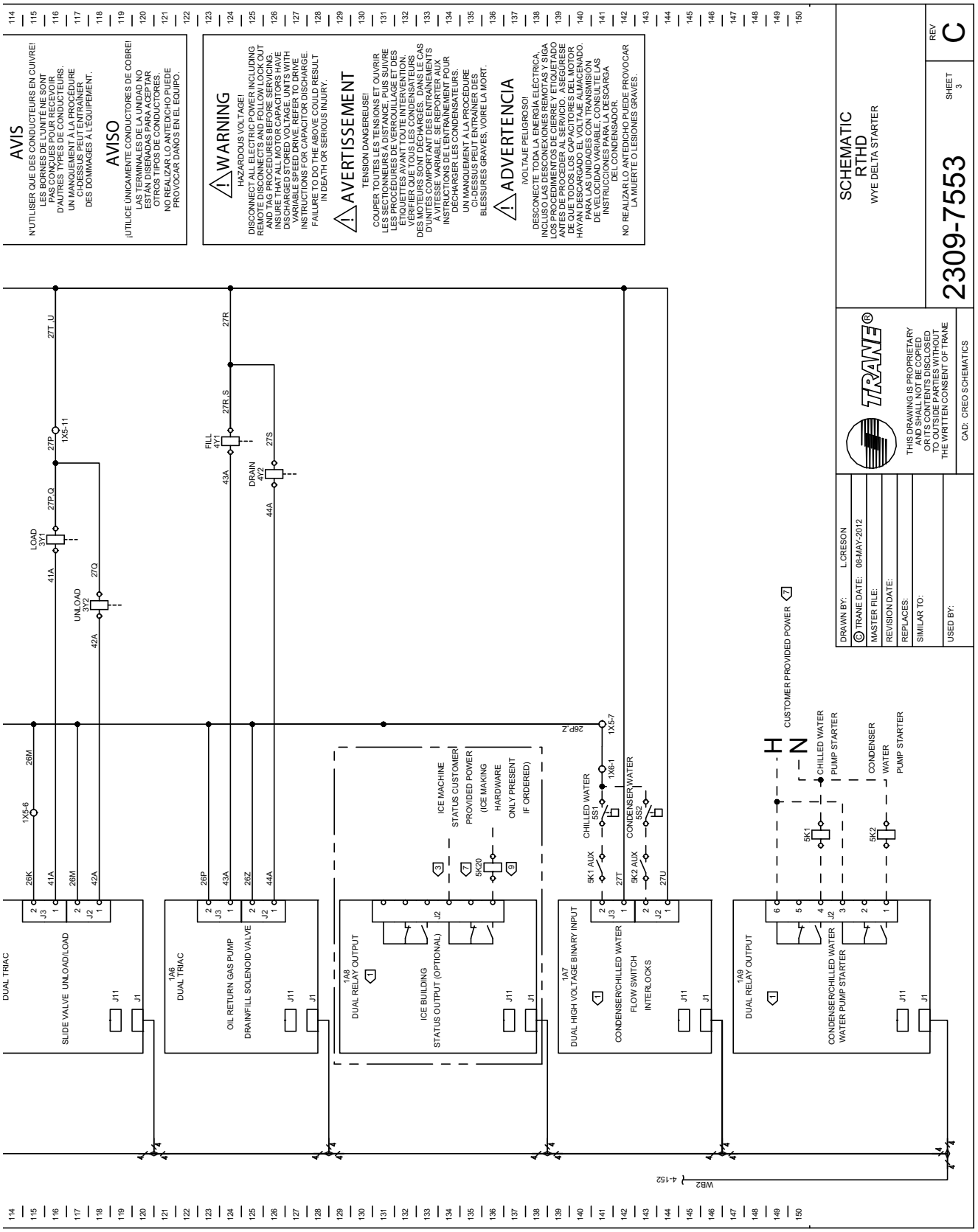
UN MANQUEMENT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES DOMMAGES À L'ÉQUIPEMENT.
AVISO
1A3 STARTER MODULE
TRANSITION COMPLETE
STOP
START
RUN
SHORTING
TRANSITION
1A4 DUAL HIGH VOLTAGE BINARY INPUT
HIGH PRESSURE CUTOUT
1A5 DUAL TRIAC
SLIDE VALVE UNLOAD/LOAD
LOAD 3Y1
UNLOAD 3Y2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WARNING
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DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INJURY OR DEATH MAY RESULT IF CAPACITORS DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.
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WYE DELTA STARTER
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© TRANE DATE: 08-MAY-2012
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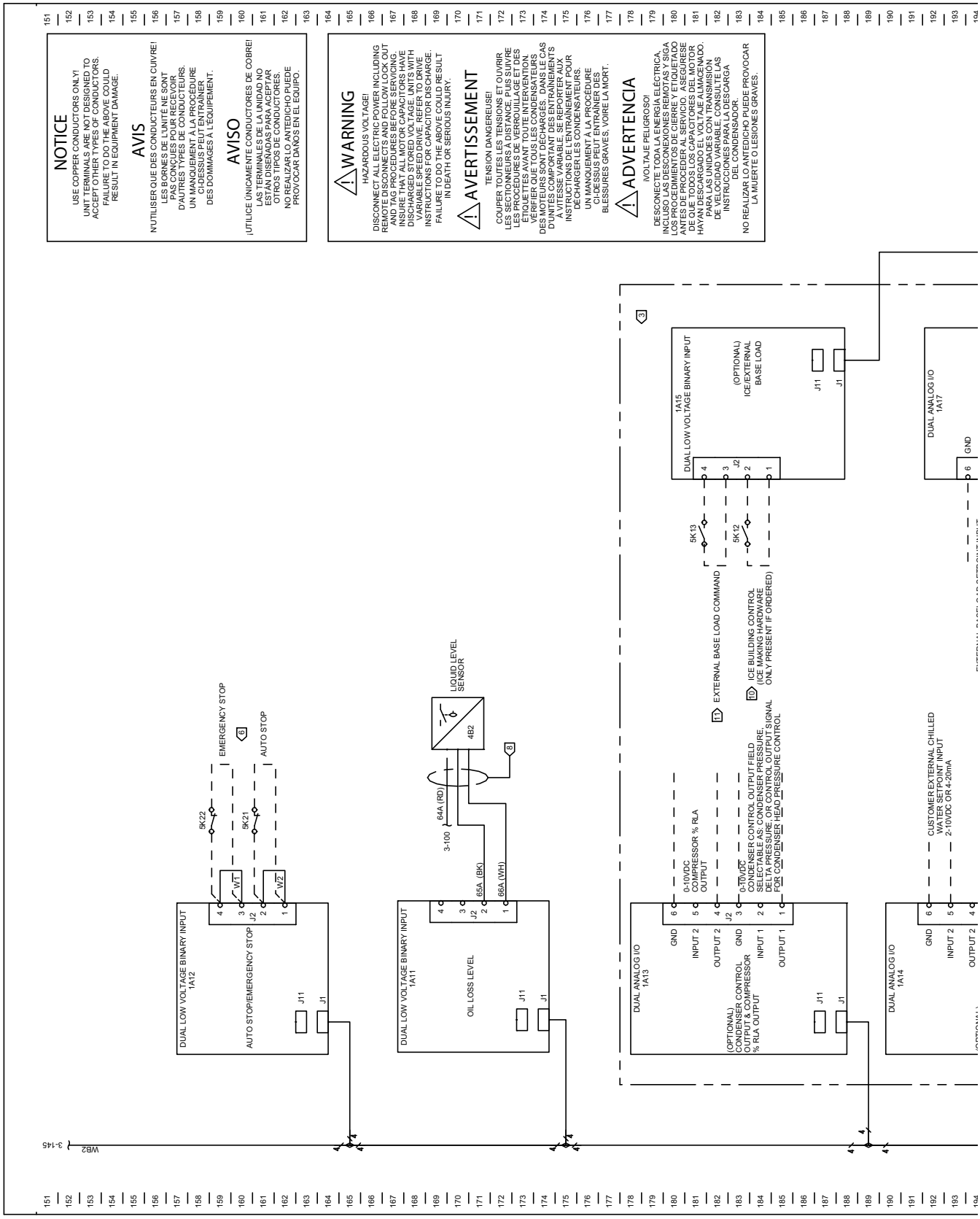
DUAL TRIAC
SLIDE VALVE UNLOAD/LOAD
OIL RETURN GAS PUMP
DRAIN/FILL SOLENOID VALVE
ICE BUILDING STATUS OUTPUT (OPTIONAL)
ICE MACHINE STATUS CUSTOMER PROVIDED POWER (ICE MAKING HARDWARE ONLY PRESENT IF ORDERED)
CONDENSER/CHILLED WATER FLOW SWITCH INTERLOCKS
CHILLED WATER 5S1
CONDENSER WATER 4S2
CUSTOMER PROVIDED POWER
CHILLED WATER PUMP STARTER
CONDENSER WATER PUMP STARTER
CONDENSER/CHILLED WATER WATER PUMP STARTER
LOAD 3Y1
UNLOAD 3Y2
FILL 4Y1
DRAIN 4Y2
1A6 DUAL TRIAC
1A8 DUAL RELAY OUTPUT
1A7 DUAL HIGH VOLTAGE BINARY INPUT
1A9 DUAL RELAY OUTPUT
1X5-6
1X5-11
1X6-1
1X5-7
26M
26K
26P
26Z
26P,Z
27T, U
27P
27P,Q
27R
27R, S
27S
27Q
41A
42A
43A
44A
5K1
5K2
5K20
8K1 AUX
8K2 AUX
27T
27U
W82
4-152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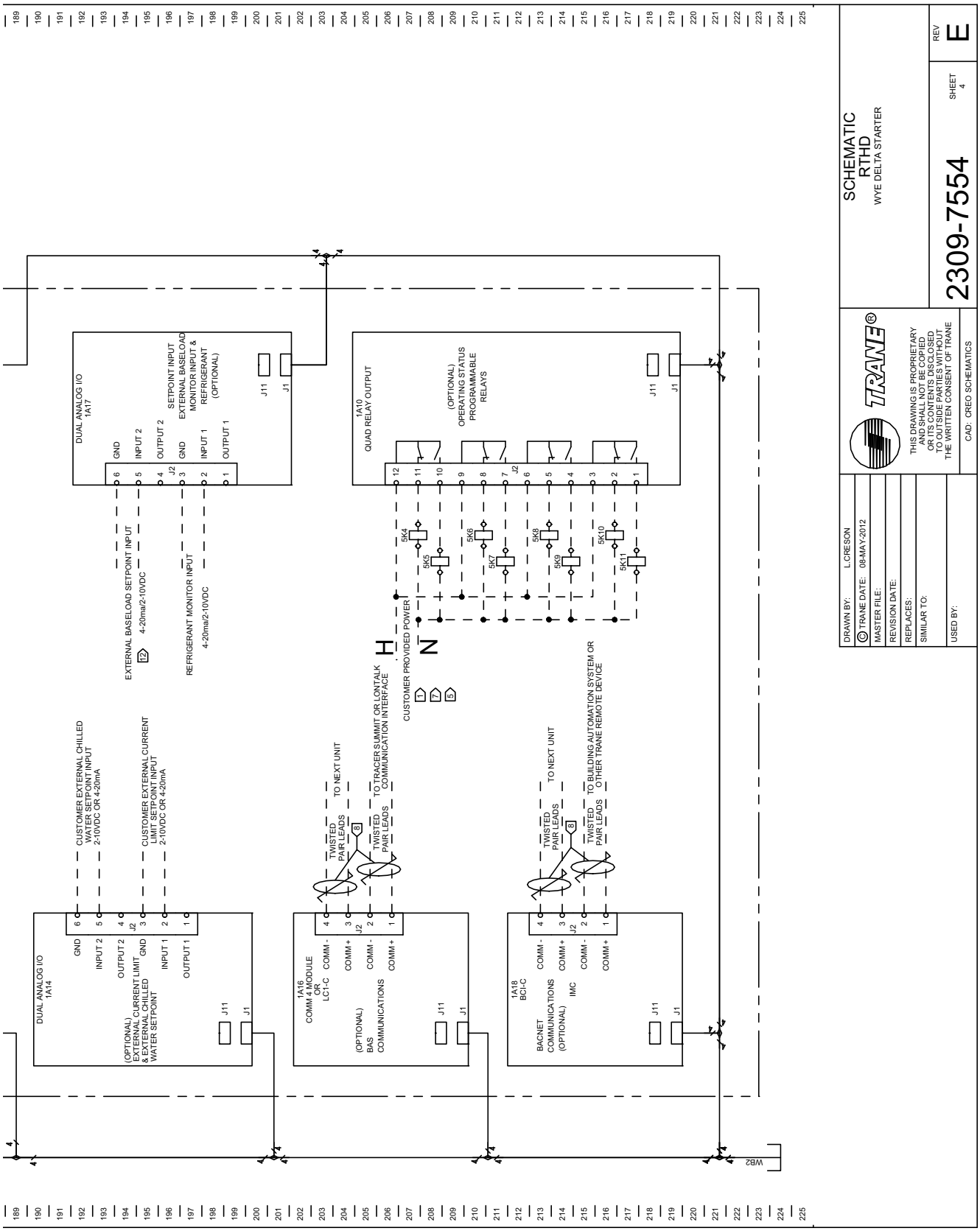
DUAL LOW VOLTAGE BINARY INPUT 1A12
AUTO STOP/EMERGENCY STOP
EMERGENCY STOP
AUTO STOP
5K22
5K21
W1
W2
J2
J11
J1
DUAL LOW VOLTAGE BINARY INPUT 1A11
OIL LOSS LEVEL
LIQUID LEVEL SENSOR
4B2
64A (RD)
65A (BK)
66A (WH)
3-100
DUAL ANALOG I/O 1A13
0-10VDC COMPRESSOR % RLA OUTPUT
(OPTIONAL) CONDENSER CONTROL OUTPUT AS COMPRESSOR % RLA OUTPUT
0-10VDC CONDENSER CONTROL OUTPUT FIELD SELECTABLE AS: CONDENSER PRESSURE, DELTA PRESSURE, OR CONTROL OUTPUT SIGNAL FOR CONDENSER HEAD PRESSURE CONTROL
EXTERNAL BASE LOAD COMMAND
ICE BUILDING CONTROL (ICE MAKING HARDWARE ONLY PRESENT IF ORDERED)
DUAL LOW VOLTAGE BINARY INPUT 1A15
(OPTIONAL) ICE/EXTERNAL BASE LOAD
5K13
5K12
DUAL ANALOG I/O 1A14
CUSTOMER EXTERNAL CHILLED WATER SETPOINT INPUT 2-10VDC OR 4-20mA
DUAL ANALOG I/O 1A17
GND
INPUT 1
INPUT 2
OUTPUT 1
OUTPUT 2
W82
3-145


SCHEMATIC
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DUAL ANALOG I/O 1A14
DUAL ANALOG I/O 1A17
1A10 QUAD RELAY OUTPUT
(OPTIONAL) OPERATING STATUS PROGRAMMABLE RELAYS
1A16 COMM4 MODULE OR LC1-C
1A18 BCI-C
CUSTOMER EXTERNAL CHILLED WATER SETPOINT INPUT 2-10VDC OR 4-20mA
CUSTOMER EXTERNAL CURRENT LIMIT SETPOINT INPUT 2-10VDC OR 4-20mA
EXTERNAL BASELOAD SETPOINT INPUT 4-20ma/2-10VDC
REFRIGERANT MONITOR INPUT 4-20ma/2-10VDC
SETPOINT INPUT EXTERNAL BASELOAD MONITOR INPUT & REFRIGERANT (OPTIONAL)
TWISTED PAIR LEADS
TO NEXT UNIT
TO TRACER SUMMIT OR LONTALK COMMUNICATION INTERFACE
TO BUILDING AUTOMATION SYSTEM OR OTHER TRANE REMOTE DEVICE
CUSTOMER PROVIDED POWER
5K4
5K5
5K6
5K7
5K8
5K9
5K10
5K11

⚠ WARNING

HAZARDOUS VOLTAGE!

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UN MANQUEMENT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES BLESSURES GRAVES, VOIRE LA MORT.

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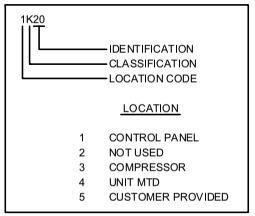
NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR DAÑOS EN EL EQUIPO.

DEVICE	DESCRIPTION	ZONE
1A1	ADAPTIVIEW DISPLAY MONITOR	2-52
1A10	(OPTIONAL) OPERATING STATUS PROGRAMMABLE RELAYS	4-217
1A11	OIL LOSS LEVEL	4-172
1A12	AUTO STOP/EMERGENCY STOP	4-162
1A13	(OPTIONAL) CONDENSER CONTROL OUTPUT & COMPRESSOR % RLA OUTPUT	4-185
1A14	(OPTIONAL) EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT	4-197
1A15	(OPTIONAL) ICE/EXTERNAL BASE LOAD	4-184
1A16	(OPTIONAL) BAS COMMUNICATIONS	4-206
1A17	(OPTIONAL) REFRIGERANT MONITOR INPUT & EXTERNAL BASELOAD SETPOINT INPUT	4-199
1A2	POWER SUPPLY MODULE	2-70
1A3	STARTER MODULE	3-103
1A4	HIGH PRESSURE CUTOUT & SOLID STATE STARTER FAULT	3-110
1A5	SLIDE VALVE UNLOAD/LOAD	3-118
1A6	OIL RETURN GAS PUMP DRAIN/FILL SOLENOID VALVE	3-126
1A7	CONDENSER/CHILLED WATER FLOW SWITCH INTERLOCKS	3-144
1A8	ICE BUILDING AND MASTER OIL LINE SOL VALVE	3-136
1A9	CONDENSER/CHILLED WATER WATER PUMP STARTER	3-0
1F1	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F2	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F3	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F4	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 115V	2-49
1F5	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 27V	2-49
1F6	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 27V	2-49
1K1	START CONTACTOR	3-93
1K2	RUN CONTACTOR	3-97
1K3	SHORTING CONTACTOR	3-100
1K4	TRANSITION CONTACTOR	3-103
1Q1	CIRCUIT BREAKER	2-5
1R1	TRANSITION RESISTOR	2-32
1R2	TRANSITION RESISTOR	2-29
1R3	TRANSITION RESISTOR	2-26
1S1	DISCONNECT SWITCH	2-4
1T1	CONTROL POWER TRANSFORMER	2-44
1T2-1	CURRENT TRANSFORMERS	2-10
1T2-2	CURRENT TRANSFORMERS	2-12
1T2-3	CURRENT TRANSFORMERS	2-14
1T3-1	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1T3-2	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1T3-3	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1X1	POWER TERMINAL BLOCK	2-0
1X3-1	UNDER OVER VOLTAGE TERMINAL BLOCK	2-26
1X5-1	CONTROL TERMINAL BLOCK 115V	3-81



COLOR CODE	
BK	BLACK
BN	BROWN
BU	BLUE
GY	GRAY
RD	RED
WH	WHITE
GN	GREEN
OG	ORANGE
YE	YELLOW

CPT FUSE REPLACEMENT TABLE				
FUSE-VOLTAGE	200V	230V	380-415V	460-575V
1F1	10	8	5	4
1F2	10	8	5	4
1F3	3	3	3	3
1F4	10	10	10	10
1F5	6	6	6	6
1F6	6	6	6	6

———	TRANE WIRING
— — —	CUSTOMER WIRING
— — — —	OPTIONS

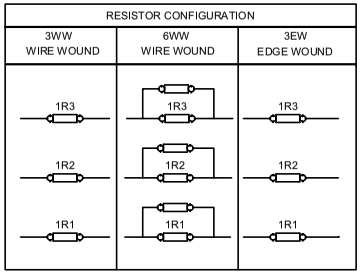


TABLE 1		
TRANSITION RESISTOR CONFIGURATION		
VOLTS	RLA	CONFIGURATION
200	477-606	6WW
	607-779	6WW
230	399-476	6WW
	477-606	6WW
	607-779	3EW
346-480	0-277	6WW
	278-364	6WW
	365-398	6WW
	399-476	3EW
	477-606	3EW
550-600	0-277	6WW
	278-364	3EW
	399-476	3EW

1X5-1	CONTROL TERMINAL BLOCK 115V	3-81
1X6-1	FIELD FLOW SWITCH TERMINAL BLOCK	3-141
1XJ1	CONTROL HARNESS JACK 1	3-99
1XJ2	CONTROL HARNESS JACK 2	3-105
1XP1	CONTROL HARNESS PLUG 1	3-99
1XP2	CONTROL HARNESS PLUG 2	3-105
3M1	COMPRESSOR MOTOR	2-26
3Y1	LOAD	3-116
3Y2	UNLOAD	3-118
4B2	OIL LOSS LEVEL OPTICAL SENSOR	4-170
4B20	EVAPORATOR ENTRANCE WATER	2-47
4B21	EVAPORATOR LEAVING WATER	2-52
4B22	CONDENSER ENTRANCE WATER	2-57
4B23	CONDENSER LEAVING WATER	2-61
4B24	OIL PRESSURE TRANSDUCER	2-66
4B25	EVAPORATOR REFRIGERANT PRESSURE	2-41
4B26	CONDENSER REFRIGERANT PRESSURE	2-45
4B27	COMPRESSOR DISCHARGE TEMPERATURE	2-49
4B29	HIGH PRESSURE CUTOUT SWITCH	3-86
4B3	EVAPORATOR REFRIGERANT LIQUID LEVEL	2-70
4E1	OIL SUMP HEATERS	3-81
4E2	OIL SUMP HEATERS	3-82
4Y1	FILL	3-124
4Y2	DRAIN	3-126
4Y20	DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 1	2-43
4Y21	DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 2	2-39
4Y3	MASTER OIL LINE SOLENOID	3-84
5B28	OUTDOOR AIR TEMPERATURE	2-60
5K1	CHILLED WATER PUMP STARTER	3-141
5K1	CHILLED WATER PUMP STARTER	3-0
5K10	UNIT STATUS RELAYS	4-216
5K11	UNIT STATUS RELAYS	4-217
5K12	ICE BUILDING CONTROL	4-183
5K13	EXTERNAL BASE LOAD ENABLE	4-181
5K2	CONDENSER WATER PUMP STARTER	3-0
5K2	CONDENSER WATER PUMP STARTER	3-143
5K21	EXTERNAL AUTO STOP	4-161
5K22	EXTERNAL EMERGENCY STOP	4-159
5K4	UNIT STATUS RELAYS	4-207
5K5	UNIT STATUS RELAYS	4-208
5K6	UNIT STATUS RELAYS	4-210
5K7	UNIT STATUS RELAYS	4-211
5K8	UNIT STATUS RELAYS	4-213
5K9	UNIT STATUS RELAYS	4-214
5S1	CHILLED WATER	3-141
5S2	CONDENSER WATER	3-143

NOTES:

1. CLASS 1 FIELD WIRED MODULE
2. CLASS 1 FIELD WIRING INSULATION RATING IS REQUIRED TO BE EQUAL TO OR GREATER THAN THE EQUIPMENT SUPPLY VOLTAGE RATING. CLASS 2 FIELD WIRE INSULATION TO BE RATED AT 300V MINIMUM.
3. OPTIONAL MODULES. REFER TO FIELD WIRING DIAGRAM FOR SUGGESTED WIRING.
4. TRANSITION RESISTORS SHOWN MAY BE COMPRISED OF ONE OR TWO RESISTORS, DEPENDING ON RLA RATING OF COMPRESSOR. REFER TO TABLE 1 FOR RESISTOR CONFIGURATION.
5. FIELD ASSIGNED PROGRAMMABLE RELAYS.
6. AUTO/STOP, EMERGENCY STOP THE CONTACTS ARE JUMPED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
7. RELAY AT 120VAC: 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, 1/3 HP, 7.2 FLA AT 240VAC: 5 AMPS GENERAL PURPOSE.
8. IF SHIELD IS PRESENT, DO NOT WIRE SHIELD TO GROUND IN CONTROL PANEL. IF USED, SHIELD IS TO BE GROUNDED EXTERNALLY TO CONTROL PANEL. REFERENCE FIELD WIRING DIAGRAM FOR RECOMMENDED WIRE TYPE.
9. RELAY ENERGIZED WHILE MAKING ICE.
10. CONTACT CLOSURE ENABLES ICE MAKING.
11. CLOSED CONTACT COMMANDS BASE LOADING OPERATION.
12. ACTUAL BASE LOADING SETPOINT USED IS SETABLE AT FRONT PANEL. REFER TO IOM FOR DETAILS.
13. WIRES 1C, 1D, 2C, 2D, 3C, 3D, 7D, 8D, 9D,10D, 11D, 12D ARE ONLY PRESENT WHERE PARALLEL WIRE SETS ARE USED.

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SHEET 1

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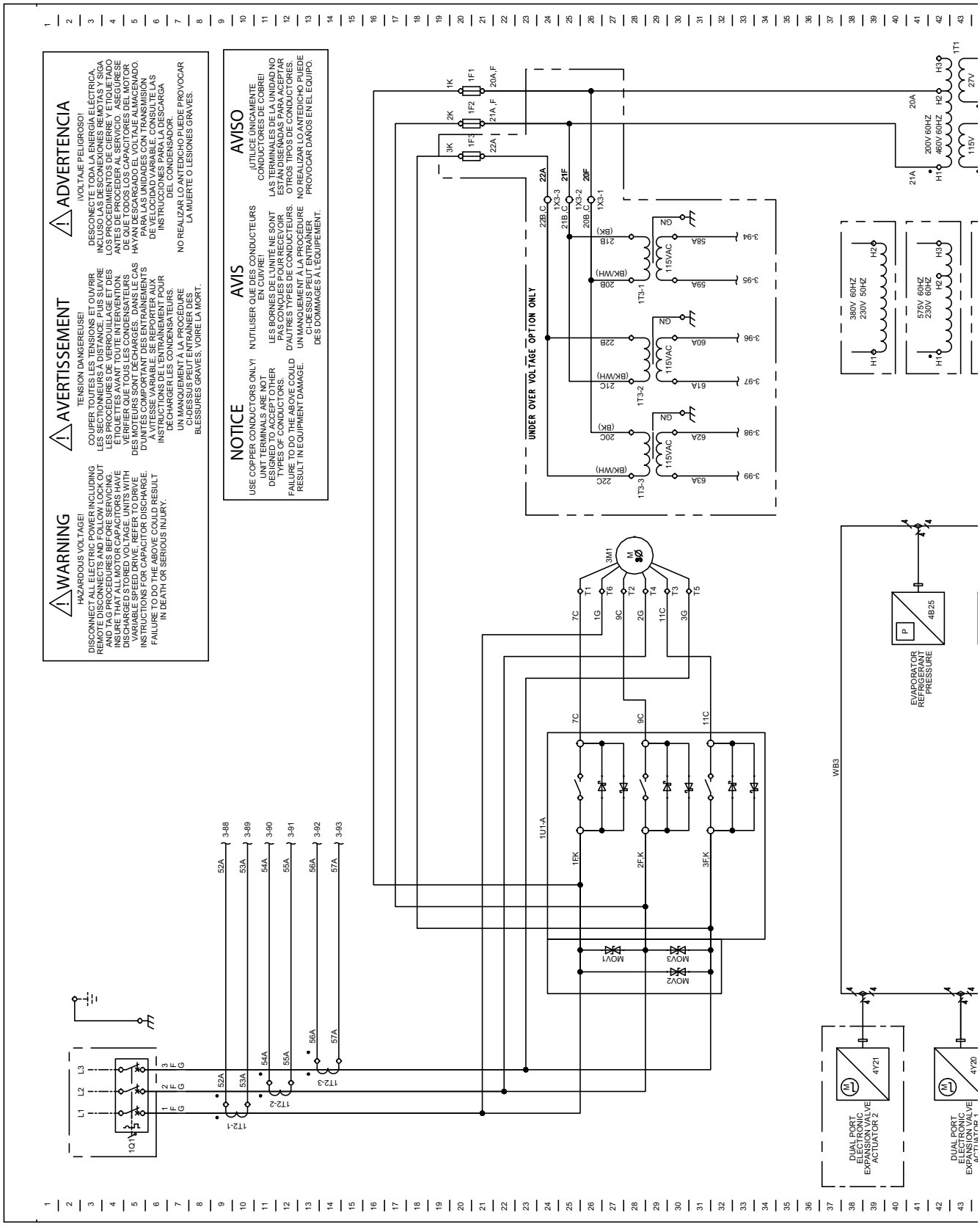
⚠WARNING
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.
⚠AVERTISSEMENT
TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS A DISTANCE, PUIS SUIVRE LES PROCEDURES DE VERROUILLAGE ET DES ETIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS RELATIVES À L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS. UN MANQUEMENT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES BLESSURES GRAVES, VOIRE LA MORT.
⚠ADVERTENCIA
¡VOLTAJE PELIGROSO!
DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE BLOQUEO Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON TRANSMISIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR LA MUERTE O LESIONES GRAVES.
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AVISO
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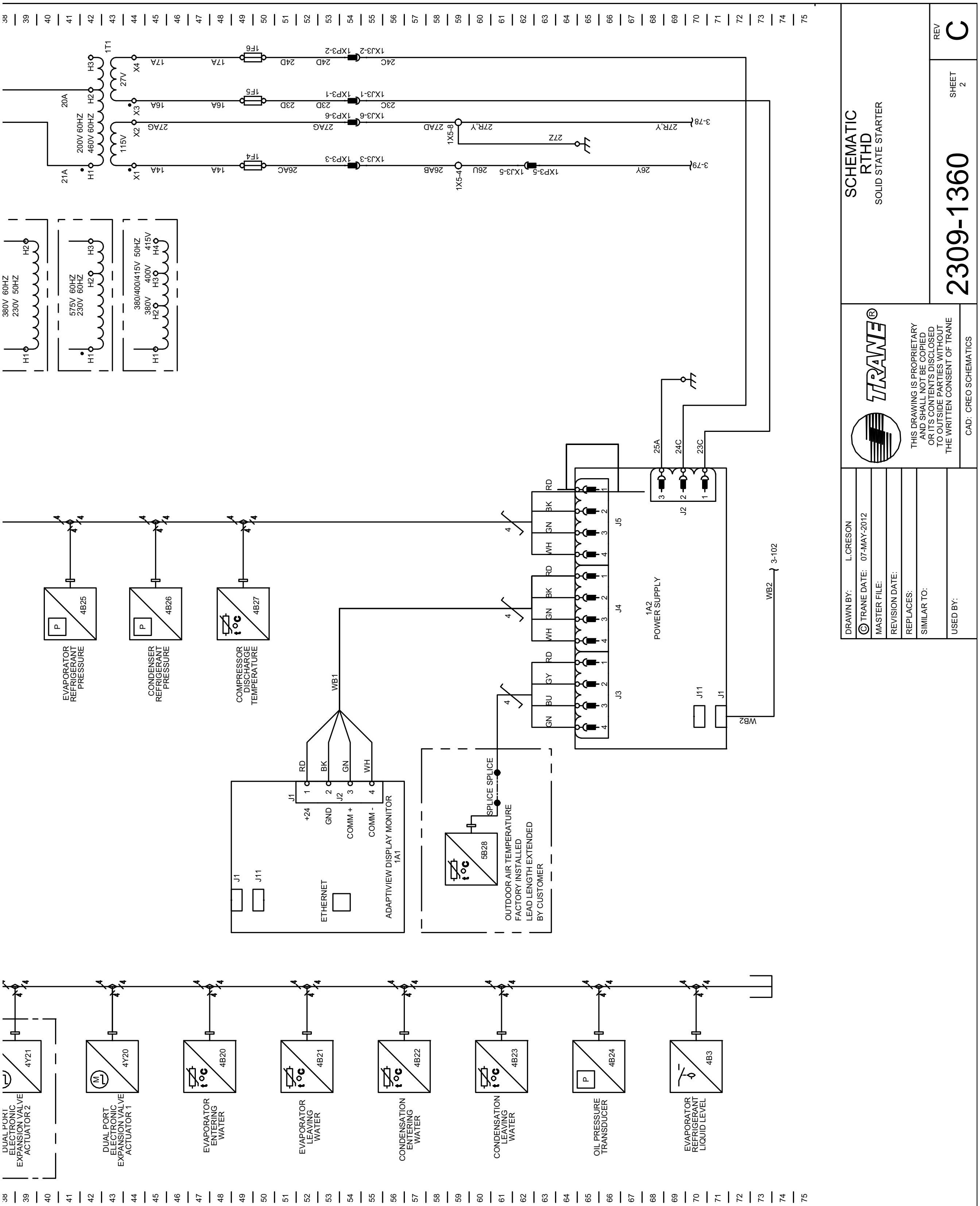
UNDER OVER VOLTAGE OPTION ONLY
EVAPORATOR REFRIGERANT PRESSURE
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 2
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 1
MOV1
MOV2
MOV3
WB3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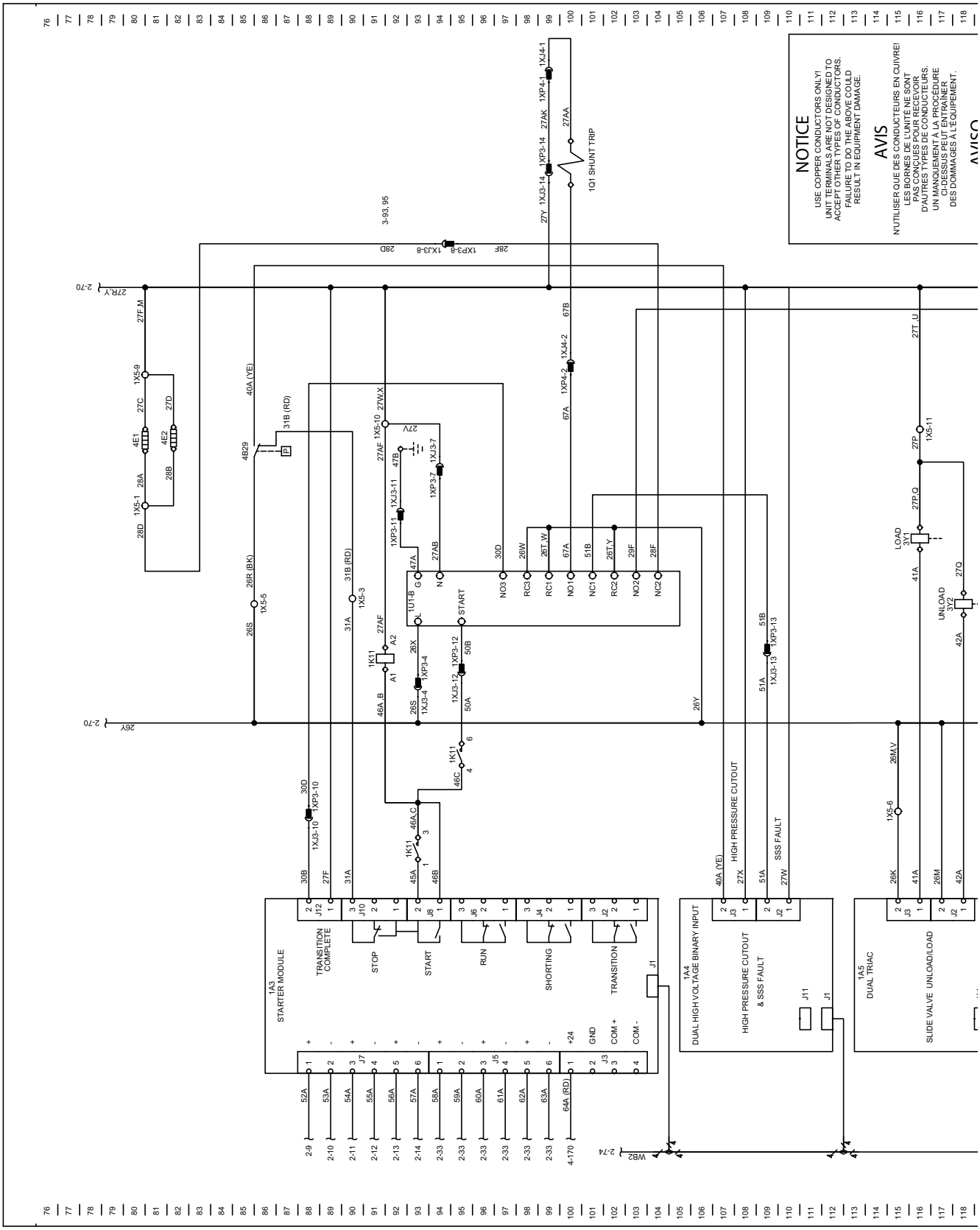
DRAWN BY: L.CRESON
TRANE DATE: 07-MAY-2012
MASTER FILE:
REVISION DATE:
REPLACES:
SIMILAR TO:
USED BY:
1A2 POWER SUPPLY
ADAPTIVIEW DISPLAY MONITOR 1A1
ETHERNET
OUTDOOR AIR TEMPERATURE FACTORY INSTALLED LEAD LENGTH EXTENDED BY CUSTOMER
SPLICE SPLICE
EVAPORATOR REFRIGERANT PRESSURE
CONDENSER REFRIGERANT PRESSURE
COMPRESSOR DISCHARGE TEMPERATURE
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 2
DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 1
EVAPORATOR ENTERING WATER
EVAPORATOR LEAVING WATER
CONDENSATION ENTERING WATER
CONDENSATION LEAVING WATER
OIL PRESSURE TRANSDUCER
EVAPORATOR REFRIGERANT LIQUID LEVEL
380V 60HZ 230V 50HZ
575V 60HZ 230V 60HZ
380/400/415V 50HZ
200V 60HZ 460V 60HZ
115V
27V
1T1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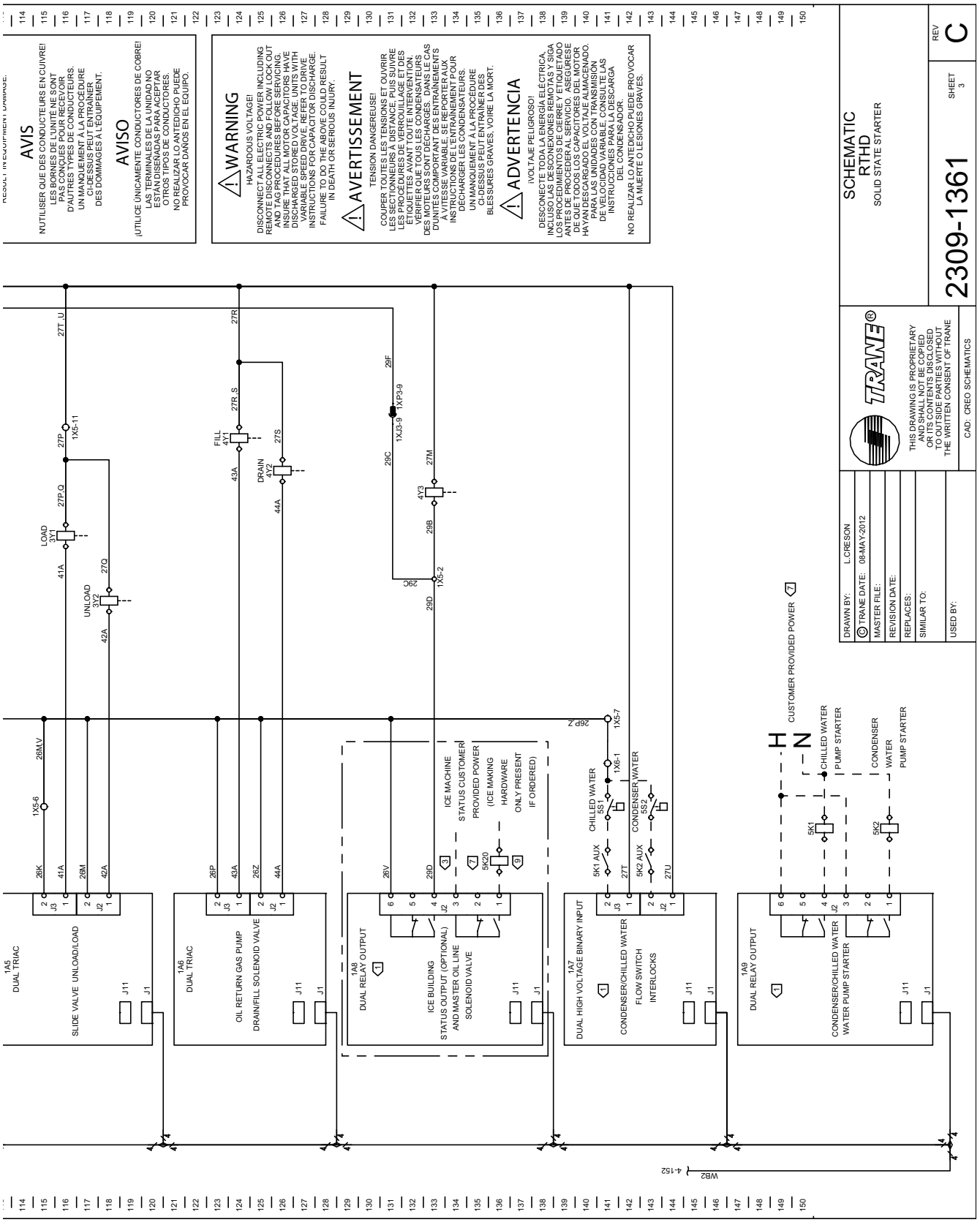
UNIT TERMINALS ARE NOT DESIGNED TO
ACCEPT OTHER TYPES OF CONDUCTORS.
FAILURE TO DO THIS ABOVE COULD
RESULT IN EQUIPMENT DAMAGE.
AVIS
N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!
LES BORNES DE L'UNITÉ NE SONT
PAS CONÇUES POUR RECEVOIR
D'AUTRES TYPES DE CONDUCTEURS.
UN MANQUEMENT À LA PROCÉDURE
CI-DESSUS PEUT ENTRAÎNER
DES DOMMAGES À L'ÉQUIPEMENT.
1A3
STARTER MODULE
TRANSITION COMPLETE
STOP
START
RUN
SHORTING
TRANSITION
1A4
DUAL HIGH VOLTAGE BINARY INPUT
HIGH PRESSURE CUTOUT & SSS FAULT
HIGH PRESSURE CUTOUT
SSS FAULT
1A5
DUAL TRIAC
SLIDE VALVE UNLOAD/LOAD
LOAD 3Y1
UNLOAD 3Y2
1Q1 SHUNT TRIP
START
+24
GND
COM +
COM -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DES DOMMAGES À L'ÉQUIPEMENT.
AVISO
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LAS TERMINALES DE LA UNIDAD NO
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OTROS TIPOS DE CONDUCTORES.
NO REALIZAR LO ANTEDICHO PUEDE
PROVOCAR DAÑOS EN EL EQUIPO.
WARNING
HAZARDOUS VOLTAGE!
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FAILURE TO DO THE ABOVE COULD RESULT
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AVERTISSEMENT
TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR
LES SECTIONNEURS À DISTANCE, PUIS SUIVRE
LES PROCÉDURES DE VERROUILLAGE ET DES
ÉTIQUETTES AVANT TOUT ENTRETIEN. NE PAS
VÉRIFIER QUE TOUS LES CONDENSATEURS
DES MOTEURS SONT DÉCHARGÉS, DANS LE CAS
D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS
À VITESSE VARIABLE, SE REPORTER AUX
INSTRUCTIONS DE L'ENTRAÎNEMENT POUR
DÉCHARGER LES CONDENSATEURS.
UN MANQUEMENT À LA PROCÉDURE
CI-DESSUS PEUT ENTRAÎNER DES
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LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO
ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE
DE QUE TODOS LOS CAPACITORES DEL MOTOR
HAYAN DESCARGADO EL VOLTAJE ALMACENADO.
EN UNIDADES CON ACCIONAMIENTOS DE
VELOCIDAD VARIABLE, CONSULTE LAS
INSTRUCCIONES PARA LA DESCARGA
DEL CONDENSADOR.
NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR
LA MUERTE O LESIONES GRAVES.
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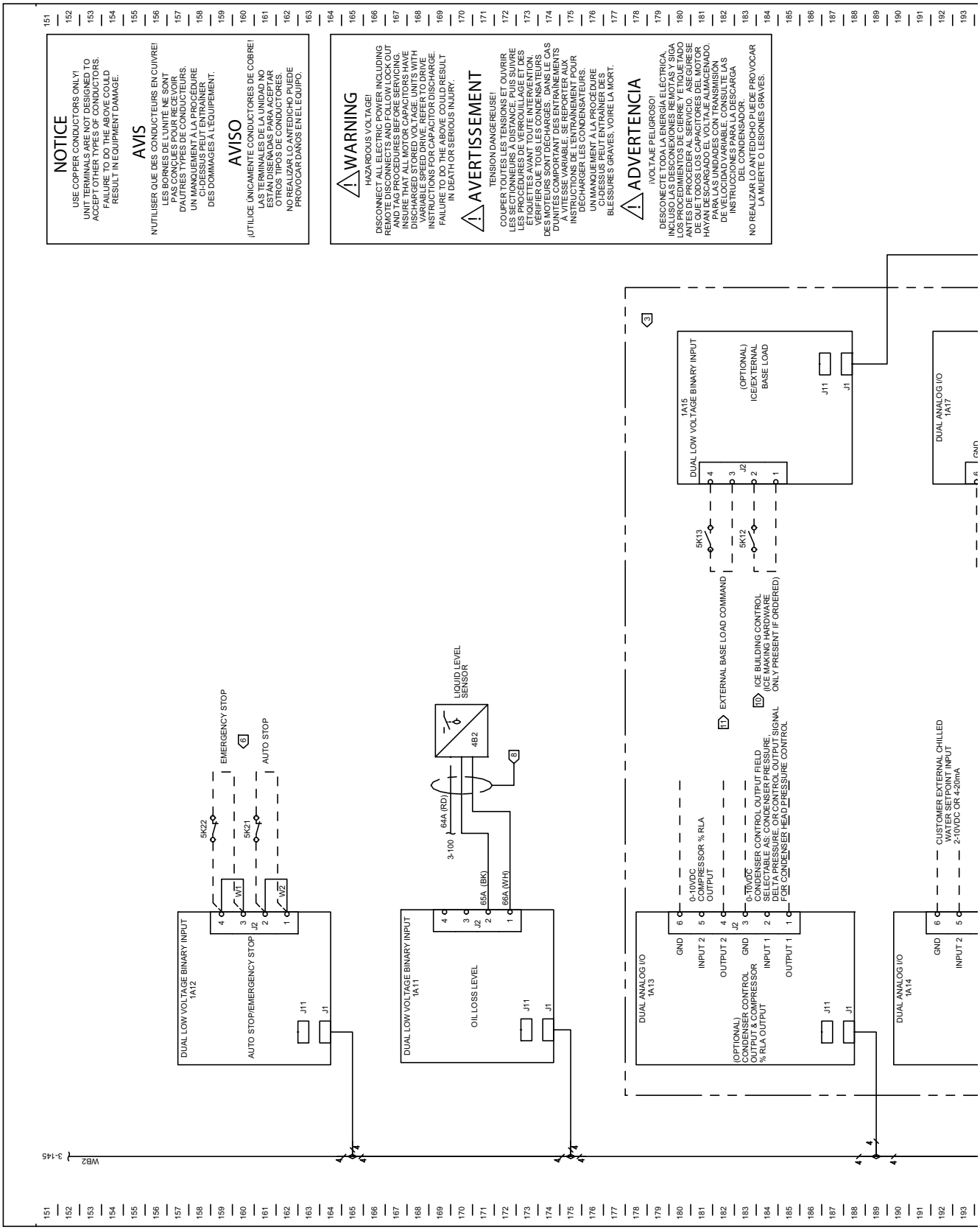
1A5 DUAL TRIAC
SLIDE VALVE UNLOAD/LOAD
1A6 DUAL TRIAC
OIL RETURN GAS PUMP
DRAIN/FILL SOLENOID VALVE
1A8 DUAL RELAY OUTPUT
ICE BUILDING
STATUS OUTPUT (OPTIONAL)
AND MASTER OIL LINE
SOLENOID VALVE
ICE MACHINE
STATUS CUSTOMER
PROVIDED POWER
(ICE MAKING
HARDWARE
ONLY PRESENT
IF ORDERED)
1A7 DUAL HIGH VOLTAGE BINARY INPUT
CONDENSER/CHILLED WATER
FLOW SWITCH
INTERLOCKS
1A9 DUAL RELAY OUTPUT
CONDENSER/CHILLED WATER
WATER PUMP STARTER
CUSTOMER PROVIDED POWER
CHILLED WATER
PUMP STARTER
CONDENSER
WATER
PUMP STARTER
LOAD 3Y1
UNLOAD 3Y2
FILL 4Y1
DRAIN 4Y2
4Y3
5K1
5K2
5K20
5K1 AUX
5K2 AUX
CHILLED WATER 5S1
CONDENSER WATER 5S2
1X5-11
1X5-2
1X5-6
1X5-7
1X6-1
1XJ3-9
1XP3-9
WB2 4-152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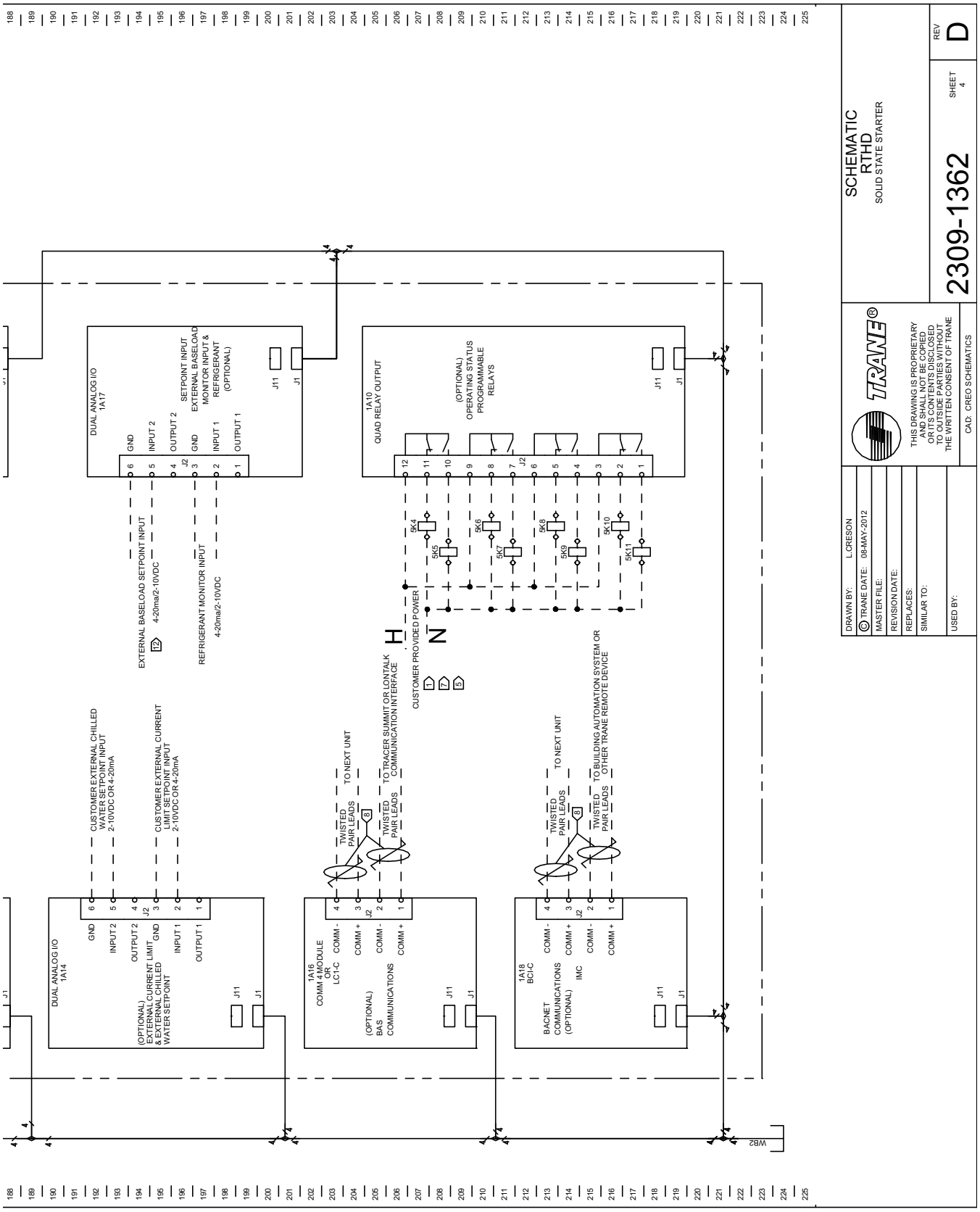
DUAL LOW VOLTAGE BINARY INPUT 1A12
AUTO STOP/EMERGENCY STOP
EMERGENCY STOP
AUTO STOP
5K22
5K21
WT
WZ
DUAL LOW VOLTAGE BINARY INPUT 1A11
OIL LOSS LEVEL
LIQUID LEVEL SENSOR
4B2
64A (RD)
65A (BK)
66A (WH)
3-100
DUAL ANALOG I/O 1A13
0-10VDC COMPRESSOR % RLA OUTPUT
(OPTIONAL) CONDENSER CONTROL OUTPUT & COMPRESSOR % RLA OUTPUT
0-10VDC CONDENSER CONTROL OUTPUT FIELD SELECTABLE AS CONDENSER PRESSURE SETPOINT OR CONTROL OUTPUT SIGNAL FOR CONDENSER HEAD PRESSURE CONTROL
EXTERNAL BASE LOAD COMMAND
ICE BUILDING CONTROL (ICE MAKING HARDWARE ONLY PRESENT IF ORDERED)
DUAL LOW VOLTAGE BINARY INPUT 1A15
(OPTIONAL) ICE/EXTERNAL BASE LOAD
5K13
5K12
DUAL ANALOG I/O 1A14
CUSTOMER EXTERNAL CHILLED WATER SETPOINT INPUT 2-10VDC OR 4-20mA
DUAL ANALOG I/O 1A17
GND
INPUT 1
INPUT 2
OUTPUT 1
OUTPUT 2
J1
J2
J11
WB2
3-145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DUAL ANALOG I/O 1A17
GND
INPUT 2
OUTPUT 2
SETPOINT INPUT EXTERNAL BASELOAD MONITOR INPUT & REFRIGERANT (OPTIONAL)
INPUT 1
OUTPUT 1
EXTERNAL BASELOAD SETPOINT INPUT
4-20ma/2-10VDC
REFRIGERANT MONITOR INPUT
4-20ma/2-10VDC
1A10 QUAD RELAY OUTPUT
(OPTIONAL) OPERATING STATUS PROGRAMMABLE RELAYS
CUSTOMER PROVIDED POWER
DUAL ANALOG I/O 1A14
(OPTIONAL) EXTERNAL CURRENT LIMIT & EXTERNAL CHILLED WATER SETPOINT
CUSTOMER EXTERNAL CHILLED WATER SETPOINT INPUT 2-10VDC OR 4-20mA
CUSTOMER EXTERNAL CURRENT LIMIT SETPOINT INPUT 2-10VDC OR 4-20mA
1A16 COMM 4 MODULE OR LCI-C
(OPTIONAL) BAS COMMUNICATIONS
COMM -
COMM +
TWISTED PAIR LEADS
TO NEXT UNIT
TO TRACER SUMMIT OR LONTALK COMMUNICATION INTERFACE
1A18 BCI-C
BACNET COMMUNICATIONS (OPTIONAL)
IMC
TO BUILDING AUTOMATION SYSTEM OR OTHER TRANE REMOTE DEVICE
J1
J2
J11
W82

⚠ WARNING

HAZARDOUS VOLTAGE!

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UN MANQUEMENT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES BLESSURES GRAVES, VOIRE LA MORT.

⚠ ADVERTENCIA

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NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR LA MUERTE O LESIONES GRAVES.

NOTICE

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO THE ABOVE COULD RESULT IN EQUIPMENT DAMAGE.

AVIS

N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!

LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.

UN MANQUEMENT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES DOMMAGES À L'ÉQUIPEMENT.

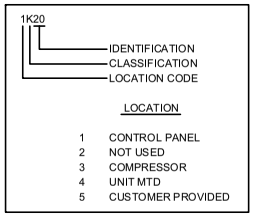
AVISO

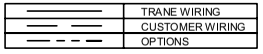
¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!

LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.

NO REALIZAR LO ANTEDICHO PUEDE PROVOCAR DAÑOS EN EL EQUIPO.

DEVICE	DESCRIPTION	ZONE
1A1	ADAPTIVIEW DISPLAY MONITOR	2-52
1A10	(OPTIONAL) OPERATING STATUS PROGRAMMABLE RELAYS	4-217
1A11	OIL LOSS LEVEL	4-172
1A12	AUTO STOP/EMERGENCY STOP	4-162
1A13	(OPTIONAL) CONDENSER CONTROL OUTPUT & COMPRESSOR % RLA OUTPUT	4-185
1A14	(OPTIONAL) EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT	4-197
1A15	(OPTIONAL) ICE/EXTERNAL BASE LOAD	4-184
1A16	(OPTIONAL) BAS COMMUNICATIONS	4-206
1A17	(OPTIONAL) REFRIGERANT MONITOR INPUT & EXTERNAL BASELOAD SETPOINT INPUT	4-199
1A2	POWER SUPPLY MODULE	2-70
1A3	STARTER MODULE	3-103
1A4	HIGH PRESSURE CUTOUT & SOLID STATE STARTER FAULT	3-110
1A5	SLIDE VALVE UNLOAD/LOAD	3-118
1A6	OIL RETURN GAS PUMP DRAIN/FILL SOLENOID VALVE	3-126
1A7	CONDENSER/CHILLED WATER FLOW SWITCH INTERLOCKS	3-144
1A8	ICE BUILDING AND MASTER OIL LINE SOL VALVE	3-136
1A9	CONDENSER/CHILLED WATER WATER PUMP STARTER	3-0
1F1	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F2	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F3	PRIMARY FUSES-CONTROL POWER TRANSFORMER, UNDER/OVER VOLTAGE MODULE	2-20
1F4	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 115V	2-49
1F5	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 27V	2-49
1F6	SECONDARY FUSE-CONTROL POWER TRANSFORMER, 27V	2-49
1K11	START CONTACTOR	3-89
1Q1	CIRCUIT BREAKER	2-5
1T1	CONTROL POWER TRANSFORMER	2-44
1T2-1	CURRENT TRANSFORMERS	2-10
1T2-2	CURRENT TRANSFORMERS	2-12
1T2-3	CURRENT TRANSFORMERS	2-14
1T3-1	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1T3-2	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1T3-3	UNDER OVER VOLTAGE TRANSFORMERS	2-30
1U1	SOLID STATE STARTER	2-0
1X3-1	UNDER OVER VOLTAGE TERMINAL BLOCK	2-26
1X5-1	CONTROL TERMINAL BLOCK 115V	3-81
1X6-1	FIELD FLOW SWITCH TERMINAL BLOCK	3-141





COLOR CODE	
BK	BLACK
BN	BROWN
BU	BLUE
GY	GRAY
RD	RED
WH	WHITE
GN	GREEN
OG	ORANGE
YE	YELLOW

CPT FUSE REPLACEMENT TABLE				
FUSE-VOLTAGE	200V	230V	380-415V	460-575V
1F1	10	8	5	4
1F2	10	8	5	4
1F3	3	3	3	3
1F4	10	10	10	10
1F5	6	6	6	6
1F6	6	6	6	6

1X3-1	UNDER OVER VOLTAGE TERMINAL BLOCK	2-26
1X5-1	CONTROL TERMINAL BLOCK 115V	3-81
1X6-1	FIELD FLOW SWITCH TERMINAL BLOCK	3-141
1XJ3	CONTROL HARNESS JACK 3	3-99
1XJ4	SHUNT TRIP HARNESS JACK 4	3-97
1XP3	CONTROL HARNESS PLUG 3	3-99
1XP4	SHUNT TRIP HARNESS PLUG 4	3-97
3M1	COMPRESSOR MOTOR	2-26
3Y1	LOAD	3-116
3Y2	UNLOAD	3-118
4B2	OIL LOSS LEVEL OPTICAL SENSOR	4-170
4B20	EVAPORATOR ENTRANCE WATER	2-47
4B21	EVAPORATOR LEAVING WATER	2-52
4B22	CONDENSER ENTRANCE WATER	2-57
4B23	CONDENSER LEAVING WATER	2-61
4B24	OIL PRESSURE TRANSDUCER	2-66
4B25	EVAPORATOR REFRIGERANT PRESSURE	2-41
4B26	CONDENSER REFRIGERANT PRESSURE	2-45
4B27	COMPRESSOR DISCHARGE TEMPERATURE	2-49
4B29	HIGH PRESSURE CUTOUT SWITCH	3-86
4B3	EVAPORATOR REFRIGERANT LIQUID LEVEL	2-70
4E1	OIL SUMP HEATERS	3-81
4E2	OIL SUMP HEATERS	3-82
4Y1	FILL	3-124
4Y2	DRAIN	3-126
4Y20	DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 1	2-43
4Y21	DUAL PORT ELECTRONIC EXPANSION VALVE ACTUATOR 2	2-39
4Y3	MASTER OIL LINE SOLENOID	3-133
5B28	OUTDOOR AIR TEMPERATURE	2-60
5K1	CHILLED WATER PUMP STARTER	3-141
5K1	CHILLED WATER PUMP STARTER	3-0
5K10	UNIT STATUS RELAYS	4-216
5K11	UNIT STATUS RELAYS	4-217
5K12	ICE BUILDING CONTROL	4-183
5K13	EXTERNAL BASE LOAD ENABLE	4-181
5K2	CONDENSER WATER PUMP STARTER	3-143
5K2	CONDENSER WATER PUMP STARTER	3-0
5K21	EXTERNAL AUTO STOP	4-161
5K22	EXTERNAL EMERGENCY STOP	4-159
5K4	UNIT STATUS RELAYS	4-207
5K5	UNIT STATUS RELAYS	4-208
5K6	UNIT STATUS RELAYS	4-210
5K7	UNIT STATUS RELAYS	4-211
5K8	UNIT STATUS RELAYS	4-213
5K9	UNIT STATUS RELAYS	4-214
5S1	CHILLED WATER	3-141
5S2	CONDENSER WATER	3-143

NOTES:

1. CLASS 1 FIELD WIRED MODULE
2. CLASS 1 FIELD WIRING INSULATION RATING IS REQUIRED TO BE EQUAL TO OR GREATER THAN THE EQUIPMENT SUPPLY VOLTAGE RATING. CLASS 2 FIELD WIRE INSULATION TO BE RATED AT 300V MINIMUM.
3. OPTIONAL MODULES. REFER TO FIELD WIRING DIAGRAM FOR SUGGESTED WIRING.
5. FIELD ASSIGNED PROGRAMMABLE RELAYS.
6. AUTO/STOP, EMERGENCY STOP THE CONTACTS ARE JUMPED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
7. RELAY AT 120VAC: 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, 1/3 HP, 7.2 FLA AT 240VAC: 5 AMPS GENERAL PURPOSE.
8. IF SHIELD IS PRESENT, DO NOT WIRE SHIELD TO GROUND IN CONTROL PANEL. IF USED, SHIELD IS TO BE GROUNDED EXTERNALLY TO CONTROL PANEL. REFERENCE FIELD WIRING DIAGRAM FOR RECOMMENDED WIRE TYPE.
9. RELAY ENERGIZED WHILE MAKING ICE.
10. CONTACT CLOSURE ENABLES ICE MAKING.
11. CLOSED CONTACT COMMANDS BASE LOADING OPERATION.
12. ACTUAL BASE LOADING SETPOINT USED IS SETABLE AT FRONT PANEL. REFER TO IOM FOR DETAILS.

DRAWN BY:	L.CRESON
© TRANE DATE:	07-MAY-2012
MASTER FILE:	
REVISION DATE:	
REPLACES:	
SIMILAR TO:	
USED BY:	

TRANE®

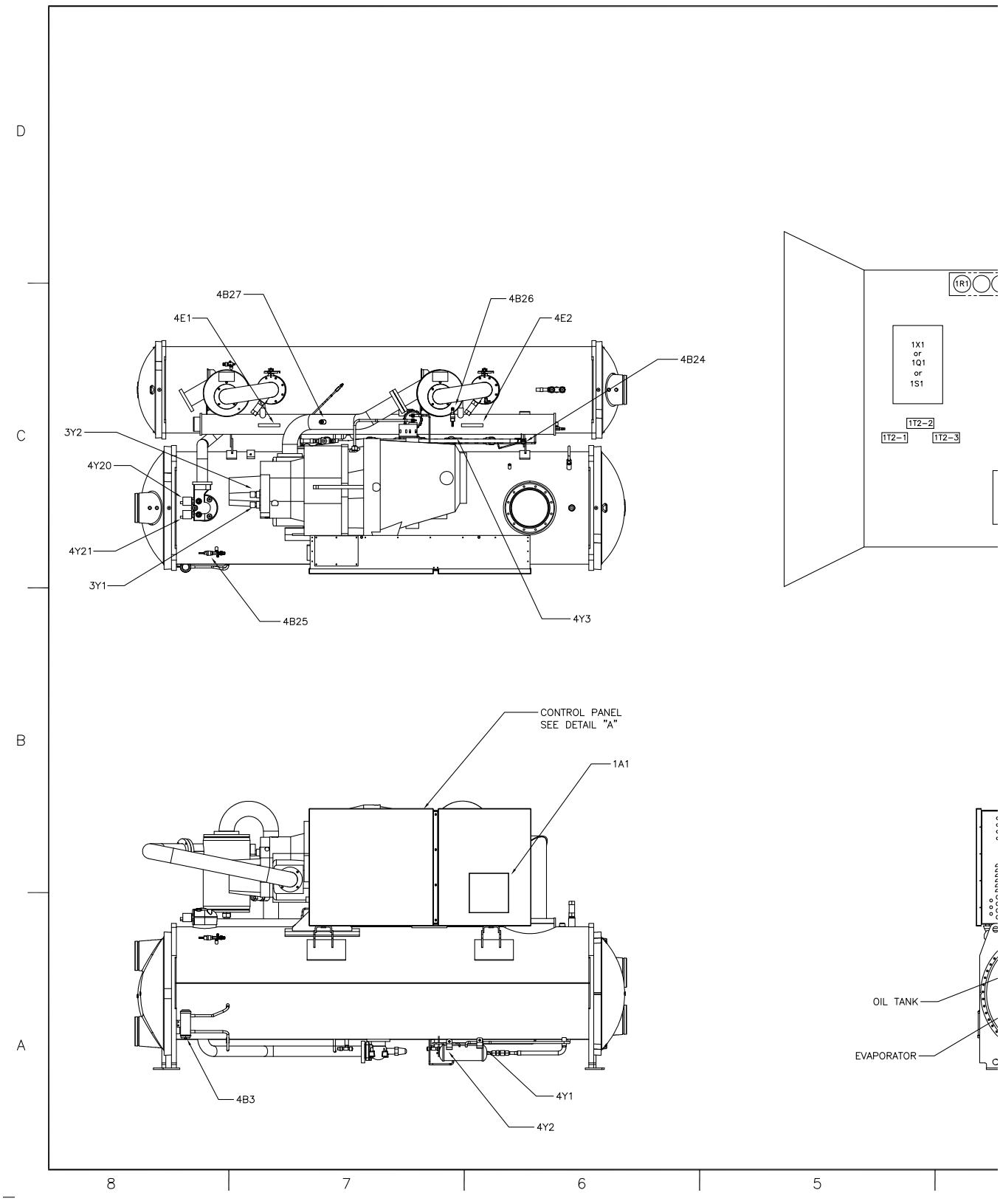
CAD: CREO SCHEMATICS

SCHEMATIC
RTHD
SOLID STATE STARTER

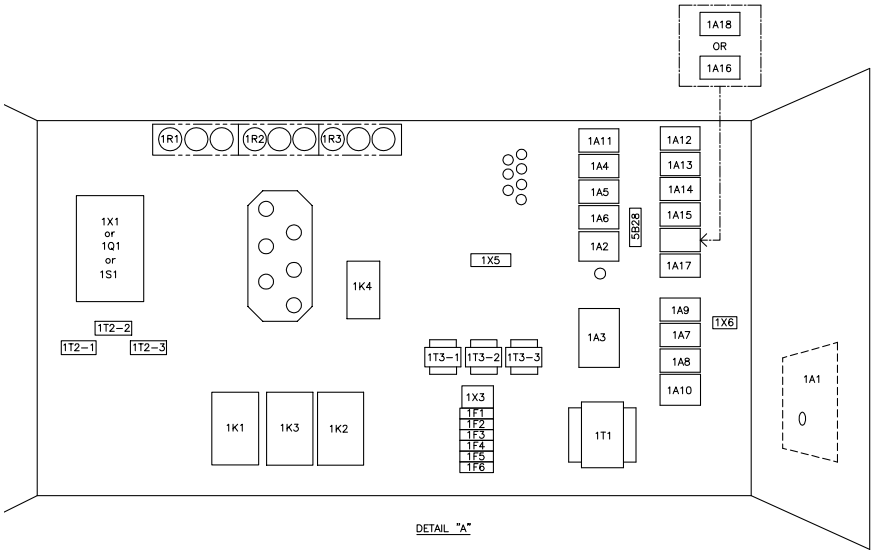
2309-1363

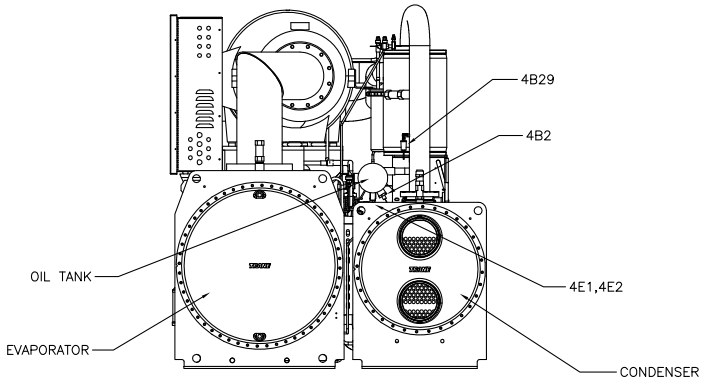
SHEET 1

REV D

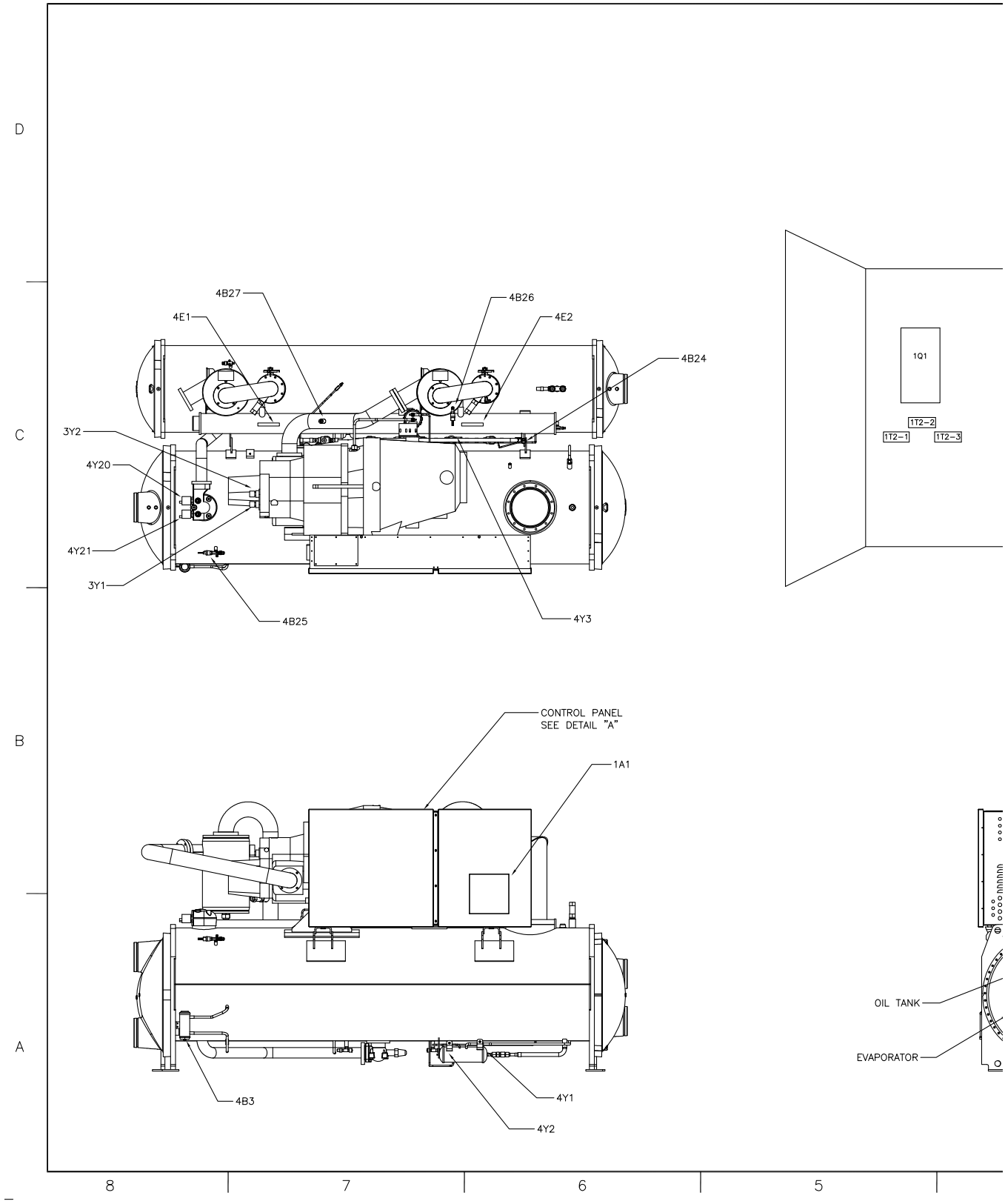

4B27
4E1
4B26
4E2
4B24
3Y2
4Y20
4Y21
3Y1
4B25
4Y3
1R1
1X1
or
1Q1
or
1S1
1T2-2
1T2-1
1T2-3
CONTROL PANEL
SEE DETAIL "A"
1A1
4B3
4Y1
4Y2
OIL TANK
EVAPORATOR
D
C
B
A
8
7
6
5

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCE: .X = ± .XX = ± .XXX = ± ANGLES = ± FINISH ✓ HOLE DIA = + - CONFORMS TO ASME Y14.5M - 1994	TRANE THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE PARTIES WITHOUT THE WRITTEN CONSENT OF TRANE DRAWN BY: PBL © TRANE DATE: 3-13-03 DO NOT SCALE PRINT THIRD ANGLE PROJECTION	23097564 SHEET 1 OF 1 REV E COMPONENT LOCATION RTHD WYE–DELTA START

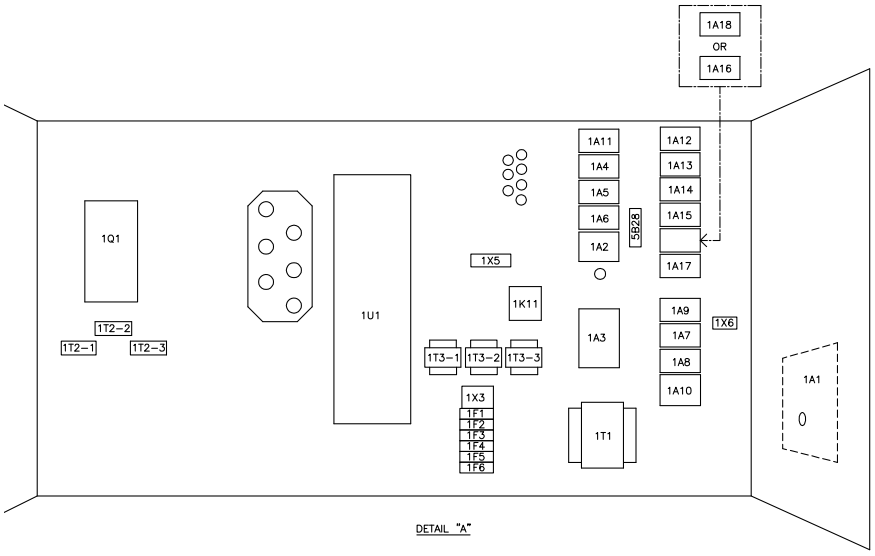


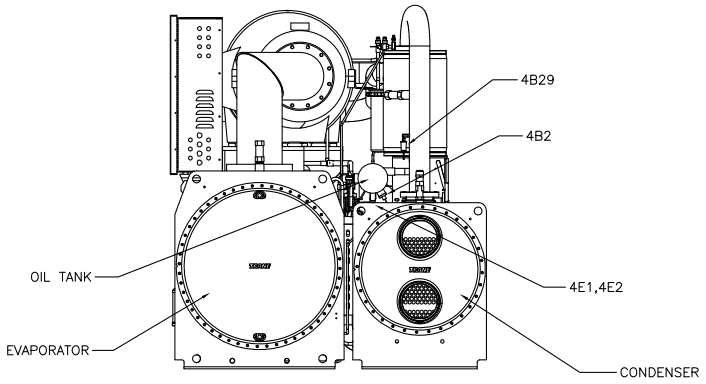


4 3 2 1

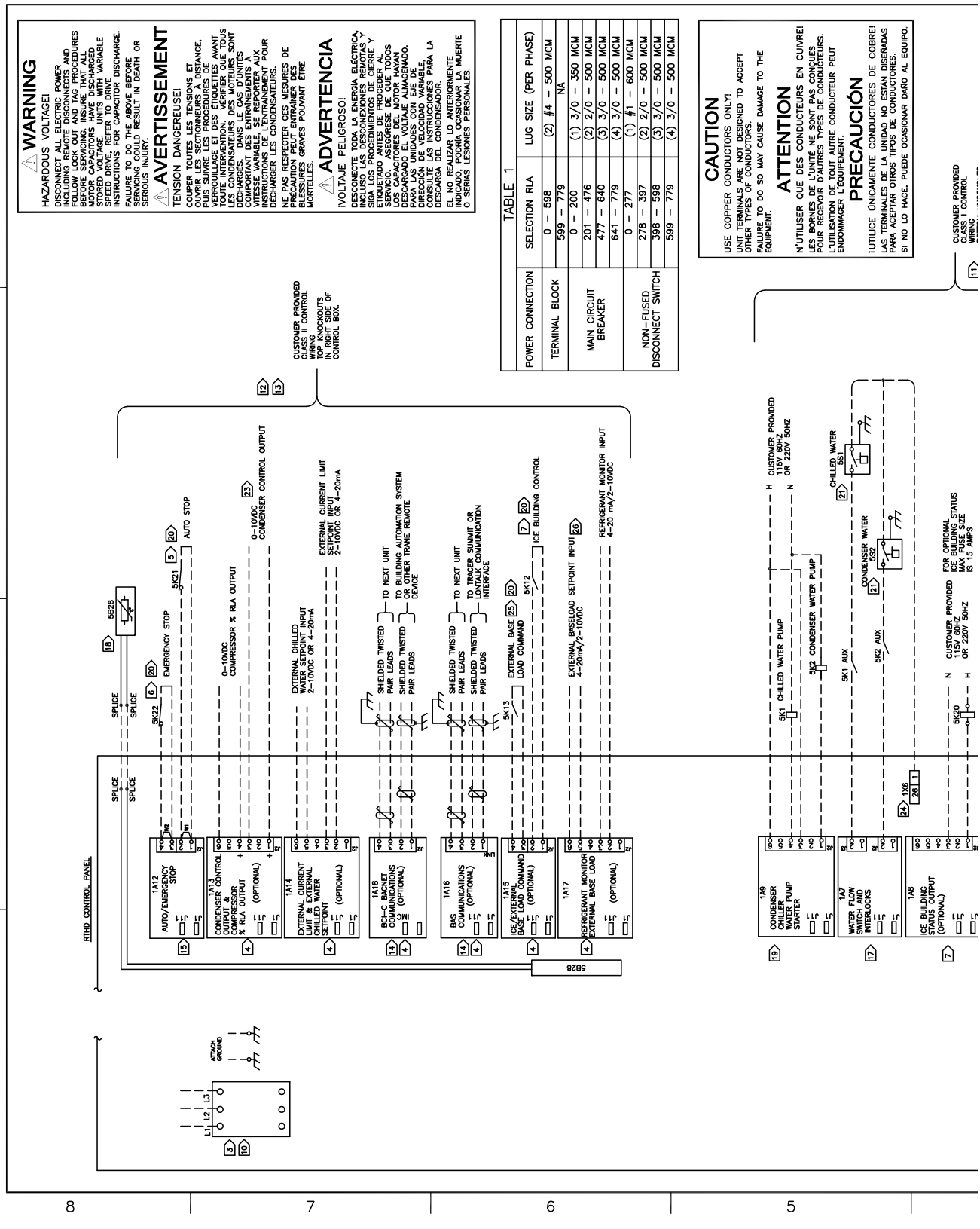

D
C
B
A
8
7
6
5
4B27
4E1
4B26
4E2
4B24
3Y2
4Y20
4Y21
3Y1
4B25
4Y3
1Q1
1T2-2
1T2-1
1T2-3
CONTROL PANEL
SEE DETAIL "A"
1A1
4B3
4Y1
4Y2
OIL TANK
EVAPORATOR

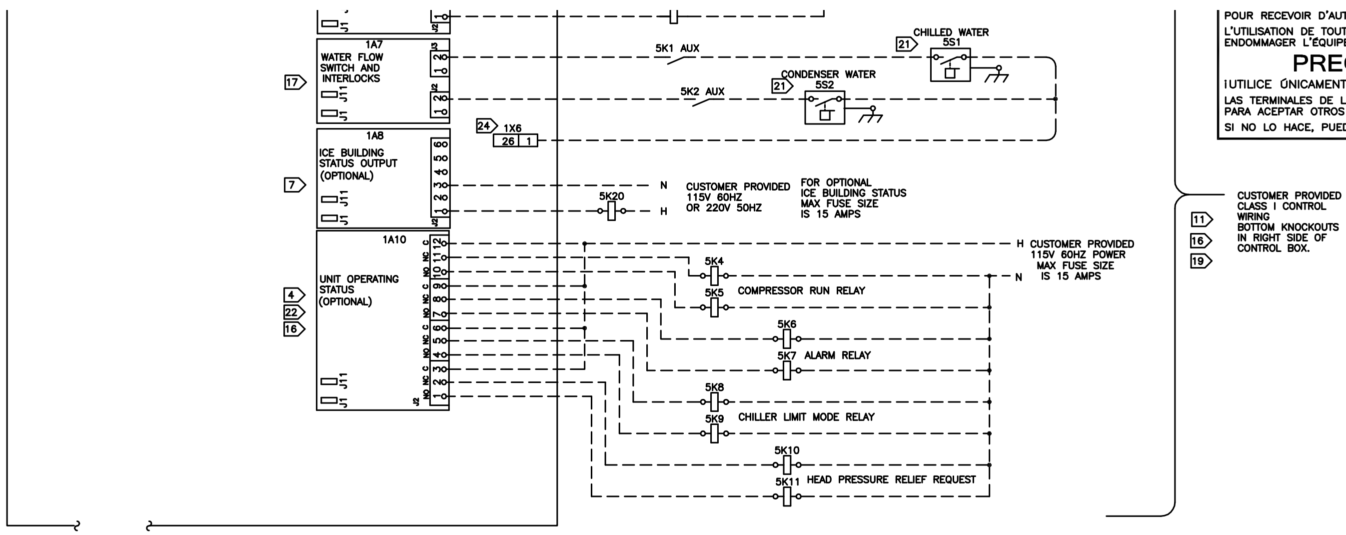
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCE: .X = ± .XX = ± .XXX = ± ANGLES = ± HOLE DIA = + - FINISH ✓ CONFORMS TO ASME Y14.5M - 1994	TRANE THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE PARTIES WITHOUT THE WRITTEN CONSENT OF TRANE DRAWN BY: PBL © TRANE DATE: 3-13-03 DO NOT SCALE PRINT THIRD ANGLE PROJECTION	23097565 SHEET 1 OF 1 REV E COMPONENT LOCATION RTHD SOLID STATE STARTER





4	3	2	1


WARNING
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW PROPER LOCK OUT/TAG OUT PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE.
FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.
AVERTISSEMENT
TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS À DISTANCE, PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUT ENTRETIEN. VÉRIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS CONCERNANT LA POMPE DÉCHARGER LES CONDENSATEURS.
NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.
ADVERTENCIA
¡VOLTAJE PELIGROSO!
DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO APROPIADOS AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. EN UNIDADES CON VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.
EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.
TABLE 1
POWER CONNECTION | SELECTION RLA | LUG SIZE (PER PHASE)
TERMINAL BLOCK | 0 – 598 | (2) #4 – 500 MCM
599 – 779 | NA
MAIN CIRCUIT BREAKER | 0 – 200 | (1) 3/0 – 350 MCM
201 – 476 | (2) 2/0 – 500 MCM
477 – 640 | (3) 3/0 – 500 MCM
641 – 779 | (4) 3/0 – 500 MCM
NON–FUSED DISCONNECT SWITCH | 0 – 277 | (1) #1 – 600 MCM
278 – 397 | (2) 2/0 – 500 MCM
398 – 598 | (3) 3/0 – 500 MCM
599 – 779 | (4) 3/0 – 500 MCM
CAUTION
USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.
ATTENTION
N'UTILISER QUE DES CONDUCTEURS EN CUIVRE! LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS. L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.
PRECAUCIÓN
¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE! LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES. SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.
RTHD CONTROL PANEL
SPLICE
5B28
1A12 AUTO/EMERGENCY STOP
1A13 CONDENSER CONTROL OUTPUT & COMPRESSOR % RLA OUTPUT (OPTIONAL)
1A14 EXTERNAL CURRENT LIMIT & EXTERNAL CHILLED WATER SETPOINT (OPTIONAL)
1A18 BCI–C BACNET COMMUNICATIONS (OPTIONAL)
1A16 BAS COMMUNICATIONS (OPTIONAL)
1A15 ICE/EXTERNAL BASE LOAD COMMAND (OPTIONAL)
1A17 REFRIGERANT MONITOR & EXTERNAL BASE LOAD (OPTIONAL)
1A9 CONDENSER CHILLED WATER PUMP STARTER
1A7 WATER FLOW SWITCH AND INTERLOCKS
1A8 ICE BUILDING STATUS OUTPUT (OPTIONAL)
EMERGENCY STOP
AUTO STOP
0–10VDC COMPRESSOR % RLA OUTPUT
0–10VDC CONDENSER CONTROL OUTPUT
EXTERNAL CHILLED WATER SETPOINT INPUT 2–10VDC OR 4–20mA
EXTERNAL CURRENT LIMIT SETPOINT INPUT 2–10VDC OR 4–20mA
SHIELDED TWISTED PAIR LEADS
TO NEXT UNIT
TO BUILDING AUTOMATION SYSTEM OR OTHER TRANE REMOTE DEVICE
TO TRACER SUMMIT OR LONTALK COMMUNICATION INTERFACE
EXTERNAL BASE LOAD COMMAND
ICE BUILDING CONTROL
EXTERNAL BASELOAD SETPOINT INPUT 4–20mA/2–10VDC
REFRIGERANT MONITOR INPUT 4–20 mA/2–10VDC
CUSTOMER PROVIDED CLASS II CONTROL WIRING TOP KNOCKOUTS IN LOWEST SIDE OF CONTROL BOX.
CUSTOMER PROVIDED 115V 60HZ OR 220V 50HZ
CHILLED WATER PUMP
CONDENSER WATER PUMP
5K1 AUX
5K2 AUX
CHILLED WATER 5S1
CONDENSER WATER 5S2
CUSTOMER PROVIDED 115V 60HZ OR 220V 50HZ
FOR OPTIONAL ICE BUILDING STATUS MAX. FUSE SIZE IS 15 AMPS
CUSTOMER PROVIDED CLASS I CONTROL WIRING
ATTACH GROUND
L1 L2 L3
8
7
6
5
D
C
B
A



POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS. L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'EQUIPEMENT.

PRECAUCIÓN

¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE! LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.

SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

GENERAL NOTES:

1. CAUTION–DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. COMPRESSOR MOTOR IS PROTECTED FROM PRIMARY SINGLE PHASE FAILURE.
3. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 75 DEGREE C (MRLA = 0–598) OR 90 DEGREE C (MRLA = 779). SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. USE 600 VOLT COPPER CONDUCTORS ONLY. 200 TO 600 VOLT CIRCUIT, PROVIDE AN EQUIPMENT GROUND IN ACCORDANCE WITH APPLICABLE ELECTRIC CODES.
4. THESE FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
5. OPENING THE EXTERNAL AUTO–STOP CONTACT WILL INITATE A SHUT DOWN SEQUENCE OF THE CHILLER. CLOSURE OF THE CONTACT WILL ALLOW THE CHILLER TO RETURN TO NORMAL AUTOMATIC OPERATION.
6. AN OPENING OF THE EMERGENCY STOP CONTACT WILL SHUT THE CHILLER DOWN IMMEDIATELY AND TRIGGER AN EMERGENCY STOP INPUT DIAGNOSTIC. CLOSURE OF THE CONTACT AND A MANUAL RESET OF THE UNIT CONTROL DIAGNOSTIC WILL ALLOW THE CHILLER TO RETURN TO NORMAL OPERATION.
7. ICE BUILDING CONTROL IS OPTIONAL. THE 1A8 MODULE IS STANDARD FOR A SOLID STATE STARTER UNIT BUT IS OPTIONAL FOR A WYE–DELTA STARTER.

WIRING REQUIREMENTS

8. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DASHED LINES
9. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
10. LINE VOLTAGE OPTIONS:
UNIT MOUNTED TERMINAL BLOCK, DISCONNECT OR HACR CIRCUIT BREAKER. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN TABLE 1.
11. CLASS I WIRING ,14 AWG, 600 VOLT CONDUCTORS. 115 VOLT CIRCUIT
12. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG.
13. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.
14. TRANE TRACER SUMMIT RECOMMENDED WIRE:
TRANE ICS SHIELDED TWISTED PAIR COMMUNICATION CABLE 14–18 AWG. 600V CABLE, 30 VOLT CIRCUIT. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 5000 FEET. GROUND THE SHIELD AT THE TRACER END ONLY. REFER TO THE IOM FOR COMPLETE CABLE AND INSTALLATION REQUIREMENTS. TRANE TRACER SUMMIT MAY ALSO USE LCI WIRING RECOMMENDED BELOW.
LONTALK COMMUNICATION INTERFACE (LCI) RECOMMENDED WIRE:
22 AWG LEVEL 4 UNSHIELDED COMMUNICATION WIRE RECOMMENDED. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED4500 FEET. CONNECTION TOPOLOGY SHOULD BE DAISY CHAIN. REFER TO BUILDING AUTOMATION SYSTEM (BAS) COMMUNICATION INSTALLATION LITERATURE FOR END OF LINE TERMINATION RESISTOR REQUIREMENTS.
15. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
16. FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR ALL FIELD PROVIDED WIRING IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.
17. CHILLED/CONDENSER WATER PUMP STARTER AUXILIARY CONTACTS TO BE WIRED IN SERIES WITH FLOW SWITCHES.
18. WHEN ORDERED THE OUTDOOR AIR TEMP SENSOR ELECTRONICS IS FACTORY MOUNTED INSIDE THE CONTROL PANEL AND THE IPC BUS IS FACTORY WIRED. THE SENSOR IS TO BE FIELD WIRED EXTERNALLY WITH THE SENSOR LEADS EXTENDED BACK TO THE CONTROL PANEL. THESE WIRES CAN BE SPLICED WITH TWO 14–18 AWG 600V WIRES, WITH A MAXIMUM LENGTH OF 1000 FEET (305 METERS), SPLICE AT SENSOR END MUST BE WATER TIGHT. REFER TO UNIT IOM FOR DETAILS.

CONTACT RATINGS AND REQUIREMENTS

19. UNIT PROVIDED DRY CONTACTS FOR THE CONDENSER/CHILLED WATER PUMP CONTROL. THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.
20. CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
21. FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.
22. THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. EACH FUNCTION IS ASSOCIATED WITH A SPDT RELAY. THE INDICATORS FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.
THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.
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COMPRESSOR RUNNING — THE NO CONTACTS CLOSE WHEN COMPRESSOR STATUS FROM STARTER MODULE IS EITHER STARTING OR RUNNING.
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23. FIELD SELECTABLE AS: CONDENSER PRESSURE, DELTA PRESSURE OR CONTROL OUTPUT SIGNAL FOR CONDENSER HEAD PRESSURE CONTROL.
24. THE FIELD WIRING FOR THE 115V HOT LEG IS TERMINATED TO 1X6 TERMINAL BLOCK. SEE INSTRUCTION LABEL IN CONTROL PANEL FOR WIRE INSERTION INSTRUCTIONS. SPLICE FIELD WIRES TOGETHER AND WIRE TO 1X6.
25. CLOSED CONTACT COMMANDS BASE LOADING OPERATION.
26. ACTUAL BASE LOADING SETPOINT USED IS SETABLE AT FRONT PANEL. REFER TO IOM FOR DETAILS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCE:
.X = ±
.XX = ±
.XXX = ±
ANGLES = ±
HOLE DIA = +/-
FINISH ✓
CONFORMS TO ASME Y14.5M - 1994

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SHEET 1 OF 1
REV F
FIELD WIRING
RTHD

4 3 2 1

NOTES:

1. DASHED LINES INDICATE FIELD WIRING BY OTHERS. PHANTOM LINES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS. CHECK SALES ORDER TO DETERMINE IF WIRING IS REQUIRED FOR SPECIFIC OPTIONS.

2. REQUIRED DEVICE AND/OR CIRCUITRY BY OTHERS.

3. REQUIRED DEVICE AVAILABLE FROM TRANE. FIELD INSTALLED

4. OPENING THE EXTERNAL AUTO–STOP CONTACT WILL INITATE A SHUT DOWN SEQUENCE OF THE CHILLER. CLOSURE OF THE CONTACT WILL ALLOW THE CHILLER TO RETURN TO NORMAL AUTOMATIC OPERATION.

5. AN OPENING OF THE EMERGENCY STOP CONTACT WILL SHUT THE CHILLER DOWN IMMEDIATELY AND TRIGGER AN EMERGENCY STOP INPUT DIAGNOSTIC. CLOSURE OF THE CONTACT AND A MANUAL RESET OF THE UNIT CONTROL DIAGNOSTIC WILL ALLOW THE CHILLER TO RETURN TO NORMAL OPERATION.

GENERAL WIRING REQUIREMENTS AND PROVISIONS

6. THE EIGHT 1/2" CONDUIT KNOCKOUTS LOCATED NEAR THE TOP OF THE RIGHT HAND SIDE OF THE CONTROL PANEL ARE FOR USE WITH LOW VOLTAGE 30 VOLT CIRCUIT WIRING.

7. THE SIX 1/2" CONDUIT KNOCKOUTS AND 4 1–1/4" KNOCKOUTS LOCATED NEAR THE BOTTOM OF THE RIGHT HAND SIDE OF THE CONTROL PANEL ARE FOR USE WITH 115 VOLT CIRCUIT WIRING.

REQUIRED WIRING:

8. CLASS 1 WIRING ,14 AWG, 600 VOLT CONDUCTORS. 115 VOLT CIRCUIT

9. CLASS 2 WIRING.

10. TRANE TRACER SUMMIT RECOMMENDED WIRE:
TRANE ICS SHIELDED TWISTED PAIR COMMUNICATION CABLE 14–18 AWG, 600V CABLE, 30 VOLT CIRCUIT. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 5000 FEET. GROUND THE SHIELD AT THE TRACER END ONLY. REFER TO THE IOM FOR COMPLETE CABLE AND INSTALLATION REQUIREMENTS. TRANE TRACER SUMMIT MAY ALSO USE LCI WIRING RECOMMENDED BELOW.

LONTALK COMMUNICATION INTERFACE (LCI) RECOMMENDED WIRE:
22 AWG LEVEL 4 UNSHIELDED COMMUNICATION WIRE RECOMMENDED. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 4500 FEET. CONNECTION TOPOLOGY SHOULD BE DAISY CHAIN. REFER TO BUILDING AUTOMATION SYSTEM (BAS) COMMUNICATION INSTALLATION LITERATURE FOR END OF LINE TERMINATION RESISTOR REQUIREMENTS.

11. THE FIELD WIRING FOR THE 115V HOT LEG IS TERMINATED TO 1X6 TERMINAL BLOCK. SEE INSTRUCTION LABEL IN CONTROL PANEL FOR WIRE INSERTION INSTRUCTIONS. SPLICE FIELD WIRES TOGETHER AND WIRE TO 1X6.

GENERAL NOTES:

12. CAUTION–DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.

13. COMPRESSOR MOTOR IS PROTECTED FROM PRIMARY SINGLE PHASE FAILURE.

14. THESE FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.

WIRING REQUIREMENTS

15. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.

16. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 75 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. USE 600 VOLT COPPER CONDUCTORS ONLY. 200 TO 600 VOLT CIRCUIT, PROVIDE AN EQUIPMENT GROUND IN ACCORDANCE WITH APPLICABLE ELECTRIC CODES.

17. LINE VOLTAGE OPTIONS:

UNIT MOUNTED TERMINAL BLOCK, DISCONNECT OR HACR CIRCUIT BREAKER THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN TABLE 2.

18. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG.

19. FIELD SELECTABLE AS: CONDENSER PRESSURE, DELTA PRESSURE OR CONTROL OUTPUT SIGNAL FOR CONDENSER HEAD PRESSURE CONTROL.

20. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT

21. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE NOTED JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.

22. FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR ALL FIELD PROVIDED WIRING IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

23. CLOSED CONTACT COMMANDS BASE LOADING OPERATION.

24. ACTUAL BASE LOADING SETPOINT USED IS SETABLE AT FRONT PANEL. REFER TO IOM FOR DETAILS.

CONTACT RATINGS AND REQUIREMENTS

25. UNIT PROVIDED DRY CONTACTS FOR THE CONDENSER/CHILLED WATER PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.

26. CUSTOMER SUPPLIED CONTACTS FOR ALL CLASS 2 CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.

27. FLOW SWITCH & INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1 mA CIRCUIT OR A 220 VOLT 2 mA CIRCUIT.

28. CHILLED / CONDENSER WATER PUMP STARTER AUXILIARY CONTACTS TO BE WIRED IN SERIES WITH FLOW SWITCHES.

29. THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. EACH FUNCTION IS ASSOCIATED WITH A SPDT RELAY. THE INDICATORS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.
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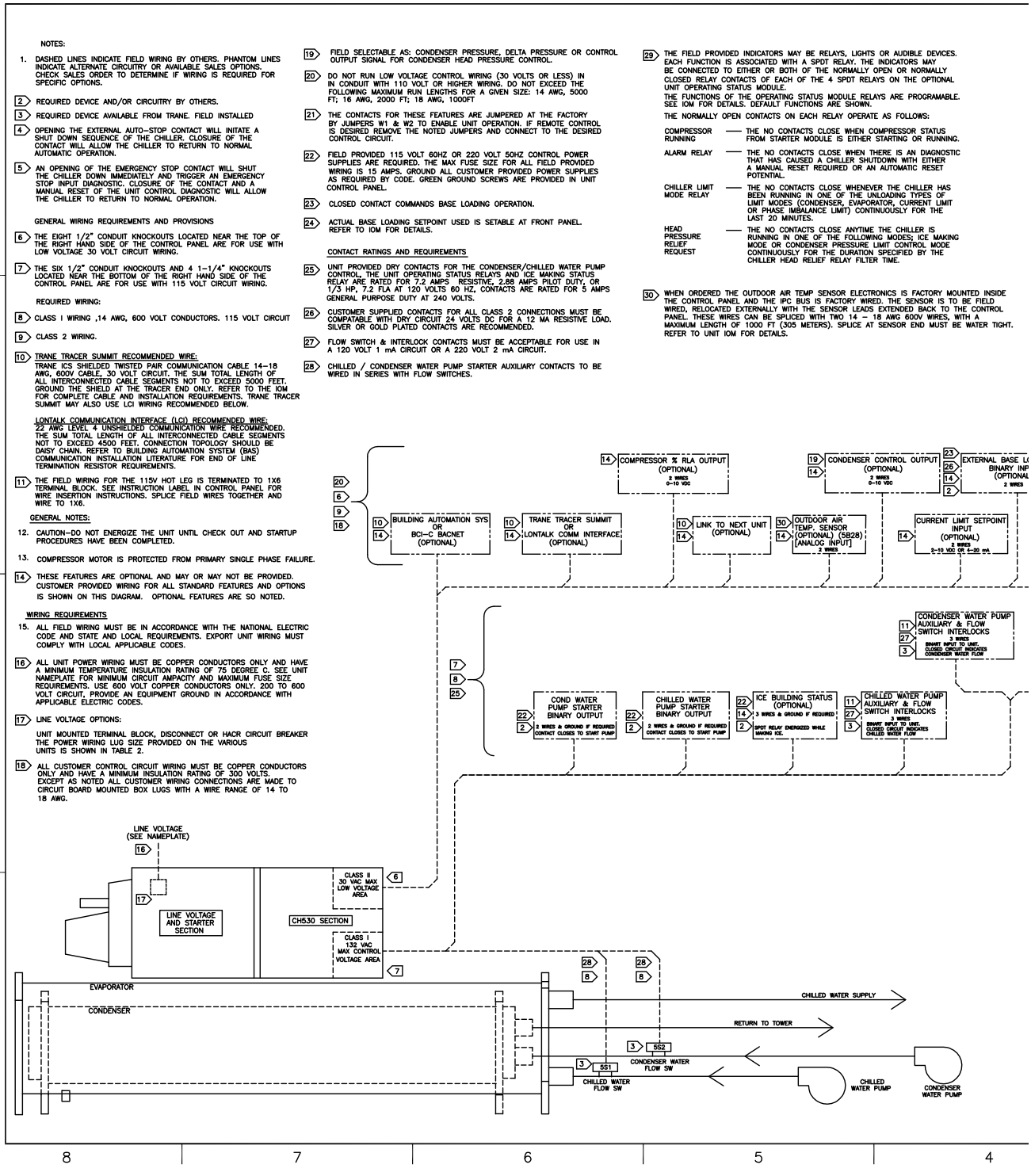
30. WHEN ORDERED THE OUTDOOR AIR TEMP SENSOR ELECTRONICS IS FACTORY MOUNTED INSIDE THE CONTROL PANEL AND THE IPC BUS IS FACTORY WIRED. THE SENSOR IS TO BE FIELD WIRED, RELOCATED EXTERNALLY WITH THE SENSOR LEADS EXTENDED BACK TO THE CONTROL PANEL. THESE WIRES CAN BE SPLICED WITH TWO 14 – 18 AWG 600V WIRES, WITH A MAXIMUM LENGTH OF 1000 FT (305 METERS). SPLICE AT SENSOR END MUST BE WATER TIGHT. REFER TO UNIT IOM FOR DETAILS.



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DRAWN BY: PBL

© TRANE DATE: 1-21-03

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23094869 SHEET 1 OF 1 REV E

FIELD LAYOUT DIAGRAM
RTHD

CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

ATTENTION

N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!

LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.

L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

PRECAUCIÓN

¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!

LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.

SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE.

FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠ AVERTISSEMENT

TENSION DANGEREUSE!

COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS À DISTANCE, PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS.

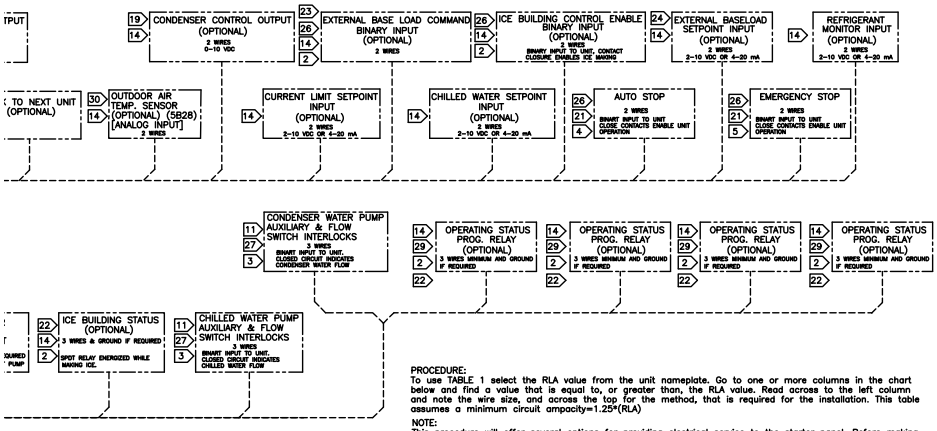
NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.

⚠ ADVERTENCIA

¡VOLTAJE PELIGROSO!

DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.

EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.



PROCEDURE:
To use TABLE 1 select the RLA value from the unit nameplate. Go to one or more columns in the chart below and find a value that is equal to, or greater than, the RLA value. Read across to the left column and note the wire size, and across the top for the method, that is required for the installation. This table assumes a minimum circuit ampacity=1.25*(RLA)

NOTE:
This procedure will offer several options for providing electrical service to the starter panel. Before making a final selection, review the accompanying TABLE 2 indicating wire ranges for the available lug sizes supplied on the equipment.

TABLE 1

RECOMMENDED WIRE SELECTION TABLE (REF.2002 NEC)
RATED LOAD AMPS (RLA)

MIN WIRE SIZE COPPER 75°C	SUPPLY LEADS FOR ALL STARTER PANELS						
	1 CONDUIT 3 WIRE	1 CONDUIT 6 WIRE	1 CONDUIT 9 WIRE	2 CONDUIT 6 WIRE	2 CONDUIT 12 WIRE	3 CONDUIT 9 WIRE	4 CONDUIT 12 WIRE
	1 wire/ph/co	2 wire/ph/co	3 wire/ph/co	1 wire/ph/co	2 wire/ph/co	1 wire/ph/co	1 wire/ph/co
8	40	**	**	**	**	**	**
6	52	**	**	**	**	**	**
4	68	**	**	**	**	**	**
3	80	**	**	**	**	**	**
2	92	**	**	**	**	**	**
1	104	**	**	**	**	**	**
0	120	192	252	240	384	360	480
00	140	224	294	280	448	420	560
000	160	256	336	320	512	480	640
0000	184	294	386	368	589	552	736
250	204	326	428	408	653	612	816
300	228	365	479	456	730	684	912
350	248	397	521	496	794	744	992
400	268	429	563	536	858	804	1072
500	304	486	638	608	973	912	1216

** Electrical conductors may be connected in parallel only for size 1/0 wire and larger per Nec 310–4.

The unit nameplate will be marked 'Maximum Fuse or Circuit Breaker Size' The maximum fuse or circuit breaker size is calculated as follows:

Calculated value = 2.25 * (Compressor RLA)

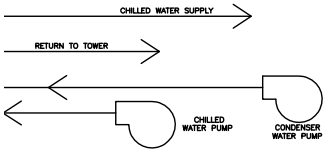
The calculated value is then used to select the fuse or circuit breaker from the standard sizes.

Standard Sizes = 100, 110, 125, 150, 175, 200, 225, 300, 350, 400, 450, 500, 600, 700, 800, 1000, 1200, 1600, 2000.

Maximum Fuse or Circuit Breaker Size = The standard size that is closest to the calculated value without exceeding it.

TABLE 2

POWER CONNECTION	SELECTION RLA	LUG SIZE (PER PHASE)
TERMINAL BLOCK	0 – 598	(2) #4 – 500 MCM
	599 – 779	NA
MAIN CIRCUIT BREAKER	0 – 200	(1) 3/0 – 350 MCM
	201 – 476	(2) 2/0 – 500 MCM
	477 – 640	(3) 3/0 – 500 MCM
	641 – 779	(4) 3/0 – 500 MCM
NON–FUSED DISCONNECT SWITCH	0 – 277	(1) #1 – 600 MCM
	278 – 397	(2) 2/0 – 500 MCM
	398 – 598	(3) 3/0 – 500 MCM
	599 – 779	(4) 3/0 – 500 MCM



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