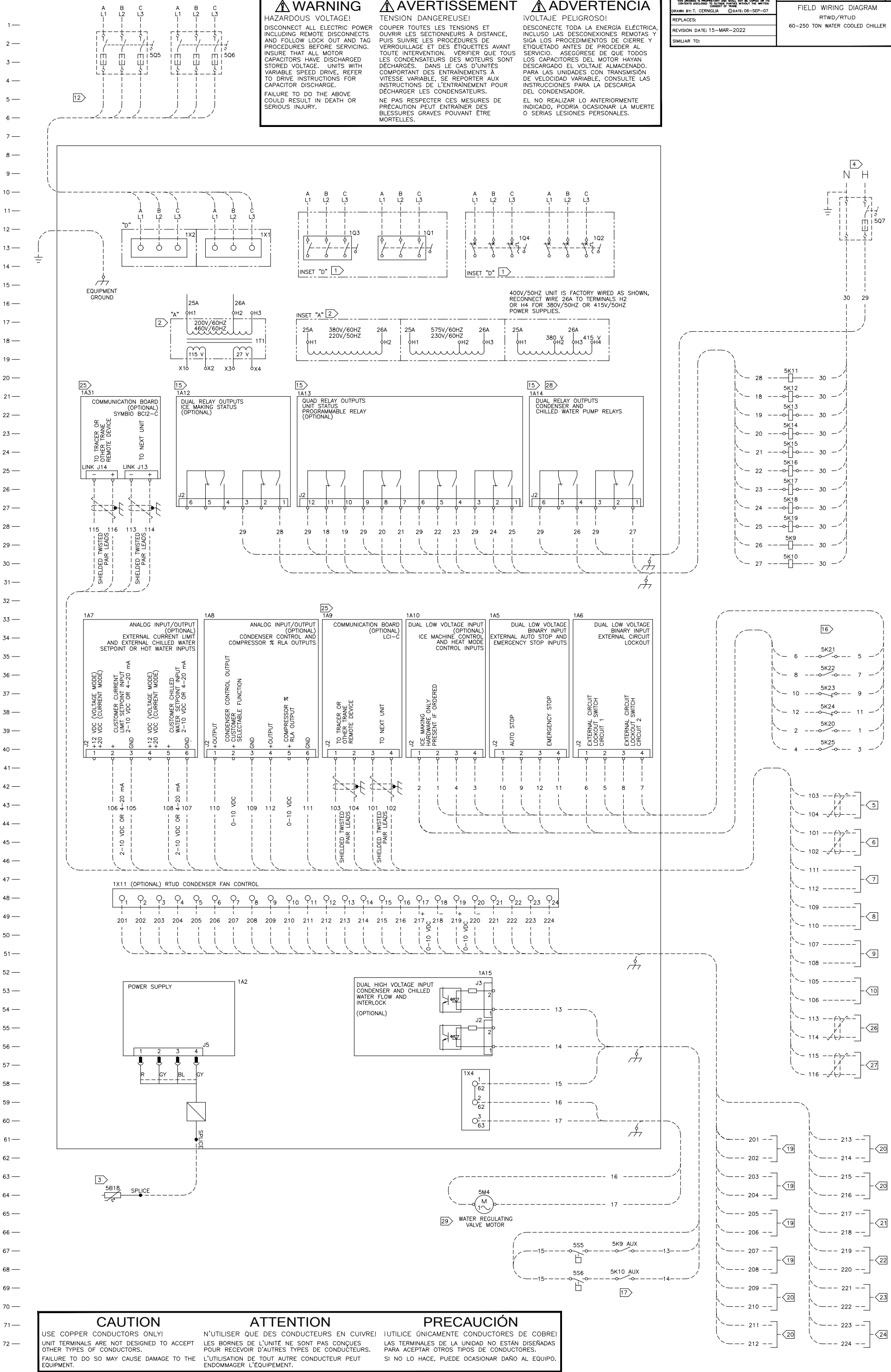


WARNING
 HAZARDOUS VOLTAGE!
 DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.

AVERTISSEMENT
 TENSION DANGEREUSE!
 COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS 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 TRANSMISIÓN 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.

TRANE		2309-1913	SHEET 1 OF 2	REV S
THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF TRANE. ©DATE: 06-SEP-07		FIELD WIRING DIAGRAM		
REPLACES:		RTWD/RTUD		
REVISION DATE: 15-MAR-2022		60-250 TON WATER COOLED CHILLER		
SIMILAR TO:				



1

SINGLE SOURCE POWER IS PROVIDED AS STANDARD ON THESE PRODUCTS, DUAL SOURCE POWER IS OPTIONAL. FIELD CONNECTIONS FOR SINGLE SOURCE POWER ARE MADE TO 1X1, 1Q1, OR 1Q2. WHEN THE OPTIONAL DUAL SOURCE POWER IS SELECTED THE FIELD CONNECTIONS FOR CIRCUIT #2 ARE MADE TO 1X2, 1Q3, OR 1Q4.

2

FOR VOLTAGES 200V/60HZ, 220V/50HZ, 380V/60HZ, 460V/60HZ, WIRE 26A SHALL BE CONNECTED TO H2. FOR VOLTAGES 230V/60HZ & 575V/60HZ, WIRE 26A SHALL BE CONNECT TO H3. 400V/50HZ UNIT IS FACTORY WIRED WITH 26A CONNECTED TO H3 – RECONNECT WIRE 26A TO H2 FOR 380V/50HZ, OR H4 FOR 415V/50HZ. H4 IS ONLY AVAILABLE WITH 400V/50HZ PANELS.

3

FACTORY INSTALLED OUTDOOR AIR TEMPERATURE SENSOR LEAD LENGTH TO BE SPLICED AND EXTENDED BY CUSTOMER. 18–AWG, TWISTED PAIR RECOMMENDED.

4

CUSTOMER SUPPLIED POWER 115V/60HZ/1PH OR 220V/50HZ/1PH TO POWER RELAYS. MAX. FUSE SIZE IS 15 AMPS. GROUND ALL CUSTOMER SUPPLIED POWER SUPPLIES AS REQUIRED BY APPLICABLE CODES. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

5

WIRED TO NEXT UNIT. 22–AWG, SHIELDED COMMUNICATION WIRE EQUIVALENT TO HELIX LF22P0014216 RECOMMENDED. THE SUM TOTAL 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.

6

WIRED TO TRACER OR OTHER TRANE REMOTE DEVICE. 22–AWG, SHIELDED COMMUNICATION WIRE EQUIVALENT TO HELIX LF22P0014216 RECOMMENDED. THE SUM TOTAL 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.

7

WIRED TO COMPRESSOR % RLA.

8

WIRED TO CONDENSER CONTROL CUSTOMER SELECTABLE FUNCTION.

9

WIRED TO CUSTOMER CHILLED WATER SETPOINT 2–10 VDC OR 4–20 mA.

10

WIRED TO CUSTOMER CURRENT LIMIT SETPOINT 2–10 VDC OR 4–20 mA.

11

REFER TO RTWD/RTUD ELECTRICAL SCHEMATIC FOR SPECIFIC ELECTRICAL CONNECTION INFORMATION AND NOTES PERTAINING TO WIRING INSTALLATION.

12

ALL UNIT POWER WIRING MUST BE 600–V, COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 75 DEGREE C. REFER TO UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION DEVICE. PROVIDE AN EQUIPMENT GROUND IN ACCORDANCE WITH APPLICABLE ELECTRIC CODES.

13

ALL FIELD WIRING MUST BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE AND LOCAL REQUIREMENTS.

14

ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 V. EXCEPT AS NOTED, ALL CUSTOMER CONTROL CIRCUIT WIRING CONNECTIONS HAVE A WIRE RANGE OF 14 TO 18 AWG.

15

UNIT PROVIDED DRY CONTACTS FOR THE CONDENSER/CHILLED WATER PUMP CONTROL. RELAYS ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR ½ HP, 7.2 FLA AT 120 V, CONTACTS ARE RATED FOR 5 A GENERAL PURPOSE DUTY 240 V.

16

CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATIBLE WITH DRY CIRCUIT 24 VDC FOR A 12–mA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS RECOMMENDED.

17

FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120–V, 1–mA CIRCUIT OR A 220–V, 2–mA CIRCUIT.

18

WIRES ARE CONNECTED TO NORMALLY OPEN DRY CONTACTS FOR CIRCUIT 1 CONDENSER FAN. CONTROL RELAYS ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP. CONTACTS ARE RATED FOR 7.2 FLA AT 120 V OR 5 AMPS GENERAL PURPOSE DUTY AT 240 V.

19

WIRES 201 AND 202 ENABLE FAN GROUP 1. WIRES 203 AND 204 ENABLE FAN GROUP 2. WIRES 205 AND 206 ENABLE FAN GROUP 3. WIRES 207 AND 208 ENABLE FAN GROUP 4.

20

FAN GROUPS 1 AND 2 MAY BE COMBINED FOR TWO SPEED FAN CONTROL. WIRES 201 AND 202 ENABLE PART SPEED. WIRES 203 AND 204 ENABLE FULL SPEED. WHEN PROPERLY CONFIGURED, RTUD CONTROLS WILL NEVER ENABLE BOTH SIGNALS SIMULTANEOUSLY AND WILL PROVIDE A SHORT DELAY BETWEEN SIGNALS. TRANE RECOMMENDS THE USE OF MECHANICAL AND ELECTRONIC INTERLOCKS TO PREVENT EQUIPMENT DAMAGE IN THE EVENT OF CONTACT FAILURE OR MISCONFIGURATION.

21

WIRES ARE CONNECTED TO NORMALLY OPEN DRY CONTACTS FOR CIRCUIT 1 CONDENSER FAN. CONTROL RELAYS ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP. CONTACTS ARE RATED FOR 7.2 FLA AT 120 V OR 5 AMPS GENERAL PURPOSE DUTY AT 240 V.

22

WIRES 209 AND 210 ENABLE FAN GROUP 1. WIRES 211 AND 212 ENABLE FAN GROUP 2. WIRES 213 AND 214 ENABLE FAN GROUP 3. WIRES 215 AND 216 ENABLE FAN GROUP 4.

23

FAN GROUPS 1 AND 2 MAY BE COMBINED FOR TWO SPEED FAN CONTROL. WIRES 209 AND 210 ENABLE PART SPEED. WIRES 211 AND 212 ENABLE FULL SPEED. WHEN PROPERLY CONFIGURED, RTUD CONTROLS WILL NEVER ENABLE BOTH SIGNALS SIMULTANEOUSLY AND WILL PROVIDE A SHORT DELAY BETWEEN SIGNALS. TRANE RECOMMENDS THE USE OF MECHANICAL AND ELECTRONIC INTERLOCKS TO PREVENT EQUIPMENT DAMAGE IN THE EVENT OF CONTACT FAILURE OR MISCONFIGURATION.

THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE PARTIES WITHOUT THE WRITTEN CONSENT OF TRANE

DRAWN BY: T. CERNIGLIA ©DATE: 11–NOV–07

REPLACES:

REVISION DATE: 15–MAR–2022

SIMILIAR TO:

2309–1913

SHEET 2 OF 2

REV S

FIELD WIRING DIAGRAM

RTWD/RTUD

60–250 TON WATER COOLED CHILLER

REPLACEABLE FUSE TABLE

Panel Type	Designation		Class	QTY.	Size (A)
	Volts	Hertz			
200	60	1F13, 14	CC	2	10
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10
230	60	1F13, 14	CC	2	8
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10
380	60	1F13, 14	CC	2	5
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10
460	60	1F13, 14	CC	2	5
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10
575	60	1F13, 14	CC	2	4
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10
400	50	1F13, 14	CC	2	5
		1F18, 19, 20, 21	CC	4	3
		1F16, 17	CC	2	6
		1F15	CC	1	10

21

WIRES ARE CONNECTED TO 0–10–VDC SIGNAL AT 22 mA MAXIMUM FOR CIRCUIT 1, GROUP 1, CONDENSER FAN SPEED CONTROL.

22

WIRES ARE CONNECTED TO 0–10–VDC SIGNAL AT 22 mA MAXIMUM FOR CIRCUIT 2, GROUP 1, CONDENSER FAN SPEED CONTROL.

23

WIRES ARE CONNECTED TO CIRCUIT 1, GROUP 1, CONDENSER FAN FAULT FEEDBACK. CONNECTION MUST BE COMPATIBLE WITH DRY CIRCUIT 24 VDC FOR A 12–mA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS RECOMMENDED.

24

WIRES ARE CONNECTED TO CIRCUIT 2, GROUP 1, CONDENSER FAN FAULT FEEDBACK. CONNECTION MUST BE COMPATIBLE WITH DRY CIRCUIT 24 VDC FOR A 12–mA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS RECOMMENDED.

25

1A31 (BACNET) AND 1A9 (LONTALK) MAY NOT BE INSTALLED ON THE SAME UNIT.

26

WIRED TO NEXT UNIT. 18–AWG, 24–pF/ft, SHIELDED COMMUNICATION WIRE RECOMMENDED. THE SUM TOTAL OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 4000 FEET. CONNECTION TOPOLOGY SHOULD BE DAISY CHAIN. LIMIT LINK TO 60 TRANE DEVICES OR 32 DEVICES OF TRANE AND NON–TRANE MANUFACTURE.

27

WIRED TO TRACER OR OTHER TRANE REMOTE DEVICE. 18–AWG, 24–pF/ft, SHIELDED COMMUNICATION WIRE RECOMMENDED. THE SUM TOTAL OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 4000 FEET. CONNECTION TOPOLOGY SHOULD BE DAISY CHAIN. LIMIT LINK TO 60 TRANE DEVICES OR 32 DEVICES OF TRANE AND NON–TRANE MANUFACTURE.

28

ALL RTUD UNITS (SYSTEMS WITH A REMOTE CONDENSER) REQUIRE CHILLED WATER PUMPS BE CONTROLLED BY THE TRANE CH530 TO AVOID CATASTROPHIC DAMAGE TO THE EVAPORATOR DUE TO FREEZING. IT IS STRONGLY RECOMMENDED THAT CHILLED WATER PUMP CONTROL ALSO BE USED ON RTWD TO PROVIDE PROPER UNIT OPERATION.

29

220V VALVE OPTION REQUIRES CUSTOMER PROVIDED POWER.

⚠

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 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 TRANSMISIÓN 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.

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.

1

2

3

4