

21 WIRING SHOWN IS FOR HOOKUP WITHOUT COMM. BOARD  
HOOK PPF14(VAV) OR PPF13(CV) TO RTRM J4.  
FOR OPTL. COMM. BOARD, HOOK PPF14 OR PPF13 TO  
COMM J2, P14 TO RTRM J4 AND P21 TO COMM J1.  
(SEE INSET A FOR WIRE NUMBERS.)

22 WIRE 36AE IS NOT USED FOR THE TC/TE\_420 OR TC/TE\_600.

24 REQUIRED FOR OPT. REFERENCE ENTHALPY CONTROL.

25 REQUIRED FOR OPT. COMPARATIVE ENTHALPY CONTROL.

26 WIRES 174A REQUIRED ONLY FOR TC (COOLING/NO HEAT) UNITS. WIRES 67B, 65E & 64D REQUIRED ONLY FOR TE (COOLING/ELECTRIC HEAT) UNITS.

☐ 28 REQUIRED FOR OPTIONAL POWER EXHAUST.

29 OPTIONAL CLOGGED FILTER SWITCH.

30 REQUIRED FOR OPTIONAL VAV

31 REQUIRED FOR OPTIONAL VED

32 SEE APPLICABLE VARIABLE FD

32 BALANCE OF CIRCUIT.

33 PLUG(S) LOCATED IN MAIN CONTROL PANEL

34 WIRES REQUIRED ONLY FOR V.F.D. WITH BYPASS OPTION

35 WIRES 154A & 155A (P34) REQUIRED FOR VAV W/ IGV OPTION  
WIRES 154B & 155B (P35) REQUIRED FOR VAV W/ VFD OPTION

☐ 37 REQUIRED FOR OPTIONAL 100% POWER EXHAUST

38 REQUIRED FOR OPTIONAL FRESH AIR TRACKING EXHAUST

HAZARDOUS VOLTAGE!  
DISCONNECT ALL ELECTRIC POWER  
INCLUDING REMOTE DISCONNECTS  
BEFORE SERVICING.

FAILURE TO DISCONNECT POWER  
BEFORE SERVICING CAN CAUSE  
SEVERE PERSONAL INJURY OR DEATH.

 **AVERTISSEMENT**  
VOLTAGE DANGEROUS!

DECONNECTEZ TOUTES LES SOURCES  
ELECTRIQUES INCLUANT LES

DISJONCTEURS SITUÉS A DISTANCE  
AVANT D'EFFECTUER L'ENTRETIEN.  
FAUTE DE DECONNECTER LA SOURCE  
ELECTRIQUE AVANT D'EFFECTUER  
L'ENTRETIEN PEUT ENTRAÎNER DES  
BLESSURES CORPORELLES SEVERES  
OU LA MORT.

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.

## IMPORTANT

**DO NOT ENERGIZE UNIT  
UNTIL CHECK-OUT AND  
START-UP PROCEDURE HAS  
BEEN COMPLETED.**

**COMM BOARD CONNECTIONS**

**COMM**

J1: 1 2 3 4  
P21: 1 2 3 4

40A, 39A, 38A

**RTAM**

J2: 1 2 3 4  
P32: 1 2 3 4

W71, W70, W69, W68

**PPFT4**

J2: 1 2 3 4 5  
PPF14: 1 2 3 4 5

**COMM BOARD**

**FACTORY POWERED GF1 CONVENIENCE OUTLET**

208V/50HZ

404A 405A 230V/50HZ 405A

TN56 RED BROWN BLUE

SPLICE SPLICE

WHT 120V SPLICE

408B GRN 408A (WHT) 409A (BLK)

**460V/60HZ**

404A 405A 575V/60HZ 405A

TN56 RED BROWN BLUE

SPLICE SPLICE

WHT 120V SPLICE

408B GRN 408A (WHT) 409A (BLK)

**FIELD POWERED GF1 CONVENIENCE OUTLET**

208V/50HZ

404A 405A 120V 405A

TN56 RED BROWN BLUE

SPLICE SPLICE

WHT 120V SPLICE

408B GRN 408A (WHT) 409A (BLK)

**460V/60HZ**

404A 405A 120V 405A

TN56 RED BROWN BLUE

SPLICE SPLICE

WHT 120V SPLICE

408B GRN 408A (WHT) 409A (BLK)

11 X 17 METAL PLATE

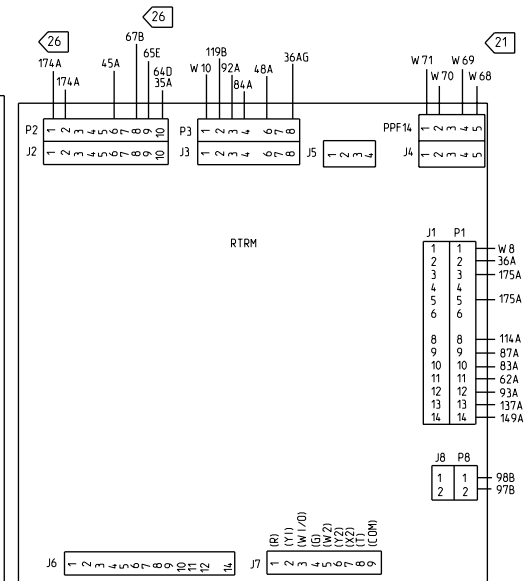
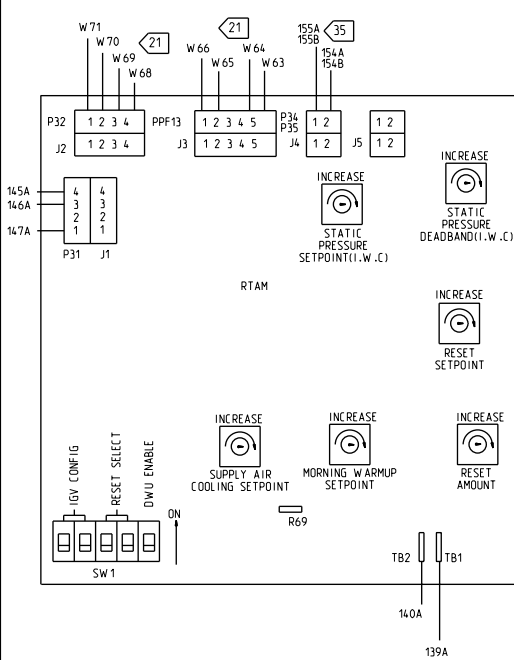
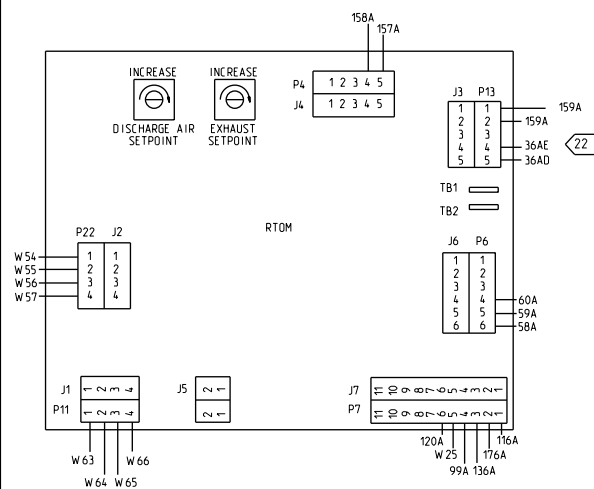
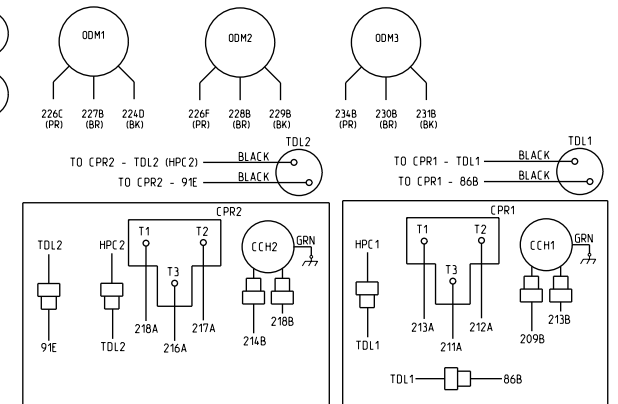
TO 114A — BLUE — LPC1  
CNT  
BOX 118A — BLUE —

TO CNTL BOX 85A — BLACK — HPC1  
TO CPR1 - HPC1 — BLACK —

TO CNTL BOX 88B — RED — HPC2  
TO CPR2 - HPC2 — RED —

|                                                                                                                                                                                                    |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <h1 style="margin: 0;">TRANE</h1> <p style="margin: 0;">THIS DRAWING IS PROPRIETARY AND SHALL NOT BE<br/>COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE<br/>PARTIES WITHOUT THE CONSENT OF TRANE.</p> |                            |
| DRAWN BY:<br>D. SHANNON                                                                                                                                                                            | TRANE® DATE:<br>9-9-08     |
| REPLACES:<br>-                                                                                                                                                                                     | REVISION DATE:<br>10-16-08 |
| CAD SYSTEM USED:<br>PRO/F                                                                                                                                                                          | SIMILAR TO:<br>2309-3540   |

|                                                                                 |                              |                  |          |
|---------------------------------------------------------------------------------|------------------------------|------------------|----------|
| FILE NUMBER:<br>2313-0207                                                       | DRAWING NUMBER:<br>2313-0224 | SHEET:<br>1 OF 1 | REV<br>B |
| VOYAGER 3<br>72 & 90 KW TE<br>27.5-35 TON - 380-575 VOLT<br>VARIABLE AIR VOLUME |                              |                  |          |



## 72 KW HEAT

**RETURN AIR SECTION WIRING**

The diagram illustrates the electrical connections for the Return Air Section. The central component is the **ECM** (Electronic Control Module), which is a 24V VDC motor with various control inputs and outputs. The wiring is as follows:

- ECM Inputs:**
  - 2-10 VDC FEEDBACK INPUT:** Connected to terminal J17 (1, 2).
  - 2-10 VDC CONTROL OUTPUT:** Connected to terminal J18 (1, 2).
  - 24V AC:** Connected to terminal J16 (1, 2).
  - COM:** Connected to terminal J15 (1, 2).
  - TR:** Connected to terminal J14 (1, 2).
  - MBUS:** Connected to terminal J13 (1, 2).
  - MBUS+:** Connected to terminal J12 (1, 2).
  - MBUS-:** Connected to terminal J11 (1, 2).
  - DCV:** Connected to terminal J10 (1, 2).
  - RAH/RAE:** Connected to terminal J9 (1, 2).
  - RAT:** Connected to terminal J8 (1, 2).
  - OAT:** Connected to terminal J7 (1, 2).
  - 0AH/OAE:** Connected to terminal J6 (1, 2).
  - MAT:** Connected to terminal J5 (1, 2).
  - EXF:** Connected to terminal J4 (1, 2).
- ECM Outputs:**
  - 134A:** Connected to terminal J1 (1, 2).
  - 153A:** Connected to terminal J2 (1, 2).
  - 134A:** Connected to terminal J3 (1, 2).
  - 123A:** Connected to terminal J4 (1, 2).
  - 124A:** Connected to terminal J5 (1, 2).
  - 122A:** Connected to terminal J6 (1, 2).
  - 121A:** Connected to terminal J7 (1, 2).
  - 128A:** Connected to terminal J8 (1, 2).
  - 125A:** Connected to terminal J9 (1, 2).
  - 131A:** Connected to terminal J10 (1, 2).
  - 133A:** Connected to terminal J11 (1, 2).
  - 135C:** Connected to terminal J12 (1, 2).
  - 129A:** Connected to terminal J13 (1, 2).
- Other Components:**
  - FBA:** A 35G, 36AV, 182A, 183A unit connected to terminals TR, TR1, IN, and IN-.
  - 3B:** A 3B unit connected to terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
  - W55, W56, W57:** Three 24V AC lines connected to terminals J17, J18, and J16.
  - W54:** A 24V AC line connected to terminal J15.
  - W53:** A 24V AC line connected to terminal J14.
  - W52:** A 24V AC line connected to terminal J13.
  - W51:** A 24V AC line connected to terminal J12.
  - W50:** A 24V AC line connected to terminal J11.
  - W49:** A 24V AC line connected to terminal J10.
  - W48:** A 24V AC line connected to terminal J9.
  - W47:** A 24V AC line connected to terminal J8.
  - W46:** A 24V AC line connected to terminal J7.
  - W45:** A 24V AC line connected to terminal J6.
  - W44:** A 24V AC line connected to terminal J5.
  - W43:** A 24V AC line connected to terminal J4.
  - W42:** A 24V AC line connected to terminal J3.
  - W41:** A 24V AC line connected to terminal J2.
  - W40:** A 24V AC line connected to terminal J1.