FROM CUSTOMER'S A.C. LINES

L1 (1) .CB1 (4) 1L1
L2 (2) (5) 1L2
L3 (3) (6) 1L3
(SEE SH. 2, TABLE 2 FOR CB1 AMP RATINGS)

GND LUG — EARTH GROUND — SEE SH. 2, NOTE 1 — .CG1
GND LUG — UTILITY GROUND — SEE SH. 2, NOTE 1 — .CG2

.K1

OPTION P2
LIGHTENING PROTECTION
1L1 1L2 1L3
(GRN) (BLK) (BLK) (BLK)
A9
.CH1
SEE SH. 2, NOTE 1

OPTION PN
DELTA–WYE CAPACITIVE INPUT FILTER
A5
(GRN) (YEL) (YEL) (YEL)
TO DRIVE TERMINAL
L11 L21 L31

OPTION PR
3% INPUT REACTOR
A1 B1 C1
.L1
A2 B2 C2

OPTION PF
DRIVE INPUT FUSES
.F3 .F4 .F5

2L1 2L2 2L3 1L3 1L2 1L1

L11 L21 L31 L1 (R) L2 (S) L3 (T) Ω1 Ω2(400)

TO CABINET DOOR MOUNTED DRIVE KEYPAD

CN1 CN2 CONTROL BOARD
CN2 A6
OPTIONS T2,T3 OR TL
SEE THE APPROPRIATE TECHNICAL MANUAL FOR NETWORK CONNECTIONS

E7 DRIVE
.A1

A1 MANUAL REF. IN 0–10VDC (20K OHM)
AC ANALOG COM.
A2 AUTO REF. IN (AS SET BY H3–08)
+V +15VDC 20mA MAX.
AC ANALOG COM.
E (G) TB3 SHIELD

DIP SWITCH S1
OFF ON 1
OFF ON 2
TERMINAL BOARD

MA DRIVE FAULT MB MC — MA → L1/1.04, MC → L3/1.14
MA DRIVE RUNNING M1 M2 — M2 → L4/1.15
SERIAL COMM. RUN M3 M4 — M3 → L5/1.16, M4 → L6/1.17
RUN FWD S1 — S1 → L7/1.18
BYPASS DRIVE ENABLE S3 — S1
FAULT RESET S4
HAND/AUTO S5 — S5 → L8/1.20
COM. SN — SN → L9/1.21
SEQ. COM. SC
JUMPER +24V SP

STD. AUTO MODE SPEED REFERENCE
✳ ISOLATED AUTO MODE SPEED REFERENCE
4–20MADC OR 0–10VDC (SEE SH. 3, TABLE 5)
+ – A2 AC E
SHIELD SEE SH. 2, NOTE 6

OR

3–15 PSI PRESSURE TRANSDUCER OPTION TP
✳ 3–14.5 PSI PNEUMATIC SIGNAL
.A4 3–15 PSI FOLLOWER
4–20MA OUTPUT A2 — A2
VCC +V — +V
COM. AC — AC
PART NO. UTC000038 J2 +V AC

OPTION PH
3% LOAD REACTOR
OR
OPTION PK
5% LOAD REACTOR
3T1 3T2 3T3 A1 B1 C1 .L4 A2 B2 C2 2T1 2T2 2T3

OPTION PN GREEN LEAD WIRE
.PG1 SEE SH. 2, NOTE 1
MOTOR EARTH GROUND
EG EG (U) (V) (W) T1 T2 T3
2T1 2T2 2T3 .K2
1T3 1T2 1T1

MA (96) (95) .S10 SEE SH. 2, NOTE 3
111 T1 T2 T3
L1/1.04
L2/1.07
TO A2
(T2) (T1) (T3)
A.C. MOTOR ✳

F1 F2
1L1 1L2
A CONTROL TRANSFORMER B .T1 (X2) (X1)
TO OPTION P3 SPACE HEATER
.F6 120 L10 /1.28

| CONTROL TRANSFORMER PRIMARY CONNECTIONS | | | |
|---|---|---|---|
| INPUT VOLTS | TERMINALS A | TERMINALS B | JUMPER LOCATION |
| 208 | (H1) | (H2) | NONE |
| 230/240 | (H1) | (H4) | (H1) TO (H3) (H2) TO (H4) |
| 460/480 | (H1) | (H4) | (H2) TO (H3) |

100
.DG1 .EG1 .PG2 SEE SH. 2, NOTE 1
L1 /1.14 /1.39 /1.28
MA

INPUT CONTACTOR 104
OUTPUT CONTACTOR 130 130 111 134
BYPASS CONTACTOR 114 109

MA 100 111 112 113 114 115 116
L2/1.39
.K1 (A2) (A1)
.K3 114 113
.K2 (A2) (A1) 116 115
.K3 (A2) (A1)
L100 /1.28

CN102A 1 2 3 4 5 6 7 8
CN102B 1 2 3 4 5 6 7 8
CN102C 13 12 14 6 4 5 7 8 1 2 3 9 10 11

L3/1.16 MC
L4/1.18 M2
L5/1.19 M3
L6/1.20 M4
L7/1.21 S1
L8/1.24 S5
L9/1.25 SN

BYPASS RELAY CONTROLLER PCB
.A2
PART NUMBER UTC000036

TB1 26 25 24 23 22 21 20 19 18 17
PG2 PG2
REMOTE TRANSFER TO BYPASS CONTACT (CLOSED=BYPASS) MIN. RATING: 0.1A,120VAC
120VAC,1 PHASE 100VA MAX. POWER FOR CUSTOMER USE
CUSTOMER TO PROVIDE FUSING (BUSSMANN FNQ–R–1.25 IS RECOMMENDED)
120VAC DAMPER SOLENOID 40VA MAX.
SMOKE PURGE CONTACT (CLOSED=PURGE) MIN. RATING: 0.1A,120VAC

CN103

TB1 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
MOTOR OVERLOAD OR CUSTOMER SAFETIES FAULT
DRIVE FAULT
BYPASS RUN
DRIVE RUN
CONTACTS FOR CUSTOMER USE
RATED: 1A, 120VAC MAX.
CUSTOMER MUST PROVIDE PROPER SHORT CIRCUIT PROTECTION AND MEANS OF DISCONNECT.

S103 DISABLE (TOP) ENABLE (BOTTOM) AUTO–TRANSFER TO BYPASS
S104 DISABLE (TOP) ENABLE (BOTTOM) REMOTE TRANSFER TO BYPASS
S105 DISABLE (TOP) ENABLE (BOTTOM) SMOKE PURGE
JUMPER J2 — FOR INSERTION OF NORMALLY OPEN BLDG. AUTOMATION SYSTEM INTERLOCK, OR NORMALLY OPEN DAMPER END SWITCH SEE SH. 2, NOTE 5
✳ AUTO MODE RUN/STOP CONTACT (CLOSED = RUN)
JUMPER J1 — FOR INSERTION OF NORMALLY CLOSED CUSTOMER SAFETY CONTACTS SEE SH. 2, NOTE 4

CABINET DOOR OPERATOR PANEL
PART NUMBER UOPN0008
.A3
CN1
DRIVE KEYPAD
TO A1 CONTROL BOARD CN1

BYPASS OPERATOR INTERFACE PCB
A3
PART NUMBER UTC000037–2
CN204 1 2 3
CN203
CN205 1 2 3
BYPASS RUN DS205
CONTROL POWER ON DS201
DRIVE RUN DS204
MOTOR OL/ SAFETIES FAULT DS202
SMOKE PURGE DS206
DRIVE FAULT DS203
TEST NORMAL BYPASS DRIVE OFF HAND AUTO
S203 S201 S202
CN207 1 2 3
CN206A 1 2
CN206B 1 2

L10/1.05 120 MA .K2 118 .TS1 (1) (2) 119 .B1–B12 (1) (2) 100 CABINET BLOWER(S) (AS REQUIRED)
CABINET THERMOSTAT RANGE: (30 – 140) DEG. F FACTORY SETTING: 60 DEG. F
L1/1.04
L100/1.14
.F7 121 .K2 122 HR1 (L1) (FAN) (N) (GND)
CABINET SPACE HEATER RANGE: (0 – 100) DEG. F FACTORY SETTING: 40 DEG. F
SEE SH. 2, NOTE 7
.PG3 SEE SH. 2, NOTE 1
OPTION P3 SPACE HEATER

✳ – INDICATES COMPONENTS NOT SUPPLIED BY YASKAWA.
— – INDICATES CUSTOMER WIRING.
SEE SHEETS 2 AND 3 FOR NOTES AND TABLES.

YASKAWA



| | | | |
|---|---|---|---|
| DRAWN BY: D.R. CMELAK | DATE 5/27/08 | TITLE: SCHEMATIC DIAGRAM E7B BYPASS | |
| CHECKED: K. FLIERL | DATE 5/27/08 | | |
| TECH: | DATE | | |
| APPROVED: J. ZUEHLKE | DATE 5/27/08 | SIZE D | REVISION R03 |
| ORIGINAL DESIGN D.R. CMELAK | DATE 5/1/07 | PAGE 1 of 3 | |
| | | DRAWING #: DS.E7B.04 | |

NOTES:

1. CONNECTED TO THE CABINET. CUSTOMER TO CONNECT THE CABINET GROUND LUGS TO EARTH GROUND AND UTILITY GROUND.
2. THE CUSTOMER MUST USE TYPE 3R HUBS AND FITTINGS (OR EQUIVALENT) TO MAINTAIN THE ENCLOSURE RATING.
3. THE MOTOR OVERLOAD RELAY IS FACTORY SET FOR MANUAL RESET. CUSTOMER TO ADJUST THE MOTOR OVERLOAD RELAY TRIP SETTING FOR THE ACTUAL AC MOTOR'S FULL LOAD AMPS.
4. TERMINALS TB1(1) AND TB1(2) ARE SUPPLIED FOR INSERTION OF CUSTOMER SUPPLIED NORMALLY CLOSED SAFETY CONTACTS (I.E., FIRESTAT, FREEZESTAT, WINDING OR BEARING TEMPERATURE ACTIVATED SWITCHES). IF APPLICABLE, REMOVE FACTORY INSTALLED JUMPER J1.
5. TERMINALS TB1(5) AND TB1(6) ARE SUPPLIED FOR INSERTION OF A CUSTOMER SUPPLIED NORMALLY OPEN DAMPER END SWITCH (OPEN = DAMPER CLOSED, AND CLOSED = DAMPER FULLY OPEN), OR A NORMALLY OPEN BUILDING AUTOMATION SYSTEM (BAS) INTERLOCK. IF APPLICABLE, REMOVE THE FACTORY INSTALLED JUMPER J2.
6. INSULATED TWISTED SHIELDED WIRE IS REQUIRED. 2 CONDUCTOR #18GA. (BELDEN #8760, OR EQUIVALENT). SHIELD TO CONNECT TO PROPER TERMINAL AS SHOWN. CONNECT THE SHIELD ONLY AT THIS END. STUB AND ISOLATE THE OTHER END. DO NOT RUN THESE WIRES IN THE SAME CONDUIT AS THE AC POWER AND AC CONTROL WIRES.
7. CUSTOMER TO ADJUST THE THERMOSTAT ON THE SPACE HEATER HR1 FOR THE MINIMUM DESIRED TEMPERATURE INSIDE THE DRIVE CABINET. THIS SET TEMPERATURE IS NORMALLY SELECTED TO BE SLIGHTLY HIGHER THAN THE MINIMUM AMBIENT TEMPERATURE OF THE AIR SURROUNDING THE DRIVE CABINET, AND IS THE TEMPERATURE AT WHICH THE SPACE HEATER HR1 WILL SHUT OFF.
8. SERIAL COMMUNICATIONS OPTIONS T2, T3, TJ, TU, TV, OR TL (SEE TABLE 5 ON SHEET 3):
   OPTION T2 = ETHERNET/IP, OPTION T3 = BACNET, OPTION TJ = EMBEDDED METASYS N2, OPTION TU = EMBEDDED APOGEE FLN, OPTION TV = EMBEDDED MODBUS AND OPTION TL = LONWORKS
   A. THE HAND/OFF/AUTO SWITCH MUST BE IN THE "AUTO" POSITION, IF SERIAL COMMUNICATION IS TO BE USED TO CONTROL THE DRIVE.
   B. TO OBTAIN AN ANALOG REFERENCE AT DRIVE TERMINAL A2 WHEN IN THE "AUTO" MODE, THERE MUST BE JUMPERS ADDED TO THE DRIVE, FROM TERMINAL S4 TO TERMINAL SN, AND FROM TERMINAL S5 TO TERMINAL S6.
   C. THERE MUST BE A JUMPER ADDED TO THE DRIVE, FROM TERMINAL S5 TO TERMINAL S6.

TABLE 1 FACTORY SET DRIVE PARAMETERS

| PARAMETER | DATA | UNIT | DESCRIPTION/REMARKS |
|---|---|---|---|
| b1-01 | SEE TABLE 5 | N/A | FREQUENCY REFERENCE SELECTION |
| b1-08 | 1 | N/A | RUN COMMAND SELECTION DURING PROGRAMMING - ENABLED |
| b2-03 | 0.0 | SEC. | DC INJECTION BRAKING TIME AT START |
| b5-01 | SEE TABLE 5 | N/A | PI MODE SETTING |
| d1-01 | 10.0 | HZ. | FREQUENCY REFERENCE 1 - SEE TABLE 5 |
| d1-02 | 6.0 | HZ. | FREQUENCY REFERENCE 2 - SEE TABLE 5 |
| d1-04 | 20.0 | HZ. | FREQUENCY REFERENCE 4 - SEE TABLE 5 |
| E1-01 | 240(480) | VOLTS | STANDARD INPUT VOLTAGE SETTING |
| | 208 | | INPUT VOLTAGE SETTING FOR BASE NUMBER "D___" |
| E1-05 | 230(460) | VOLTS | STANDARD MAXIMUM OUTPUT VOLTAGE SETTING |
| | 208 | | MAXIMUM OUTPUT VOLTAGE SETTING FOR BASE NUMBER "D___" |
| F6-02 | SEE TABLE 5 | N/A | SERIAL COMMUNICATIONS EXTERNAL FAULT DETECTION SELECTION |
| F6-03 | SEE TABLE 5 | N/A | SERIAL COMMUNICATIONS EXTERNAL FAULT STOPPING METHOD SELECTION |
| H1-01 | 70 | N/A | TERMINAL S3 SET FOR BYPASS DRIVE ENABLE |
| H1-02 | SEE TABLE 5 | N/A | TERMINAL S4 SELECTION |
| H1-03 | SEE TABLE 5 | N/A | TERMINAL S5 SELECTION |
| H1-04 | SEE TABLE 5 | N/A | TERMINAL S6 SELECTION |
| H2-02 | 3B | N/A | TERMINALS M3-M4 SET FOR SERIAL COMM. RUN COMMAND |
| H3-08 | SEE TABLE 5 | N/A | TERMINAL A2 SIGNAL SELECTION |
| H3-09 | SEE TABLE 5 | N/A | TERMINAL A2 FUNCTION SELECTION |
| H5-02 | SEE TABLE 5 | N/A | SERIAL COMMUNICATIONS SPEED SELECTION BAUD RATE |
| H5-07 | SEE TABLE 5 | N/A | REQUEST TO SEND (RTS) CONTROL SELECTION |
| H5-08 | SEE TABLE 5 | N/A | SERIAL COMMUNICATIONS PROTOCOL SELECTION |
| H5-09 | 10.0 | SEC. | SERIAL COMMUNICATIONS ERROR DETECTION TIME |
| L4-05 | 0 | N/A | FREQUENCY REFERENCE LOSS DETECTION DISABLED |
| L5-01 | 10 | N/A | NUMBER OF AUTO RESTART ATTEMPTS |
| L5-03 | 10.0 | SEC. | MAXIMUM RESTART TIME AFTER FAULT |
| o2-02 | 0 | N/A | DIGITAL OPERATOR KEYPAD "OFF" KEY DISABLED |
| o2-03 | 1 | N/A | USER INITIALIZATION FACTORY SET PARAMETER DEFAULT VALUES (FOUND IN A1-03="1110") |
| o2-15 | 0 | N/A | DIGITAL OPERATOR KEYPAD "HAND" KEY DISABLED |
| o3-02 | 1 | N/A | DIGITAL OPERATOR KEYPAD READ ALLOWED ENABLED |

SEE SHEET 3 FOR TABLE 5.

## CUSTOMER WIRING REQUIREMENTS

- FOR 0 TO 100 AMPS, USE A MINIMUM OF 60° -75°C COPPER WIRE.
- FOR ABOVE 100 AMPS, USE A MINIMUM OF 75°C COPPER WIRE.

TABLE 2

| E7 BYPASS MODEL NO. BASE NUMBER E7BRXXXX | | | A.C. LINE WIRING | | | |
|---|---|---|---|---|---|---|
| | | | MOTOR CIRCUIT PROTECTOR | | | |
| 208V | 240V | 480V | MFG. PART NUMBER | CURRENT RATING (AMPS) | WIRE SIZE RANGE (AWG) | TIGHTENING TORQUE (LB.-IN.) |
| D343 | A312 | B361 | MAL36600 | 600 | (1-3) x (3/0-500 kcmil) | (1-3) x 300 |
| D396 | A360 | B414 | | | | |
| | | B477 | MAL36800 | 800 | | |

TABLE 3

| E7 BYPASS PART NUMBER E7BRXXXX | | | EARTH & UTILITY GROUND WIRING | |
|---|---|---|---|---|
| | | | GROUND LUGS | |
| 208V | 240V | 480V | WIRE SIZE RANGE (AWG) | TIGHTENING TORQUE (LB.-IN.) |
| D343 | A312 | B361 | 6 - 250 kcmil | 275 |
| D396 | A360 | B414 | | |
| | | B477 | | |

TABLE 4

| E7 BYPASS MODEL NO. BASE NUMBER E7BRXXXX | | | A.C. MOTOR WIRING | | | CONTROL WIRING | |
|---|---|---|---|---|---|---|---|
| | | | MOTOR OVERLOAD RELAY | | | TERMINAL BLOCK TB1 | |
| 208V | 240V | 480V | MFG. PART NUMBER | WIRE SIZE RANGE (AWG) | TIGHTENING TORQUE (LB.-IN.) | WIRE SIZE RANGE (AWG) | TIGHTENING TORQUE (LB.-IN.) |
| D343 | A312 | B361 | LR9 F7379 | 2 x (2-600 kcmil) | 2 x 500 | 22 - 14 | 4.4 |
| D396 | A360 | B414 | | | | | |
| | | B477 | | | | | |



YASKAWA

| | | |
|---|---|---|
| DRAWN BY: D.R. CMELAK | DATE 5/27/08 | TITLE: SCHEMATIC DIAGRAM E7B BYPASS |
| CHECKED: K. FLIERL | DATE 5/27/08 | |
| TECH: | DATE | SIZE D / REVISION R03 / PAGE 2 of 3 |
| APPROVED: J. ZUEHLKE | DATE 5/27/08 | DRAWING #: DS.E7B.04 |
| ORIGINAL DESIGN: D.R. CMELAK | DATE 5/1/07 | |

TABLE 5 DRIVE OPERATION MODE SELECTION

| OPTION PRESENT | FACTORY SET E7B BYPASS DRIVE PARAMETERS | | | | | | | | | | | | DRIVE CONTROL BOARD SWITCH S1 SETTING | | DRIVE MODE SPEED COMMAND | | | | | | | | DRIVE MODE PI CONTROL | | | | | RUN/STOP CONTROL (SEE SHEET 2, NOTE 5) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | HAND MODE | | | AUTO MODE | | | | | HAND MODE | AUTO MODE | | | | HAND MODE | | AUTO MODE | |
| | | | | | | | | | | | | | | | | | | DRIVE TERMINAL A2 SIGNAL | | | | | | | | | | | | | |
| | b1-01 | b5-01 | F6-02 | F6-03 | H1-02 (S4) | H1-03 (S5) | H1-04 (S6) | H3-08 | H3-09 | H5-02 | H5-07 | H5-08 | 1 | 2 | DRIVE KEYPAD d1-01 | DRIVE KEYPAD d1-02 | DRIVE KEYPAD d1-04 | 4-20 MADC | 0-10 VDC | 3-15 PSI | SERIAL COMM. | SEE SH. 2, NOTE | SPEED COMMAND DRIVE KEYPAD d1-01 | SETPOINT DRIVE KEYPAD d1-01 | SETPOINT SERIAL COMM. | FEEDBACK DRIVE TERMINAL A2 SIGNAL 4-20 MADC | FEEDBACK DRIVE TERMINAL A2 SIGNAL 0-10 VDC | DRIVE | BYPASS | DRIVE | BYPASS |
| NONE + | 1 ▪ | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 3 ▪ | 4 ▪ | 2 ▪ | 0 | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | YES | | YES | | | | | | | | | | | | AUTO MODE RUN/STOP CONTACT AT TB1(3) & TB1(4) AND BAS/DAMPER INTERLOCK AT TB1(5) & TB1(6) | |
| NONE | 1 ▪ | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 3 ▪ | 4 ▪ | 0 | 0 | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | YES | | | YES | | | | | | | | | | | | |
| TP | 1 ▪ | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 3 ▪ | 4 ▪ | 2 ▪ | 0 | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | YES | | | | YES | | | | | | | | | | | |
| T2 + | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 2 | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| T2 | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 2 | 4 ▪ | 0 | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | YES | | | | YES | | | 8A,8B | | | | | | | | |
| T2 AND TP | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 2 | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| T3 + | 0 | 0 ▪ | 1 | 3 | 14 ▪ | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| T3 | 0 | 0 ▪ | 1 | 3 | 3 | 6C | 4 ▪ | 0 | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | YES | | | | YES | | | 8A,8B | | | | | | | | |
| T3 AND TP | 0 | 0 ▪ | 1 | 3 | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| TJ + | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 1 | OFF ▪ | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| TJ | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 0 | 2 ▪ | 3 ▪ | 1 ▪ | 1 | OFF ▪ | OFF | YES | | | | YES | | | 8A,8B | | | | | | | | |
| TJ AND TP | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 1 | OFF ▪ | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| TU + | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 2 | 1 ▪ | 2 | OFF ▪ | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| TU | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 2 | 1 ▪ | 2 | OFF ▪ | ON ▪ | YES | | | YES | | | | 8A,8B | | | | | | | | |
| TU AND TP | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 2 | 1 ▪ | 2 | OFF ▪ | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| TV + | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| TV | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 0 | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | YES | | | | YES | | | 8A,8B | | | | | | | | |
| TV AND TP | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| TL + | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 14 ▪ | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 0 | 0 ▪ | ON | ON ▪ | YES | | | | | | YES | 8A | | | | | | | | |
| TL | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 0 | 2 ▪ | 3 ▪ | 0 | 0 ▪ | ON | OFF | YES | | | | YES | | | 8A,8B | | | | | | | | |
| TL AND TP | 0 | 0 ▪ | 0 ▪ | 1 ▪ | 3 | 6C | 4 ▪ | 2 ▪ | 2 ▪ | 3 ▪ | 0 | 0 ▪ | ON | ON ▪ | | | YES | YES | | YES | | 8A,8B | | | | | | | | |
| PI CONTROL | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 4 ▪ | 2 ▪ | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | ON ▪ | | | | | | | | | YES | YES | | YES | | | | | |
| PI CONTROL | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 4 ▪ | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | | YES | YES | | | YES | | | |
| T2 AND PI | 3 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6E | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8C | YES | | YES | | YES | | AUTO MODE RUN/STOP CONTACT AT TB1(3) & TB1(4) AND BAS/DAMPER INTERLOCK AT TB1(5) & TB1(6) | |
| T3 AND PI | 2 | 1 | 1 | 3 | 14 ▪ | 19 | 6E | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8C | YES | | YES | | YES | | | |
| TJ AND PI | 2 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6E | 0 | B | 3 ▪ | 1 ▪ | 1 | OFF ▪ | OFF | | | | | | | | 8C | YES | | YES | | YES | | | |
| TU AND PI | 2 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6E | 0 | B | 2 | 1 ▪ | 2 | OFF ▪ | OFF | | | | | | | | 8C | YES | | YES | | YES | | | |
| TV AND PI | 2 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6E | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8C | YES | | YES | | YES | | | |
| TL AND PI | 2 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6E | 0 | B | 3 ▪ | 0 | 0 ▪ | ON | OFF | | | | | | | | 8C | YES | | YES | | YES | | | |
| T2 AND PI | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 2 | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | SERIAL COMMUNICATIONS AND BAS/DAMPER INTERLOCK AT TB1(5) & TB1(6) | AUTO MODE RUN/STOP CONTACT AT TB1(3) & TB1(4) AND BAS/DAMPER INTERLOCK AT TB1(5) & TB1(6) |
| T3 AND PI | 0 | 1 | 1 | 3 | 14 ▪ | 6C | 19 | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | | |
| TJ AND PI | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6C | 0 | B | 3 ▪ | 1 ▪ | 1 | OFF ▪ | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | | |
| TU AND PI | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6C | 0 | B | 2 | 1▪ | 2 | OFF ▪ | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | | |
| TV AND PI | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 19 | 6C | 0 | B | 3 ▪ | 1 ▪ | 0 ▪ | OFF ▪ | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | | |
| TL AND PI | 0 | 1 | 0 ▪ | 1 ▪ | 14 ▪ | 6C | 19 | 0 | B | 3 ▪ | 0 | 0 ▪ | ON | OFF | | | | | | | | 8A,8C | YES | | YES | | YES | | | |

HAND/OFF/AUTO SWITCH IN THE "HAND" POSITION AND BAS/DAMPER INTERLOCK AT TB1(5) & TB1(6)

+ = STANDARD E7B BYPASS SET UP

▪ = FACTORY 2-WIRE INITIALIZATION/DEFAULT SETTING

SEE SHEET 2 FOR NOTES, AND TABLES 1, 2, 3 AND 4.



| | | |
|---|---|---|
| YASKAWA | DRAWN BY: D.R. CMELAK | DATE 5/27/08 |
| | CHECKED: K. FLIERL | DATE 5/27/08 |
| | TECH: | DATE |
| | APPROVED: J. ZUEHLKE | DATE 5/27/08 |
| | ORIGINAL DESIGN: D.R. CMELAK | DATE 5/1/07 |

TITLE: SCHEMATIC DIAGRAM E7B BYPASS

| SIZE | REVISION | PAGE |
|---|---|---|
| D | R03 | 3 of 3 |

DRAWING #: DS.E7B.04