STANDARD OR OPTION PM CIRCUIT BREAKER

FROM CUSTOMER'S A.C. LINES
SEE SH. 2, NOTE 7

L1 L2 L3 — CB1 — (1)(2)(3) (4)(5)(6) — 1L1 1L2 1L3

MAIN BONDING JUMPER
TBN1 1
NEUTRAL

GND LUG
SEE SH. 2, NOTE 1
INPUT POWER EARTH GROUND

GND LUG
SEE SH. 2, NOTE 1
UTILITY GROUND

OPTION PN
DELTA–WYE CAPACITIVE INPUT FILTER
A5
(GRN) (YEL) (YEL) (YEL)
TO DRIVE TERMINAL
L1 L2 L3

OPTION P2 LIGHTNING PROTECTION
1L1 (BLACK) (GREEN)
1L2 (BLACK) A9
1L3 (BLACK)

1L1 1L2 1L3 — K1 — 2L1 2L2 2L3 — F3 F4 F5 — 4L1 4L2 4L3

L1 (R) L2 (S) L3 (T)

P1000 DRIVE A1

CONTROL BOARD
(Factory Defaults Shown)
DIP Switch S1 Analog Input Selection
A1 A2 A3 V I
DIP Switch S2 Terminating Resistor (Off) On
Jumper S5 Terminal AM/FM V I FM AM

24VDC Common	SN	
Input Common	SC	JUMPER
+24VDC	SP	
Shield Ground (G)	E	
Power supply, +10.5 Vdc, max. 20 mA	+V	
Analog Common	AC	
Analog Input 1 (Freq. Ref. Bias)	A1	
Analog Input 2 (Freq. Ref. Bias)	A2	
Analog Input 3 (Freq. Ref. Bias)	A3	
Analog Output 1 (Output Frequency)	FM	
Analog Output 2 (Output Current)	AM	
Analog Common	AC	
	S–	
	S+	
	R–	
	R+	
	IG	

AUTO MODE SPEED REFERENCE
0–10VDC (20 kOhm) OR 4–20MA (250 Ohm)
SEE SH. 2, NOTE 3

FM MONITOR OUTPUT
0–10VDC (2MA) OR 4–20MA
SEE SH. 2, NOTE 3

DSR– DSR+ — TO ELECTRONIC BYPASS CONTROL PCB CONNECTOR CN6

E (U) (V) (W) — T1 T2 T3

OPTION PN GREEN LEAD WIRE

2T1 2T2 2T3 — K2 — 1T1 1T2 1T3

CT2 CT1

SEE SH. 2, NOTE 8 S10

3T1 3T2 3T3 — K4 K5 — T1 T2 T3

(T2) (T1) (T3)

A.C. MOTOR #1 ✳ A.C. MOTOR #2 ✳

1L3 1L2 1L1 — K3 — 1T3 1T2 1T1

1L1 F1 — 1L2 F2 — 110 F6 SEE SH. 2, NOTE 4

A CONTROL TRANSFORMER B T1 (X1) (X2) (X2) — 100 — TO SH. 2

TO SH. 2

100 110

CONTROL TRANSFORMER PRIMARY CONNECTIONS

INPUT VOLTS	TERMINALS A	TERMINALS B	JUMPER LOCATION
208	(H1)	(H2)	NONE
460/480	(H1)	(H4)	(H2) TO (H3)

INTERNAL SUPPLY 24 VDC LOGIC
TB2 1 2 3 4 5 6 7 10
CONTACT RATING 24VDC, 8MA

CN7

100	1	AC COM
110	2	AC IN
113	3	DO–1
114	4	DO–2
116	5	DO–3
122	6	DO–4
124	7	DO–5
111	8	
110	9	DO–6 BLOWER
	10	

INPUT CONTACTOR — 100 K1 (A2) (A1) RC — 108 # —
OUTPUT CONTACTOR — 100 K2 (A2) (A1) RC — 117 K3 114 — 129 # 115 —
BYPASS CONTACTOR — 100 K3 (A2) (A1) RC — 118 K2 116 — 116 # 113 —
MOTOR #1 CONTACTOR — 100 K4 (A2) (A1) RC — 121 K5 122 — 138 # 119 —
MOTOR #2 CONTACTOR — 100 K5 (A2) (A1) RC — 123 K4 124 — 138 # 117 —

TO SHEET 2

ELECTRONIC BYPASS CONTROL PCB
P/N UTC00046x
A2

CN8

100	1	AC COM
110	2	AC IN

CON1 3 L 1 N — PS1 POWER SUPPLY P/N UPS000174 — CON2 +V 1 +V 2 –V 3 –V 4 — D1 D2 D3 D4

CN4

	1	+5V
	2	+5V_RLY
	3	COM
	4	COM

TO OPTIONAL SERIAL COMMUNICATIONS NETWORK

CN1 A6 CN5 CN5 — SERIAL COMMUNICATIONS OPTION OCB'S TD, TG, TH, TL OR TQ

TO DRIVE CONTROL PCB CONNECTOR TB4 — DSR+ DSR– — CN6

	1	DTXRX+
	2	DTXRX–
	3	IG5

WHT CT2–1 BLK CT2–2 — TB7 1 CT2 IN+ 2 CT2 IN–

WHT CT1–1 BLK CT1–2 — TB5 1 CT1 IN+ 2 CT1 IN–

TB2

DI–1	1	RUN (AUTO MODE)
DI–2	2	RUN ENABLE (SAFETY)
DI–3	3	RUN INTERLOCK (BAS)
DI–4	4	REMOTE TRANSFER
DI–5	5	SMOKE PURGE BYPASS
DI–6	6	S6
DI–7	7	SPARE
DI–8	8	S8 S10 S9
IG24	9	S9
IG24	10	24V COMMON
	11	SHIELD GROUND
	12	SHIELD GROUND

PROGRAMMABLE CONTACT INPUTS DI–1/2/3/4/5/6/7/8

MTR #1 AUTO MTR #2
(1R1) 0XX (1R2) SA TB1 1
(1L3) S3 00X (1L4) TB1 2
✳ MOTOR #1/MOTOR #2 SELECT CONTACT (CLOSED=MOTOR #2)

TB1

DO–7 MOTOR RUN	1	
	2	
	3	
DO–8 HAND MODE	4	
	5	
	6	
DO–9 AUTO MODE	7	
	8	
	9	
DO–10 SYSTEM FAULT	10	
	11	
	12	

PROGRAMMABLE RELAYS DO–7/8/9/10

AS SELECTED BY ELECTRONIC BYPASS CONTROL PARAMETERS Z2–23 TO Z2–26

CONTACTS FOR CUSTOMER USE

RATED: 2A, 24VDC/120VAC +/– 15% MAX.

CUSTOMER MUST PROVIDE PROPER SHORT CIRCUIT PROTECTION AND MEANS OF DISCONNECT.

DIP SWITCH S1 OFF ON — SERIAL COMM. 120 OHM, ¼ WATT TERMINATING RESISTOR

TB3

IG5	1	
TXRX+	2	TXRX+
TXRX–	3	TXRX–
SHIELD	4	

SEE SH. 2, NOTE 3

RS485 SERIAL COMMUNICATION SELECTIONS AVAILABLE:
1. MODBUS
2. N2 / METASYS
3. FLN / APOGEE
4. BACNET (FACTORY SETTING)

CN2 — RJ45 PATCH CABLE — HOA OPERATOR PART NUMBER JVOP–183

✳ – INDICATES COMPONENTS NOT SUPPLIED BY YASKAWA.
— – INDICATES CUSTOMER WIRING.
⏚ – CONNECTED TO THE CABINET OR PANEL.
SEE SHEET 2 FOR NOTES.

REVISIONS				
REV.	DESCRIPTION	ECO #	DRAWN BY	DATE
00	INITIAL RELEASE	–	D. PACKER	2/22/14

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TITLE: SCHEMATIC DIAGRAM P1000 ELECTRONIC BYPASS 2–MTR "OR" OPTION PY

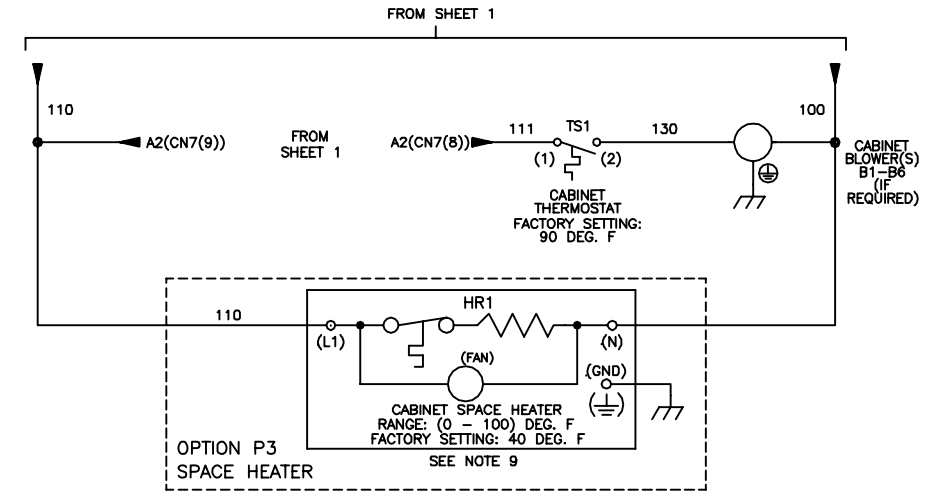
SIZE	REVISION	PAGE
D	00	1 of 2

DRAWING #: DS.P1B.3R.09

Prepared by Brian.Packer 3/5/2014 10:30:07 AM

NOTES:

1. CUSTOMER TO CONNECT THE CABINET GROUND LUGS TO EARTH GROUND AND UTILITY GROUND.
2. CONDUIT FITTINGS/HUBS SHALL COMPLY WITH THE 'STANDARD FOR CONDUIT, TUBING, AND CABLE FITTINGS, UL 514B'. OR CONDUIT FITTINGS HAVING THE SAME ENVIRONMENTAL RATING AS THE ENCLOSURE SHALL BE USED.
3. INSULATED TWISTED SHIELDED WIRE IS REQUIRED. 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 THE AC CONTROL WIRES.
4. WITH A CONTROL TRANSFORMER, T1, POWER RATING 350VA OR GREATER, SECONDARY FUSE F6 IS ADDED.
5. CHANGING Z1-01 TO "1" WILL PROGRAM THE DRIVE AND BYPASS PARAMETERS TO THEIR FACTORY DEFAULT SETTINGS.
6. SET Z1-11 TO 4 AND Z2-06 TO 27.
7. FOR 208VAC APPLICATIONS, SET E1-01 TO 208, AND SET E1-05 TO 208.
8. 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.
9. 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 CABINET. AND IS THE TEMPERATURE AT WHICH THE SPACE HEATER HR1 WILL SHUT OFF.



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