

CONTROL TRANSFORMER PRIMARY CONNECTIONS

INPUT VOLTS	TERMINALS	JUMPER LOCATION
208	A (H1) B (H2)	NONE
230/240	(H1) (H4)	(H1) TO (H3)
480/480	(H1) (H4)	(H2) TO (H4)

OPTION T, AND PART OF OPTION B CONTROL TRANSFORMER AND CABINET BLOWER(S), IF REQUIRED

120VAC, 1 PHASE, 200VA MAX. POWER FOR CUSTOMER USE

CONTACT SEQUENCE CHART FOR S1

X - INDICATES CONTACT CLOSED

CONTACT	POSITION			MANUF. LOCATION /TYPE
	HAND	OFF	AUTO	
1	X			1RO
2			X	1LO
3	X			2RO

• SCHEMATIC SHOWS THIS POSITION.

OR

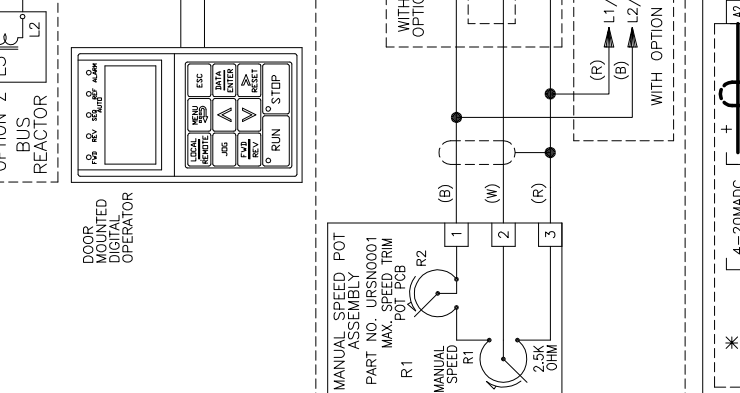
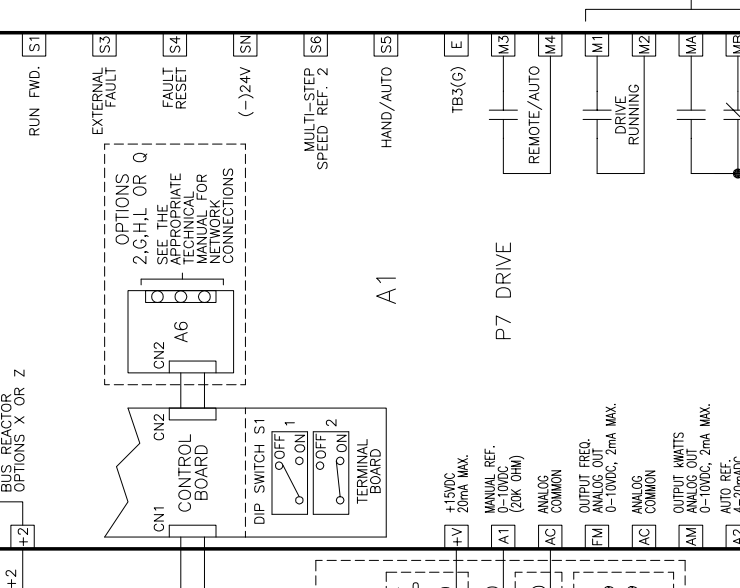
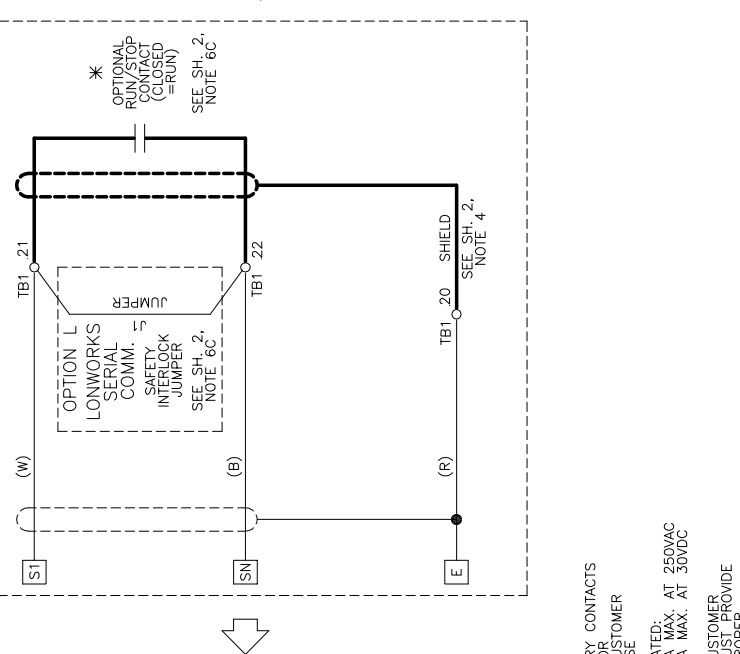
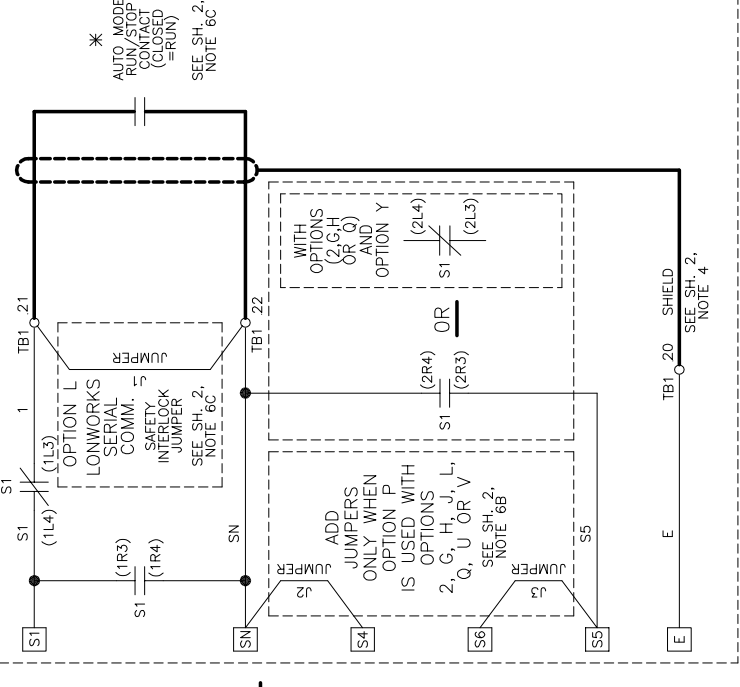
CONTACT SEQUENCE CHART FOR S1

X - INDICATES CONTACT CLOSED

CONTACT	POSITION			MANUF. LOCATION /TYPE
	HAND	OFF	AUTO	
1	X			1RO
2			X	1LO
3			X	2LO

• SCHEMATIC SHOWS THIS POSITION.

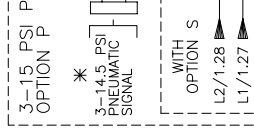
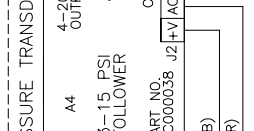
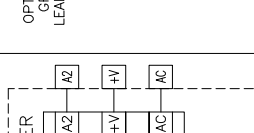
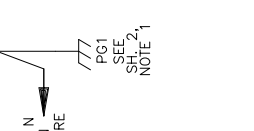
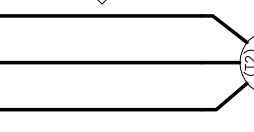
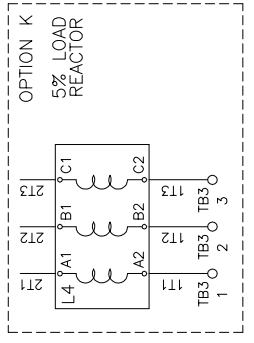
OPTION Y, AND PART OF OPTION A HAND/OFF/AUTO SWITCH



DRY CONTACTS FOR CUSTOMER USE

RATED: 1A MAX. AT 250VAC
1A MAX. AT 30VDC

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



THIS DOCUMENT AND INFORMATION CONTAINED IN IT ARE CONFIDENTIAL AND CANNOT BE COPIED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF YASKAWA ELECTRIC AMERICA INC.

DRY BY: D.R. CMELAK
DATE: 5/23/08
CHECKED: K. FLIERL
DATE: 5/23/08
APPROVED: J. ZUEHLKE
DATE: 5/23/08
DESIGNED BY: D.R. CMELAK
DATE: 10/15/04

TITLE: SCHEMATIC DIAGRAM
WALL MOUNT P7 CONFIGURED

SIZE: D
REVISEN: R07
PAGE: 1 of 3

* - INDICATES CUSTOMER WIRING.
- - - INDICATES COMPONENTS NOT SUPPLIED BY YASKAWA.

NOTES:

- CONNECTED TO THE CABINET. CUSTOMER TO CONNECT THE CABINET GROUND LUG TO EARTH GROUND.
- WITHOUT THE CIRCUIT BREAKER (OPTION C), THE DISCONNECT MEANS MUST BE SUPPLIED BY THE CUSTOMER.
- IF THE CIRCUIT BREAKER (OPTION C) OR DRIVE INPUT FUSES (OPTION F) ARE NOT ADDED, THEN BRANCH CIRCUIT PROTECTION (CIRCUIT BREAKER OR AC INPUT FUSES) MUST BE SUPPLIED BY THE CUSTOMER.
- INSULATED, TWISTED, SHIELDED WIRE IS REQUIRED. 2 CONDUCTOR #18GA. (BELDEN NO. 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.
- FOR A P7 CONFIGURED WITH A CONTROL TRANSFORMER, T1, POWER RATING OF 350VA OR GREATER, SECONDARY FUSE F6 IS ADDED.
- SERIAL COMMUNICATION OPTIONS 2, G, H, J, L, Q, U, OR V. (SEE SH. 3, TABLE 4 OR 5):
 OPTION 2 = ETHERNET/IP, OPTION G = DEVICENET, OPTION H = PROFIBUS, OPTION J = METASYS N2, OPTION L = LONWORKS,
 OPTION Q = ETHERNET MODBUS TCP/IP, OPTION U = APOGEE FLN AND OPTION V = DRIVE EMBEDDED MODBUS PROTOCOL.
 A. THE HAND/OFF/AUTO SWITCH (IF PRESENT) MUST BE IN THE "AUTO" POSITION, IF SERIAL COMMUNICATION IS TO BE USED TO CONTROL THE DRIVE.
 B. TO OBTAIN AN ANALOG SPEED REFERENCE FROM TERMINAL A2, WITH THE HAND/OFF/AUTO SWITCH PRESENT, THE FOLLOWING JUMPERS MUST BE ADDED TO THE DRIVE TERMINALS:
 1) JUMPER J2, FROM S4 TO S1
 2) JUMPER J3, FROM S5 TO S6
 C. WHEN OPTION L IS ORDERED, A JUMPER IS REQUIRED FROM TERMINAL BLOCK TB1 POINTS (21) TO (22), SO THAT LONWORKS SERIAL COMMUNICATIONS CAN BE USED TO CONTROL THE RUN, STOP AND SPEED OF THE AC MOTOR.
 CUSTOMER TO REPLACE THE JUMPER WITH NORMALLY CLOSED SAFETY INTERLOCKS, OR REMOTE RUN/STOP CONTACT, IF APPLICABLE.
- SEE TABLE 4 WITHOUT THE HAND/OFF/AUTO SELECTOR SWITCH OPTION, AND USE THE DEFAULT SETTING WITH IT.
- USE THE DEFAULT SETTING WITHOUT THE HAND/OFF/AUTO SELECTOR SWITCH OPTION, AND SEE TABLE 5 WITH IT.

TABLE 1 FACTORY SET P7 CONFIGURED DRIVE PARAMETERS

PARAMETER	DATA	UNIT	DESCRIPTION/REMARKS
b1-01	SEE TABLE 4 OR 5	N/A	FREQUENCY REFERENCE SELECTION
b1-02	SEE NOTE 7	N/A	RUN COMMAND SELECTION
b1-08	1	N/A	RUN COMMAND SELECTION DURING PROGRAMMING - ENABLED
d1-01	10.0	HZ.	FREQUENCY REFERENCE 1 - SEE TABLE 4 OR TABLE 5
d1-02	6.0	HZ.	FREQUENCY REFERENCE 2 - SEE TABLE 5
d1-04	40.0	HZ.	FREQUENCY REFERENCE 4 - SEE TABLE 5
E1-01	240(480)	VOLTS	STANDARD INPUT VOLTAGE SETTING
	208	VOLTS	INPUT VOLTAGE SETTING FOR BASE NUMBER "D_----"
E1-05	230(460)	VOLTS	STANDARD MAXIMUM OUTPUT VOLTAGE SETTING
H1-02	208	VOLTS	MAXIMUM OUTPUT VOLTAGE SETTING FOR BASE NUMBER "D_----"
H1-02	SEE NOTE 8	N/A	TERMINAL S4 SELECTION
H1-03	SEE NOTE 8	N/A	TERMINAL S5 SELECTION
H3-08	SEE TABLE 4 OR 5	N/A	TERMINAL A2 SIGNAL SELECTION
H3-09	SEE NOTE 8	N/A	TERMINAL A2 FUNCTION SELECTION
H3-13	SEE TABLE 4 OR 5	N/A	TERMINALS A1 AND A2 MASTER FREQUENCY REFERENCE SELECTION
H5-02	SEE TABLE 4 OR 5	N/A	SERIAL COMMUNICATIONS SPEED SELECTION BAUD RATE
H5-07	SEE TABLE 4 OR 5	N/A	REQUEST TO SEND (RTS) CONTROL SELECTION
H5-08	SEE TABLE 4 OR 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
o2-03	1	N/A	USER INITIALIZATION FACTORY SET PARAMETER DEFAULT VALUES (FOUND IN A1-03="1110")
o3-02	1	N/A	DIGITAL OPERATOR KEYPAD READ ALLOWED ENABLED

SEE SHEET 3 FOR TABLES 4 AND 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. (UNLESS SPECIFIED OTHERWISE)

TABLE 2 A.C. LINE WIRING

P7 CONFIG. MODEL NO. BASE NUMBER P7C*XXXX	WITH OPTION C, TO CIRCUIT BREAKER			OR, WITHOUT OPTION C & WITH OPTIONS E, F AND/OR R, TO TERMINAL BLOCK TB2		OR, WITHOUT OPTIONS C, E, F AND/OR R, TO STD. AC DRIVE
	MFG. PART NUMBER	CURRENT RATING (AMPS)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	WIRE SIZE RANGE (AWG)	
208V 240V 480V	B001	15	14 - 4	35	16 - 10	35
D002	A002					
D003	A003					
D004	A004					
D007	A006					
D010	A009	20				
D011	A015					
D016	A022	35	14 - 1/0	80	8	40
D024	A028	45	14 - 1/0	80	6 - 4	45
D030	A042	70				
D046	B052	80	14 - 1/0	80	6 - 250 kcmil	375
	A054	90				
D059	B065	100				
D074	A068	110	4 - 350 kcmil	250		
D088	A104	125				
D114	B077	150				
	B124	175				
	KAL36200	200				

WHERE * = V (NEMA 1) OR B (NEMA 12)

TABLE 3 A.C. MOTOR WIRING

P7 CONFIG. MODEL NO. BASE NUMBER P7C*XXXX	WITH OPTION K, TO TERMINAL BLOCK TB3		OR, WITHOUT OPTION K, TO STANDARD AC DRIVE		EARTH GROUND WIRING		CONTROL WIRING	
	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	GROUND LUG	TERMINAL BLOCK TB1	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)
208V 240V 480V	16 - 10	35	14 - 10	35			22 - 12	10
D002	A002							
D003	A003							
D004	A004							
D007	A006							
D010	A009							
D016	A015							
	A022							
	B021							
D024	A028	8	40					
D030	B034	4 - 6	45					
	B040	4 - 6	45					
D046	A042	6 - 250 kcmil	375			8	40	
D059	A068							
	B065							
	B077							
D074	A080	6 - 250 kcmil	375			6 - 4	45	
D088	A104							
D114	B124							

WHERE * = V (NEMA 1) OR B (NEMA 12)



THIS DOCUMENT AND INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND NOT TO BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF YASKAWA ELECTRIC AMERICA INC.

DATE	5/23/08	DATE	5/23/08	DATE	5/23/08	DATE	10/19/04
DRWN BY:	D.R. CMELAK	CHECKED:	K. FLIERL	TECH:	J. ZUEHLKE	ORIGINAL DESIGNER:	D.R. CMELAK
TITLE:	SCHEMATIC DIAGRAM WALL MOUNT P7 CONFIGURED	SIZE:	D	REVISION:	R07	PAGE:	2 of 3

