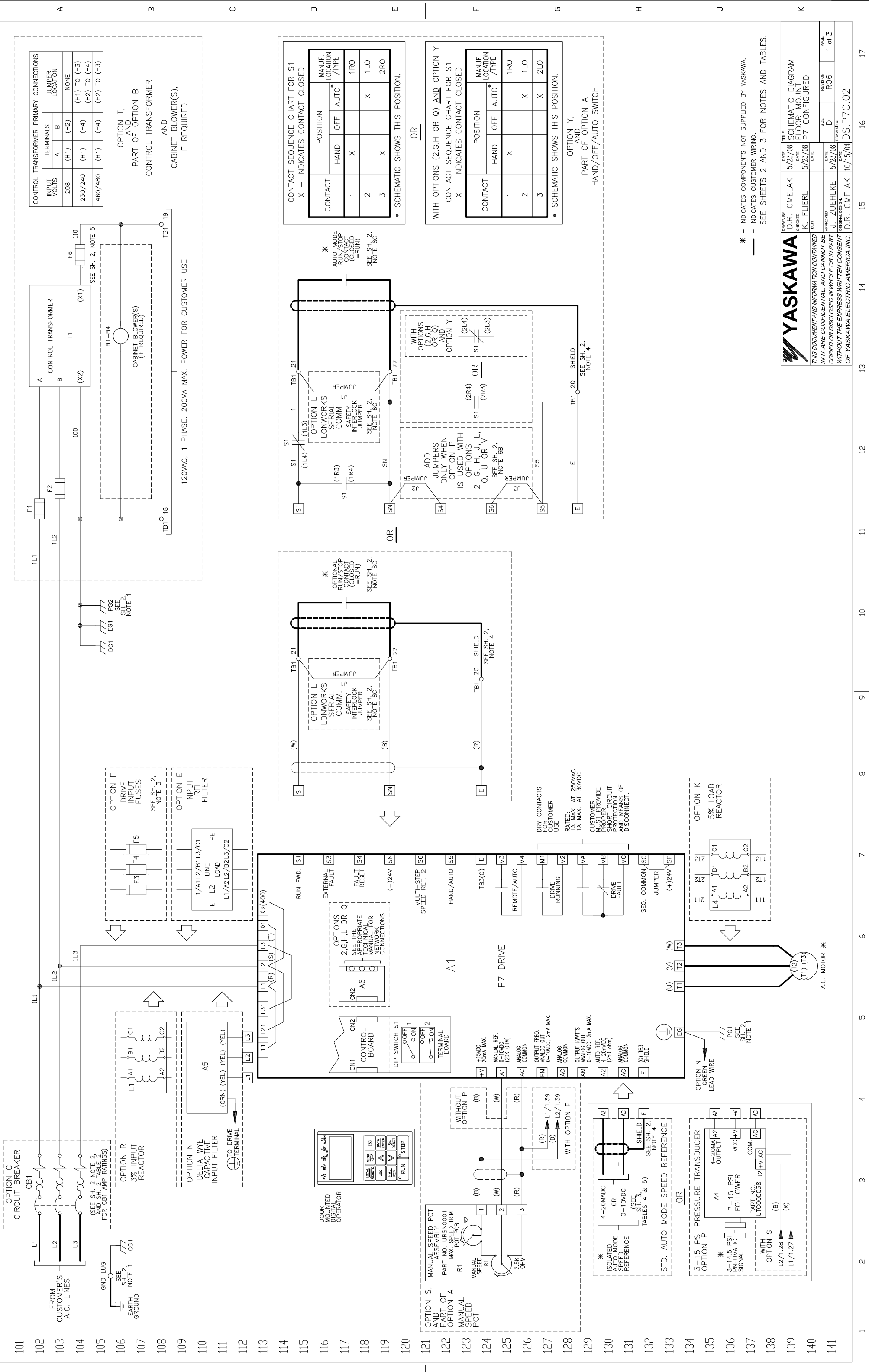


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17



CONTROL TRANSFORMER PRIMARY CONNECTIONS

INPUT VOLTS	TERMINALS A	TERMINALS B	JUMPER LOCATION
208	(H1)	(H2)	NONE
230/240	(H1)	(H4)	(H1) TO (H3)
460/480	(H1)	(H4)	(H2) TO (H4)

CONTACT SEQUENCE CHART FOR S1
X - INDICATES CONTACT CLOSED

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

• SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR S2
X - INDICATES CONTACT CLOSED

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

• SCHEMATIC SHOWS THIS POSITION.

YASKAWA

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DATE: 5/23/08
 DATE: 5/23/08
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DRAWN BY: D.R. CMELAK
 CHECKED BY: K. FLIERL
 APPROVED BY: J. ZUEHLKE
 ORIGINAL DESIGNER: D.R. CMELAK

TITLE: SCHEMATIC DIAGRAM
 FLOOR MOUNT
 P7 CONFIGURED

SIZE: D
 REVISION: R06
 DRAWING #: DS.P7C.02

PAGE: 1 of 3

* - INDICATES CUSTOMER WIRING.
 - - INDICATES COMPONENTS NOT SUPPLIED BY YASKAWA.
 - - SEE SHEETS 2 AND 3 FOR NOTES AND TABLES.

17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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 = DEVCENET, 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 SN
 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
	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.

TABLE 2 A.C. LINE WIRING

P7 CONFIG. MODEL NO. BASE NUMBER P7C*XXXX	WITH OPTION C, TO CIRCUIT BREAKER			OR, WITH OPTION F			
	MFG. PART NUMBER	CURRENT RATING (AMPS)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)
208V 230V 480V A130	KAL36200	200	4 - 350 kcmil	250	1BS103	(1-2) x (6-250 kcmil)	(1-2) x 275
D143	KAL36225	225					
A154 B156	KAL36250	250					
D169 A192 B180	LAL36300	300	1 x (1-600 kcmil)	375			
			2 x (1-250 kcmil)	2 x 375			
D211	LAL36350	350	1 x (1-600 kcmil)	375			
			2 x (1-250 kcmil)	2 x 375			
A248	LAL36400	400	1 x (1-600 kcmil)	375			
			2 x (1-250 kcmil)	2 x 375			
D273	MAL36450	450	(1-3) x (3/0-500 kcmil)	(1-3) x 300			
	MAL36500	500					
	MAL36600	600					
D343 A360	MAL36600	600	(1-3) x (3/0-500 kcmil)	(1-3) x 300	BH3145	(1-2) x (4-500 kcmil)	(1-2) x 375
D396	MAL36700	700	(1-3) x (3/0-500 kcmil)	(1-3) x 300			
	B477	800					
	B240	400	1 x (1-600 kcmil)	375	170H3004		
			2 x (1-250 kcmil)	2 x 375			
	B302	450	(1-3) x (3/0-500 kcmil)	(1-3) x 300			
	B515	800					
	B590	900					

TABLE 3 A.C. MOTOR WIRING

P7 CONFIG. MODEL NO. BASE NUMBER P7C*XXXX	WITH OPTION K, TO LOAD REACTOR L4			OR, WITHOUT OPTION K, TO STANDARD AC DRIVE			EARTH GROUND WIRING			CONTROL WIRING		
	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	GROUND LUG	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	TERMINAL BLOCK TB1	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)
208V 230V 480V A130	RL-13002	2/0, 1/0	180	RF3-0150-4	2 - 4/0	177						
D143	RL-16001											
A154 B156	RL-1600X	2-4/0	250	RF3-0330-4								
D169 A192 B180	RL-2500X											
D211	RL-2500X											
D273	RL-3200X											
A312	RL-3200X											
D343 A360	RL-4000X			FS5972-600-99								
D396	RL-5000X											
	B414											
	B477											
	B515											
	B590			FS5972-800-99								

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 LOAD REACTOR L4			OR, WITHOUT OPTION K, TO STANDARD AC DRIVE			EARTH GROUND WIRING			CONTROL WIRING		
	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	GROUND LUG	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	TERMINAL BLOCK TB1	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)
208V 230V 480V A130	RL-13002	2/0, 1/0	180	RF3-0150-4	2 - 4/0	177						
D143	RL-16001											
A154 B156	RL-1600X	2-4/0	250	RF3-0330-4								
D169 A192 B180	RL-2500X											
D211	RL-2500X											
D273	RL-3200X											
A312	RL-3200X											
D343 A360	RL-4000X			FS5972-600-99								
D396	RL-5000X											
	B414											
	B477											
	B515											
	B590			FS5972-800-99								

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



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REVISED	R06	SIZE	R06
REVISED	2	SIZE	2
REVISED	of 3	SIZE	of 3

DATE: 5/23/08
 DRAWN BY: D.R. CMELAK
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 TITLE: SCHEMATIC DIAGRAM FLOOR MOUNT P7 CONFIGURED

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 CHECKED BY: D.R. CMELAK
 TITLE: SCHEMATIC DIAGRAM FLOOR MOUNT P7 CONFIGURED

DATE: 10/15/04
 DRAWN BY: D.S.P7C.02
 CHECKED BY: D.S.P7C.02
 TITLE: SCHEMATIC DIAGRAM FLOOR MOUNT P7 CONFIGURED

DRIVE OPERATION MODE SELECTION WITHOUT THE HAND/OFF/AUTO SELECTOR SWITCH OPTION

TABLE 4

Table with columns: OPTION, DRIVE CONTROL BOARD SWITCH S1 SETTING, FACTORY SET P7C CONFIGURED DRIVE PARAMETERS (b1-01, H1-02, H1-03, H3-08, H3-09, H3-13, H5-02, H5-07, H5-08), DRIVE MODE SPEED COMMAND (DRIVE KEYPAD SPEED, DRIVE TERMINAL A2 SIGNAL, SEE SERIAL SH. 2, COMM. NOTE), DRIVE RUN/STOP CONTROL, DRIVE CONTROL BOARD SWITCH S1 SETTING, DRIVE MODE SPEED COMMAND (HAND MODE, DRIVE KEYPAD, DRIVE KEYPAD SPEED, DRIVE TERMINAL A2 SIGNAL, AUTO MODE), DRIVE RUN/STOP CONTROL.

TABLE 5

Table with columns: OPTION, DRIVE CONTROL BOARD SWITCH S1 SETTING, DRIVE MODE SPEED COMMAND (DRIVE KEYPAD, DRIVE KEYPAD SPEED, DRIVE TERMINAL A2 SIGNAL, SEE SERIAL SH. 2, COMM. NOTE), DRIVE RUN/STOP CONTROL, DRIVE CONTROL BOARD SWITCH S1 SETTING, DRIVE MODE SPEED COMMAND (HAND MODE, DRIVE KEYPAD, DRIVE KEYPAD SPEED, DRIVE TERMINAL A2 SIGNAL, AUTO MODE), DRIVE RUN/STOP CONTROL.

+ = STANDARD P7C CONFIGURED SET UP
= FACTORY 2-WIRE INITIALIZATION/DEFAULT SETTING

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