

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

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

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

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



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DRAWN BY: D.R. CMELAK	DATE: 5/23/08	TITLE: SCHEMATIC DIAGRAM
CHECKED BY: K. FLIERL	DATE: 5/23/08	WALL MOUNT E7 CONFIGURED
APPROVED BY: J. ZUEHLKE	DATE: 5/23/08	SIZE: D
DESIGNED BY: D.R. CMELAK	DATE: 10/15/04	REVISION: R06
		PAGE: 1 of 3

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141

A B C D E F G H J K

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

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 AN E7 CONFIGURED WITH A CONTROL TRANSFORMER, T1, POWER RATING OF 350VA OR GREATER, SECONDARY FUSE F6 IS ADDED.
- WHEN OPTION S IS ORDERED, JUMPERS ARE REQUIRED ON THE DRIVE TERMINALS, FROM S5 TO M3 AND FROM SN TO M4.
- SERIAL COMMUNICATIONS OPTIONS 2, 3, J, U, V, OR L (SEE TABLE 4 ON SHEET 3):
OPTION 2 = ETHERNET/IP, OPTION 3 = BACNET, OPTION J = EMBEDDED METASTAS N2, OPTION U = EMBEDDED APOGEE FLN, OPTION V = EMBEDDED MODBUS AND OPTION L = LONWORKS
THE DRIVE KEYPAD MUST BE IN "AUTO" MODE, IF SERIAL COMMUNICATIONS IS TO BE USED TO CONTROL THE DRIVE.
WHEN OPTIONS 3 OR L ARE ORDERED, A JUMPER IS REQUIRED FROM TERMINAL BLOCK TB1 POINTS (21) TO (22), SO THAT THE SERIAL COMMUNICATIONS CAN CONTROL THE RUN, STOP AND SPEED OF THE AC MOTOR.
CUSTOMER TO REPLACE THE JUMPER WITH NORMALLY CLOSED SAFETY INTERLOCKS, IF APPLICABLE.

TABLE 1 FACTORY SET E7 CONFIGURED DRIVE PARAMETERS

PARAMETER	DATA	UNIT	DESCRIPTION/REMARKS
b1-01	SEE TABLE 4	N/A	FREQUENCY REFERENCE SELECTION
b1-02	SEE TABLE 4	N/A	RUN COMMAND SELECTION
b1-08	1	N/A	RUN COMMAND SELECTION DURING PROGRAMMING - ENABLED
b1-12	SEE TABLE 4	N/A	HAND MODE FREQUENCY REFERENCE SELECTION
b5-01	SEE TABLE 4	N/A	PI MODE SETTING
d1-01	10.0	HZ.	FREQUENCY REFERENCE 1 - SEE TABLE 4
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_---"
F6-02	SEE TABLE 4	N/A	SERIAL COMMUNICATIONS EXTERNAL FAULT DETECTION SELECTION
F6-03	SEE TABLE 4	N/A	SERIAL COMMUNICATIONS EXTERNAL FAULT STOPPING METHOD SELECTION
H1-03	SEE TABLE 4	N/A	TERMINAL S5 SELECTION
H3-08	SEE TABLE 4	N/A	TERMINAL A2 SIGNAL SELECTION
H3-09	SEE TABLE 4	N/A	TERMINAL A2 FUNCTION SELECTION
H3-13	SEE TABLE 4	N/A	TERMINALS A1 AND A2 MASTER FREQUENCY REFERENCE SELECTION
H5-02	SEE TABLE 4	N/A	SERIAL COMMUNICATIONS SPEED SELECTION BAUD RATE
H5-07	SEE TABLE 4	N/A	REQUEST TO SEND (RTS) CONTROL SELECTION
H5-08	SEE TABLE 4	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 TABLE 4.

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

E7 CONFIG. MODEL NO. BASE NUMBER E7C*XXXX	WITH OPTION C, TO CIRCUIT BREAKER			OR, WITHOUT OPTION C AND WITH OPTIONS E, F AND/OR R, TO TERMINAL BLOCK TB2		OR, WITHOUT OPTIONS C, E, F AND/OR R, TO STANDARD AC DRIVE
	MFG. PART NUMBER	CURRENT RATING (AMPS)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)	TIGHTENING TORQUE (LB.-IN.)	
208V 240V 480V B001	FAL36015	15	14 - 4	35	35	CUSTOMER TO SUPPLY A UL LISTED CLOSED-LOOP CONNECTOR, PER THE AC DRIVE TECHNICAL MANUAL USE 75°C COPPER WIRE ONLY
D002 A002 B002						
D003 A003 B003						
D004 A004 B004						
D007 A006 B007						
D010 A009 B011	FAL36020	20				
A015 B014	FAL36025	25				
D016	FAL36030	30				
A022 B021	FAL36035	35	14 - 1/0	80	40	
D024	FAL36040	40				
A028 B027	FAL36045	45	14 - 1/0	80	45	
D030	FAL36050	50				
B034	FAL36060	60				
A042 B040	FAL36070	70				
D046	FAL36080	80				
B052			14 - 1/0	80	375	
A054	FAL36090	90				
D059	FAL36100	100				
A068	KAL36110	110				
D074 A080 B077	KAL36125	125	4 - 350 kcmil	250		
D088 A104 B096	KAL36150	150				
D114	KAL36175	175				
B124	KAL36200	200				

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

TABLE 3 A.C. MOTOR WIRING

E7 CONFIG. MODEL NO. BASE NUMBER E7C*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.)		GROUND LUG	TERMINAL BLOCK TB1	
208V 240V 480V B001	16 - 10	35	14 - 10	GROUND LUG	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.-IN.)
D002 A002 B002					22 - 12	10
D003 A003 B002						
D004 A004 B003						
D007 A006 B004						
D010 A009 B007						
D016 A015 B011						
A022 B014						
B021						
D024 A028 B027	8	40				
D030						
B034	4 - 6	45				
D046 A042 B040	4 - 6	45				
D059 A054 B052	6 - 250 kcmil	375				
A068 B065						
B077						
D074 A080 B096	6 - 250 kcmil	375				
D088 A104 B124						
D114						

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



DRAWN BY: D.R. CMELAK
CHECKED BY: K. FLIERL
DATE: 5/23/08

TITLE: SCHEMATIC DIAGRAM
WALL MOUNT
E7 CONFIGURED

APPROVED BY: J. ZUEHLKE
DATE: 5/23/08

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TABLE 4 DRIVE OPERATION MODE SELECTION


OPTION	FACTORY SET E7C CONFIGURED DRIVE PARAMETERS														DRIVE CONTROL BOARD SWITCH S1 SETTING			DRIVE MODE SPEED COMMAND			DRIVE MODE PI CONTROL			DRIVE RUN/STOP CONTROL				
	b1-01	b1-02	b1-12	b5-01	F6-02	F6-03	H1-03 (S5)	H3-08	H3-09	H3-13	H5-02	H5-07	H5-08	DRIVE KEYPAD d1-01	DRIVE SPEED POT	4-20 MADC	0-10 VDC	3-15 PSI	SERIAL SH. 2, COMM. NOTE	SEE	DRIVE KEYPAD d1-01	SETPOINT	DRIVE KEYPAD SERIAL COMM.	4-20 MADC	DRIVE TERMINAL A2 SIGNAL	FEEDBACK	HAND MODE	HAND MODE
	1	1	0	0	0	1	3	2	2	2	2	3	1	0	ON	YES	YES	YES	0-10 VDC	0-10 VDC	0-10 VDC	41-01	41-01	41-01	4-20 MADC	0-10 VDC	HAND MODE	AUTO MODE
	1	1	0	0	0	1	3	2	2	2	2	3	1	0	OFF	YES	YES	YES	0-10 VDC	0-10 VDC	0-10 VDC	41-01	41-01	41-01	4-20 MADC	0-10 VDC	HAND MODE	AUTO MODE
PRESENT	1	1	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES				YES	YES	YES	4-20 MADC	0-10 VDC			AUTO MODE
NONE +	1	1	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES				YES	YES	YES	4-20 MADC	0-10 VDC			AUTO MODE
NONE	1	1	0	0	0	1	3	0	2	2	3	1	0	OFF	OFF													
P	1	1	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6								
S +	1	1	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6								
S	1	1	0	0	0	1	3	0	2	2	3	1	0	OFF	OFF					6								
S AND P	1	1	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6								
2 +	3	3	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			7								
2	1	3	0	0	0	1	3	0	2	2	3	1	0	OFF	OFF					7								
2 AND P	1	3	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			7								
2 AND S	3	3	1	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7								
2, S AND P	1	3	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7								
3 +	2	2	0	0	1	3	3	2	2	2	3	1	1	OFF	ON	YES	YES			7,8								
3	1	2	0	0	1	3	3	0	2	2	3	1	0	OFF	OFF					7,8								
3 AND P	1	2	0	0	1	3	3	2	2	2	3	1	0	OFF	ON	YES	YES			7,8								
3 AND S	2	2	1	0	1	3	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7,8								
3, S AND P	1	2	0	0	1	3	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7,8								
J +	2	2	0	0	0	1	3	2	2	2	3	1	1	OFF	ON	YES	YES			7								
J	1	2	0	0	0	1	3	0	2	2	3	1	1	OFF	OFF					7								
J AND P	1	2	0	0	0	1	3	2	2	2	3	1	1	OFF	ON	YES	YES			7								
J AND S	2	2	1	0	0	1	3	2	2	2	3	1	1	OFF	ON	YES	YES			6,7								
J, S AND P	1	2	0	0	0	1	3	2	2	2	3	1	1	OFF	ON	YES	YES			6,7								
U +	2	2	0	0	0	1	3	2	2	2	3	1	2	OFF	ON	YES	YES			7								
U	1	2	0	0	0	1	3	0	2	2	3	1	2	OFF	OFF					7								
U AND P	1	2	0	0	0	1	3	2	2	2	3	1	2	OFF	ON	YES	YES			7								
U AND S	2	2	1	0	0	1	3	2	2	2	3	1	2	OFF	ON	YES	YES			6,7								
U, S AND P	1	2	0	0	0	1	3	2	2	2	3	1	2	OFF	ON	YES	YES			6,7								
V +	2	2	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			7								
V	1	2	0	0	0	1	3	0	2	2	3	1	0	OFF	OFF					7								
V AND P	1	2	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			7								
V AND S	2	2	1	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7								
V, S AND P	1	2	0	0	0	1	3	2	2	2	3	1	0	OFF	ON	YES	YES			6,7								
L +	2	2	0	0	0	1	3	2	2	2	3	0	0	ON	ON	YES	YES			7,8								
L	1	2	0	0	0	1	3	0	2	2	3	0	0	ON	OFF					7,8								
L AND P	1	2	0	0	0	1	3	2	2	2	3	0	0	ON	ON	YES	YES			7,8								
L AND S	2	2	1	0	0	1	3	2	2	2	3	0	0	ON	ON	YES	YES			7,8								
L, S AND P	1	2	0	0	0	1	3	2	2	2	3	0	0	ON	ON	YES	YES			6,7,8								
PI CONTROL	1	1	0	1	0	1	19	2	B	0	3	1	0	OFF	ON					6,7,8			YES	YES		YES		
PI CONTROL	1	1	0	1	0	1	19	0	B	0	3	1	0	OFF	OFF							YES	YES			YES		
2 AND PI	3	3	0	1	0	1	19	0	B	0	3	1	0	OFF	OFF					7			YES	YES		YES		
3 AND PI	2	2	0	1	1	3	19	0	B	0	3	1	0	OFF	OFF					7,8			YES	YES		YES		
J AND PI	2	2	0	1	0	1	19	0	B	0	3	1	1	OFF	OFF					7			YES	YES		YES		
U AND PI	2	2	0	1	0	1	19	0	B	0	2	1	2	OFF	OFF					7			YES	YES		YES		
V AND PI	2	2	0	1	0	1	19	0	B	0	3	1	0	OFF	OFF					7			YES	YES		YES		
L AND PI	2	2	0	1	0	1	19	0	B	0	3	1	0	ON	OFF					7,8			YES	YES		YES		

DRIVE KEYPAD IN THE "HAND" MODE

SERIAL COMMUNICATIONS

AUTO MODE RUN/STOP CONTACT AT TB1(21) & TB1(22)

SERIAL COMMUNICATIONS



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TITLE:	SCHEMATIC DIAGRAM			SIZE:	D	REVISION:	R06	PAGE:	3 of 3
	WALL MOUNT			DRAWING #:					
	E7 CONFIGURED								

+ = STANDARD E7C CONFIGURED SET UP
 ▪ = FACTORY 2-WIRE INITIALIZATION/DEFAULT SETTING

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