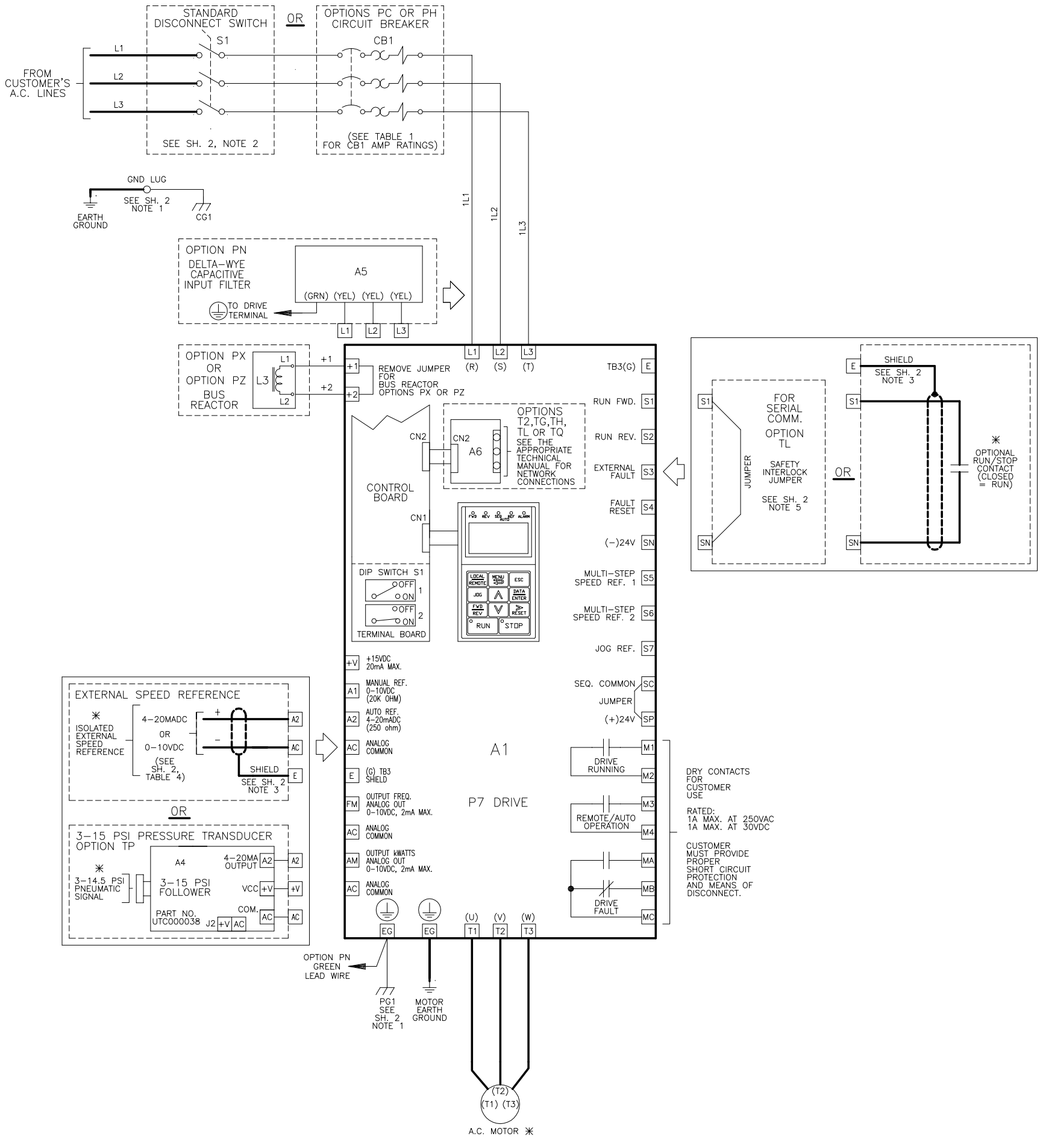

CUSTOMER WIRING REQUIREMENTS

- 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 1

P7 CONFIG. MODEL NO. BASE NUMBER P7SVXXXX			A.C. LINE WIRING						
			TO STANDARD INPUT DISCONNECT SWITCH			OR WITH OPTIONS PC OR PH, TO CIRCUIT BREAKER			
208V	240V	480V	MFG. PART NUMBER	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.–IN.)	MFG. PART NUMBER	CURRENT RATING (AMPS)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.–IN.)
	A002	B001	V0	14 – 8	19	H_L36015	15	14 – 10	50
D002	A003	B002						OR	OR
D003	A004	B003						8 – 3/0	120
D004	A006	B004							
D007	A009	B007							
D010		B011				H_L36020	20		
D016	A015					H_L36025	25		
		B014	V3	12 – 6	40				
	A022					H_L36030	30		
		B021				H_L36035	35		
D024						H_L36040	40		
	A028	B027				H_L36045	45		
D030		B034	V4	6 – 2	50	H_L36050	50		
		B040				H_L36060	60		
	A042					H_L36070	70		
D046			V5	8 – 2/0	200	H_L36070	70		
	A054	B052				H_L36080	80		
D059		B065				H_L36090	90		
	A068					H_L36110	110		
	A080		V6	8 – 2/0	200				
		B077	H_L36000S15	8 – 3/0	120				
D074			V6	8 – 2/0	200	H_L36125	125		
D088			H_L36000S15	8 – 3/0	120				
D114	A104	B096	H_L36000S15	8 – 3/0	120	H_L36150	150		
		B124	J_L36000S17	4 – 4/0	225	J_L36175	175	4 – 4/0	225

WHERE _ = D, G, J OR L

TABLE 2

P7 CONFIG. MODEL NO. BASE NUMBER P7SVXXXX			A.C. MOTOR WIRING	EARTH GROUND WIRING		CONTROL WIRING	
				TO GROUND LUG		TO DRIVE TERMINALS	
208V	240V	480V	TO STANDARD AC DRIVE	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.–IN.)	WIRE SIZE RANGE (AWG)	TIGHTENING TORQUE (LB.–IN.)
D002	A002	B001	CUSTOMER TO SUPPLY	14 – 10	35	26 – 16	4.2 – 5.3
D003	A003	B002	A UL LISTED	OR	OR	FOR ALL TERMINALS	
D004	A004	B003	CLOSED–LOOP	8	40	EXCEPT E(G)	
D007	A006	B004	CONNECTOR, PER	OR	OR	20 – 14	7.0 – 8.8
D010	A009	B007	THE AC DRIVE	6 – 4	45	FOR TERMINAL E(G)	
D016	A015	B011	TECHNICAL MANUAL				
D024	A022	B014					
D030	A028	B021	USE 75°C COPPER				
D046	A042	B027	WIRE OR EQUIVALENT				
D059	A054	B034					
D074	A068	B040					
D088	A080	B052					
D114	A104	B065					
		B077					
		B096					
		B124					

✳ – INDICATES COMPONENTS NOT SUPPLIED BY YASKAWA.

—— – INDICATES CUSTOMER WIRING.

SEE SHEET 2 FOR NOTES AND TABLES 3 AND 4.

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	CHECKED: K. FLIERL	DATE 8/31/09	
	TECH:	DATE	SIZE D / REVISION R00 / PAGE 1 of 2
	APPROVED: J. ZUEHLKE	DATE 8/31/09	
	ORIGINAL DESIGN: D.R. CMELAK	DATE 8/31/09	DRAWING #: DS.P7S.01

NOTES:

1. CONNECTED TO THE CABINET. CUSTOMER TO CONNECT THE CABINET GROUND LUG TO EARTH GROUND.
2. IF THE CIRCUIT BREAKER (OPTION PC OR OPTION PH) IS NOT ADDED, THEN BRANCH CIRCUIT PROTECTION (CIRCUIT BREAKER OR AC INPUT FUSES) MUST BE SUPPLIED BY THE CUSTOMER.
3. INSULATED TWISTED SHIELDED WIRE IS REQUIRED. 2 CONDUCTOR #18GA. (BELDEN NO. 8760, OR EQUIVALENT) OR 3 CONDUCTOR #18GA. (BELDEN NO. 8770, OR EQUIVALENT). CONNECT THE SHIELD TO DRIVE TERMINAL E(G). CONNECT THE SHIELD ONLY AT THIS END. STUB AND ISOLATE THE OTHER END. KEEP THIS LEAD LENGTH AS SHORT AS POSSIBLE TO MAINTAIN SIGNAL QUALITY (50 METERS OR LESS). DO NOT RUN THESE WIRES IN THE SAME CONDUIT AS THE AC POWER AND AC CONTROL WIRES.
4. SERIAL COMMUNICATION OPTIONS T2, TG, TH, TJ, TL, TQ, TU OR TV (SEE TABLE 4 ON SHEET 2): OPTION T2 = ETHERNET/IP, OPTION TG = DEVICENET, OPTION TH = PROFIBUS, OPTION TJ = METASYS N2, OPTION TL = LONWORKS, OPTION TQ = ETHERNET MODBUS TCP/IP, OPTION TU = APOGEE FLN AND OPTION TV = DRIVE EMBEDDED MODBUS PROTOCOL.
5. WHEN OPTION TL IS ORDERED, A JUMPER IS REQUIRED FROM DRIVE TERMINALS S1 TO SN, SO THAT THE LONWORKS SERIAL COMMUNICATIONS CAN CONTROL THE RUN, STOP AND SPEED OF THE AC MOTOR. CUSTOMER TO REPLACE THE JUMPER WITH NORMALLY CLOSED SAFETY INTERLOCKS, OR RUN/STOP CONTACT, IF APPLICABLE.

TABLE 3 FACTORY SET P7S 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
d1-01	10.0	HZ.	FREQUENCY REFERENCE 1 – SEE TABLE 4
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___"
H3-08	SEE TABLE 4	N/A	TERMINAL A2 SIGNAL 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

TABLE 4

OPTION PRESENT	FACTORY SET P7S CONFIGURED DRIVE PARAMETERS							DRIVE CONTROL BOARD SWITCH S1 SETTING		DRIVE MODE SPEED COMMAND						DRIVE RUN/STOP CONTROL
											DRIVE TERMINAL A2 SIGNAL					
	b1-01	b1-02	H3-08	H3-13	H5-02	H5-07	H5-08	1	2	DRIVE KEYPAD d1-01	4-20 MADC	0-10 VDC	3-15 PSI	SERIAL COMM.	SEE SH. 1, NOTE	
NONE +	0	0	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪	YES						DRIVE KEYPAD
NONE	1 ▪	0	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪		YES					
NONE	1 ▪	0	0	1	3 ▪	1 ▪	0 ▪	OFF ▪	OFF			YES				
NONE	0	1 ▪	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪	YES						RUN/STOP CONTACT AT TERMINALS S1 AND SN
NONE	1 ▪	1 ▪	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪		YES					
NONE	1 ▪	1 ▪	0	1	3 ▪	1 ▪	0 ▪	OFF ▪	OFF			YES				
TP +	1 ▪	0	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪				YES			DRIVE KEYPAD
TP	1 ▪	1 ▪	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪				YES			RUN/STOP CONTACT
T2,TG,TH OR TQ +	3	3	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		SERIAL COMMUNICATIONS
T2,TG,TH OR TQ	0	3	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪	YES						
T2,TG,TH OR TQ	1 ▪	3	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪		YES					
T2,TG,TH OR TQ	1 ▪	3	0	1	3 ▪	1 ▪	0 ▪	OFF ▪	OFF			YES				
T2,TG,TH OR TQ	3	0	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		DRIVE KEYPAD
T2,TG,TH OR TQ	3	1 ▪	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		RUN/STOP CONTACT
(T2,TG,TH OR TQ) AND TP	1 ▪	3	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪				YES			SERIAL COMM.
TJ +	2	2	2 ▪	0 ▪	3 ▪	1 ▪	1	OFF ▪	ON ▪					YES		SERIAL COMMUNICATIONS
TJ	0	2	2 ▪	0 ▪	3 ▪	1 ▪	1	OFF ▪	ON ▪	YES						
TJ	1 ▪	2	2 ▪	1	3 ▪	1 ▪	1	OFF ▪	ON ▪		YES					
TJ	1 ▪	2	0	1	3 ▪	1 ▪	1	OFF ▪	OFF			YES				
TJ	2	0	2 ▪	0 ▪	3 ▪	1 ▪	1	OFF ▪	ON ▪					YES		DRIVE KEYPAD
TJ	2	1 ▪	2 ▪	0 ▪	3 ▪	1 ▪	1	OFF ▪	ON ▪					YES		RUN/STOP CONTACT
TJ AND TP	1 ▪	2	2 ▪	1	3 ▪	1 ▪	1	OFF ▪	ON ▪				YES			SERIAL COMM.
TU +	2	2	2 ▪	0 ▪	2	1 ▪	2	OFF ▪	ON ▪					YES		SERIAL COMMUNICATIONS
TU	0	2	2 ▪	0 ▪	2	1 ▪	2	OFF ▪	ON ▪	YES						
TU	1 ▪	2	2 ▪	1	2	1 ▪	2	OFF ▪	ON ▪		YES					
TU	1 ▪	2	0	1	2	1 ▪	2	OFF ▪	OFF			YES				
TU	2	0	2 ▪	0 ▪	2	1 ▪	2	OFF ▪	ON ▪					YES		DRIVE KEYPAD
TU	2	1 ▪	2 ▪	0 ▪	2	1 ▪	2	OFF ▪	ON ▪					YES		RUN/STOP CONTACT
TU AND TP	1 ▪	2	2 ▪	1	2	1 ▪	2	OFF ▪	ON ▪				YES			SERIAL COMM.
TV +	2	2	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		SERIAL COMMUNICATIONS
TV	0	2	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪	YES						
TV	1 ▪	2	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪		YES					
TV	1 ▪	2	0	1	3 ▪	1 ▪	0 ▪	OFF ▪	OFF			YES				
TV	2	0	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		DRIVE KEYPAD
TV	2	1 ▪	2 ▪	0 ▪	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪					YES		RUN/STOP CONTACT
TV AND TP	1 ▪	2	2 ▪	1	3 ▪	1 ▪	0 ▪	OFF ▪	ON ▪				YES			SERIAL COMM.
TL +	2	2	2 ▪	0 ▪	3 ▪	0	0 ▪	ON	ON ▪					YES		SERIAL COMMUNICATIONS
TL	0	2	2 ▪	0 ▪	3 ▪	0	0 ▪	ON	ON ▪	YES						
TL	1 ▪	2	2 ▪	1	3 ▪	0	0 ▪	ON	ON ▪		YES					
TL	1 ▪	2	0	1	3 ▪	0	0 ▪	ON	OFF			YES				
TL	2	0	2 ▪	0 ▪	3 ▪	0	0 ▪	ON	ON ▪					YES		DRIVE KEYPAD
TL	2	1 ▪	2 ▪	0 ▪	3 ▪	0	0 ▪	ON	ON ▪					YES	5	RUN/STOP CONTACT
TL AND TP	1 ▪	2	2 ▪	1	3 ▪	0	0 ▪	ON	ON ▪				YES			SERIAL COMM.

+ = STANDARD P7S CONFIGURED SET UP

▪ = FACTORY 2-WIRE INITIALIZATION/DEFAULT SETTING

SEE SHEET 1 FOR TABLES 1 AND 2.

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