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Schematic/Electrical Parts—

Linear Costa Controller
Linear Costa Master
Mark 4 Controls

Read the separate safety manual before installing, operating, or servicing

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

Please Read

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for ME6LCCS1BE/2007322N
Linear Costa Controller Linear Costa Master Mark 4 Controls

COMPONENT PARTS LIST

W6LC4PL/2000476N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
BA	**>>PRINTED CIRCUIT BOARDS**				
BBB-1	BOARD-BATTERY BACKUP	W6LC4BW	08BSBB1T	BD:SERIAL BATT BACKUP-TEST	LCM CONTROLR
BBB-1	BOARD-BATTERY BACKUP	W6LM4BW	O8BSBB1T	BD:SERIAL BATT BACKUP-TEST	LCM CONTROLR
BI0-0	BOARD-8OUT/16INPUT #0	W6LM4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LC BOARD BOX
BIO-1	BOARD-8OUT/16INPUT #1	W6LC4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LC BOARD BOX
BI0-2	BOARD-8OUT/16INPUT #2	W6LC4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LC BOARD BOX
BIO-3	BOARD-8OUT/16INPUT #3	W6LC4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LC BOARD BOX
BIO-4	BOARD-80UT/16INPUT #4	W6LC4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LC BOARD BOX
BIO-8	BOARD-8OUT/16INPUT #5	W6LM4BW	08BS816CT	SERIAL 8OUT-16INPUT-TESTED	LCM BOARD BX
BPB	BOARD-186 MICROPROCESSOR	W6LM4BW	08BSPET	186 SERIAL PROCESSOR-TEST	LCM CONTROLR
BPB-1	BOARD-8088 MICROPROCESSOR	W6LC4BW	08BSPDT	8088 PROCESSOR-TEST	LC CONTROLLER
BVGA	BOARD-VGA VIDEO CONTROLLER	W6LM4BW	08PCVGA16	BOARD 16BIT VGA VIDEO DIAMOND	LCM CONTROLR
CD	**>>RELAY-TIME DELAY**				
CDCHP	DELAY-COHORP LOADED	W6LM4CHA	09CF002024	TDR F2S 2PDT 11PIN 24V50/60C	COHORP CONTR
CDCHP	DELAY-COHORP LOADED	W6LM4CHC	09CF002024	TDR F2S 2PDT 11PIN 24V50/60C	COHORP BOX
CD1	DELAY-COIN BELT CLEAR	W6LM4CHC	09CF002024	TDR F2S 2PDT 11PIN 24V50/60C	COHORP CONTR
CP	**>>PHOTOEYES**				
CPCHP	PHOTOEYE-COHORP LOADED	W6LM4CHA	09RPE004	SENSOR DK,OPR.AC N.O-OUT	COHORP BELT
CPCHP	PHOTOEYE-COHORP LOADED	W6LM4CHC	09RPE004	SENSOR DK,OPR.AC N.O-OUT	COHORP BELT
CPCID	PHOTOEYE-COHORP COINC DISC	W6LM4CHC	09RPE004	SENSOR DK,OPR.AC N.O-OUT	COHORP BELT
CPCIL	PHOTOEYE-COHORP COINC LOAD	W6LM4CHC	09RPE004	SENSOR DK,OPR.AC N.O-OUT	COHORP BELT
CPPEFO	PHOTOEYE-BELTO FORWORD	W6LM4FR0	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEFO	PHOTOEYE-FORWORD BELT 0	W6LM4CH	09RPE004	SENSOR DK,OPR.AC N.O-OUT	LC BELT END
CPPEF1	PHOTOEYE-BELT 1 FORWARD	W6LM4FR1	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF2	PHOTOEYE-BELT 2 FORWARD	W6LM4FR2	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF3	PHOTOEYE-BELT 3 FORWARD	W6LM4FR3	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF4	PHOTOEYE-BELT 4 FORWARD	W6LM4FR4	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF5	PHOTOEYE-BELT 5 FORWARD	W6LM4FR5	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF6	PHOTOEYE-BELT 6 FORWARD	W6LM4FR6	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPEF7	PHOTOEYE-BELT 7 FORWARD	W6LM4FR7	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER0	PHOTOEYE-BELT 0 REVERSE	W6LM4FR0	09RPE004	SENSOR DK,OPR.AC N.O-OUT	LC BELT END
CPPER0	PHOTOEYE-REVERSE BELT 0	W6LM4CH	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER1	PHOTOEYE-BELT 1 REVERSE	W6LM4FR1	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
CPPER2	PHOTOEYE-BELT 2 REVERSE	W6LM4FR2	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER3	PHOTOEYE-BELT 3 REVERSE	W6LM4FR3	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER4	PHOTOEYE-BELT 4 REVERSE	W6LM4FR4	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER5	PHOTOEYE-BELT 5 REVERSE	W6LM4FR5	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER6	PHOTOEYE-BELT 6 REVERSE	W6LM4FR6	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CPPER7	PHOTOEYE-BELT 7 REVERSE	W6LM4FR7	09RPE004	SENSOR DK,OPR.AC N.O-OUT	BELT CONTRLR
CR	**>>RELAY-PILOT OR CONTROL**				
CRA	RELAY-COINC BELT RUN FORWARD	W6LM4CHC	09CO1DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	COHORP CONTR
CRCID	RELAY-COINC DISC EYE BLOCKED	W6LM4CHC	09CO1DDD24	RELAY 3PDT DIFGOLD 11PIN 24VAC	COHORP CONTR
CRCIL	RELAY-COINC LOAD EYE BLOCKED	W6LM4CHC	09CO1DDD24	RELAY 3PDT DIFGOLD 11PIN 24VAC	COHORP CONTR
CRD	RELAY-COHORP AT DISCHARGE	W6LM4CHA	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	COHORP BX
CRD	RELAY-COHORP IS AT DICHARGE	W6LM4CHC	09CO1DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	COHORP BX
CRH	RELAY-COHORP AT HOME	W6LM4CHA	09CO1DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	COHORP BX
CRH	RELAY-COHORP IS HOME	W6LM4CHC	09CO1DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	COHORP BX
CRPEFO	RELAY-FORWARD PHEYE BLOCKED	W6LM4CH	09CO1DDD24	RELAY 3PDT DIFGOLD 11PIN 24VAC	BELT CONTRLR
CRPER0	RELAY-REVERSE PHEYE BLOCKED	W6LM4CH	09CO1DDD24	RELAY 3PDT DIFGOLD 11PIN 24VAC	BELT CONTRLR
CRRBF0A	RELAY-RUN BELT 0 REVERSE	W6LM4CH	09CO1DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	BELT CONTRLR
CRS+	RELAY-3-WIRE	W6LC4BW	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	LC CONTROLLR
CRS+	RELAY-3-WIRE	W6LM4BW	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	LCM CONTROLR
CRS+	RELAY-3-WIRE	W6LM4S+	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	LCM CONTROLR
CRSG	RELAY-SIGNAL	W6LC4BW	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	SIGNAL BOX
CRSG	RELAY-SIGNAL	W6LM4BW	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	SIGNAL BOX
CRSG	RELAY-SIGNAL	W6LM4S+	09C01DDD37	RELAY 3PDT DIFGOLD 11PIN 120VAC	SIGNAL BOX
CRT-1	MONITOR-MICROPROCESSOR	W6LM4BW	08MN070VGA	RELAY 3PDT DIFGOLD 11PIN 120VAC	LCM CONTROLR
CS	**>>CONTACTOR-MOTOR STARTER**				
CSCI	CONTACTOR-RUN COINC BELT	W6LM4CHC	09MC04B337	3P CONTACTOR NR 120V5/6 IEC	COHORP CONTR
CSRBFO	CONTACTOR-RUN BELT0 FORWARD	W6LM4FRO	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CNTRLR
CSRBFO	CONTACTOR-RUN BELT0 FORWARD	W6LM4CH	09MC04N337	30A 3P REV+2N/C 120V5/6 IEC	CONTACTOR BX
CSRBF1	CONTACTOR-RUN BELT1 FORWARD	W6LM4FR1	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBF2	CONTACTOR-RUN BELT2 FORWARD	W6LM4FR2	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBF3	CONTACTOR-RUN BELT3 FORWARD	W6LM4FR3	09MC04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBF4	CONTACTOR-RUN BELT4 FORWARD	W6LM4FR4	09MC04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBF5	CONTACTOR-RUN BELT 5 FORWARD	W6LM4FR5	09MC04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
CSRBF6	CONTACTOR-RUN BELT 6 FORWARD	W6LM4FR6	09MCO4E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBF7	CONTACTOR-RUN BELT 7 FORWARD	W6LM4FR7	09MC04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBRO	CONTACTOR-RUN BELT0 REVERSE	W6LM4FR0	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR0	CONTACTOR-RUN BELT 0 REVERSE	W6LM4CH	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR1	CONTACTOR-RUN BELT 1 REVERSE	W6LM4FR1	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR2	CONTACTOR-RUN BELT 2 REVERSE	W6LM4FR2	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR3	CONTACTOR-RUN BELT 3 REVERSE	W6LM4FR3	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR4	CONTACTOR-RUN BELT 4 REVERSE	W6LM4FR4	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR5	CONTACTOR-RUN BELT 5 REVERSE	W6LM4FR5	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR6	CONTACTOR-RUN BELT 6 REVERSE	W6LM4FR6	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
CSRBR7	CONTACTOR-RUN BELT 7 REVERSE	W6LM4FR7	09MR04E337	30A 3P REV+2N/C 120V5/6 IEC	BELT CONTRLR
EB	**>>BUZZER OR AUDIBLE SIGNAL**				
EBCD	BUZZER-COHORP MOVING TO DISC	W6LM4CHA	09H020	ALARM, MALLORY SONALERT SC110 115V	COHORP BOX
EBCD	BUZZER-COHORP MOVING TO DISC	W6LM4CHC	09H020	ALARM, MALLORY SONALERT SC110 115V	COHORP BOX
EBCH	BUZZER-COHORP MOVING TO HOME	W6LM4CHA	09H020	ALARM, MALLORY SONALERT SC110 115V	COHORP BOX
EBCH	BUZZER-COHORP MOVING TO HOME	W6LM4CHC	09H020	ALARM, MALLORY SONALERT SC110 115V	COHORP BOX
EBSG	BUZZER-SIGNAL	W6LC4BW	09H015	BUZZER 115V W/6-32 CTR+6" LEADS	LC CONTROLLER
EBSG	BUZZER-SIGNAL	W6LM4BW	09H015	BUZZER 115V W/6-32 CTR+6" LEADS	LCM CONTROLR
EBSG	BUZZER-SIGNAL	W6LM4S+	09H015	BUZZER 115V W/6-32 CTR+6" LEADS	LCM CONTROLR
EF	**>>FUSE OR FUSE HOLDER**				
EFCD	FLASHER-BUZZER COHORP MOVING	W6LM4CHA	08FL007537	FLASHER 120VAC 1AMP 75FL/MIN#FS126	BELT CONTRLR
EFCD	FLASHER-BUZZER COHORP MOVING	W6LM4CHC	08FL007537	FLASHER 120VAC 1AMP 75FL/MIN#FS126	BELT CONTRLR
EFCH	FLASHER-BUZZER COHORP MOVING	W6LM4CHA	08FL007537	FLASHER 120VAC 1AMP 75FL/MIN#FS126	BELT CONTRLR
EFCH	FLASHER-BUZZER COHORP MOVING	W6LM4CHC	08FL007537	FLASHER 120VAC 1AMP 75FL/MIN#FS126	BELT CONTRLR
EF1	FUSE-120V CONTROL CIRCUIT	W6LM4BW	09FF004AHG	FUSE BK/MDX 4 AMP 125V BUSS	BELT CONTRLR
EF37	FUSE-120V CONTROL CIRCUIT	W6LM4CH	09FF004AHG	FUSE BK/MDX 4 AMP 125V BUSS	BELT CONTRLR
EF37	FUSE-120V CONTROL CIRCUIT	W6LM4FR0	09FF004AHG	FUSE BK/MDX 4 AMP 125V BUSS	BELT CONTRLR
EL	**>>LIGHT-PILOT OR INDICATOR**				
EL0	LIGHT-120V AVAILABLE	W6LM4FR0	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
ELSG	LIGHT-SIGNAL	W6LC4BW	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	LC CONTROLLOR
ELSG	LIGHT-SIGNAL	W6LM4BW	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	LCM CONTROLR
ELSG	LIGHT-SIGNAL	W6LM4S+	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	LCM CONTROLR
EL0	LIGHT-120V AVAILABLE	W6LM4CH	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BELT CONTRLR

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
EL1	LIGHT-120V AVAILABLE	W6LM4FR1	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL2	LIGHT-120V AVAILABLE	W6LM4FR2	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL24	LIGHT-24V AVAILABLE	W6LM4CH	09J060A24	LAMP 1/2" AMB IDI #1090QC3-28V	BELT CONTRLR
EL3	LIGHT-120V AVAILABLE	W6LM4FR3	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL4	LIGHT-120V AVAILABLE	W6LM4FR4	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL5	LIGHT-120V AVAILABLE	W6LM4FR5	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL6	LIGHT-120V AVAILABLE	W6LM4FR6	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
EL7	LIGHT-120V AVAILABLE	W6LM4FR7	09J060G37	LAMP 1/2" GRN 125V IDI 1052QC5	BELT CONTRLR
ES	**>>POWER SUPPLY-ELECTRONIC**				
ESPS	POWER SUPPLY-MICROPROCESSOR	W6LC4BW	08PSS3401T	30 WATT POWER SUPPLY TESTED	LC CONTROLLER
ESPS	POWER SUPPLY-MICROPROCESSOR	W6LM4BW	08PSS3401T	30 WATT POWER SUPPLY TESTED	LCM CONTROLR
ESPS3	POWER SUPPLY-120VAC TO 24VDC	W6LM4BW	08PSL1B224	PWR SUP 100-240VAC IN 24VDC OUT	LCM CONTROLR
ET	**>>THERMAL OVERLOAD DEVICES**				
ETB	OVERLOAD-TYP BELT MOTOR	W6LM4MT	09F025SA	OL RELAY 3P SZ1 AQD #9065-SEQ5	BELT CTR BOX
KB	**>>KEYBOARD-ELECTRONIC**				
KBD	KEYBOARD-MICROPROCESSOR	W6LM4KB	EC61KPBB	ASSY:ALPHA-NUM BELT BX KEYBD	LCM CONTROLR
MT	**>>MOTORS**				
MTB	MOTOR-TYP BELT	W6LM4MT	MESSAGE SO	SEE SPECIFIC COMPONENT+NAMEPLATE	BELT SIDE
SH	**>>SWITCH-HAND OPERATED**				
SHAD	SWITCH-BELT0 ALLOWED TO DISC	W6LM4FR0	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT1 ALLOWED TO DISC	W6LM4FR1	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT2 ALLOWED TO DISC	W6LM4FR2	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT3 ALLOWED TO DISC	W6LM4FR3	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT4 ALLOWED TO DISC	W6LM4FR4	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT5 ALLOWED TO DISC	W6LM4FR5	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT6 ALLOWED TO DISC	W6LM4FR6	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHAD	SWITCH-BELT7 ALLOWED TO DISC	W6LM4FR7	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 0 ALLOWED TO LOAD	W6LM4FR0	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 1 ALLOWED TO LOAD	W6LM4FR1	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 2 ALLOWED TO LOAD	W6LM4FR2	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 3 ALLOWED TO LOAD	W6LM4FR3	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 4 ALLOWED TO LOAD	W6LM4FR4	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHDT	SWITCH-BELT 5 ALLOWED TO LOAD	W6LM4FR5	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
SHDT	SWITCH-BELT 6 ALLOWED TO LOAD	W6LM4FR6	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	BELT CONTRLR
SHDT	SWITCH-BELT 7 ALLOWED TO LOAD	W6LM4FR7	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	BELT CONTRLR
SHMD	SWITCH-MOTOR DISCONNECT	W6LC4BW	09N042203	ROTARY DISCON 10A 600V 2POS 4P	LC BELT
SHMD	SWITCH-MOTOR DISCONNECT	W6LM4BW	09N042203	ROTARY DISCON 10A 600V 2POS 4P	LC BELT
SHMD	SWITCH-TYP BELT MOTOR	W6LM4MT	09N042203	ROTARY DISCON 10A 600V 2POS 4P	BELT CTR BOX
SHMD	SWITCH-MOTOR DISCONNECT	W6LM4S+	09N042203	ROTARY DISCON 10A 600V 2POS 4P	BELT SIDE
SHPE1	SWITCH-EMERGENCY PULL CORD	W6LC4BW	09R014A	MINI-SW SPDT STAKON #V15G1C26K	LC BELT SIDE
SHPE1	SWITCH-EMERGENCY PULL CORD	W6LM4BW	09R014A	MINI-SW SPDT STAKON #V15G1C26K	LC BELT SIDE
SHPE1	SWITCH-EMERGENCY PULL CORD	W6LM4S+	09R014A	MINI-SW SPDT STAKON #V15G1C26K	BELT SIDE
SHPE1	SWITCH-EMERGENCY PULL CORD	W6LM4CH	09R014A	MINI-SW SPDT STAKON #V15G1C26K	BELT SIDE
SHPE2	SWITCH-EMERGENCY PULL CORD	W6LC4BW	09R014A	MINI-SW SPDT STAKON #V15G1C26K	LC BELT SIDE
SHPE2	SWITCH-EMERGENCY PULL CORD	W6LM4BW	09R014A	MINI-SW SPDT STAKON #V15G1C26K	LC BELT SIDE
SHPE2	SWITCH-EMERGENCY PULL CORD	W6LM4S+	09R014A	MINI-SW SPDT STAKON #V15G1C26K	BELT SIDE
SHPE2	SWITCH-EMERGENCY PULL CORD	W6LM4CH	09R014A	MINI-SW SPDT STAKON #V15G1C26K	BELT SIDE
SHS+	SWITCH-START	W6LC4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LC CONTROLLER
SHS+	SWITCH-START	W6LM4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LCM CONTROLR
SHS+	SWITCH-START	W6LM4S+	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	LCM CONTROLR
SHSG	SWITCH-SIGNAL CANCEL	W6LC4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LC CONTROLLER
SHSG	SWITCH-SIGNAL CANCEL	W6LM4BW	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	LCM CONTROLR
SHSG	SWITCH-SIGNAL CANCEL	W6LM4S+	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LCM CONTROLR
SHSMA	SWITCH-MASTER SWITCH	W6LC4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LC CONTROLLER
SHSMA	SWITCH-MASTER SWITCH	W6LM4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LCM CONTROLR
SHSMA	SWITCH-MASTER SWITCH	W6LM4S+	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LCM CONTROLR
SHSO	SWITCH-STOP	W6LC4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LC CONTROLLER
SHSO	SWITCH-STOP	W6LM4BW	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	LCM CONTROLR
SHSO	SWITCH-STOP	W6LM4S+	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	LCM CONTROLR
SK	**>>SWITCH-KEYLOCK**				
SKPR	SWITCH-PROGRAM/RUN	W6LC4BW	09N127C	KEYSW SPST 7A120VAC SCREW TERM	LC CONTROLLER
SKPR	SWITCH-PROGRAM/RUN	W6LM4BW	09N127C	KEYSW SPST 7A120VAC SCREW TERM	LCM CONTROLR
SKPR	SWITCH-PROGRAM/RUN	W6LM4S+	09N127C	KEYSW SPST 7A120VAC SCREW TERM	LCM CONTROLR
SM	**>>SWITCH-MECHANICAL OPERATED**				
SMD	SWITCH-DISCHARGE POSITION	W6LM4CHA	09RM01209S	CAPSW 09FT 108DEG ROLLER SILVER	COHORP BOX
SMD	SWITCH-COHORP AT DISCHARGE	W6LM4CHC	09RM01209S	CAPSW 09FT 108DEG ROLLER SILVER	COHORP BOX

COMPONENT PARTS LIST

W6LC4PL/2000476N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
SMH	SWITCH-HOME POSITION	W6LM4CHA	09RM01209S	CAPSW 09FT 108DEG ROLLER SILVER	COHORP BOX
SMH	SWITCH-COHORP IS HOME	W6LM4CHC	09RM01209S	CAPSW 09FT 108DEG ROLLER SILVER	COHORP BOX
VE	**>>VALVE-ELECTRIC OPERATED**				
VECD	VALVE-MOVE COHORP TO DISCHARGE	W6LM4CHA	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	COHORP BOX
VECD	VALVE-MOVE COHORP TO DISCHARGE	W6LM4CHC	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	COHORP BOX
VECH	VALVE-MOVE COHORP HOME	W6LM4CHA	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	COHORP BOX
VECH	VALVE-MOVE COHORP HOME	W6LM4CHC	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	COHORP BOX
VEFD	VALVE-FLAG DOWN	W6LC4BW	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	LC VALVE BOX
VEFD	VALVE-BELT X FLAG DOWN LOAD	W6LM4FD	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	RAIL VALVE BX
VEFE	VALVE-BELT X FLAG DOWN DISC	W6LM4FD	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	RAIL VALVE BX

PELLERIN MILNOR CORPORATION

LIMITED STANDARD WARRANTY

We warrant to the original purchaser that MILNOR machines including electronic hardware/software (hereafter referred to as “equipment”), will be free from defects in material and workmanship for a period of one year from the date of shipment from our factory with no operating hour limitation. This warranty is contingent upon the equipment being installed, operated and serviced as specified in the operating manual supplied with the equipment, and operated under normal conditions by competent operators.

Providing we receive written notification of a warranted defect within 30 days of its discovery, we will – at our option – repair or replace the defective part or parts, FOB our factory. We retain the right to require inspection of the parts claimed defective in our factory prior to repairing or replacing same. We will not be responsible, or in any way liable, for unauthorized repairs or service to our equipment, and this warranty shall be void if the equipment is repaired or altered in any way without MILNOR’s written consent.

Parts which require routine replacement due to normal wear – such as gaskets, contact points, brake and clutch linings and similar parts – are not covered by this warranty, nor are parts damaged by exposure to weather or to chemicals.

We reserve the right to make changes in the design and/or construction of our equipment (including purchased components) without obligation to change any equipment previously supplied.

ANY SALE OR FURNISHING OF ANY EQUIPMENT BY MILNOR IS MADE ONLY UPON THE EXPRESS UNDERSTANDING THAT MILNOR MAKES NO EXPRESSED OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE. MILNOR WILL NOT BE RESPONSIBLE FOR ANY COSTS OR DAMAGES ACTUALLY INCURRED OR REQUIRED AS A RESULT OF: THE FAILURE OF ANY OTHER PERSON OR ENTITY TO PERFORM ITS RESPONSIBILITIES, FIRE OR OTHER HAZARD, ACCIDENT, IMPROPER STORAGE, MISUSE, NEGLECT, POWER OR ENVIRONMENTAL CONTROL MALFUNCTIONS, DAMAGE FROM LIQUIDS, OR ANY OTHER CAUSE BEYOND THE NORMAL RANGE OF USE. REGARDLESS OF HOW CAUSED, IN NO EVENT SHALL MILNOR BE LIABLE FOR SPECIAL, INDIRECT, PUNITIVE, LIQUIDATED, OR CONSEQUENTIAL COSTS OR DAMAGES, OR ANY COSTS OR DAMAGES WHATSOEVER WHICH EXCEED THE PRICE PAID TO MILNOR FOR THE EQUIPMENT IT SELLS OR FURNISHES.

WE NEITHER ASSUME, NOR AUTHORIZE ANY EMPLOYEE OR OTHER PERSON TO ASSUME FOR US, ANY OTHER RESPONSIBILITY AND/OR LIABILITY IN CONNECTION WITH THE SALE OR FURNISHING OF OUR EQUIPMENT TO ANY BUYER.

BMP720097
92732A

How to order repair parts

Repair parts may be ordered either from the authorized dealer who sold you this machine, or directly from the MILNOR factory. In most cases, your dealer will have these parts in stock.

When ordering parts, please be sure to give us the following information:

1. Model and serial number of the machine for which the parts are required
2. Part number
3. Name of the part
4. Quantity needed
5. Method of shipment desired
6. In correspondence regarding motors or electrical controls, please include all nameplate data, including wiring diagram number and the make or manufacturer of the motor or controls.

All parts will be shipped C.O.D. transportation charges collect only.

Please read this manual

It is strongly recommended that you read the installation and operating manual before attempting to install or operate your machine. We suggest that this manual be kept in your business office so that it will not become lost.

PELLERIN MILNOR CORPORATION
P.O. BOX 400, KENNER, LA., 70063-0400, U.S.A.
FAX: Administration 504/468-9307, Engineering 504/469-1849, Service 504/469-9777

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HOW TO USE MILNOR® ELECTRICAL SCHEMATICS

Milnor® electrical schematic manuals contain a ***table of contents/component list*, a set of s*chematic drawings, and a signal routing table.*** These documents are cross referenced and must be used together.

The ***table of contents/components list shows,*** for every component on every schematic in the manual, the *component item number*(explained in detail below), statement of function, parent schematic number, part number, description and electric box location.

The ***schematic drawings*** use symbols for each electro-mechanical component, and indicate the function of each. Integrated circuits are not shown, but the function of each microprocessor input and output is stated. Certain electrical components not pertinent to circuit logic, such as wire connectors, are not represented on the schematic but are shown in the signal routing table. **Most machines (manuals) require several schematics to describe the complete control system *including all available options.* However, this means that there are usually some schematics that do not apply to a specific machine.** Each schematic is devoted to circuits with common functions (e.g., microprocessor inputs, motor contactors). Schematics appear in the manual in alphanumeric order.

The ***signal routing table*** assists in determining wire routing. It identifies each group of conductors in a control system connected with zero resistance. Groups are identified by a two or three character wire number. Each wire belonging to such a group of conductors has that group's wire number printed along the wire insulation. Although there are some exceptions, generally each group of conductors within the entire electrical system for a machine family has its own unique wire number. The signal routing table for the manual lists each wire alphanumerically by wire number and each component/pin number to which *the wire is attached*, including those not shown on the schematics (e.g., wire connectors). Milnor® document MSTS0202BE "HOW TO USE THE SIGNAL ROUTING TABLE" provides more information.

Component Prefix Classifications and Descriptions

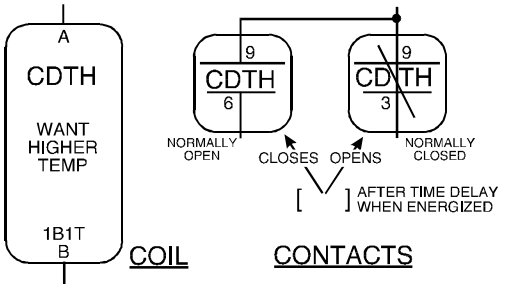
The ***component item numbers*** consist of up to six characters and appear as part of a component's symbol on the schematic. The first two characters indicate the general class of component and the remaining characters are a mnemonic for the function. For example, "CD" is the code for all time delay relays and "SR" stands for safety reset. Thus, CDSR is a time delay relay that serves as a safety reset.

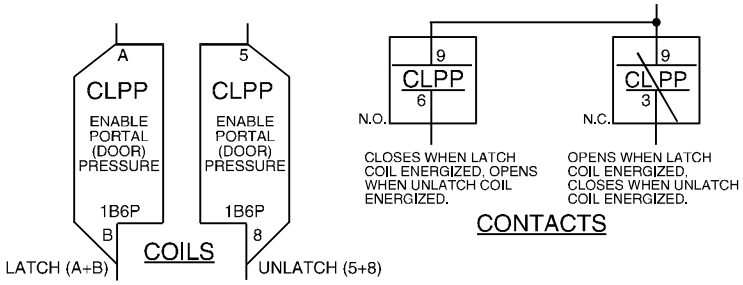
The following are descriptions of the electrical components used in Milnor® machines. Descriptions are in alphabetical order of the component class code (two character prefix).

BA=Printed Circuit Board Insulating substrate on which a thin pattern of copper conductors has been formed to connect discreet electronic components also mounted on the board.

CB=Circuit Breaker Automatic switch that opens an electric circuit in abnormal current conditions (e.g., an overload).

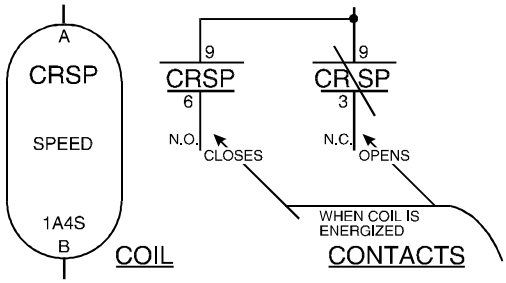
CD=Control, Time Delay Relay A relay whose contacts switch only after a fixed or adjustable delay, once voltage has been applied to its coil. The contacts switch back to normal (de-energized state) immediately when the voltage is removed.

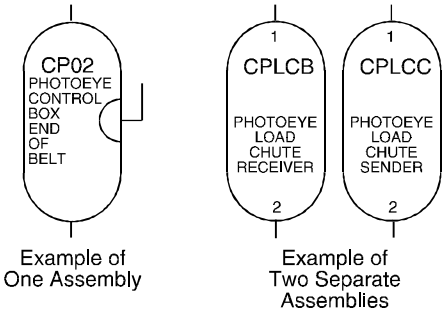




CL=Control, Latch Relay A relay which latches in an energized or set position when operated by one coil (the *latch/set coil*). The relay stays latched, even though coil voltage is removed. The relay releases or unlatches when voltage is applied to a second coil, (the *unlatch/reset coil*).

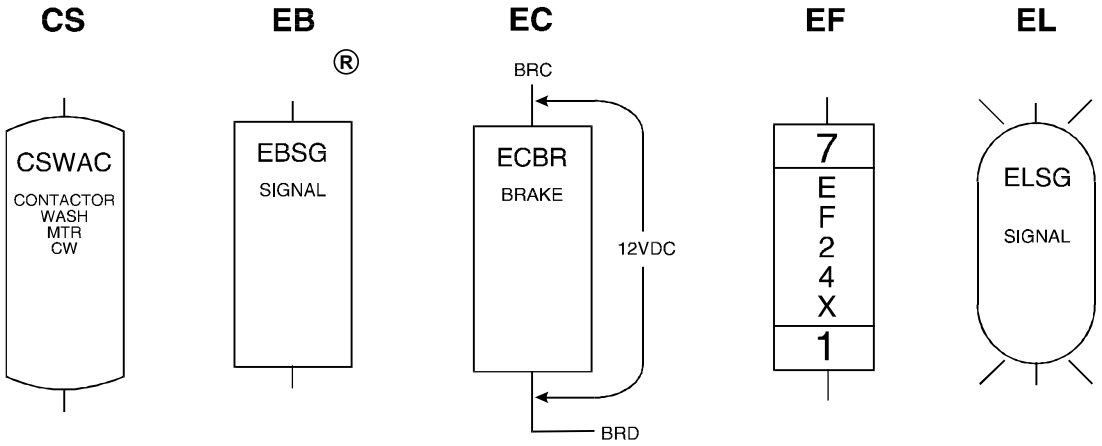
CR=Control, Relay A relay whose contacts switch immediately when voltage is applied to its coil and revert to normal when the voltage is removed.





CP=Control, Photo-Eyes Photo-eyes sense the presence of an object without direct physical contact. Photo-eyes consist of a *transmitter, receiver, and output module.* These components may be housed in one assembly with the transmitter bouncing light off of a reflector to the receiver, or these components can be housed in *two separate assemblies* with the transmitter pointed directly at the receiver.

The photo-eye can be set to turn on its output either when the light beam becomes blocked (dark operate) or when it becomes unblocked (light operate).



CS=Control, Contactor/Motor Starter A relay capable of handling heavier electrical loads, usually a motor.

EB=Electric Buzzer An audible signaling device.

EC=Electric Clutch A clutch consists of a coil and a rotor. The rotor has two separate rotating plates. These plates are free to rotate independent of each other until the coil is energized. Once energized the two plates turn as one.

ED=Electronic Display A visual presentation of data, such as an LCD (liquid crystal display), LED (light emitting diode) display, or VFD (vacuum florescent display).

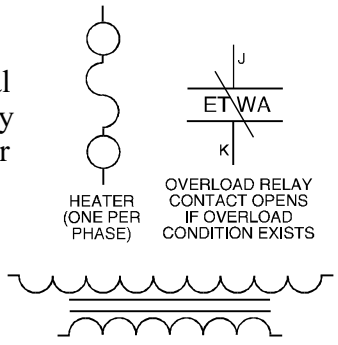
EF=Electric Fuse A fuse is an over-current safety device with a circuit opening fusible member which is heated and severed by the passage of over-current through it.

EL=Electric Light Indicator lights may be either incandescent or fluorescent.

EM=Electro Magnet Solenoid A device consisting of a core surrounded by a wire coil through which an electric current is passed. While current is flowing, iron is attracted to the core (e.g., a pinch tube drain valve solenoid).

ES=Electronic Power Supply A device that converts AC (altemating current) to filtered and regulated DC (direct current). The input voltage to the power supply is usually 120 or 240 VAC . The output is +5, +12, and -12 VDC.

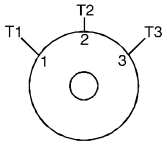
ET=Thermal Overload A safety device designed to protect a motor. A thermal overload consists of an overload block, heaters, and an auxiliary contact. The auxiliary contact is normally installed in a safety (three-wire) circuit that stops power to the motor contactor coil when a motor overload occurs.



EX=Electrical Transformer A device that transfers electrical energy from one isolated circuit to another, often raising or lowering the voltage in the process.

KB=Keyboard Device similar to a typewriter for making entries to a computer.

MN=Electronic Monitor (CRT) A cathode ray tube used for visual presentation of data.



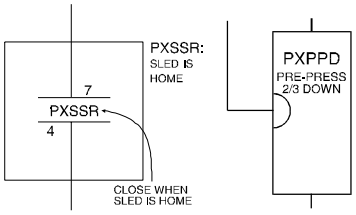
MR=Motors Electro-mechanical device that converts electrical energy into mechanical energy.

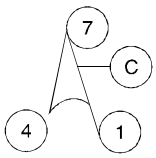
MV=Motor (Variable Speed) Inverter To vary the speed of an AC motor, the volts to frequency ratio must be kept constant. The motor will overheat if this ratio is not maintained.

The motor variable speed inverter converts three phase AC to DC. The inverter then uses this DC voltage to generate AC at the proper voltage and frequency for the commanded speed.

NOTE: Switch symbols used in the schematics and described below always depict the switch in its unactuated state.

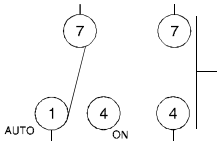
PX=Proximity Switch A device which reacts to the proximity of an target without physical contact or connection. The actuator or target causes a change in the inductance of the proximity switch which causes the switch to operate. Proximity switches can be two-wire (AC) or three-wire (DC) devices.

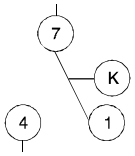




SC=Switch, Cam Operated A switch in which the electrical contacts are opened and/or closed by the mechanical action of a cam(s). Applications include 35-50 pound timer operated machines, autospot, timer reversing motor assembly, and some balancing systems.

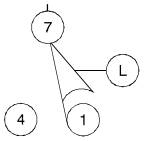
SH=Switch, Hand Operated A switch that is manually operated (e.g., *Start button*, *Master switch*, etc.).



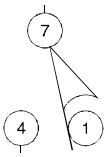


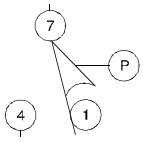
SK=Switch, Key Lock A switch that requires a key to operate . This prevents unauthorized personnel from gaining access to certain functions (e.g., the *Program Menu*).

SL=Switch, Level Operated A switch connected to a float that causes the switch to open and close as the level changes.



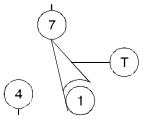
SM=Switch, Mechanically Operated A switch that is mechanically operated by a part of or the motion of the machine (e.g., door closed switch, tilt limit switches, etc.)





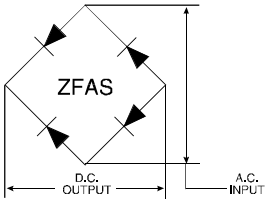
SP=Switch, Pressure Operated A switch consisting of a diaphragm that pushes against a switch actuator.

ST=Switch, Temperature Operated A switch that is actuated at a preset temperature (e.g., dryer safety probes) or has adjustable set points (e.g., Motometers or Combistats).



TB=Terminal Board A strip or block for attaching or terminating wires.

VE=Valve, Electric Operated A valve operated by an electric coil to control the flow of fluid. The fluid can be air, water or hydraulics.

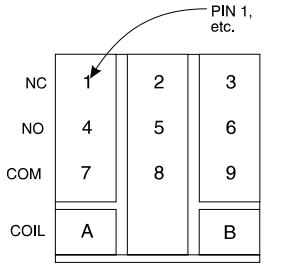


ZF=Rectifier A solid state device that converts alternating current to direct current.

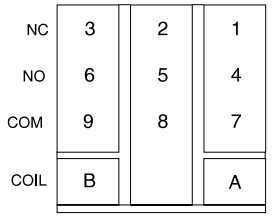
WC=Wiring Connector A coupling device for joining two cables or connecting a cable to an electronic circuit or piece of equipment. Connectors are male or female, according to whether they plug into or receive the mating connector.

Component Terminal Numbering

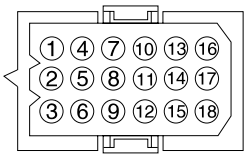
NOTE: Numbers shown usually appear on the component.



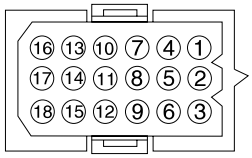
11 PIN PLUG IN RELAY
(PIN END VIEW)



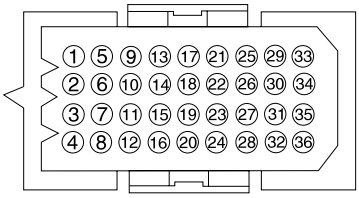
11 PIN RELAY BASE
("PLUG- IN" SIDE)



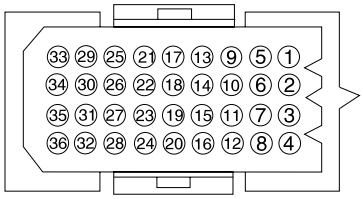
18 PIN (R)



18 PIN (P)

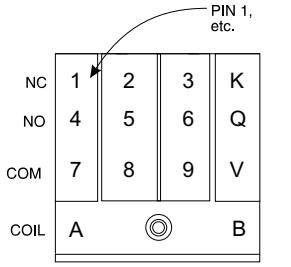


36 PIN (R)

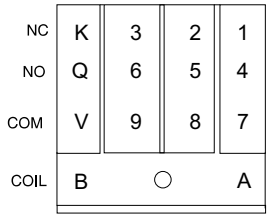


36 PIN (P)

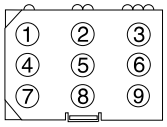
AMP CONNECTOR PIN LOCATIONS
(Viewed from mating side of connector)



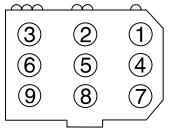
14 PIN PLUG IN RELAY
(PIN END VIEW)



14 PIN RELAY BASE
("PLUG- IN" SIDE)



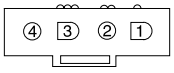
9 PIN (R)



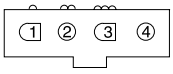
9 PIN (P)

2 PIN (R)

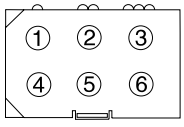
2 PIN (P)



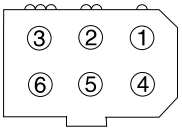
4 PIN (P)



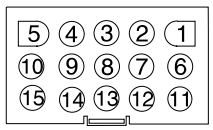
4 PIN (R)



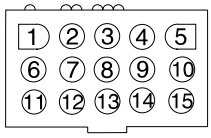
6 PIN (R)



6 PIN (P)

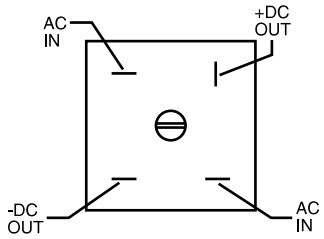


15 PIN (P)

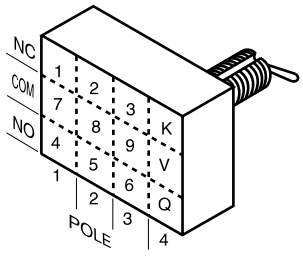


15 PIN (R)

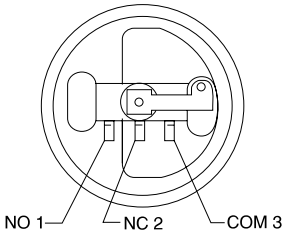
MOLEX CONNECTOR PIN LOCATIONS
(Viewed from mating side of connector)



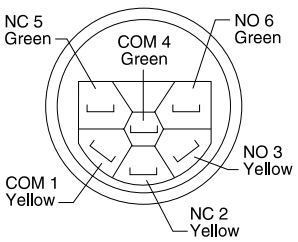
BRIDGE RECTIFIER



TOGGLE SWITCH

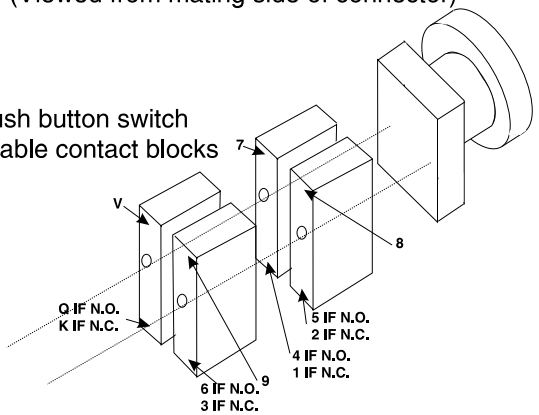


PRESSURE SWITCH



TEMPERATURE CONTROLLER
(Stork Combistat)

Rotary or push button switch
with replaceable contact blocks



Features of Milnor® Electrical Schematics

Document W6DRYGS+A shown on the next page, is part of an actual schematic for the Milnor® Gas Dryer. For the purposes of this instruction, the schematic is shown gray and explanations of the items on the schematic are shown black.

The item numbers below correspond to the circled item numbers shown on the drawing.

① The first six characters of the *drawing number (W6DRYG)* indicate that this is a *wiring diagram (W)*, identify the *generation of controls (6)*, and identify the *type of machine (DRYG*=Gas Dryer). These characters appear in the drawing number of every schematic in the set.

The characters following the first six are unique to each drawing. The two characters identified as the *page number* are an abbreviation for the function performed by the depicted circuitry (S+=three-wire circuit) and establish the order in which the schematic occurs in the manual (schematics are arranged in alpha-numeric order in the manual).

Whenever circuitry changes are significant enough to warrant publishing a new schematic drawing, the new drawing number will be the same as the old except for the major revision letter (*A* in the example).

② Included in the drawing title are the class of control system, the title of this circuit, and the circuit voltage.

③ Line numbers are provided along the bottom edge of the drawing. These permit service personnel in the field and at the Milnor® factory to quickly relate circuit locations when discussing troubleshooting over the phone. Page and line numbers are referenced on the drawing as explained in items five and six below.

④ General functions of the circuit or portions thereof are stated across the top edge of the drawing.

⑤ Relay contacts show the page and line number on which the relay coil may be found. This is the type of cross referencing most frequently used in troubleshooting.

⑥ Relay coils show the page and line number on which its associated contacts are located.

⑦ Relay contacts and relay coils show the physical location of the relay if mounted on a tray..

⑧ The designation *MTA* applies to electronic circuit board connections. Typically, a control system will contain several different types of circuit boards and one or more boards of each type. A numerical suffix identifies the board type and a numerical prefix identifies which one of several boards of a given type is being depicted. For example, the designation *1MTA5* identifies this as the first I/O board (8 output, 16 input board) in the control system. As shown on the drawing, a pin number follows the board number, separated by a dash. Thus, *1MTA5-9* is pin 9 on this board. The numerical designations for board types vary from one control system to another. Some of the board types commonly encountered on the Mark II washer-extractor control and their designations are as follows:

MTA1-MTA6 = 8 output, 16 input (8/16) boards.

MTA11-MTA16 = 16 output boards

MTA30-MTA40 = processor boards

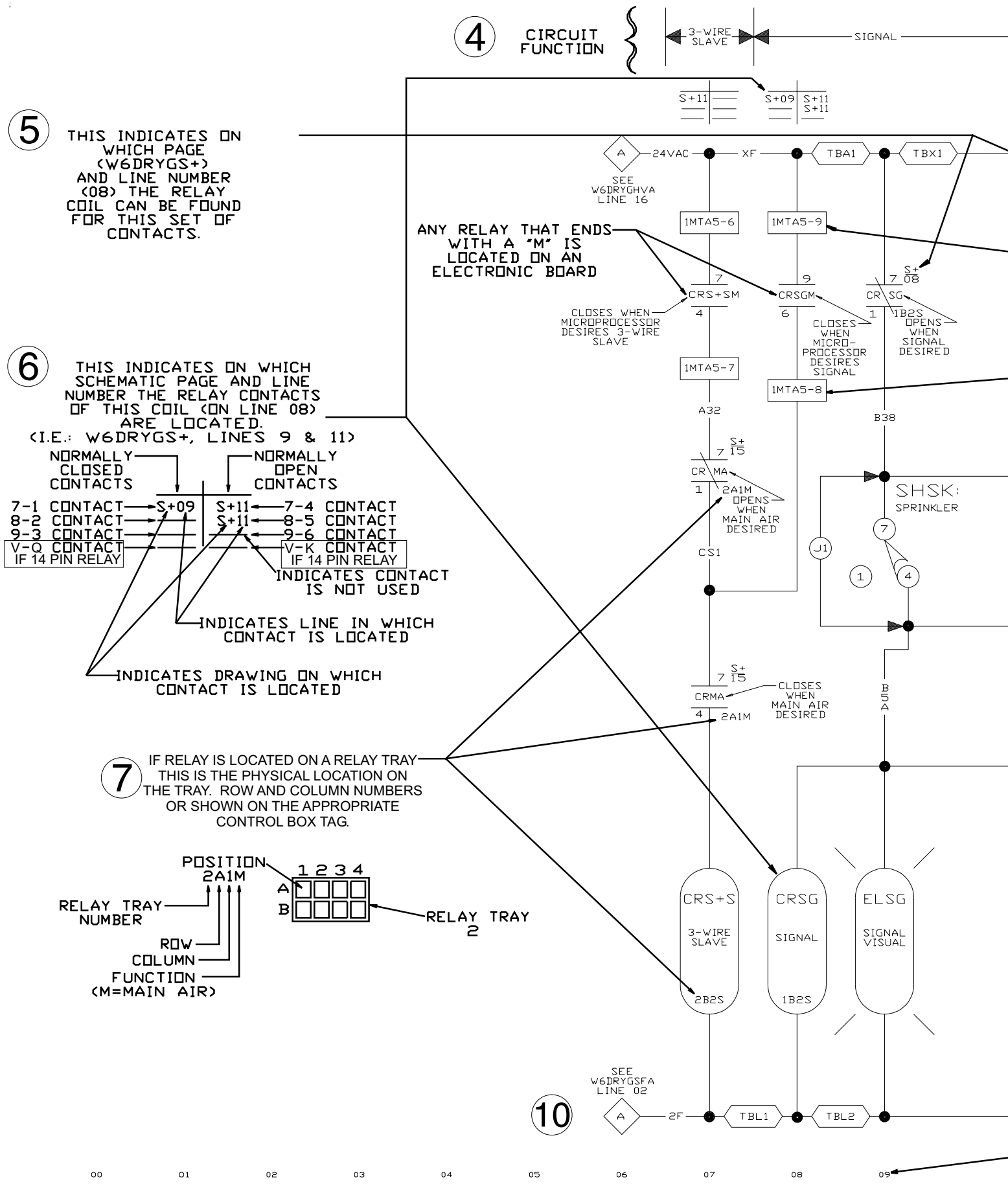
MTA41-MTA43 = digital to analog (D/A) boards

MTA51-MTA56 = analog to digital (A/D) boards

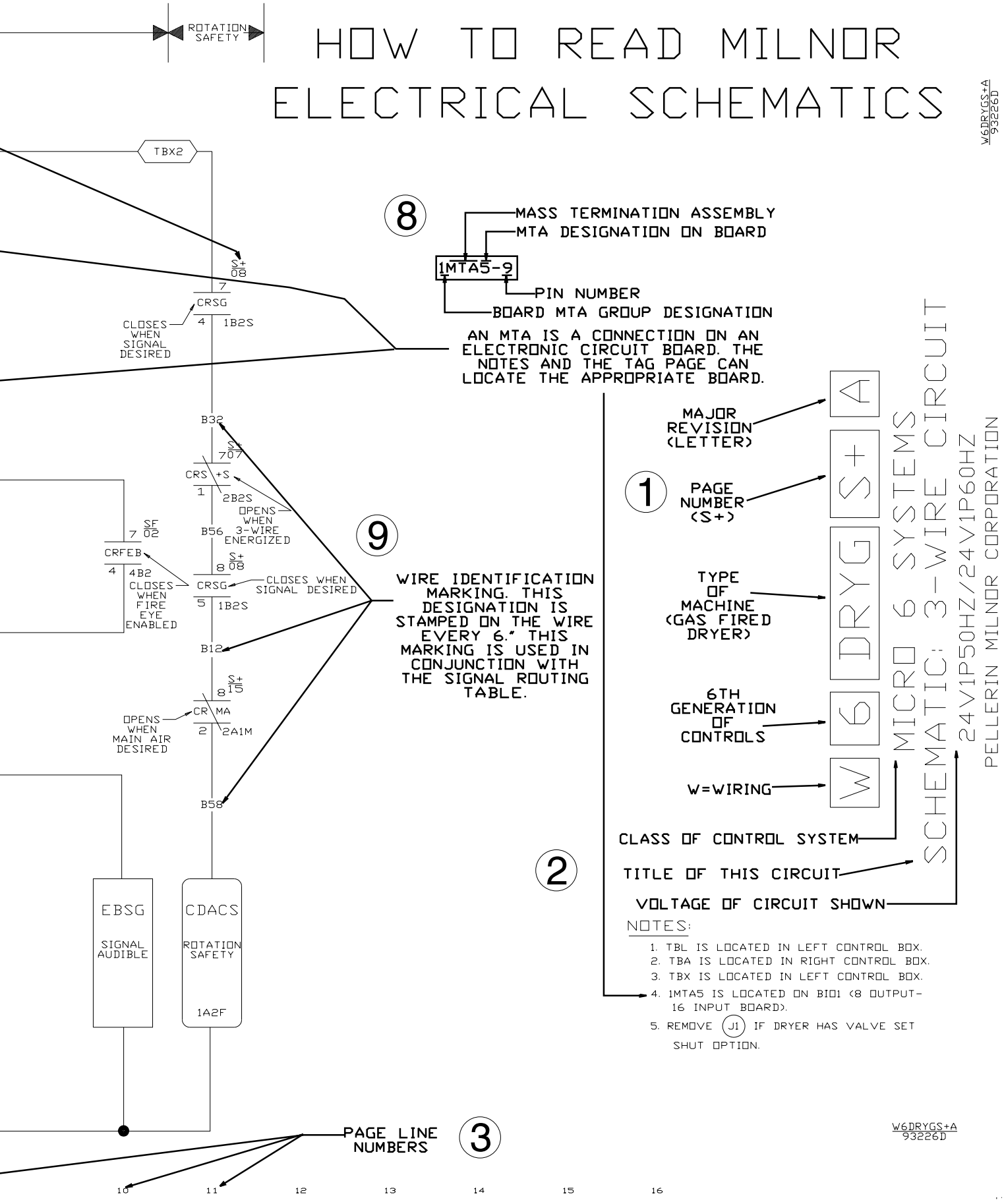
The complete listing of the boards utilized in a given control system can be found in the component list for that system.

⑨ The wire numbers, as described in the explanation of the signal routing table at the beginning of this section, are shown at appropriate locations on the schematic drawing.

⑩ Where diamond symbols appear at the end of a conductor, these are match points for continuing the schematic on another drawing. The page and line number that continues the circuit is printed adjacent to the diamond symbol. Where more than one match point appears on the referenced page, match diamonds containing corresponding letters.


4
CIRCUIT FUNCTION
3-WIRE SLAVE
SIGNAL
5
THIS INDICATES ON WHICH PAGE (W6DRYGS+) AND LINE NUMBER (08) THE RELAY COIL CAN BE FOUND FOR THIS SET OF CONTACTS.
S+11
S+09
S+11
S+11
A
24VAC
XF
TBA1
TBX1
SEE W6DRYGHVA LINE 16
1MTA5-6
1MTA5-9
ANY RELAY THAT ENDS WITH A "M" IS LOCATED ON AN ELECTRONIC BOARD
7
CRS+SM
4
CLOSES WHEN MICROPROCESSOR DESIRES 3-WIRE SLAVE
9
CRSGM
6
CLOSES WHEN MICRO-PROCESSOR DESIRES SIGNAL
7
S+08
CR SG
1
1B2S
OPENS WHEN SIGNAL DESIRED
1MTA5-7
1MTA5-8
6
THIS INDICATES ON WHICH SCHEMATIC PAGE AND LINE NUMBER THE RELAY CONTACTS OF THIS COIL (ON LINE 08) ARE LOCATED.
(I.E.: W6DRYGS+, LINES 9 & 11)
A32
B38
NORMALLY CLOSED CONTACTS
NORMALLY OPEN CONTACTS
7-1 CONTACT
8-2 CONTACT
9-3 CONTACT
V-Q CONTACT
IF 14 PIN RELAY
S+09
S+11
S+11
7-4 CONTACT
8-5 CONTACT
9-6 CONTACT
V-K CONTACT
IF 14 PIN RELAY
INDICATES CONTACT IS NOT USED
INDICATES LINE IN WHICH CONTACT IS LOCATED
INDICATES DRAWING ON WHICH CONTACT IS LOCATED
7
S+15
CR MA
1
2A1M
OPENS WHEN MAIN AIR DESIRED
CS1
SHSK
SPRINKLER
J1
7
1
4
7
S+15
CRMA
4
2A1M
CLOSES WHEN MAIN AIR DESIRED
B5A
7
IF RELAY IS LOCATED ON A RELAY TRAY THIS IS THE PHYSICAL LOCATION ON THE TRAY. ROW AND COLUMN NUMBERS OR SHOWN ON THE APPROPRIATE CONTROL BOX TAG.
POSITION
2A1M
1 2 3 4
A
B
RELAY TRAY NUMBER
RELAY TRAY 2
ROW
COLUMN
FUNCTION (M=MAIN AIR)
CRS+S
3-WIRE SLAVE
2B2S
CRSG
SIGNAL
1B2S
ELSG
SIGNAL VISUAL
SEE W6DRYGSFA LINE 02
10
A
2F
TBL1
TBL2
00
01
02
03
04
05
06
07
08
09

HOW TO READ MILNOR ELECTRICAL SCHEMATICS



On-Site Control Connections for Device Master, PC Device Master, Linear Costa, and Linear Costa Master

This document applies to the following controllers when used to control Milnor flat bed conveyors:

- **Device Master and PC Device Master**—Both of these controllers permit up to four, or up to eight devices (depending on the capacity specified) to be independently controlled and used for any of several specialized purposes (see Note 1). Device Master works with the older Miltrac system in a central controls mounting panel (belt box). PC Device Master works with newer MultiTrac systems.
- **Liner Costa Controller**—permits a single conveyor to be used as a multi-cake storage device (see Note 2).
- **Linear Costa Master Controller**—permits up to four, or up to eight conveyors (depending on the capacity specified) to be independently controlled and used as multi-cake storage devices (see Note 2).

Note 1: Device Master and PC Device Master provide for seven device types (seven specialized functions). Five apply to conveyors. One—the "non-storage belt" type—can apply to either a conveyor or a phantom belt. In the latter case, no physical connections are required because there is no physical device. The remaining function, called "allied dryer", provides for using allied dryers in a Miltrac or MultiTrac system with greater functionality than a machine-to-machine allied interface would provide. This device type only involves allied interface connections.

Note 2: As of this writing, Linear Costa and Linear Costa Master products specifically for use in MultiTrac systems have not been implemented.

These controllers perform two types of functions that require on-site wiring:

1. Each serves as a machine controller for conveyor belts. In this respect, these controllers are comparable to the microprocessor controller on any machine (except that a single Device Master or Linear Costa Master can act as several controllers—one for each belt they control). But because these controllers are located in a central control cabinet shipped and installed separately from the conveyor(s), the machine functions must be "wired in" on site, as described herein.
2. Because the conveyor(s) can receive from, and discharge to allied (non-Milnor) devices, each controller can communicate with the allied equipment via allied interfaces. Allied interface connections are made on site. Refer to manual MTPALI01 "Allied Interfaces for Milnor Automated Laundering System Machines..." for more information.

Although these controllers communicate with Miltrac, the serial links are normally wired at the factory because all components are housed in the same cabinet. However, the connection procedures are described in document BICCUC01, "On-Site Installation and Troubleshooting of Permanent Serial Communication Cables."

Regardless of the specific purpose a conveyor belt serves, all flat bed conveyors controlled by any of these controllers perform the same basic machine functions: running the belt and detecting, via photo eyes, the presence of goods. Depending on specific purpose and options, a conveyor may also perform specialized functions such as extending and retracting or signaling personnel via load lights.

1. On-Site Control Connections for Device Master, Linear Costa, or Linear Costa Master in a Miltrac™ System [Document BIYCDI02]

In a Miltrac system with the Miltrac controller mounted in a central controls mounting panel (belt box), these controllers are also mounted in the belt box. On-site connections must be made

between the controller box in the belt box and each conveyor. The standard controller-to-conveyor connections, which are the same for all three controllers, are shown in Table 1. Connections for specialized conveyor functions and for allied interfaces are not shown. Refer to the controller schematic and reference manuals, and the system layout drawings for more information.

Table 1: Standard On-Site Control Connections for Device Master, Linear Costa, and Linear Costa Master in Systems With a Miltrac Belt Box

Purpose	Cable Specification	Connection Point		
		In Controller Box		On Milnor Conveyor
		Connector	Pin	Wire (tagged)**
Motor feeds (when motor contactors are in belt box)	One set of four conductors (3-phase wiring plus ground). Each conductor: 14AWG (2.5mm²) with 600VAC insulation	ETOL****	T1	T1
		ETOL****	T2	T2
		ETOL****	T3	T3
		TB2F (ground)	any	yellow/green ground wire
Emergency Stop pull cords	Multi-conductor cable: 18AWG (1.0mm²) with 300VAC color coded insulation. Ground unused wires, one end only.	TBL	1***	Safety switch
		TBL	2***	
24VDC Photo eye power		TB24	any	24VDC
		TB2G (ground)	any	2G
Microprocessor inputs from photo eyes		TB_*	5	Load end phooey input
		TB_*	6	Discharge end phooey input

* Character in third position varies with the (device) as follows: B = belt 0, D = belt 1, E = belt 2, F = belt 3, G = belt 4, H = belt 5, J = belt 6, K = belt 7. Example: TBB is for belt 0.

** Wire-to-wire connections (white cap). Wires are located in one or more junction boxes mounted on the conveyor. Wires are tagged and/or color coded, as indicated.

*** In the controller box, connect the Emergency Stop switches from all conveyors together in series, using wire-to-wire (white cap) connections, then connect the entire series into the Device Master 3-wire circuit at this location. Pulling any pull cord must cause all conveyors to stop functioning until the controller is restarted.

**** The motor contactors/overloads are labeled "belt 0", belt 1", etc.

2. On-Site Control Connections for PC Device Master in a MultiTrac™ System [Document BIYCDI03]

PC Device Master incorporates both a microprocessor controller located in the MultiTrac cabinet and PC Device Master software running on the MultiTrac PC. On-site connections must be made between The Device Master controller in the MultiTrac cabinet and each Device Master-controlled device. The standard connection points for connections between Device Master and a Milnor flat bed conveyor used as a Device Master device are shown in Table 2. Connections for specialized conveyor functions and for the allied dryer device type (which only involves allied interface connections) are not shown. Refer to the Device Master schematic and reference manuals and the system layout drawings for more information.

Table 2: Device Master On-Site Control Connections in MultiTrac Systems

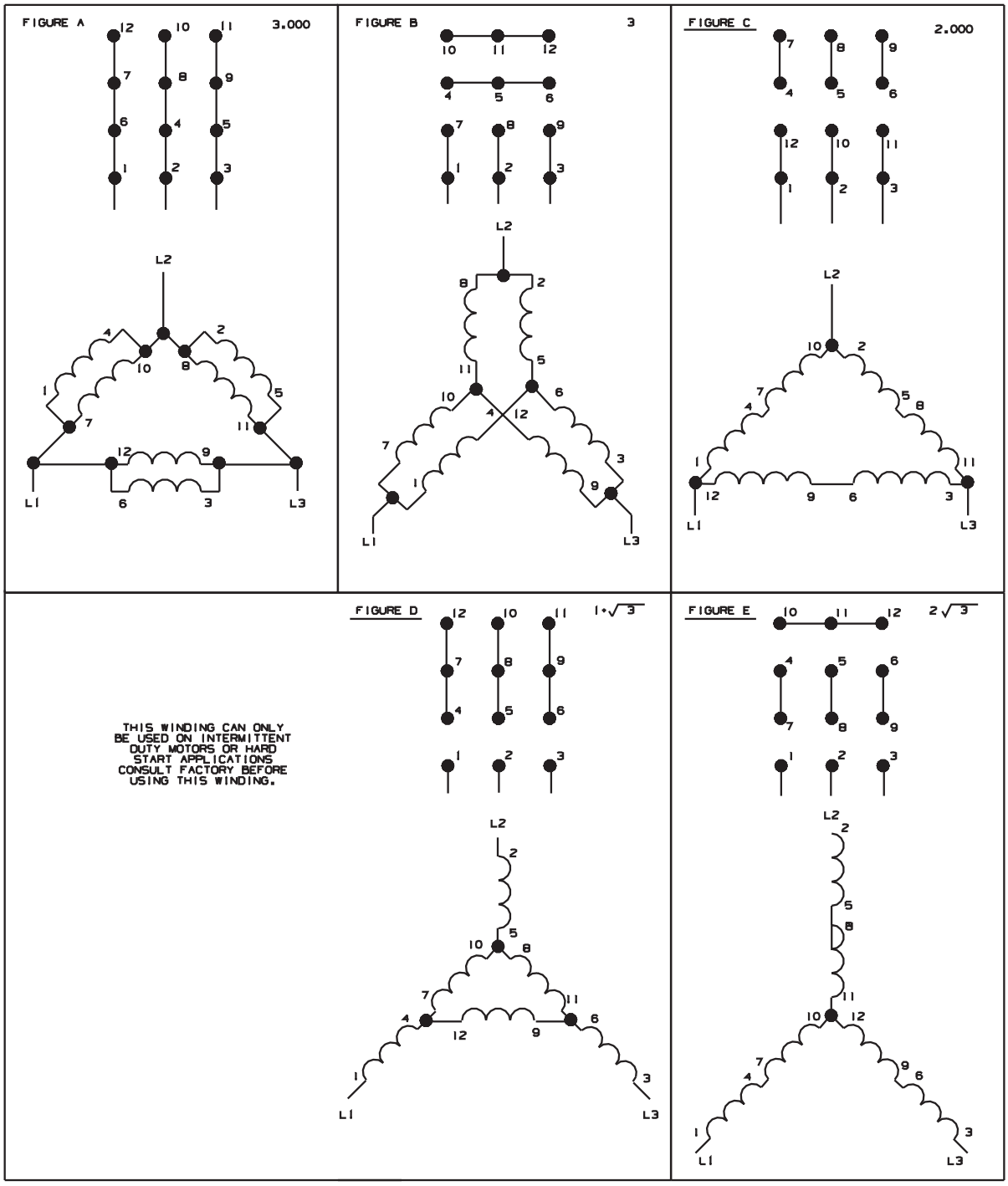
Purpose	Cable Specification	Connection Point			
		On Device Master Controller		Contactor Box On Conveyor	
		Connector	Pin	Connector	Pin
Emergency Stop pull cords	Multi-conductor cable: 18AWG (1.0mm²) with 300VAC color coded insulation. Ground unused wires, one end only.	TBL	1**	TBC	1
		TBL	2**	TBC	2
24VDC Photo eye power		TB24	any	TBC	7
		TB2G (ground)	any	TBC	6
Microprocessor inputs from photo eyes		TB_*	5	TBC	8
		TB_*	6	not implemented	
Microprocessor outputs to reversing contactors		TB_*	3	TBC	5
		TB_*	4	TBC	6
Earth ground		TB2F (ground)	any	TBC	4

* Character in third position varies with the (device) as follows: B = belt 0, D = belt 1, E = belt 2, F = belt 3, G = belt 4, H = belt 5, J = belt 6, K = belt 7. Example: TBB is for belt 0.

** In the Device Master control box, connect the Emergency Stop switches from all conveyors together in series, using wire-to-wire (white cap) connections, then connect the entire series into the Device Master 3-wire circuit at this location. Pulling any pull cord must cause all conveyors to stop functioning until Device Master is restarted.

— End of BIYCDI01 —

FIGURE	ELECTRICAL VALUES	SUFFIXES									
		B		H		M		T		U	
		50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ
A	1.000	208	230			200	220	220	240	200-220	208-240
B	$\sqrt{3}$				208	346	380	380		346-380	380
C	2.000	416	460	220	240	400	440	440	480	400-440	440-480
D	$1+\sqrt{3}$						600				600
E	$2\sqrt{3}$			380							



06 07 08 09 10 11 12 13 14 15 16 17

BMP850029

MOTOR CONNECTION DIAGRAMS

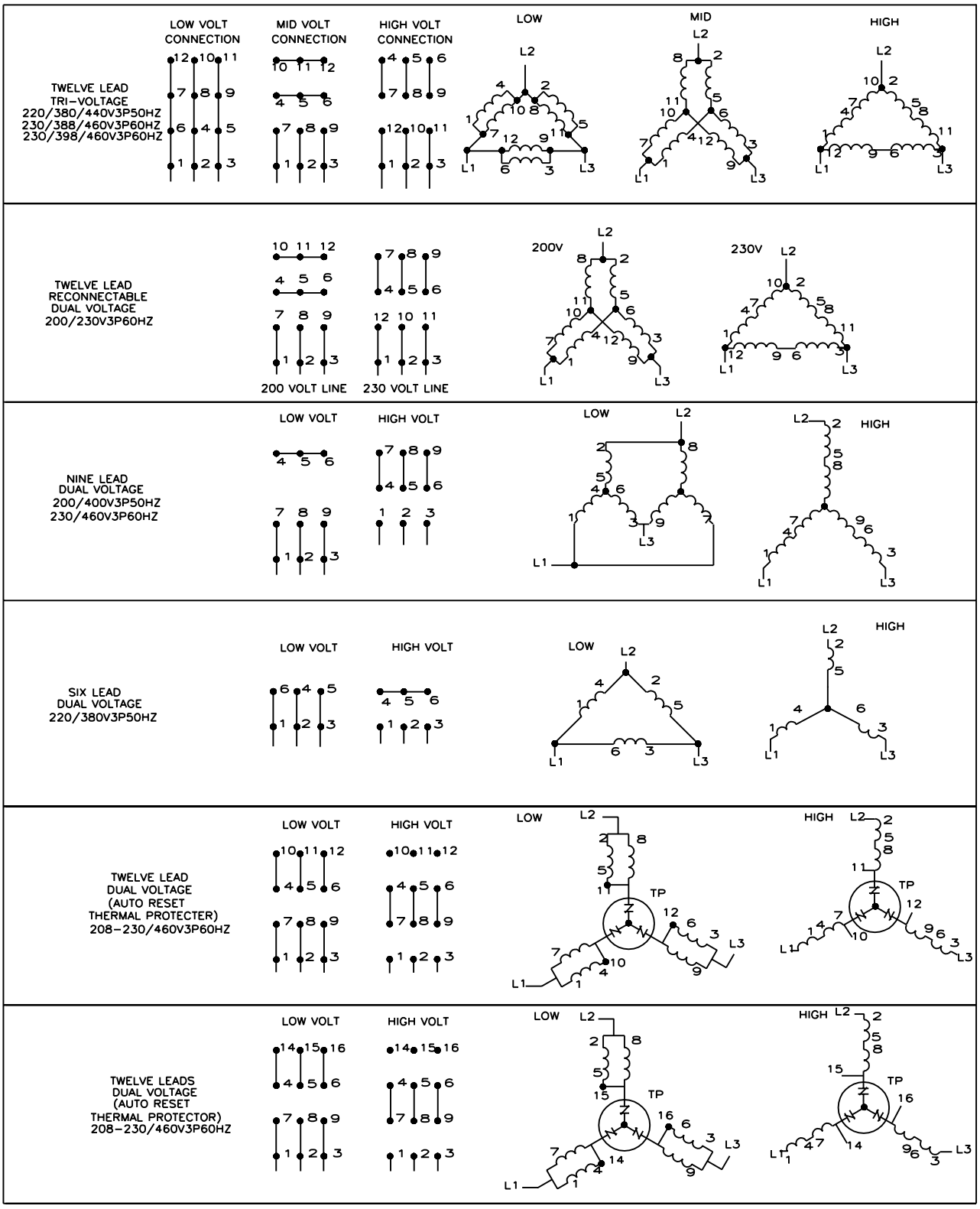
THREE PHASE SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

(ONLY FOR MOTOR SUFFIXES LISTED)

PELLERIN MILNOR CORPORATION

BMP850029
993628

BMP850029
993628



W80008

THREE PHASE
MOTOR CONNECTION DIAGRAMS
SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

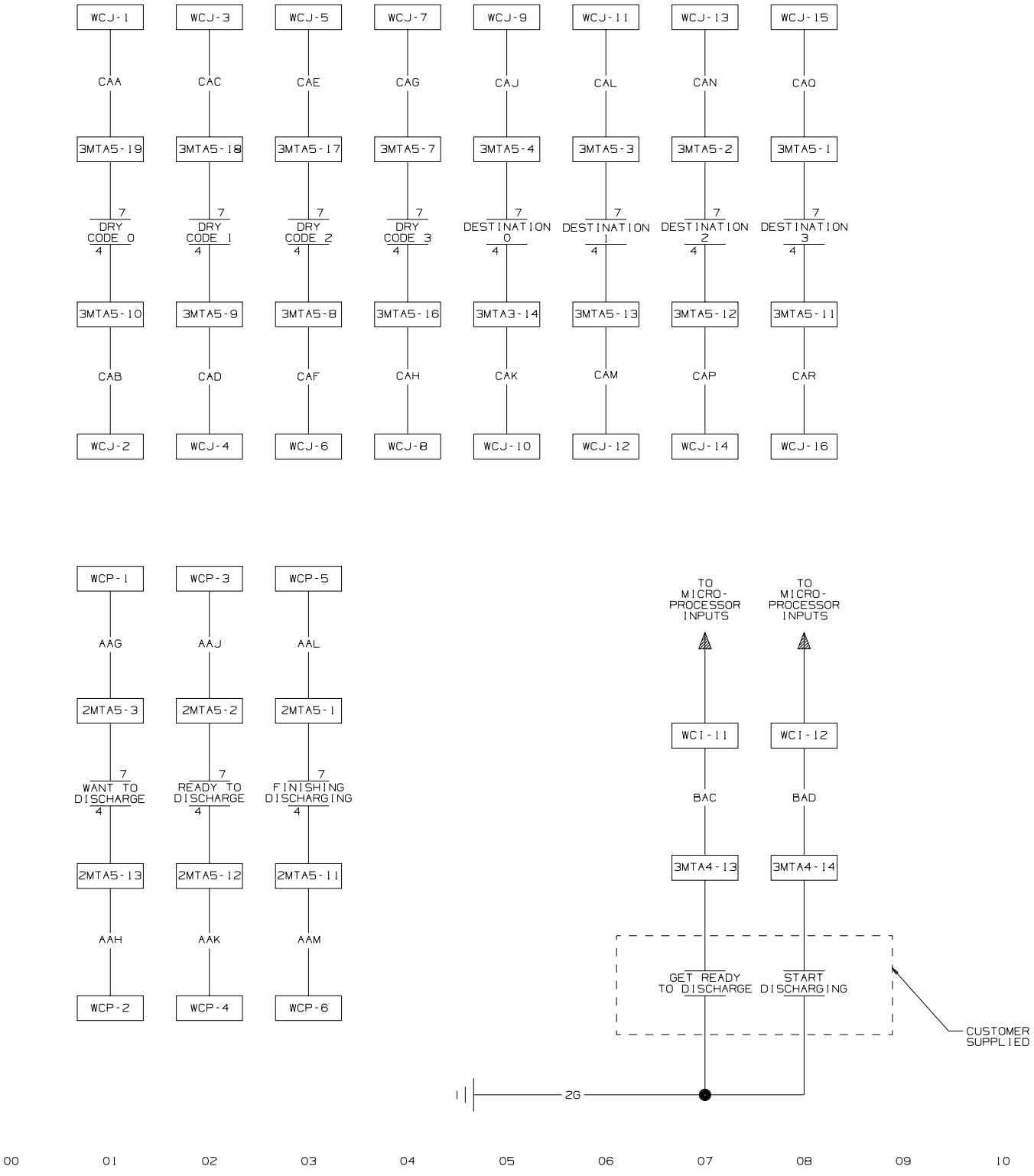
PELLERIN MILNOR CORPORATION

W80008
2001253A

W80008
2001253A

Section 1

Linear Costa Controller Schematics


WCJ-1
WCJ-3
WCJ-5
WCJ-7
WCJ-9
WCJ-11
WCJ-13
WCJ-15
CAA
CAC
CAE
CAG
CAJ
CAL
CAN
CAQ
3MTA5-19
3MTA5-18
3MTA5-17
3MTA5-7
3MTA5-4
3MTA5-3
3MTA5-2
3MTA5-1
7
DRY CODE 0
4
7
DRY CODE 1
4
7
DRY CODE 2
4
7
DRY CODE 3
4
7
DESTINATION 0
4
7
DESTINATION 1
4
7
DESTINATION 2
4
7
DESTINATION 3
4
3MTA5-10
3MTA5-9
3MTA5-8
3MTA5-16
3MTA3-14
3MTA5-13
3MTA5-12
3MTA5-11
CAB
CAD
CAF
CAH
CAK
CAM
CAP
CAR
WCJ-2
WCJ-4
WCJ-6
WCJ-8
WCJ-10
WCJ-12
WCJ-14
WCJ-16
WCP-1
WCP-3
WCP-5
AAG
AAJ
AAL
2MTA5-3
2MTA5-2
2MTA5-1
7
WANT TO DISCHARGE
4
7
READY TO DISCHARGE
4
7
FINISHING DISCHARGING
4
2MTA5-13
2MTA5-12
2MTA5-11
AAH
AAK
AAM
WCP-2
WCP-4
WCP-6
TO MICRO-PROCESSOR INPUTS
TO MICRO-PROCESSOR INPUTS
WCI-11
WCI-12
BAC
BAD
3MTA4-13
3MTA4-14
GET READY TO DISCHARGE
START DISCHARGING
CUSTOMER SUPPLIED
1
2G
00
01
02
03
04
05
06
07
08
09
10

NOTES:

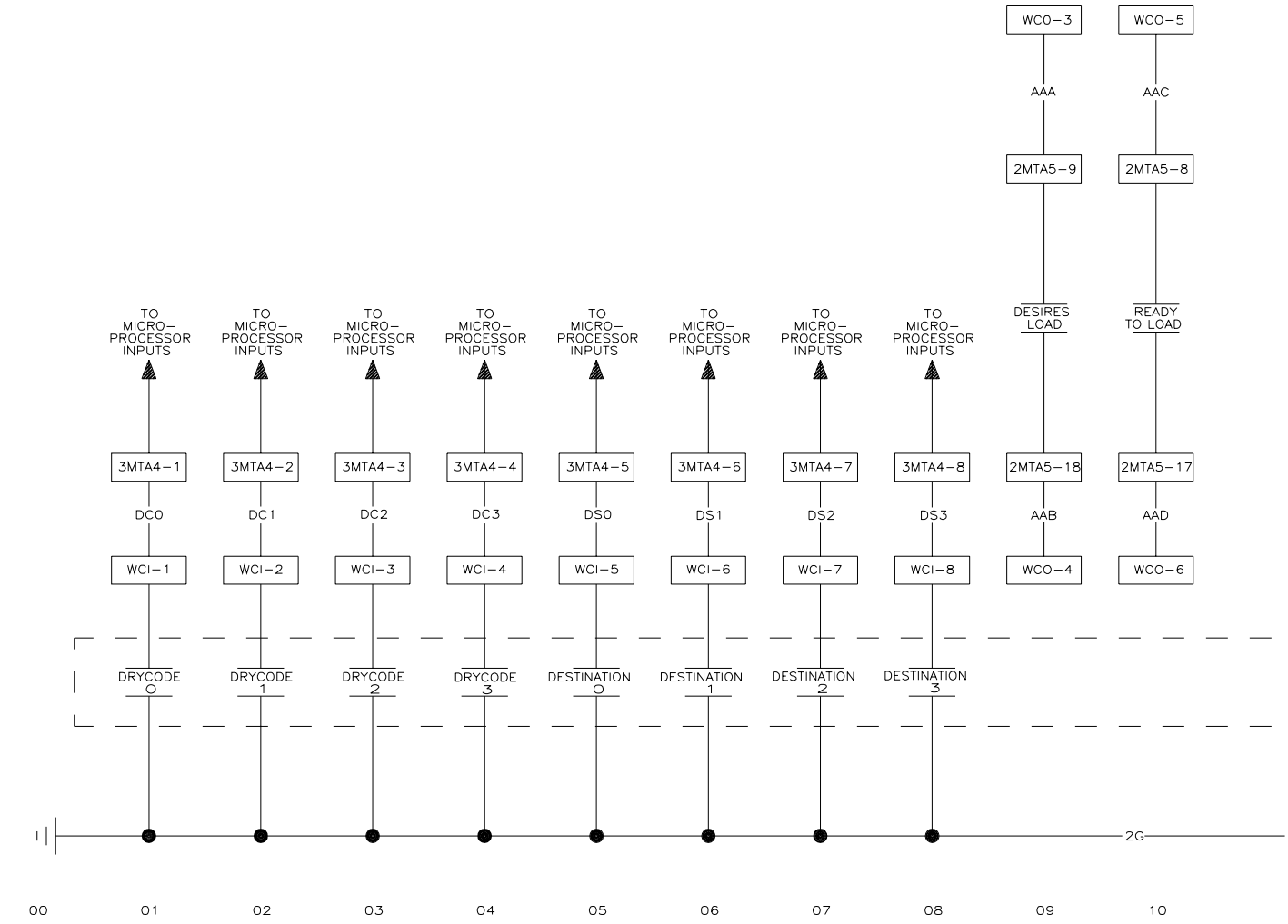
1. SEE W6LCCAL FOR BOARD SETTING.
2. IF THIS IS USED AN A LINEAR COSTA MASTER THEN WCJ AND WCI BECOMES WCJ* AND WCI* WHERE THE * REPRESENTS WHICH BELT.
3. 2MTA AND 3MTA CHANGES TO *MTA WHERE THE * REPRESENTS WHICH BELT AND BOARD.
4. REFER TO SCHEMATIC W6LCMFD.

SCHEMATIC: LINEAR COSTA ALLIED DISCHARGING

W6LC4AD

PELLERIN MILNOR CORPORATION

11 12 13 14 15

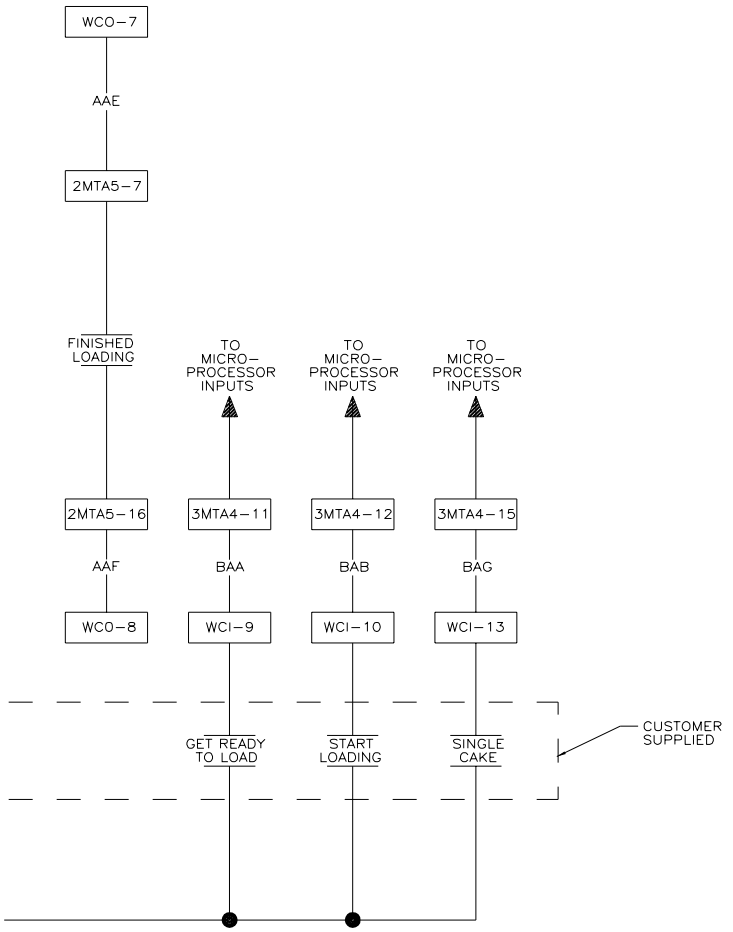


W6LC4AL
2004522B

W6LC4AL

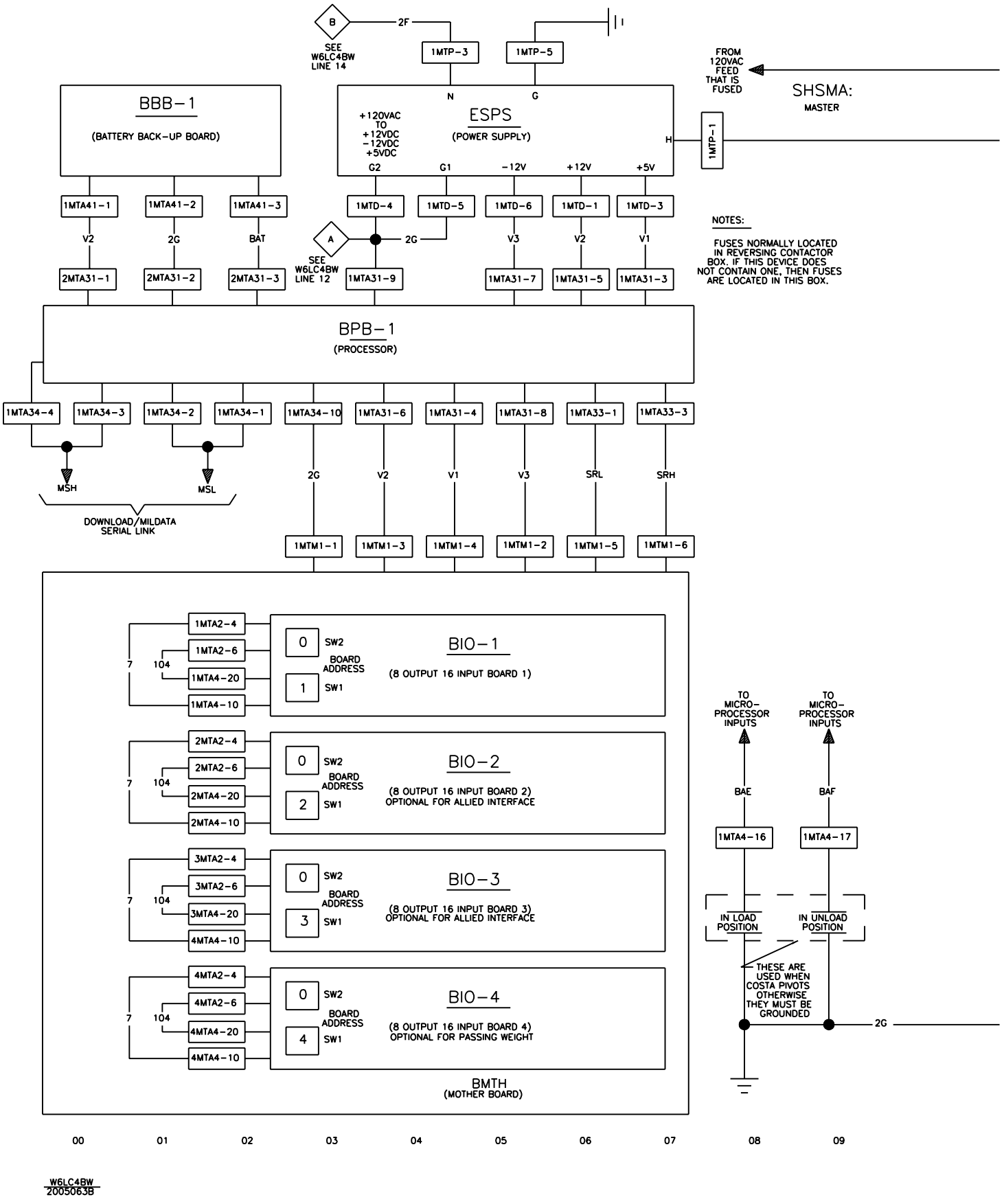
SCHEMATIC: LINEAR COSTA ALLIED LOADING

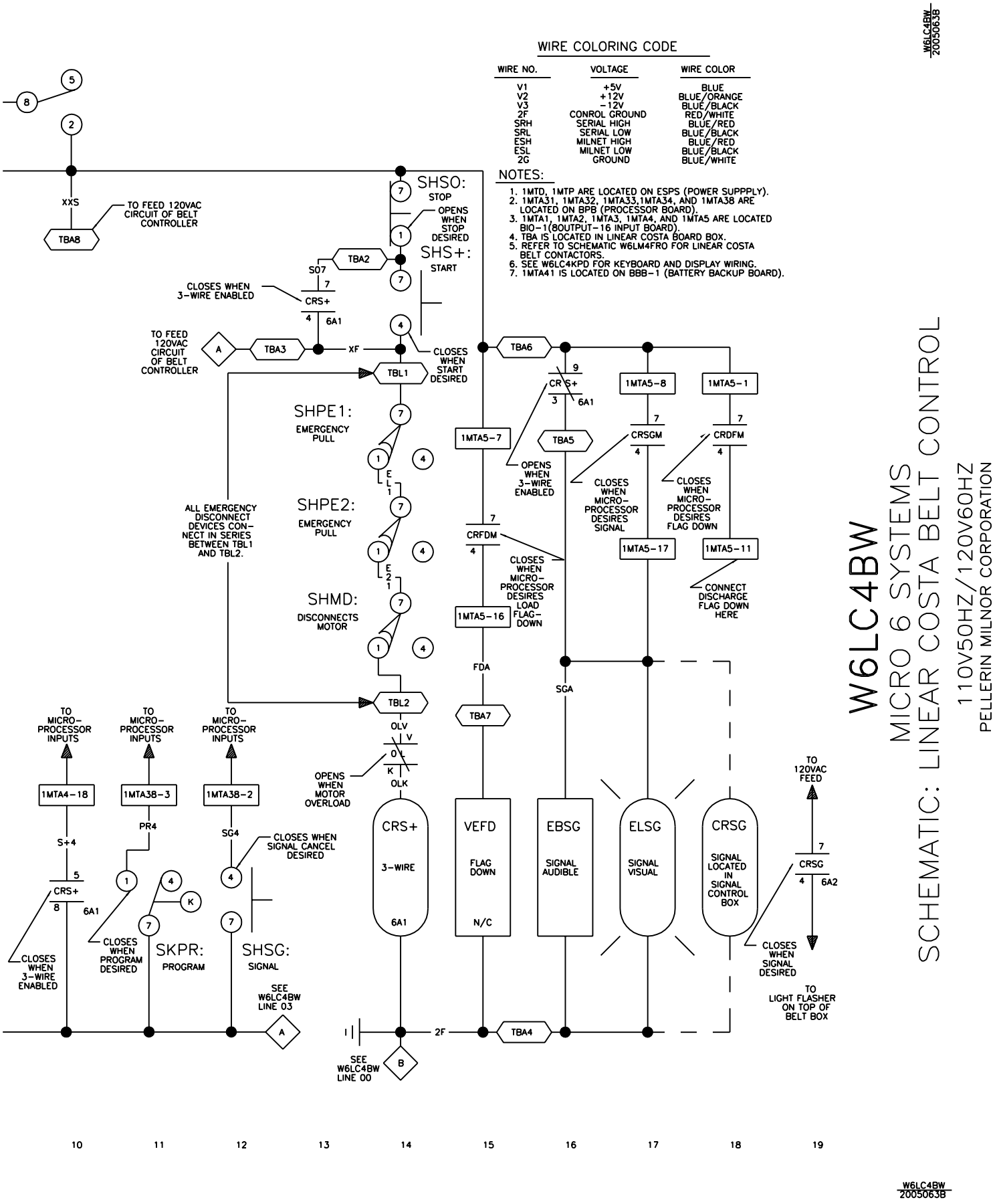
PELLERIN MILNOR CORPORATION

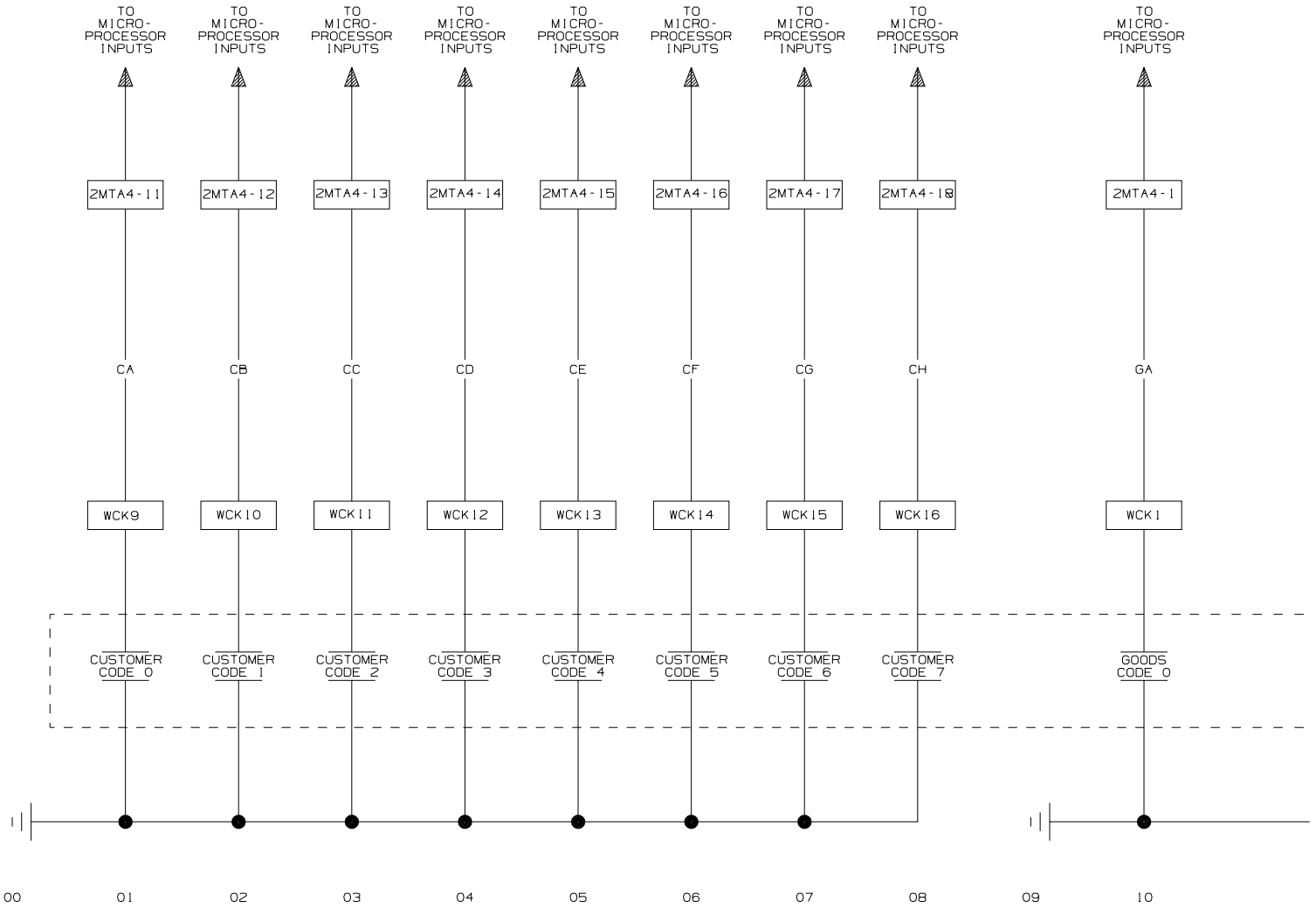


NOTES:

1. WCI = 15 PIN
   WCO = 18 PIN
2. IF THIS IS USED FOR A LINEAR COSTA MASTER THEN WCO AND WCI BECOMES WCI* AND WCO* WHERE THE * REPRESENTS WHICH BELTS.
3. 2MTA AND 3MTA CHANGES TO *MTA WHERE THE * REPRESENTS WHICH BELT AND BOARD.
4. REFER TO SCHEMATIC W6LM4FD


B
SEE W6LC4BW LINE 14
2F
1MTP-3
1MTP-5
FROM 120VAC FEED THAT IS FUSED
SHSMA:
MASTER
BBB-1
(BATTERY BACK-UP BOARD)
+120VAC TO +12VDC -12VDC +5VDC
ESPS
(POWER SUPPLY)
N
G
H
1MTP-1
G2
G1
-12V
+12V
+5V
1MTA41-1
1MTA41-2
1MTA41-3
1MTD-4
1MTD-5
1MTD-6
1MTD-1
1MTD-3
V2
2G
BAT
A
SEE W6LC4BW LINE 12
2G
V3
V2
V1
2MTA31-1
2MTA31-2
2MTA31-3
1MTA31-9
1MTA31-7
1MTA31-5
1MTA31-3
NOTES:
FUSES NORMALLY LOCATED IN REVERSING CONTACTOR BOX. IF THIS DEVICE DOES NOT CONTAIN ONE, THEN FUSES ARE LOCATED IN THIS BOX.
BPB-1
(PROCESSOR)
1MTA34-4
1MTA34-3
1MTA34-2
1MTA34-1
1MTA34-10
1MTA31-6
1MTA31-4
1MTA31-8
1MTA33-1
1MTA33-3
MSH
MSL
DOWNLOAD/MILDATA SERIAL LINK
2G
V2
V1
V3
SRL
SRH
1MTM1-1
1MTM1-3
1MTM1-4
1MTM1-2
1MTM1-5
1MTM1-6
1MTA2-4
1MTA2-6
1MTA4-20
1MTA4-10
7
104
0
SW2
BOARD ADDRESS
1
SW1
BIO-1
(8 OUTPUT 16 INPUT BOARD 1)
2MTA2-4
2MTA2-6
2MTA4-20
2MTA4-10
2
BIO-2
(8 OUTPUT 16 INPUT BOARD 2)
OPTIONAL FOR ALLIED INTERFACE
3MTA2-4
3MTA2-6
3MTA4-20
4MTA4-10
3
BIO-3
(8 OUTPUT 16 INPUT BOARD 3)
OPTIONAL FOR ALLIED INTERFACE
4MTA2-4
4MTA2-6
4MTA4-20
4MTA4-10
4
BIO-4
(8 OUTPUT 16 INPUT BOARD 4)
OPTIONAL FOR PASSING WEIGHT
BMTH
(MOTHER BOARD)
TO MICRO-PROCESSOR INPUTS
TO MICRO-PROCESSOR INPUTS
BAE
BAF
1MTA4-16
1MTA4-17
IN LOAD POSITION
IN UNLOAD POSITION
THESE ARE USED WHEN COSTA PIVOTS OTHERWISE THEY MUST BE GROUNDED
2G
00
01
02
03
04
05
06
07
08
09
W6LC4BW
2005063B


W6LC4BW
2005063B
WIRE COLORING CODE
WIRE NO. VOLTAGE WIRE COLOR
V1 +5V BLUE
V2 +12V BLUE/ORANGE
V3 -12V BLUE/BLACK
2F CONROL GROUND RED/WHITE
SRH SERIAL HIGH BLUE/RED
SRL SERIAL LOW BLUE/BLACK
ESH MILNET HIGH BLUE/RED
ESL MILNET LOW BLUE/BLACK
2G GROUND BLUE/WHITE
NOTES:
1. 1MTD, 1MTP ARE LOCATED ON ESPS (POWER SUPPPLY).
2. 1MTA31, 1MTA32, 1MTA33,1MTA34, AND 1MTA38 ARE LOCATED ON BPB (PROCESSOR BOARD).
3. 1MTA1, 1MTA2, 1MTA3, 1MTA4, AND 1MTA5 ARE LOCATED BIO-1(8OUTPUT-16 INPUT BOARD).
4. TBA IS LOCATED IN LINEAR COSTA BOARD BOX.
5. REFER TO SCHEMATIC W6LM4FRO FOR LINEAR COSTA BELT CONTACTORS.
6. SEE W6LC4KPD FOR KEYBOARD AND DISPLAY WIRING.
7. 1MTA41 IS LOCATED ON BBB-1 (BATTERY BACKUP BOARD).
XXS
TO FEED 120VAC CIRCUIT OF BELT CONTROLLER
TBA8
SHSO: STOP
OPENS WHEN STOP DESIRED
SHS+: START
TBA2
S07
CLOSES WHEN 3-WIRE ENABLED
CRS+
6A1
TO FEED 120VAC CIRCUIT OF BELT CONTROLLER
TBA3
XF
CLOSES WHEN START DESIRED
TBL1
TBA6
SHPE1: EMERGENCY PULL
SHPE2: EMERGENCY PULL
SHMD: DISCONNECTS MOTOR
ALL EMERGENCY DISCONNECT DEVICES CONNECT IN SERIES BETWEEN TBL1 AND TBL2.
TBL2
1MTA5-7
TBA5
OPENS WHEN 3-WIRE ENABLED
1MTA5-8
1MTA5-1
CRSGM
CRDFM
CLOSES WHEN MICRO-PROCESSOR DESIRES SIGNAL
CLOSES WHEN MICRO-PROCESSOR DESIRES FLAG DOWN
CRFDM
CLOSES WHEN MICRO-PROCESSOR DESIRES LOAD FLAG-DOWN
1MTA5-16
1MTA5-17
1MTA5-11
CONNECT DISCHARGE FLAG DOWN HERE
FDA
SGA
TBA7
OLV
OLK
OPENS WHEN MOTOR OVERLOAD
TO MICRO-PROCESSOR INPUTS
1MTA4-18
1MTA38-3
1MTA38-2
S+4
PR4
SG4
CLOSES WHEN SIGNAL CANCEL DESIRED
CRS+ 3-WIRE 6A1
VEFD FLAG DOWN N/C
EBSG SIGNAL AUDIBLE
ELSG SIGNAL VISUAL
CRSG SIGNAL LOCATED IN SIGNAL CONTROL BOX
TO 120VAC FEED
CRSG 6A2
CLOSES WHEN 3-WIRE ENABLED
CLOSES WHEN PROGRAM DESIRED
SKPR: PROGRAM
SHSG: SIGNAL
CLOSES WHEN SIGNAL DESIRED
TO LIGHT FLASHER ON TOP OF BELT BOX
SEE W6LC4BW LINE 03
SEE W6LC4BW LINE 00
2F
TBA4
10 11 12 13 14 15 16 17 18 19
W6LC4BW
MICRO 6 SYSTEMS
SCHEMATIC: LINEAR COSTA BELT CONTROL
110V50HZ/120V60HZ
PELLERIN MILNOR CORPORATION
W6LC4BW
2005063B



W6LC4GC
2000476B

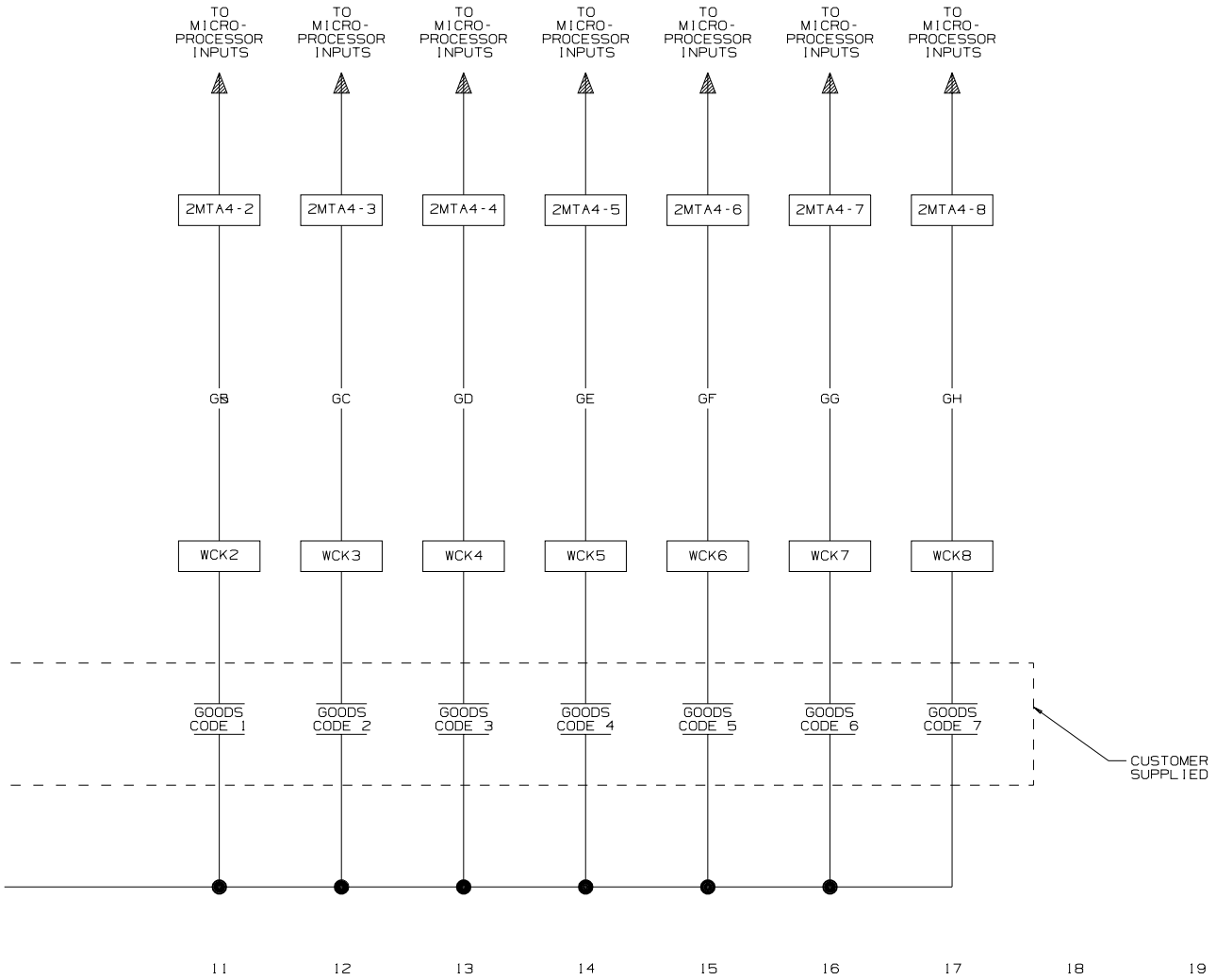
W6LC4GC

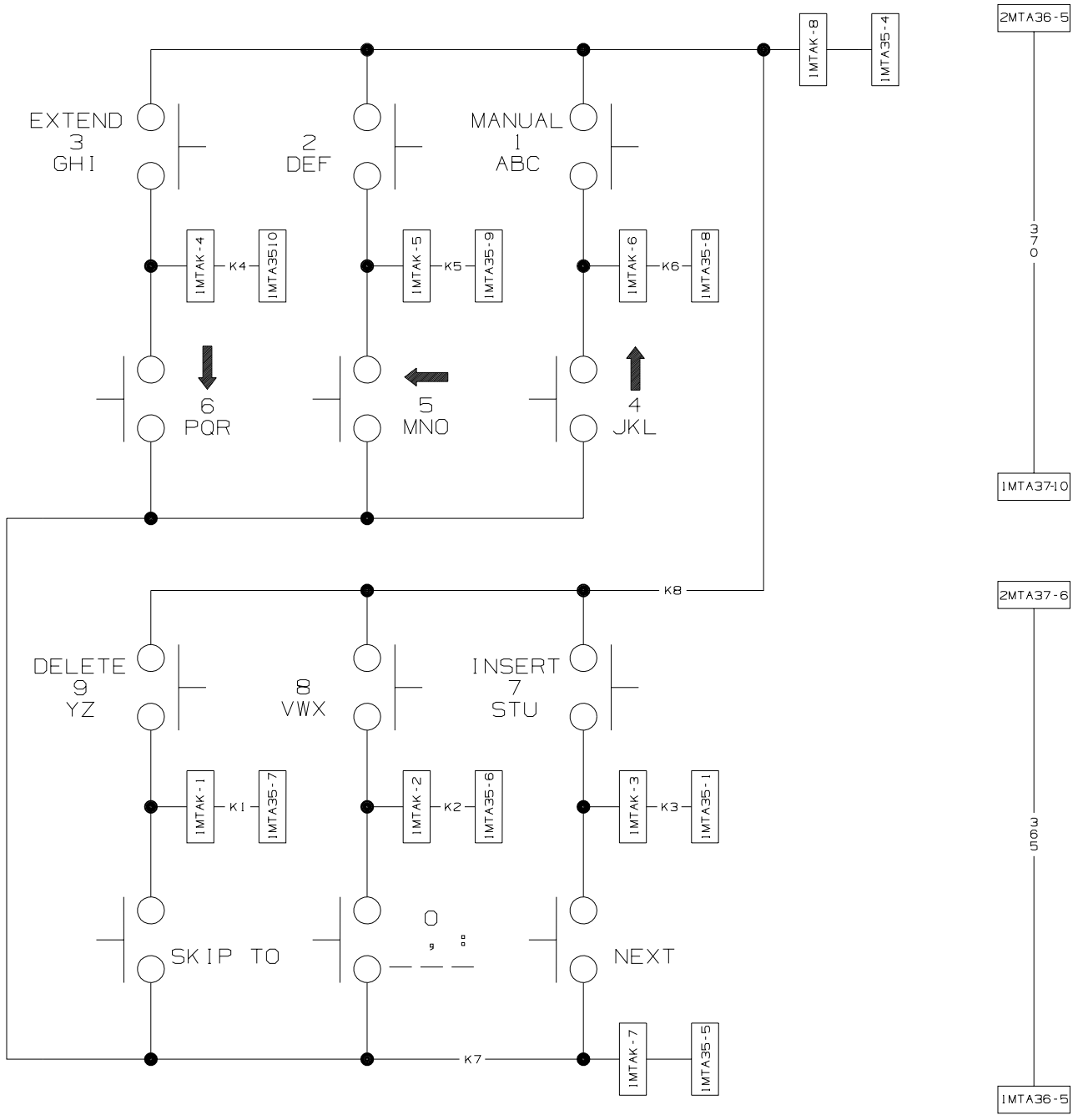
SCHEMATIC: LINEAR COSTA ALLIED CUSTOMER & GOODS CODE

PELLERIN MILNOR CORPORATION

NOTES:

1. SEE W6LCCAL FOR BOARD SETTINGS.
2. IF THIS IS USED IN A LINEAR COSTA MASTER THEN WCK BECOMES WCK* THE * REPRESENTS WHICH BELT.
3. 2MTA CHANGES TO *MTA WHERE THE * REPRESENTS WHICH BELT AND BOARD.
4. REFER TO SCHEMATIC W6LM4FD.





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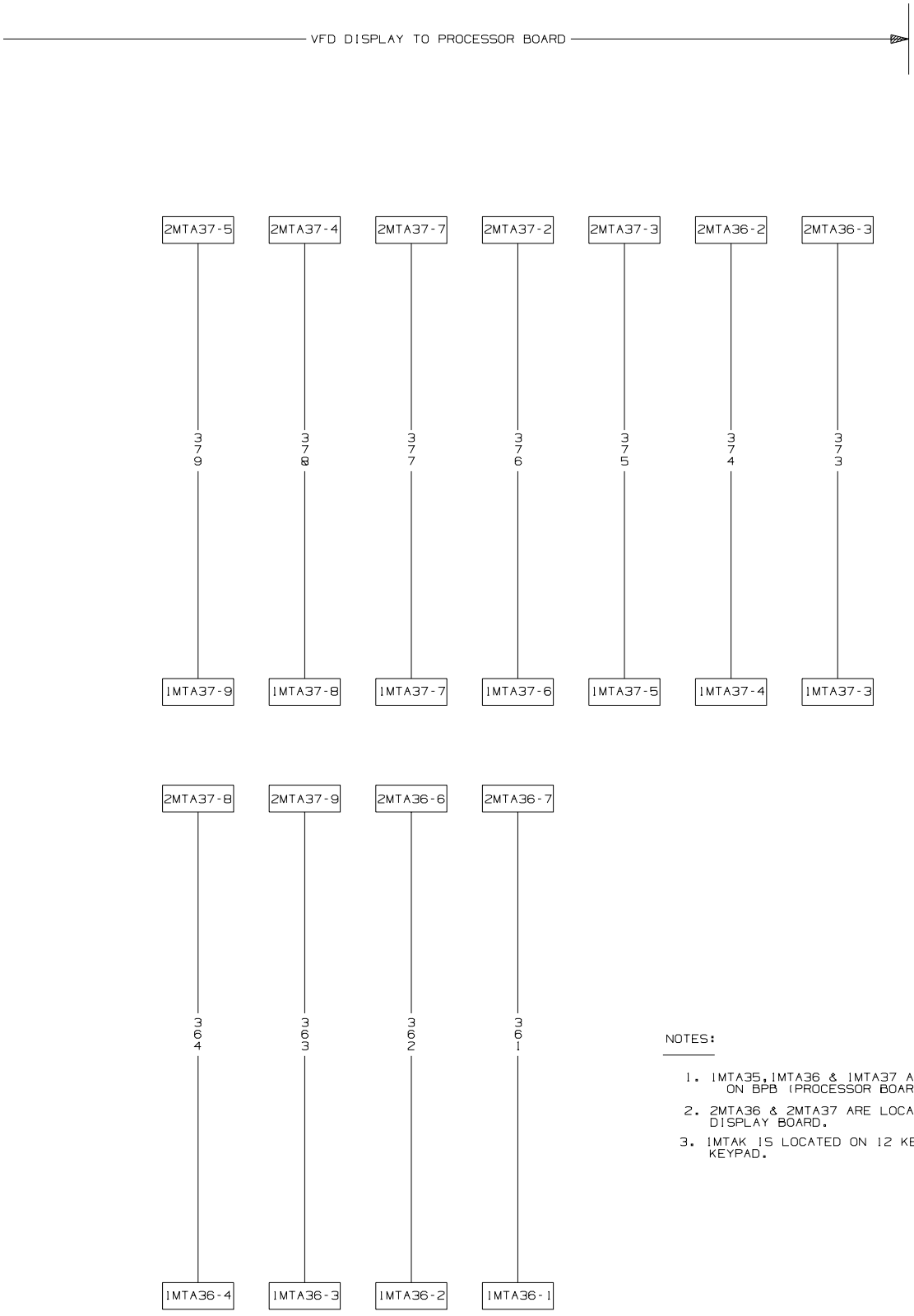
W6LC4KPD
2000476B



NOTES:

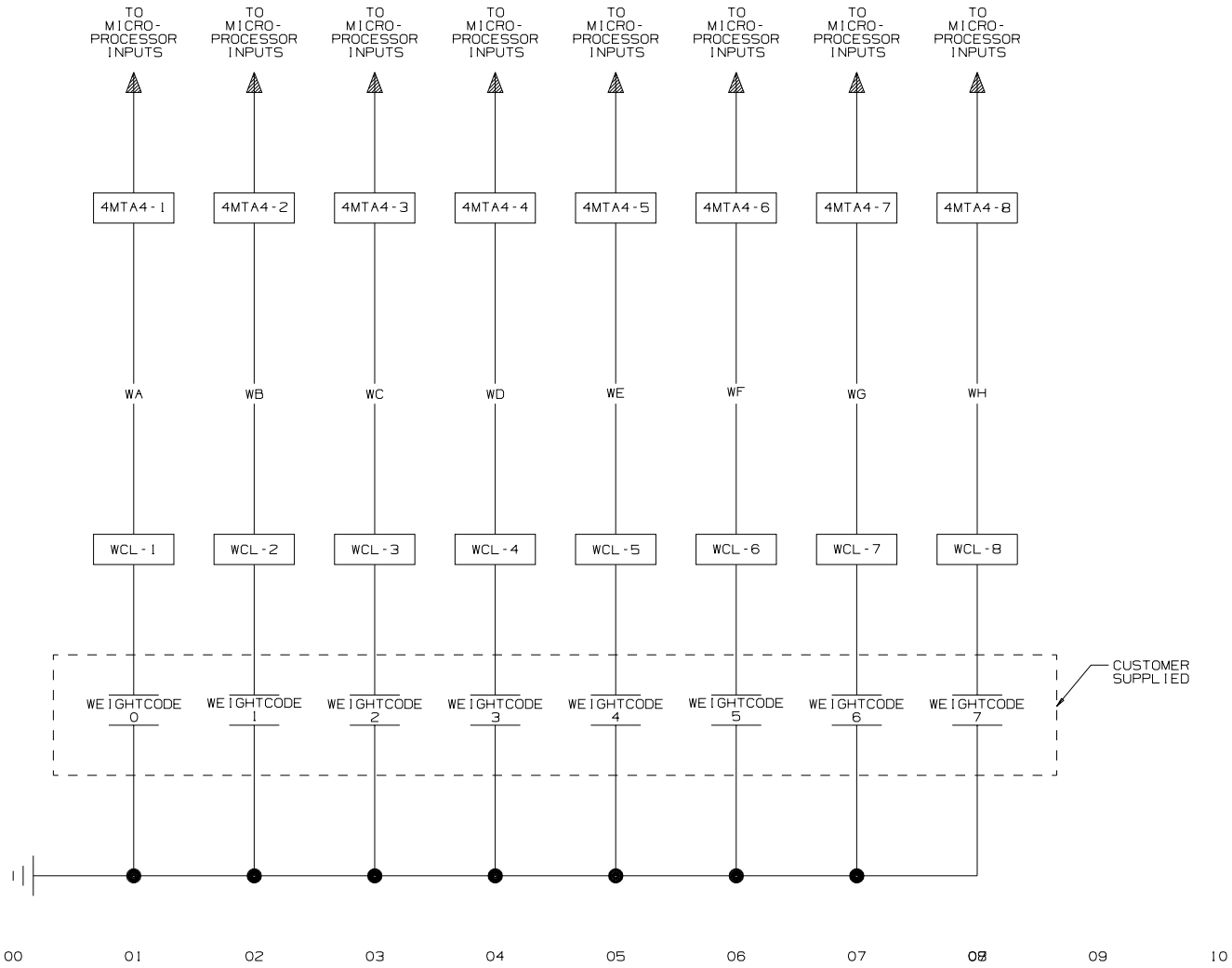
1. 1MTA35,1MTA36 & 1MTA37 ARE LOCATED ON BPB (PROCESSOR BOARD).
2. 2MTA36 & 2MTA37 ARE LOCATED ON DISPLAY BOARD.
3. 1MTAK IS LOCATED ON 12 KEY KEYPAD.

W6LC4KPD

MICRO 6 SYSTEMS SERIAL CONTROLS

SCHEMATIC : SERIAL KEYBOARD-VACUUM FLUORESCENT DISPLAY

PELLERIN MILNOR CORPORATION



W6LC4WC
2000476B

NOTES:

1. SEE W6LCCAL FOR BOARD SETTINGS.
2. IF THIS IS USED AN A LINEAR COSTA MASTER THE WCL BECOMES WCL* WHERE THE * REPRESENTS WHICH BELT.
3. 4MTA CHANGES TO *MTA WHERE THE * REPRESENTS WHICH BELT AND BOARD.
4. REFER TO SCHEMATIC W6LM4FD.

W6LC4WC

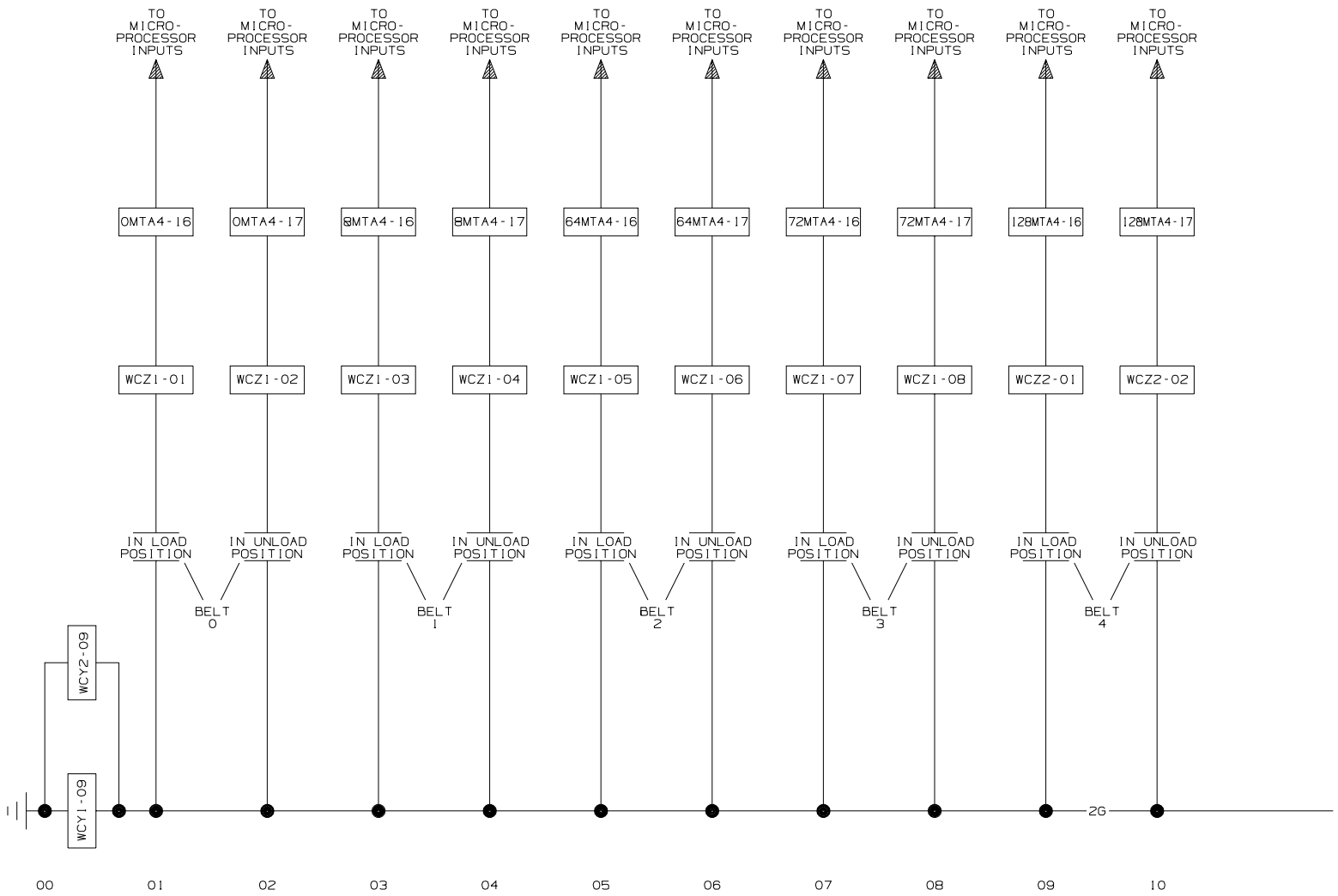
SCHEMATIC: LINEAR COSTA ALLIED WEIGHT CODE

PELLERIN MILNOR CORPORATION

11 12 13

Section 2

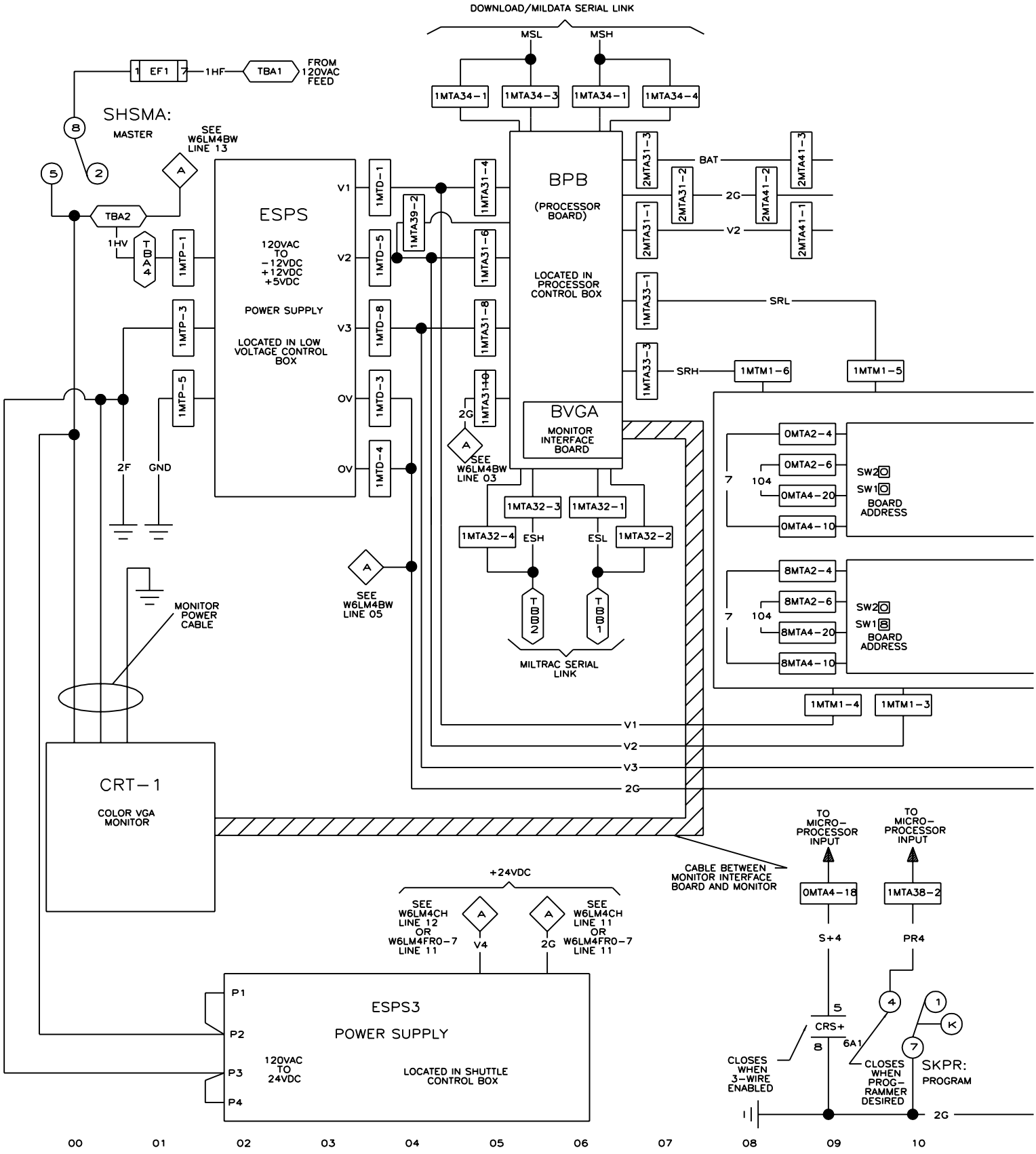
Linear Costa Master Schematics


TO MICRO-PROCESSOR INPUTS
0MTA4-16
0MTA4-17
8MTA4-16
8MTA4-17
64MTA4-16
64MTA4-17
72MTA4-16
72MTA4-17
128MTA4-16
128MTA4-17
WCZ1-01
WCZ1-02
WCZ1-03
WCZ1-04
WCZ1-05
WCZ1-06
WCZ1-07
WCZ1-08
WCZ2-01
WCZ2-02
IN LOAD POSITION
IN UNLOAD POSITION
BELT 0
BELT 1
BELT 2
BELT 3
BELT 4
WCY2-09
WCY1-09
1
2G
00
01
02
03
04
05
06
07
08
09
10

W6LM4AL

SCHEMATIC: LINEAR COSTA MASTER FOR ALLIED LOAD AND UNLOAD POSITIONS

PELLERIN MILNOR CORPORATION



W6LM4BW
2005063B

W6LM4BW
MICRO 6 SYSTEMS
SCHEMATIC: LINEAR COSTA MASTER BOARDS
110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. SEE W6LCMKB FOR KEYBOARD WIRING.
2. 1MTD, 1MTP ARE LOCATED ON ESPS (POWER SUPPLY).
3. 1MTA31, 1MTA32, 2MTA31, 1MTA38, 1MTA39 ARE LOCATED ON BPB (186 PROCESSOR BOARD)
4. 1MTA1, 1MTA2 ARE LOCATED ON BIO-1 (8 OUTPUT - 16 INPUT BOARD).
5. 8MTA1, 8MTA2 ARE LOCATED ON BIO-8 (8 OUTPUT - 16 INPUT BOARD).
6. 1MTA41 IS LOCATED ON BBB-1 (BATTERY BACKUP BOARD).
7. REFER TO SCHEMATIC W6DIN FOR DIN PIN CONNECTIONS.

WIRE NO.	VOLTAGE	WIRE COLOR
V1	+5VDC	BLUE
V2	+12VDC	BLUE/ORANGE
V3	-12VDC	BLUE/BLACK
2G	GROUND	BLUE/WHITE
SRH	SERIAL LOW	BLUE/RED
SRL	SERIAL HIGH	BLUE/BLACK
INPUTS	—	BLUE/BLACK
—	24VAC	BLUE/RED
—	120VAC	RED
2F	CONTROL GROUND	RED/WHITE

MAXIMUM BELT IS 8
WHERE EACH BELT REQUIRES AN
8 OUTPUT/16 INPUT BOARD

	BOARD ADDRESS SW1	SW2	
BELT 2	0	4	BOARD 40
BELT 3	8	4	BOARD 48
BELT 4	0	8	BOARD 80
BELT 5	8	8	BOARD 88
BELT 6	0	C	BOARD 120
BELT 7	8	C	BOARD 128

BBB-1
(BATTERY BACKUP BOARD)

BTMH
(MOTHER BOARD)

BIO-0
(8 OUTPUT, 16 INPUT BOARD 0)
BELT 0

BIO-8
(8 OUTPUT, 16 INPUT BOARD 8)
BELT 1

1MTM1-2 1MTM1-1

SEE W6LM4BW LINE 00 — A — 1HV

7 SHSO: STOP

1 — OPENS WHEN STOP DESIRED

TBA2

7 SHS+: START

7 CRS+ 4 — XF

4 — CLOSES WHEN START DESIRED

TBL1

TBA3

7 SHPE1: EMERGENCY PULL — 1 — 4 — E11

A — TO FEED 120VAC CIRCUIT OF BELT CONTROLLER

7 SHPE2: EMERGENCY PULL — 1 — 4 — E21

7 SHMD: DISCONNECTS MOTOR — 1 — 4

TBL2

OLV — OVERLOAD — OLK — OPENS WHEN MOTOR OVERLOAD

TO MICRO-PROCESSOR INPUT

1MTA38-1

SG4

4 — CLOSES WHEN SIGNAL CANCEL DESIRED

7 SHSG: SIGNAL

CRS+ 3-WIRE 6A1

TBA4 — 2F

TBA6

9 CRS+ 3 6A1 — OPENS WHEN 3-WIRE ENABLED

TBA5

1MTA5-8

7 CRSGM 4 — CLOSES WHEN MICROPROCESSOR DESIRES SIGNAL

1MTA5-17

SGA

EBSG SIGNAL AUDIBLE

ELSG SIGNAL VISUAL

CRSG SIGNAL LOCATED IN SIGNAL CONTROL BOX 6B2

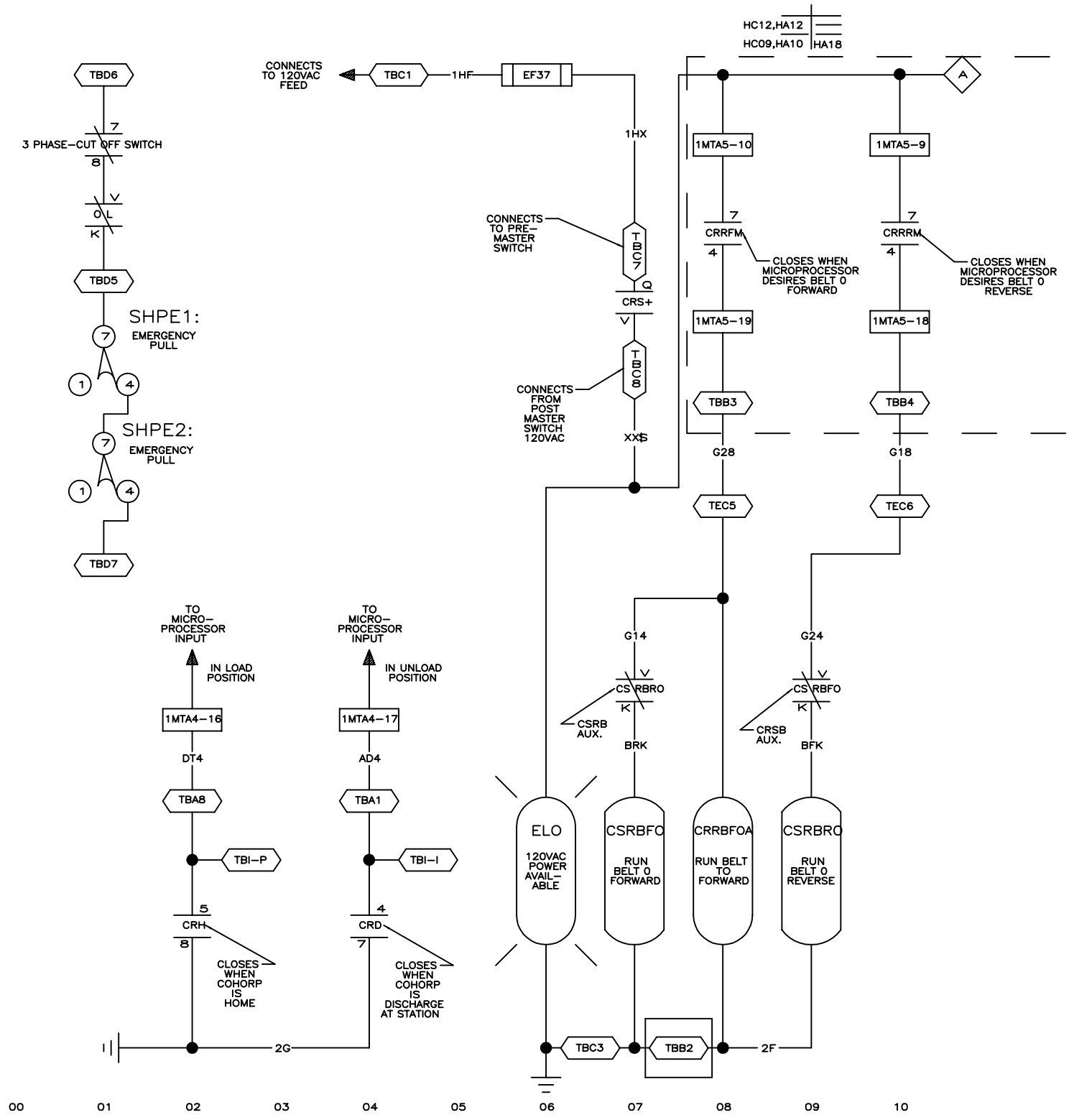
TO 120 VAC FEED

7 CRSG 4 6A2

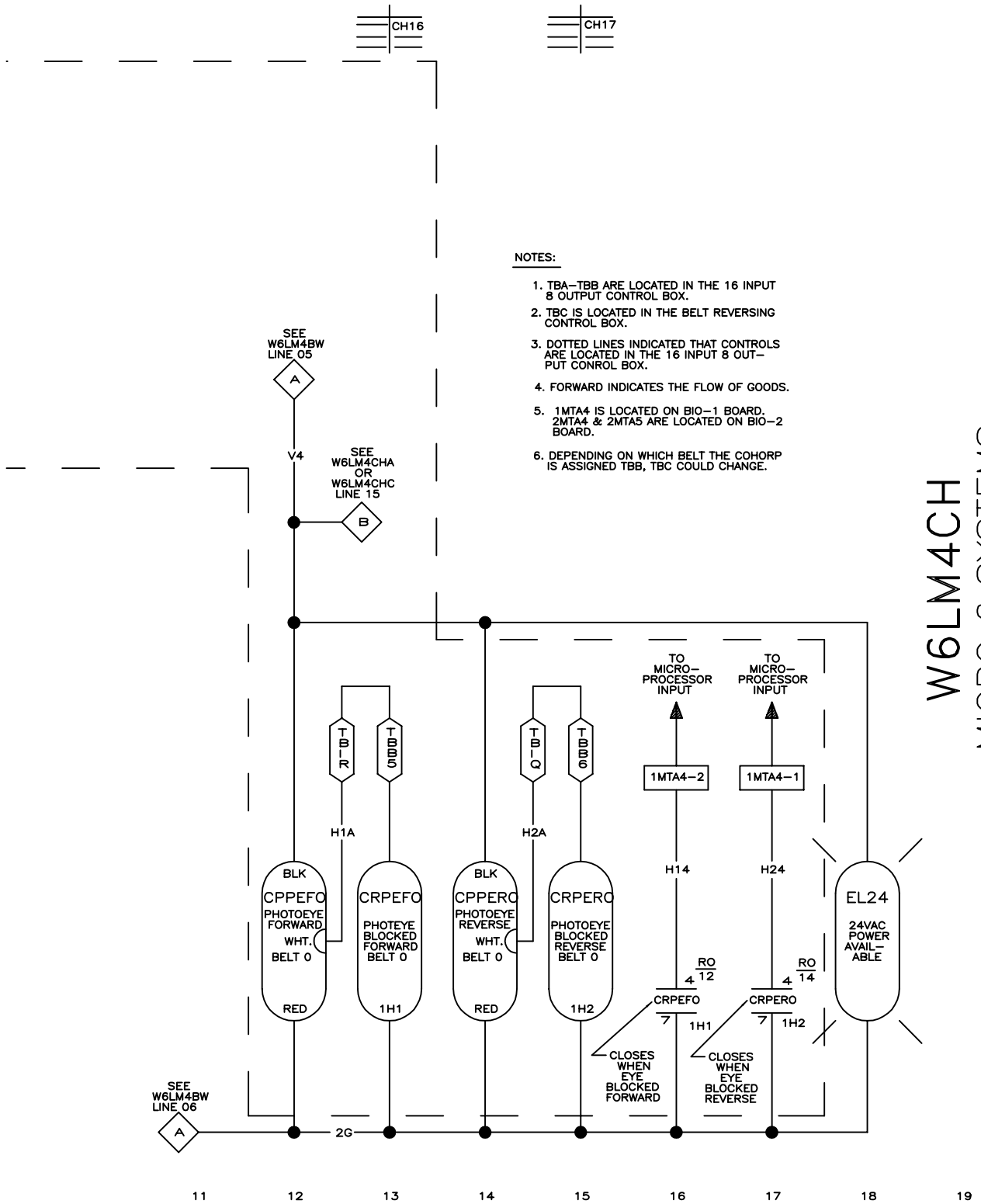
TO LIGHT FLASHER ON TOP OF BELT BOX

LOCATED IN SIGNAL BOX

11 12 13 14 15 16 17 18 19



W6LM4CH
2007322B



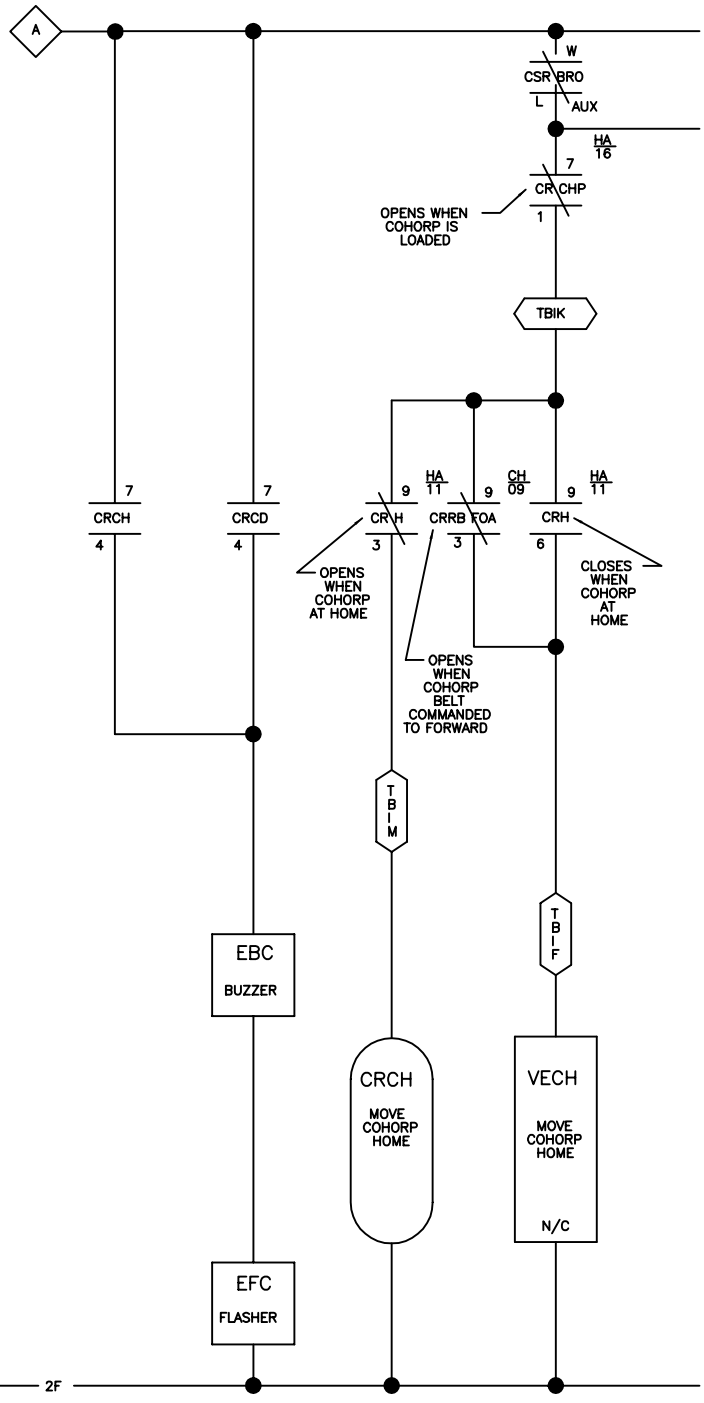
W6LM4CH

MICRO 6 SYSTEMS

SCHEMATIC: BELT CONTROLS FOR COHORP CONTROLLER

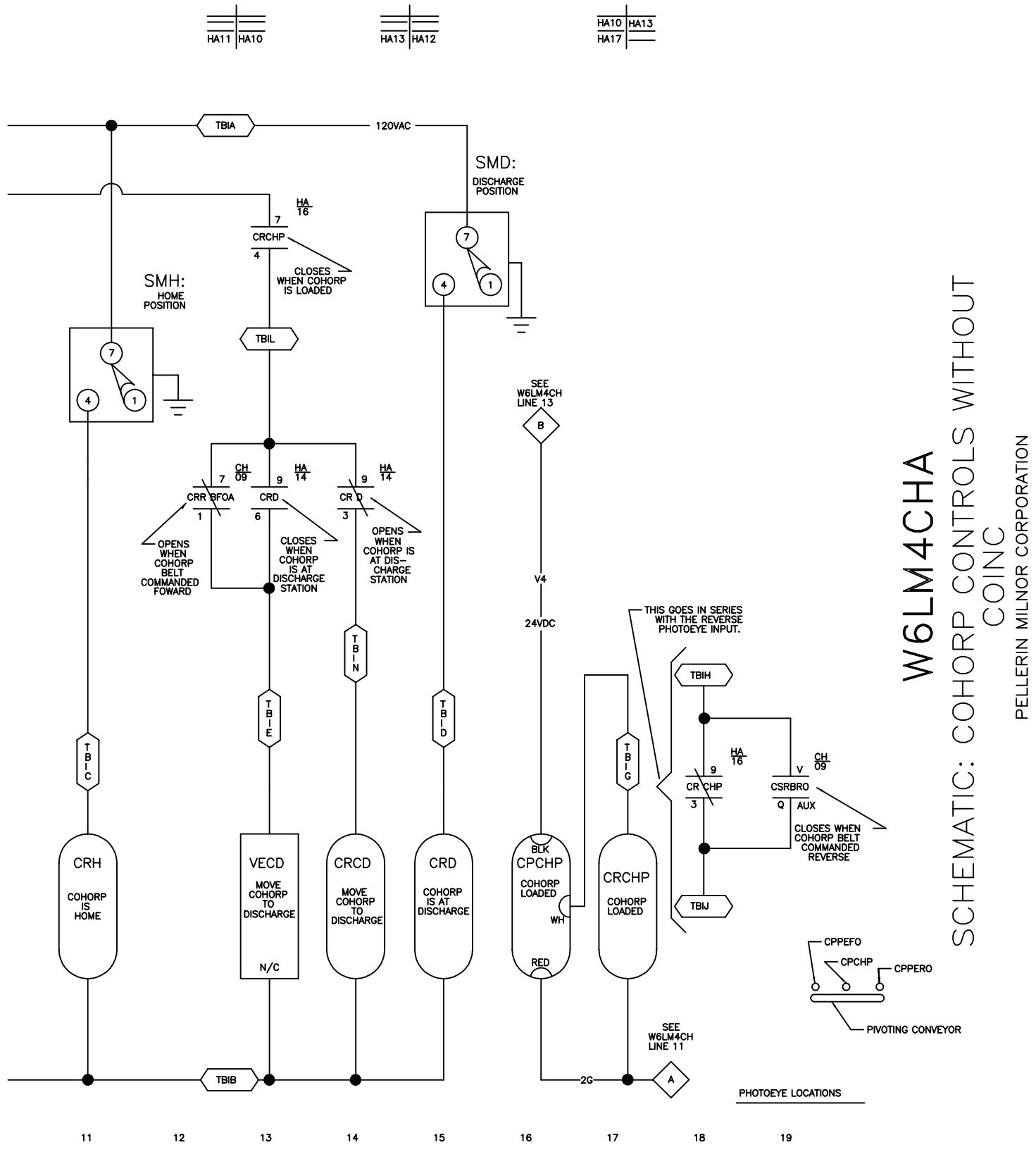
110V50HZ/120V60HZ/24V50HZ/60HZ

PELLERIN MILNOR CORPORATION



00 01 02 03 04 05 06 07 08 09 10

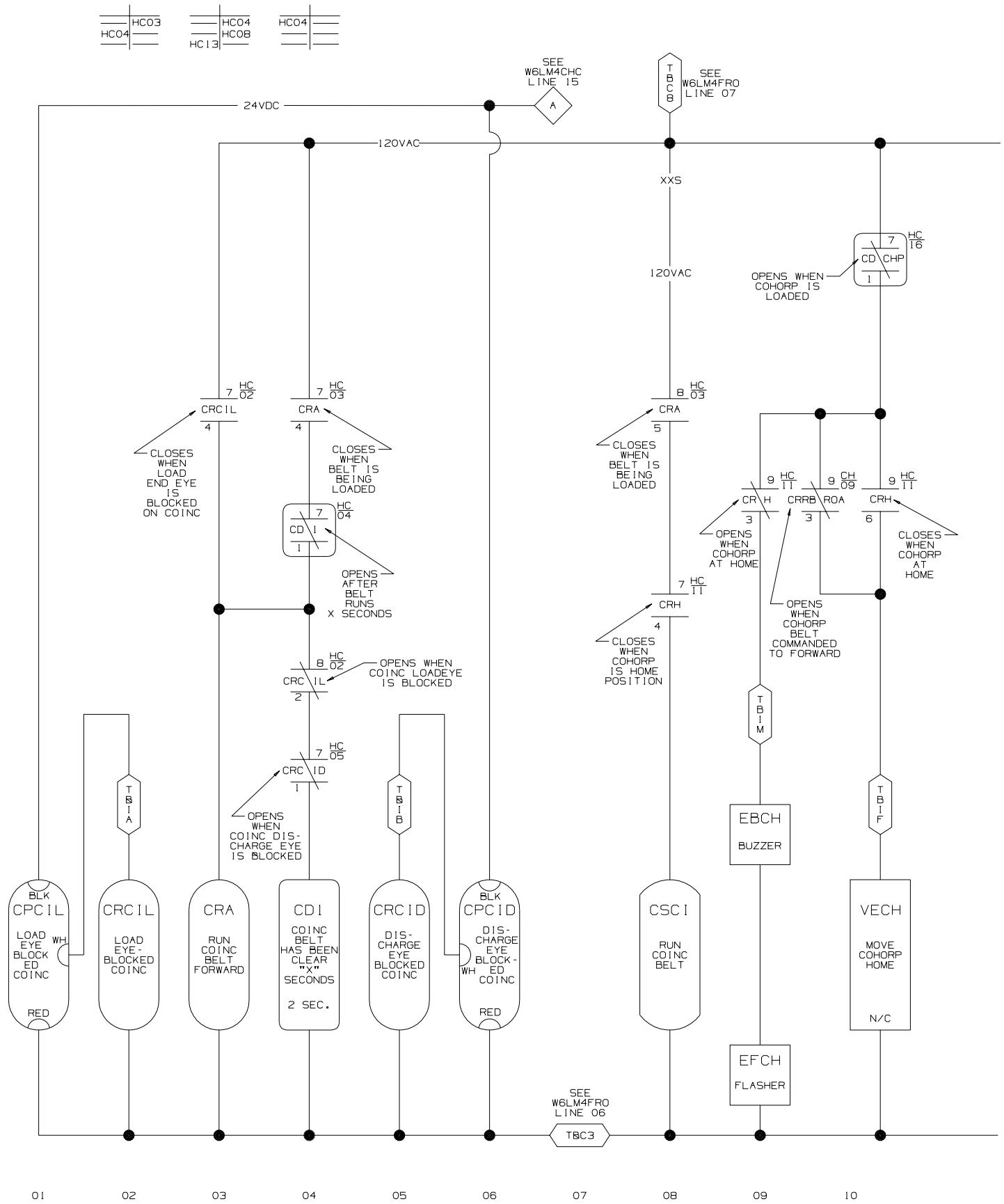
W6LM4CHA
2007322B



W6LM4CHA

SCHEMATIC: COHORP CONTROLS WITHOUT COINC

PELLERIN MILNOR CORPORATION

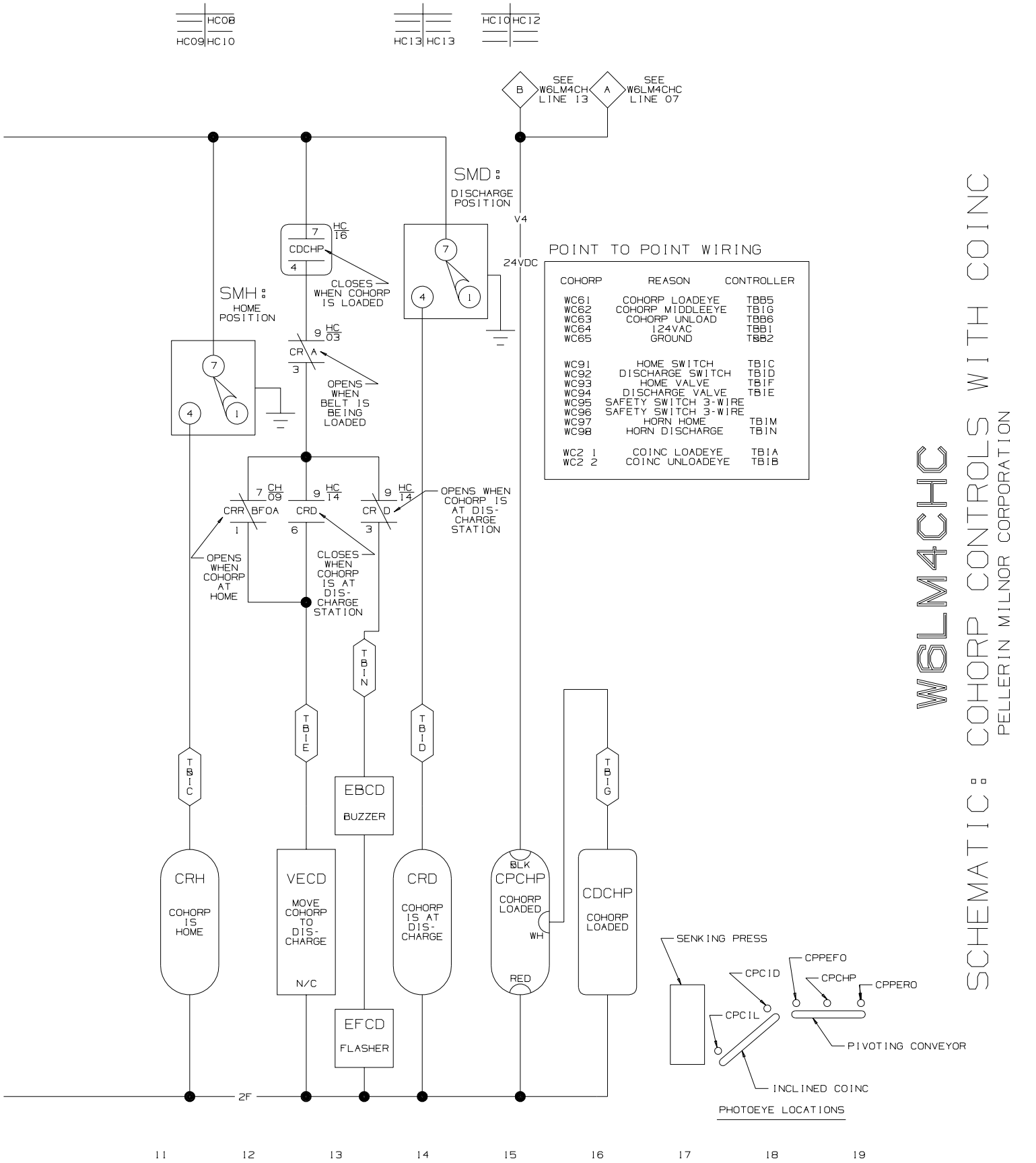


W6LM4CHC
2000476B

W6LM4CHC

SCHEMATIC: COHORP CONTROLS WITH COINC

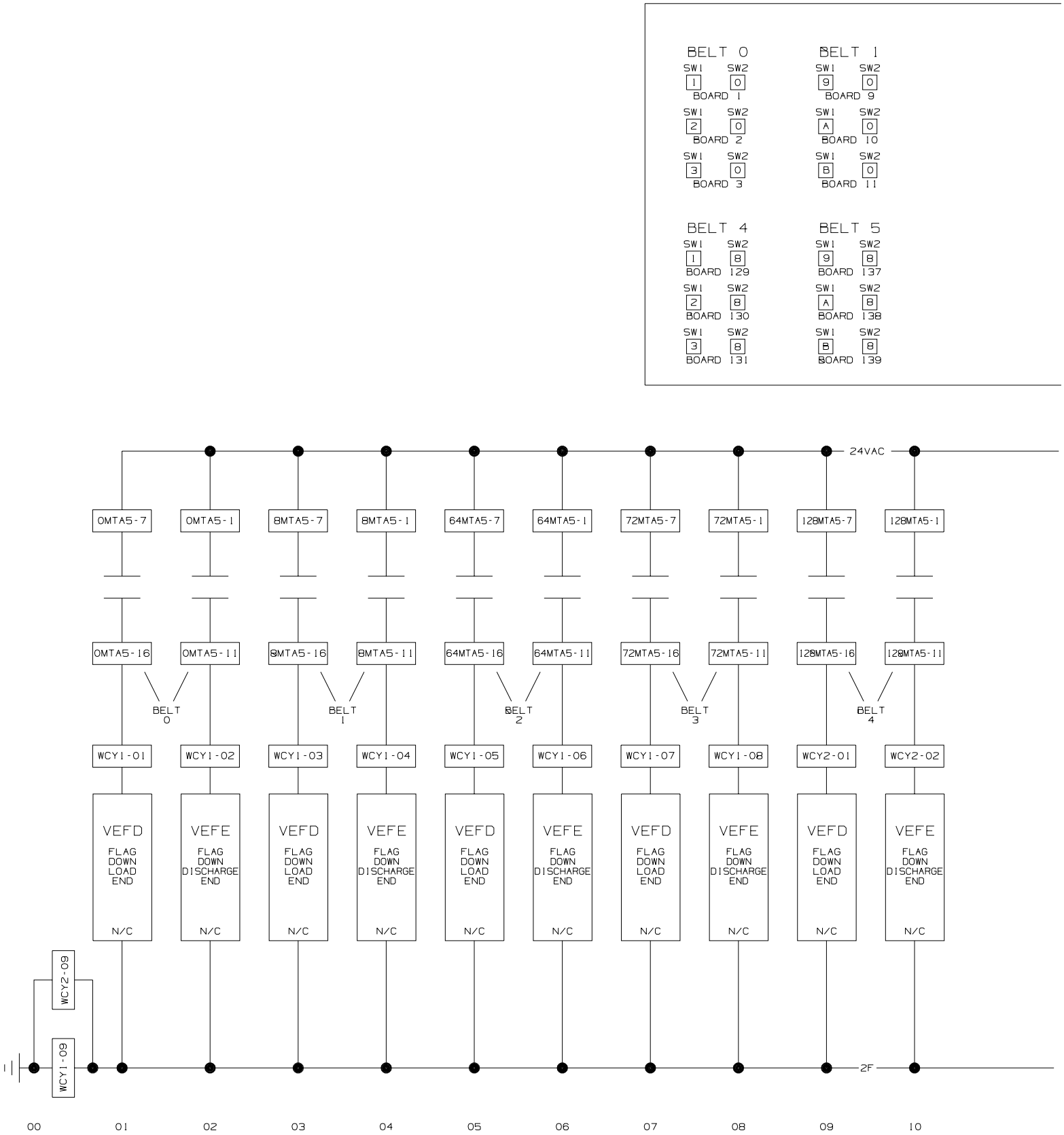
PELLERIN MILNOR CORPORATION



POINT TO POINT WIRING

COHORP	REASON	CONTROLLER
WC61	COHORP LOADEYE	TBB5
WC62	COHORP MIDDLEEYE	TBIG
WC63	COHORP UNLOAD	TBB6
WC64	124VAC	TBB1
WC65	GROUND	TBB2
WC91	HOME SWITCH	TBIC
WC92	DISCHARGE SWITCH	TBID
WC93	HOME VALVE	TBIF
WC94	DISCHARGE VALVE	TBIE
WC95	SAFETY SWITCH 3-WIRE	
WC96	SAFETY SWITCH 3-WIRE	
WC97	HORN HOME	TBIM
WC98	HORN DISCHARGE	TBIN
WC2 1	COINC LOADEYE	TBIA
WC2 2	COINC UNLOADEYE	TBIB

PHOTOEYE LOCATIONS



W6LM4FD
2000476B

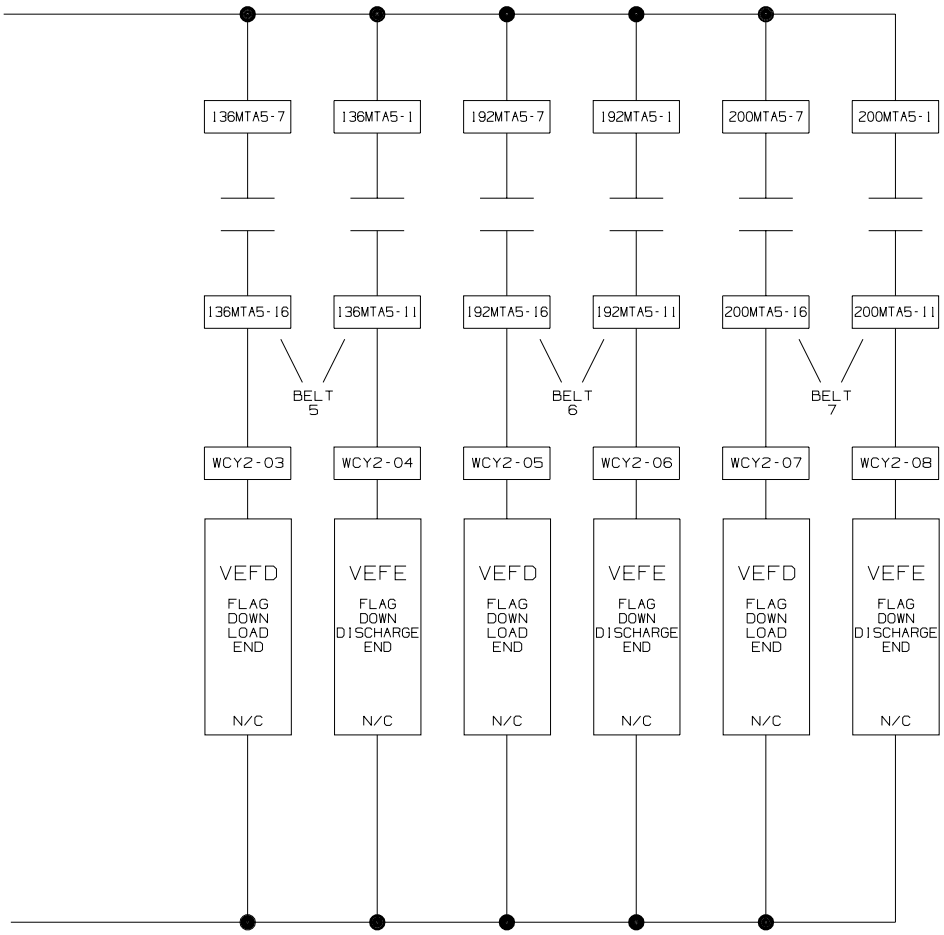
W6LM4FD

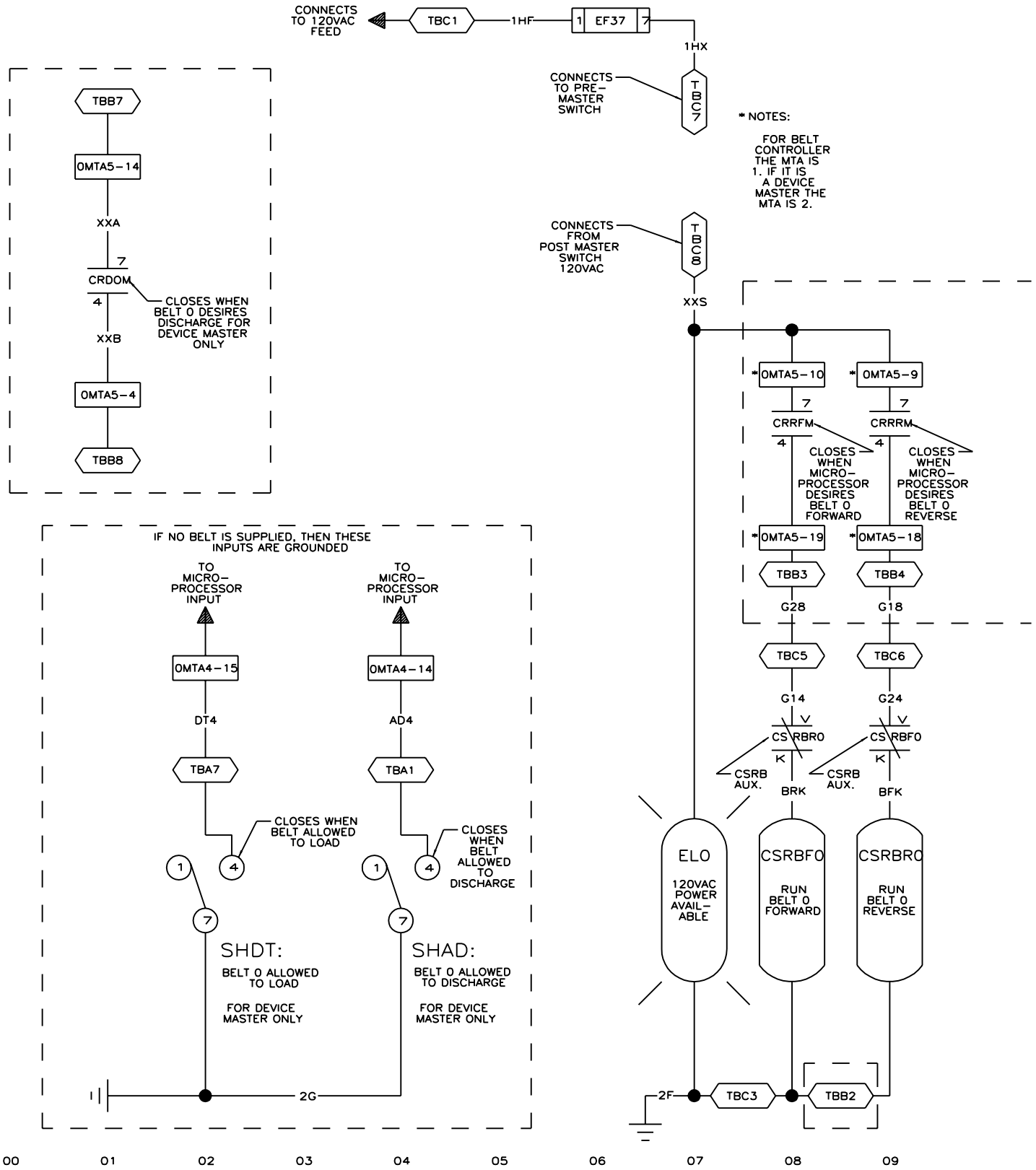
SCHEMATIC - LINEAR COSTA MASTER ALLIED BOARD SETTINGS AND FLAG DOWN

PELLERIN MILNOR CORPORATION

ALLIED BOARD SETTINGS

BELT 2		BELT 3	
SW1	SW2	SW1	SW2
1	4	9	4
BOARD 65		BOARD 73	
SW1	SW2	SW1	SW2
2	4	A	4
BOARD 66		BOARD 74	
SW1	SW2	SW1	SW2
3	4	B	4
BOARD 67		BOARD 75	
BELT 6		**BELT 7**	
SW1	SW2	SW1	SW2
1	C	9	C
BOARD 193		BOARD 201	
SW1	SW2	SW1	SW2
2	C	A	C
BOARD 194		BOARD 202	
SW1	SW2	SW1	SW2
3	C	B	C
BOARD 195		BOARD 203	

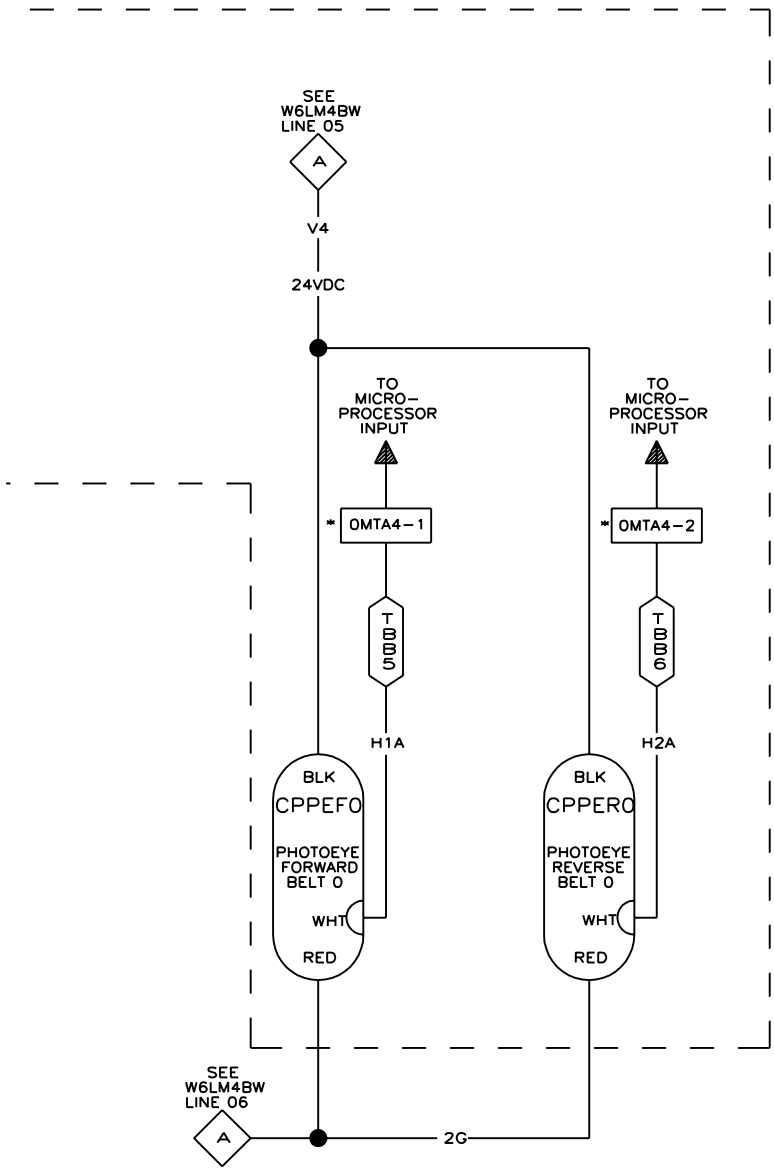




W6LM4FR0
2002106B

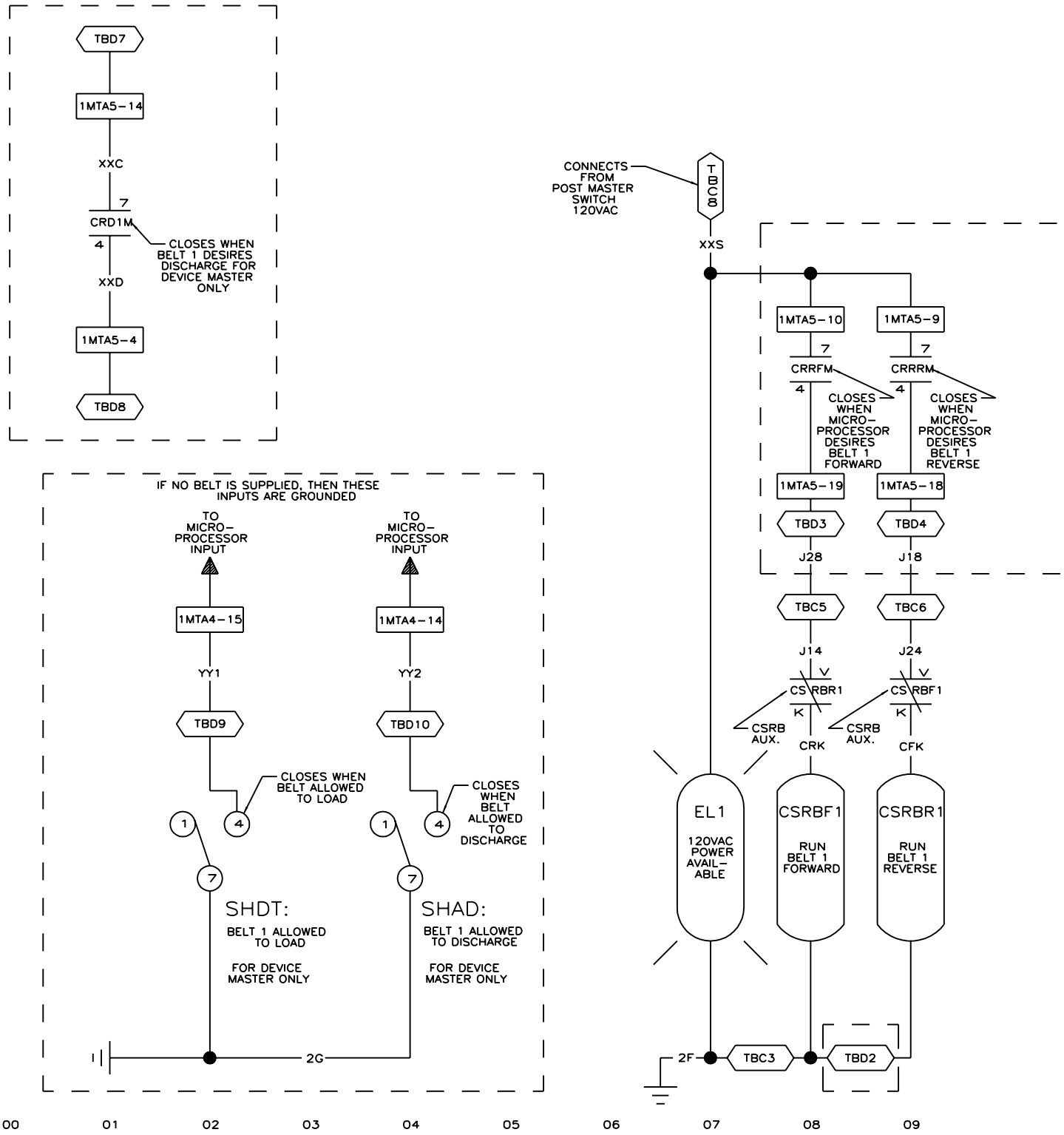
NOTES:

1. TBA–TBB ARE OCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS.
5. IMTA5 IS LOCATED ON BIO–1, 2MTA5 ARE LOCATED ON BIO–2 (8 OUTPUT 16 INPUT BOARD).



10 11 12 13 14 15 16 17 18 19

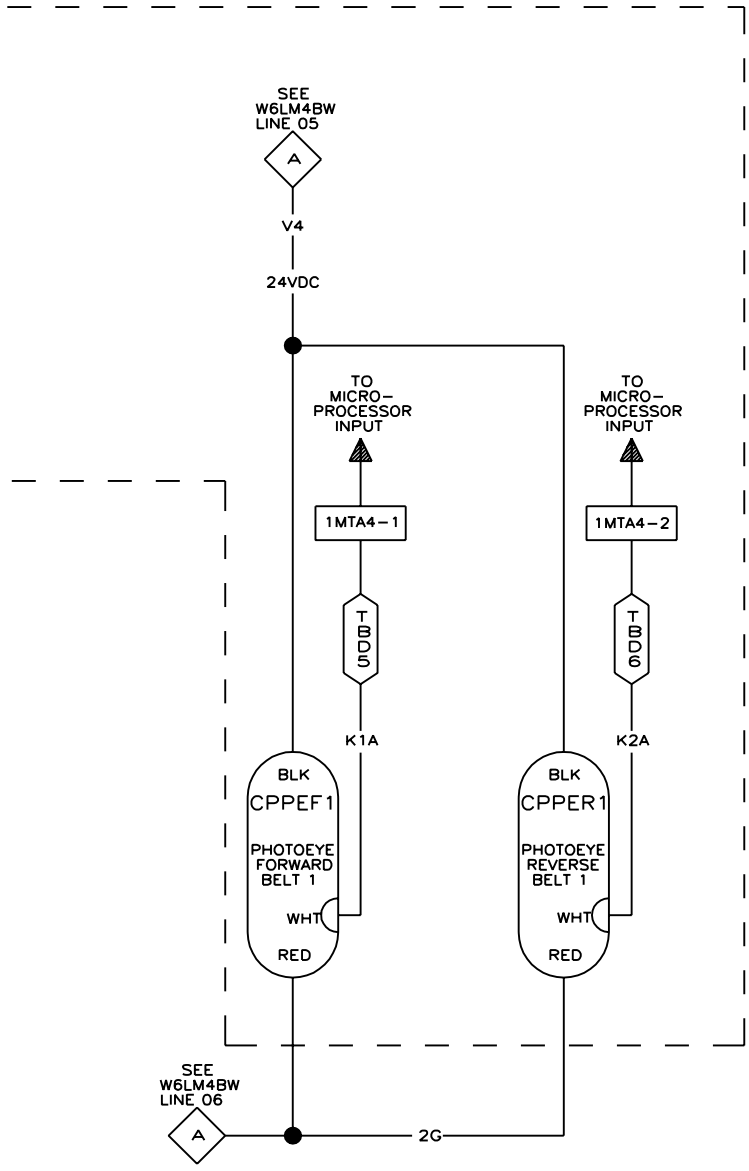
W6LM4FRO
MICRO 6 SYSTEMS
SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 0
110V50HZ/120V60HZ
PELLERIN MILNOR CORPORATION



W6LM4FR1
2002106B

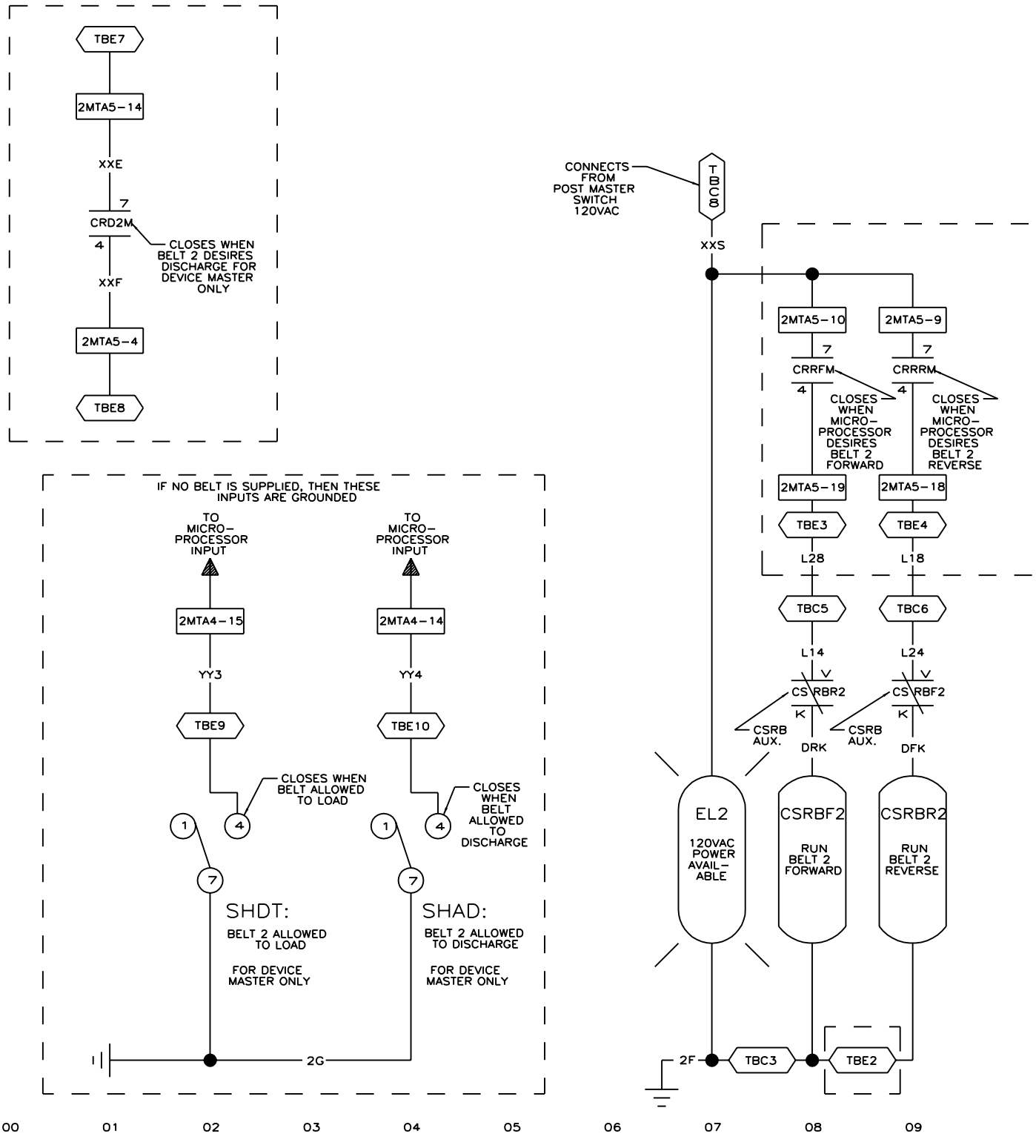
NOTES:

1. TBD IS LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS.
5. 1MTA5 IS LOCATED ON BIO-1, 2MTA4, & 2MTA5 ARE LOCATED ON BIO-2 (8 OUTPUT 16 INPUT BOARD).



10 11 12 13 14 15 16 17 18

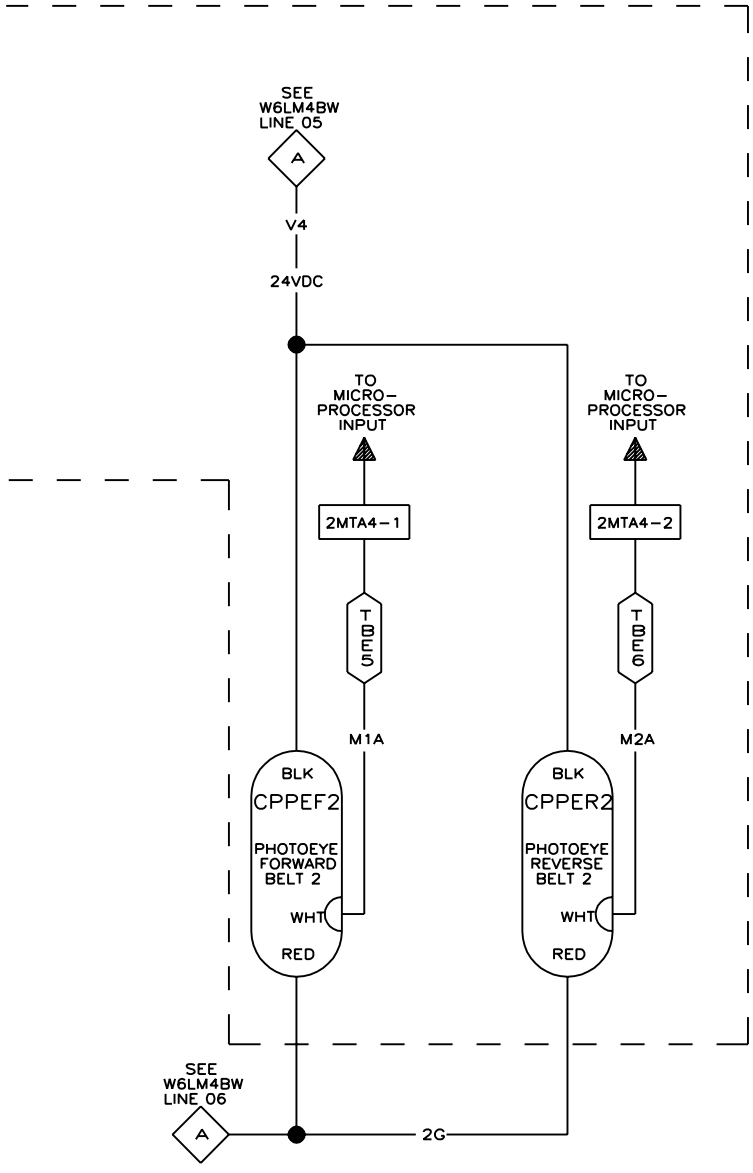
W6LM4FR1
MICRO 6 SYSTEMS
SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 1
110V50HZ/120V60HZ
PELLERIN MILNOR CORPORATION



W6LM4FR2
2002106B

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 1MTA5 IS LOCATED ON THE BIO-1 BOARD, 2MTA4 & 2MTA5 IS LOCATED ON THE BIO-2 BOARD.



10 11 12 13 14 15 16 17 18 19

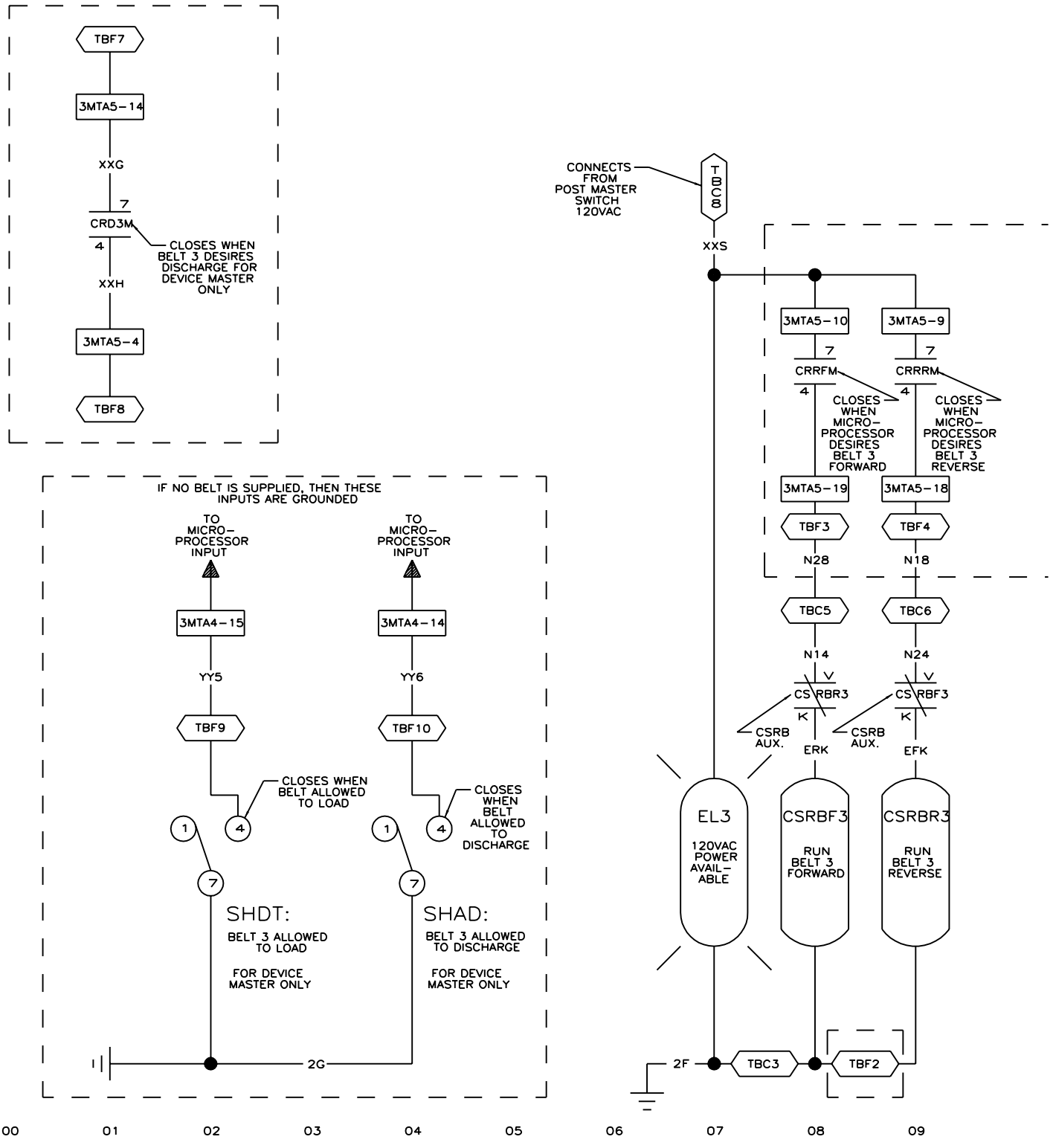
W6LM4FR2

MICRO 6 SYSTEMS

SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 2

110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION



W6LM4FR3
2002106B

W6LM4FR3

MICRO 6 SYSTEMS

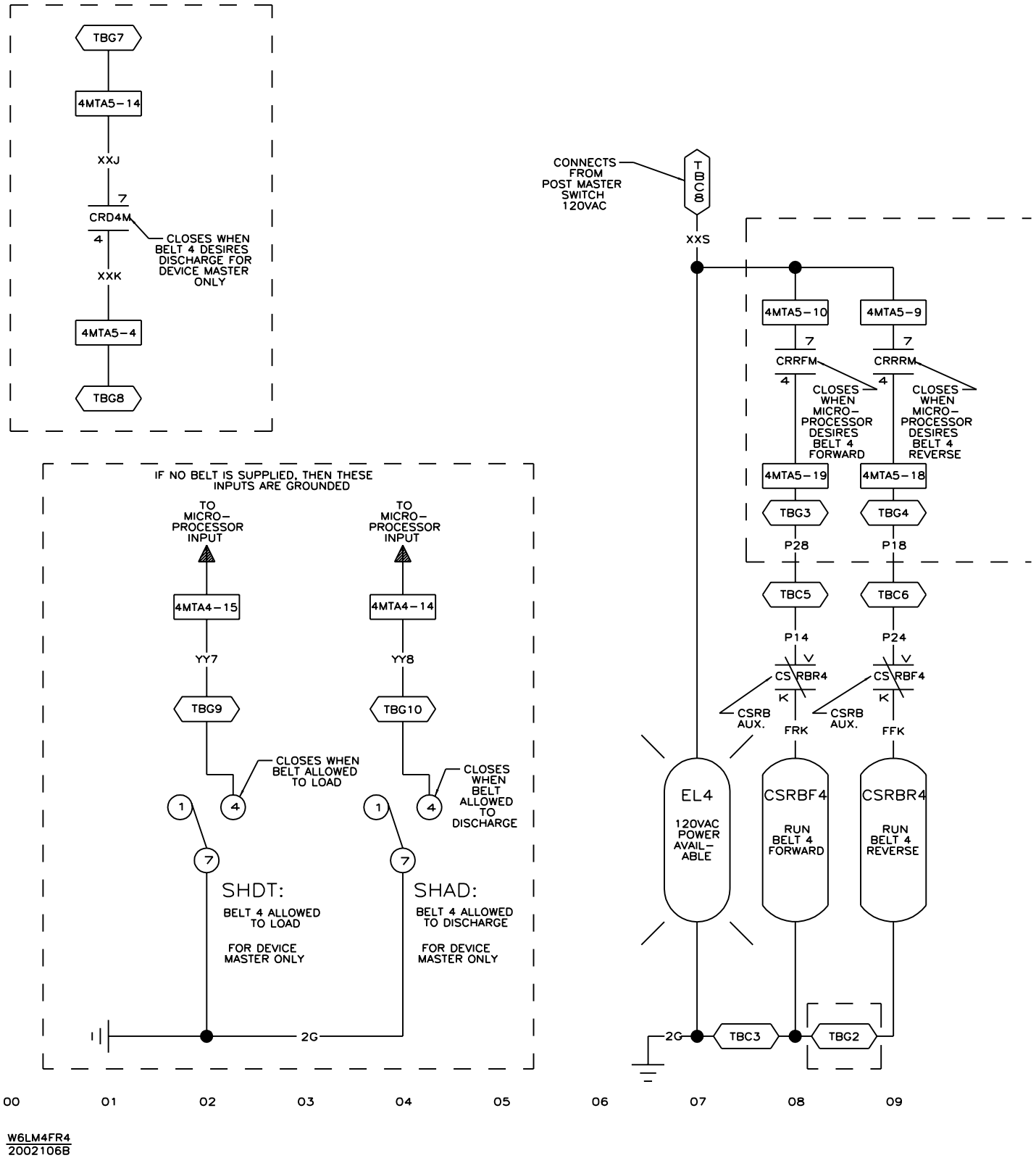
SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 3

110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 1MTA5 IS LOCATED ON THE BIO-1 BOARD, 2MTA4 & 2MTA5 IS LOCATED ON THE BIO-2 BOARD.



W6LM4FR4
2002106B

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 4MTA5 IS LOCATED ON THE BIO-4 BOARD, 3MTA4 & 3MTA5 IS LOCATED ON THE BIO-3 BOARD.

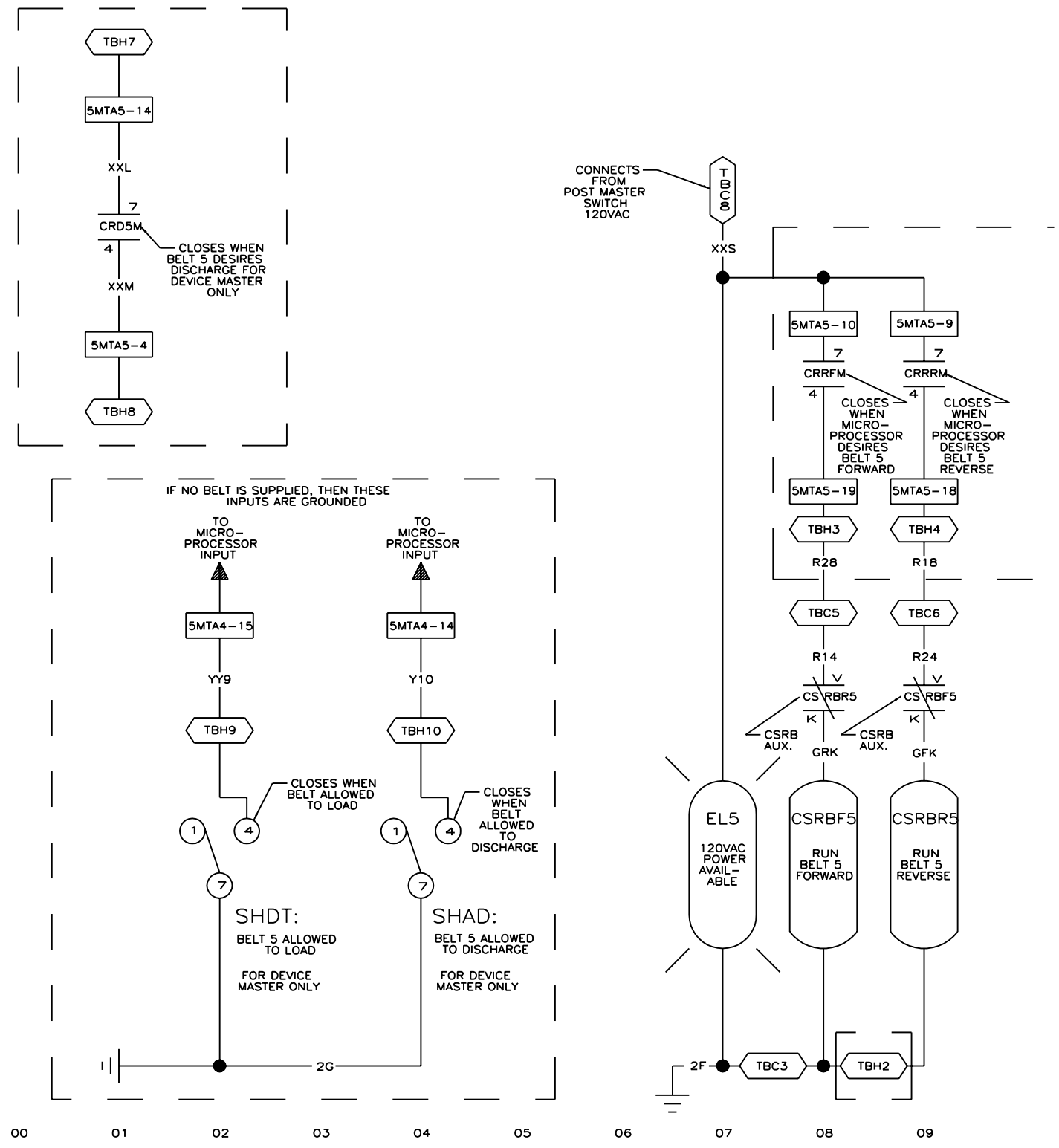
W6LM4FR4

MICRO 6 SYSTEMS

SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 4

110V50HZ/120V60HZ

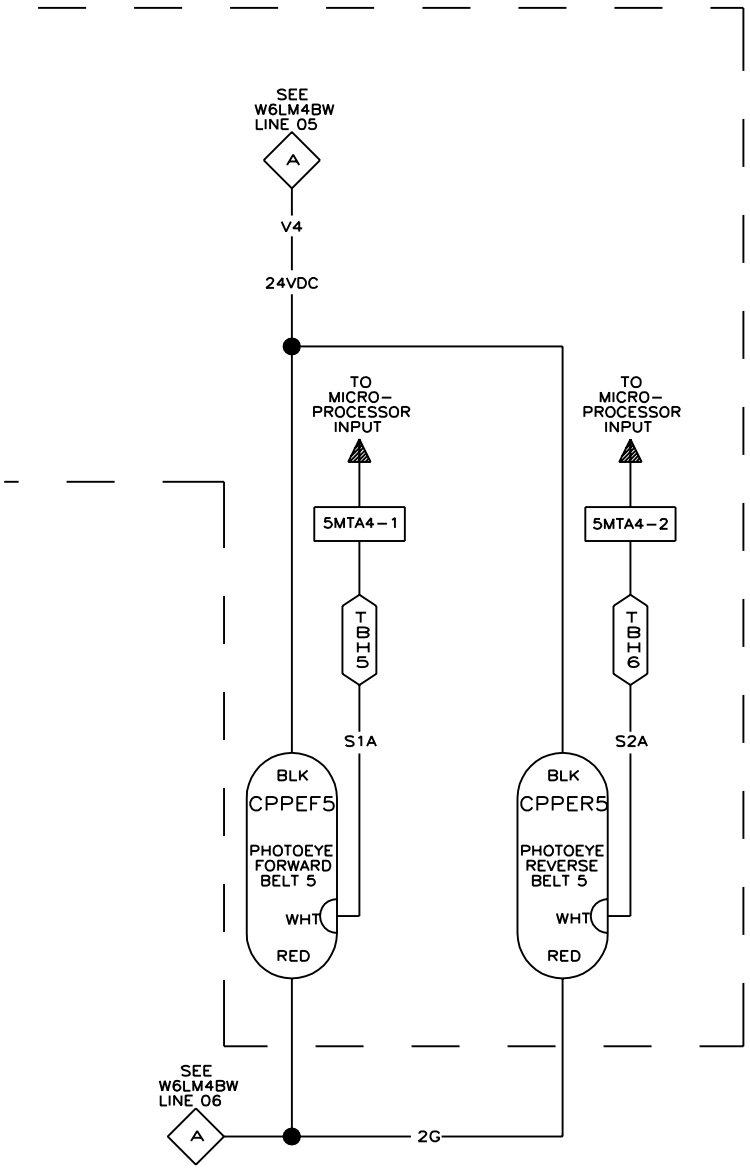
PELLERIN MILNOR CORPORATION



W6LM4FR5
2002106B

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 4MTA5 IS LOCATED ON THE BIO-4 BOARD, 3MTA4 & 3MTA5 IS LOCATED ON THE BIO-3 BOARD.



10 11 12 13 14 15 16 17 18 19

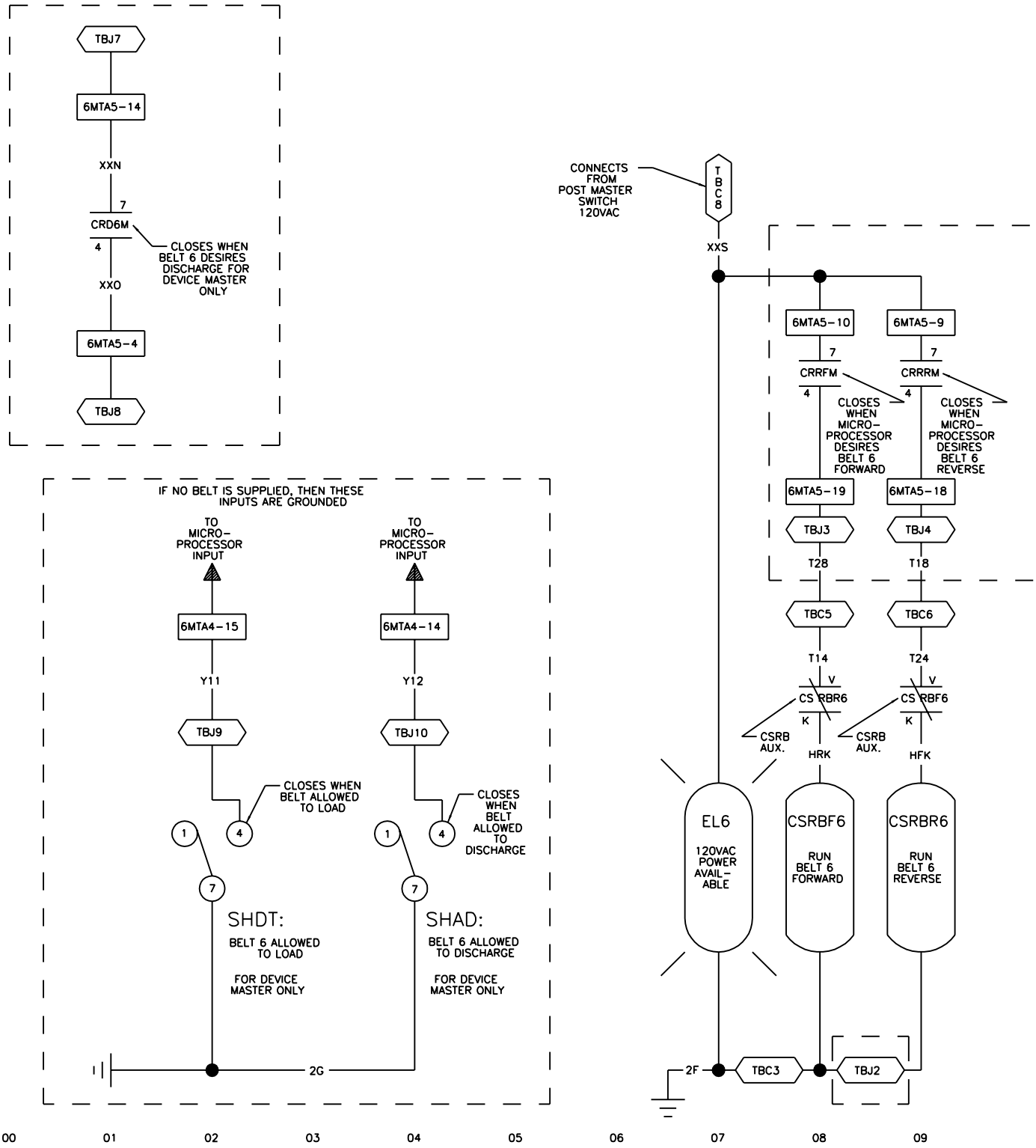
W6LM4FR5

MICRO 6 SYSTEMS

SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 5

110V50HZ/120V60HZ

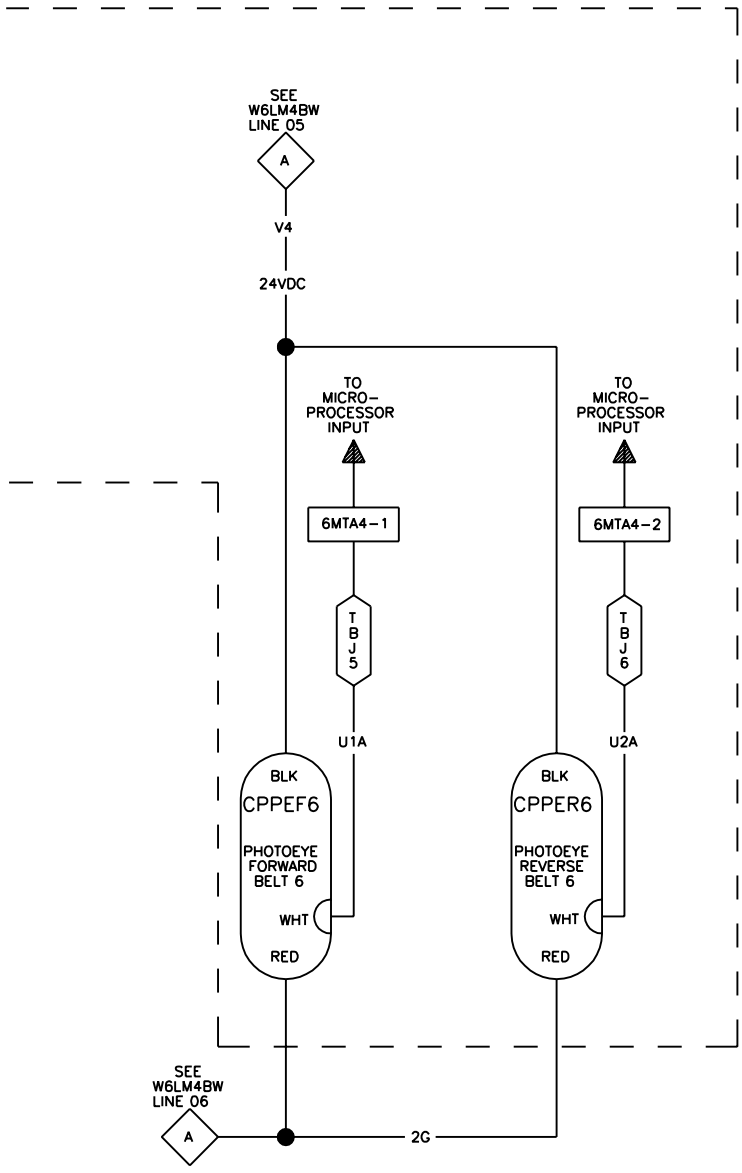
PELLERIN MILNOR CORPORATION



W6LM4FR6
2002106B

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 4MTA5 IS LOCATED ON THE BIO-4 BOARD, 3MTA4 & 3MTA5 IS LOCATED ON THE BIO-3 BOARD.



W6LCMFR6

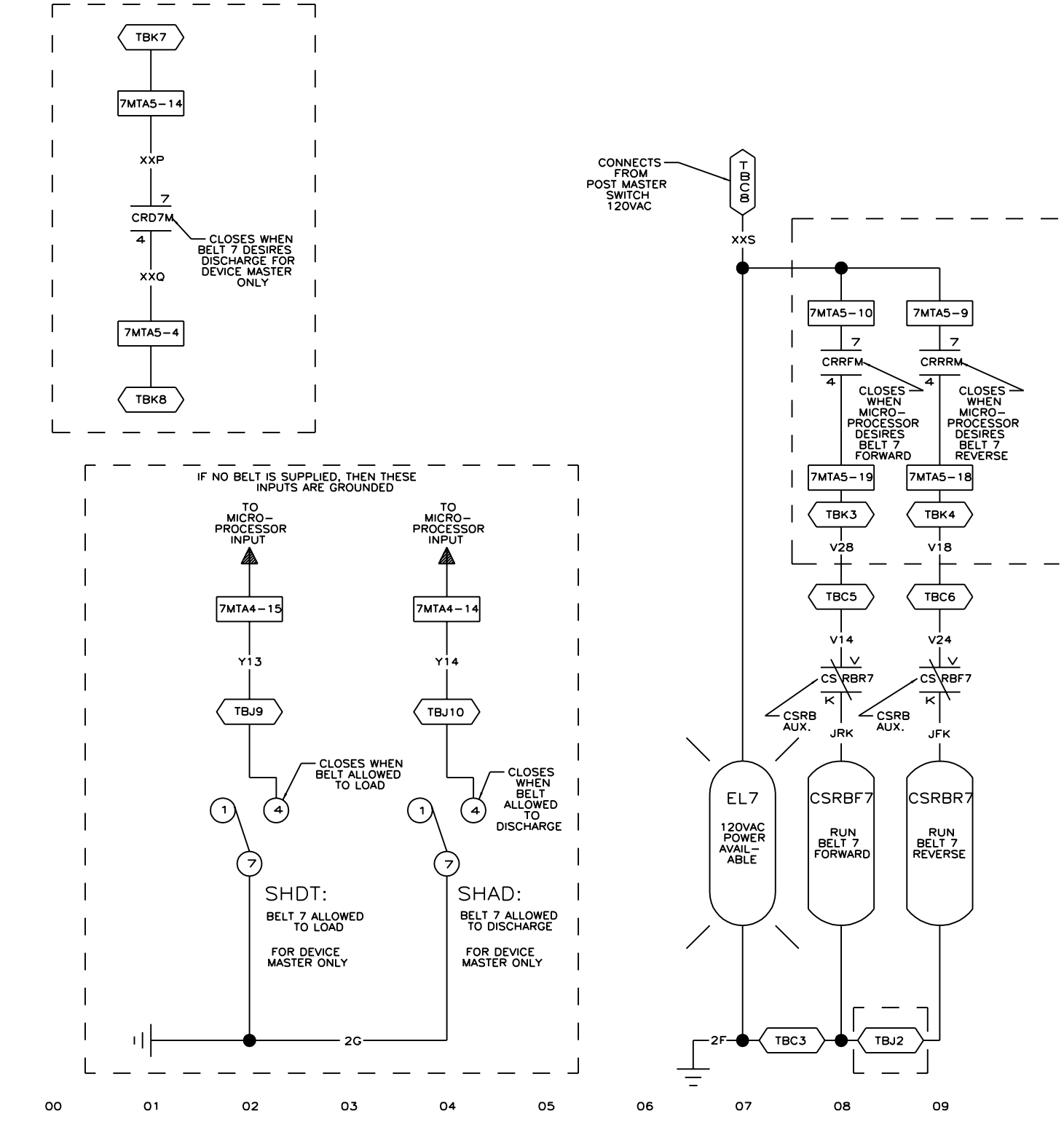
MICRO 6 SYSTEMS

SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 6

110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

10 11 12 13 14 15 16 17 18 19



W6LM4FR7
2002106B

W6LM4FR7

MICRO 6 SYSTEMS

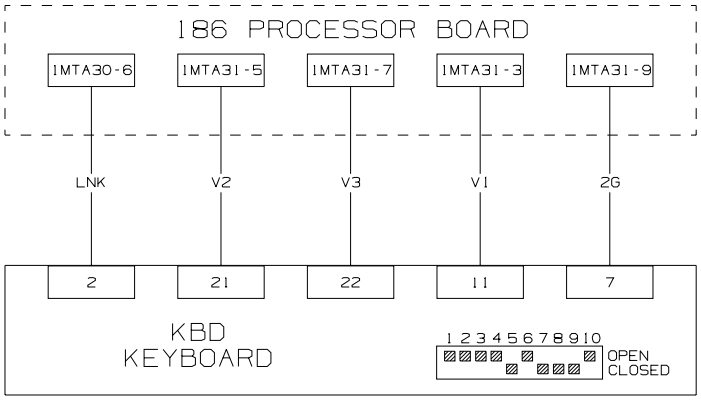
SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 7

110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. TBE IS LOCATED ON THE 8 OUTPUT 16 INPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 8 OUTPUT 16 INPUT CONTROL BOX.
4. FORWARED INDICATED THE FLOW OF GOODS
5. 4MTA5 IS LOCATED ON THE BIO-4 BOARD, 3MTA4 & 3MTA5 IS LOCATED ON THE BIO-3 BOARD.



00 01 02 03 04 05 06 07 08 09 10

W6LM4KB

MICRO 6 SYSTEMS SERIAL CONTROLS
SCHEMATIC: PMC SERIAL KEYBOARD

PELLERIN MILNOR CORPORATION

W6LM4KB
2000476B

NOTES:

1. IMTA30, IMTA31 IS LOCATED ON 186 PROCESSOR BOARD.

W6LM4KB
2000476B

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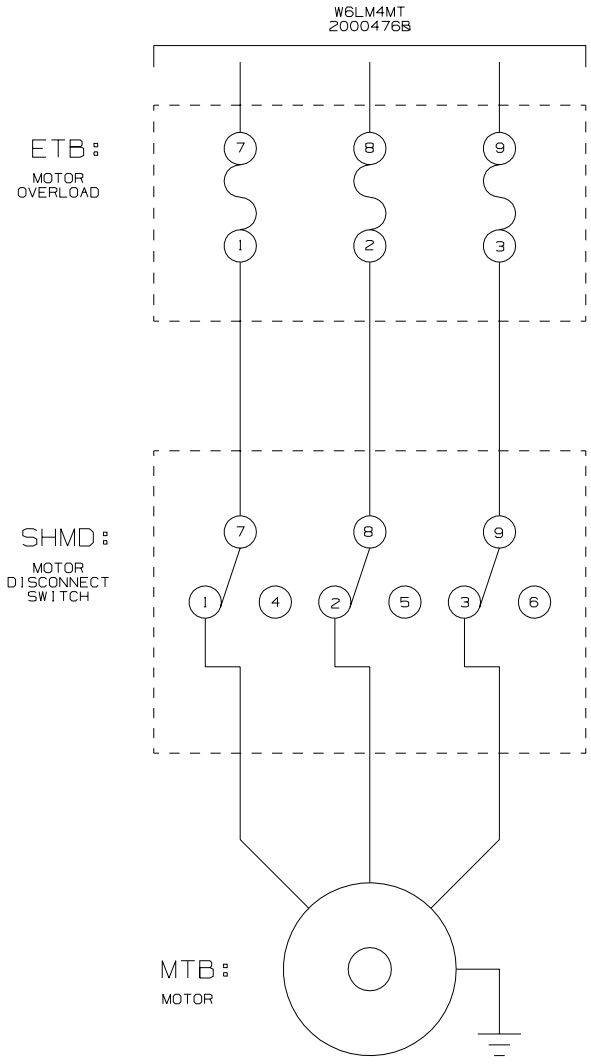


00 01 02 03 04 05 06 07 08 09 10

W6LM4MT
2000476B

W6LM4MT

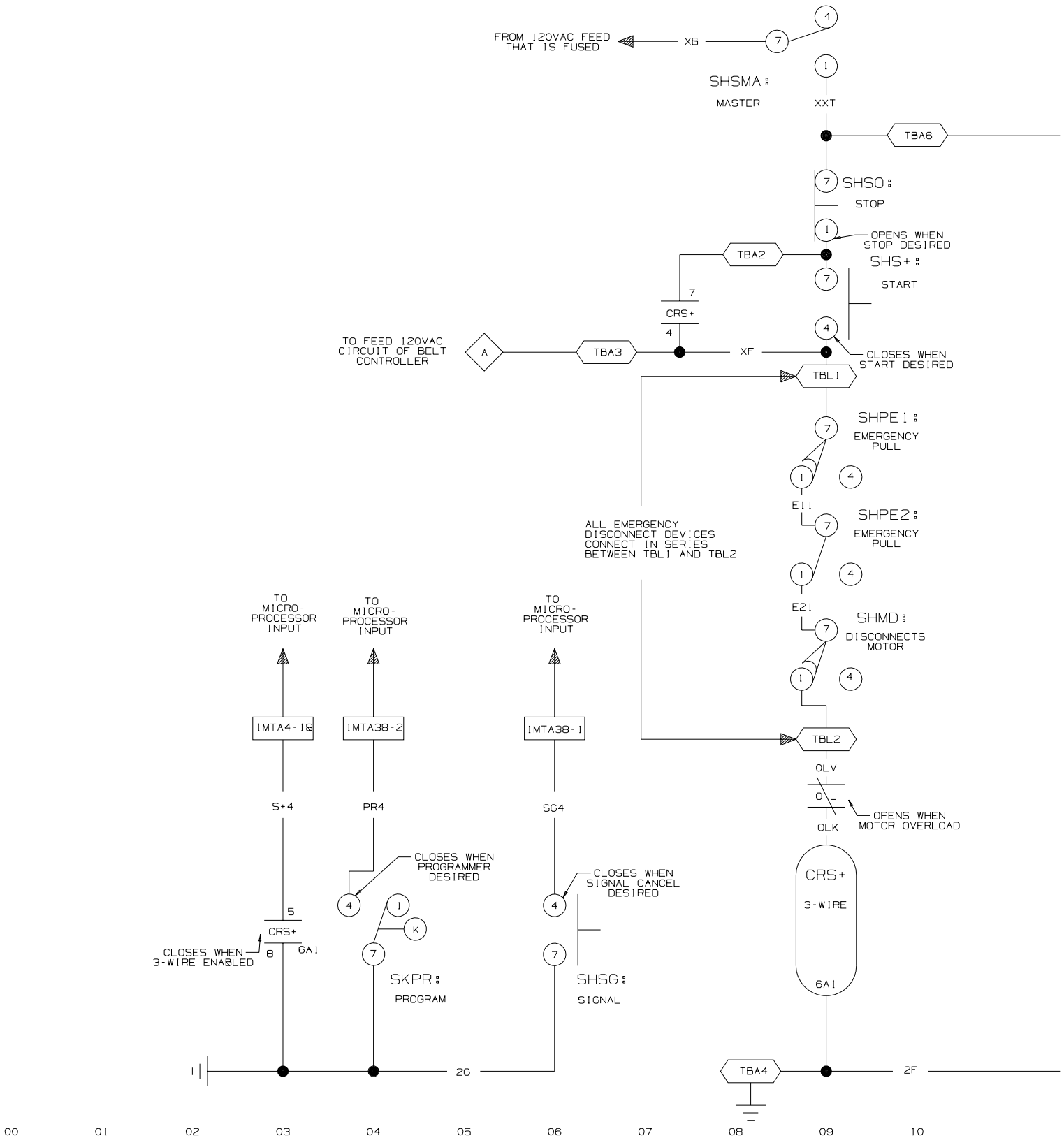
MICRO 6 SYSTEMS

SCHEMATIC: BELT MOTOR WIRING

PELLERIN MILNOR CORPORATION

W6LM4MT
2000476B

11 12

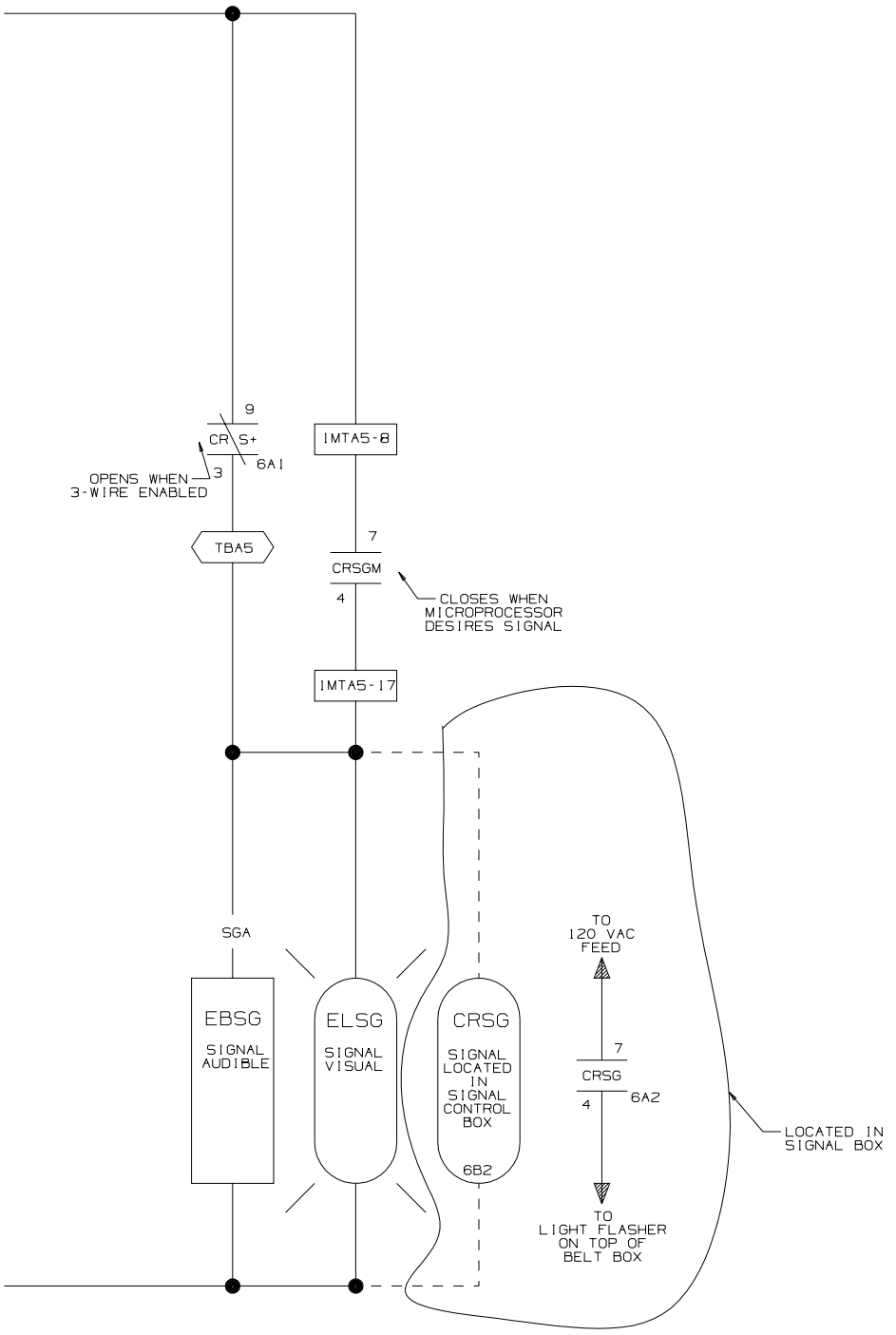

FROM 120VAC FEED THAT IS FUSED
XB
SHSMA:
MASTER
XXT
TBA6
SHSO:
STOP
OPENS WHEN STOP DESIRED
TBA2
SHS+:
START
CRS+
TO FEED 120VAC CIRCUIT OF BELT CONTROLLER
A
TBA3
XF
CLOSES WHEN START DESIRED
TBL1
SHPE1:
EMERGENCY PULL
E11
SHPE2:
EMERGENCY PULL
E21
SHMD:
DISCONNECTS MOTOR
ALL EMERGENCY DISCONNECT DEVICES CONNECT IN SERIES BETWEEN TBL1 AND TBL2
TBL2
OLV
OL
OLK
OPENS WHEN MOTOR OVERLOAD
CRS+
3-WIRE
6A1
TBA4
2F
TO MICRO-PROCESSOR INPUT
IMTA4-18
S+4
CLOSES WHEN 3-WIRE ENABLED
CRS+
6A1
TO MICRO-PROCESSOR INPUT
IMTA38-2
PR4
CLOSES WHEN PROGRAMMER DESIRED
SKPR:
PROGRAM
TO MICRO-PROCESSOR INPUT
IMTA38-1
SG4
CLOSES WHEN SIGNAL CANCEL DESIRED
SHSG:
SIGNAL
2G
00
01
02
03
04
05
06
07
08
09
10

W6LM4S+
MICRO 6 SYSTEMS
SCHMATIC: LINEAR COSTA MASTER
110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

WIRE COLORING CODE

WIRE NO.	VOLTAGE	WIRE COLOR
V1	+5VDC	BLUE
V2	+12VDC	BLUE/ORANGE
V3	-12VDC	BLUE/BLACK
2F	CONTROL GND	RED/WHITE
SRH	SERIAL HIGH	BLUE/RED
SRL	SERIAL LOW	BLUE/BLACK
ESH	MILNET HIGH	BLUE/RED
ESL	MILNET LOW	BLUE/BLACK



NOTES:
1. IMTD, IMTP ARE LOCATED ON ESPS (POWER SUPPLY)
2. IMTA31, IMTA32, IMTA33, IMTA34, IMTA38 ARE LOCATED ON BPS (PROCESSOR BOARD)
3. IMTA1, IMTA2, IMTA3, IMTA4, IMTA5 ARE LOCATED ON SIO-1 (8 OUTPUT-16 INPUT BOARD)
4. TBA IS LOCATED IN 8 OUTPUT-16 INPUT BOARD.
5. CONNECTIONS SHOWN FOR IMTA38 ARE FOR MACHINES WITH 186 PROCESSOR