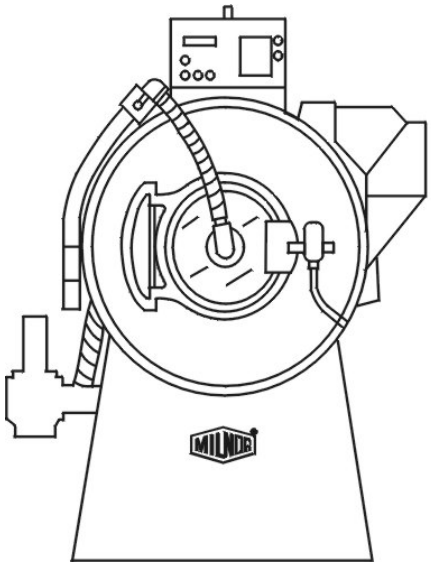
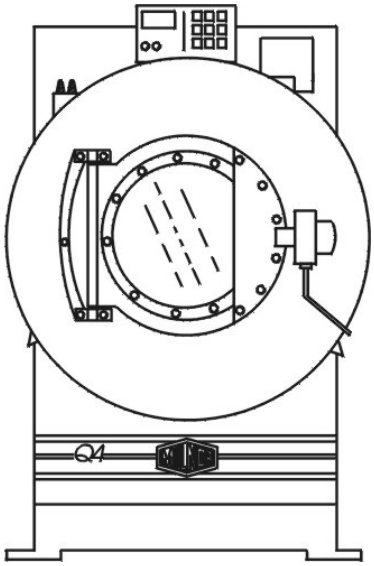
Published Manual Number/ECN: ME6HQUPSCE/2004165N
- **Publishing System: TPAS**
- **Access date: 4/19/2004**
- **Document ECN's: Latest Available**

Schematic/Electrical Parts—

36021, 36026, 42026Q4,6,7P 36021BWP, CPE, NSP MARK V CONTROLS





Read the Safety Manual

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

Please Read

About the Manual Identifying Information on the Cover

The front cover displays pertinent identifying information for this manual. Most important, are the published manual number (part number) /ECN (date code). Generally, when a replacement manual is furnished, it will have the same published manual number, but the latest available ECN. This provides the user with the latest information applicable to his machine. Similarly all documents comprising the manual will be the latest available as of the date the manual was printed, **even though older ECN dates for those documents may be listed in the table of contents**.

When communicating with the Milnor factory regarding this manual, please also provide the other identifying information shown on the cover, including the publishing system, access date, and whether the document ECN's are the latest available or exact.

References to Yellow Troubleshooting Pages

This manual may contain references to "yellow pages." Although the pages containing troubleshooting procedures are no longer printed on yellow paper, troubleshooting instructions, if any, will be contained in the easily located "Troubleshooting" chapter or section. See the table of contents.

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36021, 36026, 42026Q4,6,7P 36021BWP, CPE, NSP MARK V CONTROLS

COMPONENT PARTS LIST

W6Q5PSPL/98441N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
BA	**PRINTED CIRCUIT BOARDS**				
BAD-1	BOARD-ANALOG TO DIGITAL CONVERTER	W6Q5PSBW	08BSADCT	BD: SERIAL A-D CONVERT->TEST	LOW VOLT BOX
BBB-1	BOARD-MEMORY BATTERY BACKUP	W6Q5PSBW	08BSBB1T	BOARD: SER BATT BACKUP-TEST	SW PANEL BOX
BDA-1	BOARD-DIGITAL TO ANALOG CONVERTOR	W6Q5PSBW	08BSDACT	BD:SERIAL D TO A CONVERTR->TEST	LOW VOLT BOX
BIO-1	BOARD-8OUTPUT/16INPUT #1	W6QUPSBW	08BS816CT	BD:SERIAL 8OUT-16INPUT-TEST	LOW VOLT BOX
BO24-1	BOARD-24 OUTPUT #1	W6Q5PSBW	08BSO24AT	BD:SERIAL 24 OUTPUT->TEST	LOW VOLT BOX
B024-2	BOARD-24 OUTPUT #2	W6Q5PSBW	08BSO24AT	BD:SERIAL 24 OUTPUT->TEST	LOW VOLT BOX
BPB	BOARD-PROCESSOR	W6Q5PSBW	08BSPDT	8088 PROCESSOR -> TESTED	SW PANEL BOX
CD	**RELAY-TIME DELAY**				
CDEXN	DELAY-EXTRACT HAS ENDED	W6Q5PSS+	09CF007537	TDR F7.5S 2PDT 11PIN 120V60C	LOW VOLT BOX
CDVS	DELAY-VARIABLE SPEED FAULT	W6Q5PSVP	09CF007537	TDR F7.5S 2PDT 11PIN 120V60C	VARI SPD BOX
CDWAA	DELAY-WASH MOTOR CCW	W6Q5PSVP	09CF001037	TDR F1S 2PDT 11PIN 120V60C	VARI SPD BOX
CDWAC	DELAY-WASH MOTOR CW	W6Q5PSVP	09CF001037	TDR F1S 2PDT 11PIN 120V60C	VARI SPD BOX
CL	**RELAY-LATCH**				
CLDR	LATCH-DOOR OPEN	W6Q5PSS+	09CL2C-C37	RELAY-LATCH DPDT 120V 2-COIL	LOW VOLT BOX
CR	**RELAY-PILOT OR CONTROL**				
CRDRR	RELAY-REUSE DRAIN	W6Q5PSEV	09C024D37	4PDT "KH" 110/120V	LOW VOLT BOX
CREXA	RELAY-AMPSAVER	W6Q5PSEA	09C024D24	RELAY 4PDT DIFGLD 14PIN 24V	LOW VOLT BOX
CRS+	RELAY-START 3-WIRE	W6Q5PSS+	09C024D37	4PDT "KH" 110/120V	LOW VOLT BOX
CRSPA	RELAY-SPEED	W6Q5PSS+	09C024D37	4PDT "KH" 110/120V	LOW VOLT BOX
CRSS	RELAY-START	W6Q5PSS+	09C024D37	4PDT "KH" 110/120V	LOW VOLT BOX
CS	**CONTACTOR-MOTOR STARTER**				
CSDR	CONTACTOR-DRAIN MOTOR	W6Q5PSMC	09MC04C337	18A 3P CONT.NR 120V5/6 IEC	HIGH VOLT BX
CSDR	CONTACTOR-DRAIN MOTOR	W6Q5PSMD	09MC04C337	18A 3P CONT.NR 120V5/6 IEC	HIGH VOLT BX
CSE1	CONTACTOR-LOW EXTRACTOR MOTOR	W6Q5PSMC	09MC04C337	18A 3P CONT.NR 120V5/6 IEC	HIGH VOLT BX
CSE2	CONTACTOR-HIGH EXTRACTOR MOTOR	W6Q5PSMC	09MC04D337	25A 3P CONT.NR 120V5/6 IEC	HIGH VOLT BX
CSVS	CONTACTOR-VARIABLE SPEED	W6Q5PSVP	09MC04E337	32A 3P CONT.NR 120V5/6 IEC	HIGH VOLT BX
CSWAA	CONTACTOR-WASH CCW	W6Q5PSMC	MESSAGE EW	SEE CSWAC FOR PART NUMBER	HIGH VOLT BX
CSWAA	CONTACTOR-WASH CCW	W6Q5PSMD	MESSAGE EW	SEE CSWAC FOR PART NUMBER	HIGH VOLT BX
CSWAC	CONTACTOR-WASH MOTOR REVERSING	W6Q5PSMC	09MR04C337	18A 3P REV+2N/C 120V5/6 IEC	HIGH VOLT BX
CSWAC	CONTACTOR-WASH MOTOR REVERSING	W6Q5PSMD	09MR04C337	18A 3P REV+2N/C 120V5/6 IEC	HIGH VOLT BX
CSW2L	CONTACTOR-WASH LOW SPEED	W6Q5PSMC	MESSAGE EW	SEE CSW2N FOR PART NUMBER	2SPD WASH BX
CSW2N	CONTACTOR-WASH NORMAL SPEED REV	W6Q5PSMC	09MR04C337	18A 3P REV+2N/C 120V5/6 IEC	2SPD WASH BX

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
EB	**BUZZER OR AUDIBLE SIGNAL**				
EBSG	BUZZER-SIGNAL AUDIBLE	W6Q5PSS+	09H015	BUZZER 115V W/6-32 CRT+6" LEADS	SWITCH PANEL
EC	**CLUTCHES-ELECTRICAL**				
ECEX	CLUTCH-EXTRACT MOTOR 12VDC	W6Q5PSEC	54H160A	CLUTCH 12VDC MA-7+3/8A-2G	DRIVE MOTORS
ECWA	CLUTCH-WASH MOTOR	W6Q5PSEC	54H160A	CLUTCH 12VDC MA-7+3/8A-2G	DRIVE MOTORS
ED	**DISPLAY-ELECTRONIC**				
EDM	DISPLAY-MICROPROCESSOR	W6Q5PSD	08BSEVFD5U	SERIAL VFD 2LINE 8088-TEST	SWITCH PANEL
EF	**FUSE OR FUSE HOLDER**				
EFP1	FUSE-PRIMARY INCOMING VOLTAGE	W6Q5PSLV	09FF005AWN	BUSE BUSS KTK 5AMP 600V=HPS HOLDER	HIGH VOLT BX
EFP2	FUSE-PRIMARY INCOMING VOLTAGE	W6Q5PSLV	09FF005AWN	BUSE BUSS KTK 5AMP 600V=HPS HOLDER	HIGH VOLT BX
EF37	FUSE-120VAC CONTROL CIRCUIT	W6Q5PSLV	09FF006AMA	FUSE BK/ABC 6 AMP 250V BUSS	HIGH VOLT BX
EL	**LIGHT-PILOT OR INDICATOR**				
ELEBK	LIGHT-BALANCE EXCURSION	W6Q5PSI	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BALANCE SWPL
ELEBS	LIGHT-EXTRACT BALANCE IS O.K.	W6Q5PSEB	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BALANCE SWPL
ELEB1	LIGHT-EXTRACT BALANCE RIB #1	W6Q5PSEB	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BALANCE SWPL
ELEB2	LIGHT-EXTRACT BALANCE RIB #2	W6Q5PSEB	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BALANCE SWPL
ELEB3	LIGHT-EXTRACT BALANCE RIB #3	W6Q5PSEB	09J060A37	LAMP 1/2" AMB 125V IDI 1050QC3	BALANCE SWPL
ELSG	LIGHT-SIGNAL VISUAL	W6Q5PAS+	09J060WH37	LAMP 1/2" WH 120 TAB IDI1050QC4	SWITCH PANEL
EM	**ELECTROMAGNET AND SOLENOID**				
EMCF	FAN-INVERTER COOLING	W6Q5PSVP	13AF100A37	FAN 92CFM115V60 NEWARK #90F6921	VARI SPD BOX
EMDL	SOLENOID-DOOR LATCH	W6Q5PSS+	09K062B37	SOLENOID (C-7)120/60--110/50	DOOR LTCH BX
EMSR	SWITCH-EMERGENCY STOP	W6Q5PSS+	09N505	SW ASSY EMER STOP	SWITCH PANEL
ES	POWER SUPPLY-ELECTRONIC				
ESPS	POWER SUPPLY-MICROPROCESSOR	W6Q5PSBW	08PSS3401T	30 WATT POWER SUPPLY TESTED	SW PANEL BOX
ET	**THERMAL OVERLOAD DEVICES**				
ETDB	OVERLOAD-DYNAMIC BRAKE	W6Q5PSVP	09F024A	OL RELAY 1P SZ1 SQD #9065-C01	VARI SPD BOX
ETDR	OVERLOAD-DRAIN MOTOR	W6Q5PSMT	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
ETDR	OVERLOAD-DRAIN MOTOR	W6Q5PSMU	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
ETE1	OVERLOAD-LOW SPEED EXTRACT MOTOR	W6Q5PSMT	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
ETWA	OVERLOAD-WASH MOTOR	W6Q5PSMT	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
ETWA	OVERLOAD-WASH MOTOR	W6Q5PSMU	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
ETWA	OVERLOAD-WASH MOTOR	W6Q5PSVP	09FTC0037T	OL RELAY 3.7-12A AB#193-A3F1	HIGH VOLT BX
EX	**TRANSFORMERS**				

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
EX37	TRANSFORMER-INCOMING VOLT.120VAC	W6Q5PSLV	MESSAGE EW	SEE EX37-1, -2, OR -3 FOR VOLTAGE	HIGH VOLT BX
EX37-1	TRANSFORMER-208/240>120VAC	W6Q5PSLV	09U249AA37	XFMR 200-240V PRI/120VSEC/250VA	HIGH VOLT BX
EX37-2	TRANSFORMER-380/480>120VAC	W6Q5PSLV	09U200AAB	XFMR 380-480V/240-120V-250VA	HIGH VOLT BX
EX37-3	TRANSFORMER-600->120VAC	W6Q5PSLV	09U251AB37	XFMR 600VPRI/120VSC-250VA-3%REG	HIGH VOLT BX
EXCL	TRANSFORMER-CLUTCH	W6Q5PSEC	09U002EBR	EFMR 120/240 PRI EBR 12VDC 90	HIGH VOLT BX
KB	**KEYBOARD-ELECTRONIC**				
KBM	KEYPAD-MICROPROCESSOR	W6Q5PSKP	08ND5X6WE	KEYPAD:5X6MATRIX WASHER-EXT	SWITCH PANEL
MV	**MOTOR POWER INVERTERS**				
MVDBR	RESISTOR-DYNAMIC BRAKE	W6Q5PSVP	09MV100RES	RESIST 100 OHM 225WATT ADJ	VARI SPD BOX
MVWAH	INVERTER-WASH MOTOR 380-460V	W6Q5PSVP	09MV004B96	VARSPEED 4.8 AMPS 460V	VARI SPD BOX
MVWAL	INVERTER-WASH MOTOR 200-230V	W6Q5PSVP	09MV011A74	VARSPEED 11AMPS 230V	VARI SPD BOX
SH	**SWITCH-HAND OPERATED**				
SHD	SWITCH-DRAIN	W6Q5PSDR	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	SWITCH PANEL
SHDO	SWITCH-DOOR OPEN	W6Q5PSS+	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	DOOR SW ASSE
SHEAK	SWITCH-EXTRACT CONTROL	W6Q5PSEA	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	SWITCH PANEL
SHMD	SWITCH-MILDATA LOCAL/REMOTE	W6Q5PSI	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	SWITCH PANEL
SHS+	SWITCH-START	W6Q5PSS+	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	SWITCH PANEL
SHSG	SWITCH-SIGNAL CANCEL	W6Q5PSI	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	SWITCH PANEL
SHSMA	SWITCH-MASTER	W6Q5PSS+	09N400CBNO	CONTACT BLK ONLY 1-NO SQD#ZB2BE101	SWITCH PANEL
SHSO	SWITCH-STOP	W6Q5PSS+	09N400CBNC	CONTACT BLKONLY 1-NC SQD#ZB2BE102	SWITCH PANEL
SK	**SWITCH-KEYLOCK**				
SKPR	SWITCH-RUN/PROGRAM (KEY OP)	W6Q5PSI	09N127C	KEYSW SPST 7A120VAC SCREW TERM	SWITCH PANEL
SL	**SWITCH-LEVEL**				
SLLLL	SWITCH-LOW LEVEL	W6Q5PSI	09N069	PRESS SWITCH 4"WC EATON738-719	LEVEL TUBE
SLLL3	SWITCH-HIGH LEVEL	W6Q5PSI	09R014A	MINI-SW SPDT STAKON #V15G1C26	LEVEL TUBE
SM	**SWITCH-MECHANICAL OPERATED**				
SMEBS	SWITCH-EXTRACT BALANCE SENSING	W6Q5PSEB	09R021	MICRO SWITCH SPDT SENSING	BALANCE SENS
SMERC	SWITCH-BALANCE EXCURSION	W6Q5PSI	09R021	MICRO SWITCH SPDT SENSING	BALANCE SENS
SMPLL	SWITCH-DOOR (LATCH)	W6Q5PSS+	09R012	MICSW SPDT PAINTED BZE6-RN 01	DOOR LATCH
SMSP	SWITCH-SPEED	W6Q5PSS+	03-01053A	(3)MERCURY SWITCH ASSY=LO OHM	DRIVE MOTORS
SMWVB	SWITCH-VIBRATION	W6Q5PSS+	09R012	MICSW SPDT PAINTED BZE6-RN 01	HIGH VOLT BX
SP	**SWITCH-PRESSURE OPERATED**				
SPBR	PRESSURE SW-BRAKE	W6Q5PSI	09N082A	PRESSW NASON CLOSE @ 62 LB.	AIR VALVE BX

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
SPLLS	SWITCH-DOOR SAFETY	W6Q5PSS+	09N069	PRESS SWITCH 4"WC EATON738-719	LOW VOLT BOX
SPLL1	SWITCH-LOWER THAN LOWEST LEVEL	W6Q5PSI	09N069	PRESS SWITCH 4"WC EATON738-719	LOW VOLT BOX
VE	**VALVE-ELECTRIC OPERATED**				
VEAD	VALVE-ALTERNATE DRAIN	W6Q5PSDR	96TAU3AA37	1/8"UNIV 3WAY 120V50/60	AIR VALVE BX
VEBF	VALVE-BOTTOM FILL	W6Q5PSEV	96R301A37	1/8" AIRPILOT 3W NC 120V50/60	AIR VALVE BX
VECFM	VALVE-FLUSH MANIFOLD	W6Q5PSCX	96R301A37	1/8" AIRPILOT 3W NC 120V50/60	AIR VALVE BX
VEC01	VALVE-CHEMICAL #1 FLUSH	W6Q5PSCF	96P013G37	3/4" 2WAYPLASTCVAL 120V60C	SUPPLY INJEC
VEC02	VALVE-CHEMICAL #2 FLUSH	W6Q5PSCF	96P013G37	3/4" 2WAYPLASTCVAL 120V60C	SUPPLY INJEC
VEC03	VALVE-CHEMICAL #3 FLUSH	W6Q5PSCF	96P013G37	3/4" 2WAYPLASTCVAL 120V60C	SUPPLY INJEC
VEC04	VALVE-CHEMICAL #4 FLUSH	W6Q5PSCF	96P013G37	3/4" 2WAYPLASTCVAL 120V60C	SUPPLY INJEC
VEC05	VALVE-CHEMICAL #5 FLUSH	W6Q5PSCF	96P013G37	3/4" 2WAYPLASTCVAL 120V60C	SUPPLY INJEC
VEC06	VALVE-CHEMICAL #6	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC07	VALVE-CHEMICAL #7	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC08	VALVE-CHEMICAL #8	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC09	VALVE-CHEMICAL #9	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC10	VALVE-CHEMICAL #10	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC11	VALVE-CHEMICAL #11	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC12	VALVE-CHEMICAL #12	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC13	VALVE-CHEMICAL #13	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC14	VALVE-CHEMICAL #14	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEC15	VALVE-CHEMICAL #15	W6Q5PSCX	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	SUPPLY VLVST
VEDRS	VALVE-DRAIN	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEDRS1	VALVE-DRAIN TO REUSE	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEDRS2	VALVE-DRAIN TO SEWER	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEEB1	VALVE-BALANCE FILL RIB #1	W6Q5PSEB	96P053A37	3/4"VAL 110V HAYS #2110-6021IS	MOUNT ONMACH
VEEB2	VALVE-BALANCE FILL RIB #2	W6Q5PSEB	96P053A37	3/4"VAL 110V HAYS #2110-6021IS	MOUNT ONMACH
VEEB3	VALVE-BALANCE FILL RIB #3	W6Q5PSEB	96P053A37	3/4"VAL 110V HAYS #2110-6021IS	MOUNT ONMACH
VESTM	VALVE-STEAM PILOT	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VETCW	VALVE-COOLDOWN COLD WATER	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEWBR	VALVE-BRAKE	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEWCL	VALVE-AIR CLUTCH	W6Q5PSS+	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEWCLA	VALVE-AIR CLUTCH VENT	W6Q5PSS+	96R302A37	1/8"AIR PILOT 3WANO 120V50/60C	AIR VALVE BX
VEWVC	VALVE-COLD WATER	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX

COMPONENT PARTS LIST

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
VEWVH	VALVE-HOT WATER	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
VEWVX	VALVE-EXTRA WATER	W6Q5PSEV	96R301A37	1/8" PILOT 3W-NC 110/50 120/60	AIR VALVE BX
ZF	**RECTIFIER**				
ZFEX	RECTIFIER-EXTRACT CLUTCH	W6Q5PSEC	09A020EBR	RECTIFIER (EBR) 15A/600PIV	HIGH VOLT BX
ZFWA	RECTIFIER-WASH CLUTCH	W6Q5PSEC	09A020EBR	RECTIFIER (EBR) 15A/600PIV	HIGH VOLT 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.

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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

BMP720097R
72332A

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

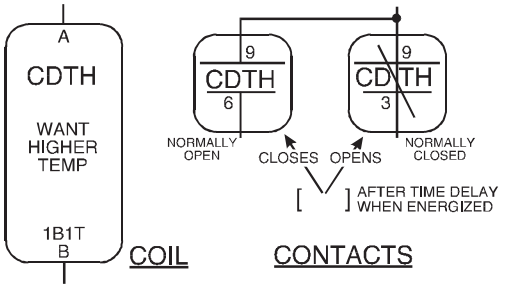
The ***component item numbers*** consist of up to six characters and appear as part of a component's symbol on the schematic. The first two characters indicate the general class of component and the remaining characters are a mnemonic for the function. For example, CD is the code for all time delay relays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

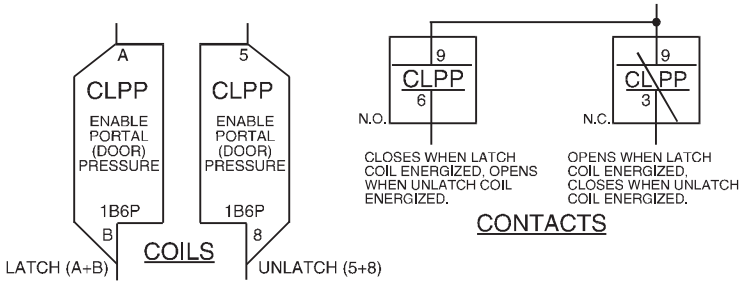
The following are descriptions of the electrical components used in Milnor® machines. Descriptions are in alphabetical order of the component class code (two character prefix).

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).

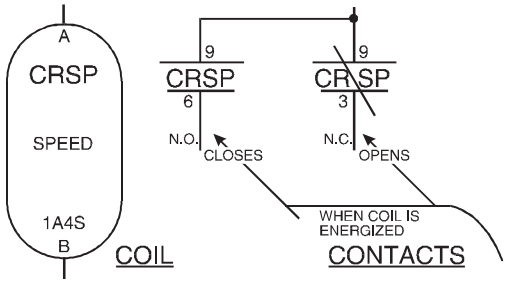
CD=Control, Time Delay Relay A relay whose contacts switch only after a fixed or adjustable delay, once voltage has been applied to its coil. The contacts switch back to normal (de-energized state) immediately when the voltage is removed.

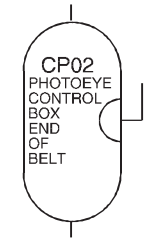




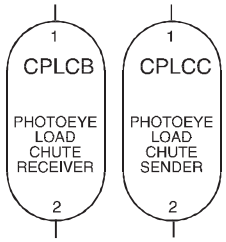
CL=Control, Latch Relay A relay which latches in an energized or set position when operated by one coil (the *latch/set coil*). The relay stays latched, even though coil voltage is removed. The relay releases or unlatches when voltage is applied to a second coil, (the *unlatch/reset coil*).

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.





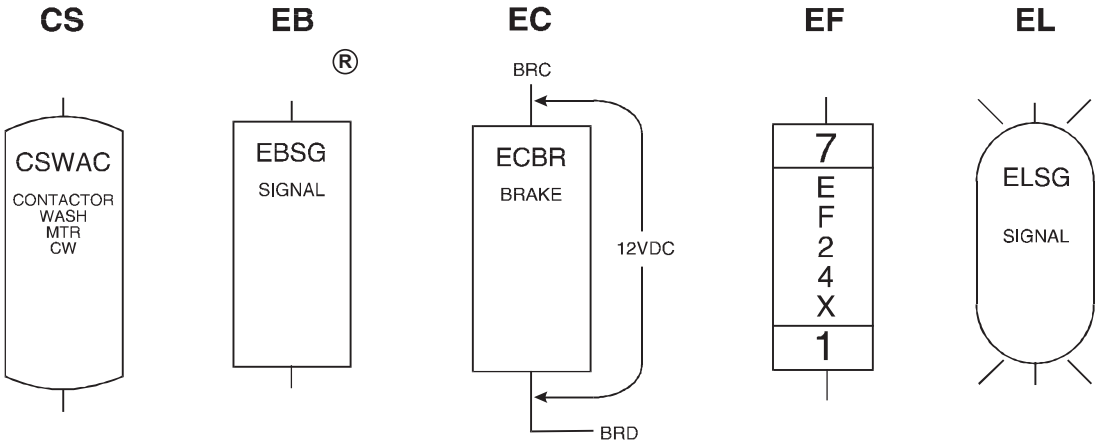
Example of One Assembly



Example of Two Separate Assemblies

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).

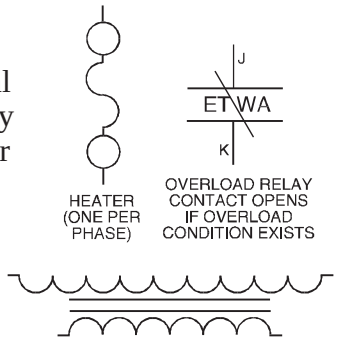
EF=Electric Fuse A fuse is an over-current safety device with a circuit opening fusible member which is heated and severed by the passage of over-current through it.

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.

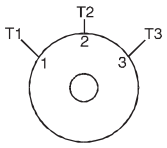
ET=Thermal Overload A safety device designed to protect a motor. A thermal overload consists of an overload block, heaters, and an auxiliary contact. The auxiliary contact is normally installed in a safety (three-wire) circuit that stops power to the motor contactor coil when a motor overload occurs.



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.



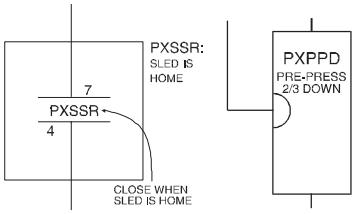
MR=Motors Electro-mechanical device that converts electrical energy into mechanical energy.

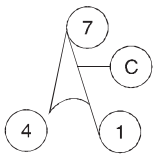
MV=Motor (Variable Speed) Inverter To vary the speed of an AC motor, the volts to frequency ratio must be kept constant. The motor will overheat if this ratio is not maintained.

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.

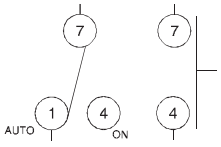
PX=Proximity Switch A device which reacts to the proximity of an target without physical contact or connection. The actuator or target causes a change in the inductance of the proximity switch which causes the switch to operate. Proximity switches can be two-wire (AC) or three-wire (DC) devices.

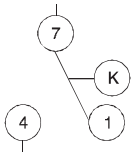




SC=Switch, Cam Operated A switch in which the electrical contacts are opened and/or closed by the mechanical action of a cam(s). Applications include 35-50 pound timer operated machines, autospot, timer reversing motor assembly, and some balancing systems.

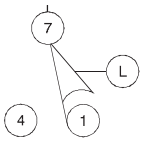
SH=Switch, Hand Operated A switch that is manually operated (e.g., *Start button, Master switch,* etc.).



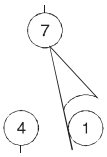


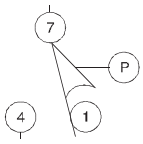
SK=Switch, Key Lock A switch that requires a key to operate . This prevents unauthorized personnel from gaining access to certain functions (e.g., the *Program Menu*).

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



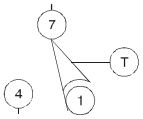
SM=Switch, Mechanically Operated A switch that is mechanically operated by a part of or the motion of the machine (e.g., door closed switch, tilt limit switches, etc.)





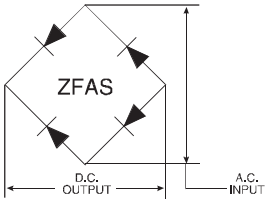
SP=Switch, Pressure Operated A switch consisting of a diaphragm that pushes against a switch actuator.

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.

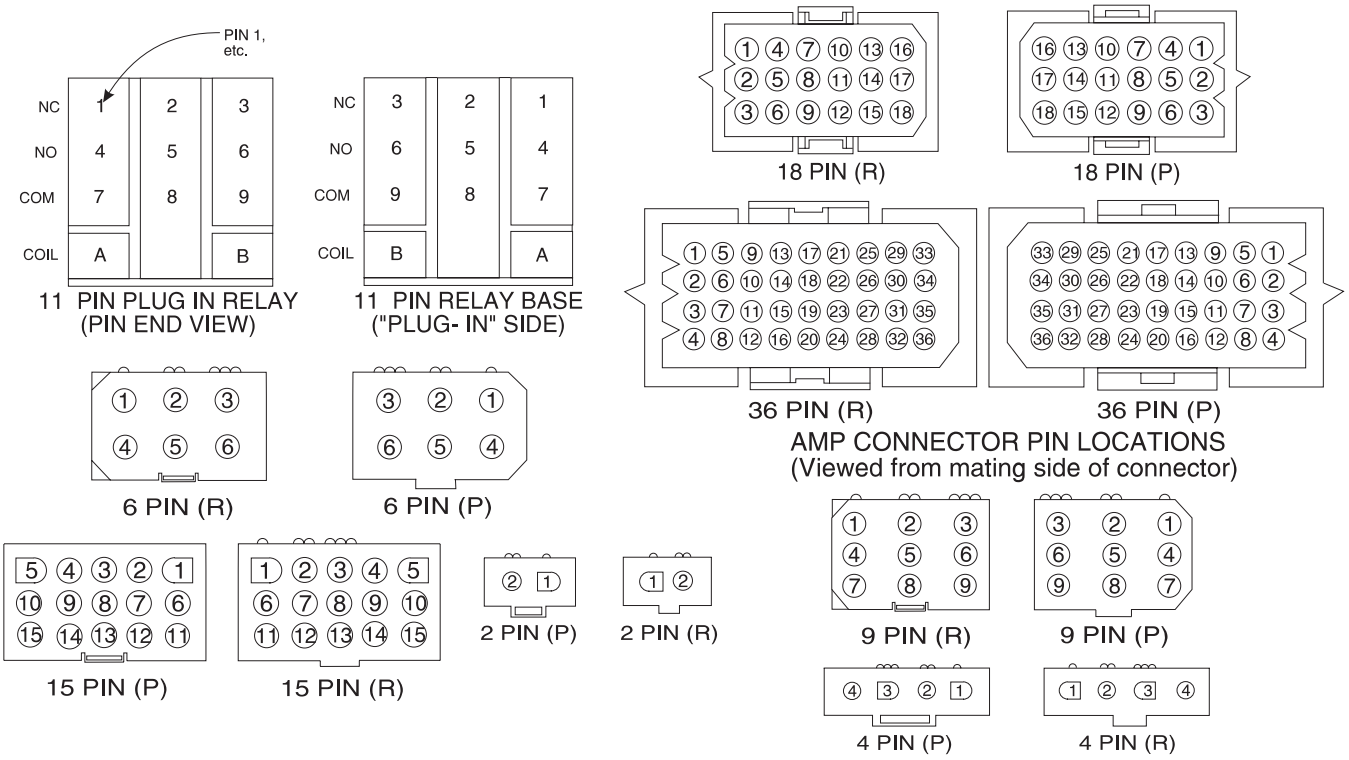


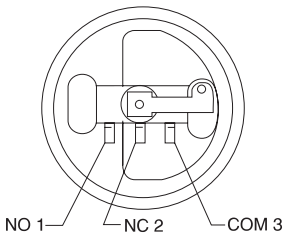
ZF=Rectifier A solid state device that converts alternating current to direct current.

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.

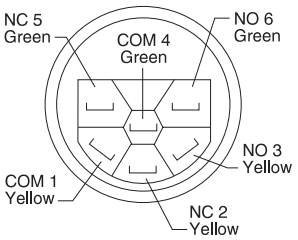
Component Terminal Numbering

NOTE: Numbers shown usually appear on the component.

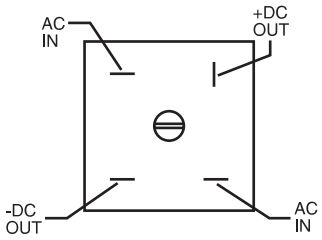




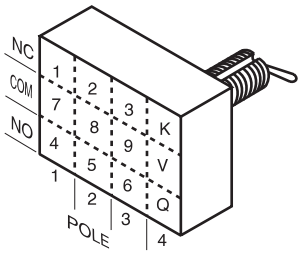
PRESSURE SWITCH



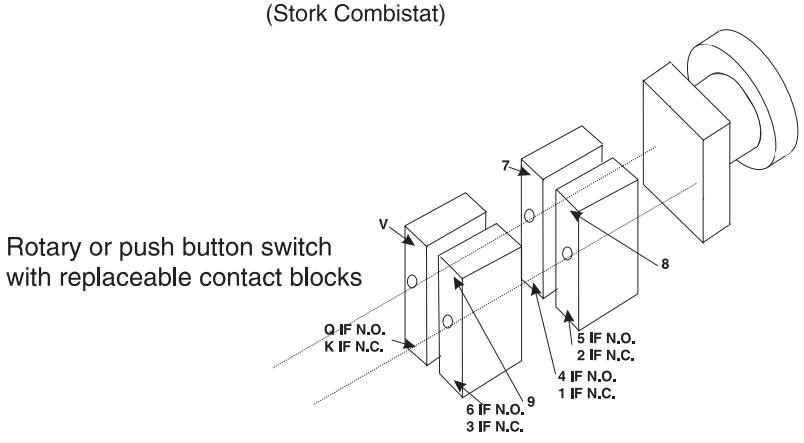
TEMPERATURE CONTROLLER
(Stork Combistat)



BRIDGE RECTIFIER



TOGGLE SWITCH



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.

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

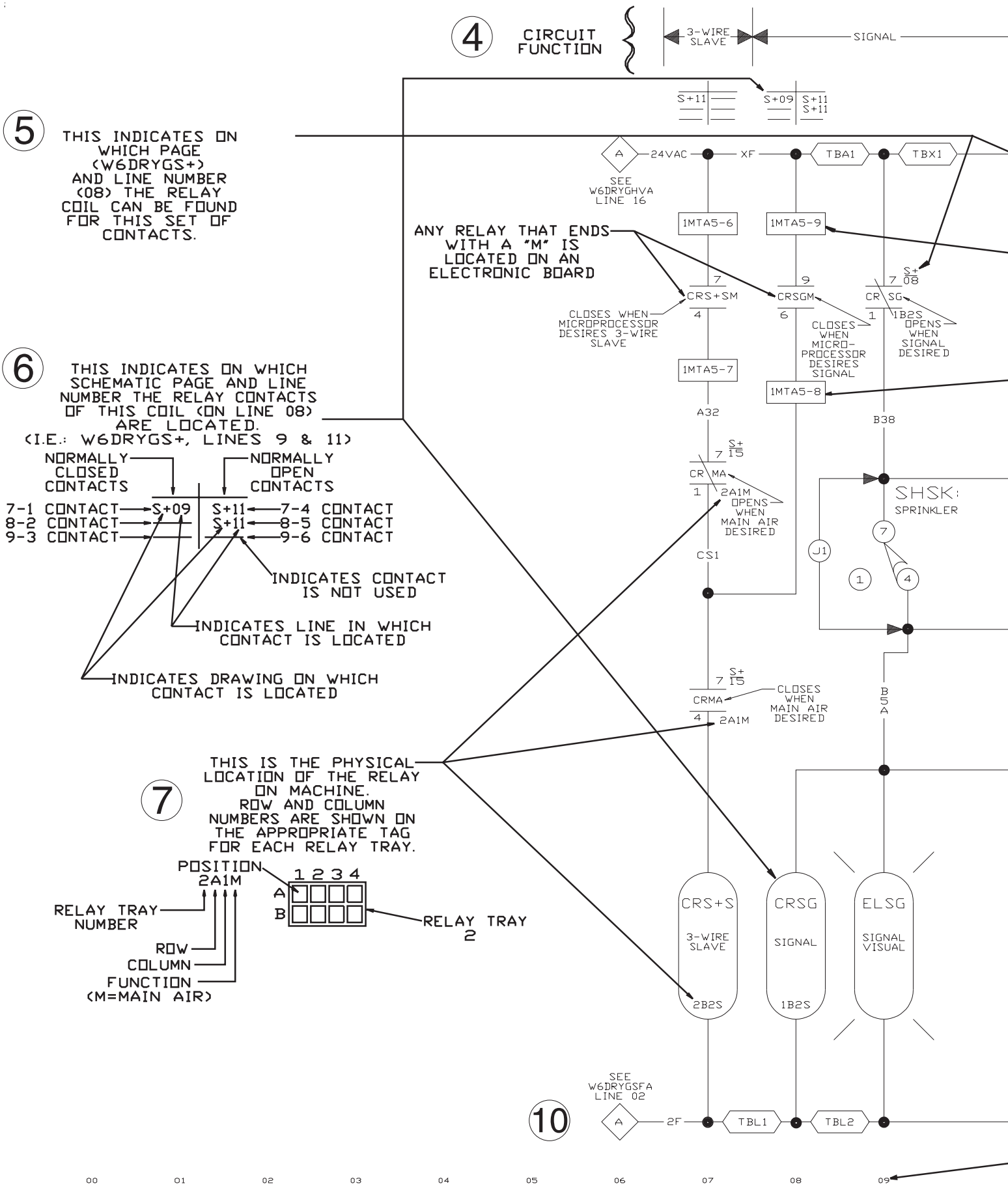
MTA41-MTA43 = digital to analog (D/A) boards

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
9
CRSGM
6
7
S+08
CR SG
1
1B2S
CLOSES WHEN MICROPROCESSOR DESIRES 3-WIRE SLAVE
CLOSES WHEN MICRO-PROCESSOR DESIRES SIGNAL
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)
NORMALLY CLOSED CONTACTS
NORMALLY OPEN CONTACTS
7-1 CONTACT
8-2 CONTACT
9-3 CONTACT
S+09
S+11
S+11
7-4 CONTACT
8-5 CONTACT
9-6 CONTACT
INDICATES CONTACT IS NOT USED
INDICATES LINE IN WHICH CONTACT IS LOCATED
INDICATES DRAWING ON WHICH CONTACT IS LOCATED
A32
B38
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
THIS IS THE PHYSICAL LOCATION OF THE RELAY ON MACHINE. ROW AND COLUMN NUMBERS ARE SHOWN ON THE APPROPRIATE TAG FOR EACH RELAY TRAY.
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

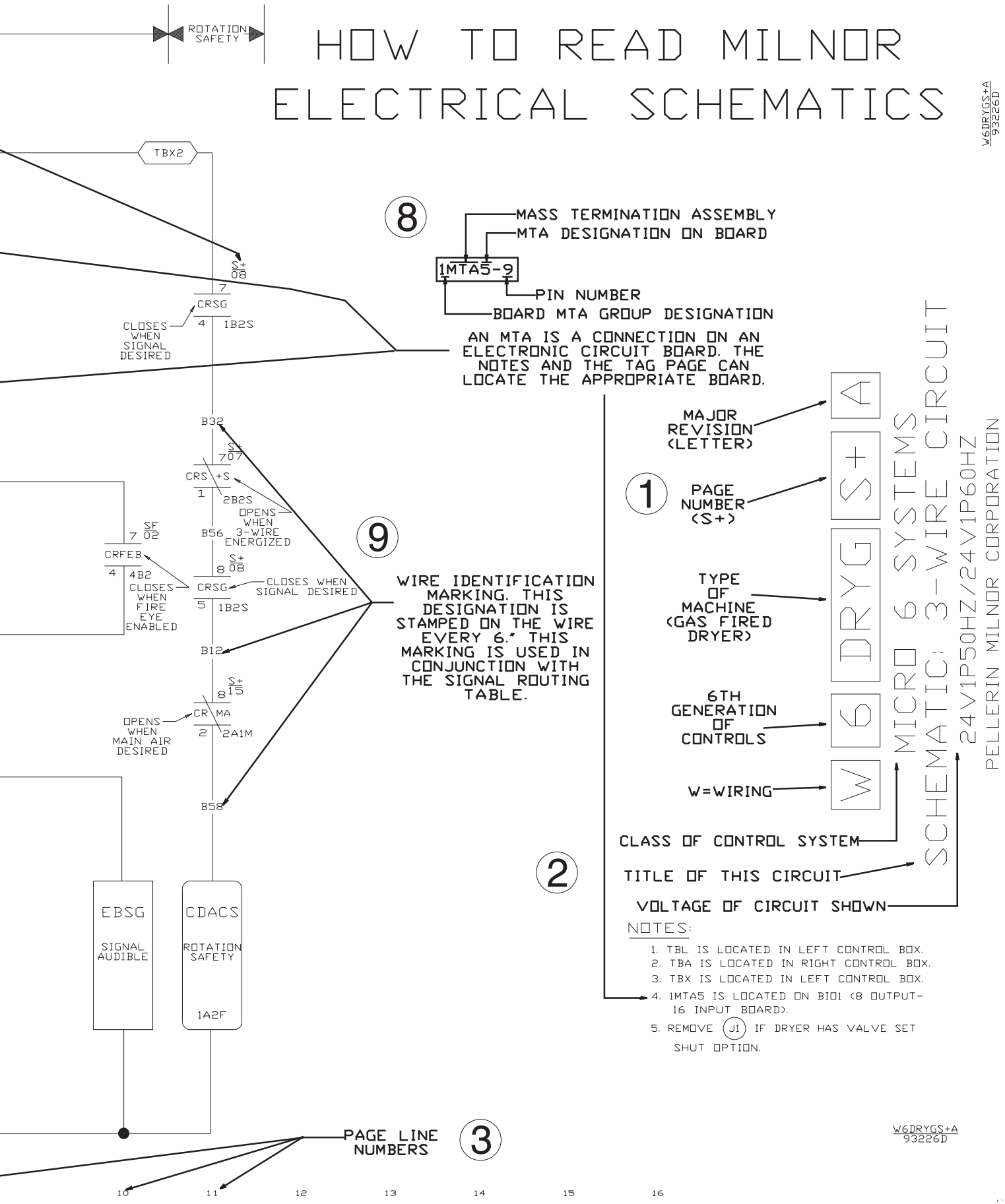
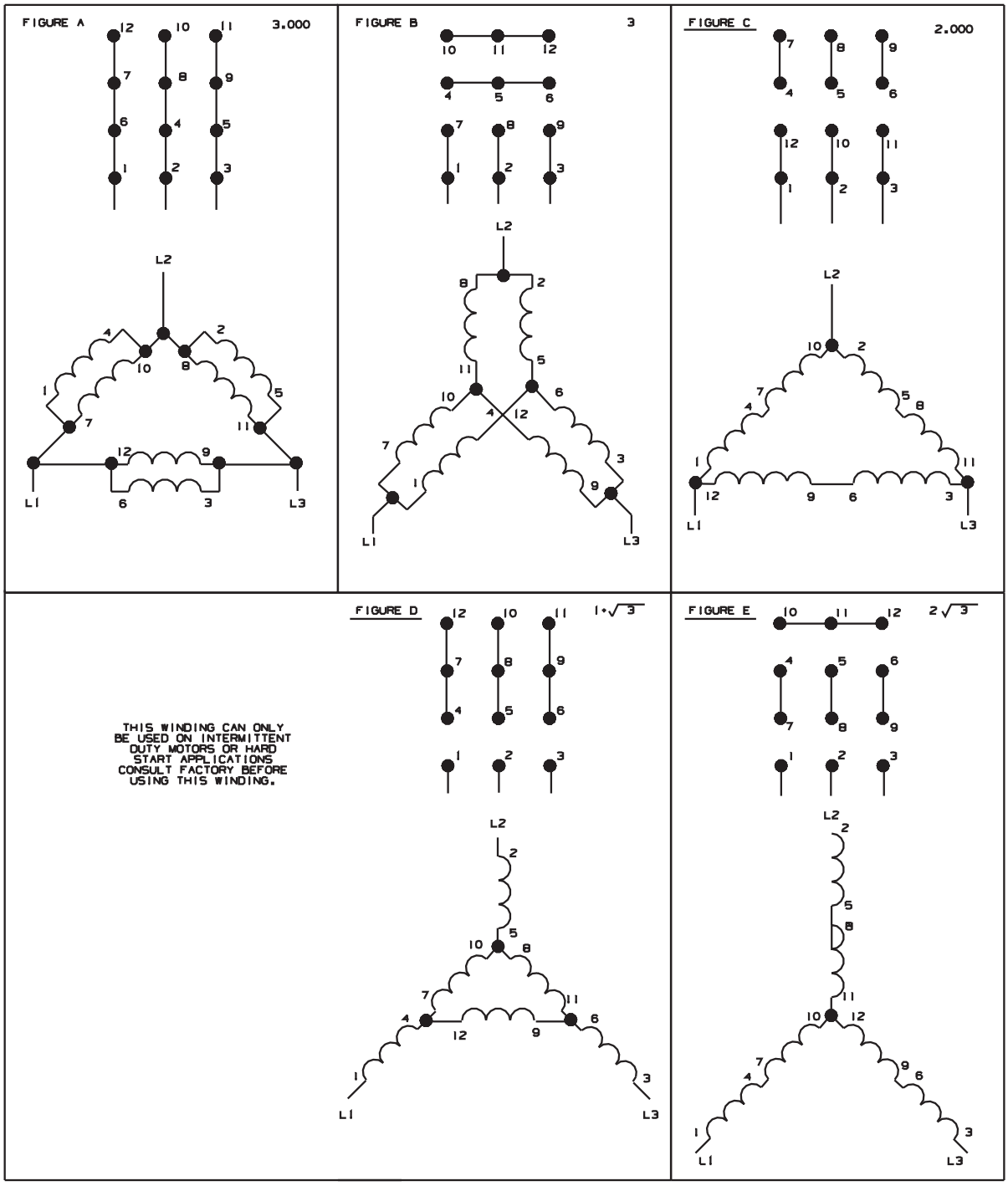


FIGURE	ELECTRICAL VALUES	SUFFIXES									
		B		H		M		T		U	
		50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ
A	1.000	208	230			200	220	220	240	200-220	208-240
B	$\sqrt{3}$				208	346	380	380		346-380	380
C	2.000	416	460	220	240	400	440	440	480	400-440	440-480
D	$1 \cdot \sqrt{3}$						600				600
E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



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

BMP850029

MOTOR CONNECTION DIAGRAMS

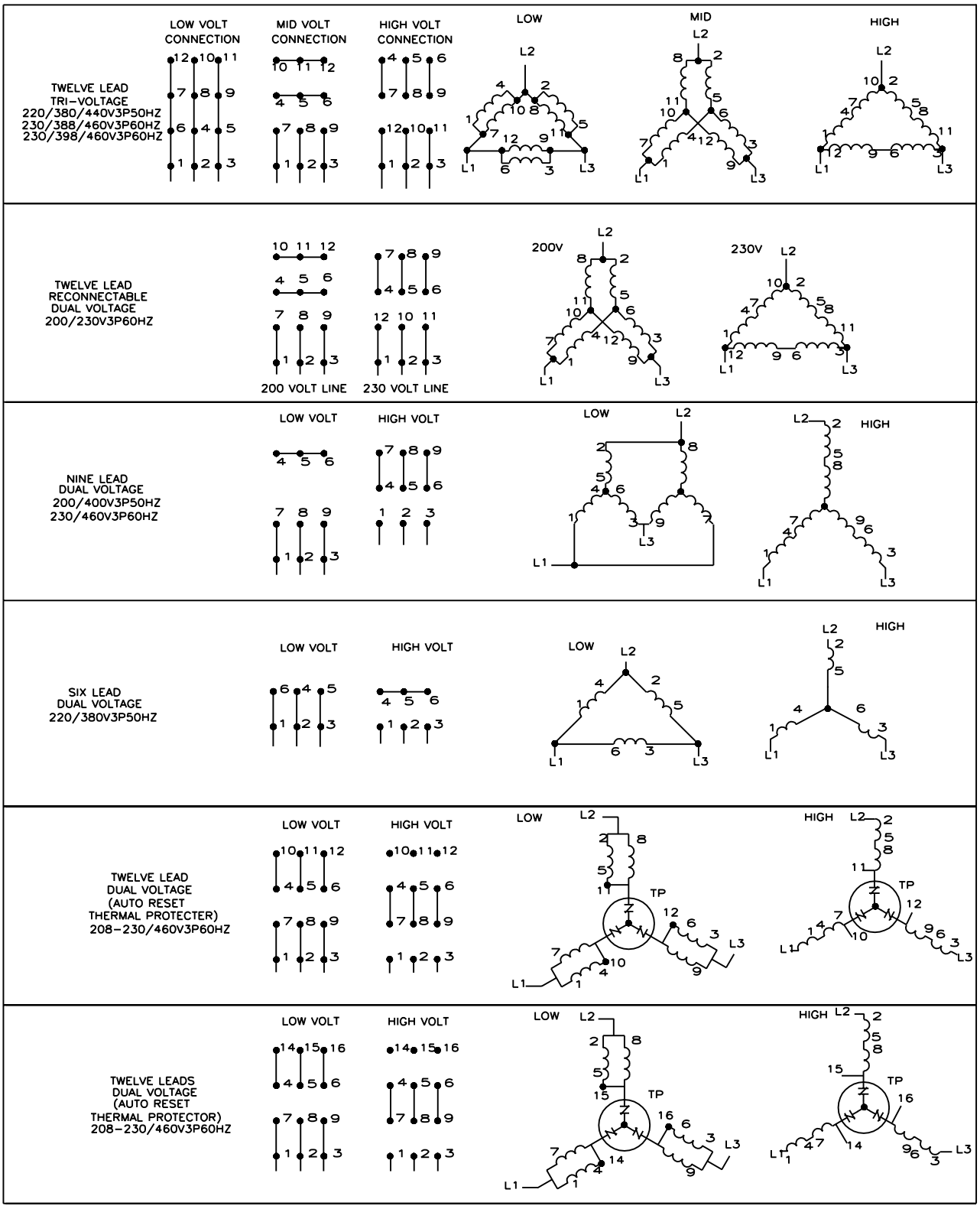
THREE PHASE SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

(ONLY FOR MOTOR SUFFIXES LISTED)

PELLERIN MILNOR CORPORATION

BMP850029
993628

BMP850029
993628

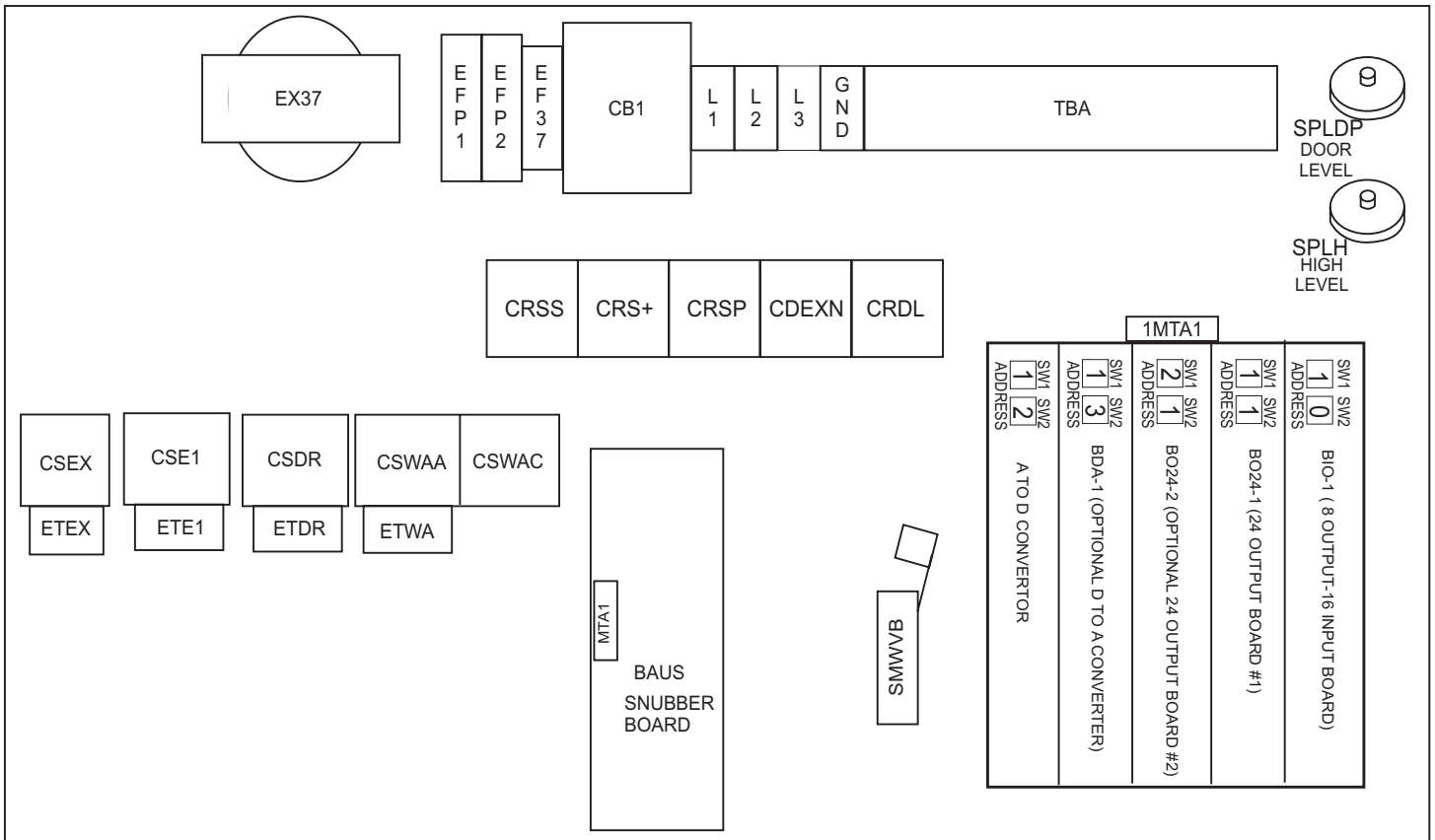


W80008

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

W80008
2001253A

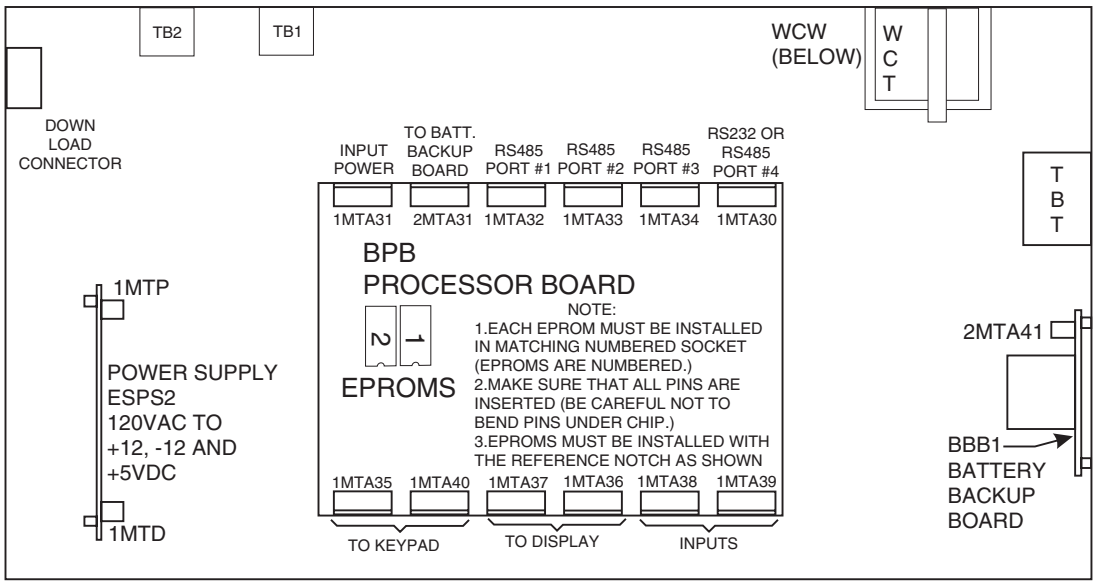
W80008
2001253A



MICRO 7 SYSTEMS MARK V CONTROLS 3621,3626Q6P, 4226Q4P,Q6P,3626BWP CONTROL BOX

PELLERIN MILNOR CORPORATION

B2TAG97032
98502G



MICRO 6 SYSTEMS 36-42 QXP, & 36BWP SWITCH PANEL BOX

PELLERIN MILNOR CORPORATION

W6Q5PSTG1
2004165B

B2TAG90059
98381G

BIO-1 (STANDARD)	BO24-1 (STANDARD)	BO24-1 (OPTIONAL)
INPUTS	OUTPUTS	OUTPUTS
0 NOT USED	0 HIGH EXTRACT MOTOR	0 CHEMICAL 14
1 DOOR NOT CLOSED	1 BALANCE	1 CHEMICAL 9
2 HIGH LEVEL	2 CLUTCH ENERGIZED	2 CHEMICAL 13
3 LOW LEVEL	3 CW WASH MOTOR	3 MANIFOLD FLUSH
4 STARCH LEVEL	4 CCW WASH MOTOR	4 CHEMICAL 15
5 NOT USED	5 STEAM VALVE ON	5 CHEMICAL 11
6 CHEM SAVE/INVERTER FAULT	6 SIGNAL	6 CHEM SAVE
7 SPEED IS LOW	7 3-WIRE ENERGIZED	7 NOT USED
8 AMPSAVER	8 BRAKE RELEASED	8 CHEMICAL 10
9 NOT USED	9 HOT WATER ON	9 AMP SAVER
10 NOT USED	10 COLD WATER ON	10 CHEMICAL 6
11 BRAKE IS OFF	11 EXTRA WATER ON	11 CHEMICAL 7
12 E2 OVERLOAD TRIPPED	12 DRAIN CLOSED	12 CHEMICAL 8
13 E1 OVERLOAD TRIPPED	13 DRAIN TO REUSE	13 CHEMICAL 12
14 DRAIN OVERLOAD TRIPPED	14 LOW EXTRACT MOTOR	14 NOT USED
15 WASH OVERLOAD TRIPPED	15 BOTTOM FILL ON	15 NOT USED
	16 NOT USED	16 NOT USED
OUTPUTS	17 NOT USED	17 NOT USED
0 DRAIN MOTOR	18 NOT USED	18 NOT USED
1 COOLDOWN	19 NOT USED	19 NOT USED
2 FLUSH	20 NOT USED	20 NOT USED
3 CHEMICAL 4	21 NOT USED	21 NOT USED
4 CHEMICAL 1	22 NOT USED	22 NOT USED
5 CHEMICAL 3	23 NOT USED	23 NOT USED
6 CHEMICAL 2		
7 CHEMICAL 5		

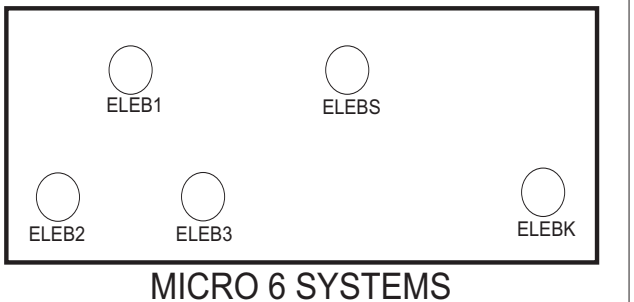
MICRO 6 SYSTEMS-MARK V CONTROLS
INPUTS/OUTPUTS ASSIGNMENTS
FOR M#P, Q#P AND BWP
PELLERIN MILNOR CORPORATION

B2TAG97007
97117G

W6Q5PSTG1

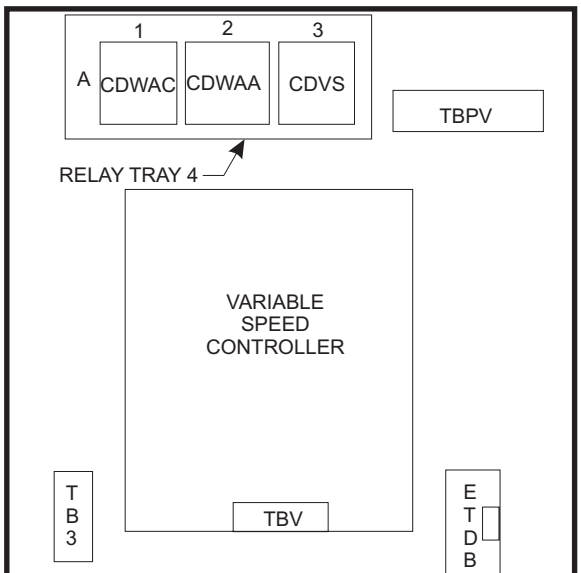
MICRO 6 SYSTEMS
MARK V LAYOUTS & CONTROLS

PELLERIN MILNOR CORPORATION



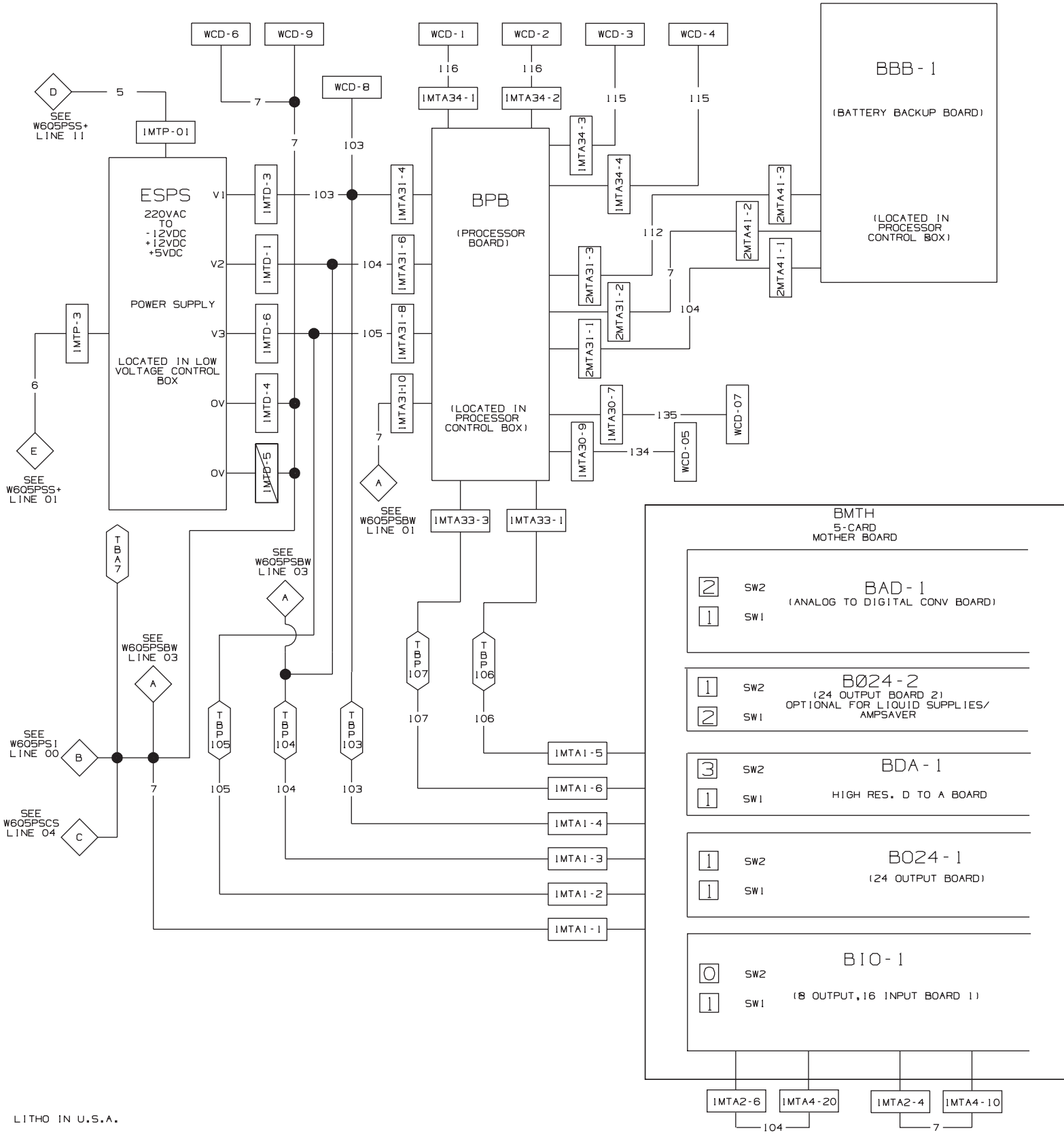
MICRO 6 SYSTEMS
36026BWP
HIGH VOLTAGE CONTROL BOX DOOR
PELLERIN MILNOR CORPORATION

B2TAG90071
95247G



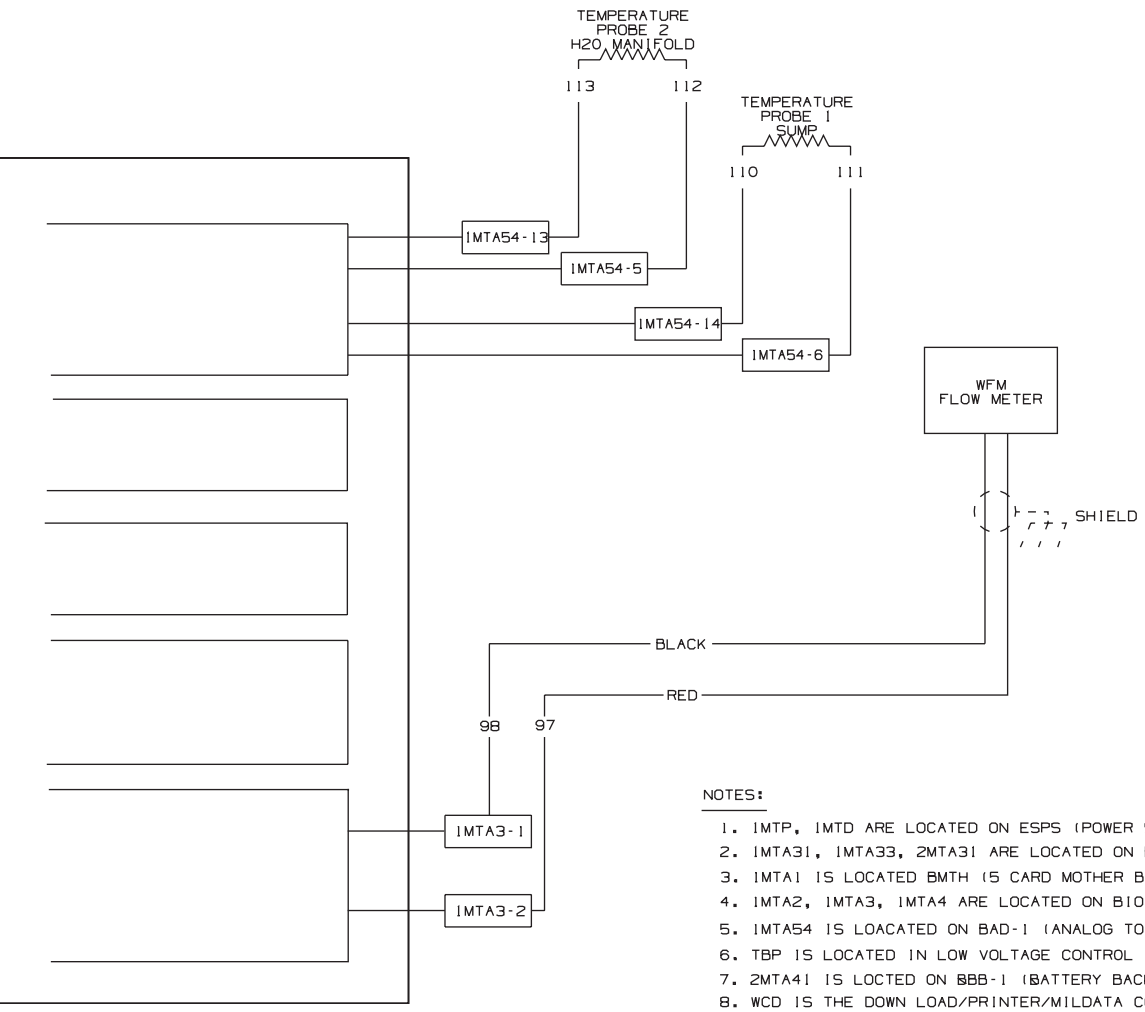
MICRO 6 SYSTEMS
VARIABLE SPEED CONTROL BOX
10HP AND SMALLER
PELLERIN MILNOR CORPORATION

B2TAG88052
95192G


WCD-6
WCD-9
WCD-8
WCD-1
WCD-2
WCD-3
WCD-4
BBB-1
(BATTERY BACKUP BOARD)
(LOCATED IN PROCESSOR CONTROL BOX)
1MTP-01
ESPS
220VAC TO -12VDC +12VDC +5VDC
POWER SUPPLY
LOCATED IN LOW VOLTAGE CONTROL BOX
V1
V2
V3
0V
0V
1MTD-3
1MTD-1
1MTD-6
1MTD-4
1MTD-5
1MTP-3
BPB
(PROCESSOR BOARD)
(LOCATED IN PROCESSOR CONTROL BOX)
1MTA34-1
1MTA34-2
1MTA34-3
1MTA34-4
1MTA31-4
1MTA31-6
1MTA31-8
1MTA31-10
2MTA31-3
2MTA31-2
2MTA31-1
2MTA41-2
2MTA41-3
2MTA41-1
1MTA30-7
1MTA30-9
WCD-07
WCD-05
1MTA33-3
1MTA33-1
SEE W605PSS+ LINE 11
SEE W605PSS+ LINE 01
SEE W605PSBW LINE 01
SEE W605PSBW LINE 03
SEE W605PSBW LINE 03
SEE W605PSI LINE 00
SEE W605PSCS LINE 04
TBA7
TBP105
TBP104
TBP103
TBP107
TBP106
BMTH
5-CARD MOTHER BOARD
BAD-1
(ANALOG TO DIGITAL CONV BOARD)
SW2
SW1
B024-2
(24 OUTPUT BOARD 2)
OPTIONAL FOR LIQUID SUPPLIES/ AMPSAVER
BDA-1
HIGH RES. D TO A BOARD
B024-1
(24 OUTPUT BOARD)
BIO-1
(8 OUTPUT,16 INPUT BOARD 1)
1MTA1-5
1MTA1-6
1MTA1-4
1MTA1-3
1MTA1-2
1MTA1-1
1MTA2-6
1MTA4-20
1MTA2-4
1MTA4-10
LITHO IN U.S.A.
00
01
02
03
04
05
06
07
08
09
10
11
W605PSBW
99312B

WIRE NO.	VOLTAGE	WIRE COLOR
103	+5VDC	BLUE/RED
104	+12VDC	BLUE/ORANGE
105	-12VDC	BLUE/BLACK
7	GROUND	BLUE/WHITE
107	SERIAL HIGH	BLUE/RED
106	SERIAL LOW	BLUE/BLACK
INPUTS	-	BLUE/BLACK
5	120VAC	RED
6	CONTROL GROUND	RED/WHITE

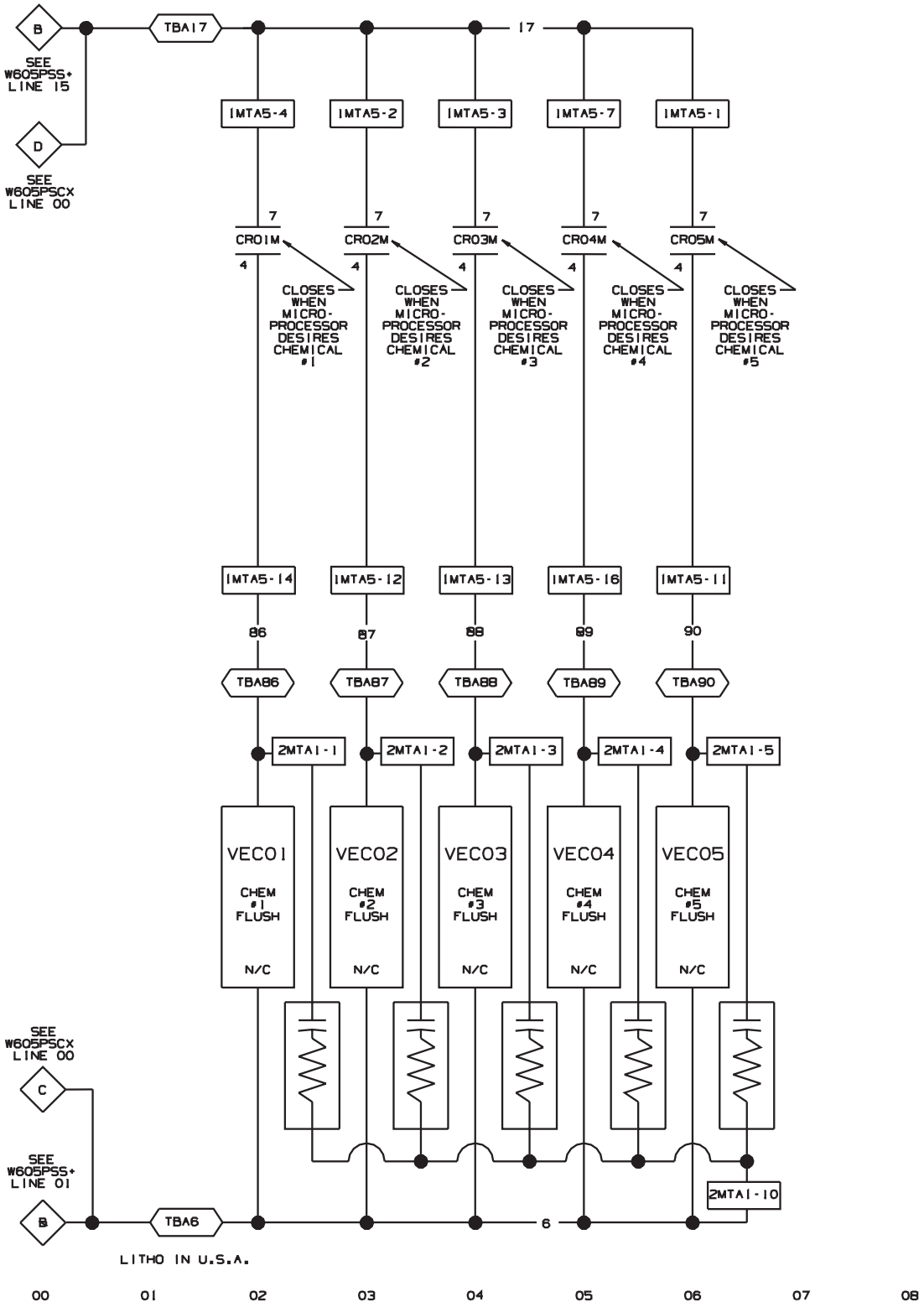
W605PSBW
MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V
SCHEMATIC: BOARD TO BOARD WIRING
PELLERIN MILNOR CORPORATION



NOTES:

1. 1MTP, 1MTD ARE LOCATED ON ESPS (POWER SUPPLY).
2. 1MTA31, 1MTA33, 2MTA31 ARE LOCATED ON BPS (PROCESSOR BOARD).
3. 1MTA1 IS LOCATED BMTH (5 CARD MOTHER BOARD).
4. 1MTA2, 1MTA3, 1MTA4 ARE LOCATED ON BIO1 (8 OUTPUT/16INPUT BOARD).
5. 1MTA54 IS LOACATED ON BAD-1 (ANALOG TO DIGITAL BOARD).
6. TBP IS LOCATED IN LOW VOLTAGE CONTROL BOX.
7. 2MTA41 IS LOCTED ON BBB-1 (BATTERY BACKUP BOARD).
8. WCD IS THE DOWN LOAD/PRINTER/MILDATA CONNECTOR.

12 13 14 15 16 17 18 19



W605PSCF
97152B

NOTES:

1. IMTA5, IMTA6 ARE LOCATED ON B10-1 (8 OUTPUT-16 INPUT)

W605PSCF

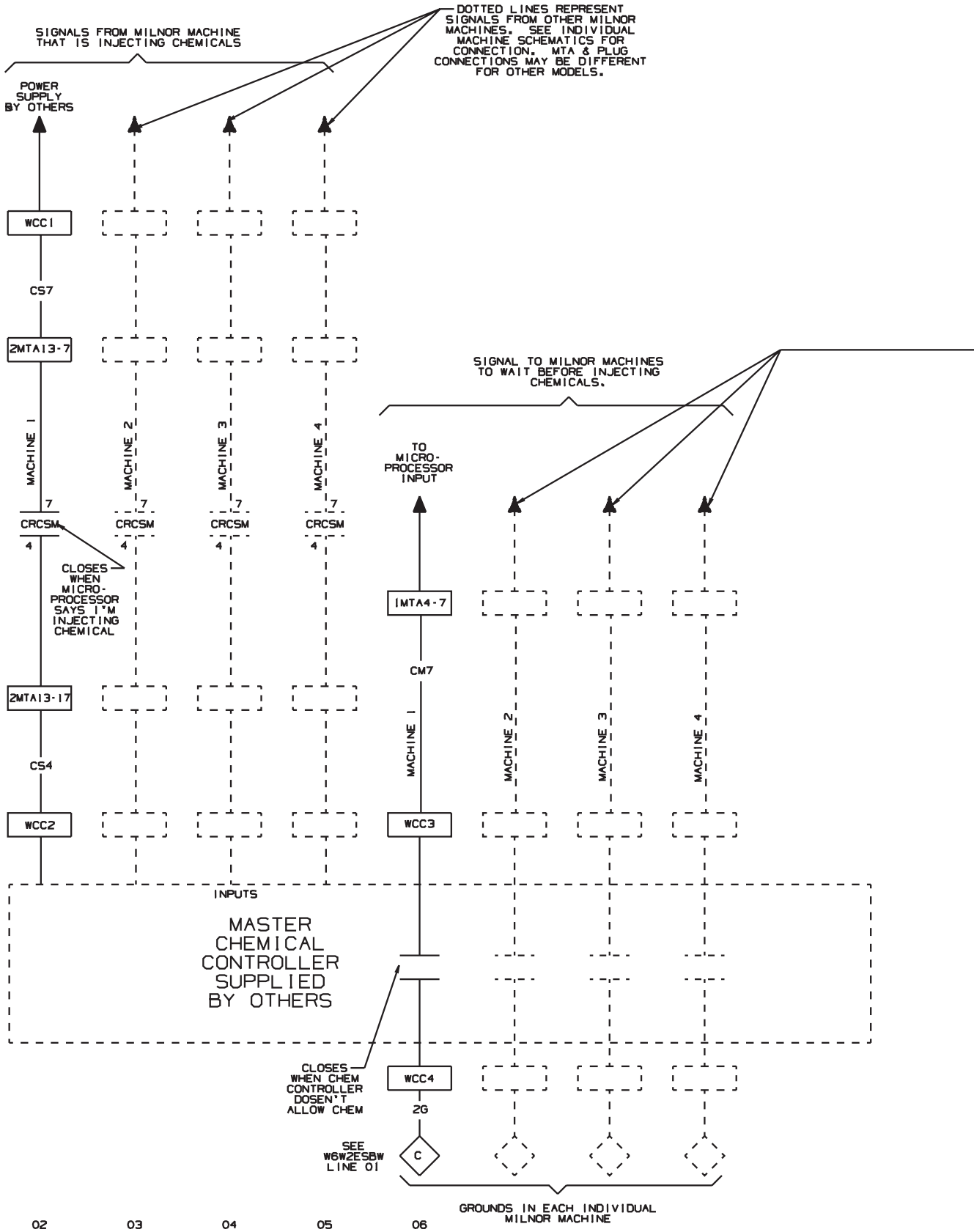
MICRO 6 SYSTEMS SERIAL CONTROLS

MARK V

SCHEMATIC: FLUSHING SUPPLIES

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION



W605PSCS
982768

DOTTED LINES REPRESENT SIGNALS TO OTHER MILNOR MACHINES SEE INDIVIDUAL MACHINE SCHEMATICS FOR CONNECTION. MTA & PLUG CONNECTIONS MAY BE DIFFERENT FOR OTHER MODELS.

W605PSCS

MICRO 6 SYSTEMS

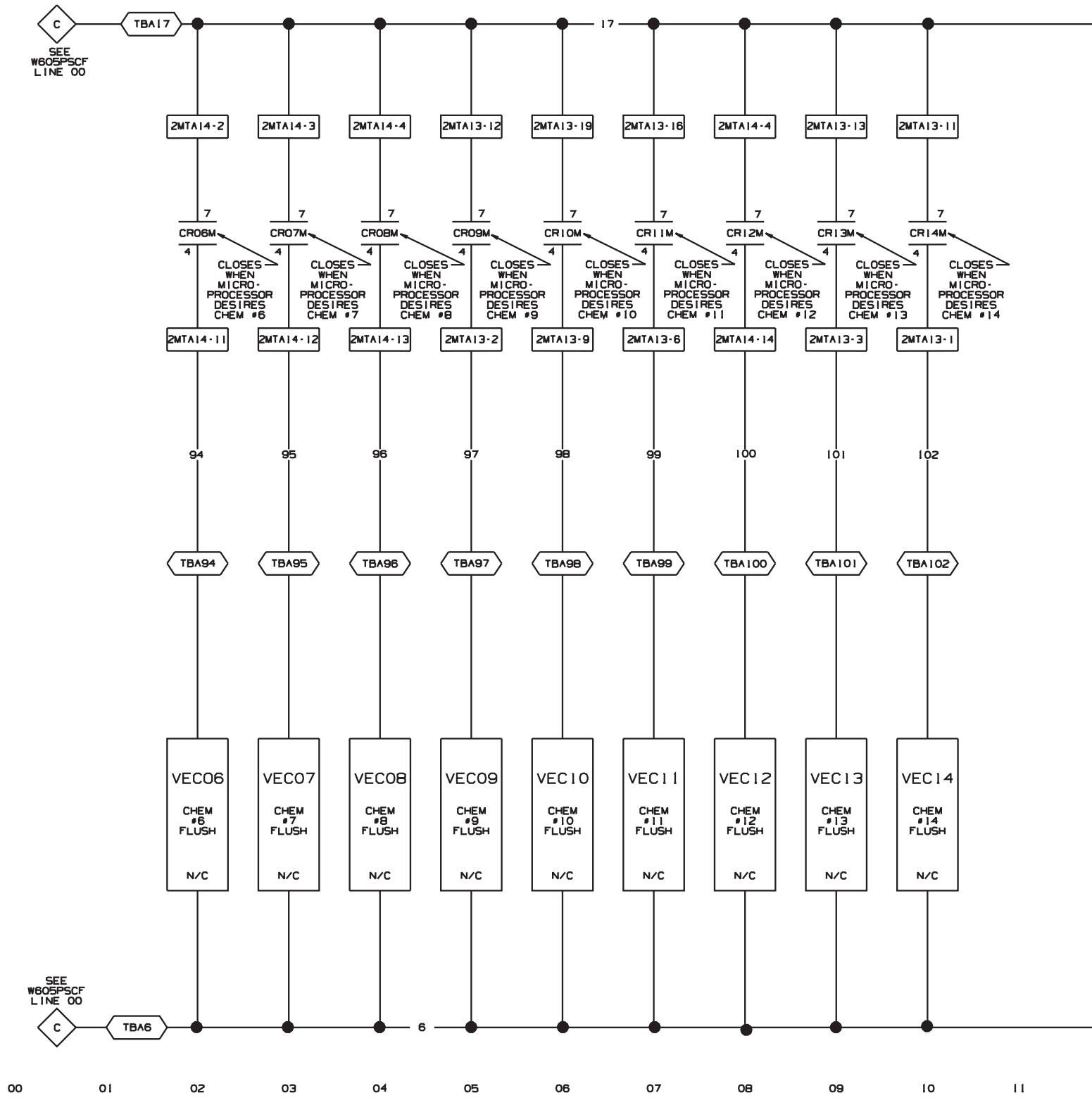
MARK III

SCHEMATIC: CHEMICAL SAVE (OPTIONAL)

PELLERIN MILNOR CORPORATION

NOTES:

1. WCC IS LOCATED IN THE RIGHT CONTROL BOX ON THIS MODEL MACHINE.
2. CONTACT CRCSM MUST BE INTERPRETED BY THE CHEMICAL SEQUENCER (SUPPLIED BY OTHERS) AND IT MUST SIGNAL ALL OTHER MILNOR MACHINES TO WAIT BEFORE THEY INJECT CHEMICALS.



W605PSCX
97152B

W605PSCX

MICRO 6 SYSTEMS

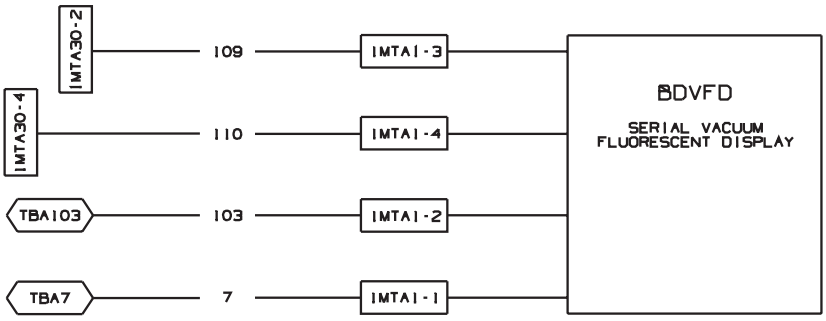
SERIAL CONTROLS

MARK V

SCHEMATIC: CENTRAL LIQUID SUPPLY

FLUSH 6 THRU 15

PELLERIN MILNOR CORPORATION



00 01 02 03 04 05 06 07 08 09 10

W605PSD

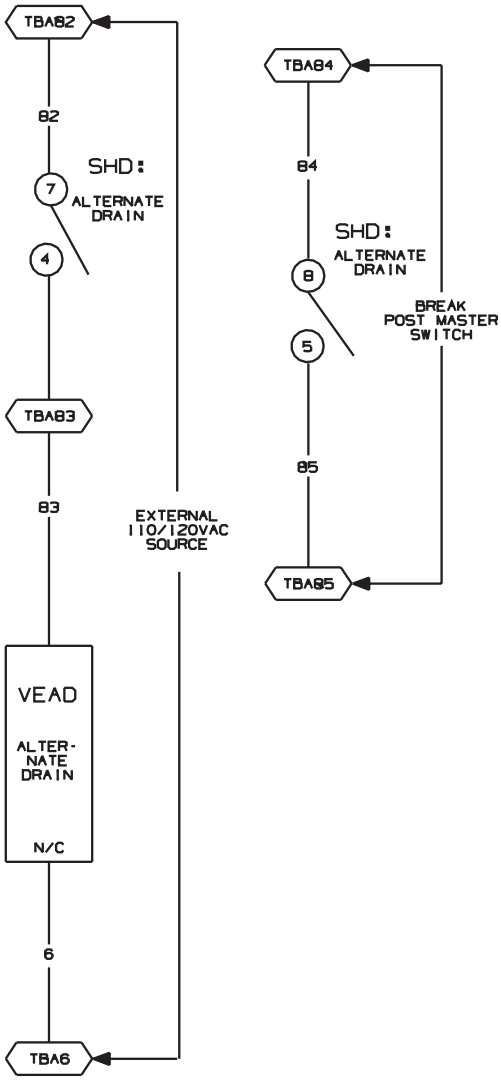
MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V
SCHEMATIC: DISPLAY

PELLERIN MILNOR CORPORATION

NOTES:

1. IMTA30 IS LOCATED ON BPB (PROCESSOR BOARD).
2. IMTA1 IS LOCATED ON BDVFD DISPLAY BOARD.

11 12 13 14 15 16 17 18 19



00 01 02 03 04 05 06 07

W605PSDR
971528

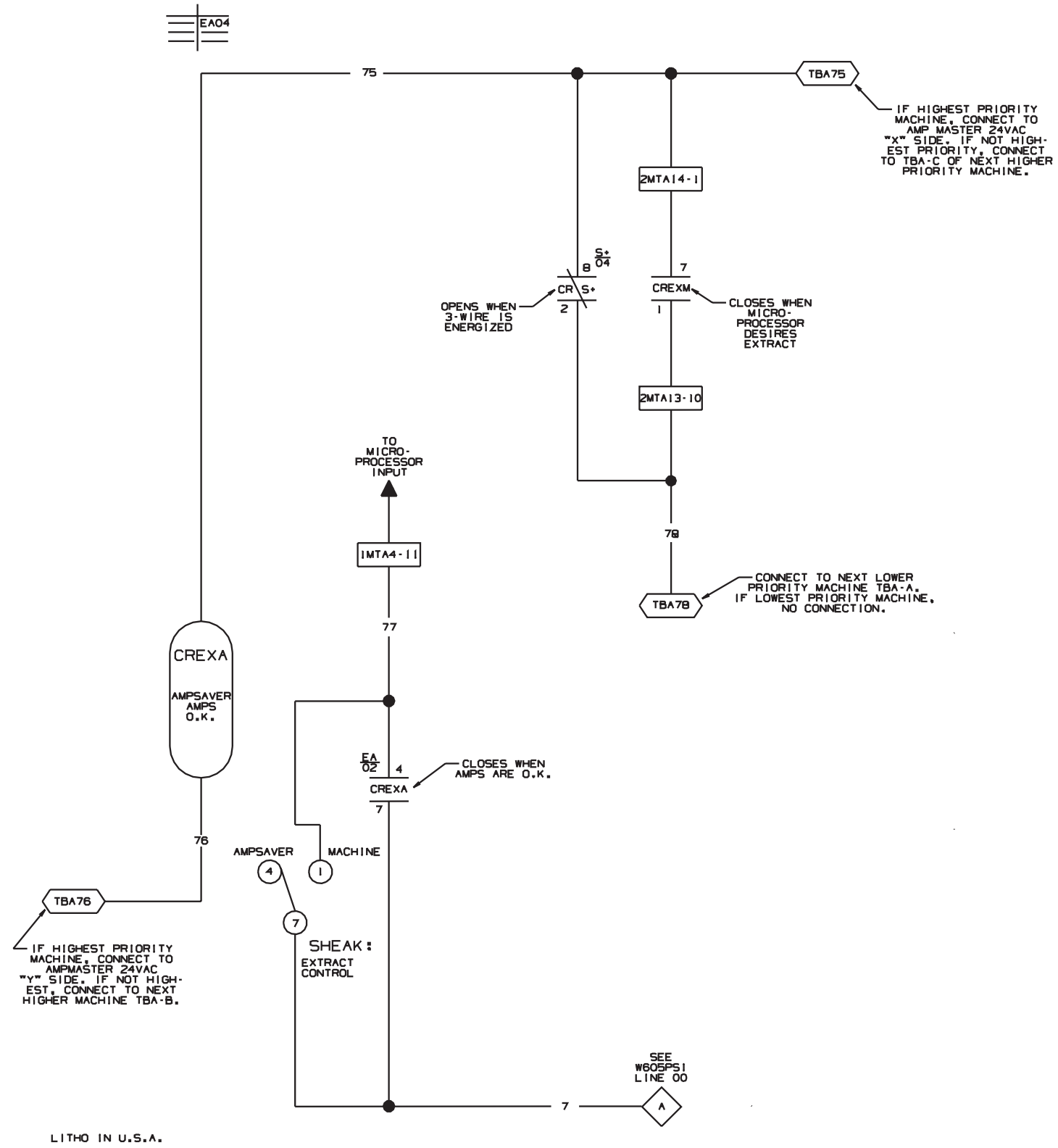
W6Q5PSDR

SCHEMATIC: ALTERNATE DRAIN VALVE FOR AIR OPERATED DRAINS ONLY

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

W605PSDR
971528


EA04
75
TBA75
IF HIGHEST PRIORITY MACHINE, CONNECT TO AMP MASTER 24VAC "X" SIDE. IF NOT HIGH-EST PRIORITY, CONNECT TO TBA-C OF NEXT HIGHER PRIORITY MACHINE.
2MTA14-1
S+ 04
8
CR S+
2
OPENS WHEN 3-WIRE IS ENERGIZED
7
CREXM
1
CLOSES WHEN MICRO-PROCESSOR DESIRES EXTRACT
2MTA13-10
TO MICRO-PROCESSOR INPUT
1MTA4-11
78
TBA78
CONNECT TO NEXT LOWER PRIORITY MACHINE TBA-A. IF LOWEST PRIORITY MACHINE, NO CONNECTION.
77
CREXA
AMPSAVER AMPS O.K.
EA 02
4
CREXA
7
CLOSES WHEN AMPS ARE O.K.
76
AMPSAVER
4
MACHINE
1
7
SHEAK:
EXTRACT CONTROL
TBA76
IF HIGHEST PRIORITY MACHINE, CONNECT TO AMPMASTER 24VAC "Y" SIDE. IF NOT HIGH-EST, CONNECT TO NEXT HIGHER MACHINE TBA-B.
SEE W60SPSI LINE 00
7
A
LITHO IN U.S.A.
00 01 02 03 04 05 06 07 08 09 10 11
W6F3WSEA
97152B

W6Q5PSEA

MICRO 6 SYSTEMS SERIAL CONTROLS

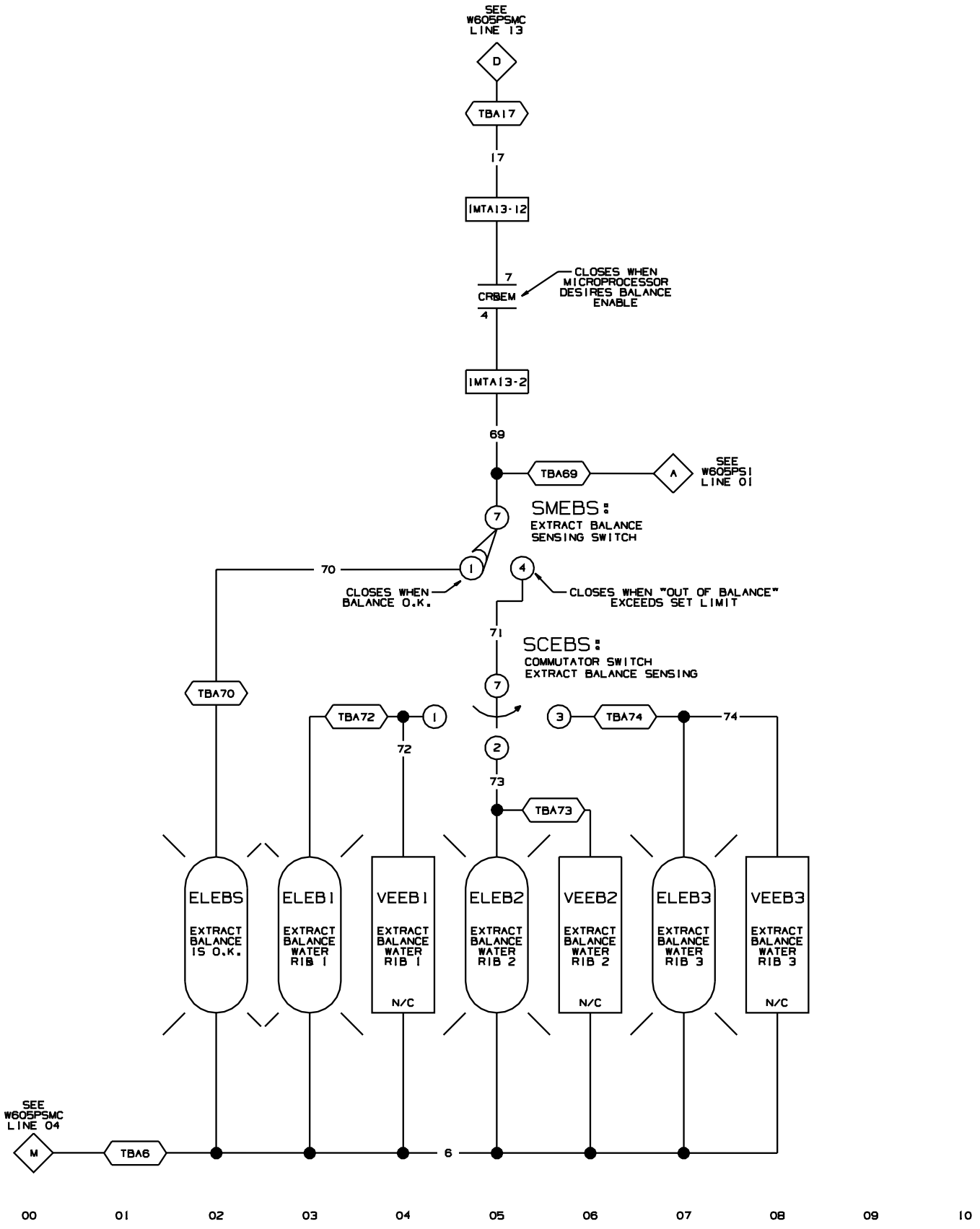
MARK V

SCHEMATIC: EXTRACT COMMANDS SATISFIED

24V1P50HZ/24V1P60HZ

PELLERIN MILNOR CORPORATION

W6F3WSEA
97152B



W605PSEB
971528

W605PSEB

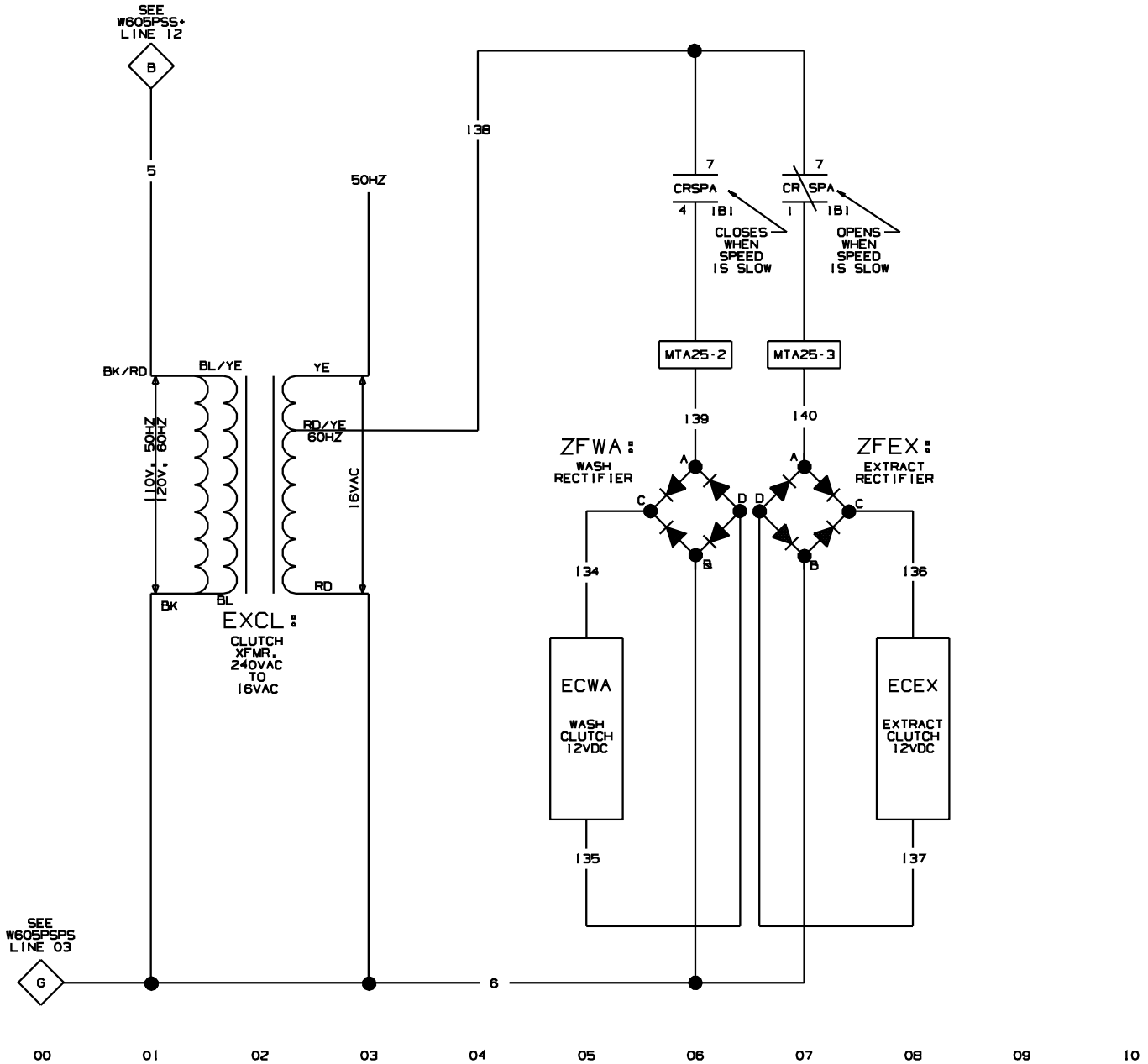
MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V
SCHEMTAIIC: BALANCING VALVES

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. 1MTA13 IS LOCATED ON B024-1
(24 OUTPUT BOARD)



W605PSEC
97152B

W605PSEC

MICRO 6 SYSTEMS, SERIAL CONTROLS MARK V

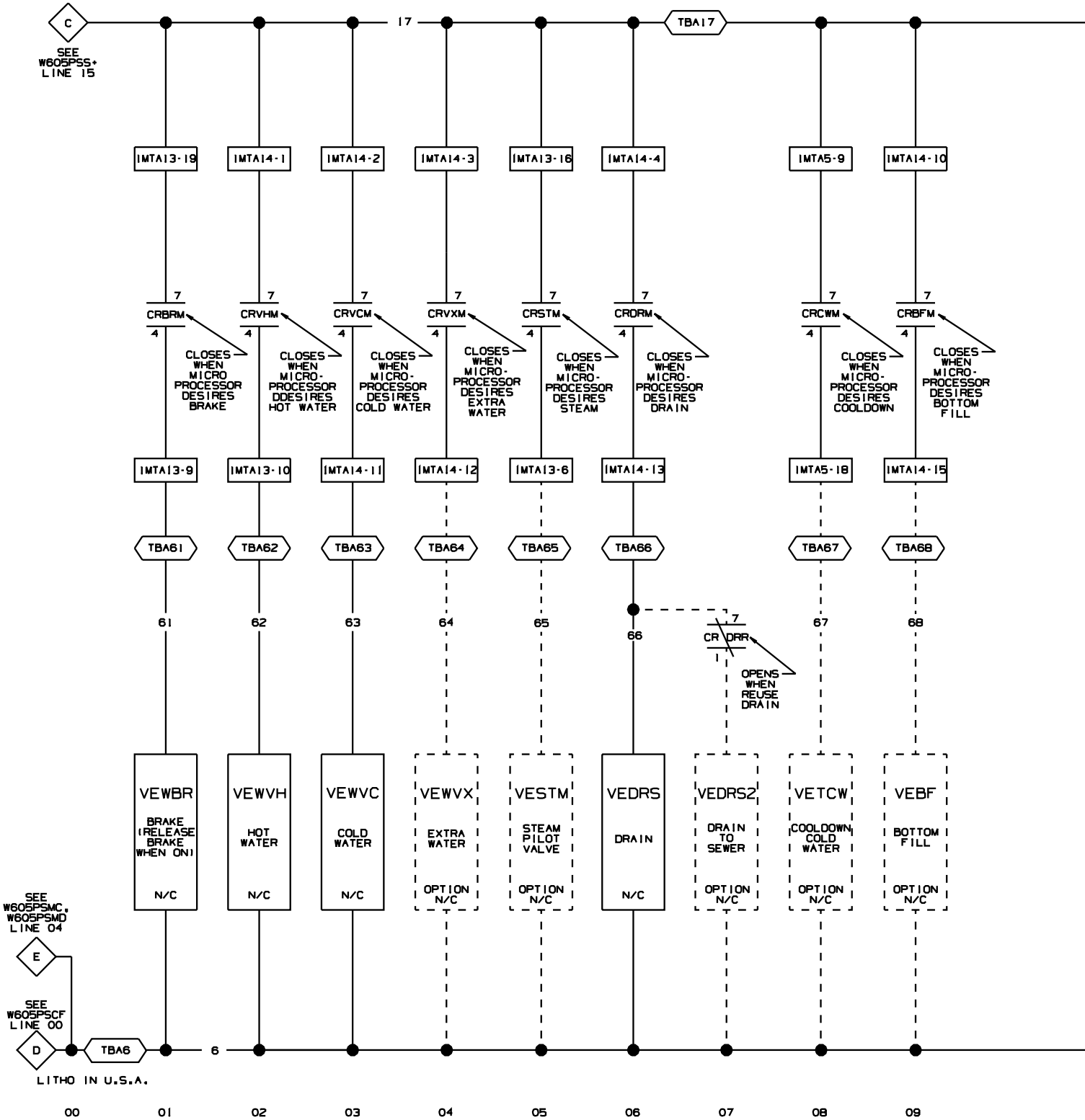
SCHEMATIC: DRIVE MOTOR CLUTCHES FOR 36021, 360260Q4P

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. MTA25 IS LOCATED ON THE OUTPUT BOARD.



W605PSEV
97152B

NOTES

1. IMTA14, IMTA15, IMTA16 ARE LOCATED ON BOI6-1 (16 OUTPUT BOARD).
2. IMTA5 IS LOCATED ON BIO-1 (8 OUTPUT-16 INPUT BOARD).

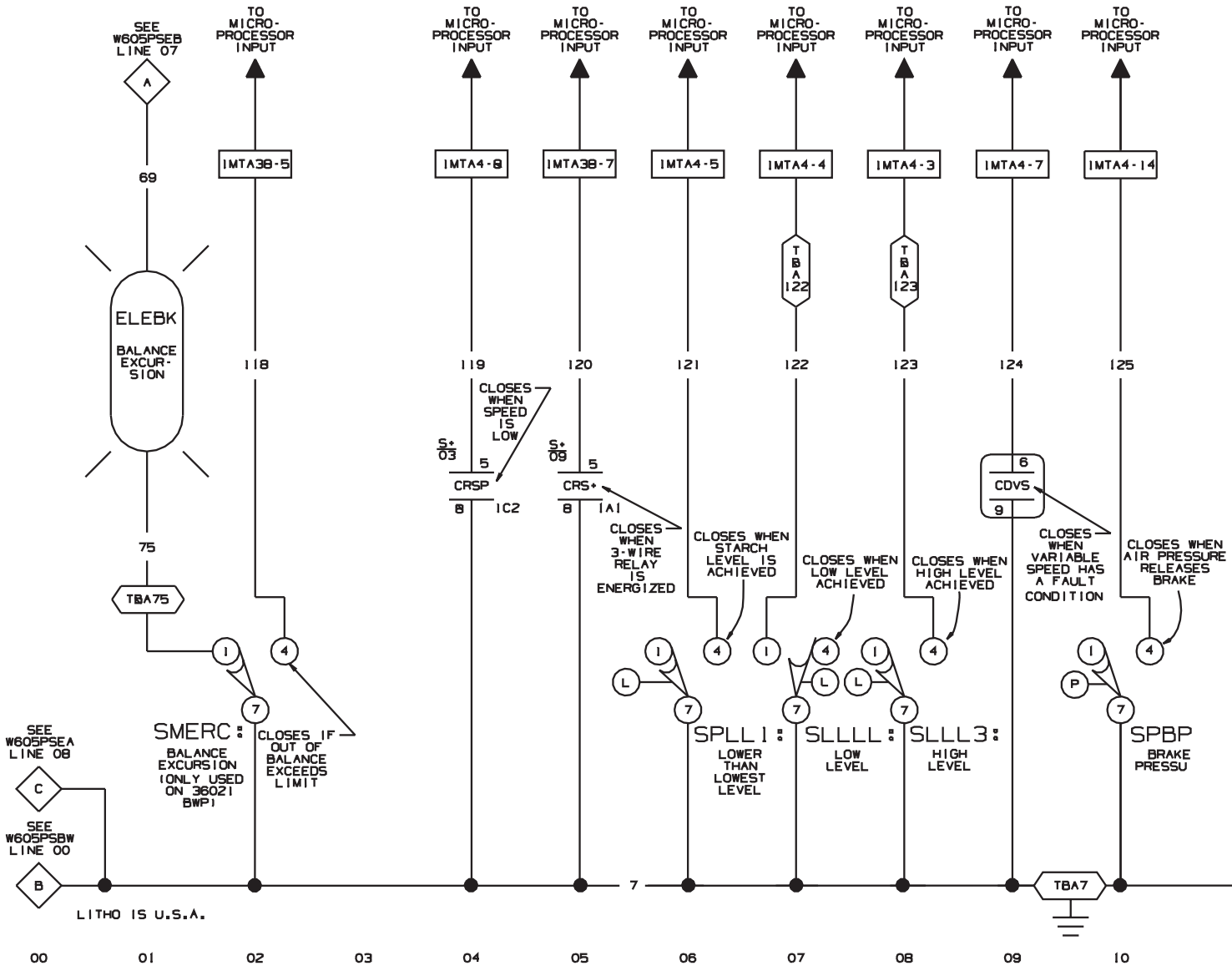
W605PSEV

MICRO 6 SYSTEMS SERIAL CONTROLS MARK V

SCHEMATIC: ELECTRICAL VALVES

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION


SEE W605PSEB LINE 07
A
69
ELEBK
BALANCE EXCUR- SION
75
TBA75
TO MICRO- PROCESSOR INPUT
IMTA38-5
118
SMERC
BALANCE EXCURSION (ONLY USED ON 36021 BWP)
CLOSES IF OUT OF BALANCE EXCEEDS LIMIT
SEE W605PSEA LINE 08
C
SEE W605PSBW LINE 00
B
LITHO IS U.S.A.
IMTA4-8
119
S+ 03
CRSP
IC2
CLOSES WHEN SPEED IS LOW
IMTA38-7
120
S+ 09
CRS+
IA1
IMTA4-5
121
CLOSES WHEN 3-WIRE RELAY IS ENERGIZED
SPLL1
LOWER THAN LOWEST LEVEL
CLOSES WHEN STARCH LEVEL IS ACHIEVED
IMTA4-4
122
TBA 122
SLLLL
LOW LEVEL
CLOSES WHEN LOW LEVEL ACHIEVED
IMTA4-3
123
TBA 123
SLLL3
HIGH LEVEL
CLOSES WHEN HIGH LEVEL ACHIEVED
IMTA4-7
124
CDVS
CLOSES WHEN VARIABLE SPEED HAS A FAULT CONDITION
IMTA4-14
125
SPBP
BRAKE PRESSU
CLOSES WHEN AIR PRESSURE RELEASES BRAKE
7
TBA7
00
01
02
03
04
05
06
07
08
09
10
W605PS1
97152B

W605PSI

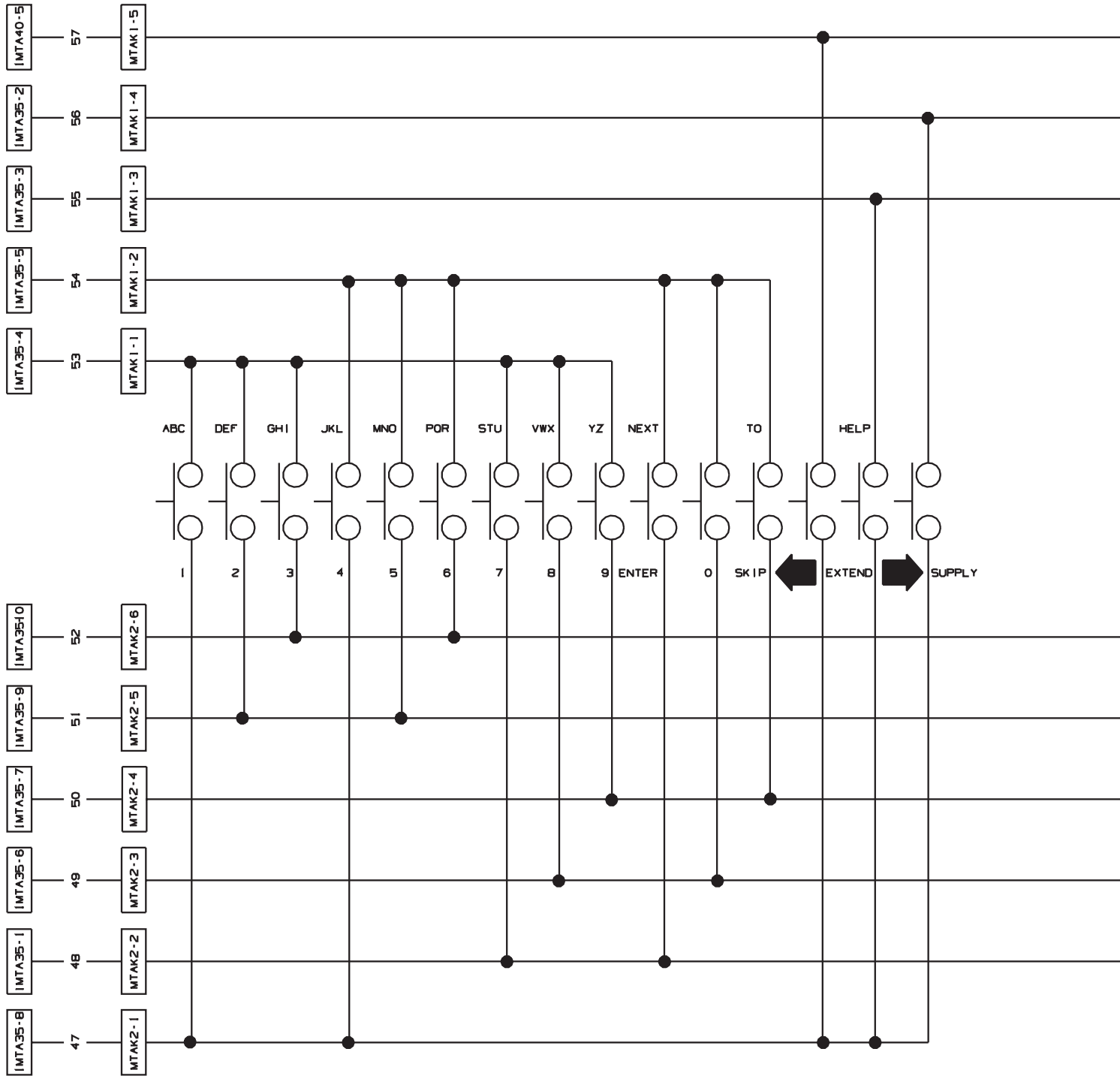
MICRO 6 SYSTEMS SERIAL CONTROLS MARK V

SCHEMATIC: MICROPROCESSOR INPUTS

PELLERIN MILNOR CORPORATION

NOTES:

1. IMTA38 IS LOCATED ON BPB (PROCESSOR BOARD)
2. IMTA3, IMTA4 ARE LOCATED ON B10-1 18 OUTPUT-16 INPUT BOARD)



LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09 10

W605PSKP
97T528

W605PSKP

MICRO 6 SYSTEMS
MARK V

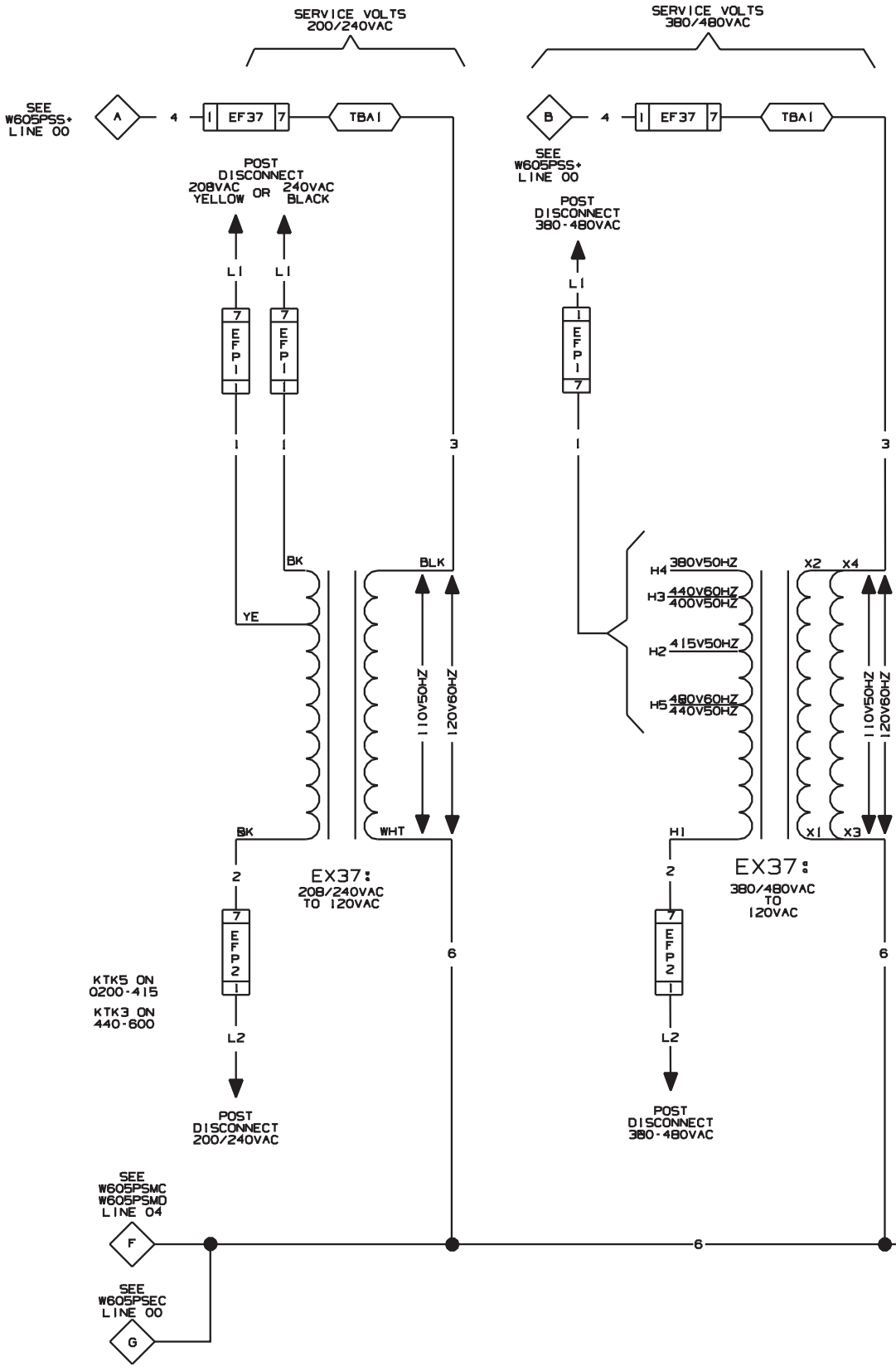
SCHEMATIC: KEYPAD (SERIAL CONTROLS)

PELLERIN MILNOR CORPORATION

NOTES:

1. MTAK1 & MTAK2 ARE LOCATED ON KEYPAD.
2. IMTA35 & IMTA40 ARE LOCATED ON BPB (PROCESSOR BOARD).

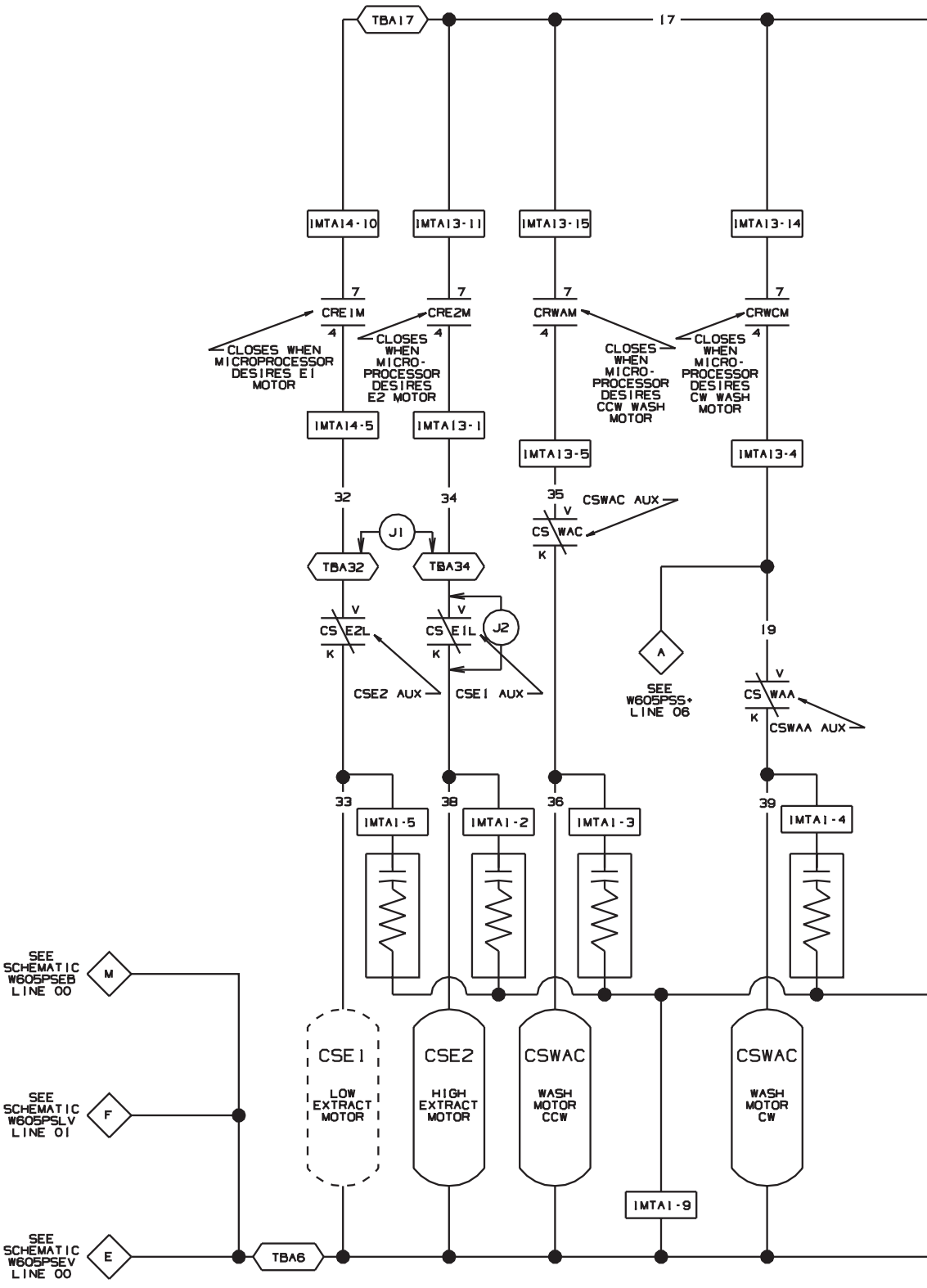
11 12 13 14 15 16 17 18 19


SERVICE VOLTS
200/240VAC
SERVICE VOLTS
380/480VAC
SEE
W605PSS+
LINE 00
A
4
1
EF37
7
TBA1
B
SEE
W605PSS+
LINE 00
POST
DISCONNECT
208VAC YELLOW OR 240VAC BLACK
POST
DISCONNECT
380-480VAC
L1
L1
L1
7
EFP1
1
1
1
3
1
3
BK
BLK
YE
H4 380V50HZ
H3 440V60HZ
400V50HZ
H2 415V50HZ
H5 480V60HZ
440V50HZ
X2
X4
110V50HZ
120V60HZ
BK
WHT
H1
X1
X3
2
2
EFP2
6
6
EX37:
208/240VAC
TO 120VAC
EX37:
380/480VAC
TO
120VAC
KTK5 ON
0200-415
KTK3 ON
440-600
L2
L2
POST
DISCONNECT
200/240VAC
POST
DISCONNECT
380-480VAC
SEE
W605PSMC
W605PSMD
LINE 04
F
6
SEE
W605PSEC
LINE 00
G
00
01
02
03
04
05
06
07
08

W605PSLV

MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V
SCHEMATIC: SOURCE 110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION


TBA17
17
1MTA14-10
1MTA13-11
1MTA13-15
1MTA13-14
7
CR E1M
4
CR E2M
CRWAM
CRWCM
CLOSES WHEN MICROPROCESSOR DESIRES E1 MOTOR
CLOSES WHEN MICRO-PROCESSOR DESIRES E2 MOTOR
CLOSES WHEN MICRO-PROCESSOR DESIRES CCW WASH MOTOR
CLOSES WHEN MICRO-PROCESSOR DESIRES CW WASH MOTOR
1MTA14-5
1MTA13-1
1MTA13-5
1MTA13-4
32
34
35
CSWAC AUX
V
CS WAC
K
J1
TBA32
TBA34
CS E2L
CS E1L
J2
CSE2 AUX
CSE1 AUX
A
SEE W605PSS* LINE 06
19
CS WAA
CSWAA AUX
33
38
36
39
1MTA1-5
1MTA1-2
1MTA1-3
1MTA1-4
SEE SCHEMATIC W605PSEB LINE 00
M
SEE SCHEMATIC W605PSLV LINE 01
F
SEE SCHEMATIC W605PSEV LINE 00
E
TBA6
CSE1
LOW EXTRACT MOTOR
CSE2
HIGH EXTRACT MOTOR
CSWAC
WASH MOTOR CCW
CSWAC
WASH MOTOR CW
1MTA1-9
00
01
02
03
04
05
06
07
08
09
10

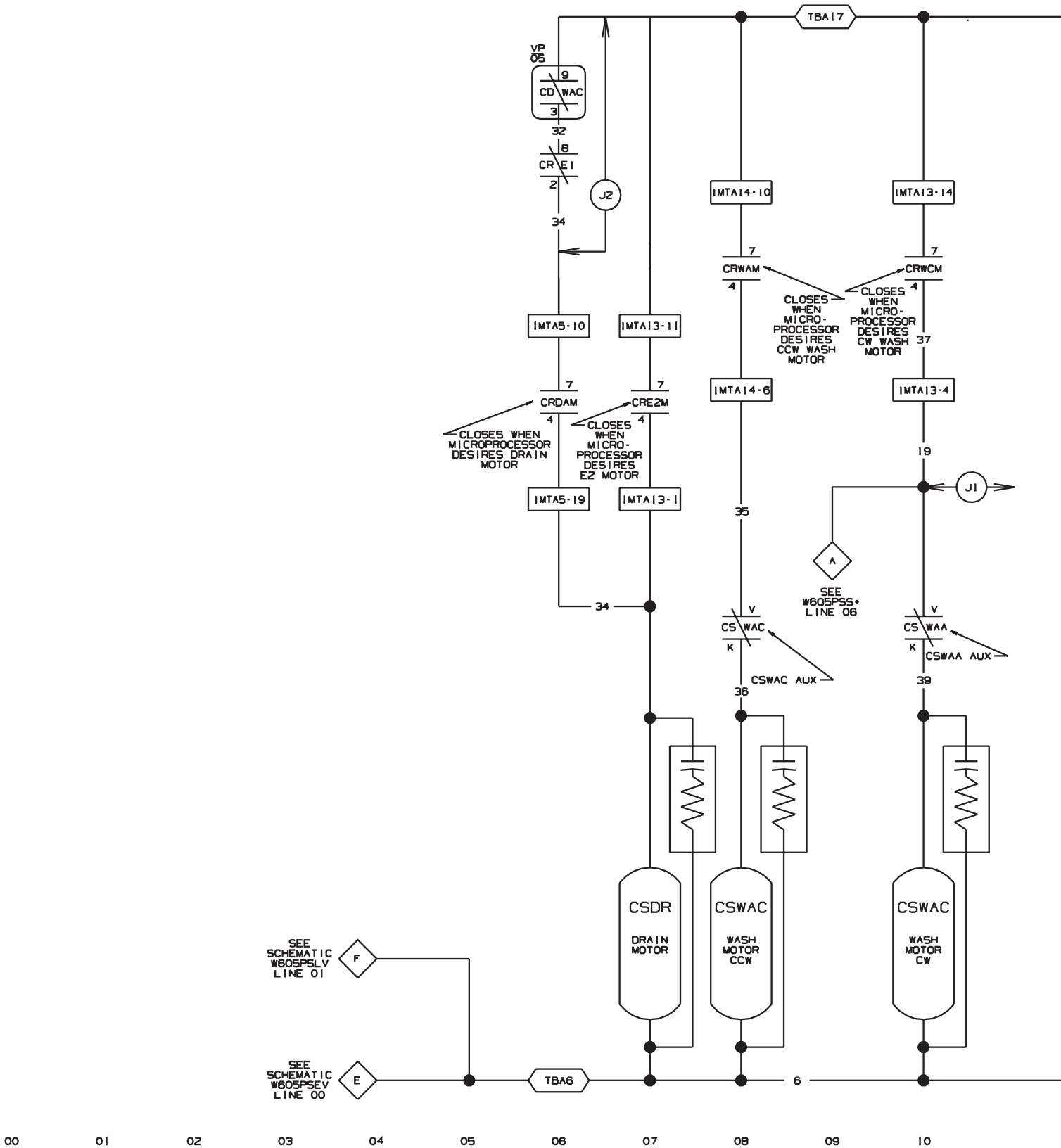
W6Q5PSMC

MICRO 6 SYSTEMS
SERIAL CONTROLS MARK V
SCHEMATIC: DRIVE MOTOR CONTACTORS
FOR 36021, 3602606P, 4202604P, Q6P AND 36026BWP
110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. REMOVE (J1) & (J2) FOR TWO SPEED EXTRACT
2. IMTA13, IMTA14 ARE LOCATED ON B024-1 (24 OUTPUT BOARD)
3. IMTA5 IS LOCATED ON B10-1 (8OUTPUT/16INPUT BOARD).



W605PSMD
97152B

W605PSMD

MICRO 6 SYSTEMS
SERIAL CONTROLS MARK V
SCHEMATIC: DRIVE MOTOR CONTACTORS

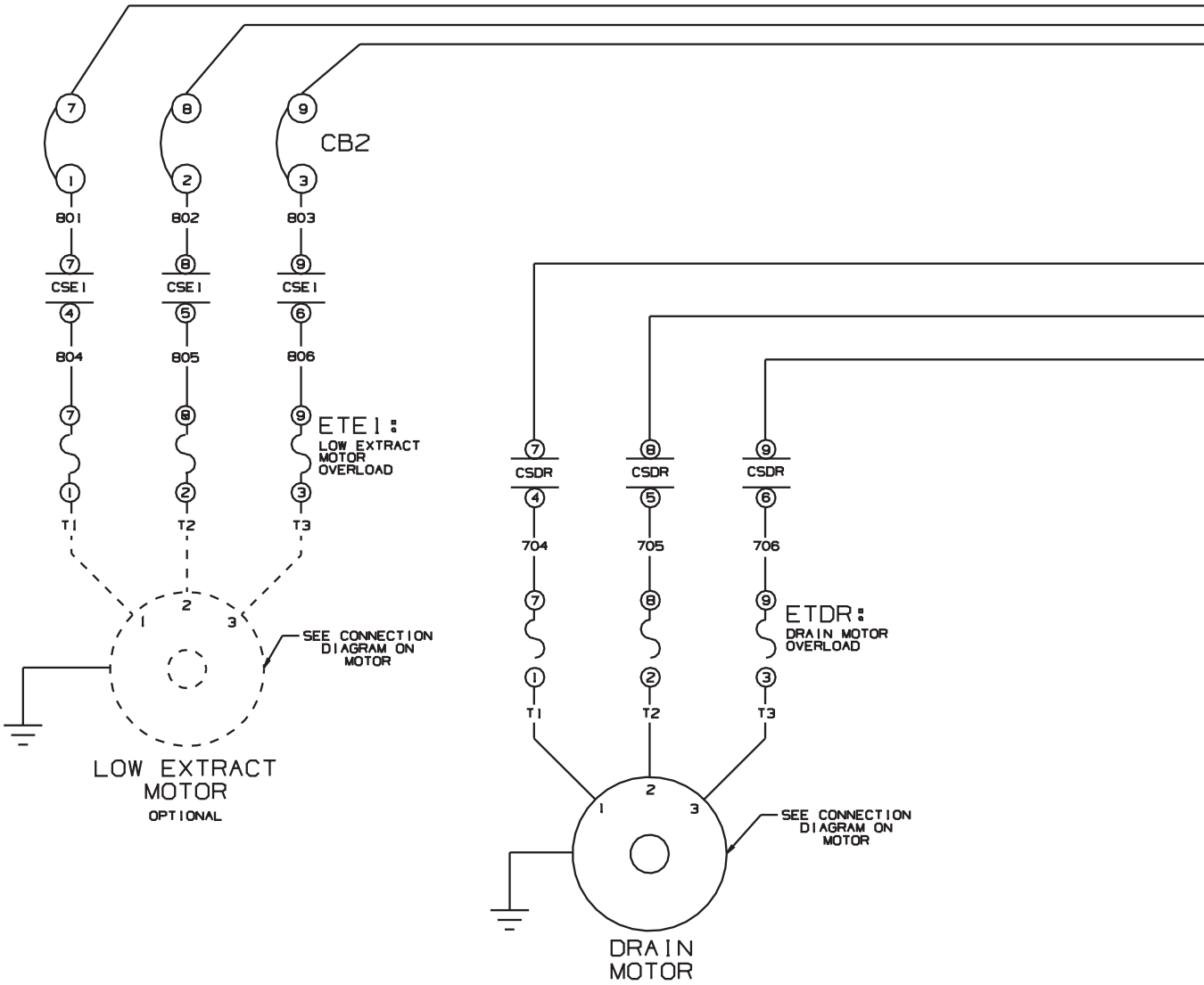
FOR 36021, 3602604P

110V1P50HZ/120V1P60HZ

PELLERIN MILNOR CORPORATION

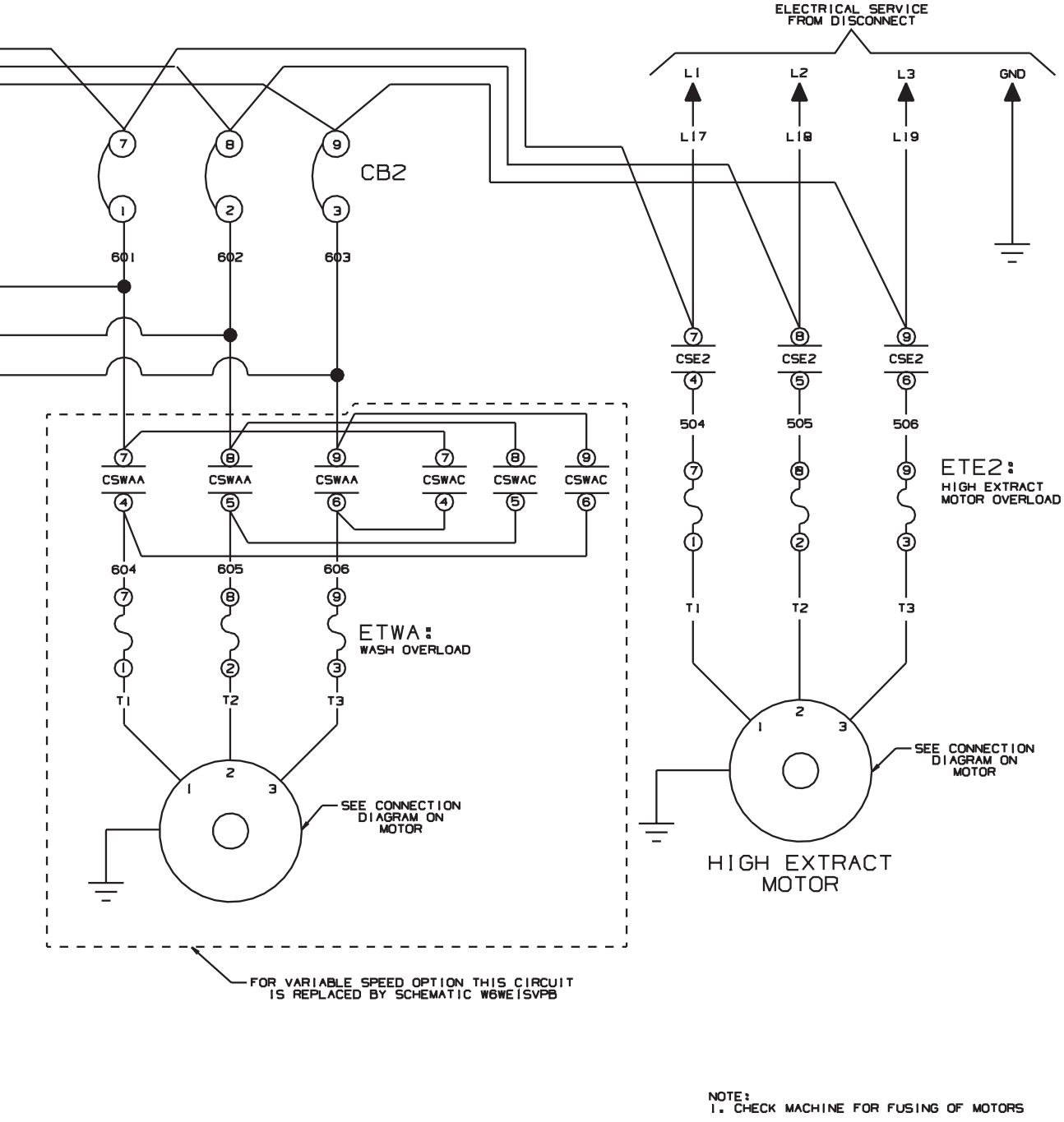
NOTES:

1. REMOVE (J1) & (J2) FOR TWO SPEED EXTRACT
2. IMTA13, IMTA14 ARE LOCATED ON B024-1 (24 OUTPUT BOARD)
3. IMTA5 IS LOCATED ON B10-1 (8OUTPUT/16INPUT BOARD).



LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09 10



NOTE:
1. CHECK MACHINE FOR FUSING OF MOTORS

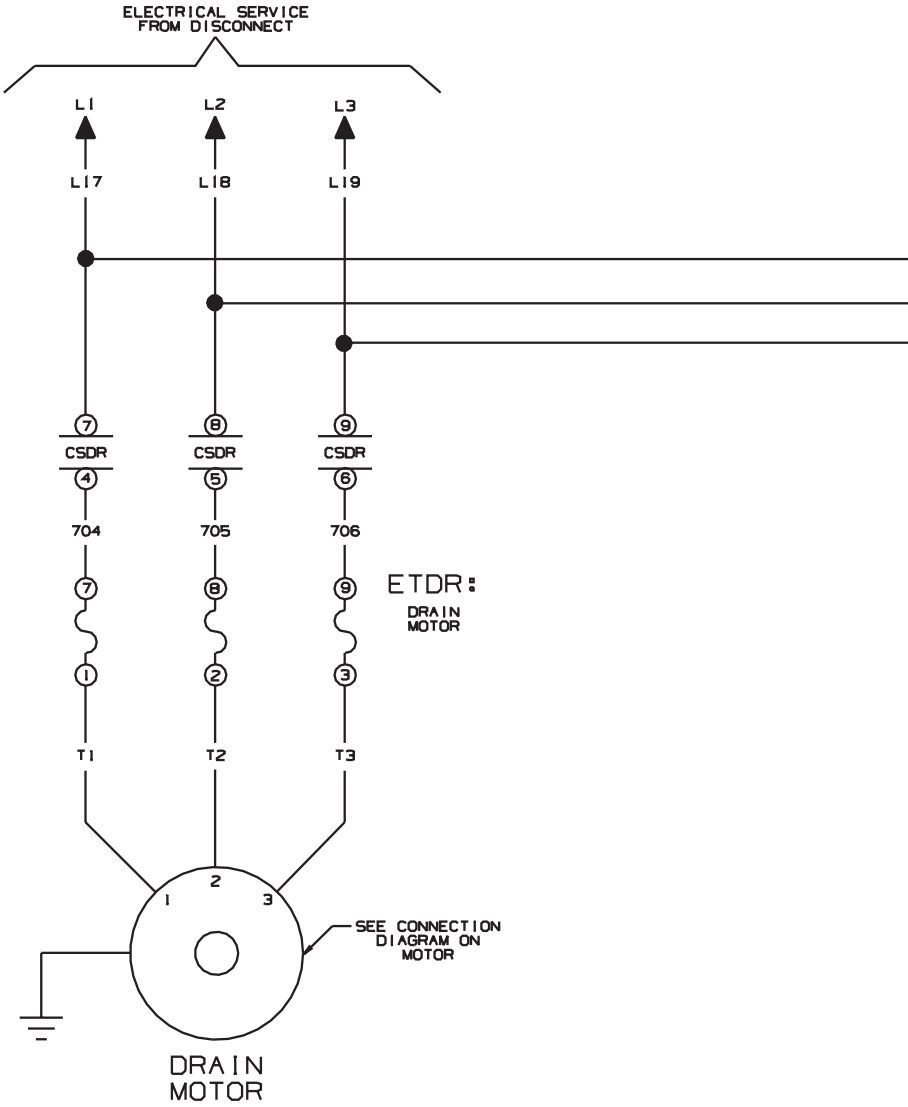
W6Q5PSMT

MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V

SCHEMATIC: OPEN POCKET MOTOR CONNECTIONS
FOR 36021, 3602606P, 4202604P, Q6P, AND 36026BWP

PELLERIN MILNOR CORPORATION

11 12 13 14 15 16 17 18 19



00 01 02 03 04 05 06 07 08 09

W605PSMU
971528

W605PSMU

MICRO 6 SYSTEMS SERIAL CONTROLS
MARK V

SCHEMATIC: OPEN POCKET MOTOR CONNECTIONS
FOR 36021, 3602604P

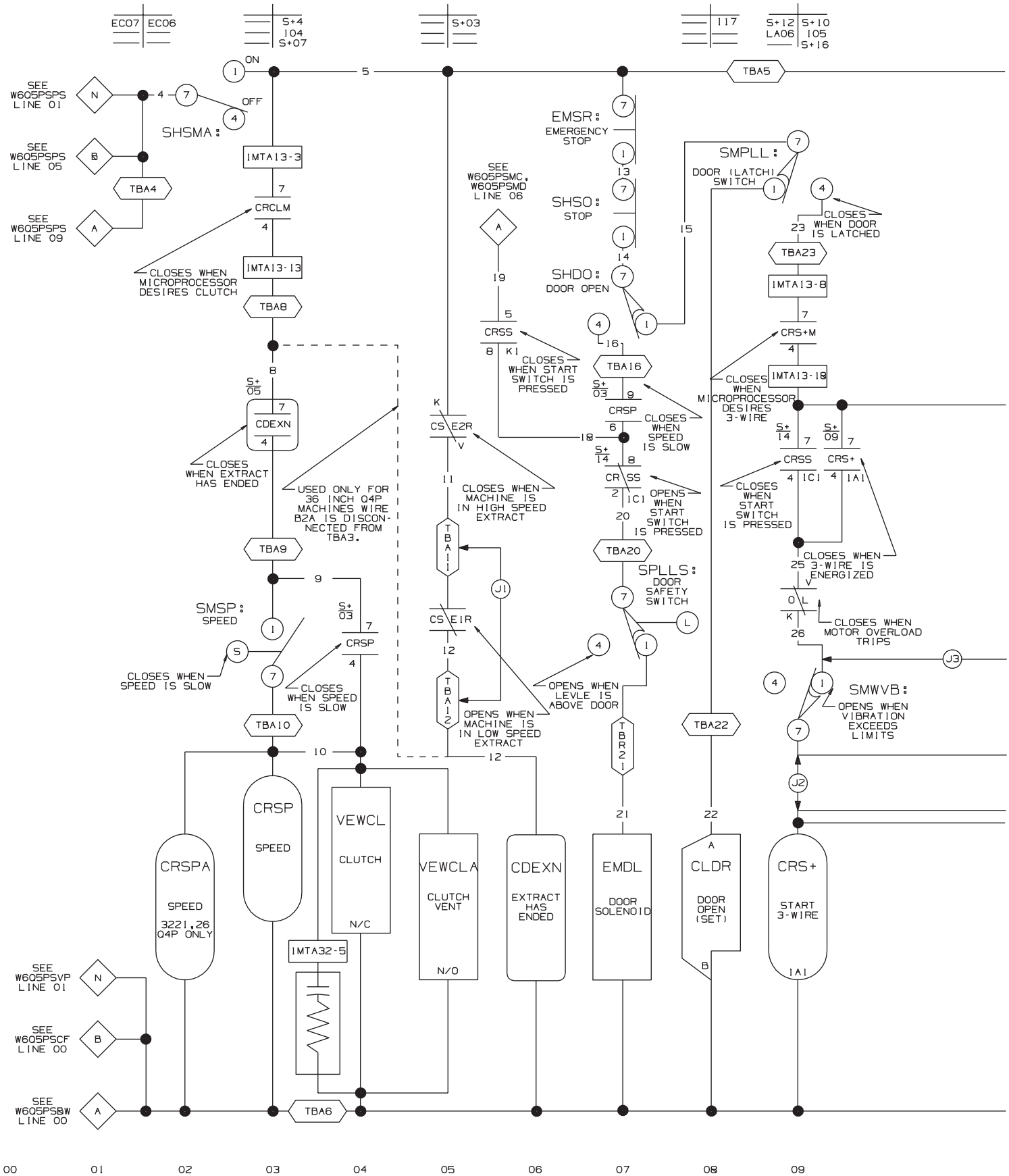
PELLERIN MILNOR CORPORATION

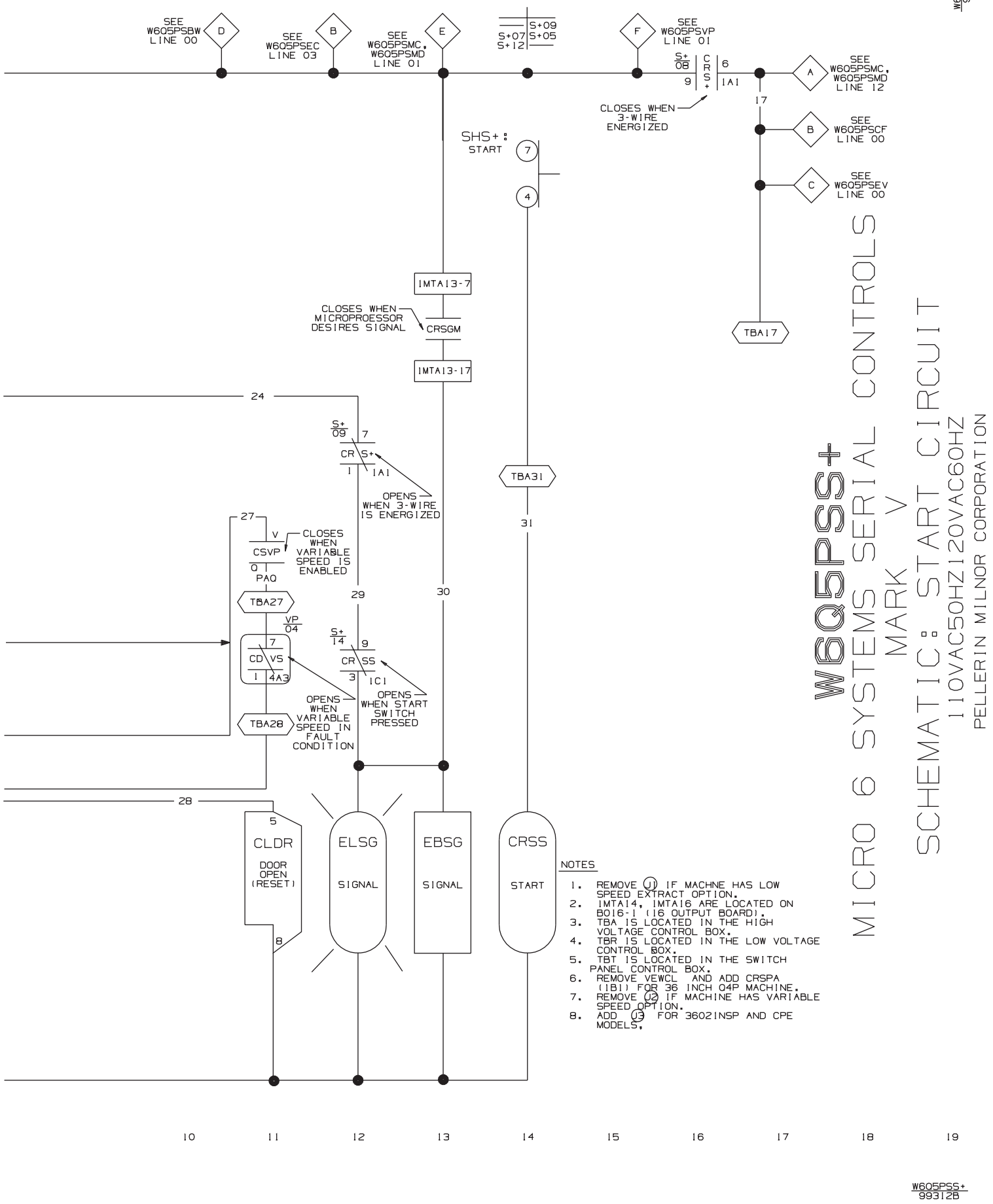
WASH
MOTOR

NOTE

1. CHECK MACHINE FOR FUSING OF MOTORS.

10 11 12 13 14 15 16 17 18 19


EC07 EC06
S+4 104 S+07
S+03
117
S+12 LA06 105 S+16
ON
SEE W605PSPS LINE 01
SEE W605PSPS LINE 05
SEE W605PSPS LINE 09
OFF
SHSMA:
IMTA13-3
TBA4
CRCLM
IMTA13-13
TBA8
CLOSES WHEN MICROPROCESSOR DESIRES CLUTCH
CDEXN
CLOSES WHEN EXTRACT HAS ENDED
USED ONLY FOR 36 INCH 04P MACHINES WIRE B2A IS DISCONNECTED FROM TBA3.
TBA9
SMSP: SPEED
CLOSES WHEN SPEED IS SLOW
CRSP
CLOSES WHEN SPEED IS SLOW
TBA10
CRSPA SPEED 3221,26 04P ONLY
CRSP SPEED
VEWCL CLUTCH N/C
IMTA32-5
VEWCLA CLUTCH VENT N/O
CDEXN EXTRACT HAS ENDED
SEE W605PSVP LINE 01
SEE W605PSCF LINE 00
SEE W605PSBW LINE 00
TBA6
SEE W605PSMC, W605PSMD LINE 06
CSE2R
CLOSES WHEN MACHINE IS IN HIGH SPEED EXTRACT
TBA11
CSE1R
TBA12
OPENS WHEN MACHINE IS IN LOW SPEED EXTRACT
CLOSES WHEN START SWITCH IS PRESSED
EMSR: EMERGENCY STOP
SHSO: STOP
SHDO: DOOR OPEN
TBA16
CRSP
CLOSES WHEN SPEED IS SLOW
CRSS
OPENS WHEN START SWITCH IS PRESSED
TBA20
SPLLS: DOOR SAFETY SWITCH
OPENS WHEN LEVLE IS ABOVE DOOR
TBR21
TBA5
TBA22
CLDR DOOR OPEN (SET)
SMPLL: DOOR (LATCH) SWITCH
CLOSES WHEN DOOR IS LATCHED
TBA23
IMTA13-8
CRS+M
IMTA13-18
CLOSES WHEN MICROPROCESSOR DESIRES 3-WIRE
CRSS
CRS+
CLOSES WHEN START SWITCH IS PRESSED
CLOSES WHEN 3-WIRE IS ENERGIZED
CLOSES WHEN MOTOR OVERLOAD TRIPS
SMWVB: OPENS WHEN VIBRATION EXCEEDS LIMITS
CRS+ START 3-WIRE
00 01 02 03 04 05 06 07 08 09
W605PSS+ 993128



W605PSS+ MICRO 6 SYSTEMS SERIAL CONTROLS

SCHEMATIC: START CIRCUIT MARK V

110VAC50HZ120VAC60HZ

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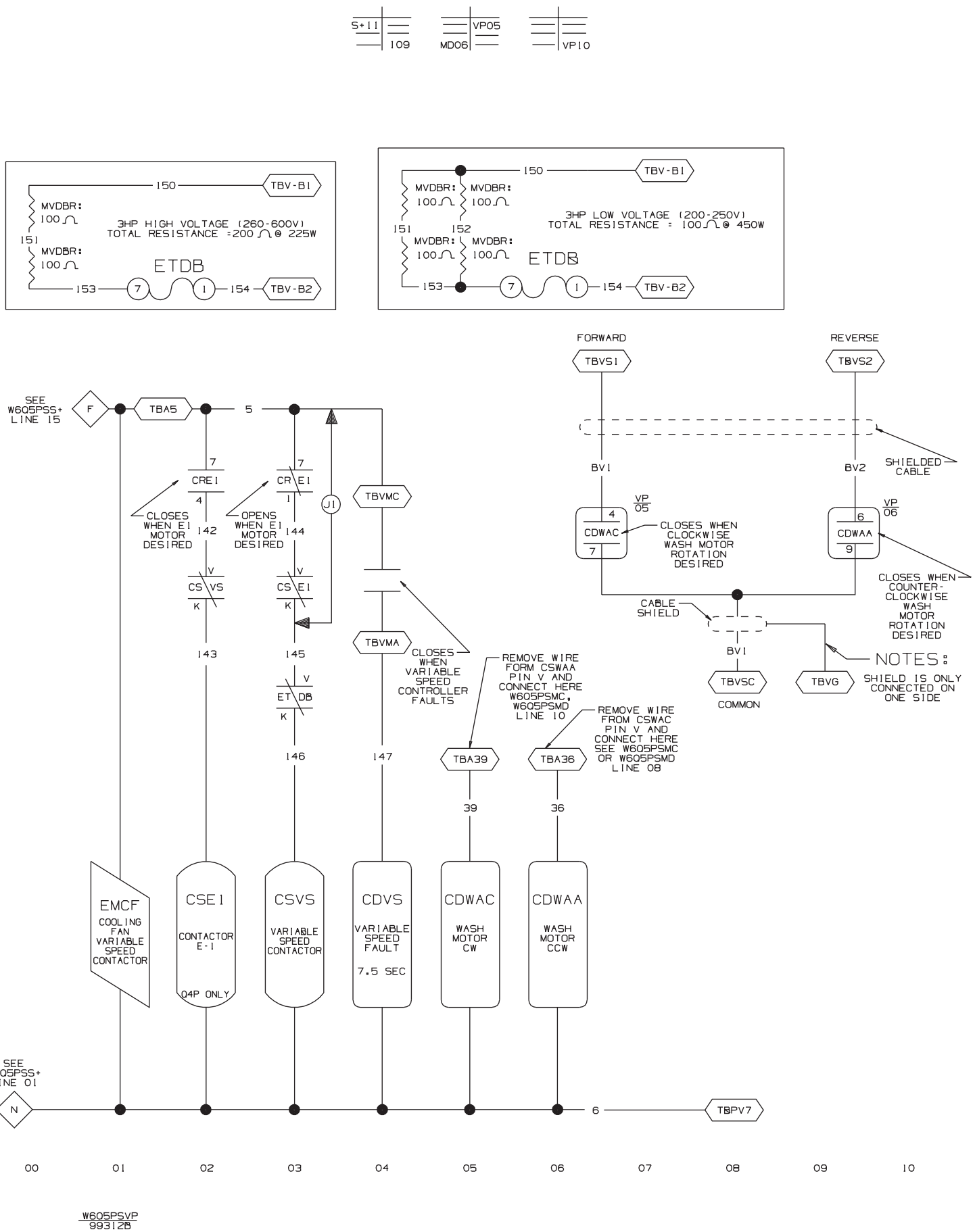
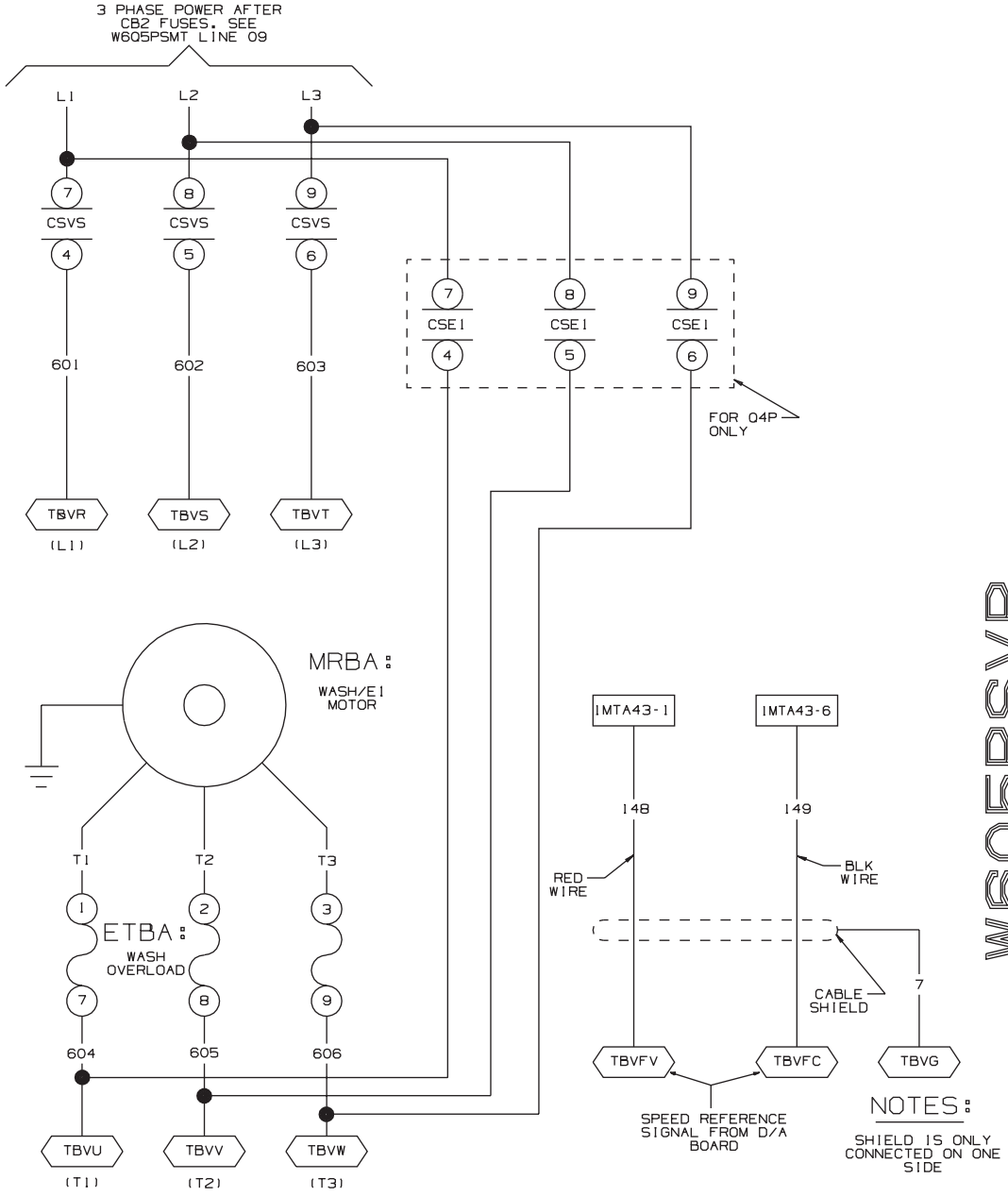

S+11
109
VP05
MD06
VP10
150
TBV-B1
MVDBR:
100Ω
151
MVDBR:
100Ω
3HP HIGH VOLTAGE (260-600V)
TOTAL RESISTANCE =200Ω@ 225W
ETDB
153
7
1
154
TBV-B2
150
TBV-B1
MVDBR:
100Ω
MVDBR:
100Ω
151
152
MVDBR:
100Ω
MVDBR:
100Ω
3HP LOW VOLTAGE (200-250V)
TOTAL RESISTANCE = 100Ω@ 450W
ETDB
153
7
1
154
TBV-B2
FORWARD
REVERSE
TBVS1
TBVS2
SEE W605PSS+ LINE 15
F
TBA5
5
BV1
BV2
SHIELDED CABLE
7
CR E1
4
142
CLOSES WHEN E1 MOTOR DESIRED
7
CR E1
1
144
OPENS WHEN E1 MOTOR DESIRED
J1
TBVMC
VP 05
4
CDWAC
7
CLOSES WHEN CLOCKWISE WASH MOTOR ROTATION DESIRED
VP 06
6
CDWAA
9
CLOSES WHEN COUNTER-CLOCKWISE WASH MOTOR ROTATION DESIRED
V
CS VS
K
143
V
CS E1
K
145
CABLE SHIELD
BV1
TBVSC
COMMON
TBVG
NOTES:
SHIELD IS ONLY CONNECTED ON ONE SIDE
TBVMA
CLOSES WHEN VARIABLE SPEED CONTROLLER FAULTS
REMOVE WIRE FORM CSWAA PIN V AND CONNECT HERE W605PSMC, W605PSMD LINE 10
REMOVE WIRE FROM CSWAC PIN V AND CONNECT HERE SEE W605PSMC OR W605PSMD LINE 08
V
ET DB
K
146
147
TBA39
TBA36
39
36
EMCF
COOLING FAN VARIABLE SPEED CONTACTOR
CSE1
CONTACTOR E-1
04P ONLY
CSVS
VARIABLE SPEED CONTACTOR
CDVS
VARIABLE SPEED FAULT
7.5 SEC
CDWAC
WASH MOTOR CW
CDWAA
WASH MOTOR CCW
SEE W605PSS+ LINE 01
N
6
TBPV7
00
01
02
03
04
05
06
07
08
09
10
W605PSVP
993128

W605PSVP
MARK V
SCHEMATIC: OPTIONAL 505 VARIABLE SPEED CONTROLLER
PELLERIN MILNOR CORPORATION



NOTES:

1. TBV IS LOCATED IN VARIABLE SPEED CONTROLLER BOX ON VARIABLE SPEED CONTROLLER.
2. IMTA43 IS LOCATED ON BDA-1 (DIGITAL TO ANALOG BOARD).
3. REMOVE (J1) FOR 04P MACHINE.

11 12 13 14 15 16 17 18 19