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

# **Schematic/Electrical Parts— Device Master Controller P.C. Device Master Mark 4 Controls**

# Please Read

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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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# COMPONENT PARTS LIST

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|-----------------------------|---------------------------------------|-----------------------------------------|--------------------|--------------------------------|-----------------|
| BA                          | >>PRINTED CIRCUIT BOARDS              |                                         |                    |                                |                 |
| BBB-1                       | BOARD-MEMORY BATTERY BACKUP           | W6DM4BW                                 | 08BSBB1T           | BOARD: SER BATT BACKUP-TEST    | CONTROLLER BX   |
| BIO-1                       | BOARD-8OUTPUT/16INPUT #1              | W6DM4BW                                 | 08BS816CT          | BD:SERIAL 8OUT-16INPUT-TEST    | BOARD BOX       |
| BIO-16                      | BOARD-8OUTPUT/16INPUT                 | W6DM4EB                                 | 08BSO24AT          | BD:SERIAL 24 OUTPUT->TEST      | CONTROLLER BX   |
| BIO-2                       | BOARD-8OUTPUT/16INPUT #2              | W6DM4BW                                 | 08BS816CT          | BD:SERIAL 8OUT-16INPUT-TEST    | BOARD BOX       |
| BIO-5                       | BOARD-8OUTPUT/16INPUT #3              | W6DM4FD                                 | 08BS816CT          | BD:SERIAL 8OUT-16INPUT-TEST    | CONTROLLER BX   |
| BO24-1                      | BOARD-24 OUTPUT BOARD                 | W6DM4LW                                 | 08BSO24AT          | BD:SERIAL 24 OUTPUT->TEST      | BOARD BOX       |
| BO24-10                     | BOARD-24 OUTPUT DEVICE FINISHED DISCH | W6DM4DF                                 | 08BSO24AT          | BD:SERIAL 24 OUTPUT->TEST      | BOARD BOX       |
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| BPB                         | BOARD-186 MICROPROCESSOR              | W6DM4BW                                 | 08BSPE1T           | 186 SER PROC-TEST              | CONTROLLER BX   |
| BVGA                        | BOARD-VGA VIDEO CONTROLLER            | W6DM4BW                                 | 08PCVGA16          | SVGA BD 1024X768NI 512K ISA    | CONTROLLER BX   |
| CD                          | >>RELAY-TIME DELAY                    |                                         |                    |                                |                 |
| CD1                         | DELAY-DEVICE ACCEPTS LOAD             | W6DM4AD                                 | 09CF016037         | TDR F16S 2PDT 11PIN 120V50/60C | BELT CNTL BOX   |
| CDCHP                       | DELAY-COHRP LOADED                    | W6DM4CHA                                | 09CF002037         | TDR F2S 2PDT 11PIN 120V60/50C  | ON COHORP       |
| CDL                         | DELAY-BELT LOADED                     | W6DM4SB                                 | 09CF002037         | TDR F2S 2PDT 11PIN 120V60/50C  | CONTROLLER BX   |
| CLL                         | LATCH-BELT DESIRES LOAD               | W6DM4AD                                 | 09CL2C-C37         | RELAY-LATCH DPDT 120V 2-COIL   | BELT CNTL BOX   |
| CP                          | >>PHOTOEYES                           |                                         |                    |                                |                 |
| CPCHP                       | PHOTOEYE-COHRP LOADED                 | W6DM4CHA                                | 09RPE004           | SENSOR DARK OPERATE AC N/O-OUT | ON COHORP       |
| CPPEF                       | PHOTOEYE-DISCHARGE END OF BELT        | W6DM4FP                                 | 09RPE004           | SENSOR DARK OPERATE AC N/O-OUT | ON COHORP       |
| CPPEF                       | PHOTOEYE-FORWARD                      | W6DM4SB                                 | 09RPE004           | SENSOR DARK OPERATE AC N/O-OUT | ON COHORP       |
| CPPEF0                      | PHOTOEYE-BELT 0 FORWARD               | W6DM4FR0                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF0                      | PHOTOEYE-BELT 0 FORWARD               | W6DM4CH                                 | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF1                      | PHOTOEYE-BELT 1 FORWARD               | W6DM4FR1                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF2                      | PHOTOEYE-BELT 2 FORWARD               | W6DM4FR2                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF3                      | PHOTOEYE-BELT 3 FORWARD               | W6DM4FR3                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF4                      | PHOTOEYE-BELT 4 FORWARD               | W6DM4FR4                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF5                      | PHOTOEYE-BELT 5 FORWARD               | W6DM4FR5                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF6                      | PHOTOEYE-BELT 6 FORWARD               | W6DM4FR6                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPEF7                      | PHOTOEYE-BELT 7 FORWARD               | W6DM4FR7                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
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| CPPER0                      | PHOTOEYE-BELT 0 REVERSE               | W6DM4CH                                 | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPER1                      | PHOTOEYE-BELT 1 REVERSE               | W6DM4FR1                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |
| CPPER2                      | PHOTOEYE-BELT 2 REVERSE               | W6DM4FR2                                | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC     | END OF BELT     |

# COMPONENT PARTS LIST

| <u>COMPONENT</u> | <u>FUNCTION OF</u>            | <u>WHERE TO FIND</u>  | <u>MIL/NOR P/N</u> | <u>DESCRIPTION</u>              | <u>LOCATION</u> |
|------------------|-------------------------------|-----------------------|--------------------|---------------------------------|-----------------|
| <u>NUMBER</u>    | <u>THIS COMPONENT</u>         | <u>THIS COMPONENT</u> |                    |                                 |                 |
| CPPER3           | PHOTOEYE-BELT 3 REVERSE       | W6DM4FR3              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | END OF BELT     |
| CPPER4           | PHOTOEYE-BELT 4 REVERSE       | W6DM4FR4              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | END OF BELT     |
| CPPER5           | PHOTOEYE-BELT 5 REVERSE       | W6DM4FR5              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | END OF BELT     |
| CPPER6           | PHOTOEYE-BELT 6 REVERSE       | W6DM4FR6              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | END OF BELT     |
| CPPER7           | PHOTOEYE-BELT 7 REVERSE       | W6DM4FR7              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | END OF BELT     |
| CPPSB5           | PHOTOEYE-FEEDER BELT #5       | W6DM4FS5              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | FEEDER BELT     |
| CPPSB6           | PHOTOEYE-FEEDER BELT #6       | W6DM4FS6              | 09RPE011           | PHOTOEYE VALU-BEAM 10-30DC      | FEEDER BELT     |
| CPRD             | PHOTOEYE-DISCHARGE END        | W6DM4AD               | 09RPE004           | SENSOR DK. OPR.AC N/O-OUT       | SIDE OF BELT    |
| CR               | >>RELAY-PILOT OR CONTROL      |                       |                    |                                 |                 |
| CRD              | RELAY-DATA VALID BELT LOADED  | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRD              | RELAY-DATA VALID              | W6DM4SB               | 09C024D37          | 4PDT "KH" 110/120V              | CONTROLLER BX   |
| CRD              | RELAY-DISCHARGE END BLOCKED   | W6DM4AD               | 09C01DDDD37        | RELAY-3PDT DIFGOLD 11PIN 120VAC | BELT CNTL BOX   |
| CRD              | RELAY-COORP AT DISCHRG        | W6DM4CHA              | 09C024D37          | 4PDT "KH" 110/120V              | ON COHORP       |
| CRDL             | RELAY-BELT DESIRES LOAD       | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRDS             | RELAY-DATA VALID BELT LOADED  | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRFL             | RELAY-BELT FINISHED UNLOADING | W6DM4SB               | 09C024D37          | 4PDT "KH" 110/120V              | CONTROLLER BX   |
| CRH              | RELAY-COORP AT HOME           | W6DM4CHA              | 09C024D37          | 4PDT "KH" 110/120V              | ON COHORP       |
| CRL              | RELAY-BELT IS LOADED          | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRLLS            | RELAY-BELT IS LOADED          | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRLM             | RELAY-DESIRES LOAD            | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | CONTROLLER BX   |
| CRLP             | RELAY-BELT IN LOAD POSITION   | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRM              | RELAY-MANUAL ENABLE           | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRMS             | RELAY-MANUAL ENABLE           | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRPEF            | RELAY-DISCHARGE END OF BELT   | W6DM4FP               | 09C024D37          | 4PDT "KH" 110/120V              | CONTROLLER BX   |
| CRPEF            | RELAY-FORWARD PHOTOEYE        | W6DM4SB               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRRBF0           | RELAY-RUN BELT 0 FORWARD      | W6DM4CH               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRS+             | RELAY-3-WIRE                  | W6DM4FQ               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRS+             | RELAY-3-WIRE                  | W6DM4S+               | 09C024D37          | 4PDT "KH" 110/120V              | BELT CONTROLR   |
| CRS+             | RELAY-3-WIRE                  | W6DM4AD               | 09C01DDDD37        | RELAY-3PDT DIFGOLD 11PIN 120VAC | BELT CNTL BOX   |
| CRSB5            | RELAY-FEEDER BELT #5 BLOCKED  | W6DM4FS5              | 09C024D37          | 4PDT "KH" 110/120V              | FEEDER BELT     |
| CRSB6            | RELAY-FEEDER BELT #6 BLOCKED  | W6DM4FS6              | 09C024D37          | 4PDT "KH" 110/120V              | FEEDER BELT     |
| CRSG             | RELAY-SIGNAL                  | W6DM4S+               | 09C024D37          | 4PDT "KH" 110/120V              | CONTROLLER BX   |
| CRT              | >>ELECTRONIC MONITORS         |                       |                    |                                 |                 |

# COMPONENT PARTS LIST

| <u>COMPONENT<br/>NUMBER</u> | <u>FUNCTION OF<br/>THIS COMPONENT</u> | <u>WHERE TO FIND<br/>THIS COMPONENT</u> | <u>MIL/NOR P/N</u> | <u>DESCRIPTION</u>              | <u>LOCATION</u> |
|-----------------------------|---------------------------------------|-----------------------------------------|--------------------|---------------------------------|-----------------|
| CRT-1                       | MONITOR-MICROPROCESSOR                | W6DM4BW                                 | 08MN070VGA         | MONITOR SVGA 14" .28DP NP       | MONITOR BOX     |
| CRUP                        | RELAY-BELT IN UNLOAD POSITION         | W6DM4FQ                                 | 09C01DDDD37        | RELAY 3PDT DIFGOLD 11PIN 120VAC | BELT CONTROLR   |
| CS                          | >>CONTACTOR-MOTOR STARTER             |                                         |                    |                                 |                 |
| CSBF                        | CONTACTOR-BELT FORWARD                | W6DM4AD                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACT BOX     |
| CSBR                        | CONTACTOR-BELT REVERSE                | W6DM4AD                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACT BOX     |
| CSBRF                       | CONTACTOR-RUN LOADING BELT            | W6DM4FP                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF                       | CONTACTOR-RUN FORWARD                 | W6DM4SB                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF0                      | CONTACTOR-RUN BELT 0 FORWARD          | W6DM4RF0                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF0                      | CONTACTOR-RUN BELT FORWARD            | W6DM4CH                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF1                      | CONTACTOR-RUN BELT 1 FORWARD          | W6DM4RF1                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF2                      | CONTACTOR-RUN BELT 2 FORWARD          | W6DM4RF2                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF3                      | CONTACTOR-RUN BELT 3 FORWARD          | W6DM4RF3                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF4                      | CONTACTOR-RUN BELT 4 FORWARD          | W6DM4RF4                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF5                      | CONTACTOR-RUN BELT 5 FORWARD          | W6DM4RF5                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF6                      | CONTACTOR-RUN BELT 6 FORWARD          | W6DM4RF6                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBRF7                      | CONTACTOR-RUN BELT 7 FORWARD          | W6DM4RF7                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR8                       | CONTACTOR-RUN LOADING BELT            | W6DM4FP                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR8                       | CONTACTOR-RUN REVERSE                 | W6DM4SB                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR0                       | CONTACTOR-RUN BELT 0 REVERSE          | W6DM4RF0                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR0                       | CONTACTOR-RUN REVERSE                 | W6DM4CH                                 | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR1                       | CONTACTOR-RUN BELT 1 REVERSE          | W6DM4RF1                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR2                       | CONTACTOR-RUN BELT 2 REVERSE          | W6DM4RF2                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR3                       | CONTACTOR-RUN BELT 3 REVERSE          | W6DM4RF3                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR4                       | CONTACTOR-RUN BELT 4 REVERSE          | W6DM4RF4                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR5                       | CONTACTOR-RUN BELT 5 REVERSE          | W6DM4RF5                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR6                       | CONTACTOR-RUN BELT 6 REVERSE          | W6DM4RF6                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| CSBR7                       | CONTACTOR-RUN BELT 7 REVERSE          | W6DM4RF7                                | 09MR08B337         | 12A 3P REV+2N/C 120V5/6 IEC     | CONTACTOR BX    |
| EB                          | >>BUZZER OR AUDIBLE SIGNAL            |                                         |                    |                                 |                 |
| EBCD                        | BUZZER-COORP MOVING TO DISCHARGE      | W6DM4CHA                                | 09H020             | ALARM SONALERT 115V             | ON COHORP       |
| EBCH                        | BUZZER-COORP MOVING TO HOME           | W6DM4CHA                                | 09H020             | ALARM SONALERT 115V             | ON COHORP       |
| EBSG                        | BUZZER-SIGNAL AUDIBLE                 | W6DM4FQ                                 | 09H015             | BUZZER 115V W/6-32 CRT+6" LEADS | BELT CONTROLR   |
| EBSG                        | BUZZER-SIGNAL AUDIBLE                 | W6DM4S+                                 | 09H015             | BUZZER 115V W/6-32 CRT+6" LEADS | CONTROLLER BX   |
| EBSG                        | BUZZER-SIGNAL                         | W6DM4AD                                 | 09H015             | BUZZER 115V W/6-32 CRT+6" LEADS | BELT CNTL BOX   |

# COMPONENT PARTS LIST

| <u>COMPONENT<br/>NUMBER</u> | <u>FUNCTION OF<br/>THIS COMPONENT</u> | <u>WHERE TO FIND<br/>THIS COMPONENT</u> | <u>MIL/NOR P/N</u> | <u>DESCRIPTION</u>               | <u>LOCATION</u> |
|-----------------------------|---------------------------------------|-----------------------------------------|--------------------|----------------------------------|-----------------|
| EF                          | >>FUSE OR FUSE HOLDER                 |                                         |                    |                                  |                 |
| EF37                        | FUSE-120V CONTROL CIRCUIT             | W6DM4CH                                 | 09FF004AHG         | FUSE BK/MDX 4 AMP 125V BUSS      | BELT CONTROLR   |
| EF37                        | FUSE-120V CONTROL CIRCUIT             | W6DM4FR0                                | 09FF004AHG         | FUSE BK/MDX 4 AMP 125V BUSS      | BELT CONTROLR   |
| EF37                        | FUSE-120V CONTROL CIRCUIT             | W6DM4ND                                 | 09FF002AMG         | FUSE BK/MDX 2 AMP 250V BUSS      | NO-DRY C-BOX    |
| EFC                         | >>FLASHER                             |                                         |                    |                                  |                 |
| EFGD                        | FLASHER-COORP MOVING TO DISCHARGE     | W6DM4CHA                                | 08FL007537         | FLASHER 120V 1 AMP 75FFL/MIN     | ON COHORP       |
| EFCH                        | FLASHER-COORP MOVING TO HOME          | W6DM4CHA                                | 08FL007537         | FLASHER 120V 1 AMP 75FFL/MIN     | ON COHORP       |
| EL                          | >>LIGHT-PILOT OR INDICATOR            |                                         |                    |                                  |                 |
| EL0                         | LIGHT-120V AVAILABLE                  | W6DM4FR0                                | 09J060G37          | LAMP 1/2" GRN 125V IDI 1052QC5   | BELT CONTROLR   |
| EL0                         | LIGHT-120V AVAILABLE                  | W6DM4CH                                 | 09J060A37          | LAMP 1/2" AMB 125V IDI 1050QC3   | BELT CONTROLR   |
| EL37                        | LIGHT-120V AVAILABLE                  | W6DM4ND                                 | 09J060A37          | LAMP 1/2" AMB 125V IDI 1050QC3   | NO-DRY C-BOX    |
| ELD                         | LIGHT-BELT DESIRES LOAD               | W6DM4RR                                 | 09J070REC          | LITE-STOP 4" RED LENS            | BELT LIGHT BX   |
| ELL                         | LIGHT-BELT LOADED                     | W6DM4RR                                 | 09J070REC          | LITE-STOP 4" RED LENS            | BELT LIGHT BX   |
| ELP                         | LIGHT-BELT IN LOAD POSITION           | W6DM4RR                                 | 09J070REC          | LITE-STOP 4" RED LENS            | BELT LIGHT BX   |
| ELS+                        | LIGHT-3-WIRE                          | W6DM4FQ                                 | 09J060G37          | LAMP 1/2" GRN 125V IDI 1052QC5   | BELT CONTROLR   |
| ELS+                        | LIGHT-3-WIRE                          | W6DM4AD                                 | 09J060G37          | LAMP 1/2" GRN 125V IDI 1050QC3   | BELT CNTL BOX   |
| ELSG                        | LIGHT-SIGNAL                          | W6DM4S+                                 | 09J060WH37         | LAMP 1/2" WHITE 120V TAB         | BELT CONTROLR   |
| ELUP                        | LIGHT-BELT IN UNLOAD POSITION         | W6DM4RR                                 | 09J070REC          | LITE-STOP 4" RED LENS            | BELT LIGHT BX   |
| ES                          | >>POWER SUPPLY-ELECTRONIC             |                                         |                    |                                  |                 |
| ESPS                        | POWER SUPPLY-MICROPROCESSOR           | W6DM4BW                                 | 08PSS3401T         | 40 WATT POWER SUPPLY TESTED      | CONTROLLER BX   |
| ESPS3                       | POWER SUPPLY-PHOTOEYE                 | W6DM4BW                                 | 08PSL1B224         | PWR SUP 100-240VAC TO 24VDC      | CONTROLLER BX   |
| ET                          | >>THERMAL OVERLOADS                   |                                         |                    |                                  |                 |
| ETB                         | OVERLOAD-BELT MOTOR                   | W6DM4MR                                 | 09FTC0010T         | OL RELAY 1.0-2.9A AB#193-A3D1    | CONTACTOR BX    |
| EX                          | >>TRANSFORMERS                        |                                         |                    |                                  |                 |
| EXL                         | TRANSFORMER-LOADING LIGHTS            | W6DM4RR                                 | 09U002EBR          | XFMR 120/240 PRI EBR 12VDC       | BELT CONTROLR   |
| KB                          | >>KEYBOARD-ELECTRONIC                 |                                         |                    |                                  |                 |
| KBD                         | KEYPAD-MICROPROCESSOR                 | W6DM4KB                                 | EC61KPBB           | ASSY:ALPHA-NUM BELT BX KEYPD     | KEYBOARD BX     |
| MR                          | >>MOTORS                              |                                         |                    |                                  |                 |
| MTB                         | MOTOR                                 | W6DM4MR                                 | MESSAGE SO         | SEE SPECIFIC COMPONENT+NAMEPLATE | SIDE OF BELT    |
| SH                          | >>SWITCH-HAND OPERATED                |                                         |                    |                                  |                 |
| SHAD                        | SWITCH-BELT ALLOWED TO DISCHARGE      | W6DM4FP                                 | 09N405M210         | SWASS M2W 1NO                    | REMOTE INPUT    |
| SHAD                        | SWITCH-BELT 0 ALLOWED TO DISCHARGE    | W6DM4FR0                                | 09N405M210         | SWASS M2W 1NO                    | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 1 ALLOWED TO DISCHARGE    | W6DM4FR1                                | 09N405M210         | SWASS M2W 1NO                    | BELT CONTROLR   |

# COMPONENT PARTS LIST

| <u>COMPONENT<br/>NUMBER</u> | <u>FUNCTION OF<br/>THIS COMPONENT</u> | <u>WHERE TO FIND<br/>THIS COMPONENT</u> | <u>MIL/NOR P/N</u> | <u>DESCRIPTION</u>                 | <u>LOCATION</u> |
|-----------------------------|---------------------------------------|-----------------------------------------|--------------------|------------------------------------|-----------------|
| SHAD                        | SWITCH-BELT 2 ALLOWED TO DISCHARGE    | W6DM4FR2                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 3 ALLOWED TO DISCHARGE    | W6DM4FR3                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 4 ALLOWED TO DISCHARGE    | W6DM4FR4                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 5 ALLOWED TO DISCHARGE    | W6DM4FR5                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 6 ALLOWED TO DISCHARGE    | W6DM4FR6                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-BELT 7 ALLOWED TO DISCHARGE    | W6DM4FR7                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-DISCHARGE ALLOWED              | W6DM4I                                  | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAD                        | SWITCH-DISCHARGE ALLOWED              | W6DM4ND                                 | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAL                        | SWITCH-LOAD ALLOWED                   | W6DM4I                                  | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAM                        | SWITCH-AUTO/MANUAL                    | W6DM4FQ                                 | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHAM                        | SWITCH-AUTOMATIC/MANUAL               | W6DM4AD                                 | 09N400CBNO         | CONTACT BLK ONLY 1-NO SQD#ZB2BE101 | BELT CNTL BOX   |
| SHBAL                       | SWITCH-FEEDER BELT #5 LD ALLOWED      | W6DM4FS5                                | 09N405PB10         | SWASS PBBK 1NO                     | BELT CONTROLR   |
| SHBAL                       | SWITCH-FEEDER BELT #6 LD ALLOWED      | W6DM4FS6                                | 09N405PB10         | SWASS PBBK 1NO                     | BELT CONTROLR   |
| SHD                         | SWITCH-DATA VALID-BELT LOADED         | W6DM4FQ                                 | 09N405PB10         | SWASS PBBK 1NO                     | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 0 ALLOWED TO LOAD         | W6DM4FR0                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 1 ALLOWED TO LOAD         | W6DM4FR1                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 2 ALLOWED TO LOAD         | W6DM4FR2                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 3 ALLOWED TO LOAD         | W6DM4FR3                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 4 ALLOWED TO LOAD         | W6DM4FR4                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 5 ALLOWED TO LOAD         | W6DM4FR5                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 6 ALLOWED TO LOAD         | W6DM4FR6                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHDT                        | SWITCH-BELT 7 ALLOWED TO LOAD         | W6DM4FR7                                | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHFA                        | SWITCH-REMOTE FORMULA SELECT ALPHA    | W6DM4SD                                 | 09N041N            | ROTSW 5-POLE 8-POSIT 5A125V        | RM SELECT BX    |
| SHFA                        | SWITCH-REMOTE FORMULA SELECT ALPHA    | W6DM4SF                                 | 09N041N            | ROTSW 5-POLE 8-POSIT 5A125V        | FORMULA SELECT  |
| SHFN                        | SWITCH-REMOTE FORMULA SELECT NUMB     | W6DM4SD                                 | 09N041N            | ROTSW 5-POLE 8-POSIT 5A125V        | RM SELECT BX    |
| SHFN                        | SWITCH-REMOTE FORMULA SELECT NUMB     | W6DM4SF                                 | 09N041N            | ROTSW 5-POLE 8-POSIT 5A125V        | FORMULA SELECT  |
| SHFR                        | SWITCH-FORWARD/REVERSE                | W6DM4AD                                 | 09N400CBNO         | CONTACT BLK ONLY 1-NO SQD#ZB2BE101 | BELT CNTL BOX   |
| SHFS                        | SWITCH-REMOTE FORMULA SELECT 0-15     | W6DM4SD                                 | 09N041N            | ROTSW 5-POLE 8-POSIT 5A125V        | RM SELECT BX    |
| SHJOG                       | SWITCH-FEEDER BELT #5 JOG             | W6DM4FS5                                | 09N405PB10         | SWASS PBBK 1NO                     | FEEDER BLT CNT  |
| SHJOG                       | SWITCH-FEEDER BELT #6 JOG             | W6DM4FS6                                | 09N405PB10         | SWASS PBBK 1NO                     | FEEDER BLT CNT  |
| SHL                         | SWITCH-BELT IS LOADED                 | W6DM4FQ                                 | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHL                         | SWITCH-BELT IS LOADED                 | W6DM4I                                  | 09N405M210         | SWASS M2W 1NO                      | ON DRYER        |
| SHLR                        | SWITCH-BELT IS LOADED RESET           | W6DM4FQ                                 | 09N405PB01         | SWASS BP BLUE INC                  | BELT CONTROLR   |

# COMPONENT PARTS LIST

W6DM4PL/2001233N

| <u>COMPONENT<br/>NUMBER</u> | <u>FUNCTION OF<br/>THIS COMPONENT</u> | <u>WHERE TO FIND<br/>THIS COMPONENT</u> | <u>MIL/NOR P/N</u> | <u>DESCRIPTION</u>                 | <u>LOCATION</u> |
|-----------------------------|---------------------------------------|-----------------------------------------|--------------------|------------------------------------|-----------------|
| SHM                         | SWITCH-FEEDER BELT #6 MANUAL          | W6DM4FS6                                | 09N405M210         | SWASS M2W 1NO                      | FEEDER BLT CNT  |
| SHM                         | SWITCH-FEEDER BELT #5 MANUAL          | W6DM4FS5                                | 09N405M210         | SWASS M2W 1NO                      | FEEDER BLT CNT  |
| SHMA                        | SWITCH-MASTER                         | W6DM4FQ                                 | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHMD                        | SWITCH-BELT MOTOR DISCONNECT          | W6DM4MR                                 | 09N042204          | ROTARY DISCON 10A 600V 2POS 4P     | SIDE OF BELT    |
| SHMD                        | SWITCH-MOTOR DISCONNECT               | W6DM4S+                                 | 09N042204          | ROTARY DISCON 10A 600V 2POS 4P     | SIDE OF BELT    |
| SHPE1                       | SWITCH-EMERGENCY PULL CORD            | W6DM4CH                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHPE1                       | SWITCH-EMERGENCY PULL CORD            | W6DM4FQ                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHPE1                       | SWITCH-EMERGENCY PULL CORD            | W6DM4S+                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHPE2                       | SWITCH-EMERGENCY PULL CORD            | W6DM4CH                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHPE2                       | SWITCH-EMERGENCY PULL CORD            | W6DM4FQ                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHPE2                       | SWITCH-EMERGENCY PULL CORD            | W6DM4S+                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | SIDE OF BELT    |
| SHS+                        | SWITCH-START                          | W6DM4FQ                                 | 09N405PG10         | SWASS PBGN INO                     | BELT CONTROLR   |
| SHS+                        | SWITCH-START                          | W6DM4S+                                 | 09N405PG10         | SWASS PBGN INO                     | CONTROLLER BX   |
| SHS+                        | SWITCH-START                          | W6DM4AD                                 | 09N400CBNO         | CONTACT BLK ONLY 1-NO SQD#ZB2BE101 | BELT CNTL BOX   |
| SHSFR                       | SWITCH-RANGE SELECT                   | W6DM4SD                                 | 09N405M210         | SWASS M2W 1NO                      | RM SELECT BX    |
| SHSG                        | SWITCH-SIGNAL CANCEL                  | W6DM4S+                                 | 09N405PY10         | SWASS PB YELLOW INO                | CONTROLLER BX   |
| SHSMA                       | SWITCH-MASTER                         | W6DM4BW                                 | 09N405M210         | SWASS M2W 1NO                      | CONTROLLER BX   |
| SHSMA                       | SWITCH-MASTER                         | W6DM4S+                                 | 09N405M210         | SWASS M2W 1NO                      | BELT CONTROLR   |
| SHSMA                       | SWITCH-MASTER                         | W6DM4AD                                 | 09N400CBNO         | CONTACT BLK ONLY 1-NO SQD#ZB2BE101 | BELT CNTL BOX   |
| SHSO                        | SWITCH-STOP                           | W6DM4FQ                                 | 09N405PR01         | SWASS PBRD 1NC                     | BELT CONTROLR   |
| SHSO                        | SWITCH-STOP                           | W6DM4S+                                 | 09N405PR01         | SWASS PBRD 1NC                     | CONTROLLER BX   |
| SHSO                        | SWITCH-STOP                           | W6DM4AD                                 | 09N400CBNC         | CONTACT BLK ONLY 1-NC SQD#ZB2BE102 | BELT CNTL BOX   |
| SK                          | >>SWITCH-KEYLOCK                      |                                         |                    |                                    |                 |
| SKPR                        | SWITCH-RUN/PROGRAM (KEY OP)           | W6DM4S+                                 | 09N127C            | KEYSW SPST 7A120VAC SCREW TERM     | CONTROLLER BX   |
| SM                          | >>SWITCH-MECHANICAL OPERATED          |                                         |                    |                                    |                 |
| SMD                         | PROX SW-COORP AT DISCHARGE            | W6DM4CHA                                | 09RPS18AAU         | PROXSW QK CONN 18M NO-AC UNSHLD    | ON COHORP       |
| SMFB1                       | SWITCH-JOG LOADING BELT               | W6DM4FP                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | LOADING BELT    |
| SMFB2                       | SWITCH-JOG LOADING BELT               | W6DM4FP                                 | 09R014A            | MINI-SW SPDT STAKON #V15G1C26      | LOADING BELT    |
| SMH                         | PROX SW-COORP AT HOME                 | W6DM4CHA                                | 09RPS18AAU         | PROXSW QK CONN 18M NO-AC UNSHLD    | ON COHORP       |
| SMLP                        | SWITCH-BELT IN LOAD POSITION          | W6DM4FQ                                 | 09R012             | MICSW SPDT PAINTED BZE6-RN 01      | END OF BELT     |
| SMUP                        | SWITCH-BELT IN UNLOAD POSITION        | W6DM4FQ                                 | 09R012             | MICSW SPDT PAINTED BZE6-RN 01      | END OF BELT     |
| VE                          | >>VALVE-ELECTRIC OPERATED             |                                         |                    |                                    |                 |
| VECD                        | VALVE-MOVE COHORP TO DISCHARGE        | W6DM4CHA                                | 96R301A37          | 1/8" PILOT 3W-NC 110/50 120/60     | ON COHORP       |

# COMPONENT PARTS LIST

| <u>COMPONENT<br/>NUMBER</u> | <u>FUNCTION OF<br/>THIS COMPONENT</u> | <u>WHERE TO FIND<br/>THIS COMPONENT</u> | <u>MILNOR P/N</u> | <u>DESCRIPTION</u>             | <u>LOCATION</u> |
|-----------------------------|---------------------------------------|-----------------------------------------|-------------------|--------------------------------|-----------------|
| VECH                        | VALVE-MOVE COHORP HOME                | W6DM4CHA                                | 96R301A37         | 1/8" PILOT 3W-NC 110/50 120/60 | ON COHORP       |
| VEET                        | VALVE-EXTEND RAIL TARGET              | W6DM4FQ                                 | 96R301A37         | 1/8" PILOT 3W-NC 110/50 120/60 | BELT CONTROLR   |
| VEET                        | VALVE-EXTEND TARGET                   | W6DM4SB                                 | 96R301A37         | 1/8" PILOT 3W-NC 110/50 120/60 | DEVICE AIR BX   |
| VET                         | VALVE-DROP TARGET                     | W6DM4ND                                 | 96R301A37         | 1/8" PILOT 3W-NC 110/50 120/60 | NO-DRY BOX      |
| ZF                          | >>RECTIFIERS                          |                                         |                   |                                |                 |
| ZFDL                        | RECTIFIER-BELT DESIRES LOAD           | W6DM4RR                                 | 09A020EBR         | RECTIFIER (ERB) 15A/600PIV     | BELT LIGHT BX   |
| ZFL                         | RECTIFIER-BELT LOADED                 | W6DM4RR                                 | 09A020EBR         | RECTIFIER (ERB) 15A/600PIV     | BELT LIGHT BX   |
| ZFP                         | RECTIFIER-BELT IN LOAD POSITION       | W6DM4RR                                 | 09A020EBR         | RECTIFIER (ERB) 15A/600PIV     | BELT LIGHT BX   |
| ZFUP                        | RECTIFIER-BELT IN UNLOAD POSITION     | W6DM4RR                                 | 09A020EBR         | RECTIFIER (ERB) 15A/600PIV     | BELT LIGHT 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, NEGLIGENCE, 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

**BMP720097R**  
**72332A**

## HOW TO USE MILNOR<sup>®</sup> ELECTRICAL SCHEMATICS

Milnor<sup>®</sup> electrical schematic manuals contain a *table of contents/component list*, a set of *schematic 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<sup>®</sup> document MST50202BE "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.

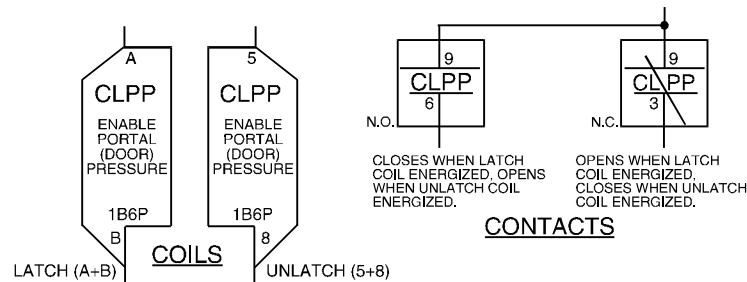
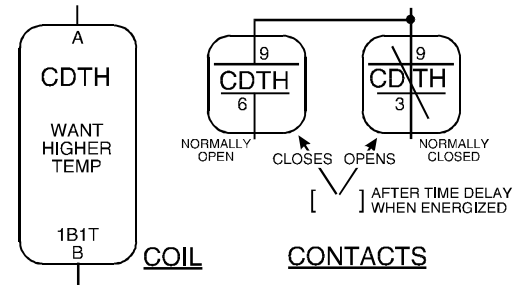
The following are descriptions of the electrical components used in Milnor<sup>®</sup> machines. Descriptions are in alphabetical order of the component class code (two character prefix).

**BA=Printed Circuit Board** Insulating substrate on which a thin pattern of copper conductors has been formed to connect discrete 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).

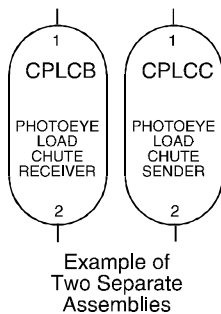
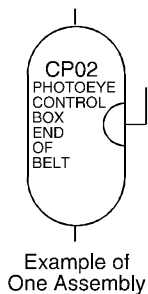
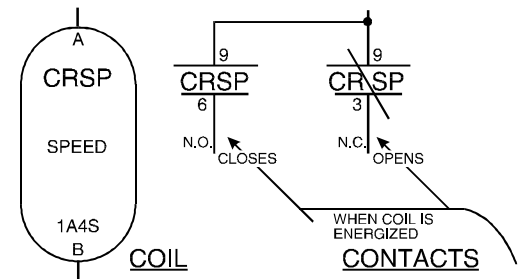


**CD=Control, Time Delay Relay** A relay whose contacts switch only after a fixed or adjustable delay, once voltage has been applied to its coil. The contacts switch back to normal (de-energized state) immediately when the voltage is removed.



**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*).

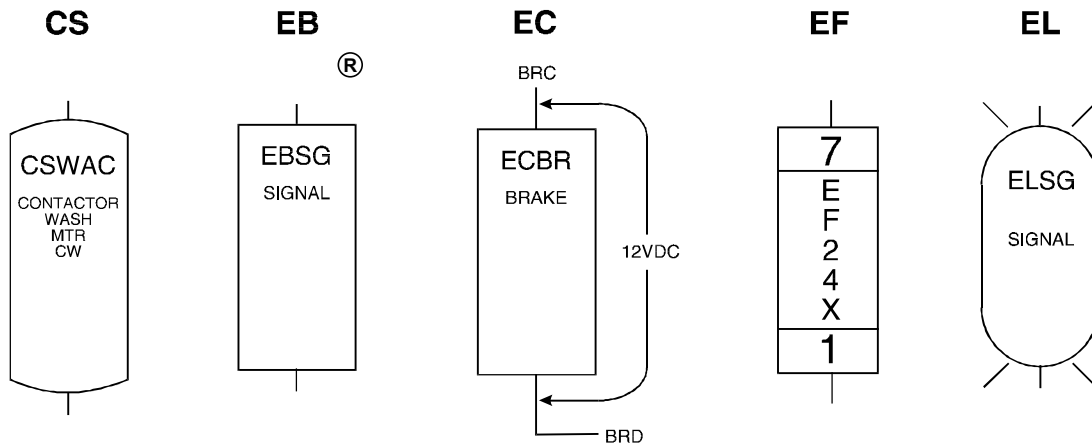
**CR=Control, Relay** A relay whose contacts switch immediately when voltage is applied to its coil and revert to normal when the voltage is removed.



**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).

## HOW TO USE MILNOR® ELECTRICAL SCHEMATICS



**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.

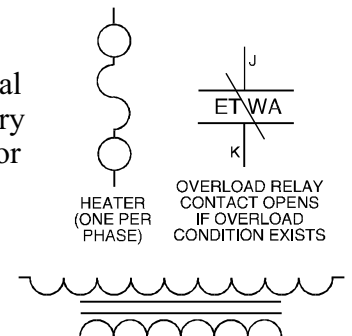
**EL=Electric Light** Indicator lights may be either incandescent or fluorescent.

**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 (alternating 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.

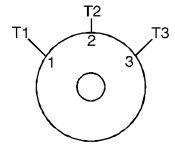
**EX=Electrical Transformer** A device that transfers electrical energy from one isolated circuit to another, often raising or lowering the voltage in the process.



**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.

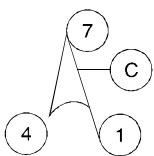
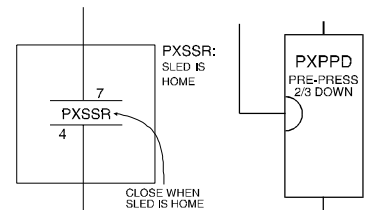


**MV=Motor (Variable Speed) Inverter** To vary the speed of an AC motor, the volts to frequency ratio must be kept constant. The motor will overheat if this ratio is not maintained.

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.

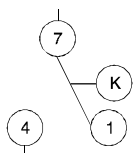
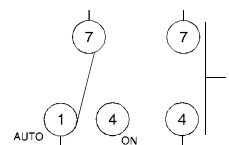
**NOTE: Switch symbols used in the schematics and described below always depict the switch in its unactuated state.**

**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.



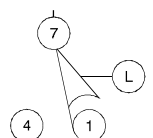
**SC=Switch, Cam Operated** A switch in which the electrical contacts are opened and/or closed by the mechanical action of a cam(s). Applications include 35-50 pound timer operated machines, autospot, timer reversing motor assembly, and some balancing systems.

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



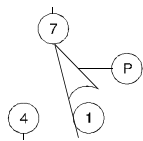
**SK=Switch, Key Lock** A switch that requires a key to operate. This prevents unauthorized personnel from gaining access to certain functions (e.g., the *Program Menu*).

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

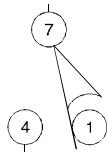


HOW TO USE MILNOR® ELECTRICAL SCHEMATICS

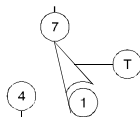
**SM=Switch, Mechanically Operated** A switch that is mechanically operated by a part of or the motion of the machine (e.g., door closed switch, tilt limit switches, etc.)



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

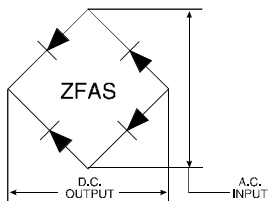


**ST=Switch, Temperature Operated** A switch that is actuated at a preset temperature (e.g., dryer safety probes) or has adjustable set points (e.g., Motometers or Combistats).



**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.



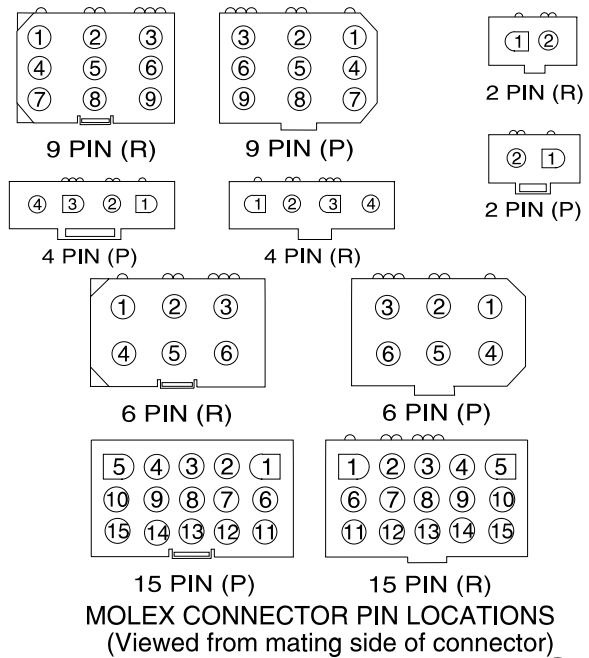
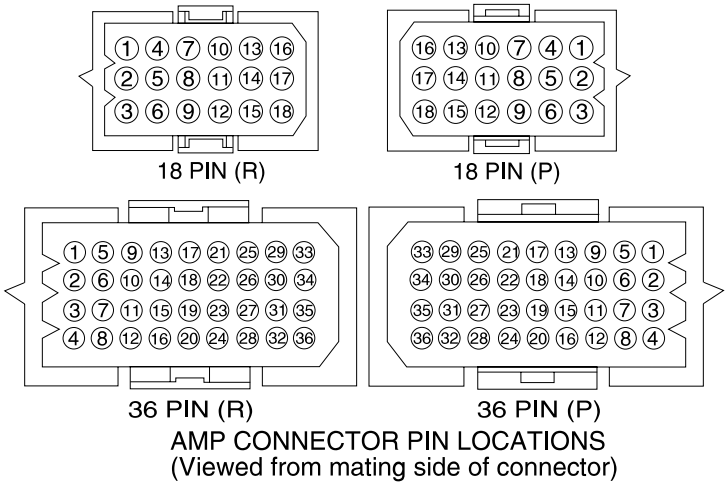
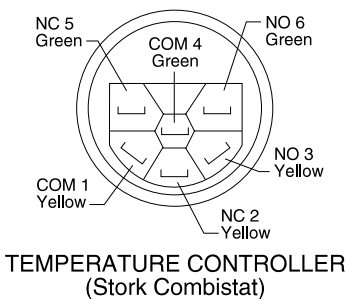
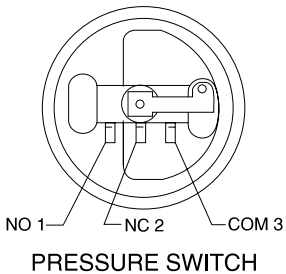
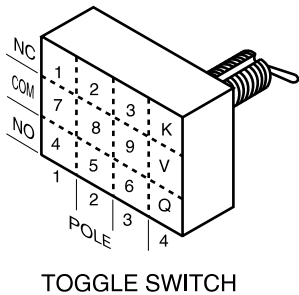
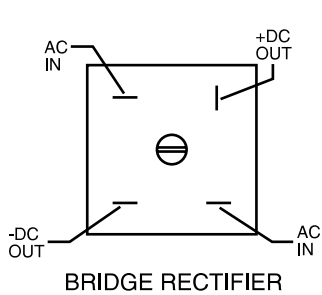
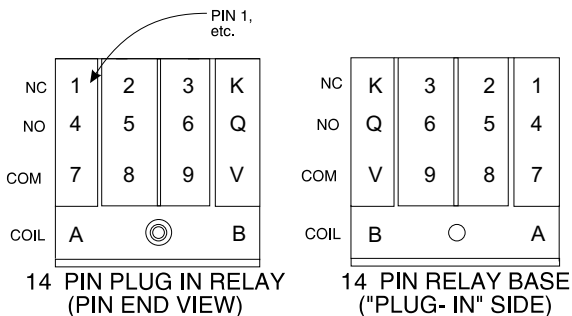
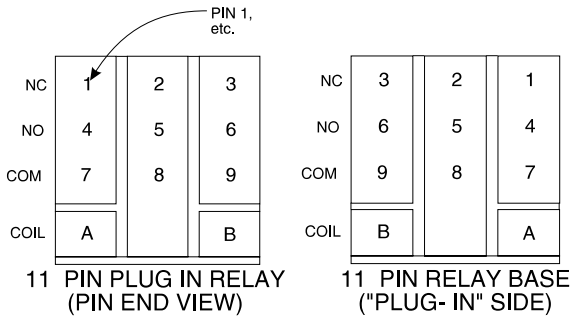
**ZF=Rectifier** A solid state device that converts alternating current to direct current.



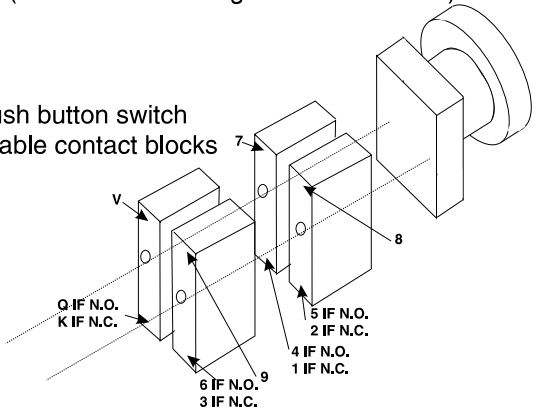
**WC=Wiring Connector** A coupling device for joining two cables or connecting a cable to an electronic circuit or piece of equipment. Connectors are male or female, according to whether they plug into or receive the mating connector.

# Component Terminal Numbering

NOTE: Numbers shown usually appear on the component.



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<sup>æ</sup> 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<sup>æ</sup> 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

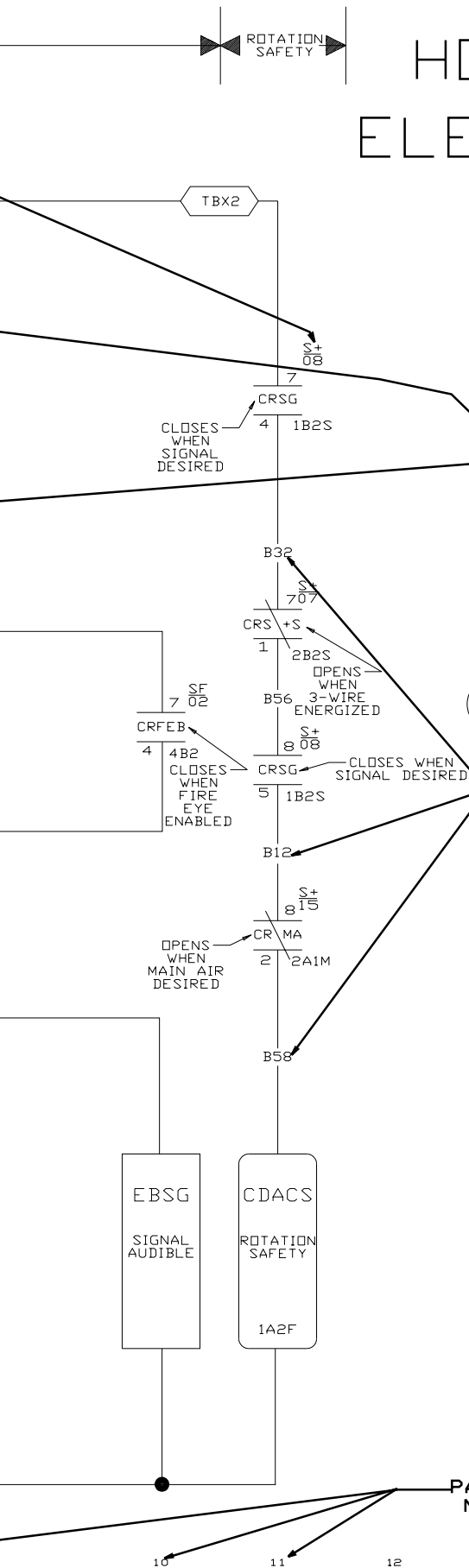
The complete listing of the boards utilized in a given control system can be found in the component list for that system.

- 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.



# HOW TO READ MILNOR ELECTRICAL SCHEMATICS

W6DRYGS+A  
93226D



8

MASS TERMINATION ASSEMBLY  
MTA DESIGNATION ON BOARD  
1MTA5-9  
PIN NUMBER  
BOARD MTA GROUP DESIGNATION

AN MTA IS A CONNECTION ON AN ELECTRONIC CIRCUIT BOARD. THE NOTES AND THE TAG PAGE CAN LOCATE THE APPROPRIATE BOARD.

9

WIRE IDENTIFICATION MARKING. THIS DESIGNATION IS STAMPED ON THE WIRE EVERY 6." THIS MARKING IS USED IN CONJUNCTION WITH THE SIGNAL ROUTING TABLE.

1

MAJOR REVISION (LETTER)

PAGE NUMBER (S+)

TYPE OF MACHINE (GAS FIRED DRYER)

6TH GENERATION OF CONTROLS

W=WIRING

CLASS OF CONTROL SYSTEM

TITLE OF THIS CIRCUIT

VOLTAGE OF CIRCUIT SHOWN

NOTES:

1. TBL IS LOCATED IN LEFT CONTROL BOX.
2. TBA IS LOCATED IN RIGHT CONTROL BOX.
3. TBX IS LOCATED IN LEFT CONTROL BOX.
4. 1MTA5 IS LOCATED ON BID1 (8 OUTPUT-16 INPUT BOARD).
5. REMOVE (J1) IF DRYER HAS VALVE SET SHUT OPTION.

MICRO 6 SYSTEMS  
SCHEMATIC: 3-WIRE CIRCUIT  
24V1P50HZ/24V1P60HZ  
PELLERIN MILNOR CORPORATION

PAGE LINE NUMBERS

3

W6DRYGS+A  
93226D

## 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***               |                          |                            |
| TB24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                | any                                   | 24VDC              |                          |                            |
| TB2G (ground)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                | any                                   | 2G                 |                          |                            |
| 24VDC Photo eye power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                | Microprocessor inputs from photo eyes | TB_*               | 5                        | Load end phooey input      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                |                                       | TB_*               | 6                        | Discharge end phooey input |
| <p>* 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.</p> <p>** 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.</p> <p>*** 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.</p> <p>**** The motor contactors/overloads are labeled "belt 0", belt 1", etc.</p> |                                                                                                                |                                       |                    |                          |                            |

## 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.

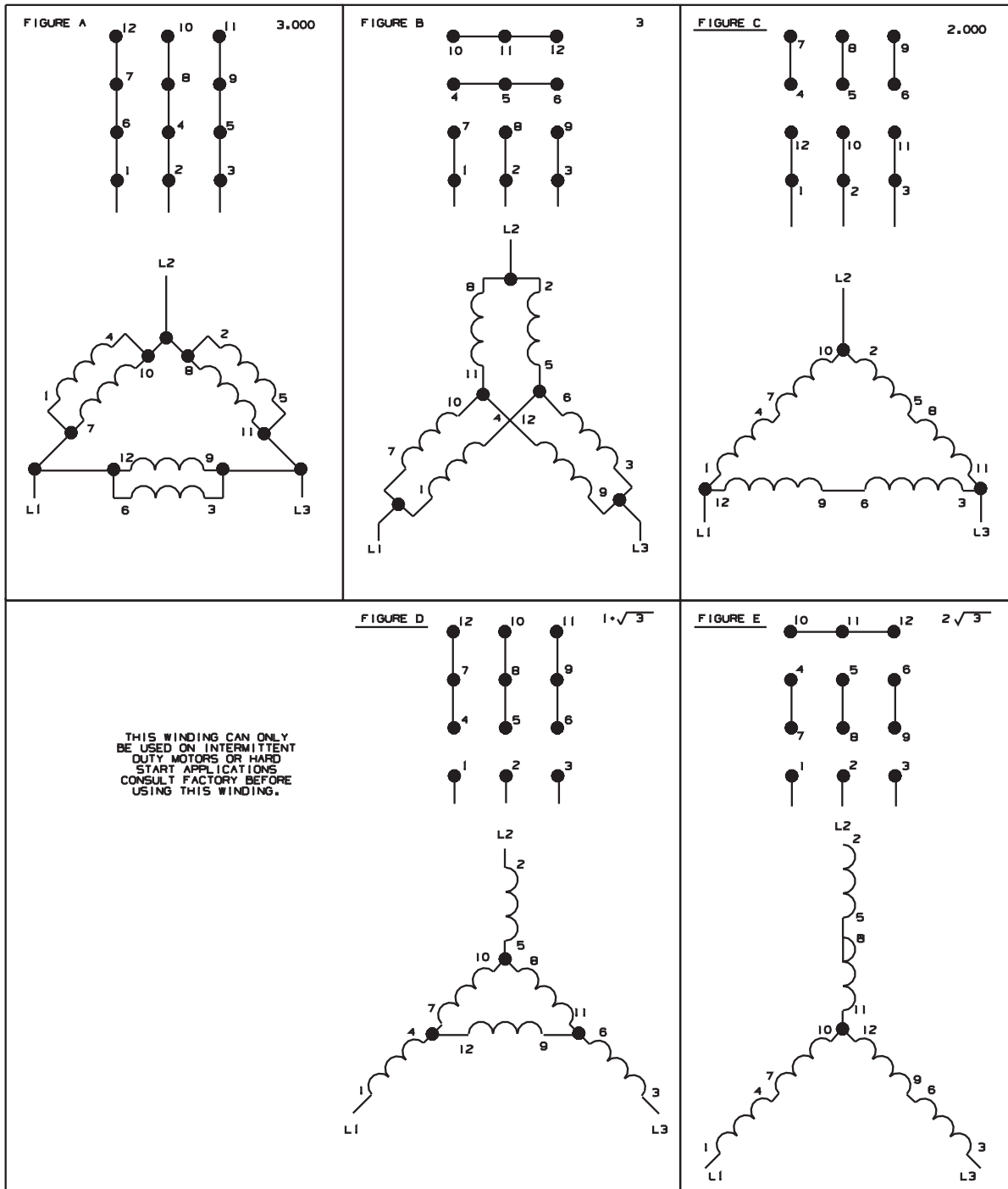
**Table 2: Device Master On-Site Control Connections in MultiTrac Systems**

| 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   |
| <p>* 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.</p> <p>** 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.</p> |                                                                                                              |                             |     |                           |     |

— End of BIYCDI01 —



| FIGURE | ELECTRICAL<br>VALUES | SUFFIXES |      |      |      |      |      |      |      |
|--------|----------------------|----------|------|------|------|------|------|------|------|
|        |                      | B        |      | H    |      | M    |      | T    |      |
|        |                      | 50HZ     | 60HZ | 50HZ | 60HZ | 50HZ | 60HZ | 50HZ | 60HZ |
| A      | 1,000                | 208      | 230  |      |      | 200  | 220  | 220  | 240  |
| B      | $\sqrt{3}$           |          |      | 208  | 240  | 346  | 380  | 380  |      |
| C      | 2,000                | 416      | 460  | 220  | 240  | 400  | 440  | 440  | 480  |
| D      | $1 + \sqrt{3}$       |          |      |      |      |      | 600  |      |      |
| E      | $2\sqrt{3}$          |          |      | 380  |      |      |      |      |      |



06

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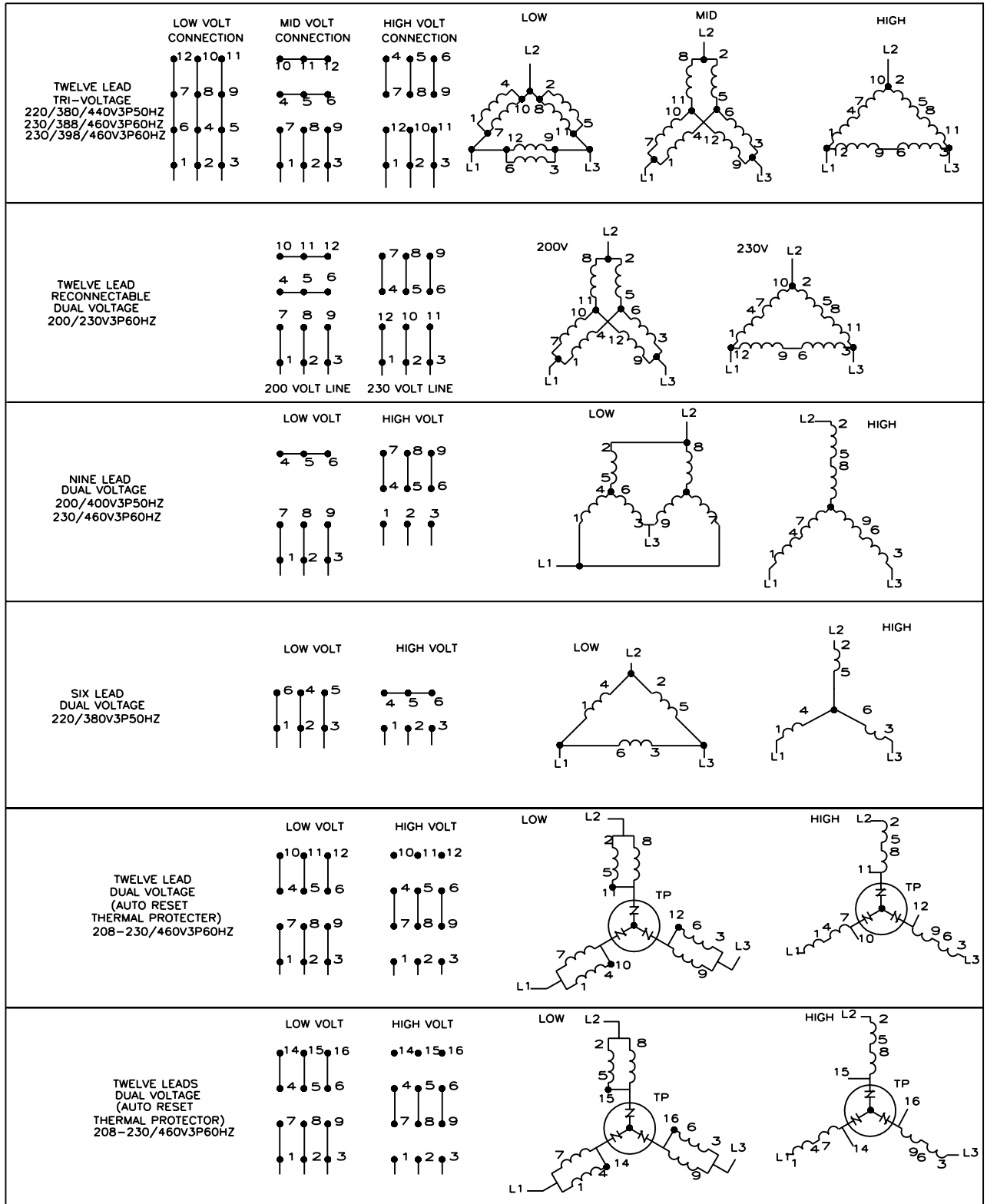
17

# BMP850029

## MOTOR CONNECTION DIAGRAMS

THREE PHASE SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS  
(ONLY FOR MOTOR SUFFIXES LISTED)

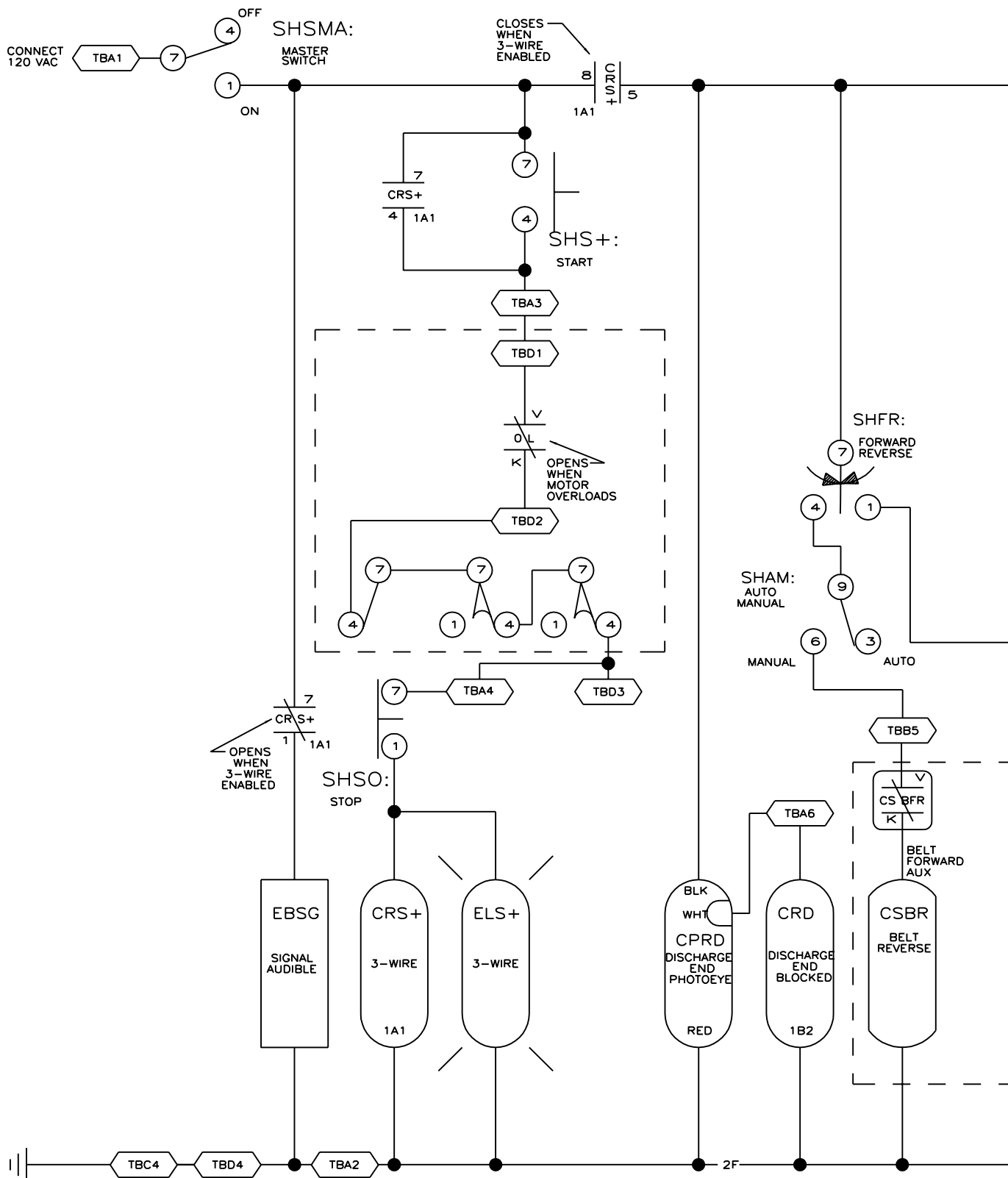
PELLERIN MILNOR CORPORATION

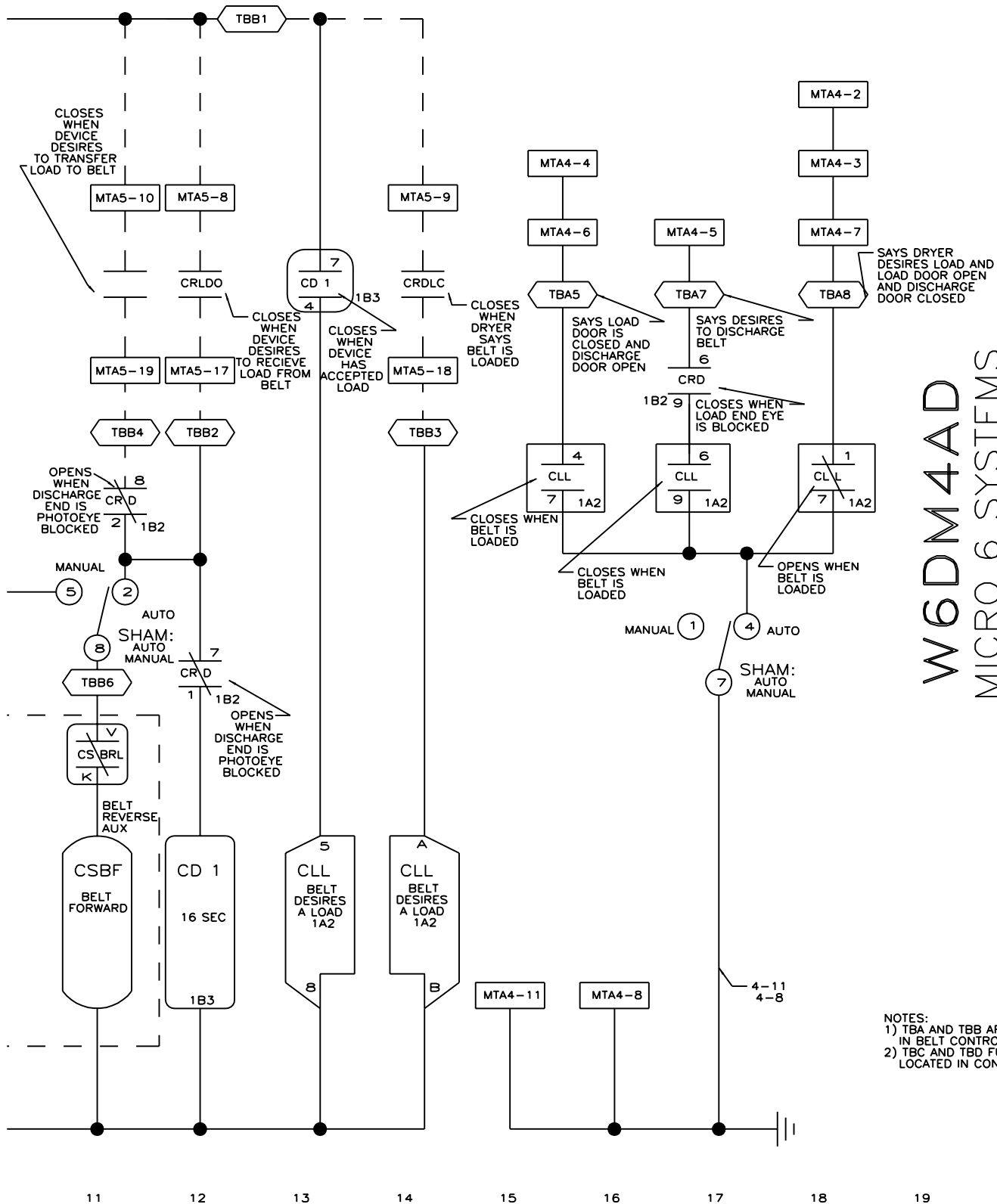


# W80008

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

W80008  
2001253A





# W6DM4AD

## MICRO 6 SYSTEMS

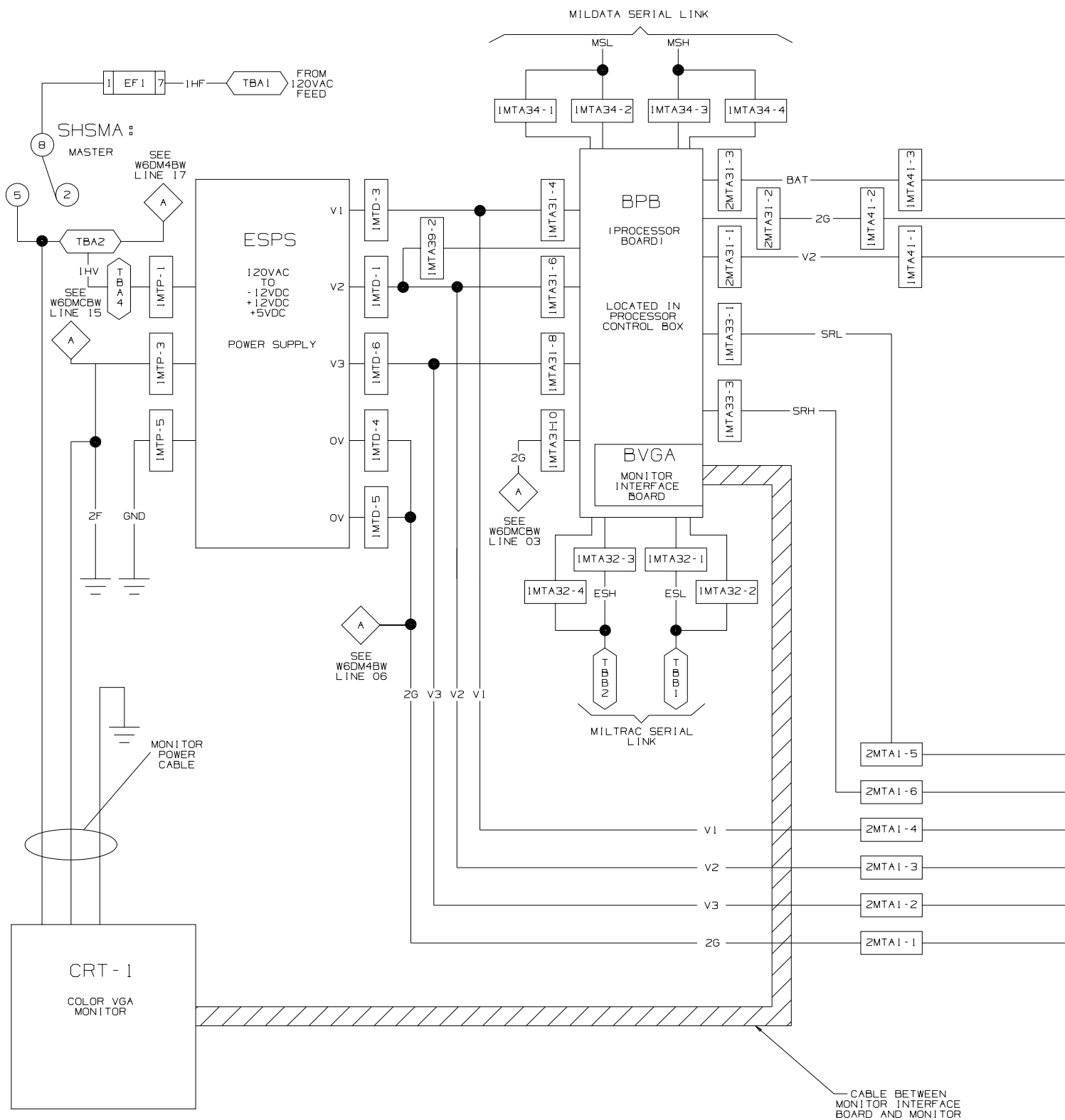
### SCHEMATIC: ALLIED DRYER INTERFACE FOR

### DEVICE MASTER ALLOWS BELT TO

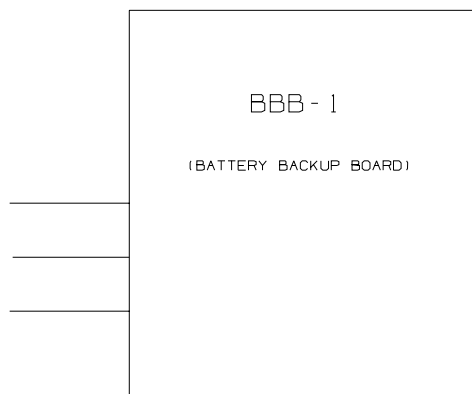
### ACT LIKE DRYER

PELLERIN MILNOR CORPORATION

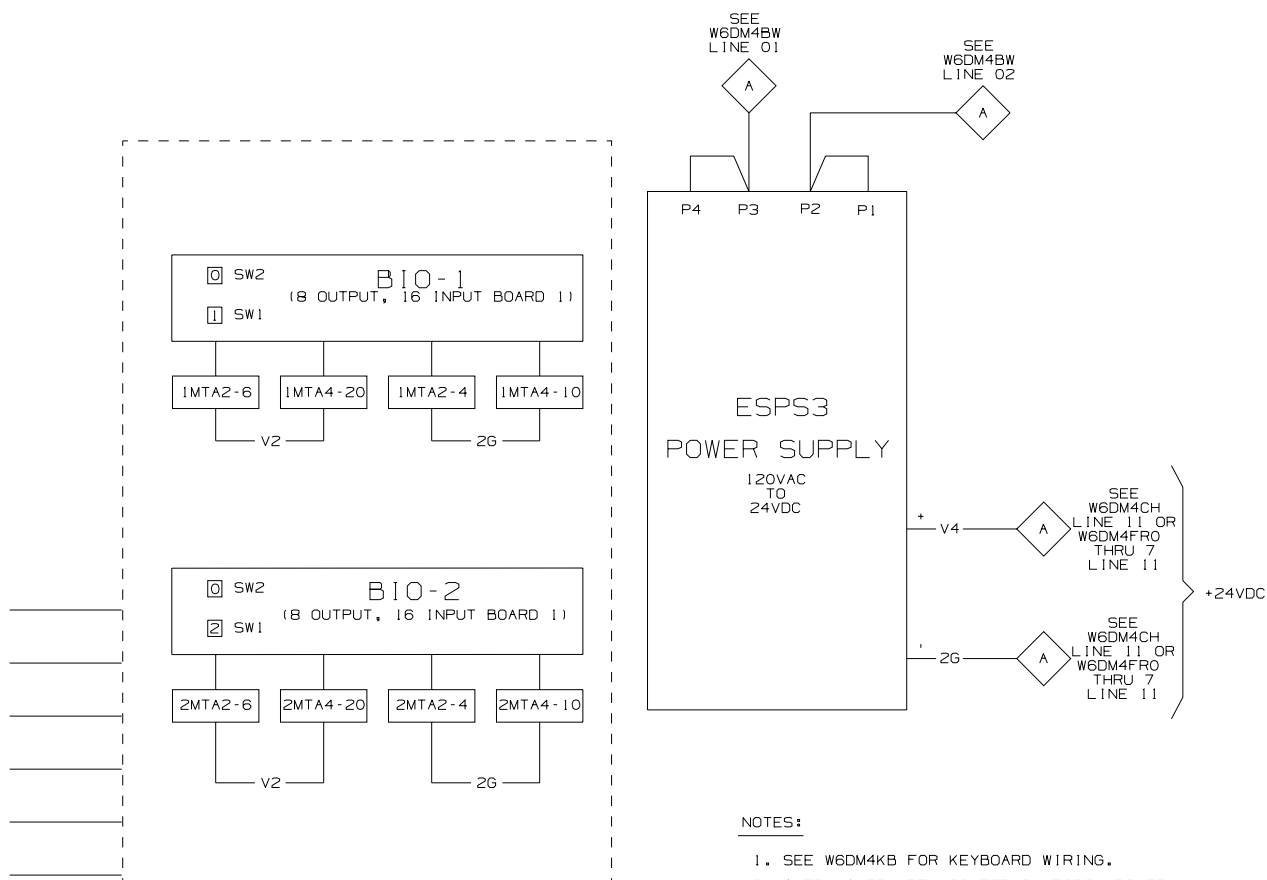
NOTES:  
1) TBA AND TBB ARE LOCATED IN BELT CONTROLLER BOX.  
2) TBC AND TBD FUSES ARE LOCATED IN CONTACTOR BOX.



00 01 02 03 04 05 06 07 08 09



| WIRE NO. | VOLTAGE        | WIRE COLOR  |
|----------|----------------|-------------|
| V1       | +5VDC          | BLUE        |
| V2       | +12VDC         | BLUE/ORANGE |
| V3       | -12VDC         | BLUE/BLACK  |
| ZG       | 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   |



# NOTES:

- SEE W6DM4KB FOR KEYBOARD WIRING.
- IMTD, IMTP ARE LOCATED ON ESPS (POWER SUPPLY).
- IMTA31, IMTA32, ZMTA31, IMTA39 IS LOCATED ON BPB (PROCESSOR BOARD).
- IMTA2, IMTA4 ARE LOCATED ON BIO-1 (8 OUTPUT - 16 INPUT BOARD).
- ZMTA2, ZMTA4 ARE LOCATED ON BIO-2 (8 OUTPUT - 16 INPUT BOARD).
- IMTA41 IS LOCATED ON BBB-1 (BATTERY BACKUP BOARD).
- REFER TO SCHEMATIC W6D1N FOR DIN PIN CONNECTIONS.

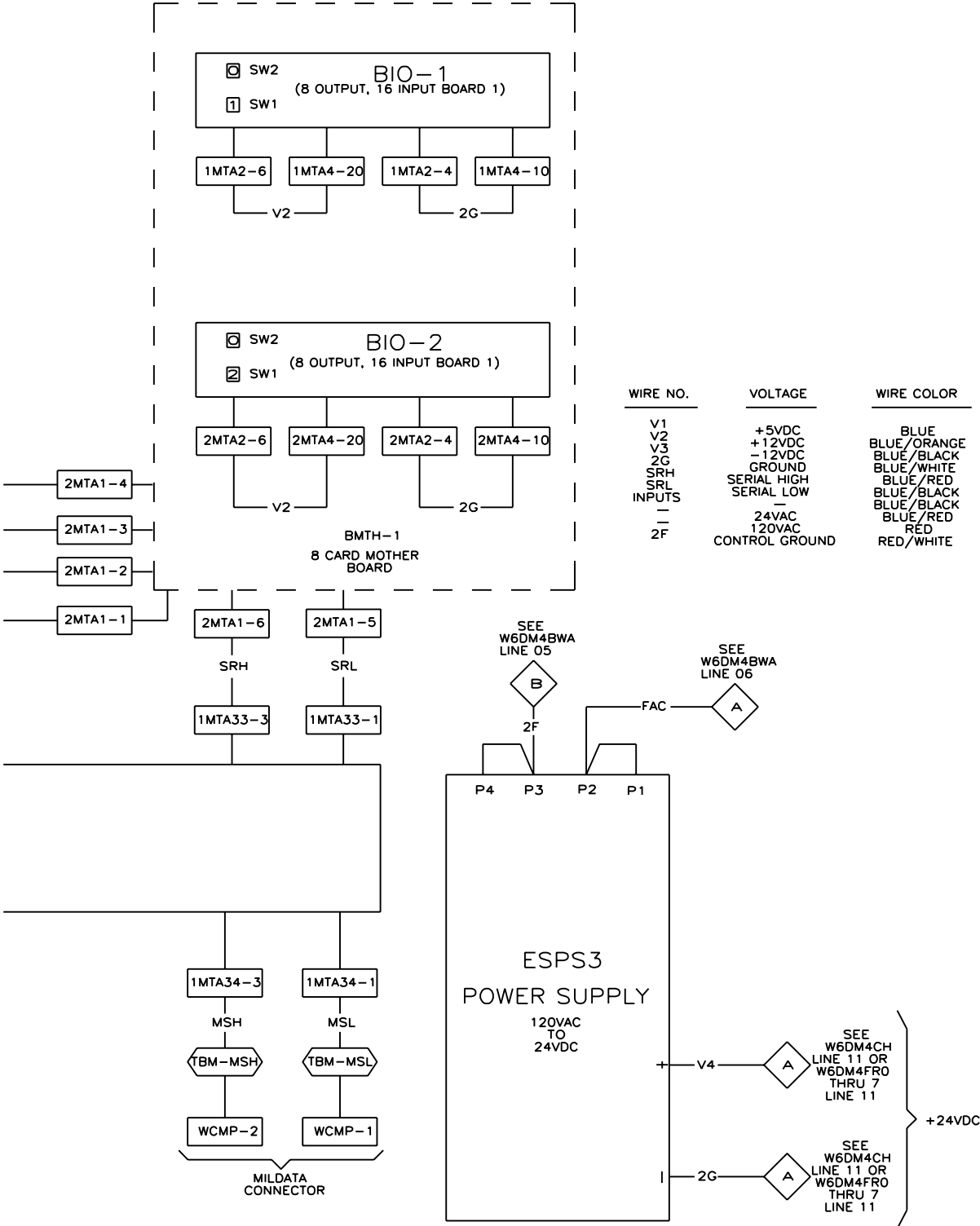
W6DM4BW  
MICRO 6 SYSTEMS  
SCHEMATIC: DEVICE MASTER BOARDS

110V1P50HZ/120V1P60HZ  
PELLERIN MILNOR CORPORATION



NOTES:

1. WHEN A P.C.IS FURNISHED TO CONTROL  
DEVICE MASTER THIS SCHEMATIC REPLACES  
W6DM4BW AND W6DM4KB.
2. TBP IS THE TERMINAL STRIP IN THE REAR  
OF THE DEVICE MASTER CONSOLE.

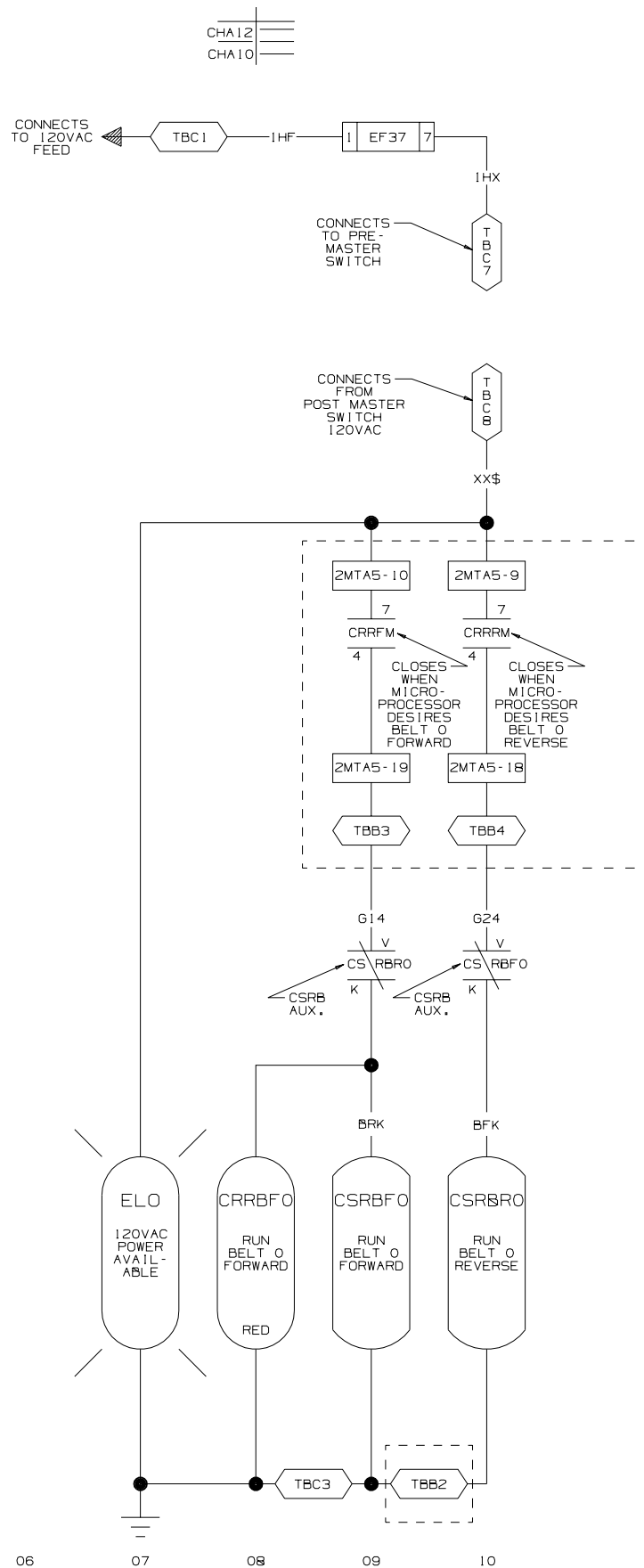
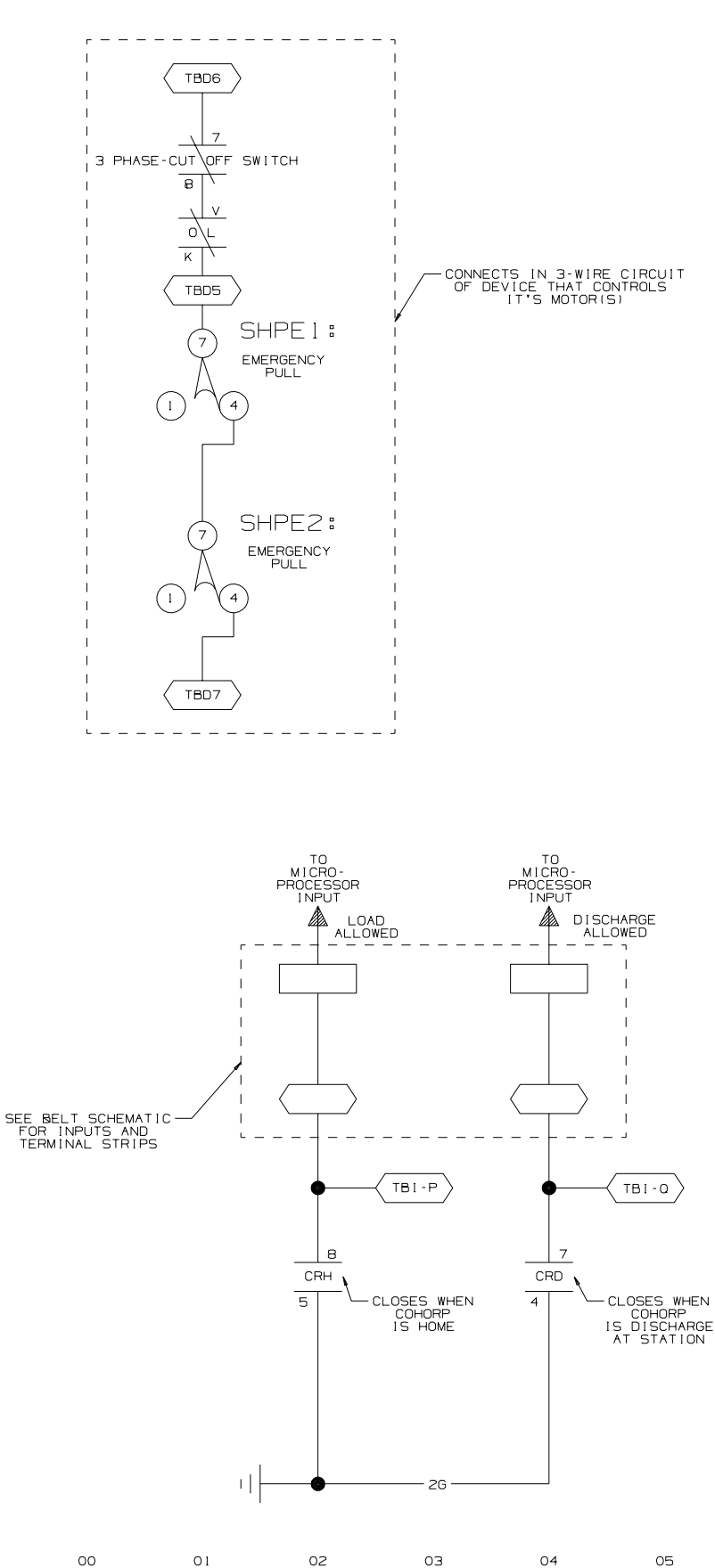


# W6DM4BWA

## MICRO 6 SYSTEMS

### SCHEMATIC: P.C DEVICE MASTER CONSOLE

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# W6DM4CH

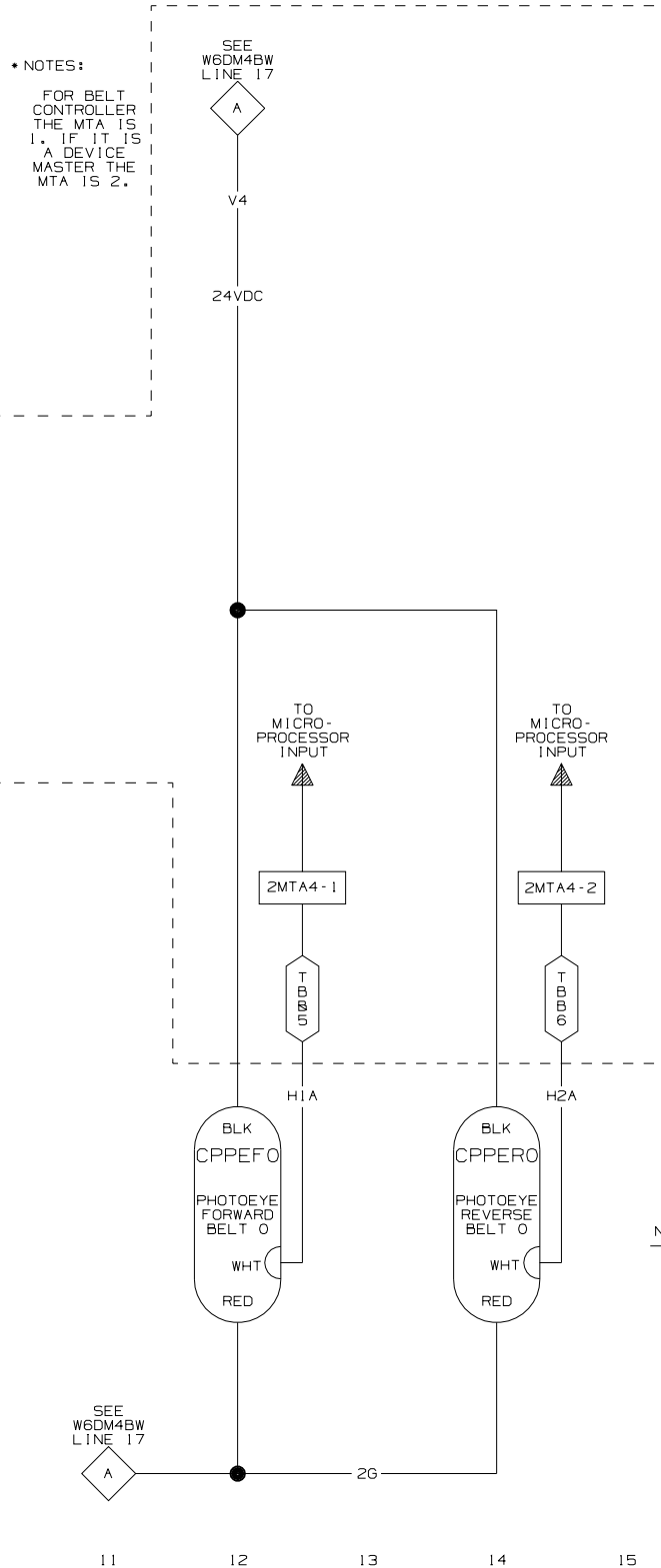
## MICRO 6 SYSTEMS

### FOR DEVICE MASTERS

#### SCHEMATIC: BELT CONTROLS FOR COHOP

#### CONTROLLER

110V50HZ/120V60HZ  
PELLERIN MILNOR CORPORATION

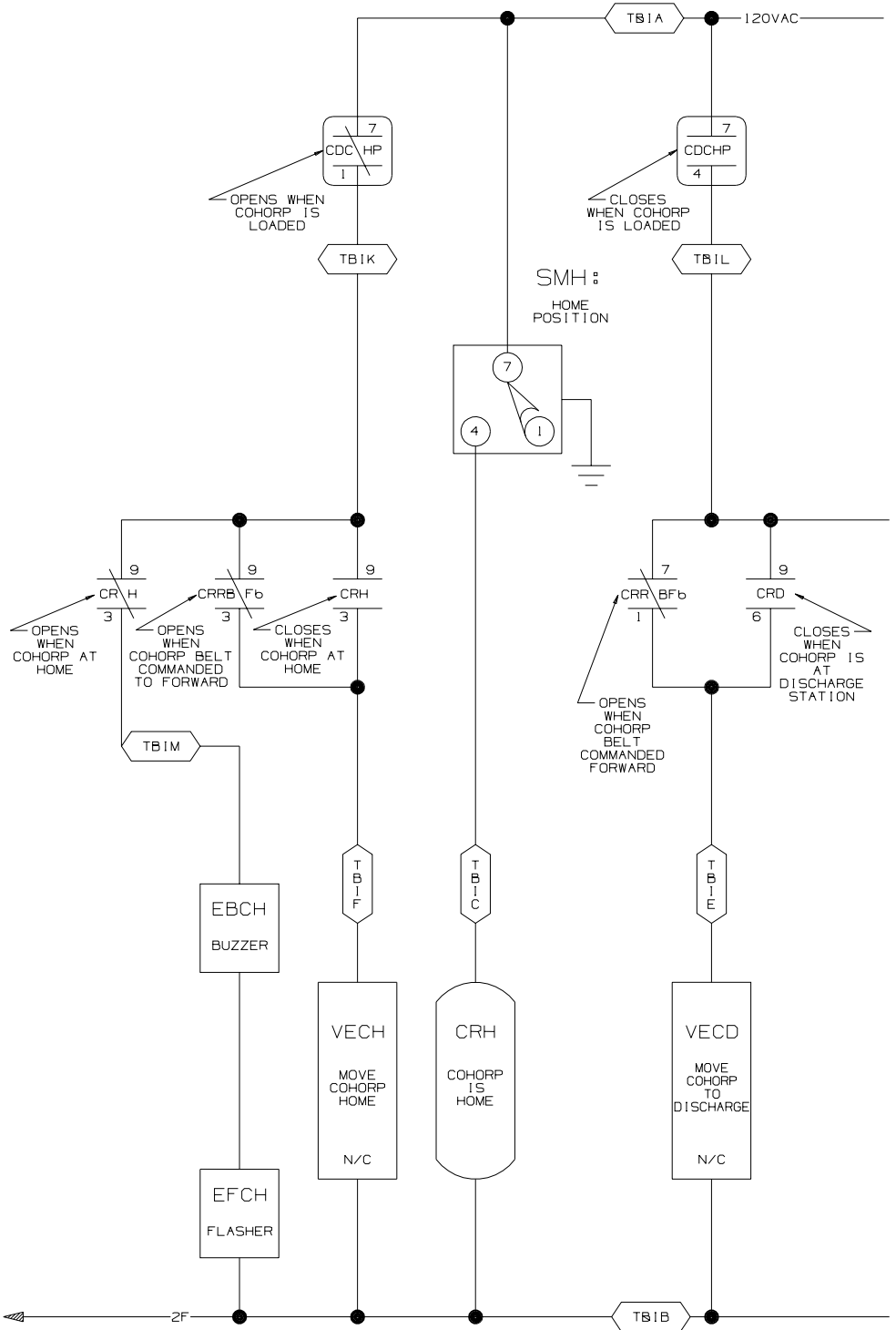


#### NOTES:

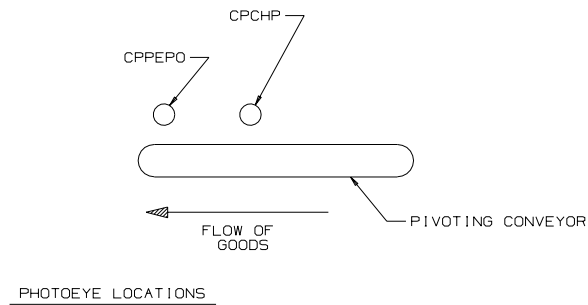
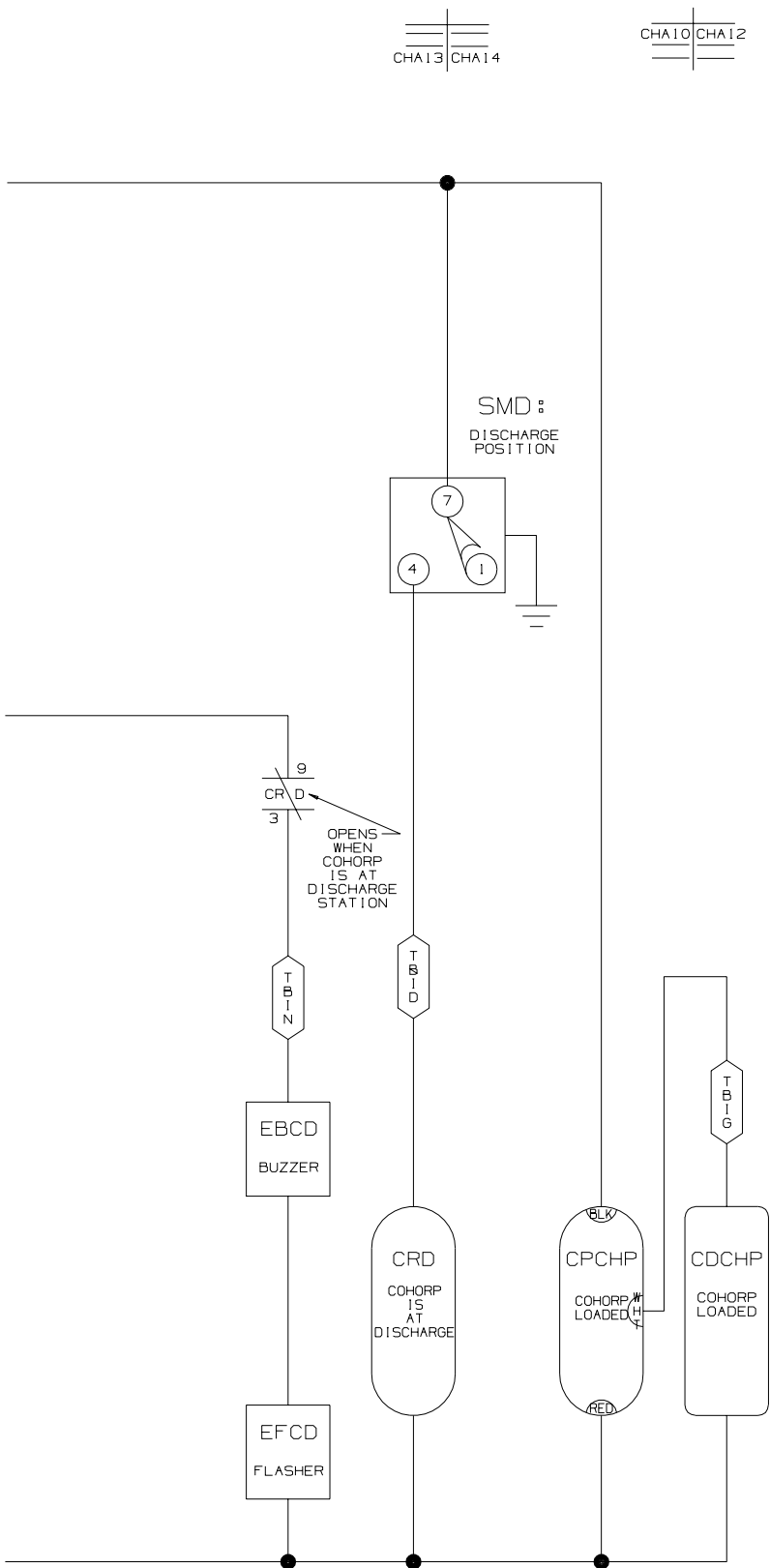
1. TBA-TBB ARE LOCATED IN THE 16 INPUT & OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT & OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS.
5. 1MTA3, 1MTA5, 1MTA6, 2MTA5, 2MTA3 & 8IO-2 ARE LOCATED ON BIO-1 (8 OUTPUT-16 INPUT BOARD).
6. DEPENDING ON WHICH BELT THE COHOP IS ASSIGNED TBB, TBC COULD CHANGE

11 12 13 14 15 16 17 18 19

CHA09 CHA10



00 01 02 03 04 05 06 07 08 09 10 11



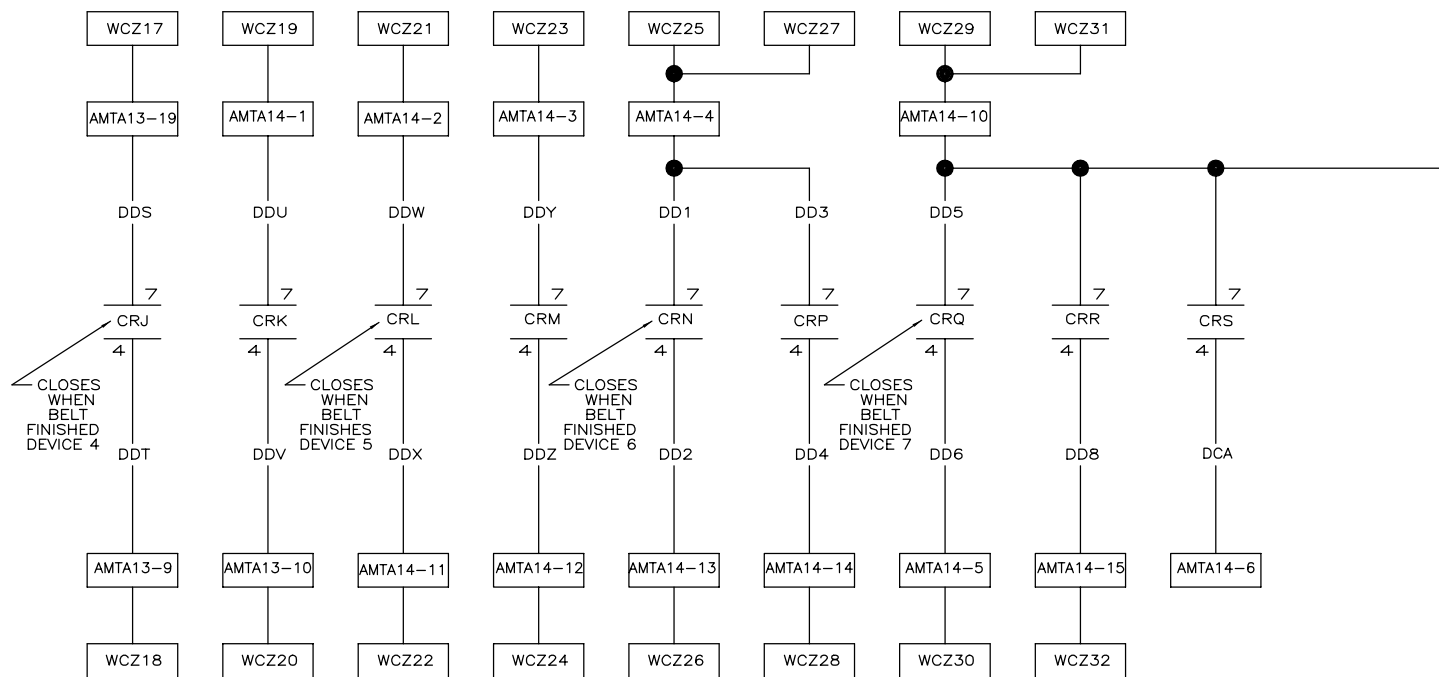
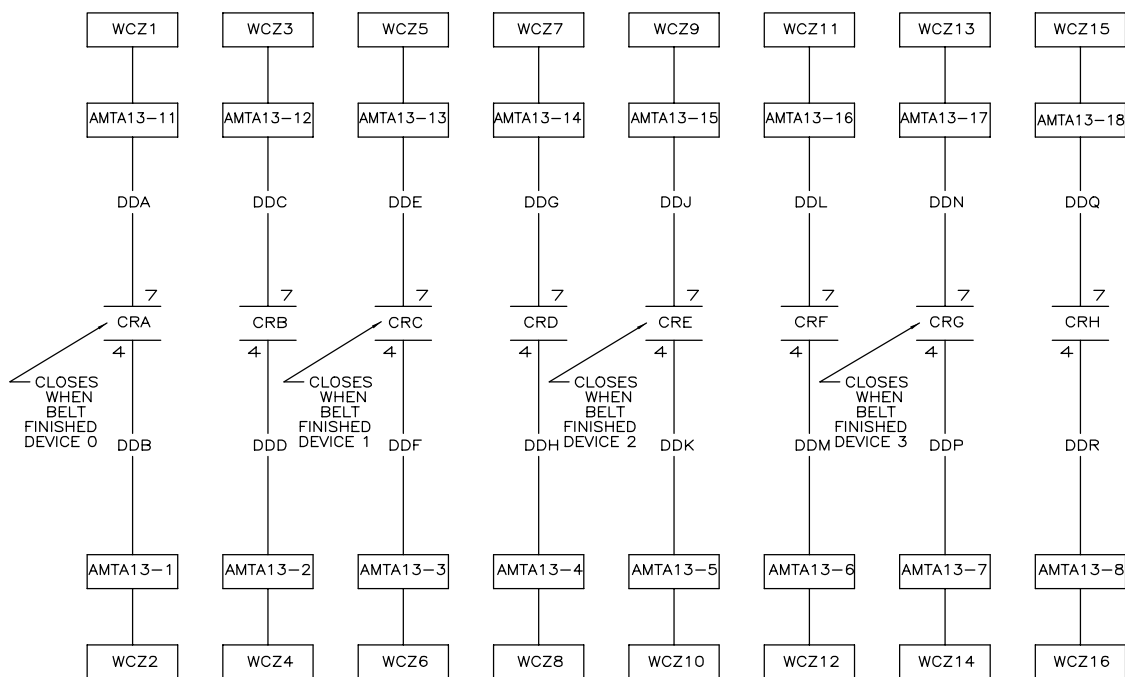
# W6DM4CHA

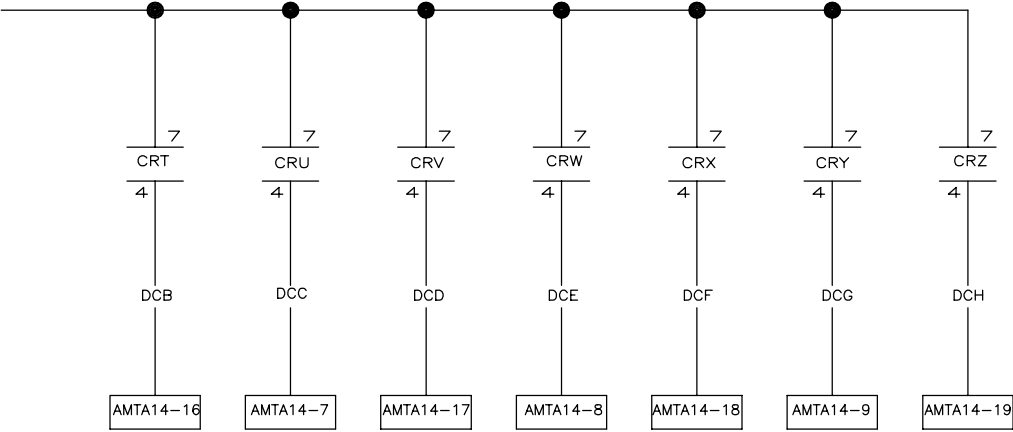
## MICRO 6 SYSTEMS

### SCHEMATIC: COHOP CONTROLS

#### WITHOUT COINC

PELLERIN MILNOR CORPORATION





11

12

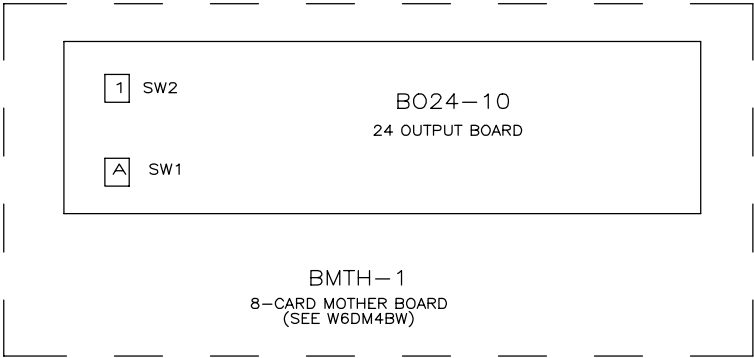
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14

15

16

17

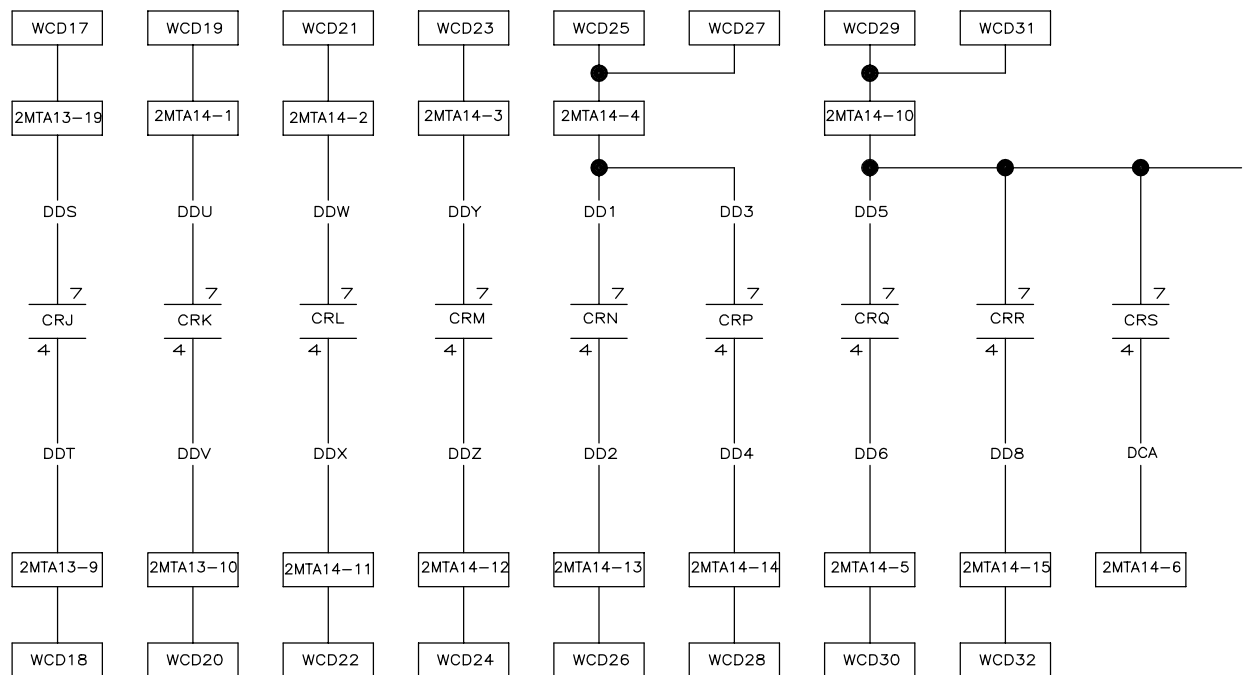
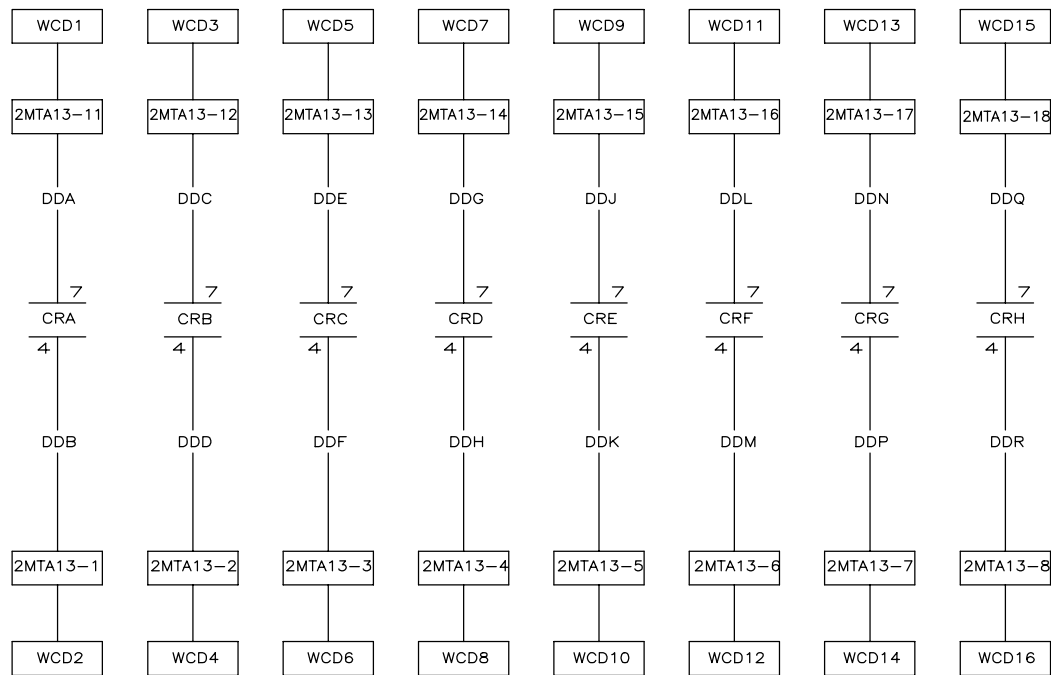


# W6DM4DF

## MICRO 6 SYSTEMS

### SCHEMATIC: DEVICE MASTER DEVICE FINISHED DISCHARGING (16 OUTPUT)

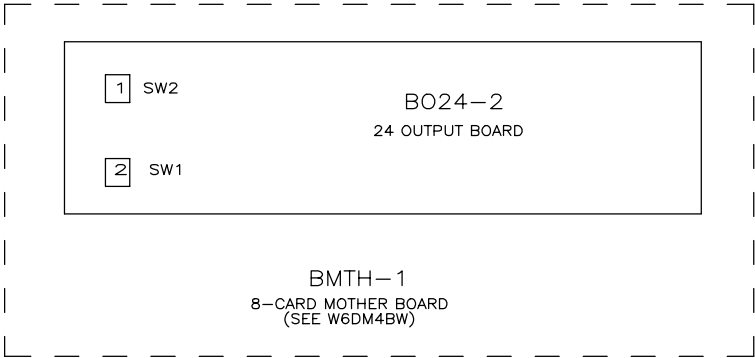
PELLERIN MILNOR CORPORATION



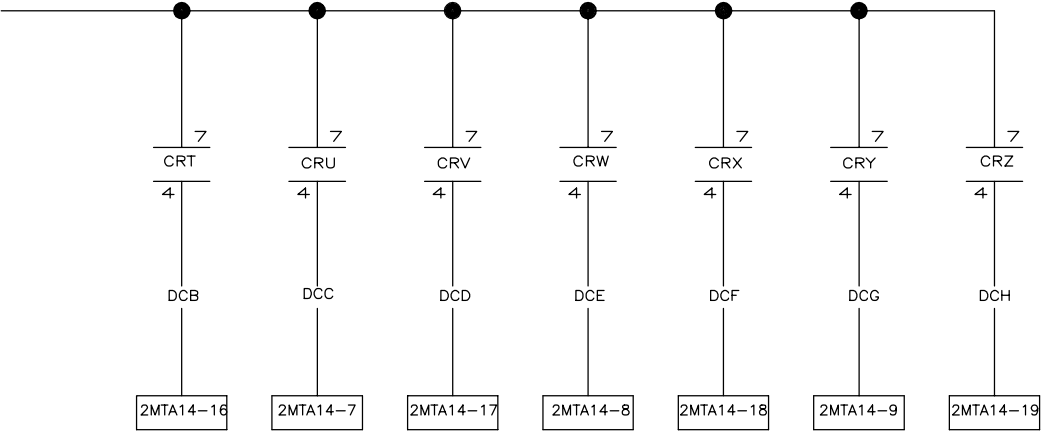
NOTE

1. THE BOARD SHOWN BELOW IS TYPICAL FOR EACH DEVICE REFER TO CHART AT RIGHT FOR CORRECT DIP SWITCH SETTING FOR EACH DEVICE.
2. IF A THIRD BOARD IS NEEDED FOR EXTRA DATA PASSING CAPABILITY THE 2MTA CHANGES TO 3MTA AND WCD CHANGES TO WCE.
3. ALLIED DATA PASS IS CONFIGURABLE FOR FORMULA, DRY CODE, DESTINATION, CUSTOMER, GOODS CODE, AND/OR CAKE NUMBER. UP TO 8 RELAYS MAY BE ASSIGNED TO ANY ONE PARAMETER. DATA IS OUTPUT IN BINARY FORMAT, IN THE ORDER INDICATED IN THE TABLE AT RIGHT, WHERE RELAY CRA CORRESPONDS TO THE LEAST SIGNIFICANT BIT (LSB), AND RELAY CRR CORRESPONDS TO THE MOST SIGNIFICANT BIT (MSB)

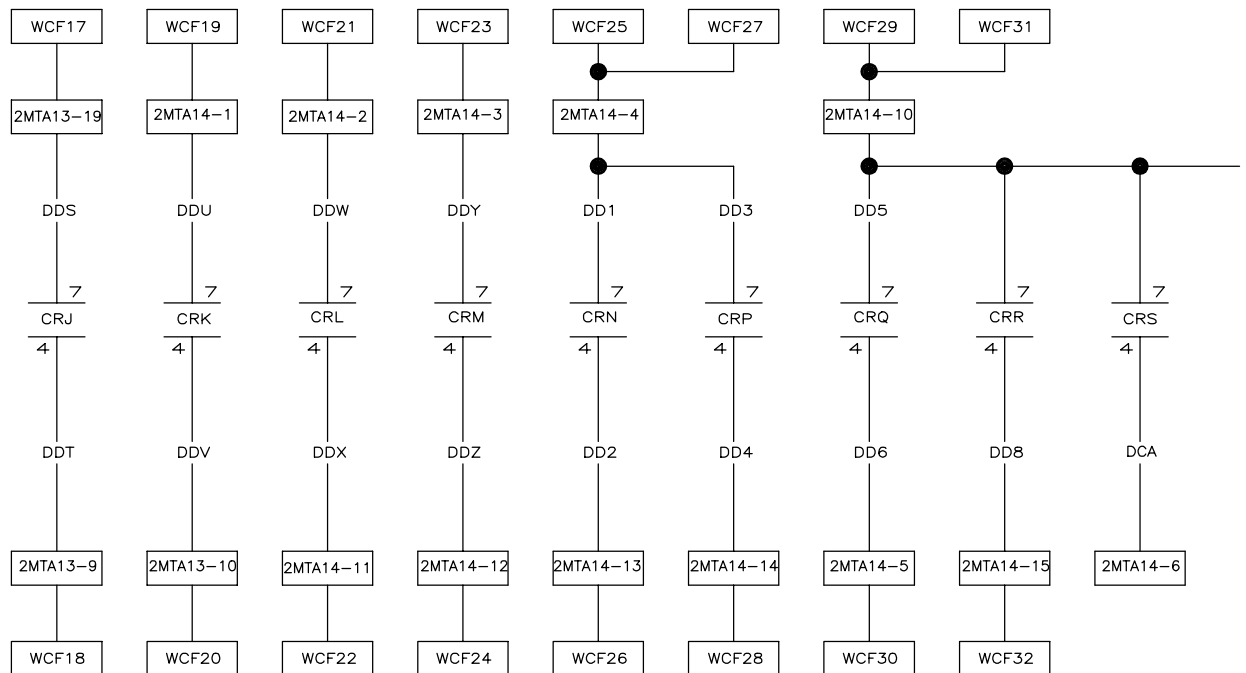
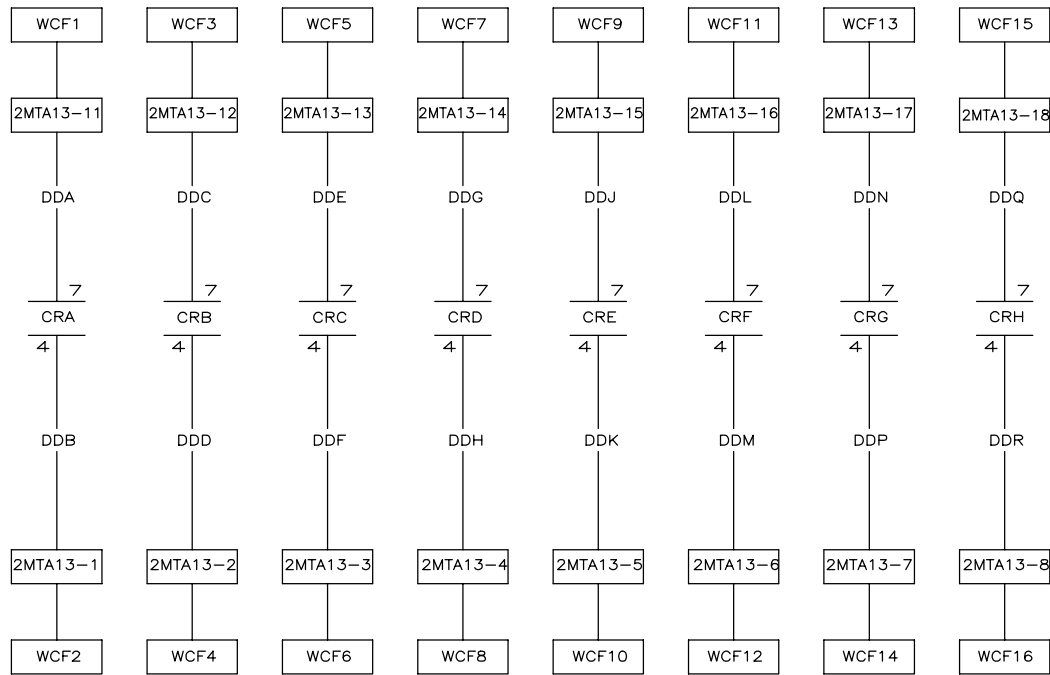
|     |                                                                                              |
|-----|----------------------------------------------------------------------------------------------|
| CRZ | NOT<br>USED                                                                                  |
| CRY |                                                                                              |
| CRX |                                                                                              |
| CRW |                                                                                              |
| CRV |                                                                                              |
| CRU |                                                                                              |
| CRT |                                                                                              |
| CRR |                                                                                              |
| CRQ | FORMULA<br>↑<br>DRY CODE<br>DESTINATION<br>CUSTOMER<br>GOODS CODE<br>CAKE NUMBER<br>↓<br>LSB |
| CRP |                                                                                              |
| CRN |                                                                                              |
| CRM |                                                                                              |
| CRL |                                                                                              |
| CRK |                                                                                              |
| CRJ |                                                                                              |
| CRH |                                                                                              |
| CRG |                                                                                              |
| CRF |                                                                                              |
| CRE |                                                                                              |
| CRD |                                                                                              |
| CRC |                                                                                              |
| CRB |                                                                                              |
| CRA |                                                                                              |



| DATA PASS<br>FOR DEVICES 0-7 |     |     |
|------------------------------|-----|-----|
|                              | SW2 | SW1 |
| 0                            | 1   | 2   |
| 1                            | 1   | 3   |
| 2                            | 1   | 4   |
| 3                            | 1   | 5   |
| 4                            | 1   | 6   |
| 5                            | 1   | 7   |
| 6                            | 1   | 8   |
| 7                            | 1   | 9   |



W6DM4DP  
MICRO 6 SYSTEMS  
SCHEMATIC: DEVICE MASTER DRY CONTACT  
DATA PASS (16 OUTPUT)  
PELLERIN MILNOR CORPORATION



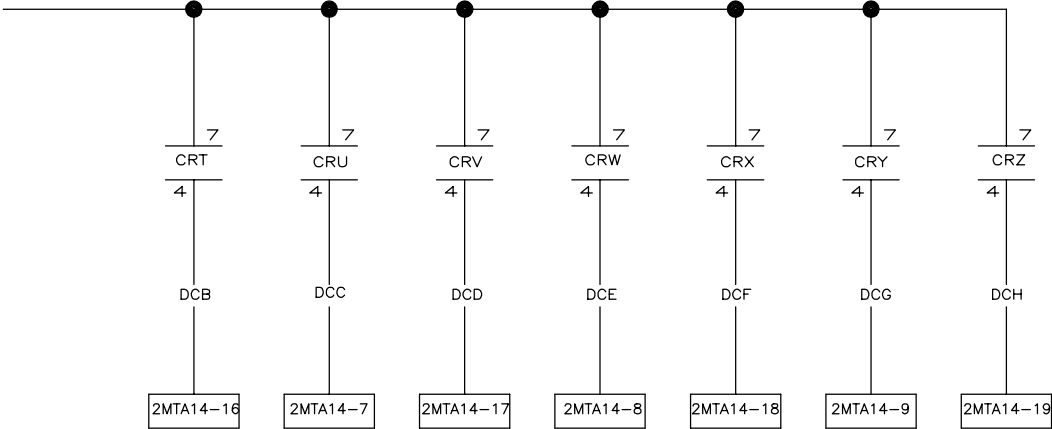
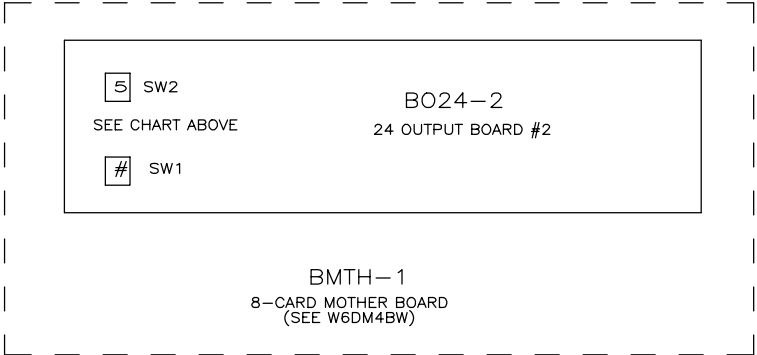
DATA PASS  
FOR DEVICES 0-7

|   | SW2 | SW1 |
|---|-----|-----|
| 0 | 5   | 2   |
| 1 | 5   | 3   |
| 2 | 5   | 4   |
| 3 | 5   | 5   |
| 4 | 5   | 6   |
| 5 | 5   | 7   |
| 6 | 5   | 8   |
| 7 | 5   | 9   |

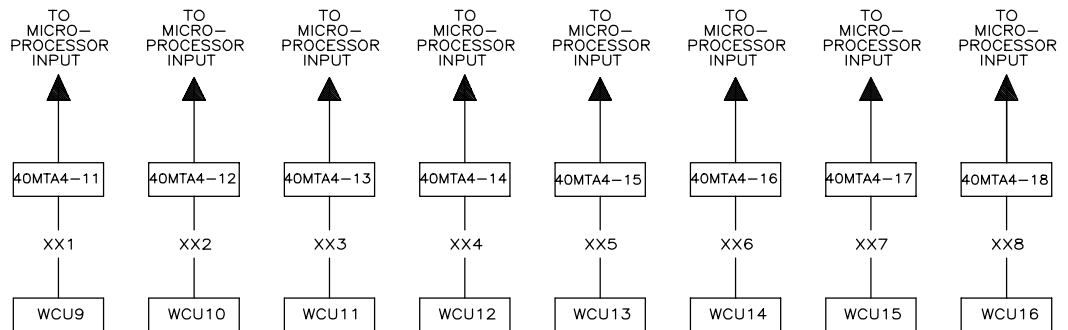
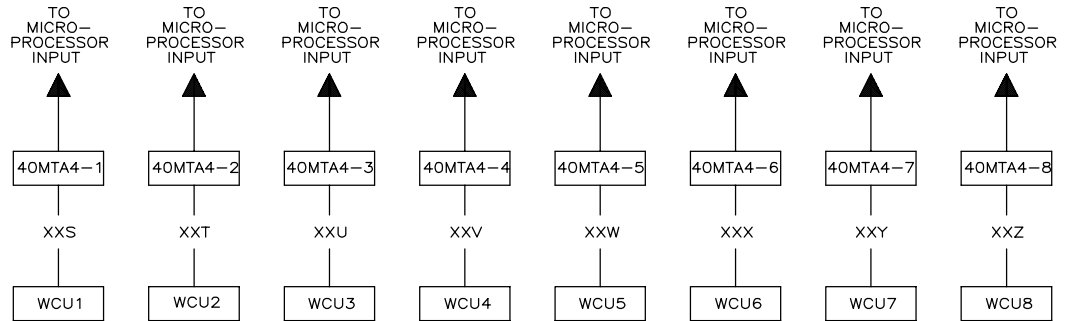
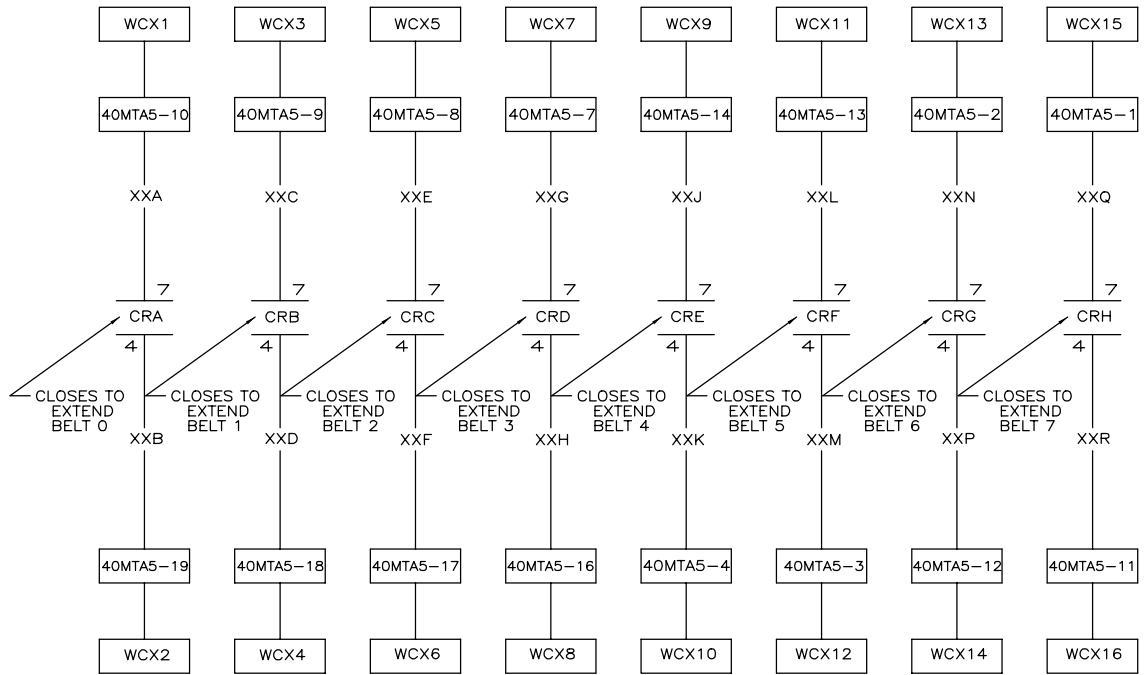
NOTE

1. THE BOARD SHOWN BELOW IS TYPICAL FOR EACH DEVICE. REFER TO CHART AT RIGHT FOR CORRECT DIP SWITCH SETTING FOR EACH DEVICE.
2. TOTAL WEIGHT CORRESPONDS TO THE SUM OF THE INDIVIDUAL VALUES OF EACH ACTIVE OUTPUT AS PROVIDED IN THE TABLE AT RIGHT.

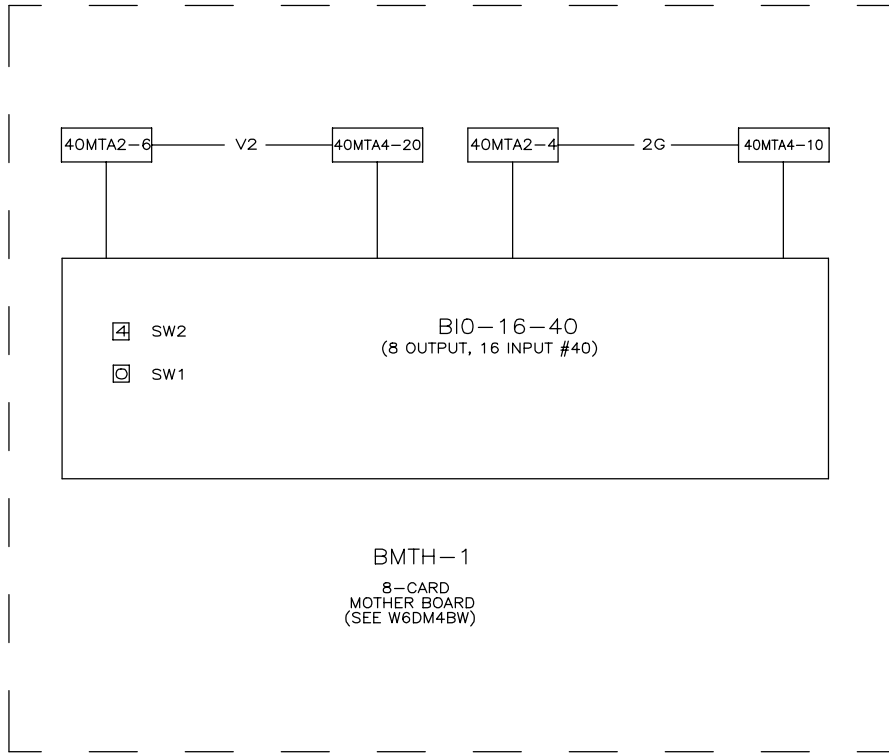
| OUTPUT | BIT      | VALUE |
|--------|----------|-------|
| CRA    | 0        | 0.1   |
| CRB    | 1        | 0.2   |
| CRC    | 2        | 0.4   |
| CRD    | 3        | 0.8   |
| CRE    | 4        | 1.6   |
| CRF    | 5        | 3.2   |
| CRG    | 6        | 6.4   |
| CRH    | 7        | 12.8  |
| CRJ    | 8        | 25.6  |
| CRK    | 9        | 51.2  |
| CRL    | 10       | 102.4 |
| CRM    | 11       | 204.8 |
| CRN    | NOT USED |       |
| CRP    | NOT USED |       |
| CRQ    | NOT USED |       |
| CRR    | NOT USED |       |



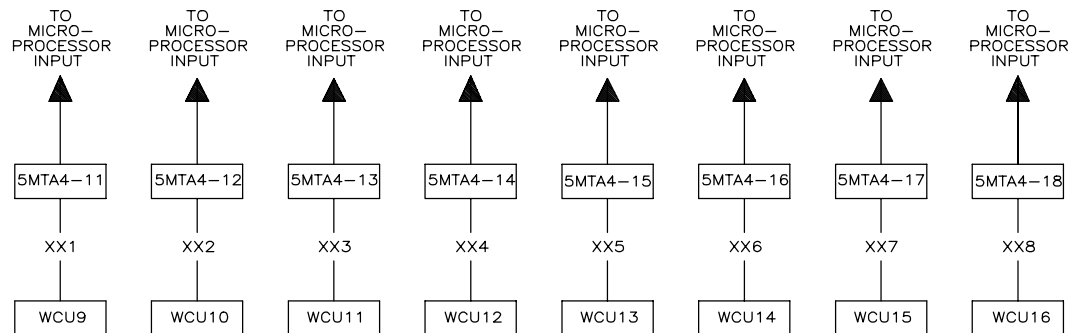
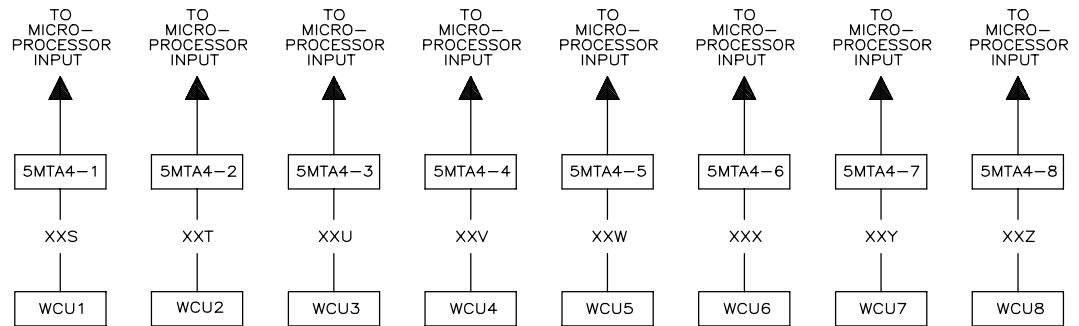
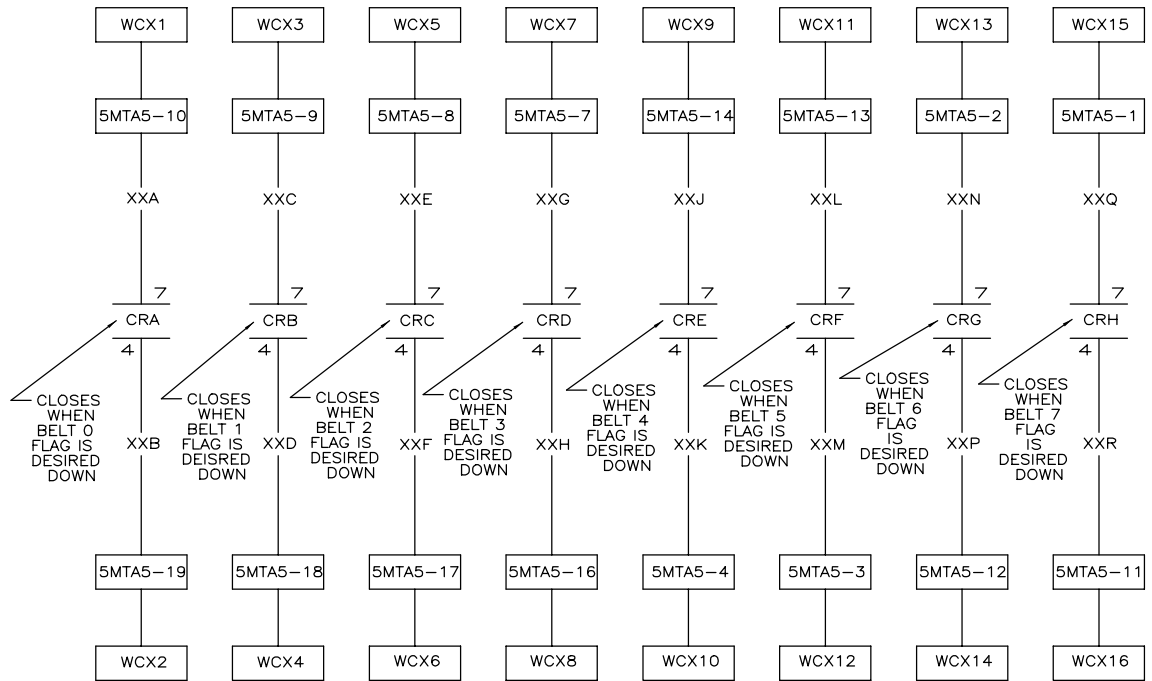
W6DM4DW  
MICRO 6 SYSTEMS  
SCHEMATIC: DEVICE MASTER DRY CONTACT  
ALLIED WEIGHT OUTPUTS (16 OUTPUT)  
PELLERIN MILNOR CORPORATION

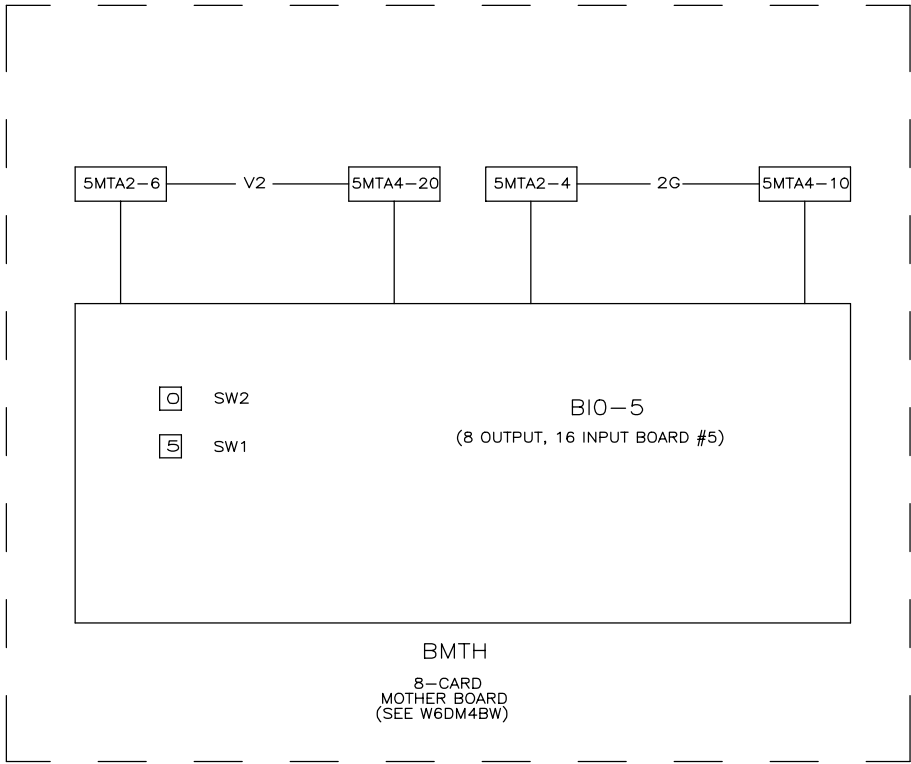


W6DM4EB  
MICRO 6 SYSTEMS  
DEVICE MASTER  
SCHEMATIC: EXTEND BELT TO LOAD  
(8 OUTPUT - 16 INPUT)  
PELLERIN MILNOR CORPORATION



| INPUT | FUNCTION               |
|-------|------------------------|
| XXS   | BELT 0 FULLY EXTENDED  |
| XXT   | BELT 0 FULLY RETRACTED |
| XXU   | BELT 1 FULLY EXTENDED  |
| XXV   | BELT 1 FULLY RETRACTED |
| XXW   | BELT 2 FULLY EXTENDED  |
| XXX   | BELT 2 FULLY RETRACTED |
| XXY   | BELT 3 FULLY EXTENDED  |
| XXZ   | BELT 3 FULLY RETRACTED |
| XX1   | BELT 4 FULLY EXTENDED  |
| XX2   | BELT 4 FULLY RETRACTED |
| XX3   | BELT 5 FULLY EXTENDED  |
| XX4   | BELT 5 FULLY RETRACTED |
| XX5   | BELT 6 FULLY EXTENDED  |
| XX6   | BELT 6 FULLY RETRACTED |
| XX7   | BELT 7 FULLY EXTENDED  |
| XX8   | BELT 7 FULLY RETRACTED |



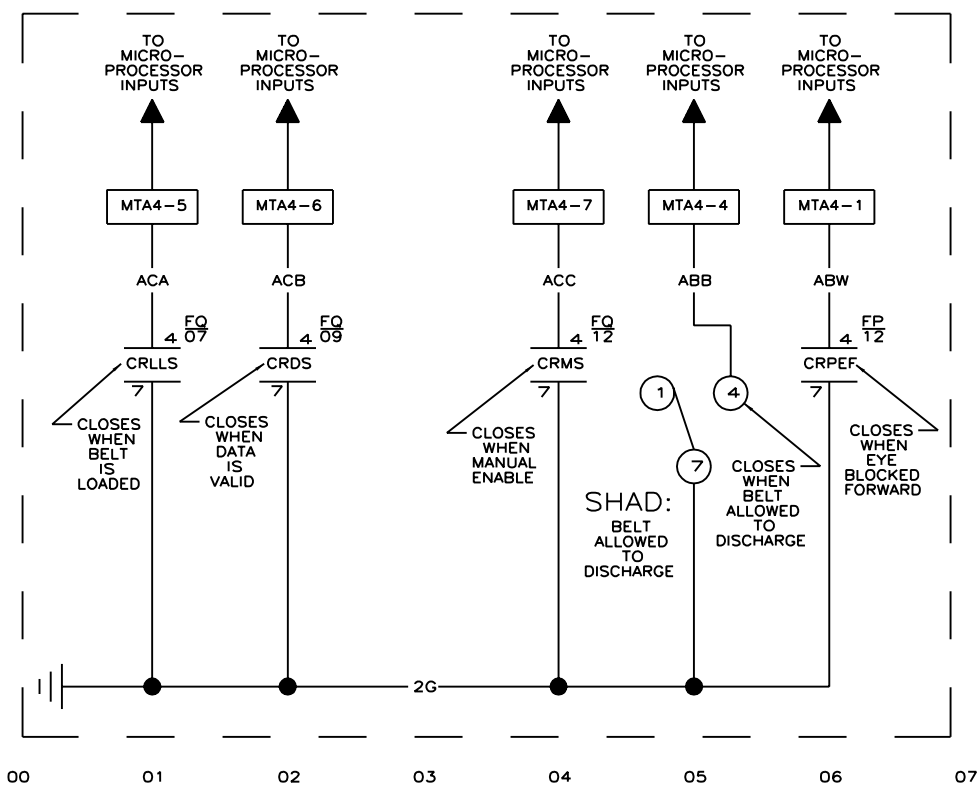


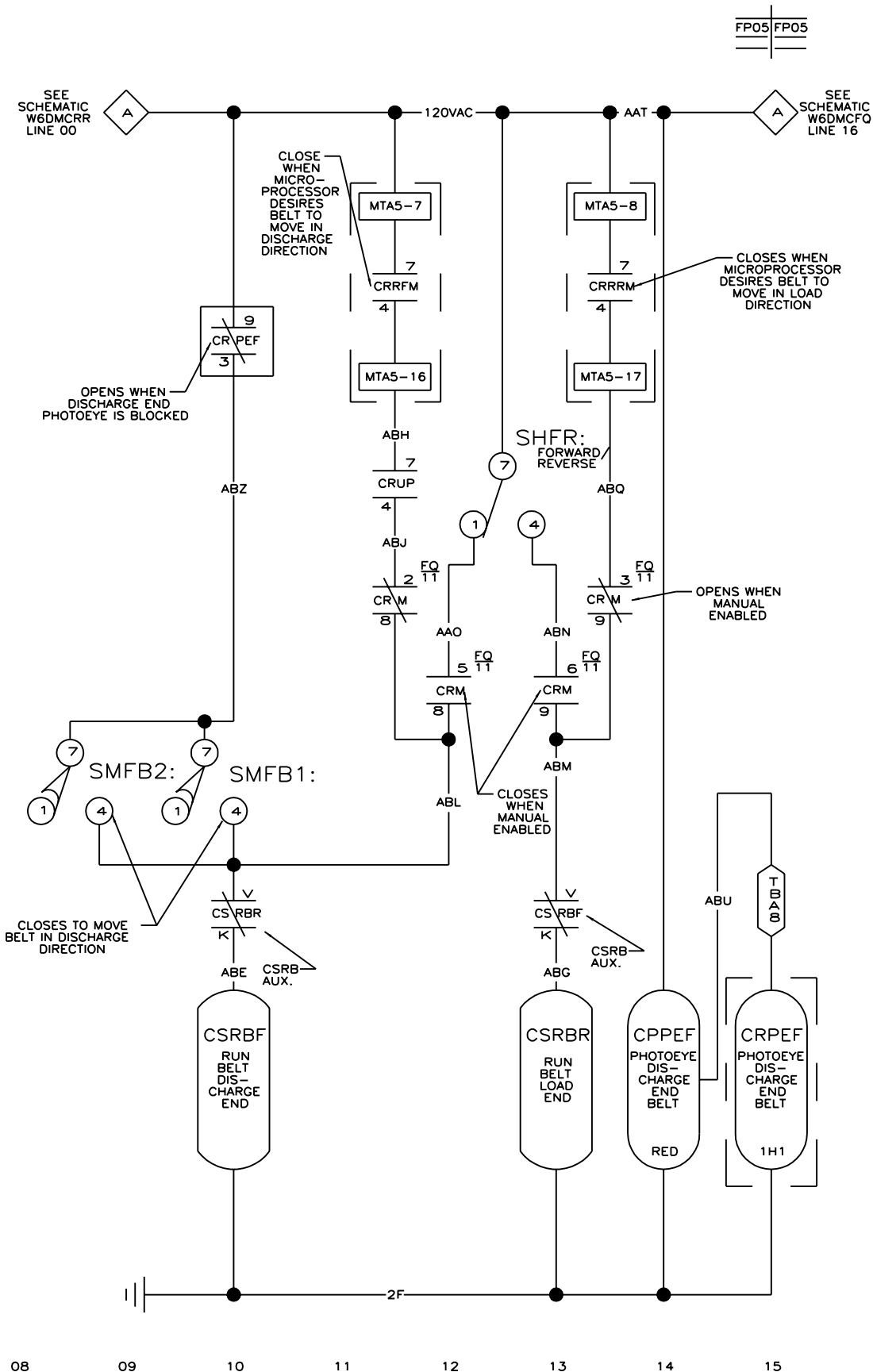
# W6DM4FD

## MICRO 6 SYSTEMS DEVICE MASTER

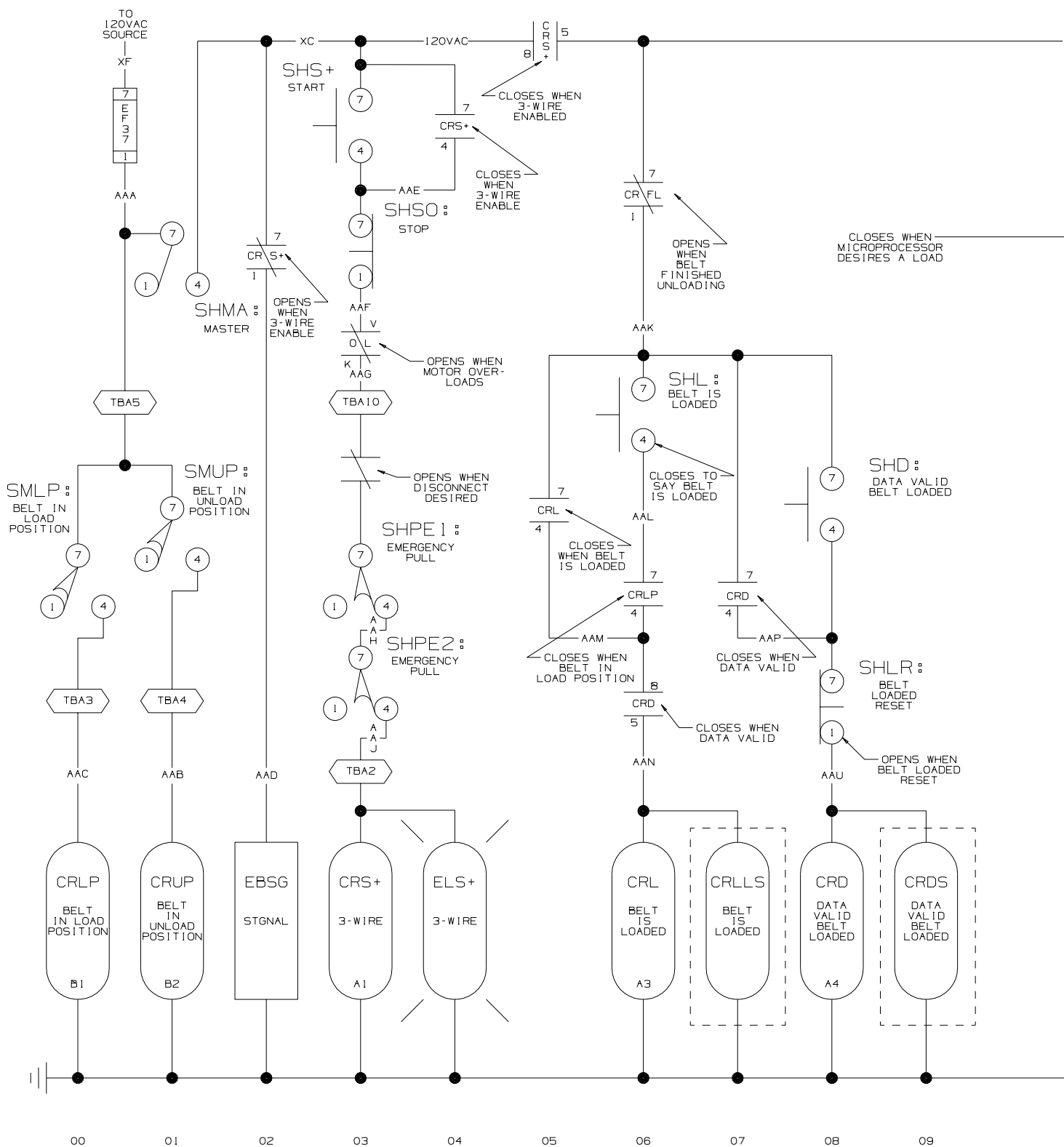
### SCHEMATIC: FLAG DOWN (8 OUTPUT — 16 INPUT)

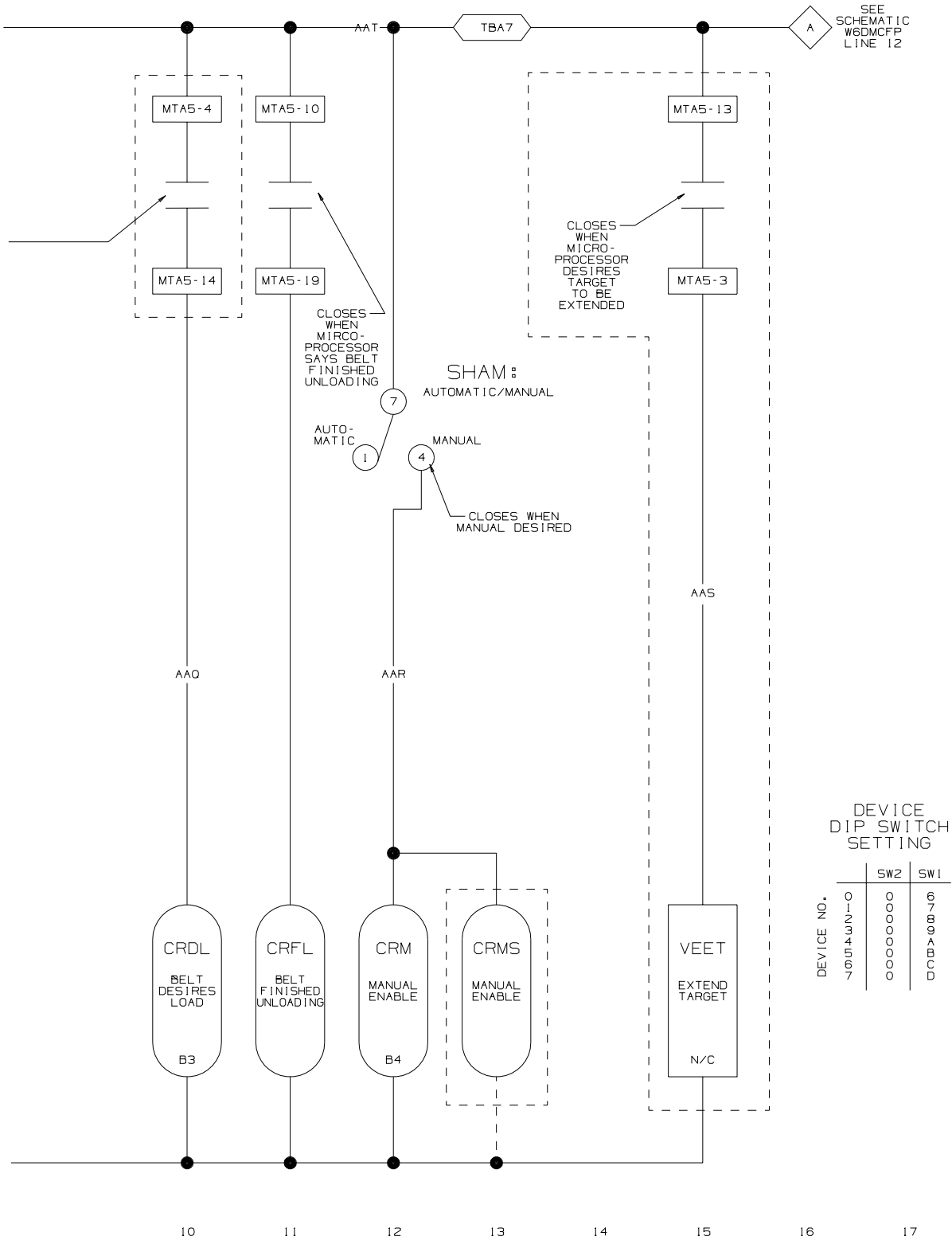
PELLERIN MILNOR CORPORATION





**W6DM4FP**  
MICRO 6 SYSTEMS  
SCHEMATIC: BELT CONTROLS FOR DEVICE  
MASTER LOADING BELT  
110V50HZ/120V60HZ/24V50HZ/60HZ  
PELLERIN MILNOR CORPORATION





**W6DM4FQ**

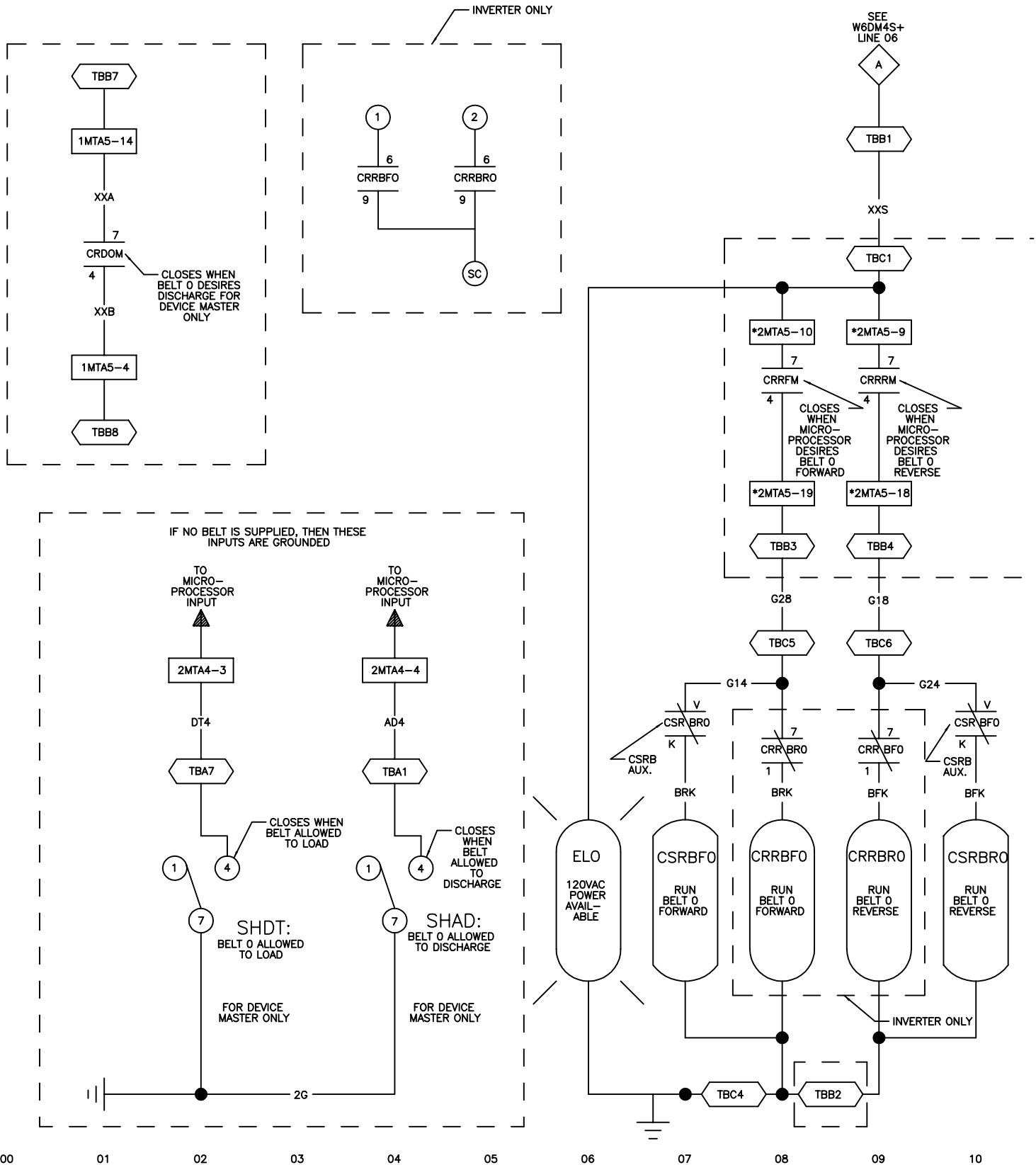
MICRO 6 SYSTEMS

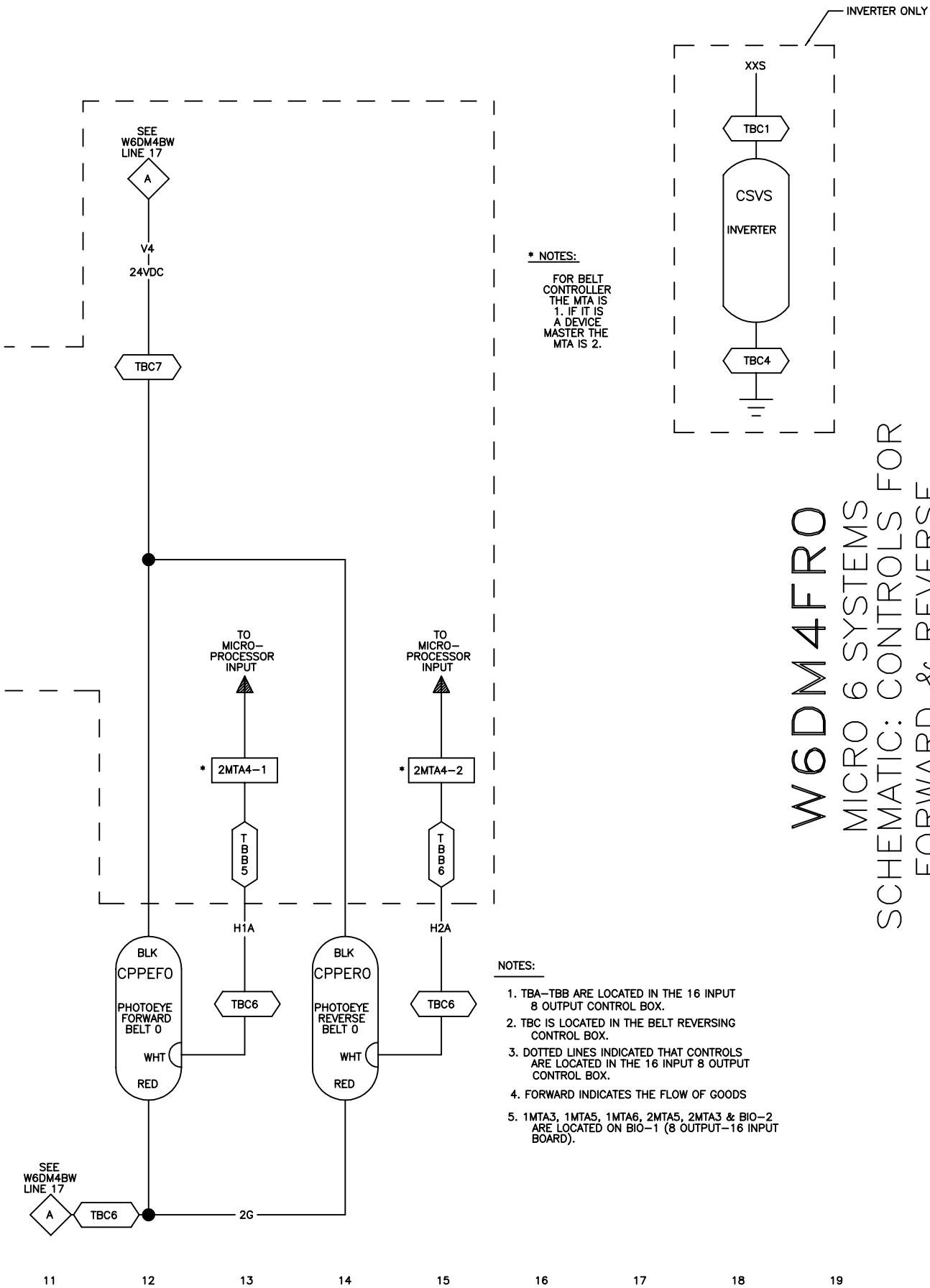
SCHEMATIC: BELT CONTROLS FOR DEVICE MASTER

LOADING BELT

110V50HZ/120V60HZ

PELLERIN MILNOR CORPORATION





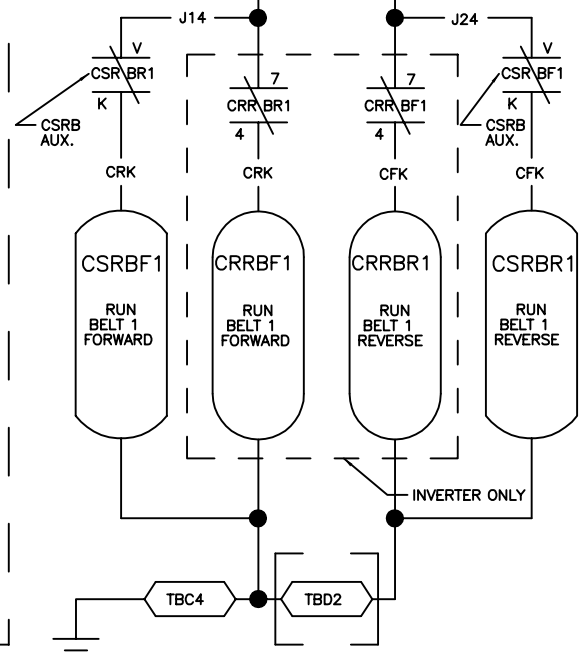
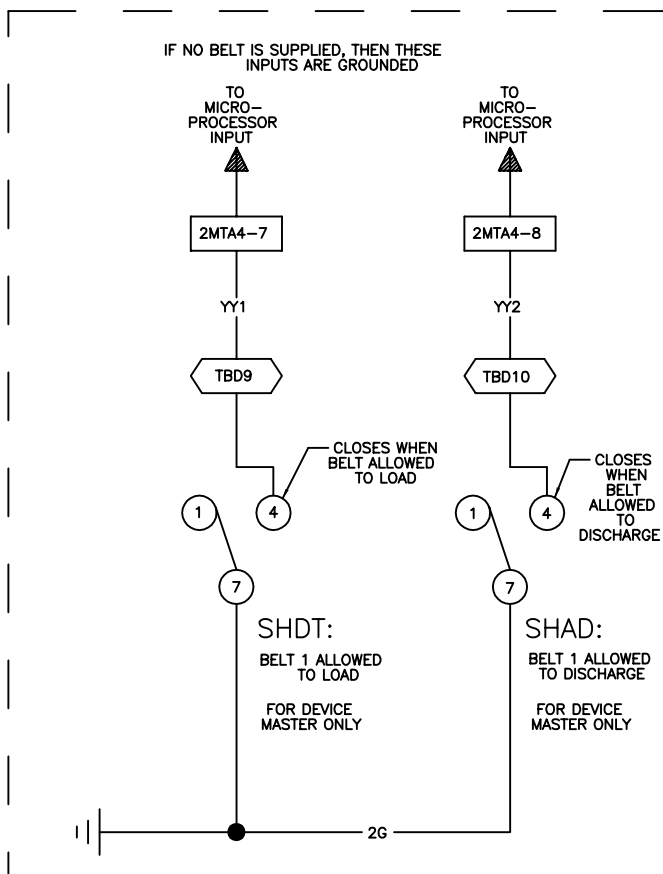
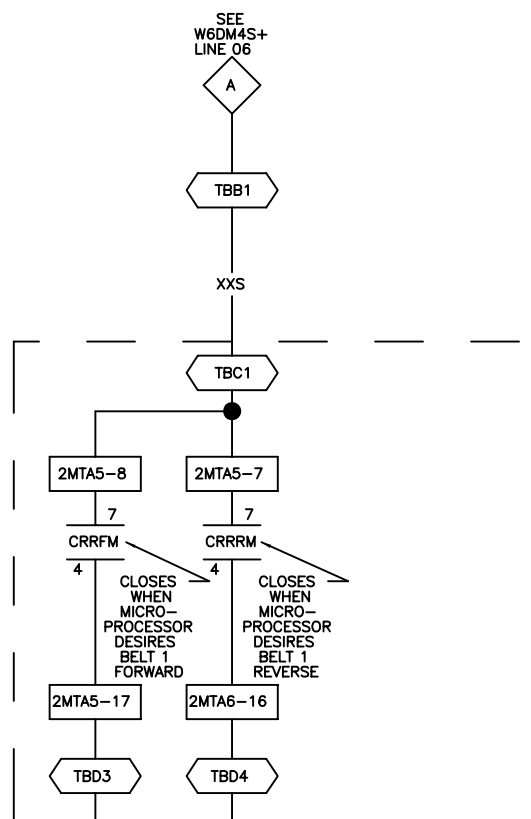
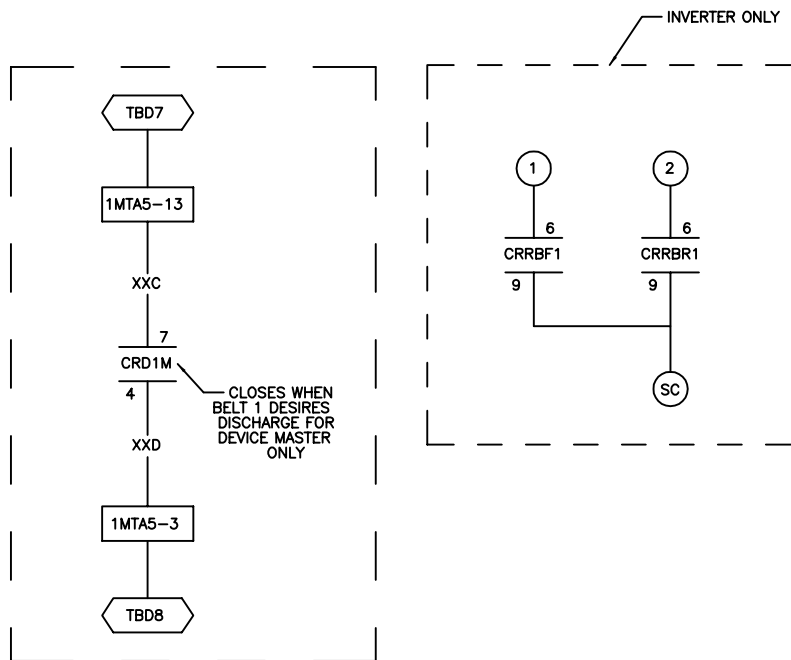
# W6DM4FR0

## MICRO 6 SYSTEMS

### SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 0

#### 110V1P50HZ/120V60HZ

PELLERIN MILNOR CORPORATION



00

01

02

03

04

05

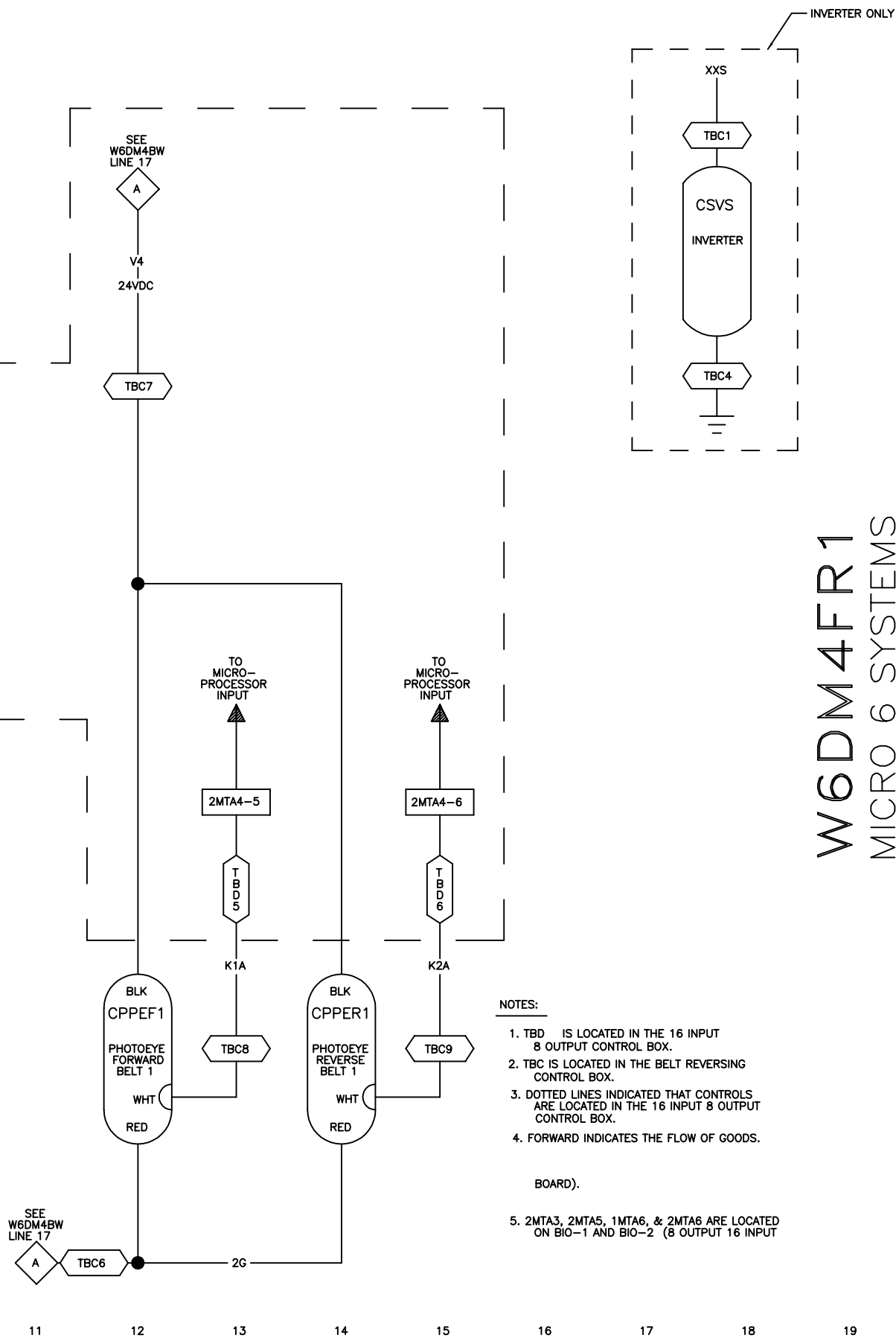
06

07

08

09

10



NOTES:

1. TBD IS LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS.
5. 2MTA3, 2MTA5, 1MTA6, & 2MTA6 ARE LOCATED ON BIO-1 AND BIO-2 (8 OUTPUT 16 INPUT BOARD).

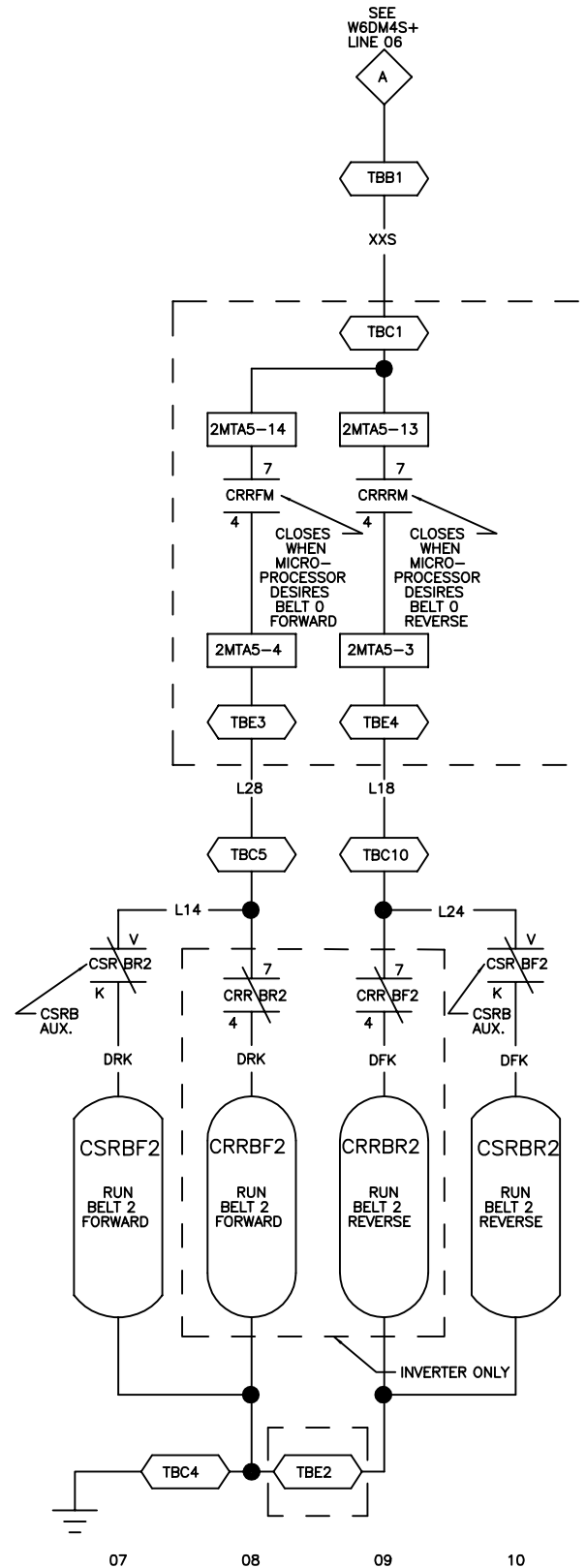
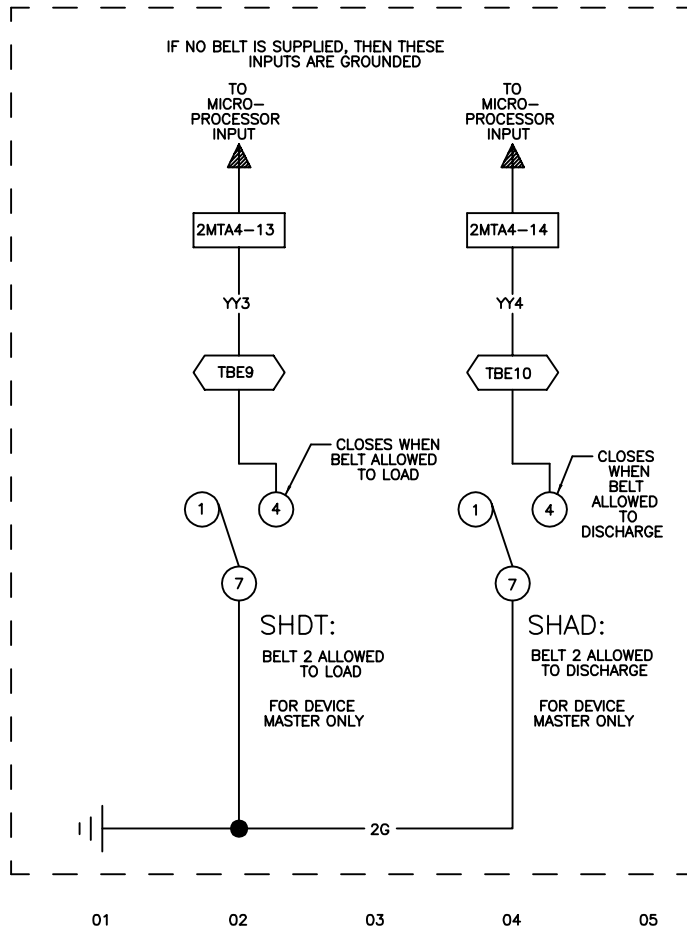
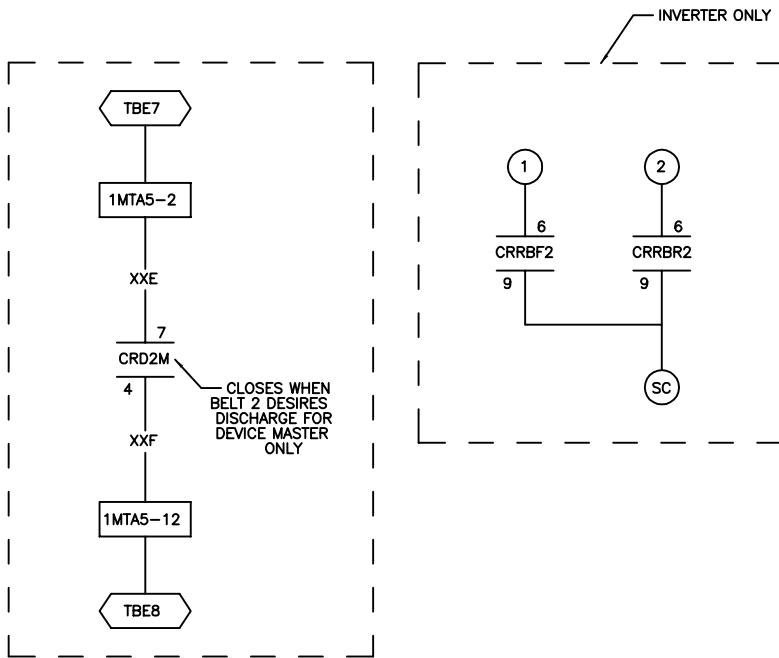
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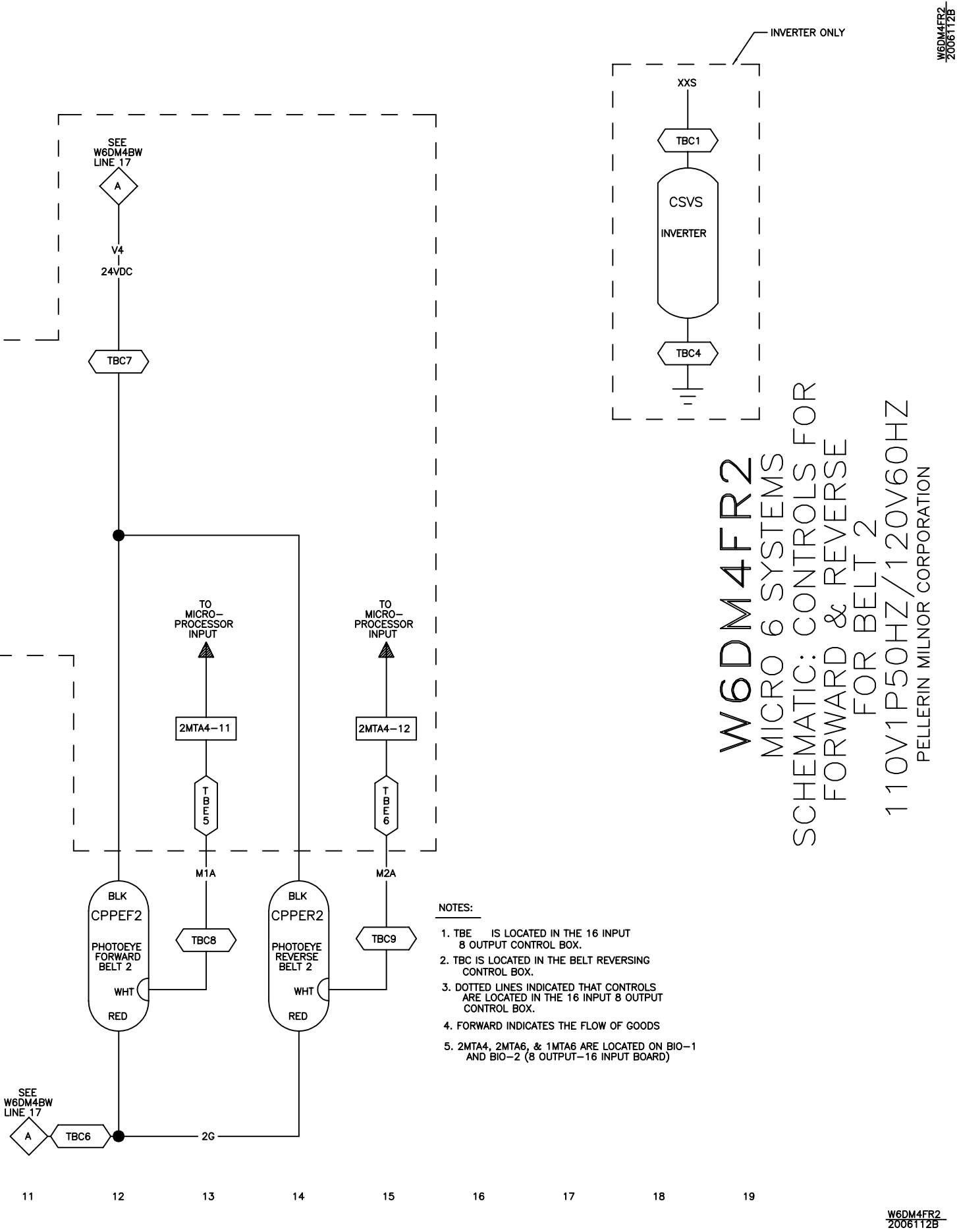
## MICRO 6 SYSTEMS

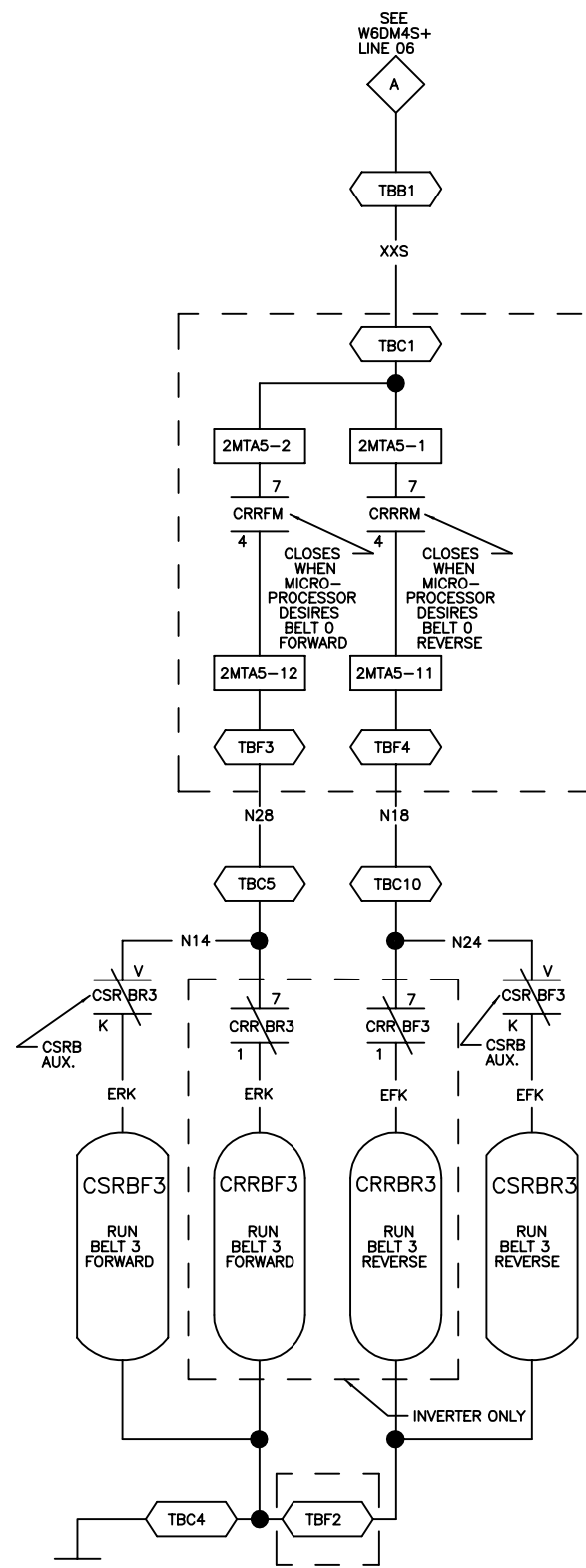
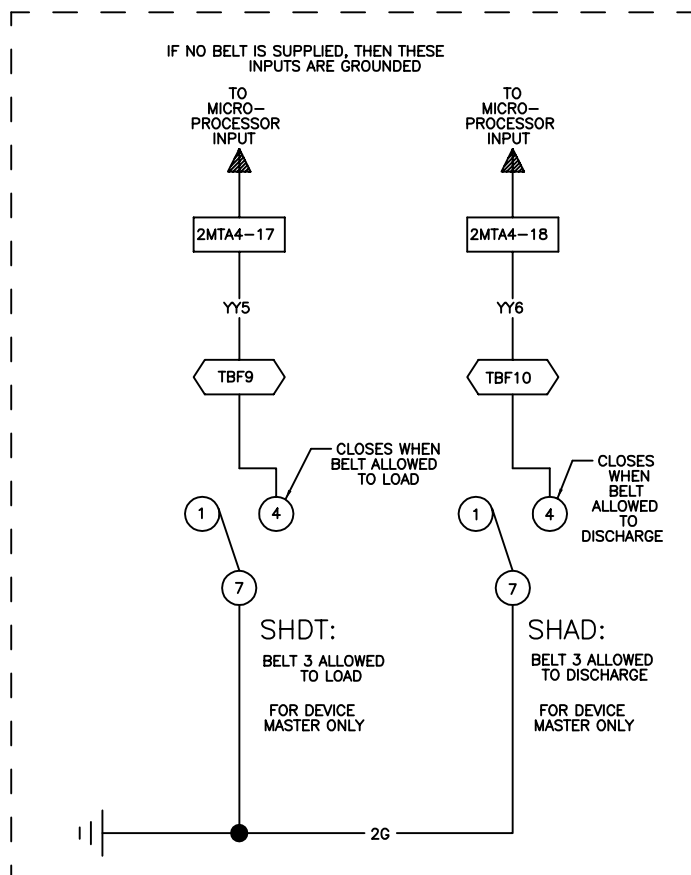
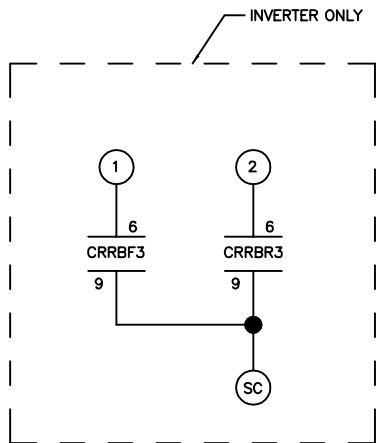
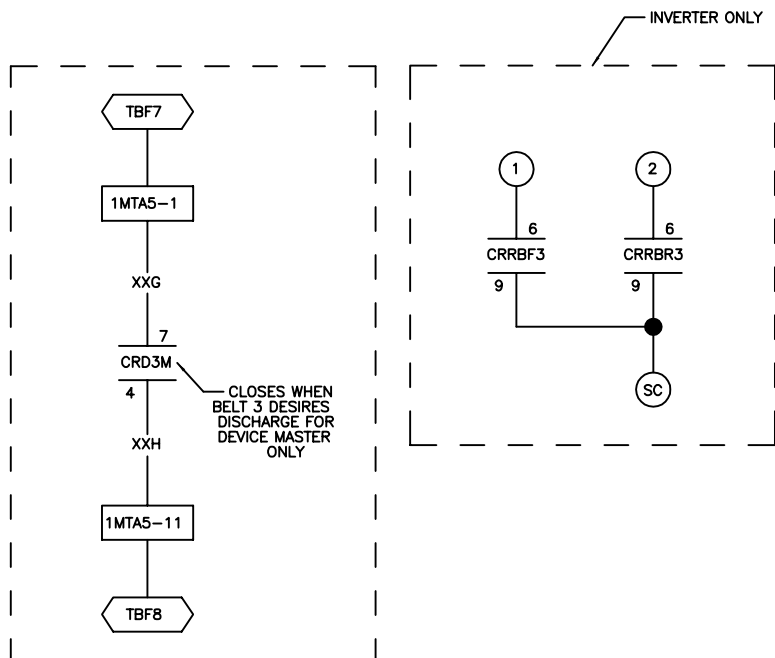
### SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 1

#### 110V1P50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

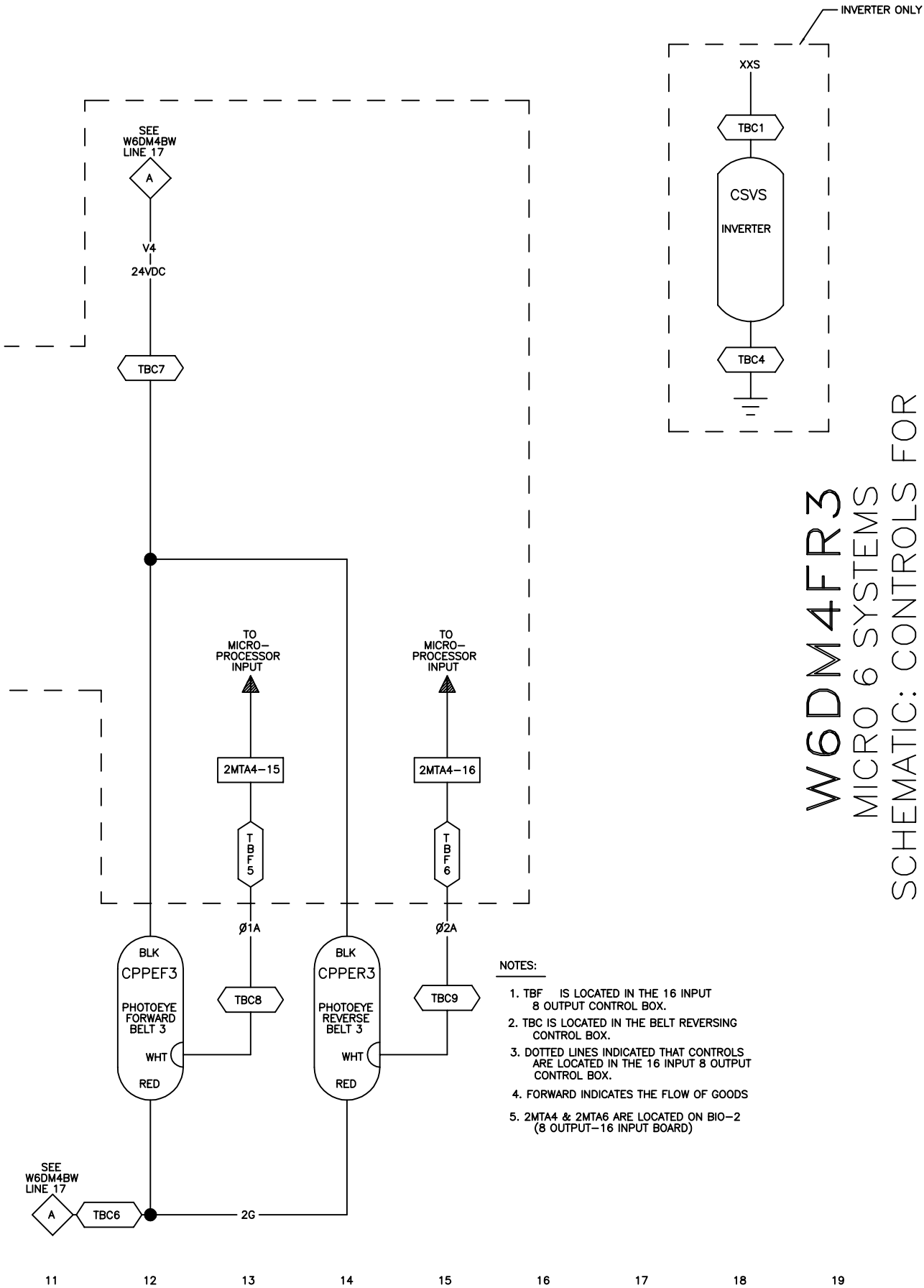






00 01 02 03 04 05

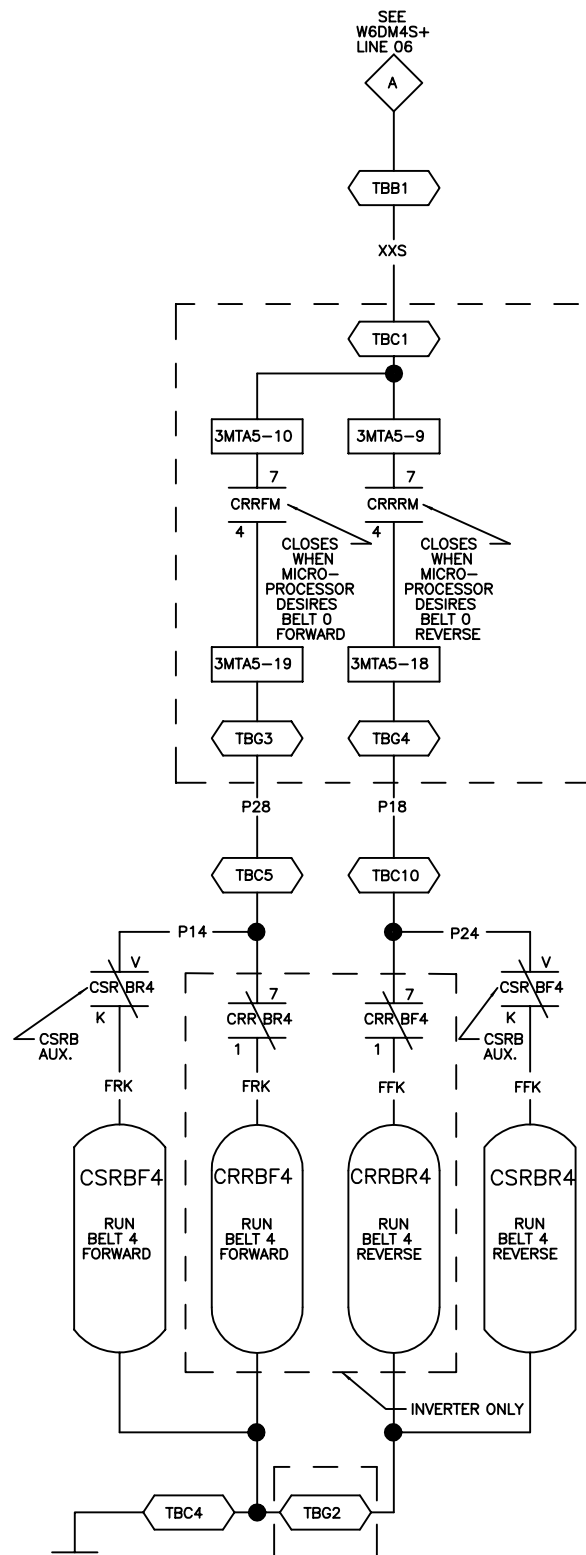
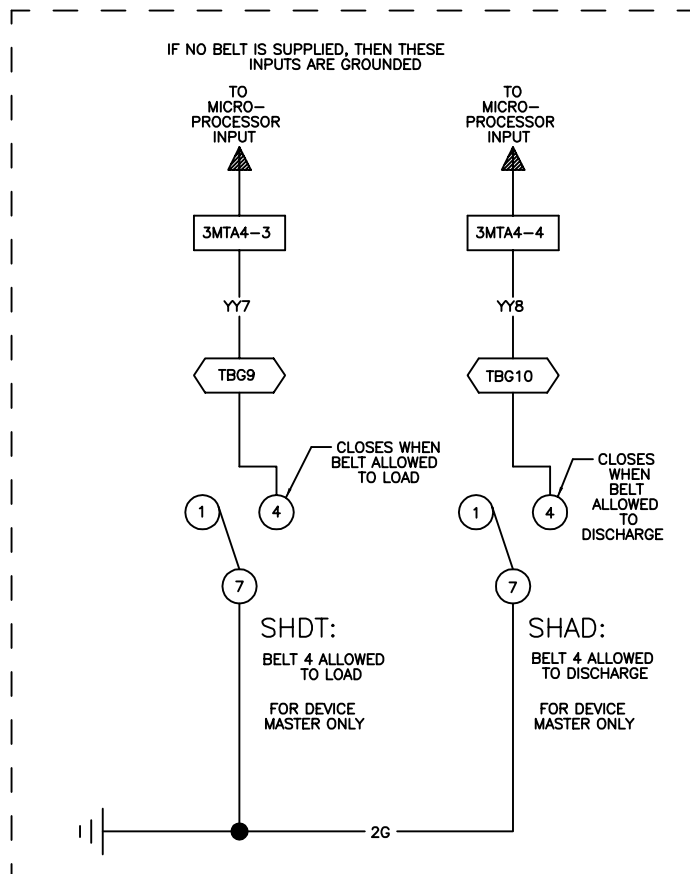
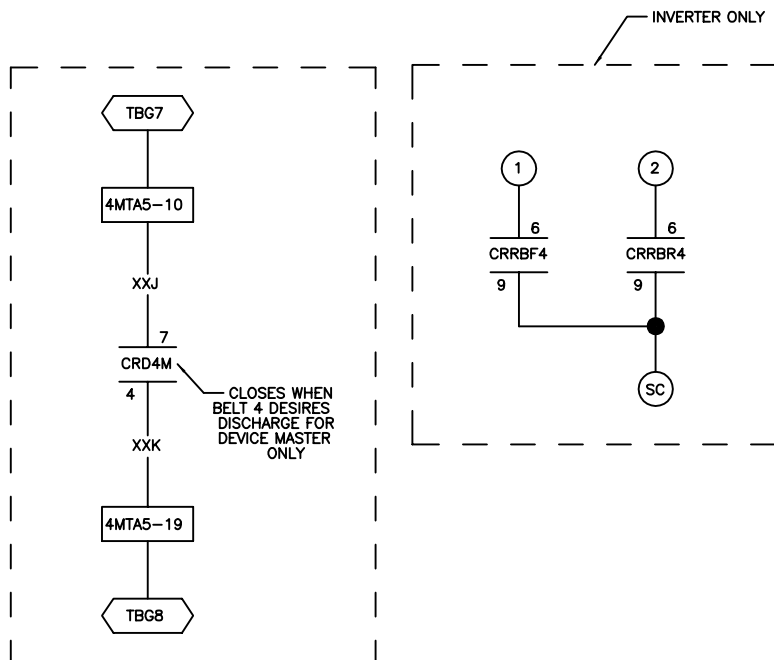
06 07 08 09 10

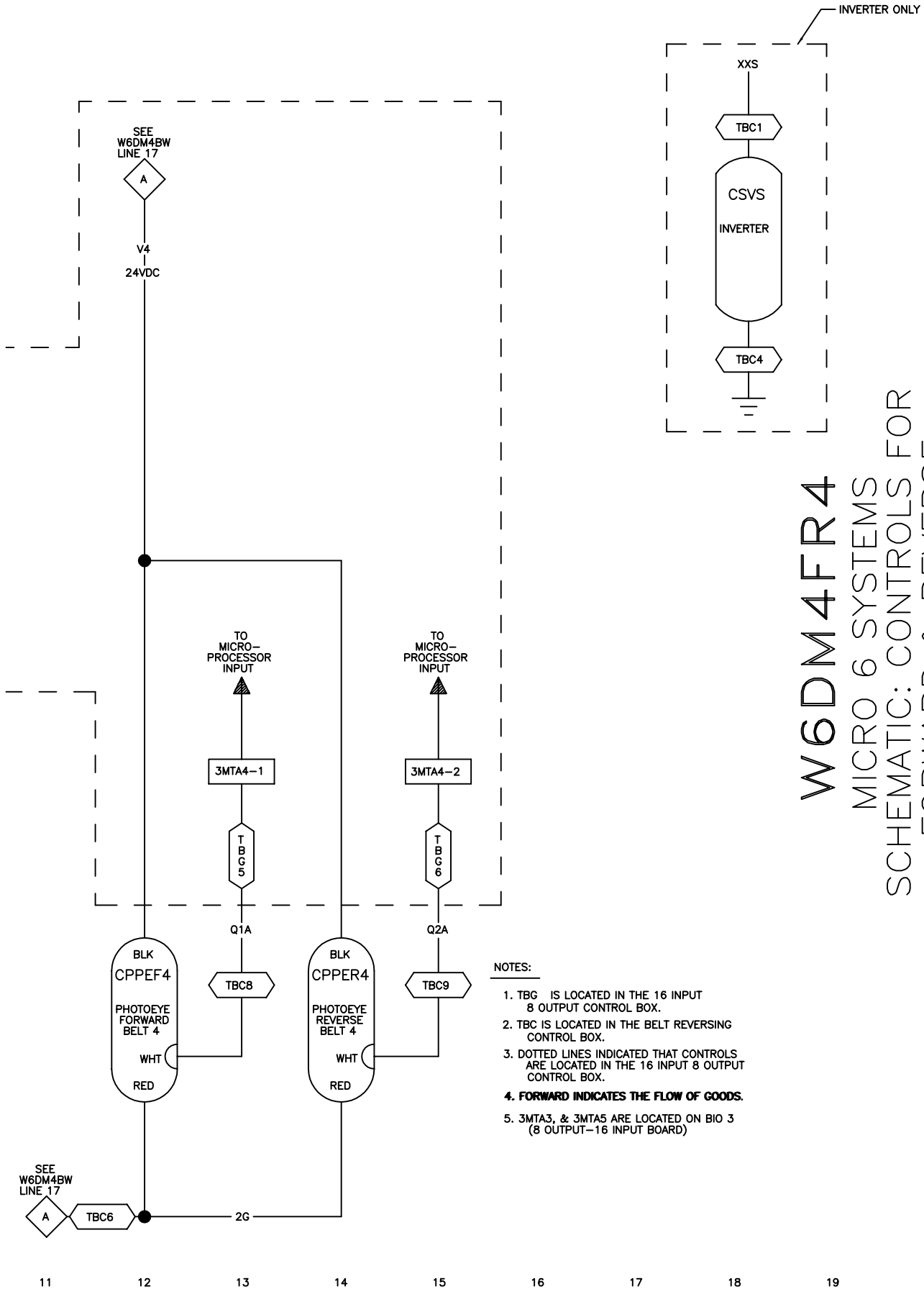


NOTES:

1. TBF 5 IS LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS
5. 2MTA4 & 2MTA6 ARE LOCATED ON BIO-2 (8 OUTPUT-16 INPUT BOARD)

W6DM4FR3  
MICRO 6 SYSTEMS  
SCHEMATIC: CONTROLS FOR  
FORWARD & REVERSE  
FOR BELT 3  
110V1P50HZ/120V60HZ  
PELLERIN MILNOR CORPORATION

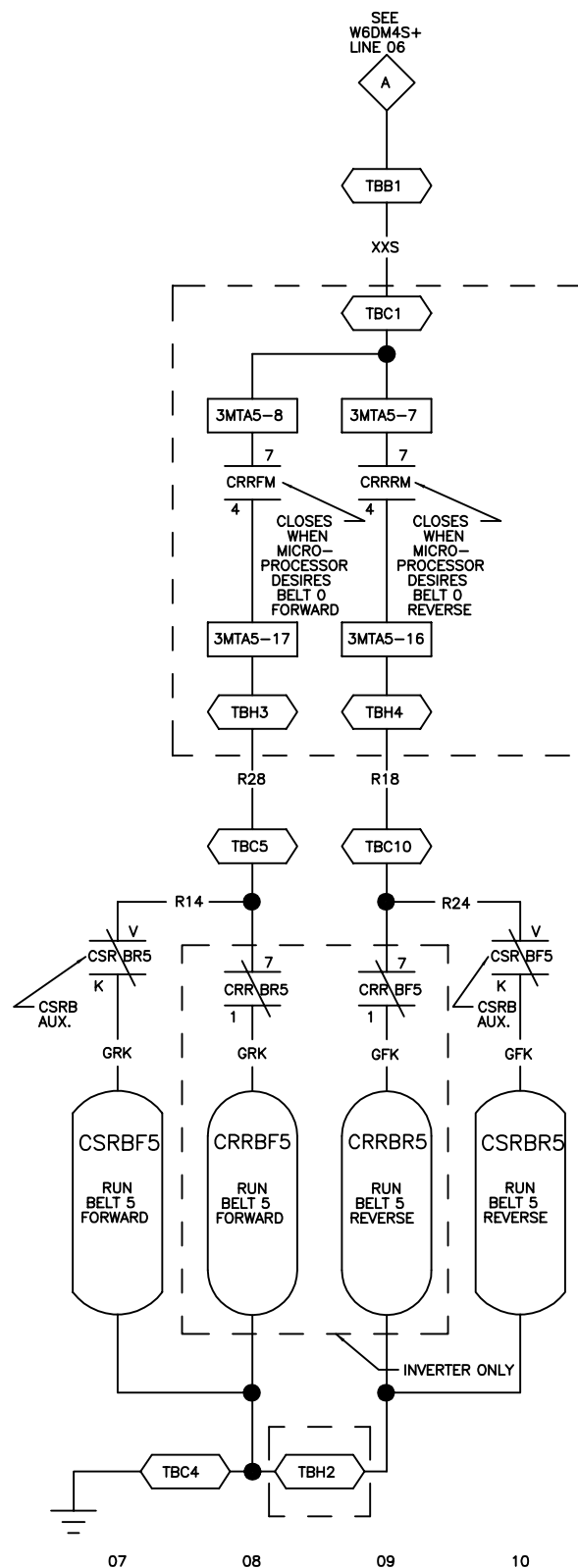


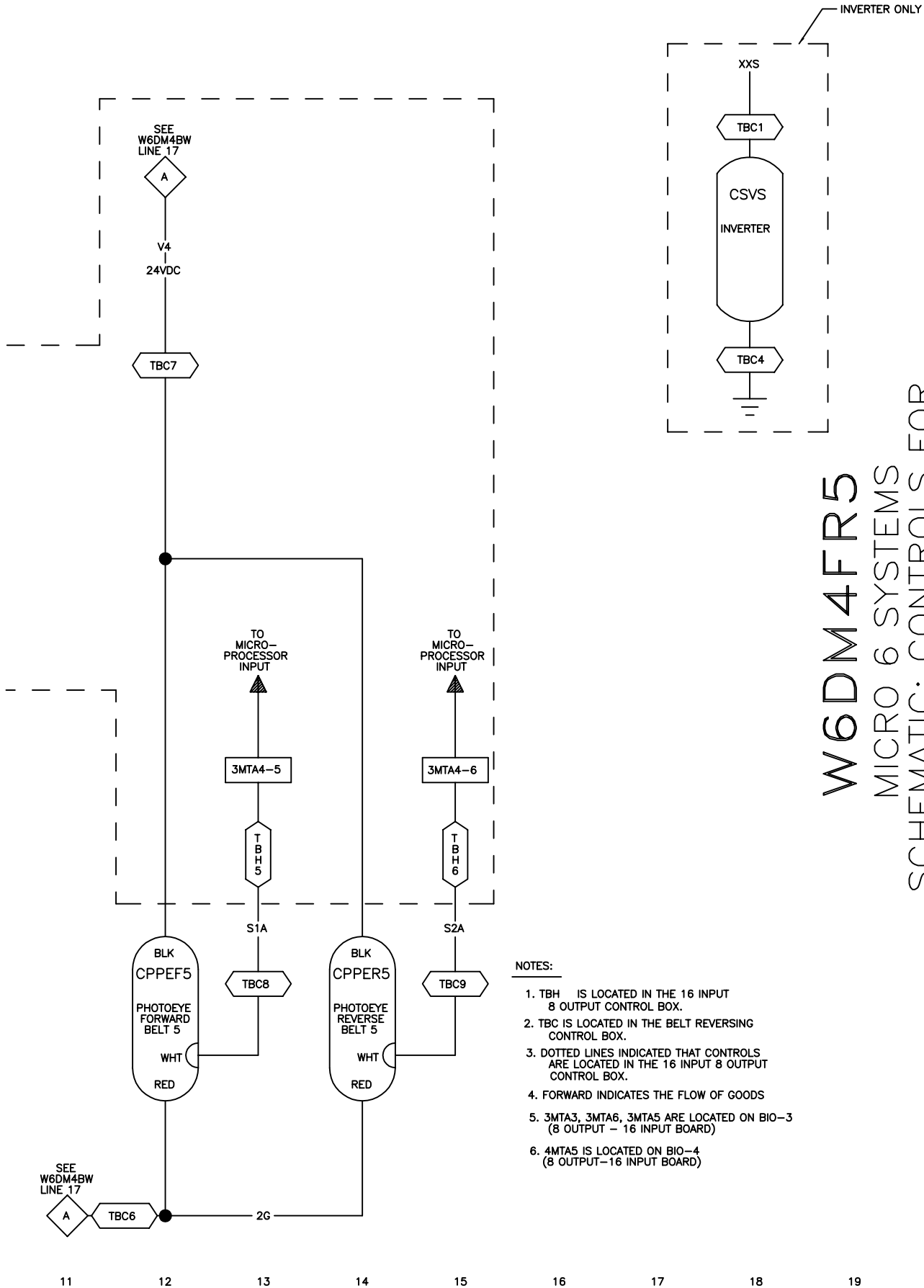


NOTES:

1. TBC IS LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS.
5. 3MTA3, & 3MTA5 ARE LOCATED ON BIO 3 (8 OUTPUT-16 INPUT BOARD)

**W6DM4FR4**  
MICRO 6 SYSTEMS  
SCHEMATIC: CONTROLS FOR  
FORWARD & REVERSE  
FOR BELT 4  
110V1P50HZ/120V60HZ  
PELLERIN MILNOR CORPORATION

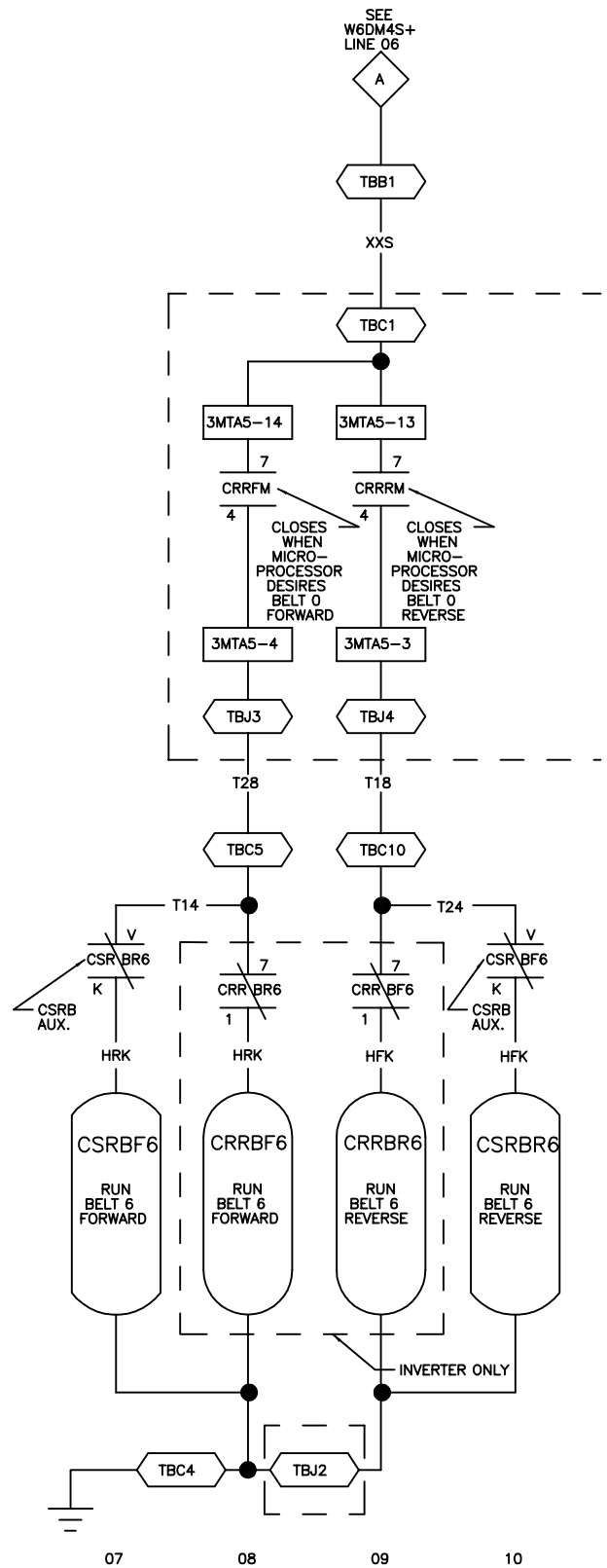
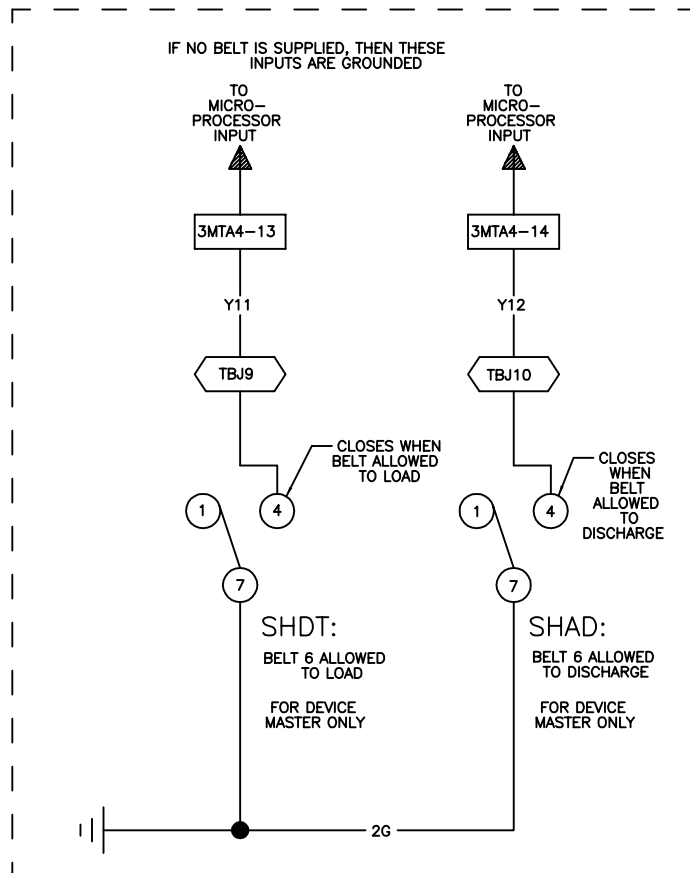
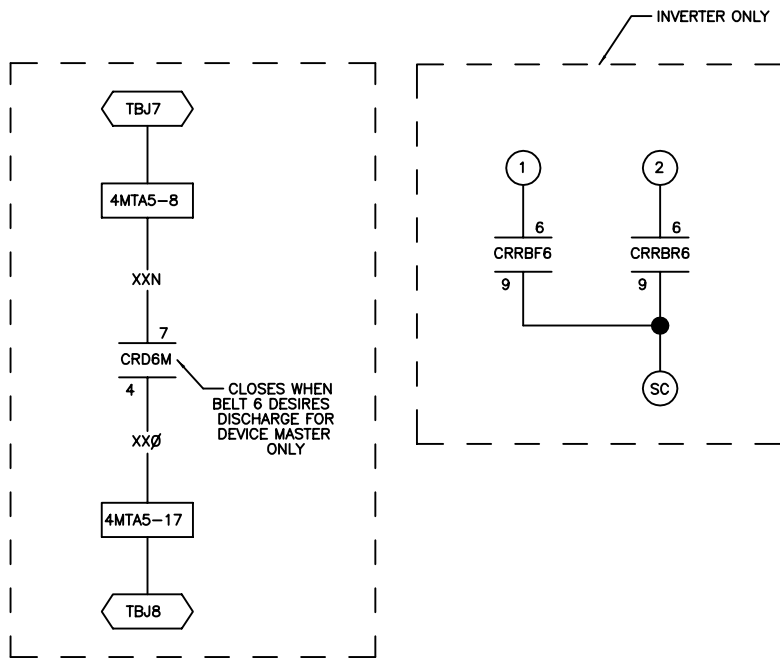




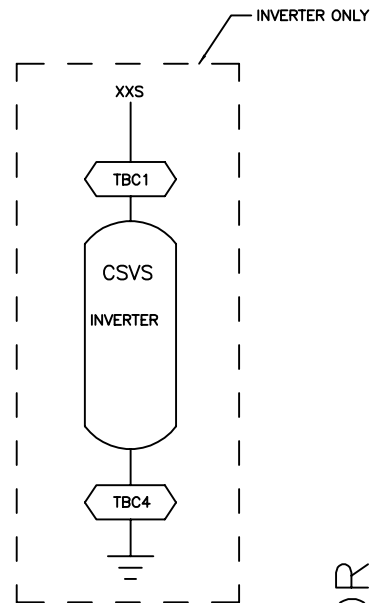
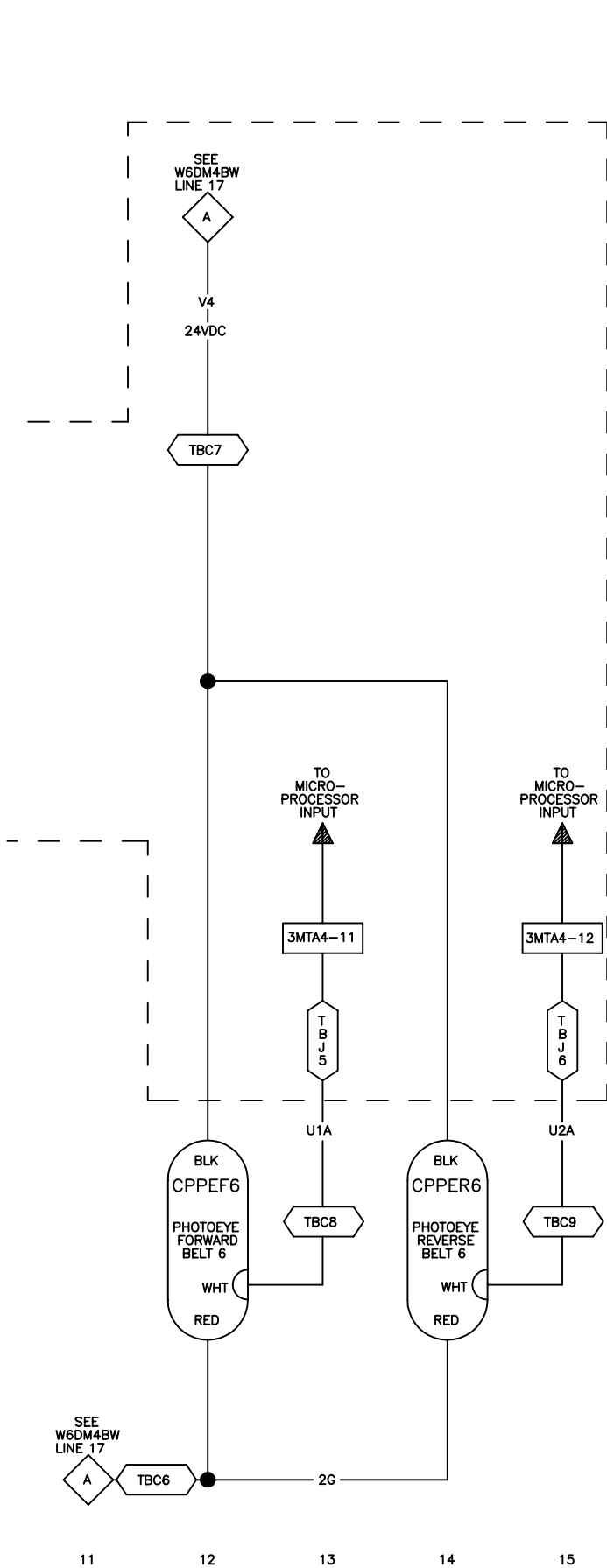
NOTES:

1. TBH IS LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS
5. 3MTA3, 3MTA6, 3MTA5 ARE LOCATED ON BIO-3 (8 OUTPUT - 16 INPUT BOARD)
6. 4MTA5 IS LOCATED ON BIO-4 (8 OUTPUT-16 INPUT BOARD)

W6DM4FR5  
MICRO 6 SYSTEMS  
SCHEMATIC: CONTROLS FOR  
FORWARD & REVERSE  
FOR BELT 5  
110V1P50HZ/120V60HZ  
PELLERIN MILNOR CORPORATION



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# W6DM4FR6

## MICRO 6 SYSTEMS

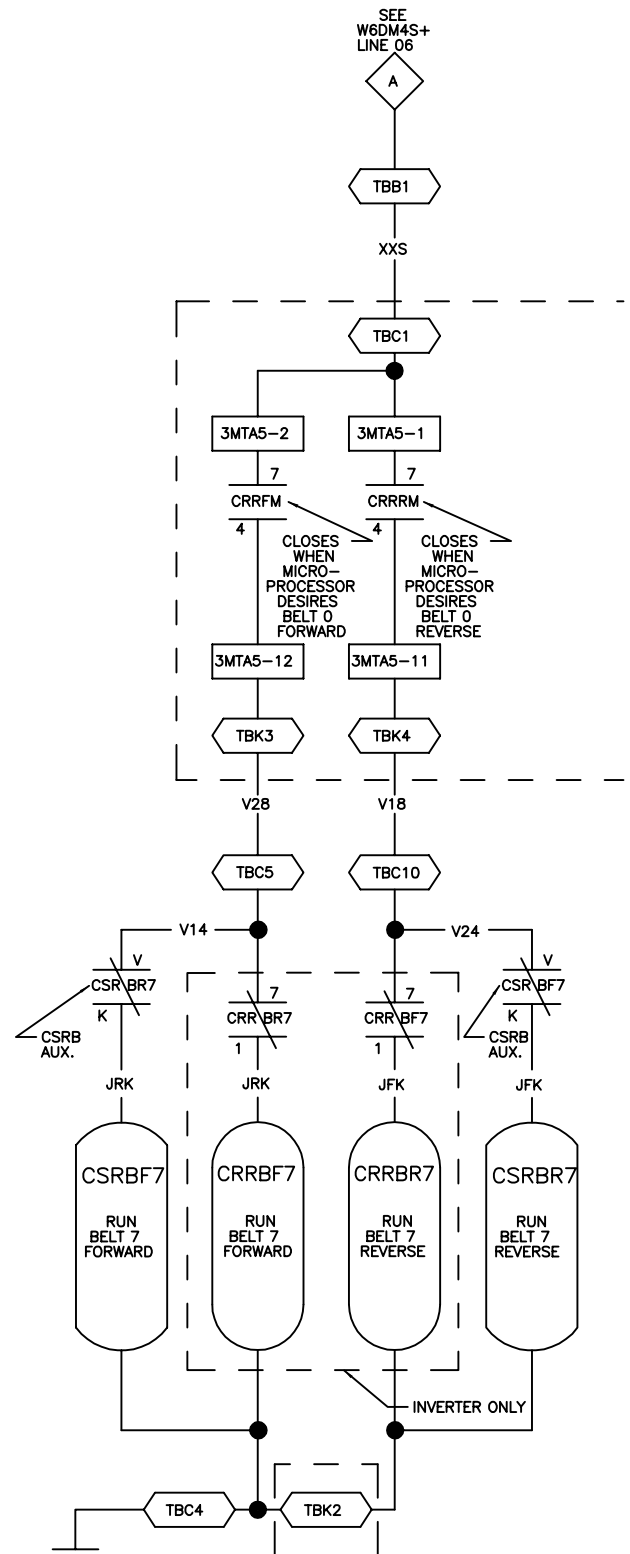
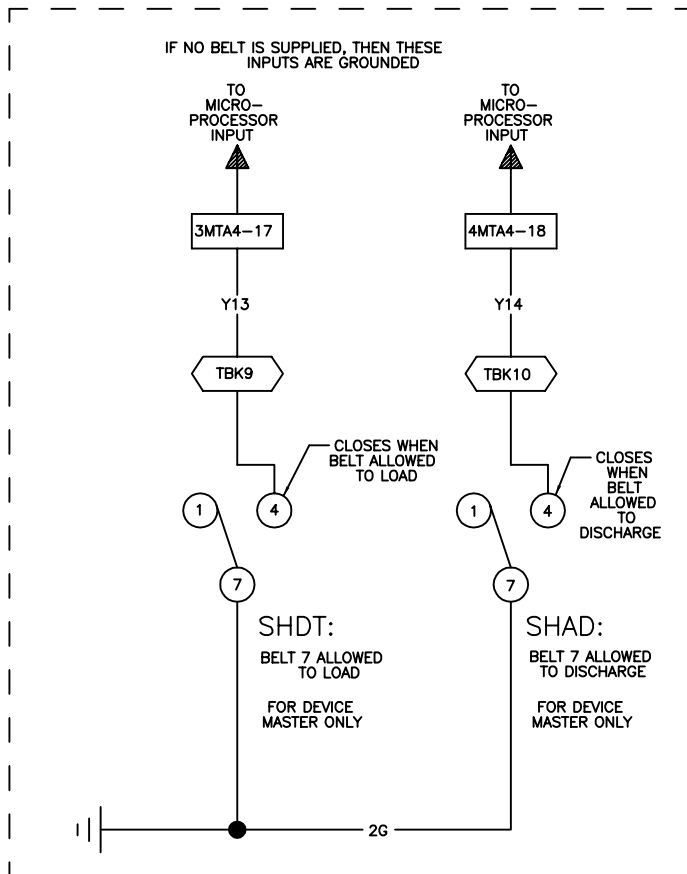
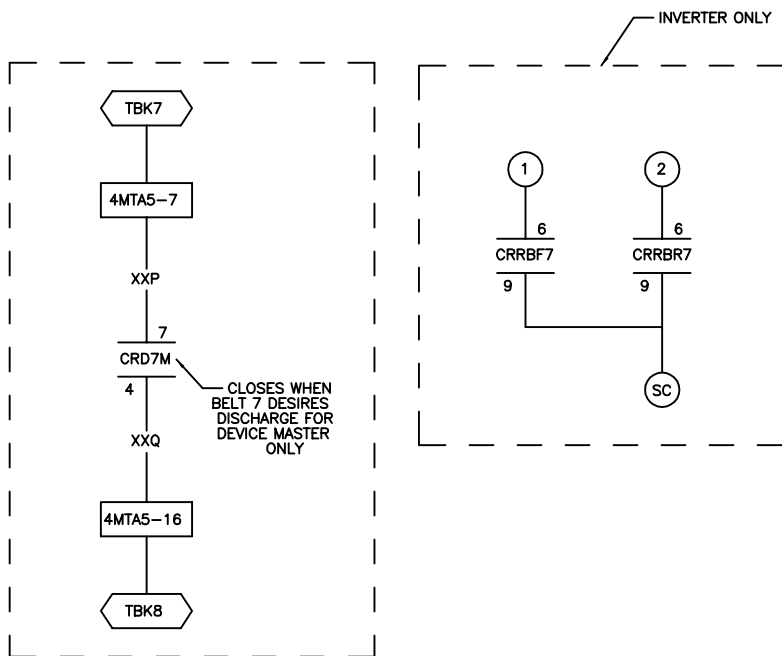
### SCHEMATIC: CONTROLS FOR FORWARD & REVERSE FOR BELT 6

#### 110V1P50HZ/120V60HZ

PELLERIN MILNOR CORPORATION

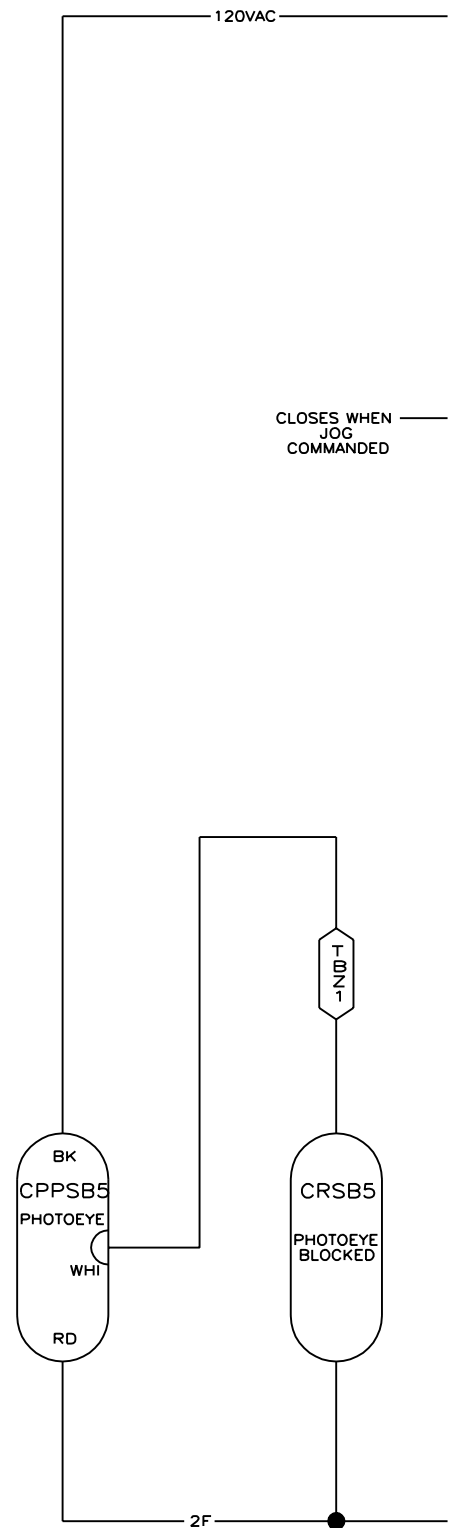
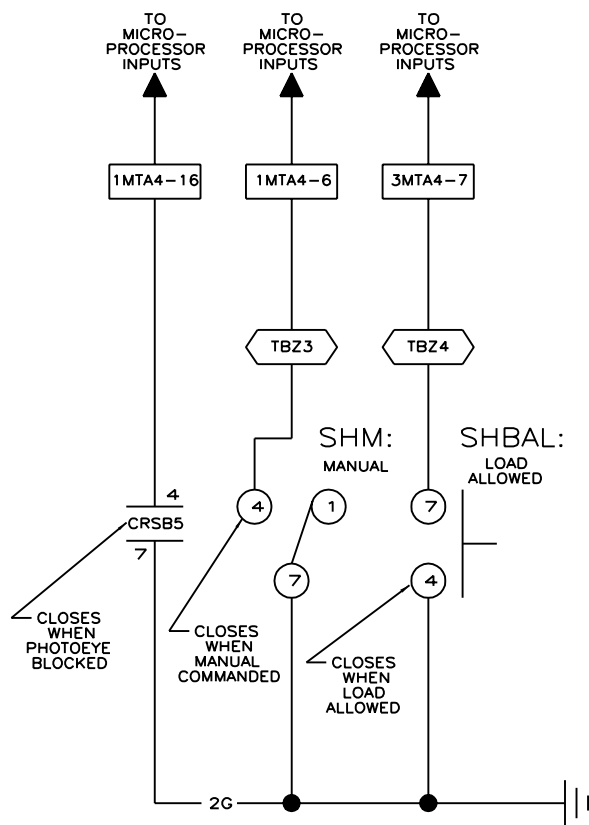
#### NOTES:

1. TBJ IS LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
2. TBC IS LOCATED IN THE BELT REVERSING CONTROL BOX.
3. DOTTED LINES INDICATED THAT CONTROLS ARE LOCATED IN THE 16 INPUT 8 OUTPUT CONTROL BOX.
4. FORWARD INDICATES THE FLOW OF GOODS
5. 3MTA4, 3MTA6, & 3MTA5 ARE LOCATED ON BIO-3 (8 OUTPUT-16 INPUT BOARD)
6. 4MTA5 IS LOCATED ON BIO-4 (8 OUTPUT-16 INPUT BOARD)

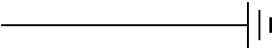


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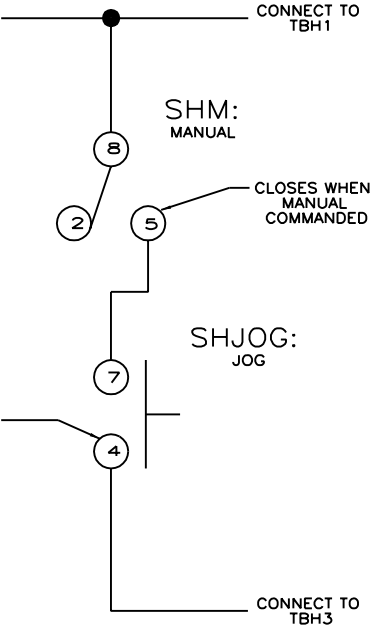
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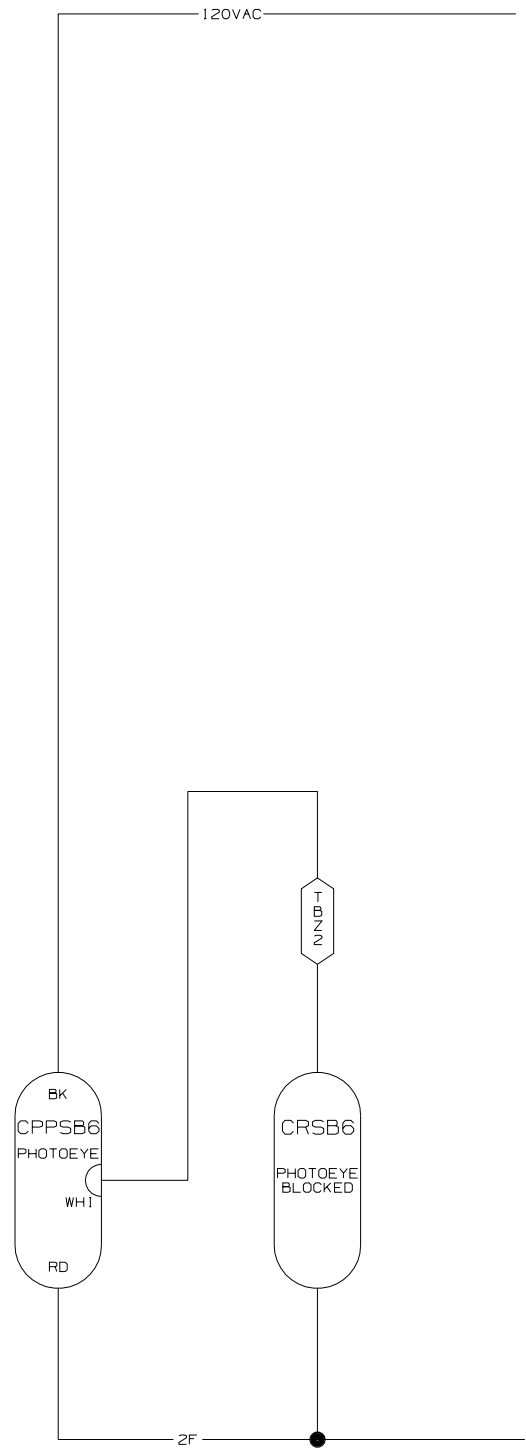
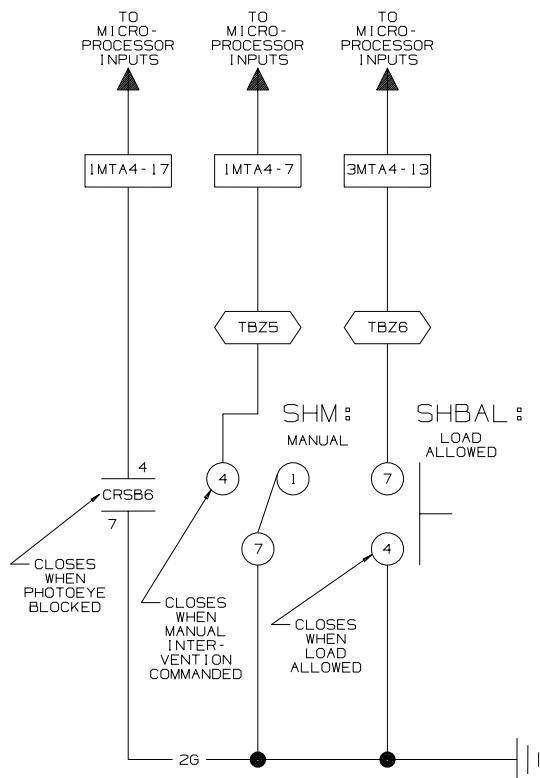
# W6DM4FS5

MICRO 6 SYSTEMS

## SCHEMATIC: FEEDER/SEQUENCER

BELT #5

PELLERIN MILNOR CORPORATION



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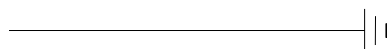
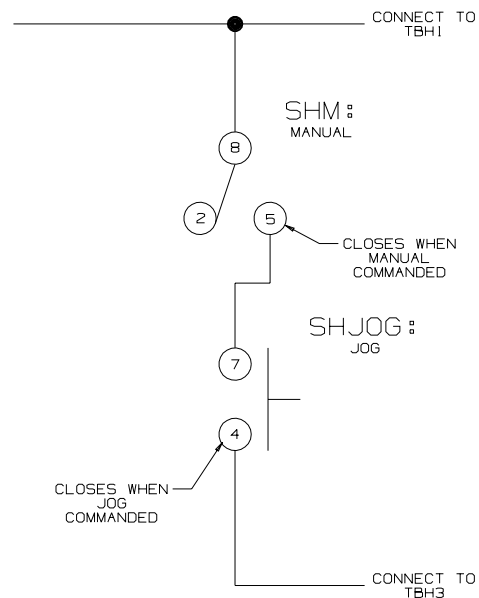
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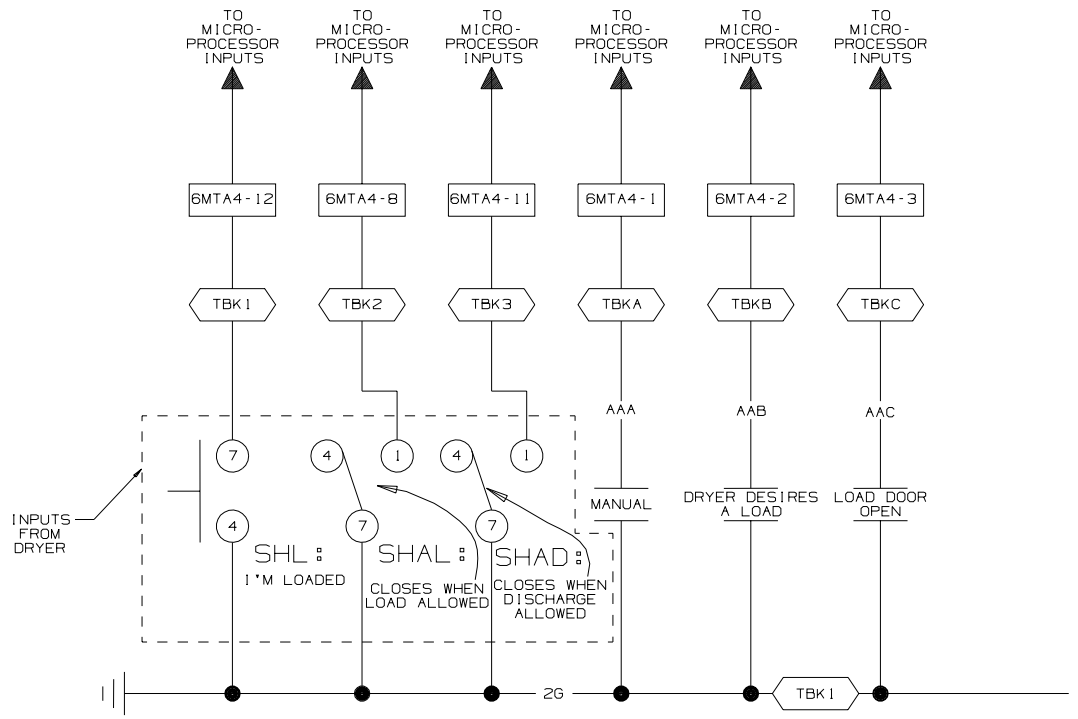
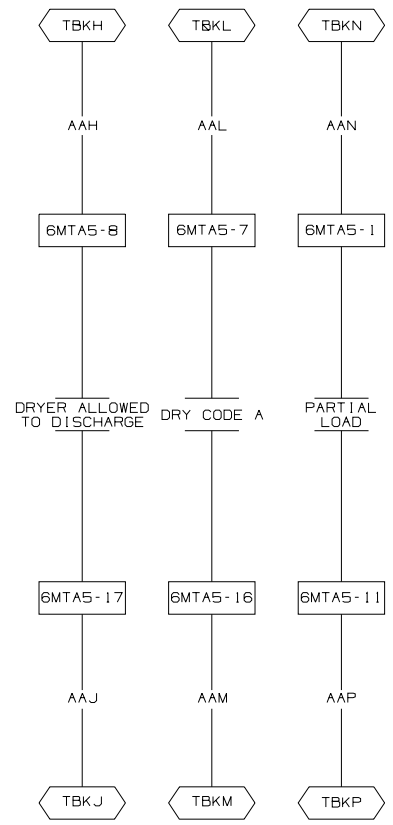
# W6DMCFS6

## MICRO 6 SYSTEMS

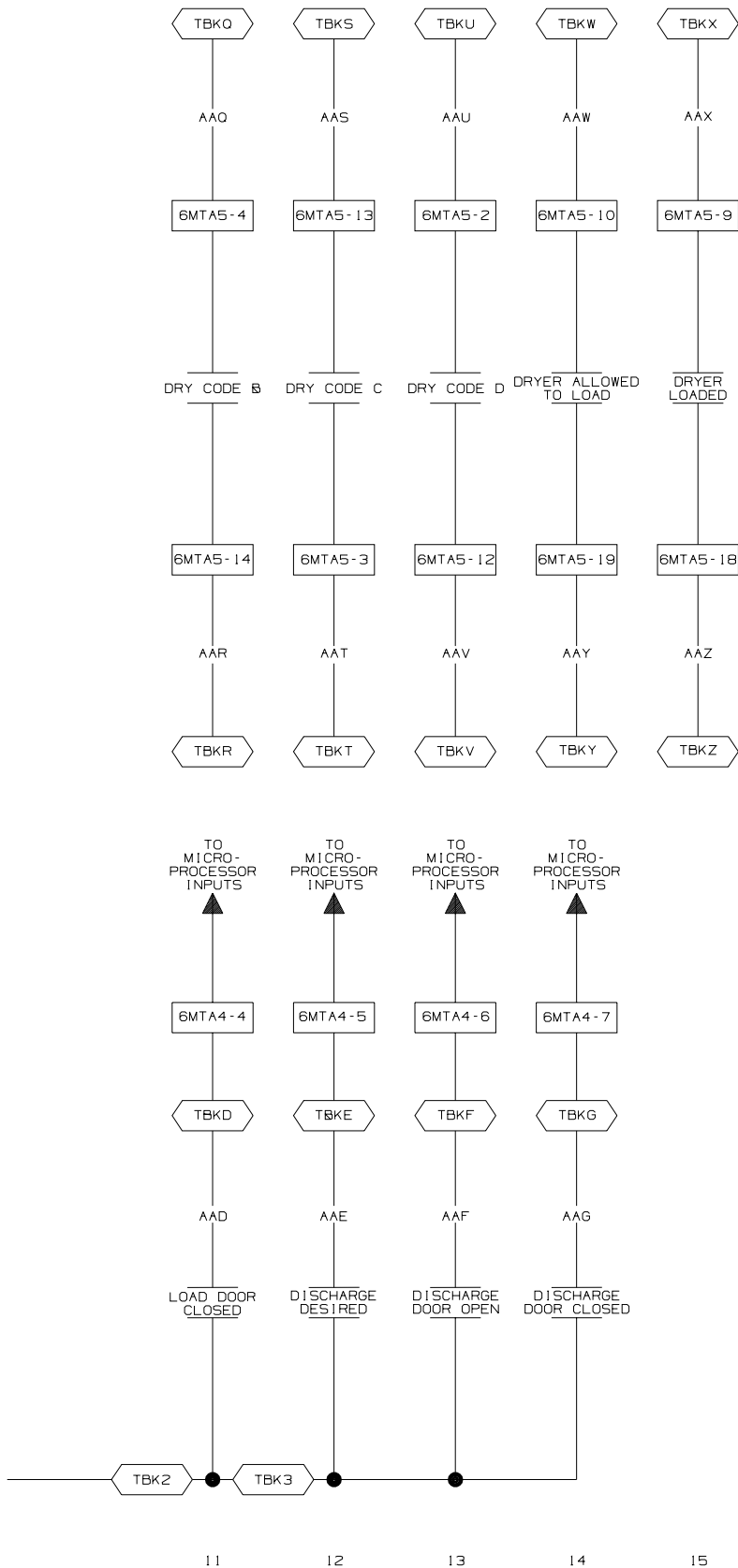
### SCHEMATIC: FEEDER/SEQUENCER

#### BELT #6

PELLERIN MILNOR CORPORATION



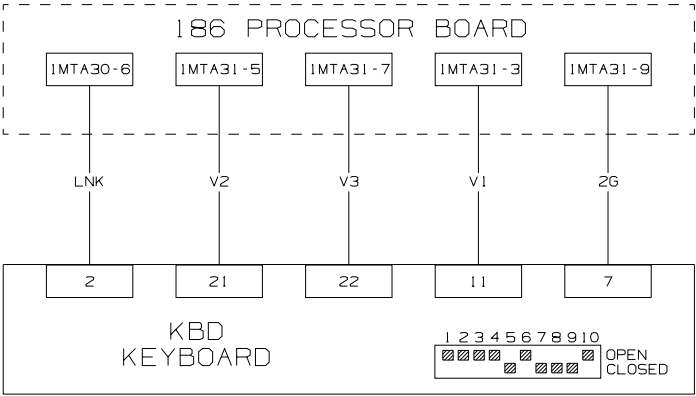
00 01 02 03 04 05 06 07 08 09 10



DIP SWITCH  
SETTINGS  
FOR DEVICES 0-7

| DEVICE NO. | SW2 | SW1 |
|------------|-----|-----|
| 0          | 0   | 0   |
| 1          | 0   | 0   |
| 2          | 0   | 0   |
| 3          | 0   | 0   |
| 4          | 0   | 0   |
| 5          | 0   | 0   |
| 6          | 0   | 0   |
| 7          | 0   | 0   |

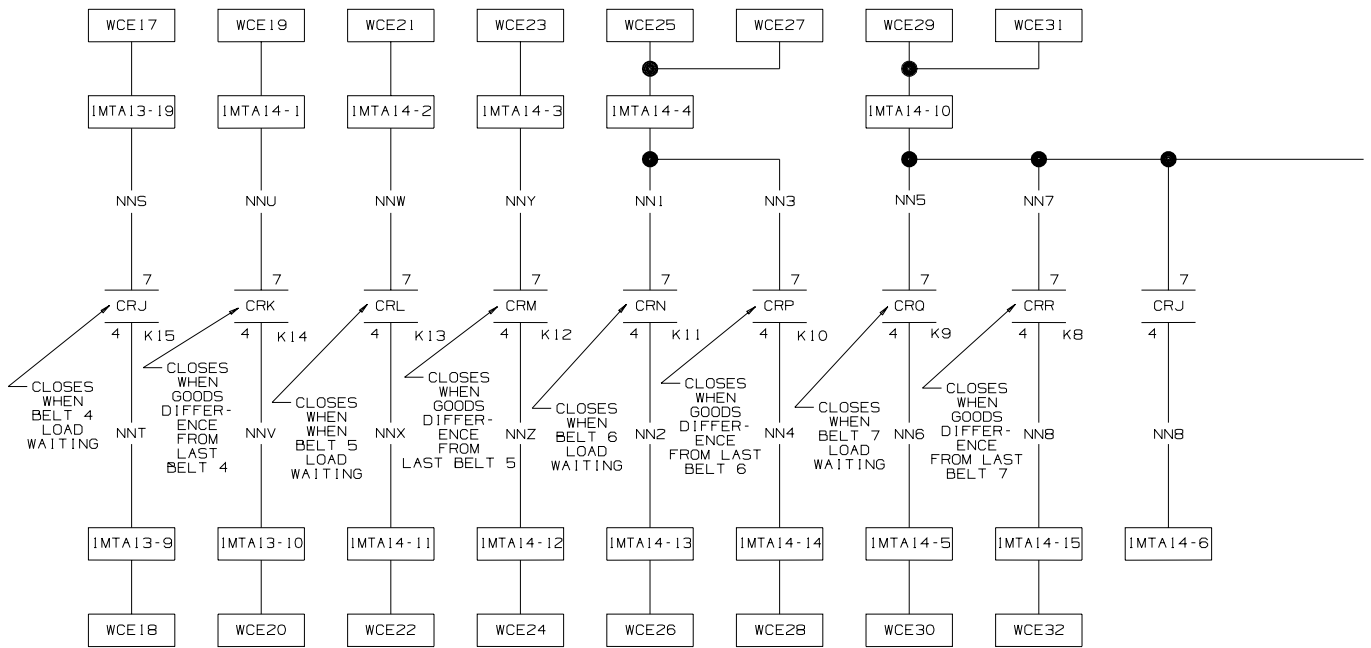
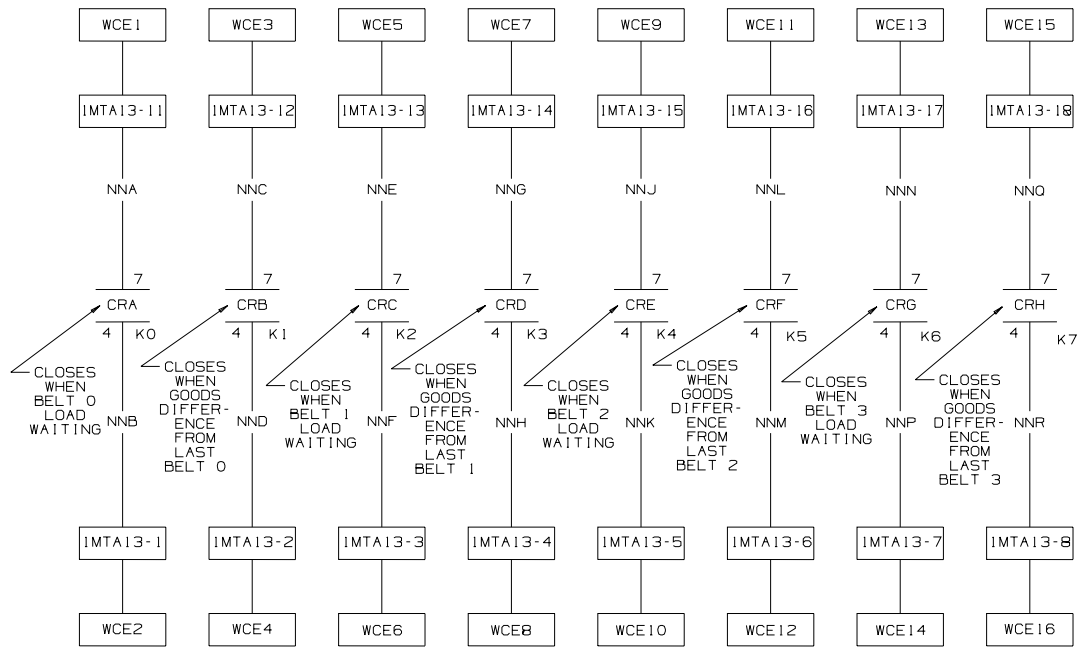
# W6DM4I SCHEMATIC: INPUTS FOR DRYER CONTROLLED BY DEVICE MASTER PELLERIN MILNOR CORPORATION



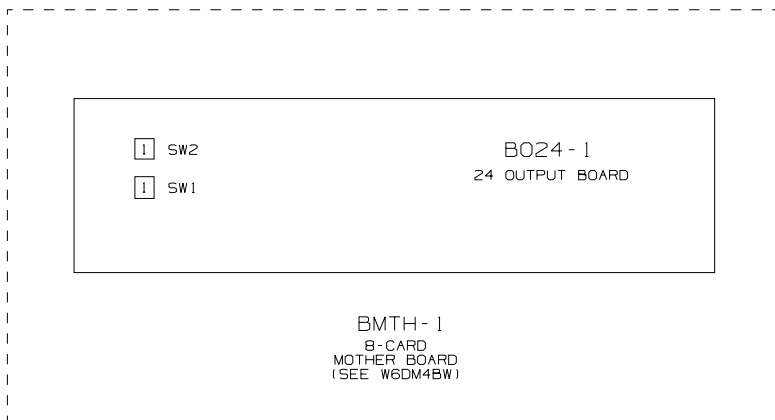
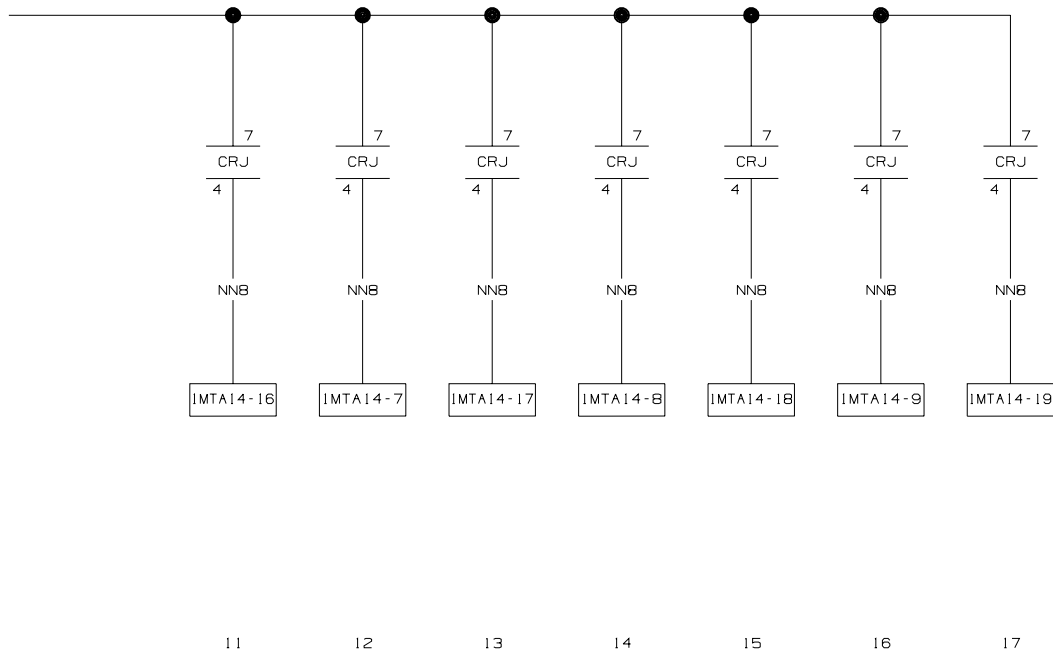
NOTES:

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

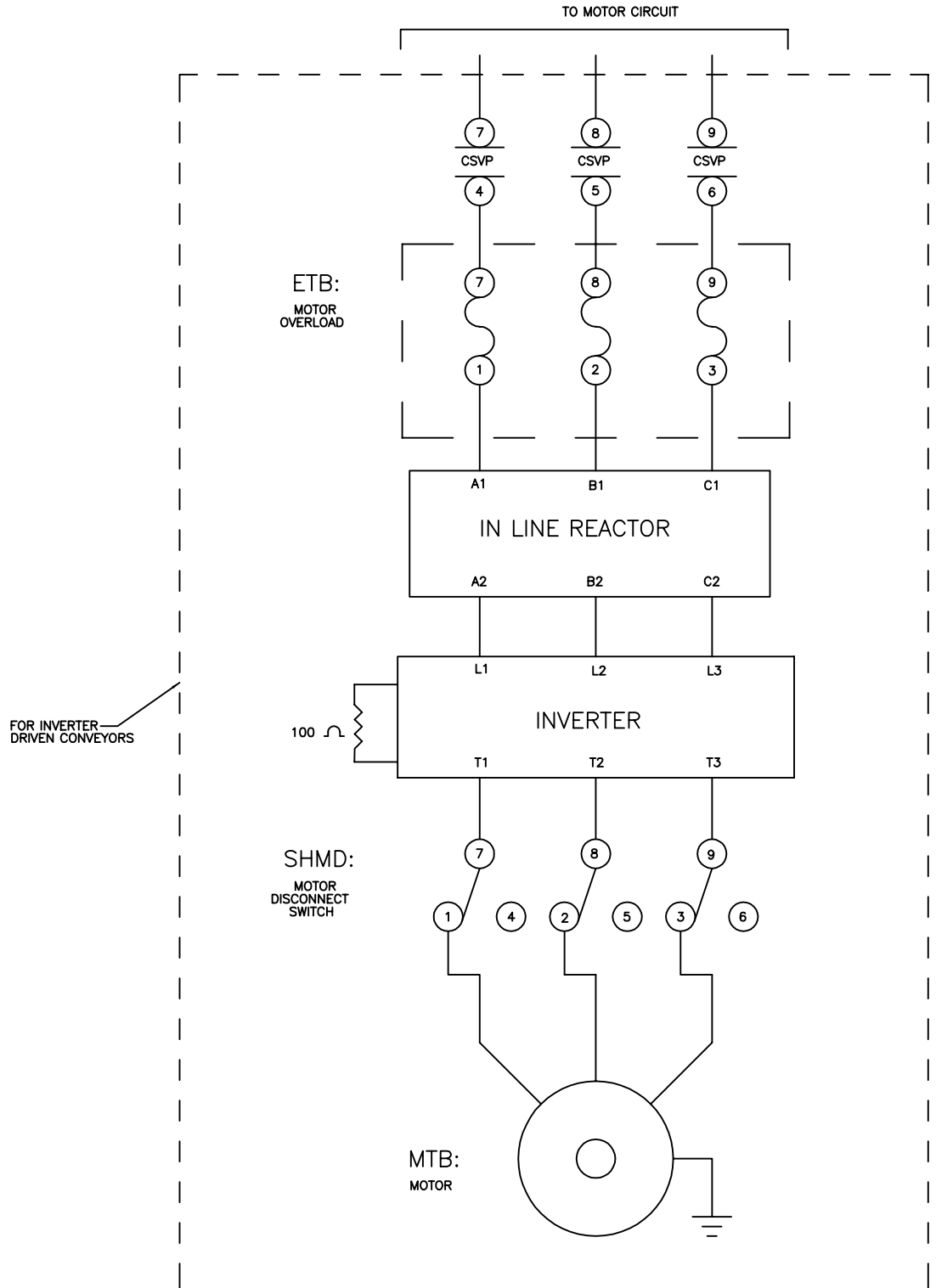
W6DM4KB  
MICRO 6 SYSTEMS SERIAL CONTROLS  
SCHEMATIC: SERIAL KEYBOARD  
PELLERIN MILNOR CORPORATION

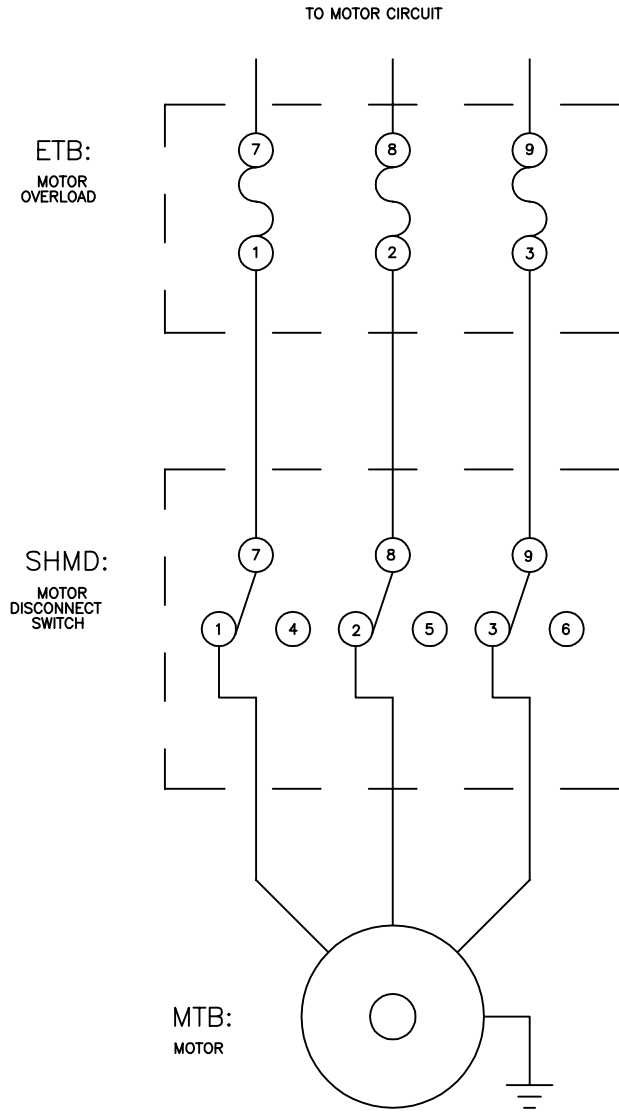


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W6DMCLW  
MICRO 6 SYSTEMS  
DEVICE MASTER  
SCHEMATIC : LOAD WAITING, DIFFERENT CUSTOMER  
(16 OUTPUT)  
PELLERIN MILNOR CORPORATION



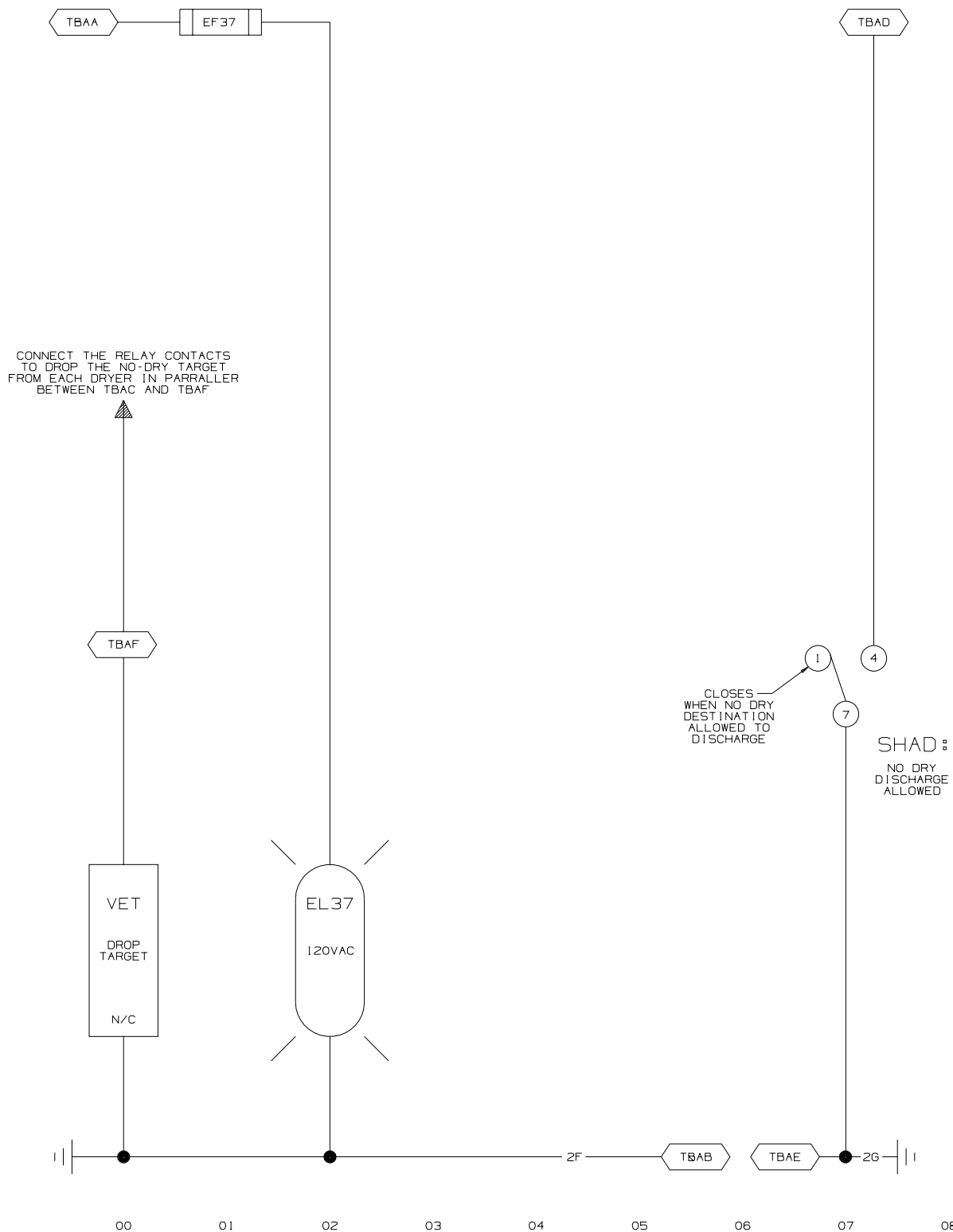


# W6DM4MR

## MICRO 6 SYSTEMS

### SCHEMATIC: TYPICAL BELT MOTOR WIRING

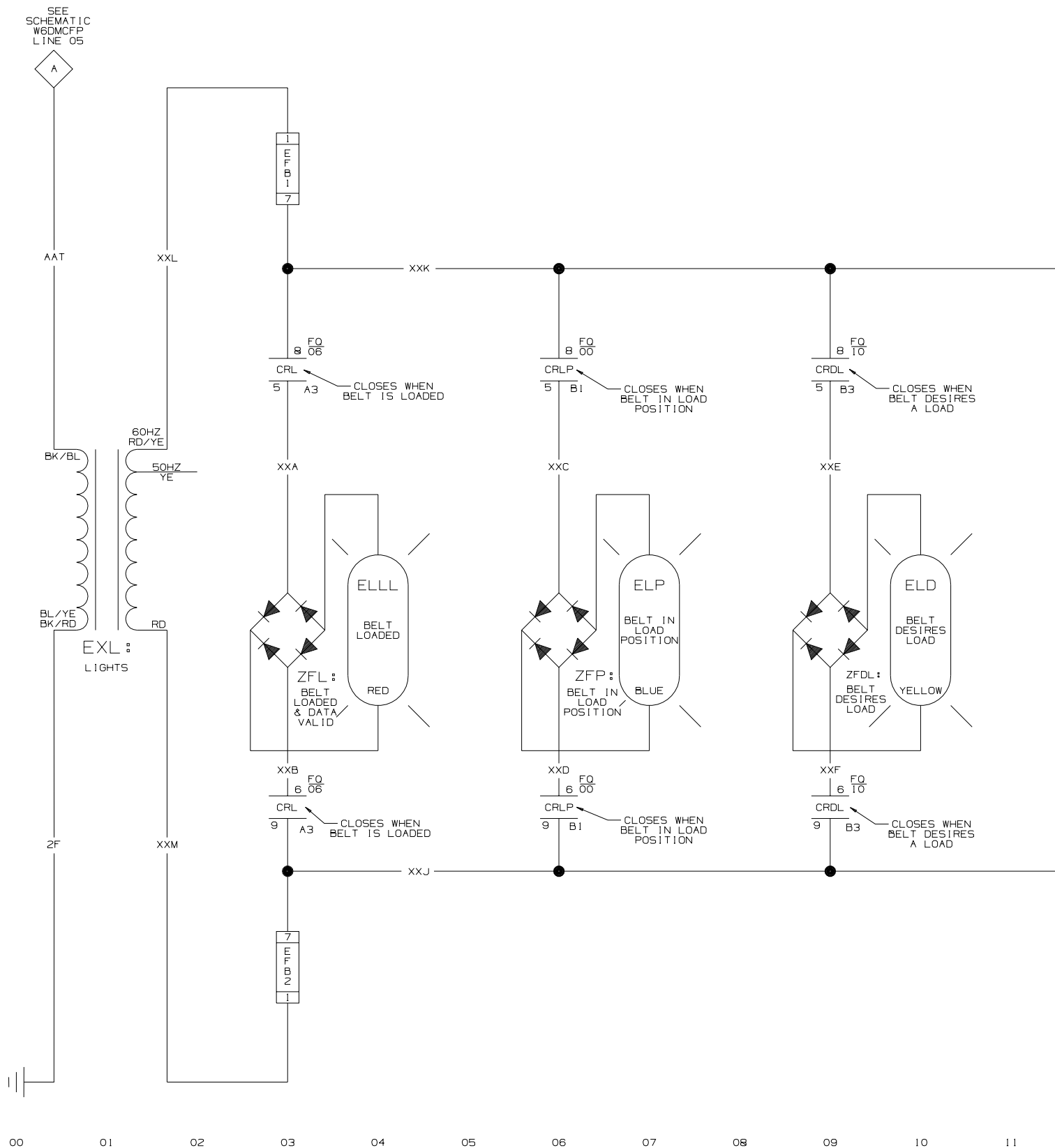
PELLERIN MILNOR CORPORATION

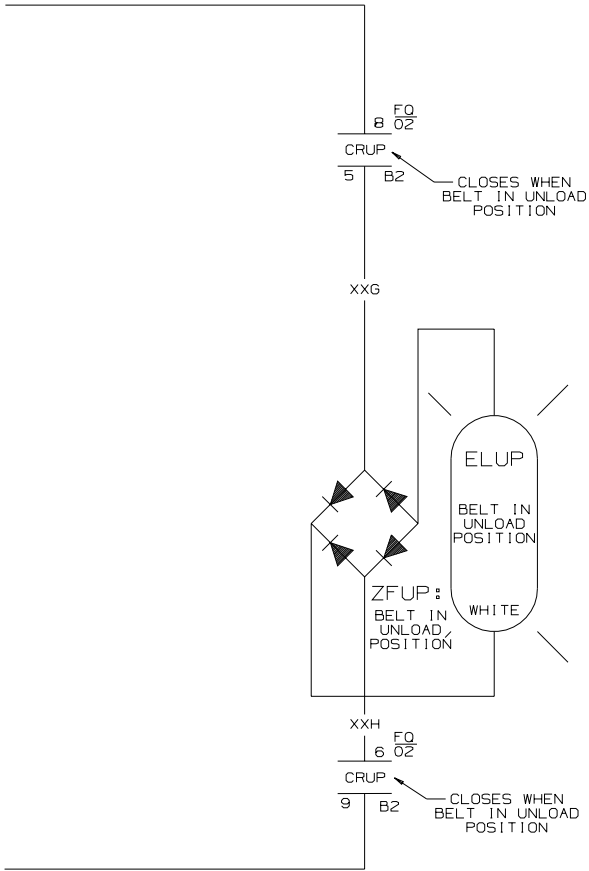


# W6DM4ND

MICRO 6 SYSTEMS  
SCHEMATIC: NO DRY DESTINATION  
CONTROLLED BY DEVICE MASTER

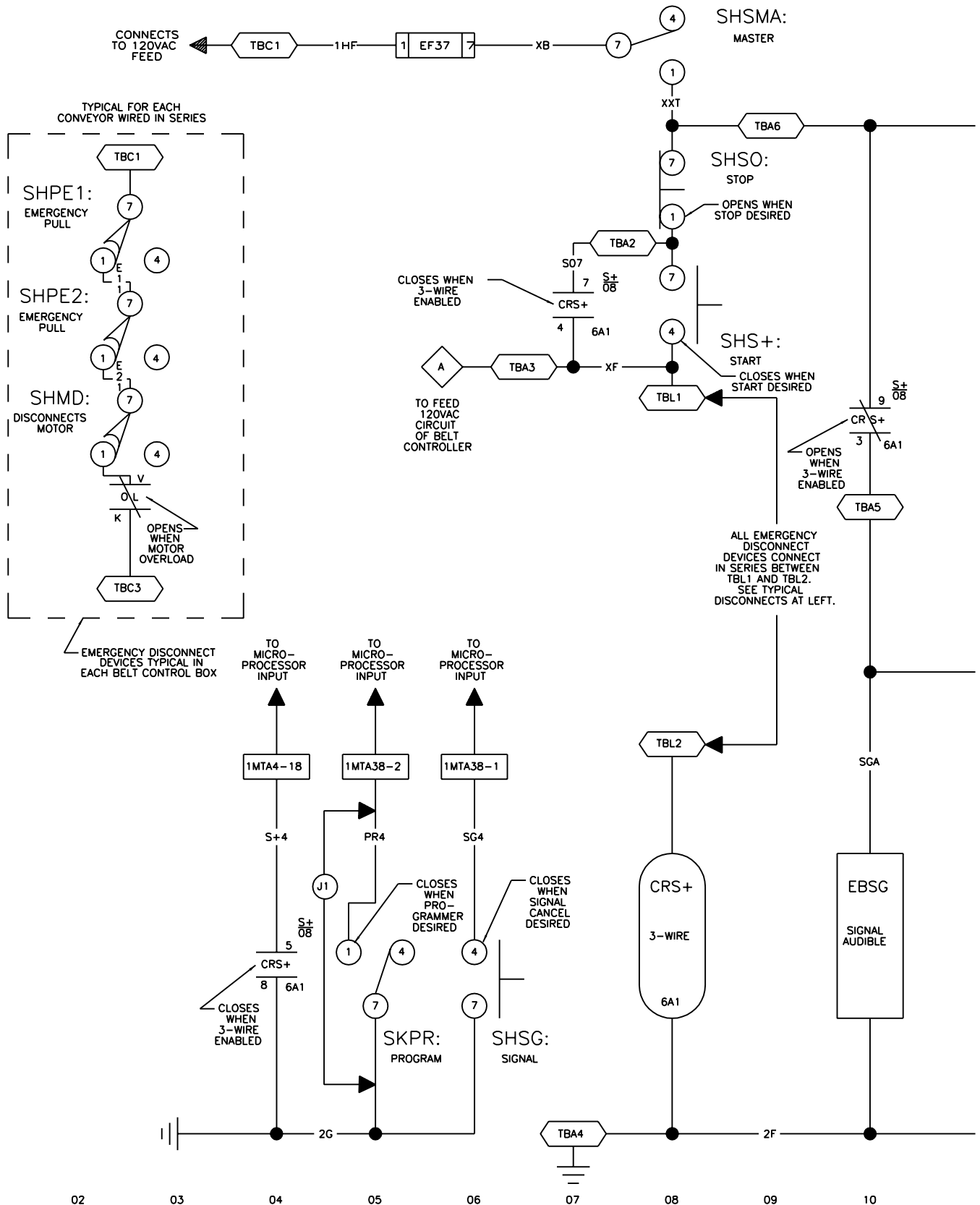
PELLERIN MILNOR CORPORATION





**W6DM4RR**  
 MICRO 6 SYSTEMS  
 SCHEMATIC: BELT CONTROLS FOR DEVICE  
 MASTER LOADING BELT  
 110V50HZ/120V60HZ  
 PELLERIN MILNOR CORPORATION

S+07  
S+04  
S+10



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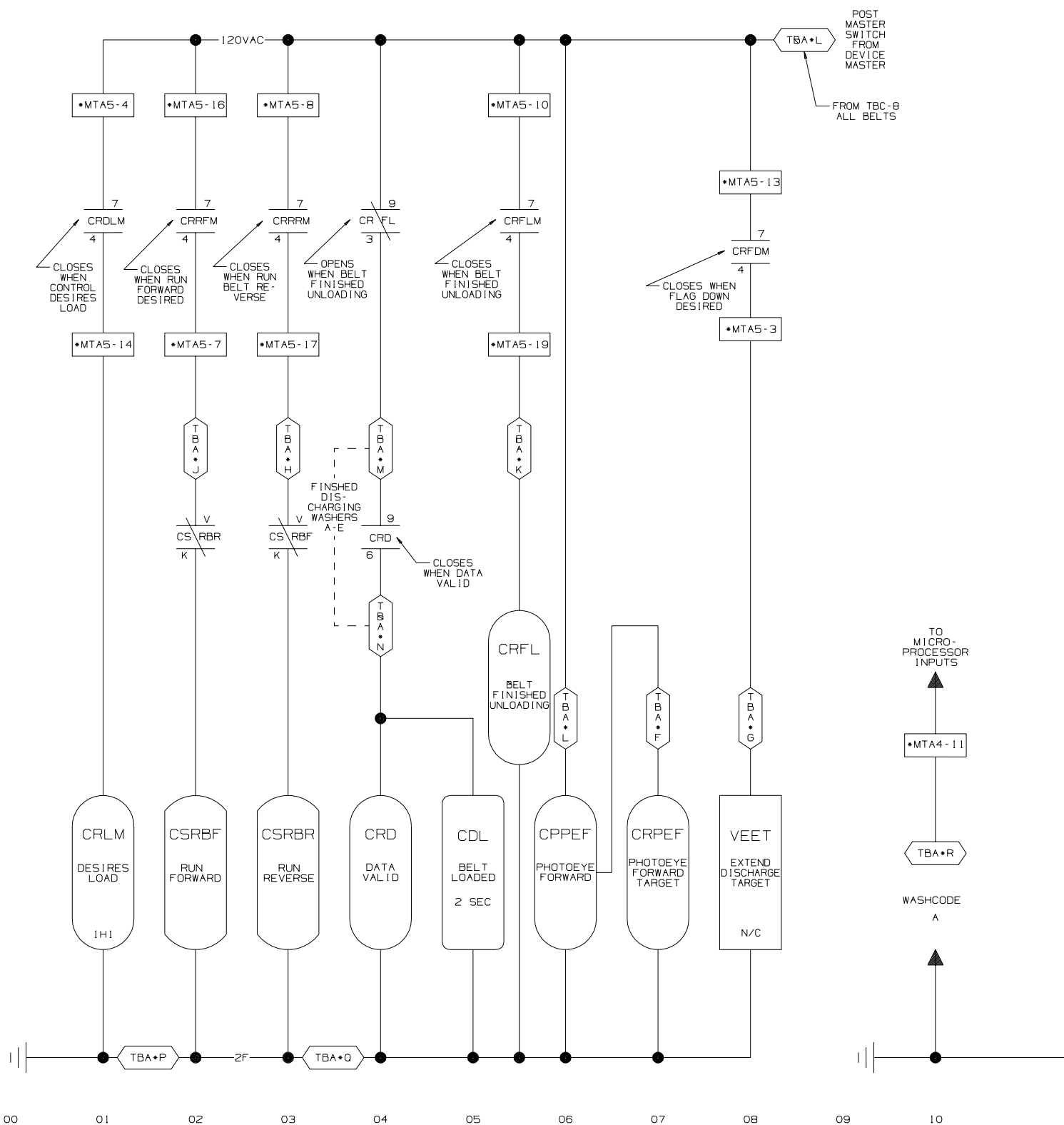
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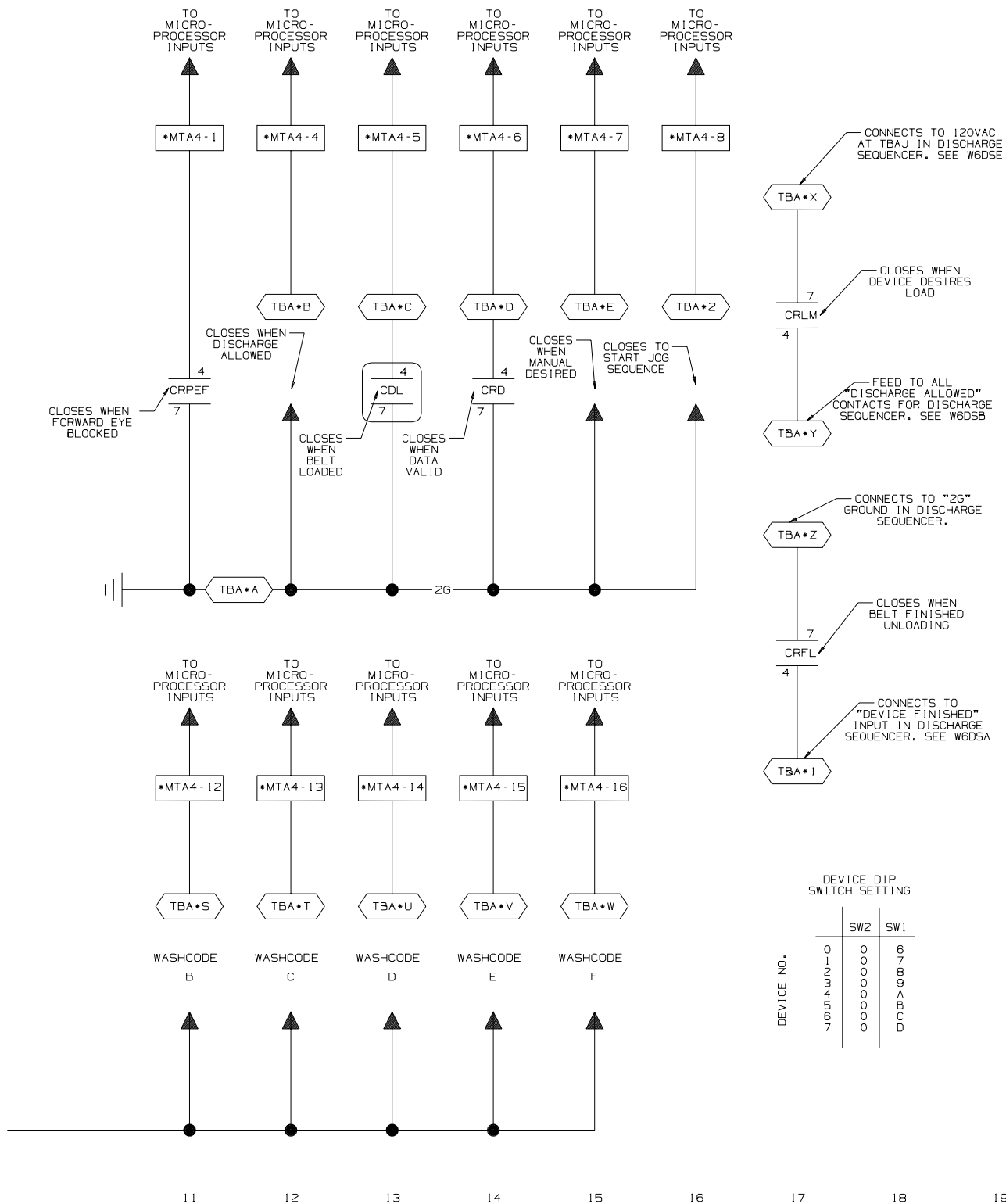
10

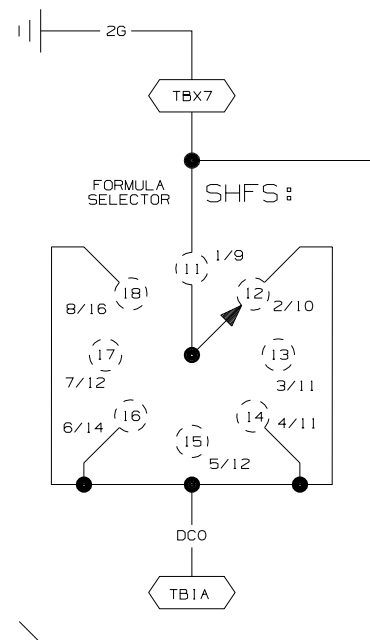
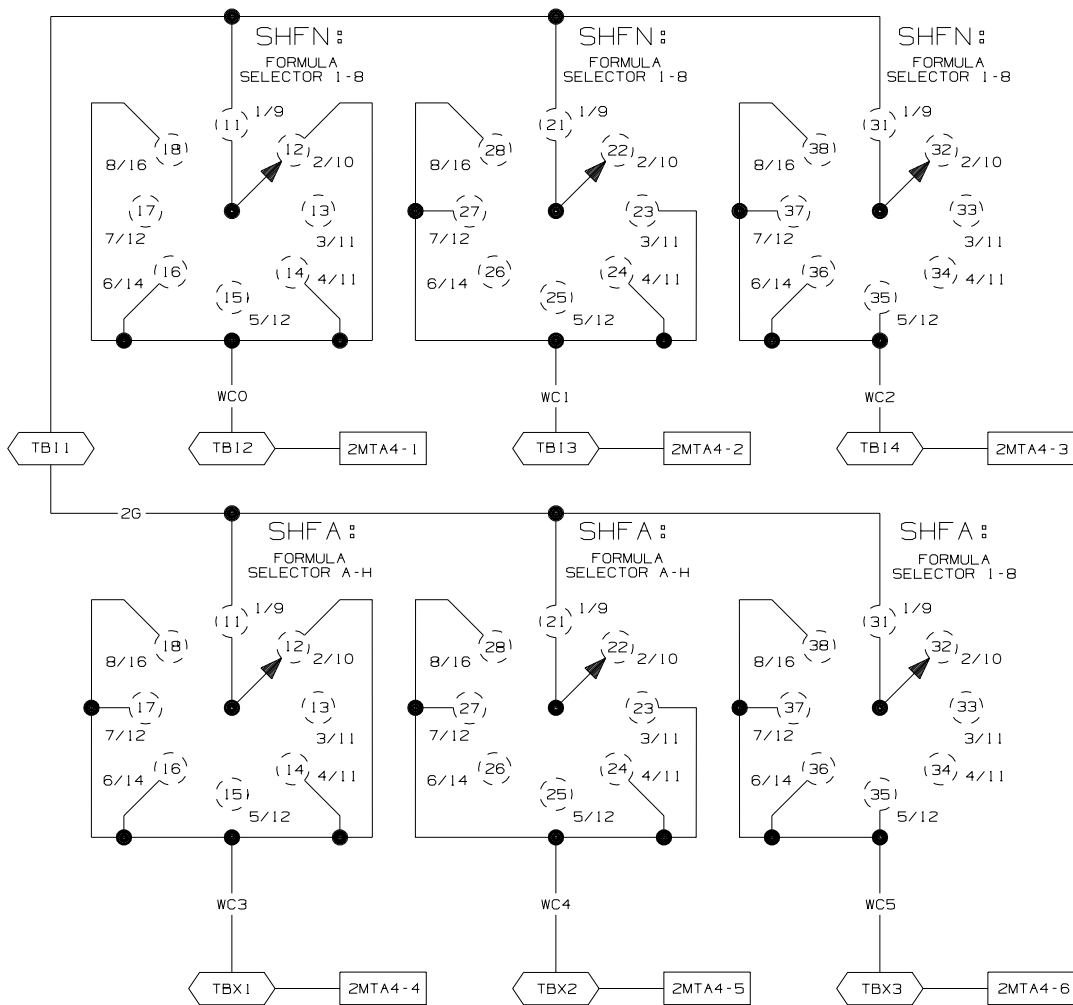
| WIRE NO. | VOLTAGE     | WIRE COLOR  |
|----------|-------------|-------------|
| V1       | +5VDC       | BLUE        |
| V2       | +12VDC      | BLUE/ORANGE |
| V3       | -12VDC      | BLUE/BLACK  |
| 2F       | CONTROL GND | RED/WHITE   |
| SRH      | SERIAL HIGH | BLUE/RED    |
| SRL      | SERIAL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



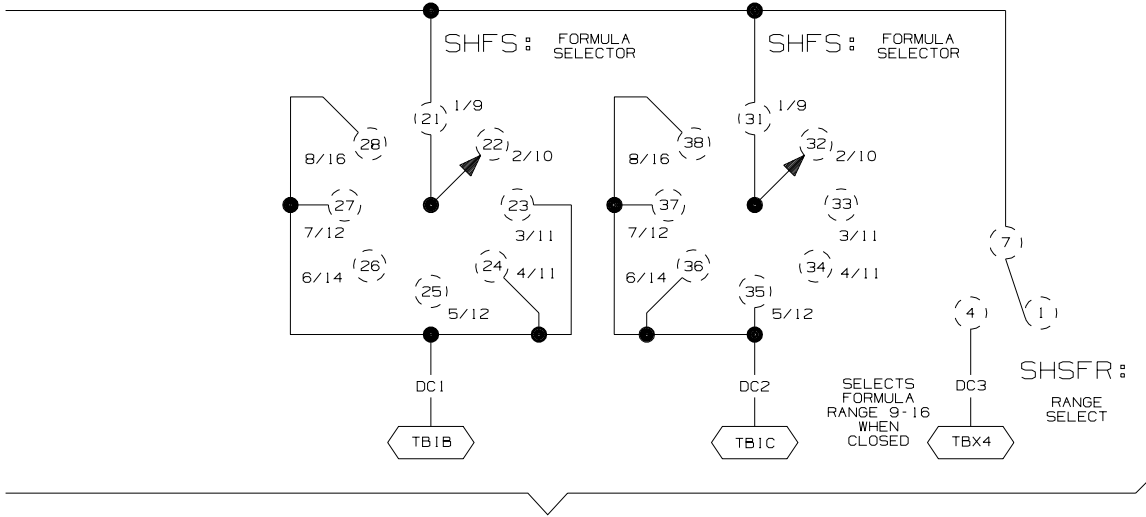
1. 1MTD, 1MTP ARE LOCATED ON ESPS (POWER SUPPLY).
2. 1MTA31, 1MTA32, 1MTA33, 1MTA34, 1MTA38 ARE LOCATED ON BPB (PROCESSOR BOARD).
3. 1MTA1, 1MTA2, 1MTA3, 1MTA4, 1MTA5, ARE LOCATED ON BIO-1 (8 OUTPUT - 16 INPUT BOARD).
4. TBA IS LOCATED IN 8 OUTPUT - 16 INPUT BOX OR MULTITRAC CABINET.
5. JUMPER (J1) IS ADDED FOR P.C. DEVICE MASTER.





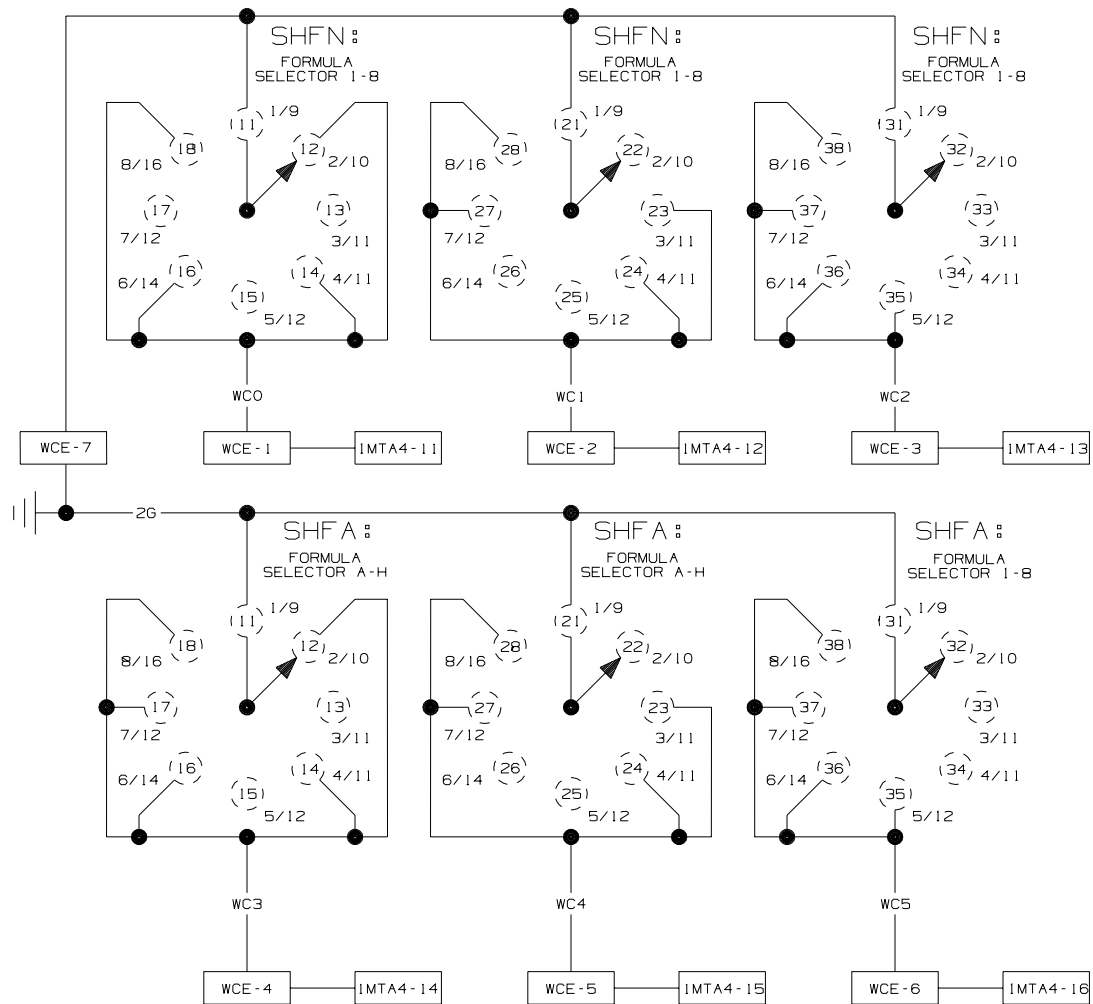


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REMOTE FORMULA SELECTOR STATION OPTION  
FOR DESTINATION AND/OR DRY CODES

**W6DMCSD**  
DEVICE MASTER  
MICRO 6 SYSTEM SERIAL CONTROLS  
SCHEMATIC: REMOTE FORMULA, DRY CODE, &  
DESTINATION SELECTION SWITCH  
PELLERIN MILNOR CORPORATION



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| REMOTE WASH FORMULA |         |         |              |         |         |              |         |         |              |         |         |
|---------------------|---------|---------|--------------|---------|---------|--------------|---------|---------|--------------|---------|---------|
| WASH<br>CODE        | SW<br>N | SW<br>A | WASH<br>CODE | SW<br>N | SW<br>A | WASH<br>CODE | SW<br>N | SW<br>A | WASH<br>CODE | SW<br>N | SW<br>A |
| 01                  | 1       | A       | 17           | 1       | C       | 33           | 1       | E       | 49           | 1       | G       |
| 02                  | 2       | A       | 18           | 2       | C       | 34           | 2       | E       | 50           | 2       | G       |
| 03                  | 3       | A       | 19           | 3       | C       | 35           | 3       | E       | 51           | 3       | G       |
| 04                  | 4       | A       | 20           | 4       | C       | 36           | 4       | E       | 52           | 4       | G       |
| 05                  | 5       | A       | 21           | 5       | C       | 37           | 5       | E       | 53           | 5       | G       |
| 06                  | 6       | A       | 22           | 6       | C       | 38           | 6       | E       | 54           | 6       | G       |
| 07                  | 7       | A       | 23           | 7       | C       | 39           | 7       | E       | 55           | 7       | G       |
| 08                  | 8       | B       | 24           | 8       | C       | 40           | 8       | E       | 56           | 8       | H       |
| 09                  | 9       | B       | 25           | 9       | C       | 41           | 9       | E       | 57           | 9       | H       |
| 10                  | 10      | B       | 26           | 10      | C       | 42           | 10      | E       | 58           | 10      | H       |
| 11                  | 11      | B       | 27           | 11      | C       | 43           | 11      | E       | 59           | 11      | H       |
| 12                  | 12      | B       | 28           | 12      | C       | 44           | 12      | E       | 60           | 12      | H       |
| 13                  | 13      | B       | 29           | 13      | C       | 45           | 13      | E       | 61           | 13      | H       |
| 14                  | 14      | B       | 30           | 14      | C       | 46           | 14      | E       | 62           | 14      | H       |
| 15                  | 15      | B       | 31           | 15      | C       | 47           | 15      | E       | 63           | 15      | H       |
| 16                  | 16      | B       | 32           | 16      | C       | 48           | 16      | E       | 64           | 16      | H       |

W6DM4SF

MICRO 6 SYSTEMS

SCHEMATIC: REMOTE FORMULA SELECTION SWITCH

PELLERIN MILNOR CORPORATION